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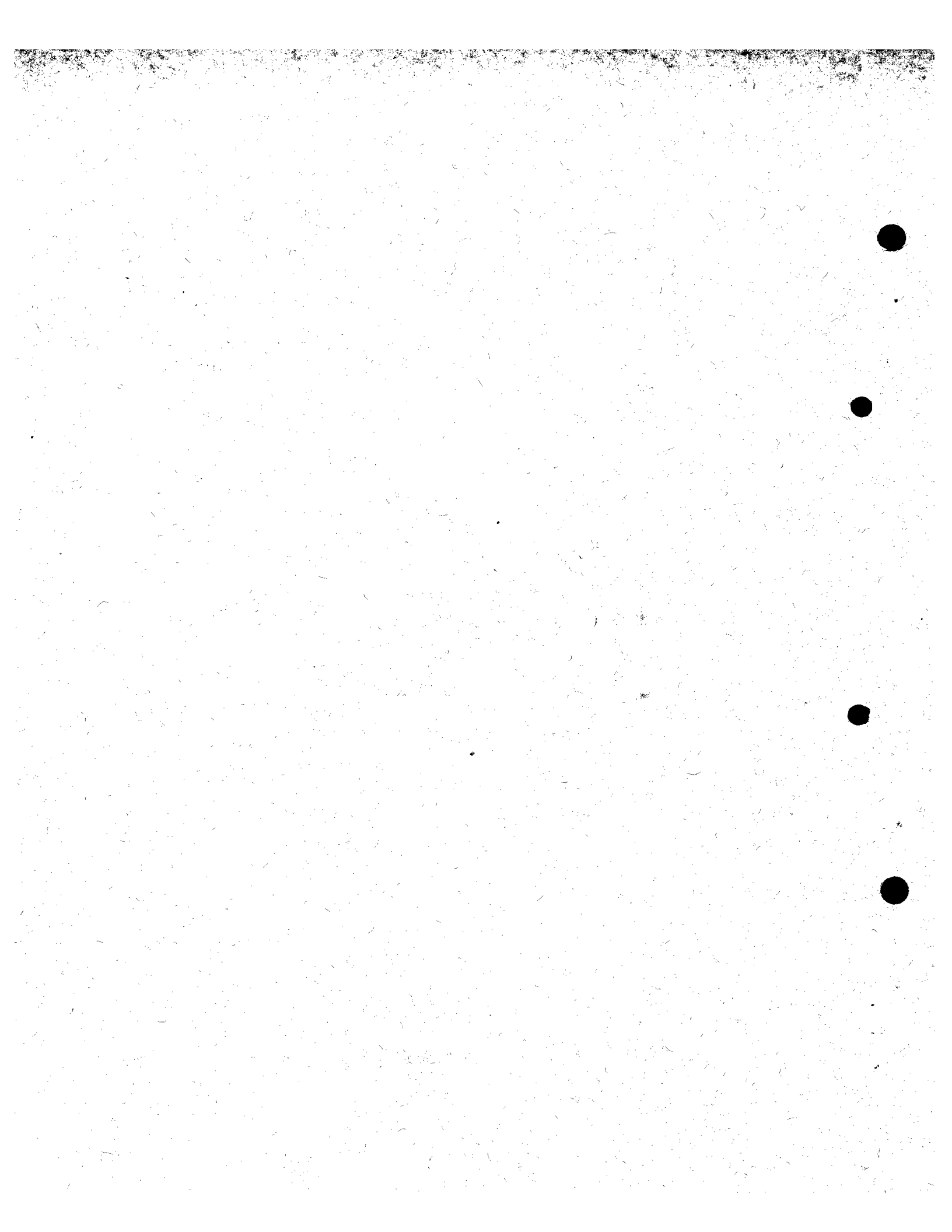
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NATIONAL RESEARCH COUNCIL OF CANADA

PROCEEDINGS  
OF THE  
TWENTIETH MEETING  
OF THE  
SUBCOMMITTEE ON FOREST TREE BREEDING  
OF THE  
ASSOCIATE COMMITTEE ON FORESTRY

OTTAWA

27 APRIL, 1948

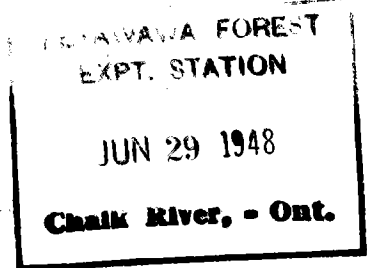


NATIONAL RESEARCH COUNCIL  
PROCEEDINGS OF THE TWENTIETH MEETING OF THE  
SUBCOMMITTEE ON FOREST TREE BREEDING  
ASSOCIATE COMMITTEE ON FORESTRY

Held in Room 416 at 193 Sparks St., Ottawa,  
on April 27th, 1948, at 2:00 P.M.

Members present:

Mr. D. A. Macdonald (Chairman)  
Dr. E. S. Archibald  
Dr. N. H. Grace  
Dr. C. C. Heimburger  
Mr. G. A. Mulloy  
Dr. C. G. Riley  
Dr. H. A. Senn  
Mr. J. L. Farrar (Secretary)



Visitors present:

Mr. J. J. de Gryse  
Mr. H. D. Heaney  
Dr. A. W. S. Hunter  
Mr. A. W. McCallum  
Dr. W. E. van Steenburgh  
Mr. G. Tunstell  
Mr. S. J. Cook  
Dr. J. Bier

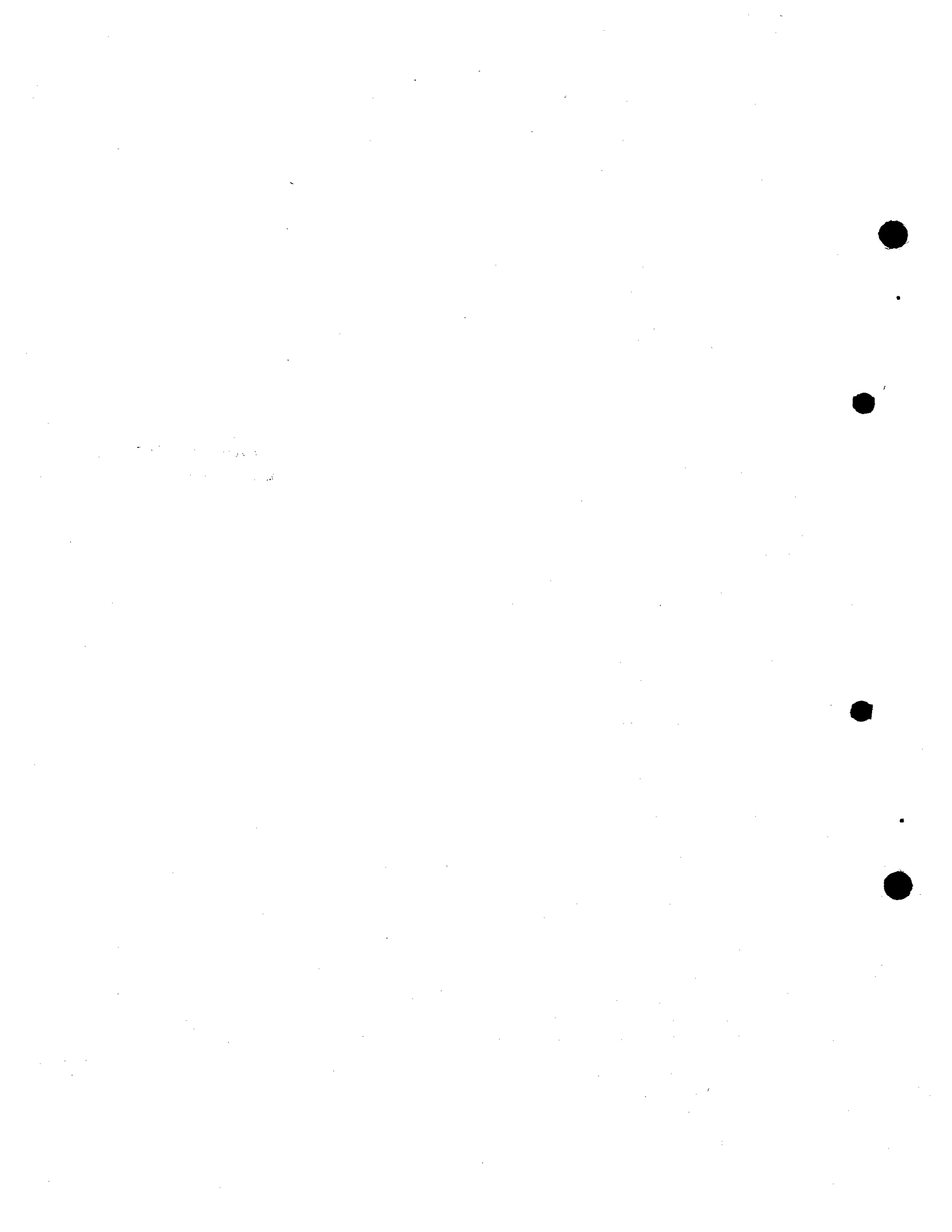
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209. The minutes of the nineteenth meeting were read and approved with the following changes:

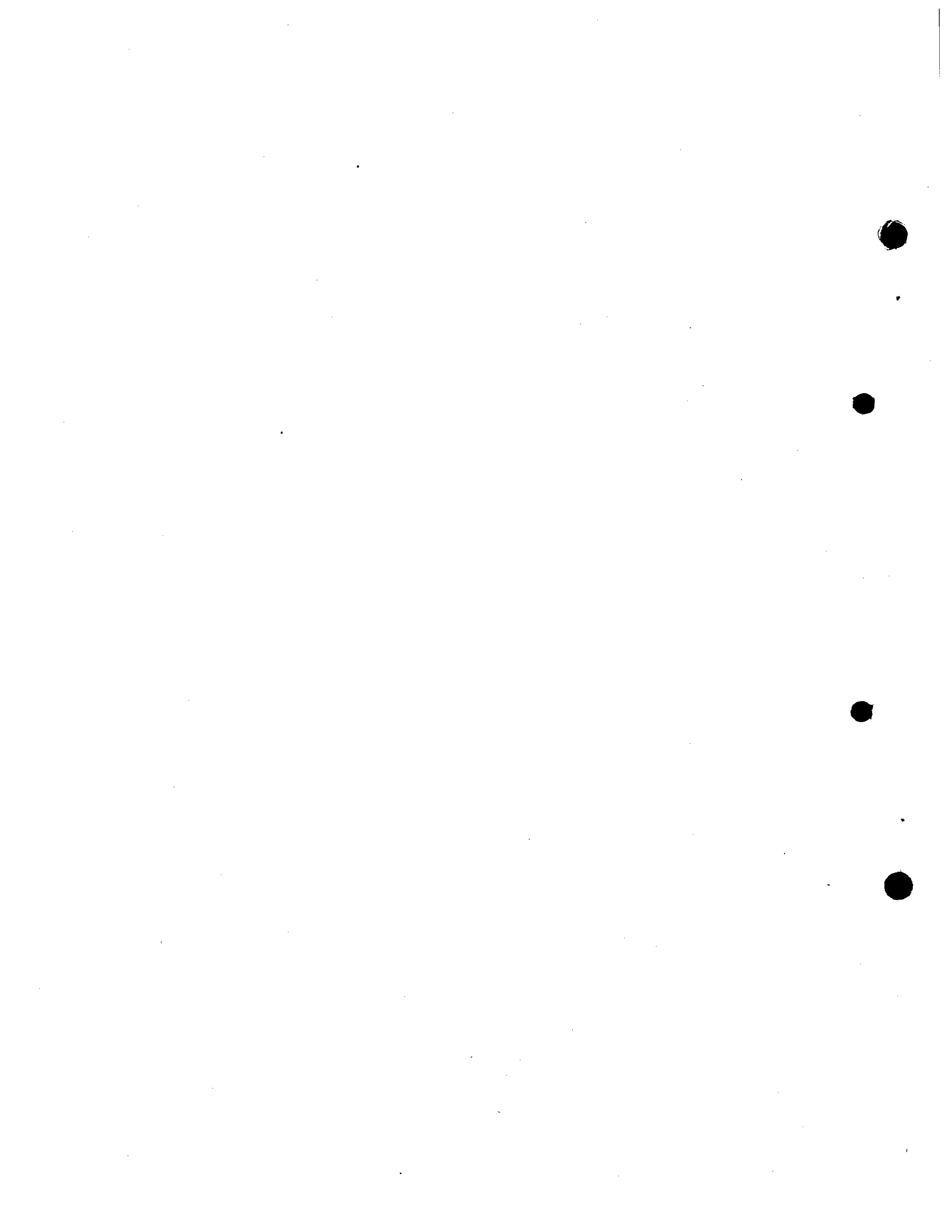
Change "these seedlings" to "some of these seedlings"  
and "The rust free", to "six rust free", in Minute 200.

210. DUTCH ELM DISEASE

In connection with the proposal to try to interest university professors in applying for grants-in-aid to carry out research on the Dutch elm disease (Minute 199), Dr. Grace reported that he had contacted Laval University without results. Dr. Senn reported that he had contacted the University of Montreal and McGill University. Dr. Henri Pratt at the former was willing to carry out work on the physiological aspects of disease resistance provided that material were supplied to him. Unfortunately we cannot undertake to do this at present.







Mr. S. J. Cook reported that Dr. R. Pomerleau, forest pathologist with the Quebec Department of Lands and Forests, had requested extracts from the Subcommittee's minutes dealing with the Dutch elm disease.

(Secretary's note: The National Film Board is producing a 10-minute colour film on the Dutch elm disease, showing the various steps being taken to study and check the disease. Mr. A.W. McCallum of the Division of Botany and Plant Pathology, of the Department of Agriculture is co-director. A National Committee on the Dutch elm disease, representing the Dominion, Quebec and Ontario Governments, maintains a continuous search for diseased elms, and specimens of suspected trees are sent to the Forest Pathological Laboratory at the Experimental Farm for diagnosis by means of cultures. Elms infected by the disease near the margin of the contaminated area are promptly destroyed. The most westerly reported occurrence of the disease in Canada is within 3 miles of the Ontario boundary, in Argenteuil County, Quebec.)

#### 211. SCOPE OF THE SUBCOMMITTEE

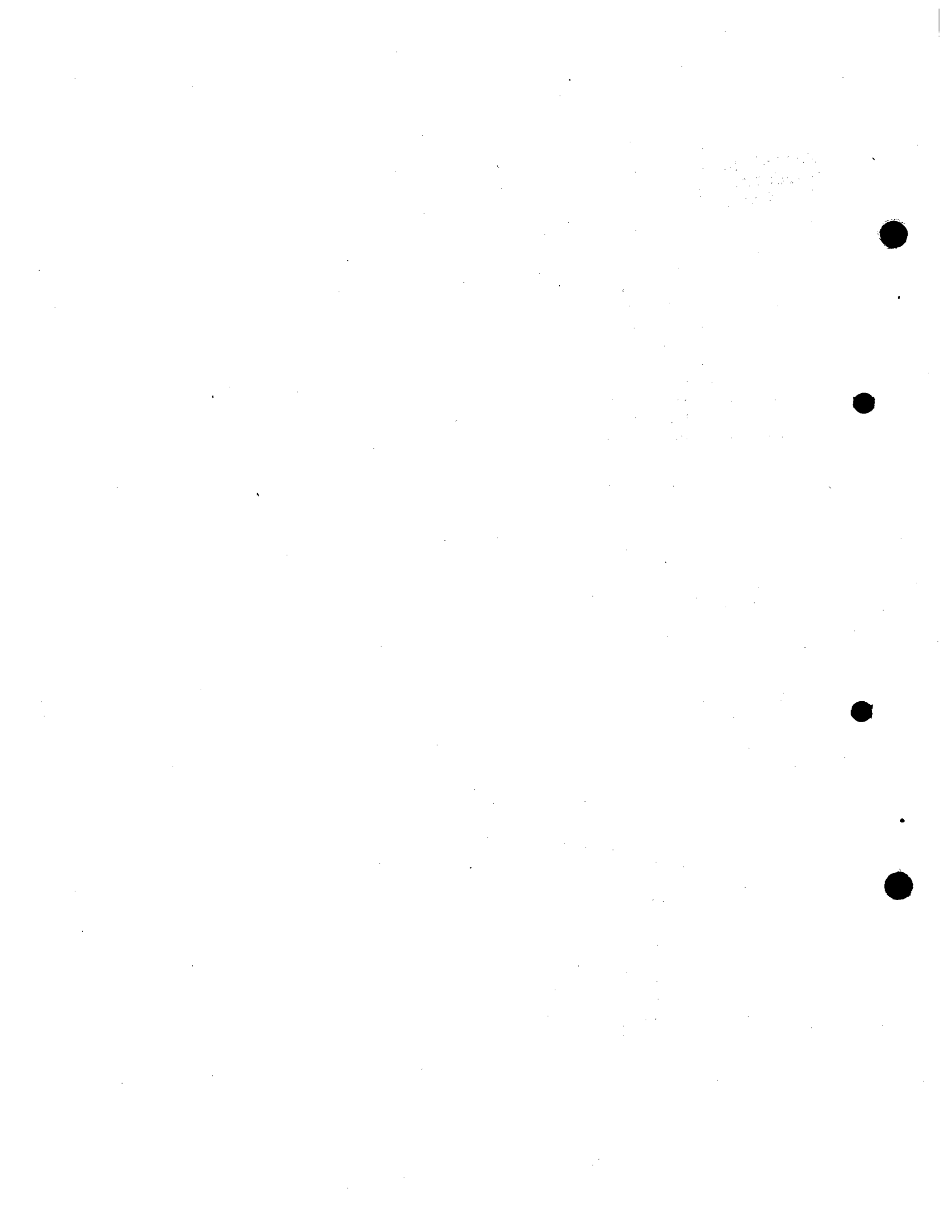
Mr. Tunstall reported that the Associate Committee had agreed to the recommendation of the Subcommittee that it be concerned only with tree breeding. (Minute 197).

#### 212. SUBCOMMITTEE MEMBERSHIP

Mr. S. J. Cook reported that President Mackenzie favoured selecting Subcommittee members on the basis of the competence of the individual in the field concerned and not as a representative of any organization or region. (This point and others relating to the Subcommittee are dealt with in Minutes 5 to 7 of the eleventh meeting of the executive of the Committee. See Exhibit "A").

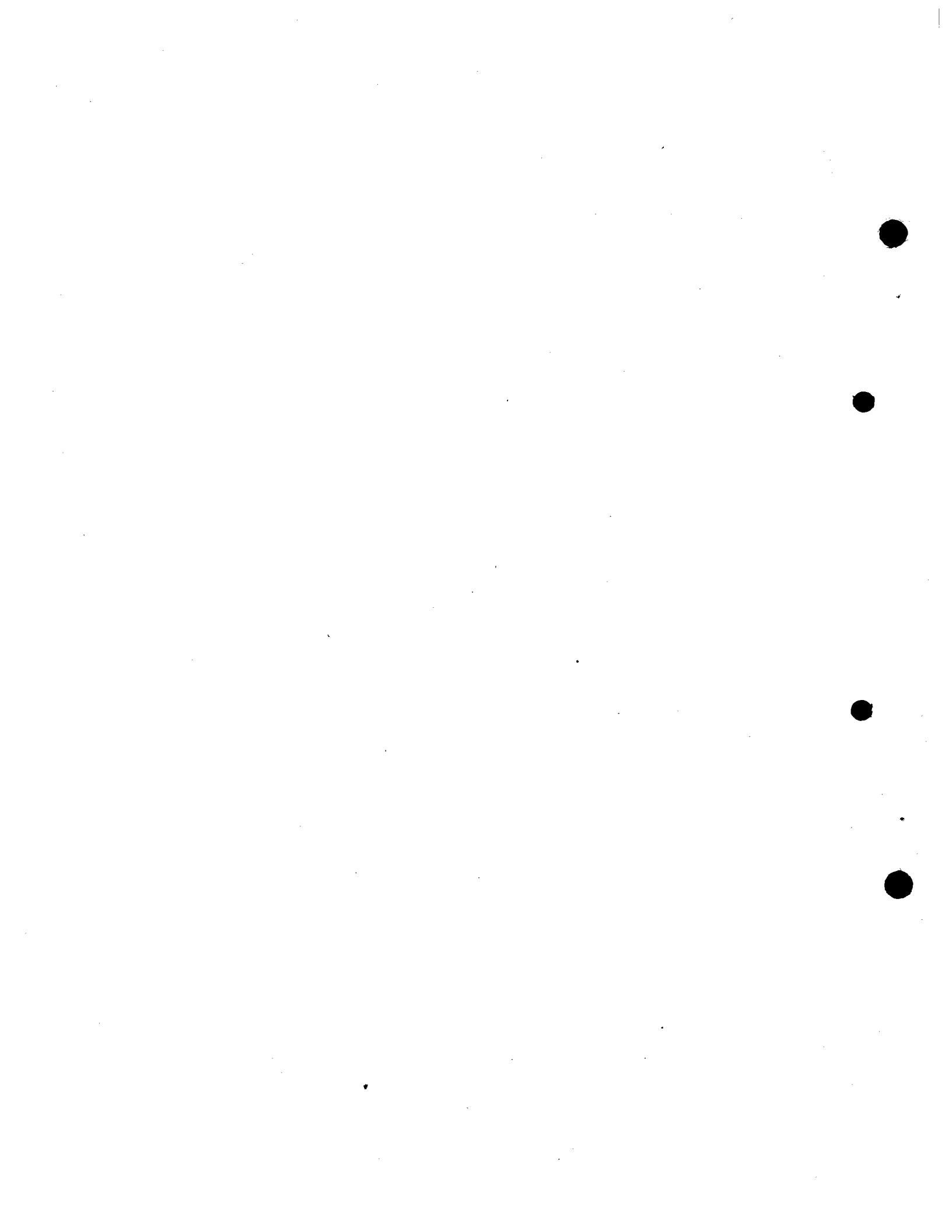
Several motions were passed dealing with the membership of the Subcommittee. If approved by the Committee, the membership would be as follows:

Dr. C. J. Mackenzie (ex officio)  
Mr. D. A. Macdonald  
Dr. E. S. Archibald  
Dr. N. H. Grace  
Dr. C. C. Heimburger  
Mr. W. L. Kerr  
Mr. G. A. Mulloy (alternate for Dominion Forester)  
Dr. C. G. Riley  
Dr. H. A. Senn  
Mr. J. Walker  
Mr. J. L. Farrar  
\*Dr. A.W.S. Hunter  
\*Mr. H. D. Heaney  
\*Mr. A. W. McCallum  
\*Mr. J. J. de Gryse  
\*Dr. W. E. van Steenburgh  
\*Dr. J. Bier









Those marked with an asterisk will be new members of the Subcommittee. In addition, the members of the Associate Committee on Forestry are eligible to attend meetings of the Subcommittee.

It was moved by Dr. Grace, seconded by Mr. Tunstell, that:

"The executive officers of the Subcommittee be appointed a Committee to bring in recommendations regarding further changes in membership."

CARRIED

213. REPORT BY DR. HEIMBURGER

Dr. Heimburger reported that he was actively engaged in tree breeding but would prefer to report on his projects at a later date.

214. REPORT BY DR. SENN

Dr. Senn reported that in co-operation with the Forest Nursery Stations, work was in progress to develop a more desirable Carragana for prairie planting.

215. REPORT BY DR. RILEY

Dr. Riley reported that the yearly observations on the condition of various poplar clones at Petawawa were available at any time from Mr. McCallum. It was agreed that these records should be typed and a copy sent to the Forest Service and to Dr. Heimburger. A summary report of the work to date presented by Dr. Riley appears in Exhibit "D".

216. REPORT BY MR. FARRAR

Mr. Farrar's report is attached as Exhibit "B". It draws attention to the lack of personnel engaged in tree breeding.

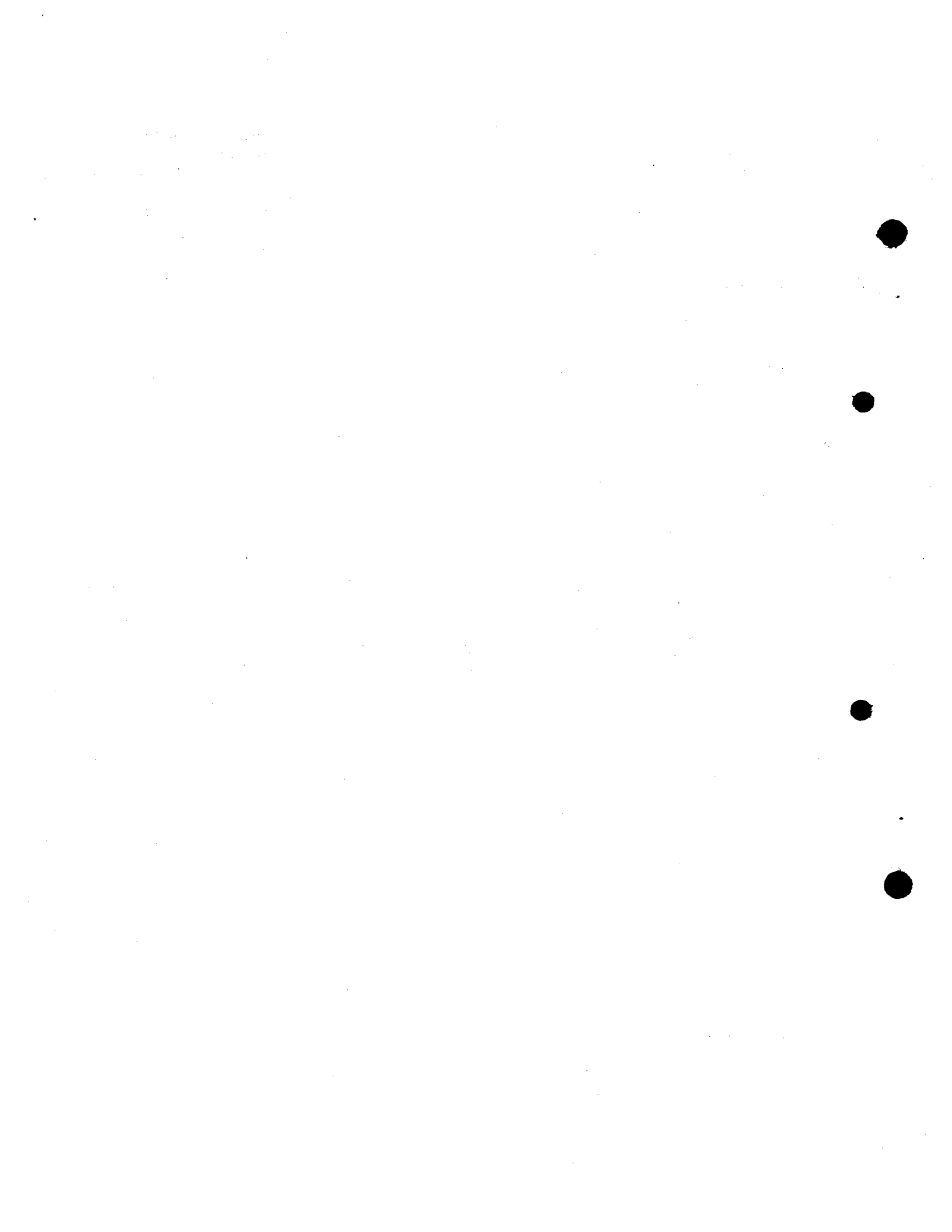
217. LACK OF PERSONNEL FOR TREE BREEDING

Dr. Archibald reported that he had been unable to recruit a tree breeder for the Forest Nursery stations in the Prairie Provinces; however, some elementary work in breeding was being done by the available staff.

The Chairman suggested that men might be available from next year's graduating class, but most forestry graduates are attracted by the higher pay offered by private employment.

Dr. Hunter suggested that botany graduates might be just as suitable as forestry graduates for this work.

Mr. Tunstell stated that certain European foresters were interested in this work and qualified for it.







Dr. Senn felt that the Cabot Foundation at Harvard University offered a good training ground for forest geneticists.

It was generally agreed that it was necessary to arouse the interest of students in forest tree breeding if we wished to employ them in this field after graduation. Mr. Macdonald said there would be at least two positions in forest tree breeding in the Forest Service.

It was moved by Dr. Riley, seconded by Mr. Tunstall that:

"A Committee consisting of Dr. Senn, Dr. Hunter, and Mr. Farrar be appointed to interest likely students in the field of tree breeding." CARRIED.

218. CONNAUGHT RANGE DISEASE GARDEN

Mr. Mulloy suggested that the Disease Garden at Connaught Range should be cleaned up. Mr. Farrar agreed to look after this. Dr. Hunter mentioned that rust-resistant currants had now been produced.

219. TERMS OF REFERENCE

The Secretary submitted a draft of Terms of Reference for the Subcommittee. These were adopted. See Exhibit "C".

220. CHAIRMANSHIP

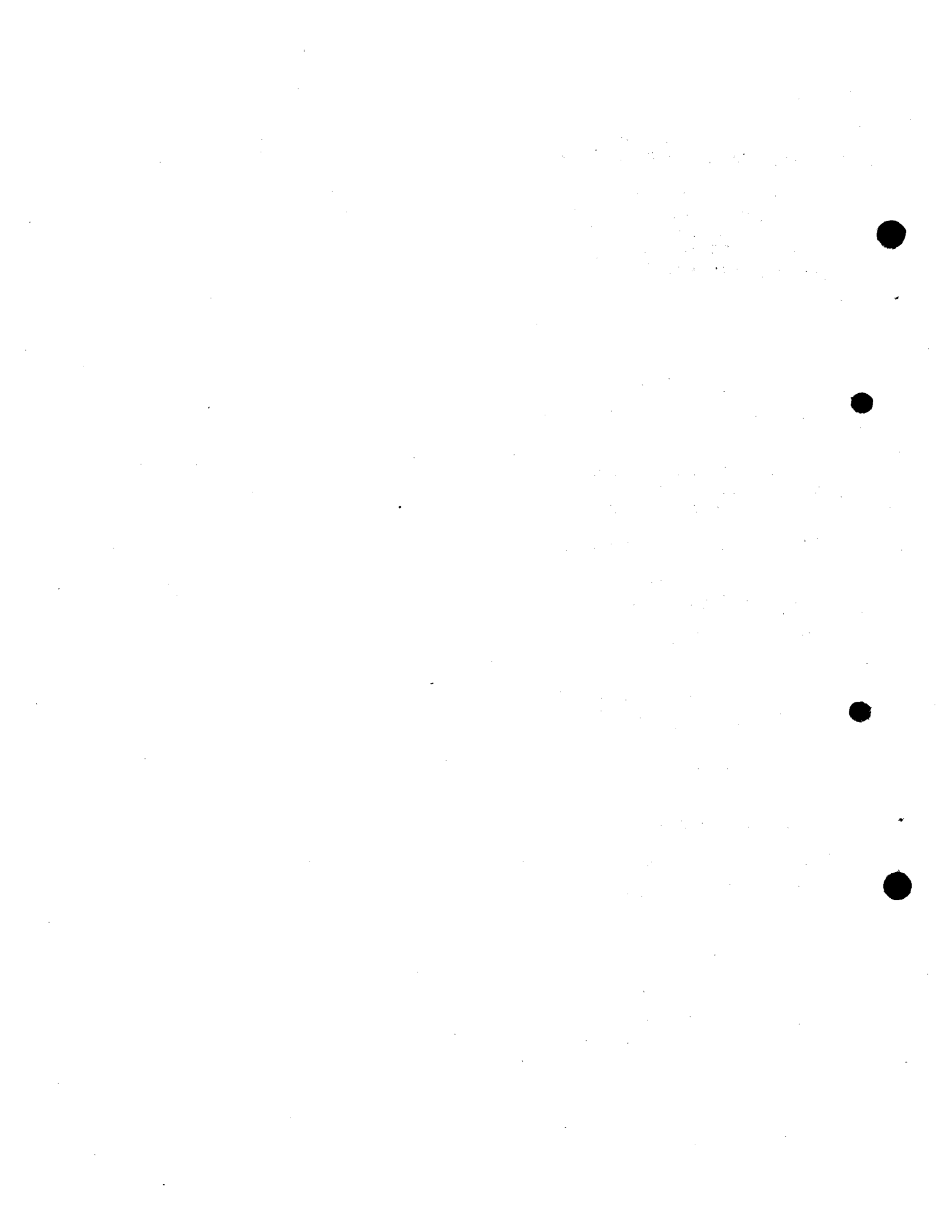
Mr. Macdonald announced his retirement as Chairman due to pressure of other work, and thanked the members for their co-operation. Mr. H. D. Heaney, Superintendent of the Petawawa Forest Experiment Station was selected to succeed Mr. Macdonald.

221. DATE OF NEXT MEETING

Dr. Heimburger requested that spring meetings be held in March as agreed to at the Fourteenth Meeting. (Minute 147).

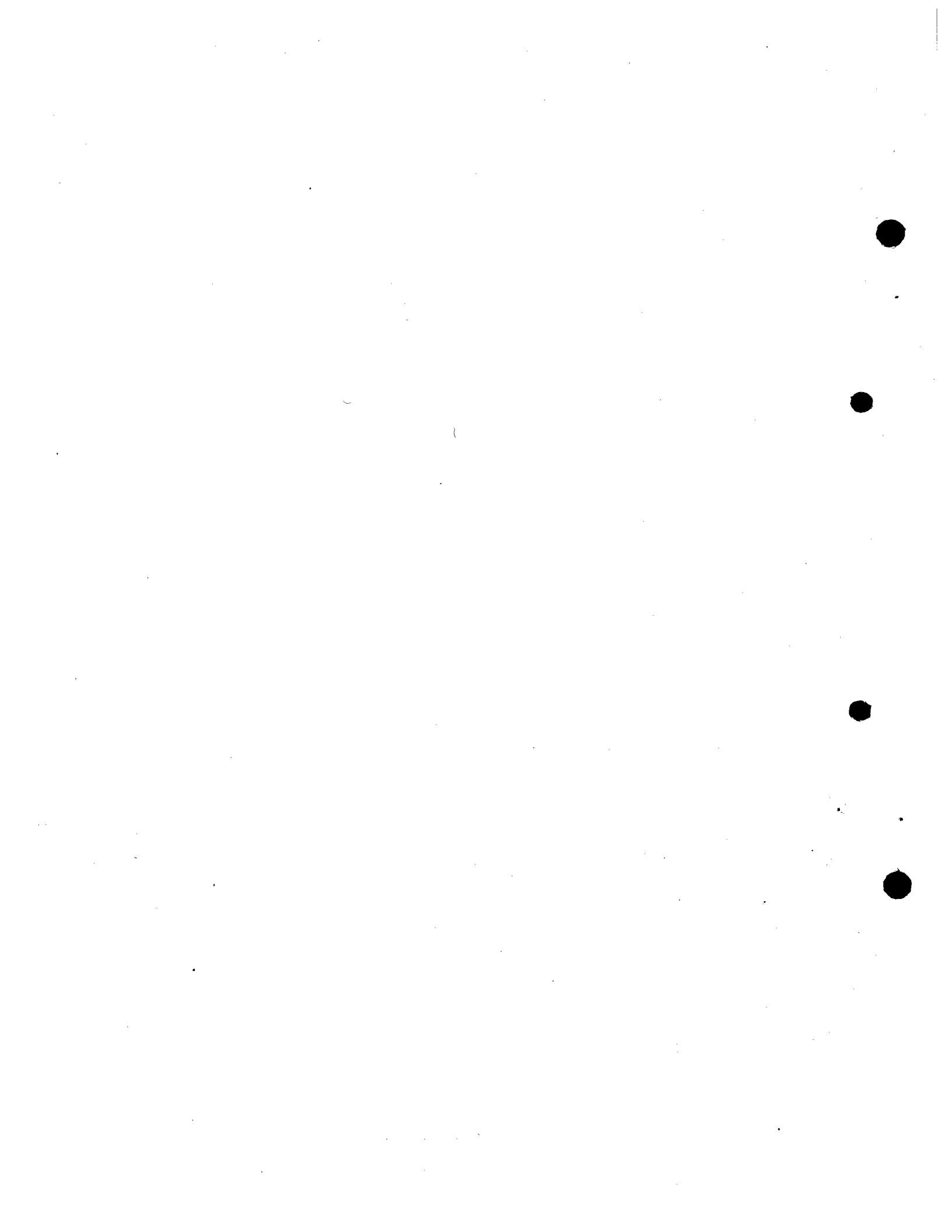
222. The Meeting adjourned at 4:30 P.M.

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## EXHIBIT "A"

Extracts from "Proceedings of the Eleventh Meeting of the Executive of the Associate Committee on Forestry".

### 5. FOREST TREE BREEDING (Min. 8, 10th Mtg.)

MR. MACDONALD presented a report of the proceedings of the 19th Meeting of the Subcommittee on Forest Tree Breeding which appears in full in APPENDIX "B". He said that there had been some discussion as to the status of the Subcommittee but that it had been agreed not to recommend any change in view of the fact that the Main Committee was now active again.

Regarding the suggestion made by Dr. W. H. Cook that the membership of the Subcommittee on Forest Tree Breeding should be enlarged and that the Subcommittee should be asked to deal with the appraisal of applications for grants-in-aid on pure science studies related to forestry, he said it was the opinion of the Subcommittee that it should continue to work only in the field of forest tree breeding and not dissipate its efforts over several other problems. It was recommended by the Subcommittee that a panel of the Main Committee be named to consider any applications for grants-in-aid that might be referred to the Committee. Several other matters dealing with scientific aspects of the Subcommittee work were reviewed briefly.

He thought it might be advantageous to add to the members of the Subcommittee one or two other persons from the provinces in which tree breeding is an important subject of study, as for example, Ontario and British Columbia.

DR. SAUNDERSON said that when reports of work supported by the Committee are received he would be glad to circulate them to all interests concerned.

PRES. MACKENZIE pointed out that selection of Subcommittee members should not be made on the nomination of provinces but by selection of the most competent scientists to aid in carrying on the work of the Subcommittee. In making such appointments consideration might be given to geographical factors but the choice should be based on the qualification of the individual rather than his location. The Chairman AGREED that these suggestions should be followed.

### 6. APPLICATIONS FOR GRANTS-IN-AID

THE CHAIRMAN said that in view of the discussion that had just taken place he thought any applications for grants-in-aid in regard to scientific problems relating to forestry matters that might be referred to the Associate Committee on Forestry by the Council's Committee on Assisted Research Grants for advice could be dealt with by the

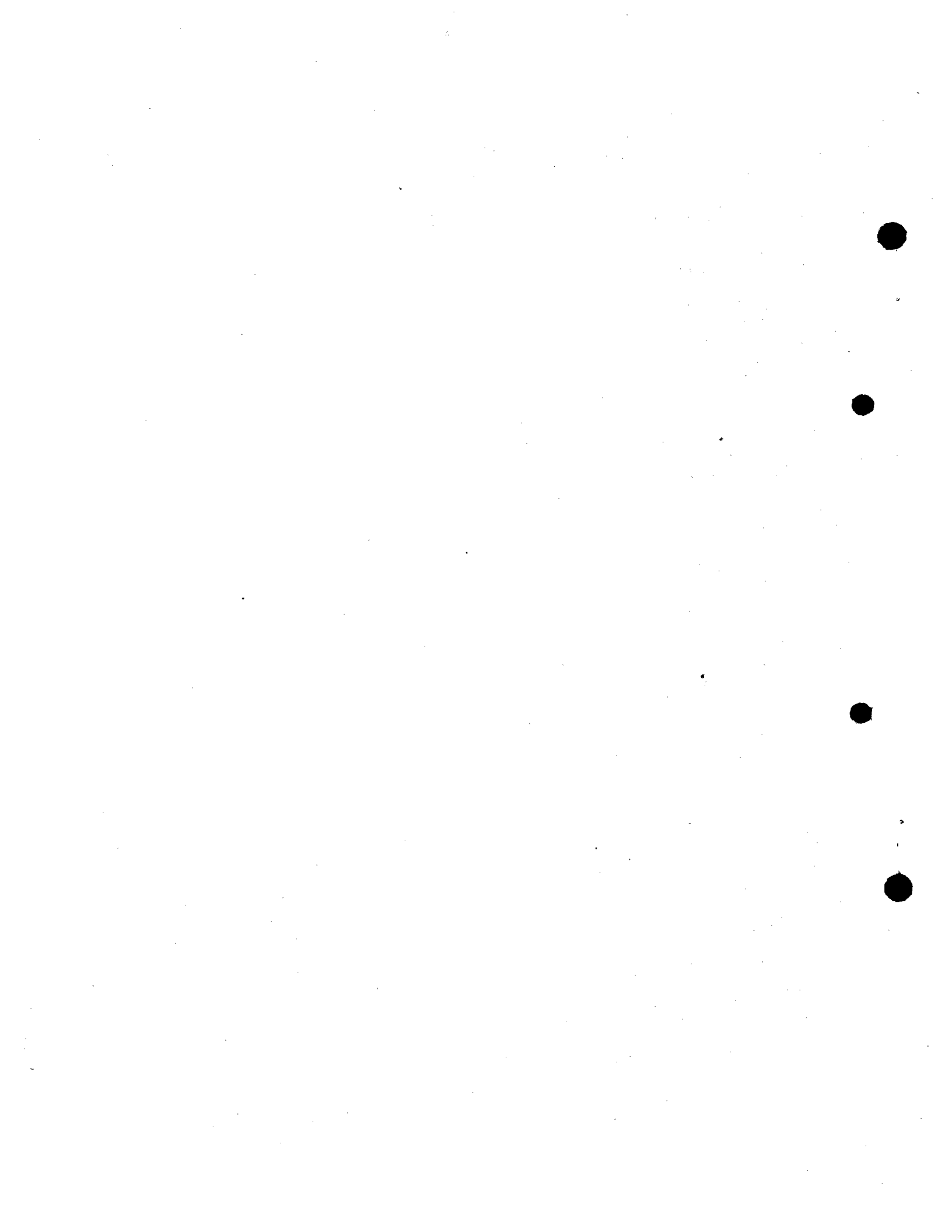


EXHIBIT "A-2"

Secretary of the Committee in consultation with the Chairman .  
AGREED.

7. PRIORITY OF PROJECTS

DR. NEATBY said that he agreed with the decision of the Subcommittee on Forest Tree Breeding to limit its work to that one subject but he would like to know what was to be done on questions relating to ecology which had been discussed at the previous meeting.

MR. MACDONALD said that the most pressing problem was the shortage of trained scientists to work on forestry problems. Funds were available but workers were scarce. He thought some consideration should be given to the general question of attracting more students into research on forestry problems.

MR. KOROLEFF said that tree breeding was very important and that more attention should be given to natural and artificial re-stocking. In Sweden selection of better sires has changed the picture drastically but this practice is not followed in Canada. For artificial re-generation better-than-average seed should be used and superior stock should be made available for planting. Ordinary common stock is generally used. He thought the Subcommittee should be strengthened if necessary.

MR. WILSON said that in order to appreciate the place of forest tree breeding in the Committee's activities a tabulation should be made of the problems proposed for Committee action and these should be rated as to priority to permit an intelligent selection of the work to be done.

MR. KOROLEFF thought it would be useful to make a list of all subjects that have been dealt with by this Committee and to include the list in the proceedings.

THE CHAIRMAN agreed that a review of the Committee's work should be made, and that members of the Executive should be asked to list their ideas in regard to items that should be included in the Committee's current programme of work. To this end a letter would be sent to each member of the Executive with notes on projects that have been considered by the Committee and the replies received would then be submitted to Mr. J. O. Wilson for review and the preparation of a list of selected problems rated according to their proper priority.

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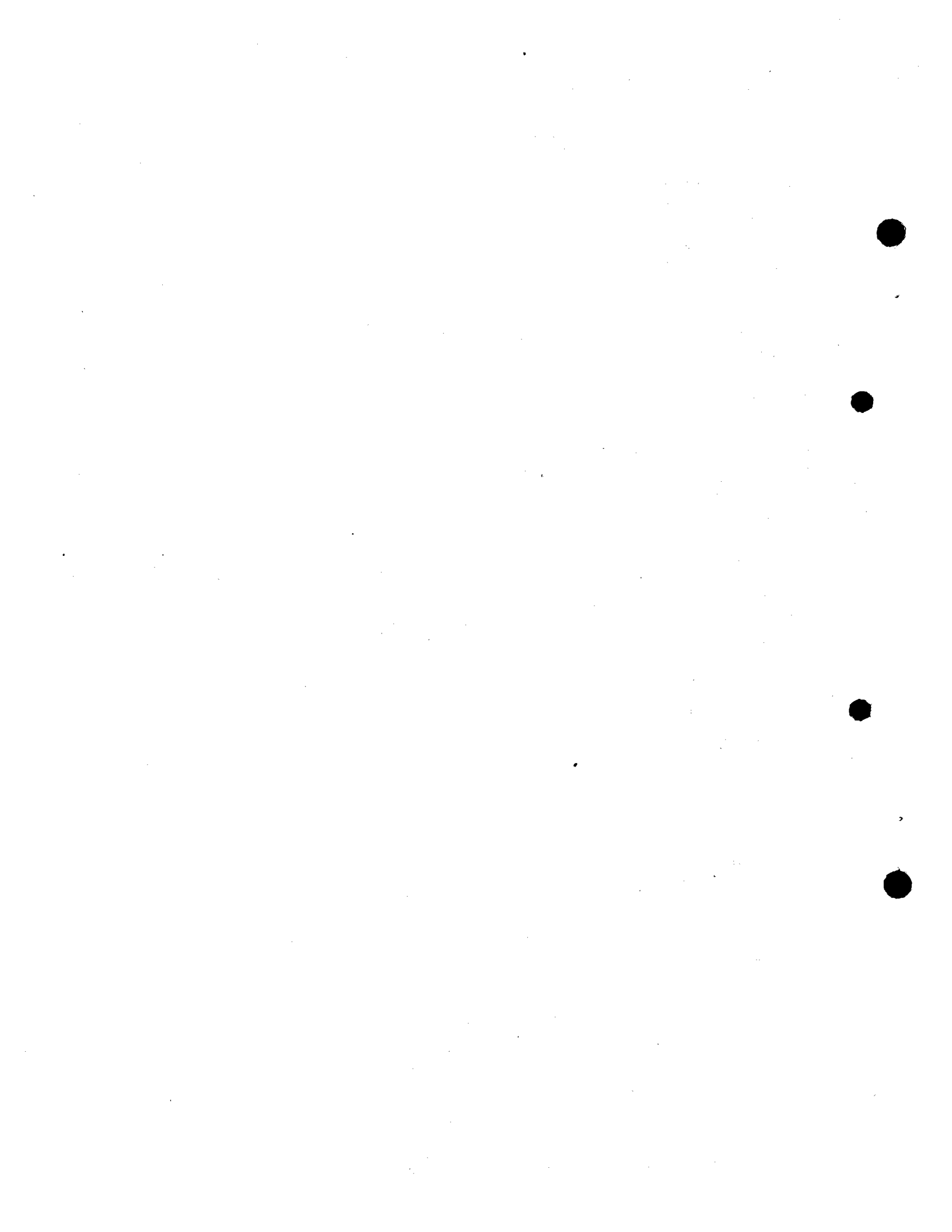


EXHIBIT "B"  
FOREST SERVICE  
ANNUAL REPORT ON FOREST TREE BREEDING  
for the year 1947-48

The unsatisfactory situation reported last year remains unchanged. The Forest Service has been unable to secure a tree breeding specialist to fill the established position, and the work is still on a maintenance basis.

At the Petawawa Forest Experiment Station most of the trees in the nurseries are being properly cared for and moved into permanent plantations when they become big enough. At Ottawa, the job of moving the white pine blister rust disease garden from the Montreal Road Annex of the National Research Council to the Connaught Ranges in an area controlled and maintained by the Department of Agriculture is being continued this spring and should be completed by the end of the month.

Co-operation in supplying cuttings, scions, pollen, etc., to tree breeding organizations in Canada and abroad has been continued. Practically all requests have been filled.

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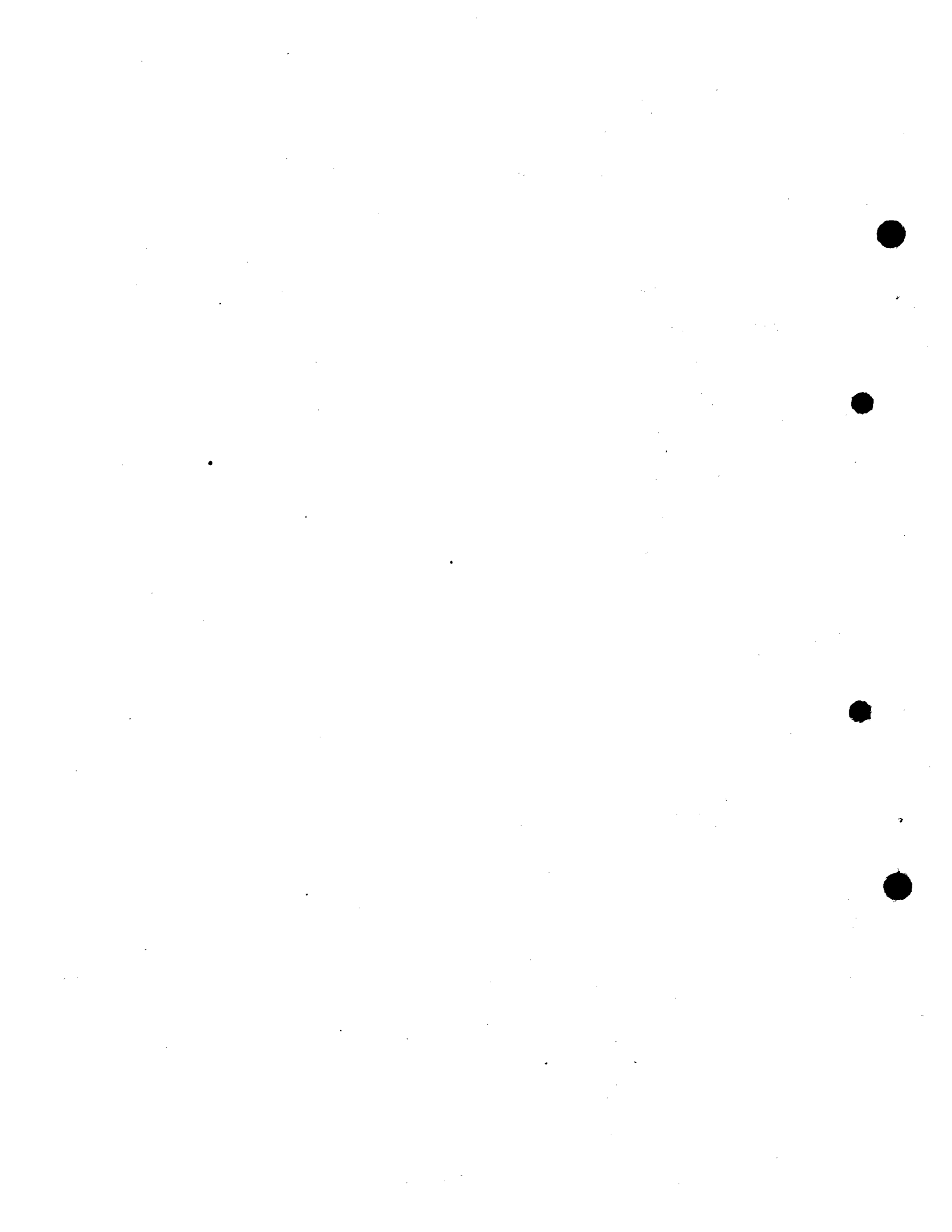




EXHIBIT "C"

TERMS OF REFERENCE

The Subcommittee on Forest Tree Breeding, Associate Committee on Forestry, is hereby assigned the following terms of reference:

1. To advise, assist and when necessary make recommendations to the Associate Committee on Forestry, with regard to matters referred to it by the Associate Committee or with regard to such other matters as may appear expedient for the furtherance of research in forest tree breeding in Canada.
  
  2. To serve in a liaison capacity between the various organizations concerned, for the investigation and review of facilities for, progress in, and requirements of research in forest tree breeding.
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EXHIBIT "D"

Subcommittee on Forest Tree Breeding  
of the  
Associate Committee on Forestry  
National Research Council

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

Reference: Reports and minutes contained in the Proceedings of the twenty meetings that have been held by this subcommittee.

The principal activity in connection with this project has been the inspection of poplar breeding materials at the Petawawa Forest Experiment Station. The most important disease that has been observed, and the only one to which much attention has been paid, is rust caused by Melampsora modusae, which has caused serious premature defoliation in certain instances. The various lots of breeding materials have been examined tree by tree, and the intensity of rust infection noted according to the Schreiner classification, which is as follows (see letter dated 21 Sept. 1939 from E. J. Schreiner, North-Eastern Forest Experiment Station, to D. R. Cameron, Dominion Forester):

Schreiners Classification: for rust

0. No rust found.
1. Slight rust: a few pustules found on up to 25% of the leaves.
2. Medium rust: a few pustules found on up to 50% of the leaves, or 25% of the leaves heavily infected.
3. Badly rusted: practically all the leaves with at least medium heavy infection.
4. Very badly rusted: practically all of the leaves heavily infected; leaves often dead or dying.

In all, 608 lots of trees have been examined, for up to 7 years. The results have been entered on loose pages that are arranged alphabetically. These are being typed in several copies for the use of any person requiring the

"D-2"

information. Additional observations can be added to these notes.

The methods employed can be criticized as follows:

(1) There has been considerable, unavoidable variation in the dates of the examinations. The intensity of the rust increases throughout the season and therefore, in order to obtain comparable results from year to year, the examinations should be made at constant dates, annually.

(2) The infections have been entirely accidental, there having been no attempt to subject all plants to the same chances of infection. It has been observed that rust may appear first in one corner of a nursery, e.g., the north east corner of the Upper Nursery, and spread over the remainder of the nursery or section or clone from that point. In such instances, the index of infection recorded, has been based on the most severely infected trees of the clone.

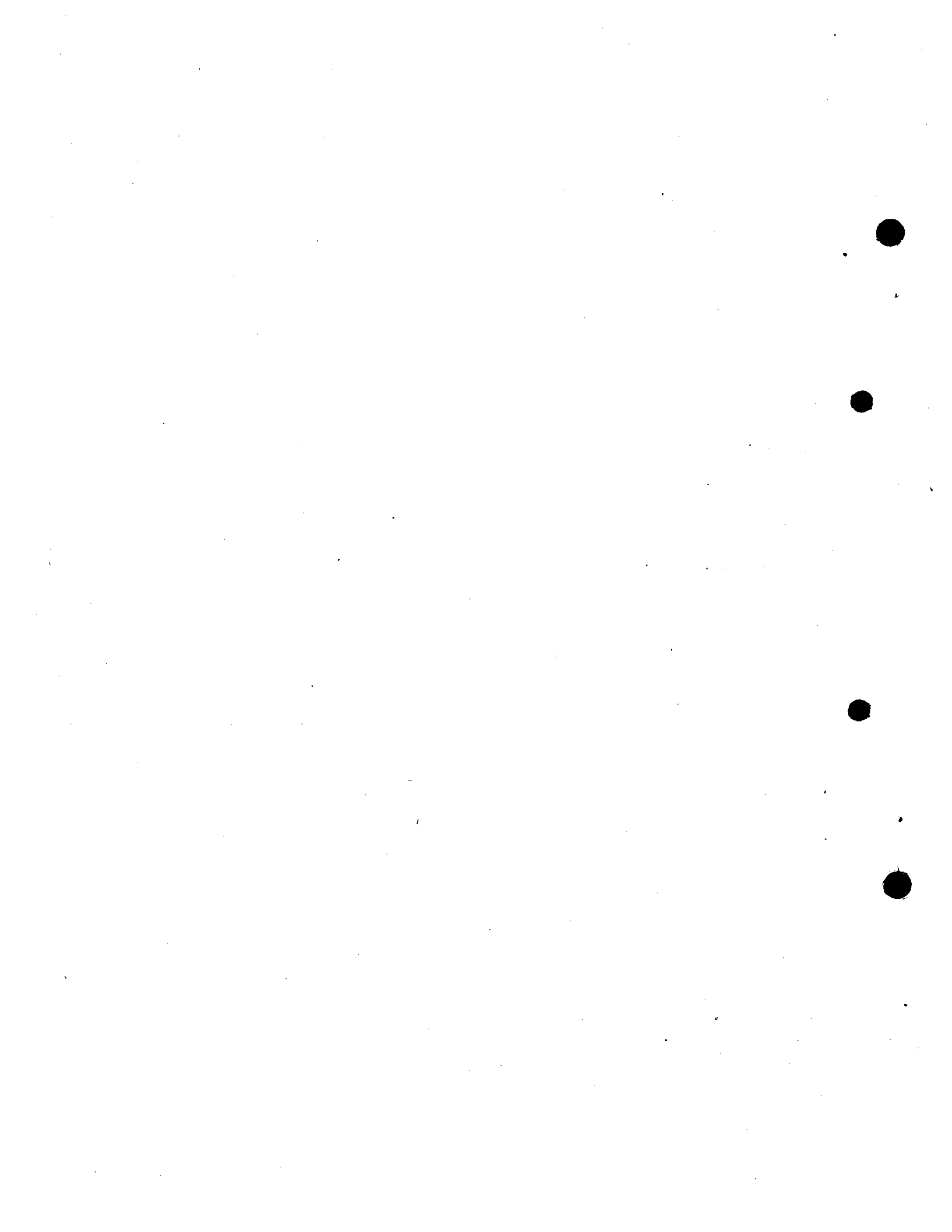
It is pointed out that these routine inspections need not be made by a forest pathologist. A technician or other assistant can quickly be trained for this work.

May 1948.

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