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REPORT OF THE EIGHTH SESSION

of the

INTERNATIONAL POPLAR COMMISSION

Spain - April-May 1955

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

Rome 1956

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GENERAL REPORT

The Eighth Session of the International Poplar Commission was held in Madrid, at the Special School of Forestry Engineers, from 25 to 28 April 1955.

The following countries were represented: ARGENTINA, AUSTRIA, BELGIUM, FINLAND, FRANCE, GERMANY, GREECE, IRAN, ITALY, NETHERLANDS, PAKISTAN, SPAIN, SWITZERLAND, TURKEY, UNITED KINGDOM and UNITED STATES OF AMERICA. The International Union of Forest Research Organizations was also represented. The list of participants appears as Appendix 1 to this Report. The following countries regretted their inability to attend and requested to be informed of the results of the meeting: Afghanistan, Australia, Canada, Chile, Corea, Iceland, India, Iraq, Japan, Jordan, Libya, Luxembourg, Mexico, New Zealand, Norway, Peru, Sweden, Union of South Africa and Yugoslavia.

Before and after the session the participants went on two study tours organized by the Directorate of Forests and by the "Patrimonio Forestal del Estado", one from 20 to 24 April from Barcelona to Madrid, and the other from 29 April to 1 May from Madrid to Granada. On these two study tours participants were able to observe the most typical features of Spanish poplar growing.

The session was opened at midday on 25 April in the Great Lecture Hall of the Special School of Forestry Engineers by Mr. Ph. Guinier, Member of the Institute (France), Chairman of the International Poplar Commission, assisted by Professor G. Houtzagers (Netherlands), Vice-Chairman, in the presence of Mr. P. Hermosilla, Director-General of the "Patrimonio Forestal del Estado" and Director-General of Forests, Wild Game and Fisheries, representing the Spanish Minister of Agriculture, of Mr. Pardo Canalis, Director-General of Co-ordination, and many Spanish forestry authorities. Mr. Fontaine represented Mr. Leloup, Director of FAO's Forestry Division.

At the opening meeting Mr. Hermosilla welcomed the delegates and pointed out the important role of poplar in Spain's forest policy; Mr. Fontaine specified the questions on the agenda that were of particular interest to FAO, especially the report of the Near East Poplar Conference, the recommendations of which will undoubtedly prove very useful for the development of arid zones, and the Poplar Study which will help countries to adjust their forest and land use policies to present and anticipated future needs. He also stressed the world character of the Commission, which is shown by the many requests for membership and by the size and caliber of the delegations. Finally, Mr. Guinier described the role of poplar in the present

economic situation and thanked the Spanish Government and FAO for organizing the Session.

The Commission adopted unanimously the provisional agenda prepared by the Secretariat, and which appears in Appendix 2.

A large number of documents were submitted by the Secretariat and the delegations on the various items of the agenda. The list of documents is given in Appendix 3.

1. REPORT ON THE ACTIVITIES OF THE SECRETARIAT

The Secretary submitted document FAO/CIP/74 which summarizes the activities of the secretariat since 1 April 1954, the date of its last progress report, and added some information on recent developments: formal request by Egypt for membership in the Commission; desire of Yugoslavia to set up a National Poplar Commission; proposed establishment in Canada of a Poplar Committee that would subsequently be transformed into a National Commission adhering to the International Commission.

The Commission congratulated the Secretariat on its work and drew the attention of Member Governments to the conclusions of the Secretariat's report regarding the forwarding of documents for reproduction and distribution in one of the working languages of the Commission and within the specified deadline, in view of the other responsibilities incumbent on the section of FAO's Forestry Division that acts as Secretariat of the Commission.

2. REPORTS ON THE ACTIVITIES OF NATIONAL COMMISSIONS

a) Note of the secretariat

In compliance with the resolution of the Commission, the Secretariat had analysed the progress reports of the various National Commissions, or bodies exercising the functions thereof, and submitted a summary of them in document FAO/CIP/75. The Secretary commented briefly on the report, stressing the salient points, and also referred to the fact that some reports had been sent in by countries not yet members of the Commission: Greece, Iran, Jordan and Syria.

The Commission expressed its thanks to the Secretariat for the work accomplished and decided that document FAO/CIP/75, together with the analysis of the reports of non-member countries received by the Secretariat, should be published as an annex to the general report of the session (Appendix 4). The Commission also pointed out the deficiencies in regard to statistical data in most of the reports and decided to draw the attention of Member Governments to the importance of statistics and the need to include poplar in the statistical surveys under way or in planned revision of statistics collection methods.

b) National reports

The representatives of the participating countries stressed the main points in their reports, or gave a verbal account of the general poplar situation in their countries if they had forwarded no report to the Secretariat. Most of the information supplied may be found in the aforementioned Appendix 4.

Following the statement of the Representative of Argentina, who pointed out the great possibilities in his country for poplar and willow plantations, and in accordance with a recommendation of the Standing Executive Committee, the Commission decided to invite the National Commissions to supplement their next progress reports by a special report on willows, which should be limited this year to wood-producing willows.

When thanking the delegates for the reports submitted, the Chairman stressed the progress achieved in the member countries and the great expansion of poplar growing everywhere.

3. NOMENCLATURE AND REGISTRATION OF NAMES

The report of the Standing Executive Committee on the nomenclature and registration of poplar names (Doc. FAO/CIP/76 and 76 Add. 1) was submitted to the Commission by Mr. Pourtet (Appendix 5).

After a brief discussion on the concept of clone, the report of the Standing Executive Committee was unanimously approved and the Commission decided to:

(i) recommend that member countries adopt the rules of nomenclature thus laid down;
(ii) invite the National Commissions to forward to the Secretariat the lists of names for registration, each name accompanied by a description card;
(iii) set up a sub-committee consisting of Messrs. Houtzagers, Peace, Piccarolo and Pourtet responsible for examining the proposed names and the description cards and submitting registration proposals to the Commission.

The Commission took note of the forthcoming meeting of a Committee established by the Organization Committee of International Horticultural Congresses and charged with studying the possibilities of extending the rules adopted for horticultural plants to forest trees and agricultural plants. The Commission decided to request the Organization Committee whether it might be represented on the aforesaid Committee, and asked the Secretariat and the representatives of the International Union of Forest Research Organizations attending the session to follow up this matter.

4. STATISTICAL METHODS IN EXPERIMENTS

The report of the Sub-Committee of the Standing Executive Committee (FAO/CIP/77) was presented by Mr. Houtzagers and approved unanimously. It was decided that the questionnaire appearing in the report should be sent to the National Commissions, as well as to interested non-member countries, so that the latter could also make known their points of view.

The Commission further recommended that a Committee of Experts be set up in each country to co-ordinate the statistical methods employed in agriculture and forestry. It was stressed, however, that the results of experiments not conducted by statistical methods would continue to be published with, of course, the necessary reservations.

The Commission also took note of a statement by Mr. Pavari, Chairman of the International Union of Forest Research Organizations, concerning a work on statistical methods, which will be published shortly.

5. POPLAR STUDY

The Secretariat informed the Commission of the progress made with the Poplar Study undertaken by the Standing Committee on the initiative of the Secretariat and approved by the Chairman. This Study will appear first in French in 1955. The plan of the Study and the names of the various authors are given in Appendix 6.

The Commission thanked the Standing Committee for the work accomplished, and FAO and the Secretariat for their initiative and the contemplated publication.

6. UTILIZATION OF POPLAR WOOD

The report of the Working Party on the Utilization of Poplar Wood was submitted by its Chairman, Mr. Giordano (Italy). He pointed out the similarity of the problems studied in the various countries, the preponderant influence of the site on the suitability of poplars for a given use and the need to make a special study of exploitation questions.

The report of the Working Party was approved with some slight amendments and appears as Appendix 7 to this Report.

After the Chairman of the Commission had thanked the Chairman and members of the Working Party for all they had accomplished, the Commission invited interested countries to inform the Secretariat, before 1 July 1955, of the names of the experts designated to form part of the select Working Party charged with revising the poplar wood sample test form.

7. BLACK HEARTWOOD

The Commission took note of the reports submitted by the Netherlands, the United Kingdom and Belgium on this question, and heard the comments of other delegations.

After a general discussion on the definition to be given to "black heartwood" and the causes of this anomaly, on its drawbacks for various utilizations and the possible influence of the soil, clone and stand density on its incidence, the Commission decided to recommend that the National Commissions continue the studies under way and report their findings to the Working Party on the Utilization of Poplar Wood, although it recognized that at present the industry had no appreciable difficulty in utilizing black heartwood.

8. POPLAR IN IMPORT AND EXPORT TRADE CLASSIFICATIONS

In view of the importance of poplar on the softwood market and the need to inform producers accurately about market trends with respect to a wood which they are requested to grow, the Commission decided to draw the attention of Member Governments again to the following resolution adopted at its last session: "The Commission, recognizing the growing importance of poplar wood in national economies and international exchanges, and the increasing necessity for being versed in its market in order to meet demand, in both quantity and quality, expressed the wish that Member Governments introduce poplar wood as a special heading in their import and export trade classifications. It further recommended to the National Commissions that they put this question on their agenda, and investigate with the proper authorities the possibilities of complying with such a wish"

The Commission made it quite clear that it was not a matter of obtaining a modification of tariffs which must be revised with a view to simplification, in accordance with international agreements, but that it was a question of changing the classifications for statistical purposes, which is within the competence of each country concerned.

9. POPLAR DISEASES - SURVEY ON "DOTHICHIZA POPULEA"

The Commission heard a statement by the delegate of Belgium and recognized the serious danger to plantations and nurseries from *Dothichiza populea*. It was decided to entrust the study of this question to an *ad hoc* Working Party that met during the session under the chairmanship of Mr. van Vloten, the composition of which is given in Appendix 8. Its conclusions were approved by the Commission.

The Commission therefore decided to:

(i) recommend to the National Commissions that they undertake,

on the basis of a questionnaire, surveys in nurseries and plantations with a view to drawing conclusions on the extent of the damage caused by *Dothichiza populea* and on methods of controlling it.

(ii) set up a select Working Party consisting of Messrs. van Vloten (Netherlands), Chairman, Muller (Germany), Herbignat (Belgium) and Taris (France), technical Secretary, to draw up the aforesaid questionnaire based on the questionnaires already existing in Belgium and the Netherlands. This questionnaire will be sent by the Secretariat of the Commission to the National Commissions to serve as a basis for their surveys. The information collected and summarized by the National Commissions will then be transmitted to the Secretariat, which will send it to the select Working Party for analysis. This analysis will then be returned to the Secretariat which will pass it on the National Commissions concerned.

The Commission, also at the suggestion of the *ad hoc* Working Party, decided to set up a Permanent Working Party on Poplar Diseases similar to that on the Utilization of Poplar Wood, and requested the Secretariat to approach the National Commissions with a view to their designating the experts to form part of it.

10. POPLAR INSECT PESTS

The Commission, having been informed by Mr. Régnier of the establishment of a Special Section on Poplar Insect Pests presided over by him at the next meeting of the European Plant Protection Organization to be held at Mondorf-les-Bains (Luxembourg) on 7, 8 and 9 September 1955, recommended to member countries that they send entomologists to the meetings of this Section. All further information on the work of this Section may be obtained directly from Mr. Régnier, Chambre Syndicale de Phyto-Pharmacie, 57, Boulevard Lannes, Paris-16ème.

The Commission decided to examine, at its next meeting, the possibility of setting up a Permanent Working Party on Poplar Pests.

11. NEAR EAST POPLAR CONFERENCE

The Commission took note of the report of the Near East Poplar Conference, submitted by Mr. Fontaine and commented on by Messrs. Pourtet and Giordano, members of the Executive Committee, who assisted the Secretariat in the technical preparation of the Conference. It pointed out

the usefulness of the recommendations contained in the report, not only for the countries of the region but for all member countries, and adopted the following three recommendations:

a) Description card

The Commission decided to adopt for the description of the various poplar types and particularly for their registration, the simplified description card adopted by the Damascus Conference (Appendix 9).

b) Regional Poplar Research Station for the Near East in Turkey

The Commission recognized the utility of establishing in Turkey a poplar research station for the Near East, and decided to draw the attention of the Director-General of FAO to such a project in order that he may facilitate its realization, particularly by giving it top priority in the Technical Assistance Program.

c) Establishment of a Mediterranean populetum in Rome:

The Commission stressed the importance os such a step and recommended that all member countries facilitate the realization of this project by providing properly identified and disease-free planting material. It requested its officers to be the intermediary between the "Ente Nazionale per la Cellulosa e per la Carta", which is to carry out the project, and the countries concerned for the despatch of the material and the organization of the collections.

12. STUDY TOURS

The Commission expressed its warmest thanks to the Director-General of Forests and of the "Patrimonio Forestal del Estado" of Spain for organizing and preparing study tours in connection with the Session.

It decided to establish groups of rapporteurs whose members will get into touch with one another by correspondence and summarize the observations made in the field during such study tours in special reports to be attached to the General Report. The groups of rapporteurs set up are the following:

- Identification: Messrs. Elorrieta, Houtzagers and Pourtet;
- Cultivation: Messrs. Allegri, Bauer, Gaillard and Jaime;
- Pests and Diseases:
  - a) Diseases: Messrs. Benito, Peace and van Vloten;
  - b) Pests: Messrs. Ceballos and Régnier;
- Utilization: Messrs. Giordano and Najera.

13. ADMISSION OF NEW COUNTRIES

Argentina, Egypt, Iran, Iraq and Syria were unanimously elected members of the Commission.

The elected countries will definitively become members of the Commission only when, after having been notified of their election, they have informed the Chairman that they have approved the Commission's Statutes and Rules of Procedure, set up a National Commission and appointed a permanent representative to the International Commission.

14. DATE AND PLACE OF THE NEXT MEETING

The Commission unanimously approved a proposal by Mr. Merveilleux du Vignaux, Head of the French Delegation, expressing the wish that the next session of the Commission be held in Paris, in April-May 1957 on the occasion of an International Poplar Congress organized in honor of the 10th anniversary of the creation of the International Commission in Paris.

15. ELECTION OF CHAIRMAN AND VICE-CHAIRMAN AND PARTIAL RENEWAL OF THE STANDING EXECUTIVE COMMITTEE

The Commission took note of the names of the three outgoing members of the Standing Executive Committee (Messrs. Bauer, Piccarolo and Pourtet), and heard a statement by the delegate of Belgium supported by the representatives of Switzerland, Italy, Spain, Germany and the United Kingdom pointing out the need to keep in office the present Chairman and Vice-Chairman and maintain the Standing Executive Committee in its present form so as not to interrupt the work under way, and to wait till 1957 before taking decisions required by the world-wide development of the Commission. It therefore decided unanimously to retain in office the present Chairman and Vice-Chairman and the Standing Executive Committee, as constituted at present, till the next session.

16. FOURTH WORLD FORESTRY CONGRESS

After a statement by Professor Giordano who recalled a recommendation by the Dehra Dun Congress for the organization, with the help of FAO, of study tours in western Europe for the benefit of poplar experts of the Near and Far East, the Commission stressed the importance of this recommendation and expressed the wish that if such tours were contemplated by FAO, it should be consulted in regard to their organization.

17. TECHNICAL COMMUNICATIONS - FILMS AND SHOWINGS

The Commission heard a number of technical communications, the titles of which appear in the attached list of documents (Appendix 3). These technical communications were submitted by Messrs. Allegri, Chardenon, de Philippis, Giordano, Hansbrough, Pavari, Régnier, Rol, and Seoane.

The Commission also attended the showing of two films on the achievements of the Spanish "Patrimonio Forestal del Estado" and views of poplars in western Europe, and in Iran, produced and with commentary by Mr. Régnier and Mr. Sabeti respectively.

LIST OF PARTICIPANTS

Chairman : Ph. GUINIER (France)
Vice-Chairman : G. HOUTZAGERS (Netherlands)
Secretary : R.G. FONTAINE (FAO)
Assistant Secretary : O. FUGALLI (FAO)

Mr. R.G. FONTAINE represented the Director of the Forestry Division of FAO.

A. DELEGATES

(a) Member Countries:

Argentina: A.M. SEOANE, M. Ugarte 1565, Olivos, Buenos Aires.

Austria: W. WETTSTEIN, Head of the Department of Silviculture and Forest Genetics of the Federal Institute of Silviculture, Hauptstrasse 7, Wien-Hadersdorf.

H.A. SALZER, Paper manufacturer, Alserstrasse 24, Wien IX.

Belgium: A. HERBIGNAT, Directeur Général des Eaux et Forêts, Président de la Commission Nationale du Peuplier, 101 rue des Horticulteurs, Bruxelles.

C. MUHLE LARSEN, Directeur scientifique, Institut de Populiculture, Grammont.

France: F. MERVEILLEUX du VIGNAUX, Directeur Général des Eaux et Forêts, Président de la Commission Nationale du Peuplier, 1 ter Avenue Lowendal, Paris.

P. ALLOUARD, Directeur de la Société "Le Feuillu Français de Papeterie", 104 Av. des Champs Elysées, Paris.

J. CAMPREDON, Directeur du Centre Technique du Bois, 14, Av. de St. Mandé, Paris.

J. CHARDENON, Service des plantations de peupliers du SEITA, Saintines (Oise).

Ph. GUINIER, Membre de l'Institut, Directeur honoraire de l'Ecole Nationale des Eaux et Forêts, 11 rue de la Planche, Paris.

J. POURTET, Ingénieur Principal des Eaux et Forêts à la Station de recherches et expériences forestières, 14, rue Girardet, Nancy.

R. M. REGNIER, Directeur de recherches agronomiques, 16 rue Dufay, Rouen.

R. ROL, Sous-Directeur de l'Ecole Nationale des Eaux et Forëts, 14 rue Girardet, Nancy.

M. SILBERBERG, Directeur, Manufacture d'Allumettes, Macon (Saône et Loire).

B. TARIS, Assistant à l'Institut National Agronomique, 16, rue Claude Bernard, Paris.

Germany:

W. WARSCH, Regierungspräsident, Chairman of the National Poplar Commission, Zeughausstrasse, Köln.

F.W. BAUER, Professor of silviculture, Bertholdstrasse, Freiburg.

F. ELSNER, Ministerialrat im Bayerischen Staatsministerium für Ernährung, Landwirtschaft und Forsten, Ludwigstrasse 10, München.

R. MÜLLER, Director of the Poplar Institute, Kaiserstrasse 29, Brühl (Köln).

L. OW, Forstmeister, Cuvilliésstrasse 3, München.

E. PEIN, Präsident des Verbandes der Forstsamen und Forstpflanzen-Betriebe, Hälstenbek/Holstein.

B. RETTELBACH, Geschäftsführer, Landesgr. Bayern Deutscher Pappelverein, Geibelstrasse 3, München.

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G.A. SCHUTZE, Direktor, Zellstoff-Fabrik, Waldhof, Humboldstrasse 14, Wiesbaden.

F. WECHSELBERGER, Landforstmeister, Hirschaverstrasse 2, Tübingen.

Iran:

H. SABETI, Chief of the Forest Research Service, Nov-Chahr.

H. SAEBI, Inspector-General of Forests, Av. Safi Ali Shah 148, Teheran.

Italy:

G. GIORDANO, Inspector-General of Forests of Technology at the University of Florence, Piazza T. Edison 11, Firenze.

E. ALLEGRI, Vice-Direttore della Stazione Sperimentale di Selvicoltura, Via delle Cascine 1, Firenze.

G. BECICH, Direttore Azienda Agraria della Sniaviscosa, Torviscosa (Udine).

G. BIANCARDI, Director, Forestry Association for Lombardy, Codogno.

L. CHIANESE, Direttore della Sezione Colturale del Centro di Sperimentazione Agricolo-Forestale dell'Ente Nazionale per la Cellulosa e per la Carta, Via G. Mercalli 31, Roma.

A. de PHILIPPIS, Professor of silviculture at the University of Florence, Director of the "Centro di Sperimentazione Agricolo-Forestale dell'E.N.C.C.", Casella Postale 9079, Roma.

D. MARCHIORI, Presidente della Commissione Interregionale del Pioppo, Camera di Commercio, Rovigo.

A. PAVARI, Direttore della Stazione Sperimentale di Selvicoltura, Consigliere dell'E.N.C.C., Via delle Cascine 1, Firenze.

Netherlands:

G. HOUTZAGERS, Professor of silviculture at the University of Wageningen, Chairman of the National Poplar Commission, 84 van Heemstralaan, Arnhem.

F.W. BURGER, Chief Engineer of the State Forest Service, Secretary of the National Poplar Commission, Kemperstraat 3, Utrecht.

K. GRIFFIOEN, Professor of Technology at the Forest Products Research Institute T.N.O., Postbus 49, Delft.

H. van VLOTEN, Director of the Forest Research Station T.N.O., Postbus 23, Wageningen.

Spain:

P. MARTINEZ HERMOSILLA, Director-General of Forests, Chairman of the National Poplar Commission, Patrimonio Forestal del Estado, Montalban 14, Madrid.

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F. BLEIN, Ingeniero de Montes, 4a. División Hidrólogico-Forestal.

E. CANEDO ARGUELLES, Presidente del Consejo Superior de Montes.

G. CEBALLOS, Profesor de la Escuela Especial de Ingenieros de Montes, Madrid.

R. DE DIEGO, Ingeniero Jefe de Montes, Jefe del Distrito Forestal de Madrid.

J. ELORRIETA, Ingeniero Jefe de Montes, Instituto Forestal de Investigaciones y Experiencias, Apartado 8111, Madrid.

J. ESCUDERO, Ingeniero de Montes, Jefe de la Brigada de Leon-Zamora del Patrimonio Forestal del Estado.

P. FIGUEROA, Ingeniero de Montes, Jefe del Servicio Hidrológico-Forestal de Granada.

L. GIMENEZ RADIX, Ingeniero de Montes, Secretario Técnico del Patrimonio Forestal del Estado.

A. GONZALES ALDAMA, Ingeniero de Montes, 4a. División Hidrológico-Forestal.

E. GONZALES VAZQUEZ, Auxiliar de la Dirección General de Montes. Madrid.

C. HERASO GOÑI, Ingeniero de Montes, Secretario permanente de la Comisión Nacional del Chopo Española, Montalban 14, Madrid.

F. JAIME FANLO, Ingeniero de Montes, Jefe de la Brigada de Teruel, 6a. División Hidrológico-Forestal.

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L. MANTARAS, Ingeniero de Montes, 4a. División Hidrológico-Forestal.

T. MARTIN GATO, Ingeniero de Montes, Inspector de Trabajos del Patrimonio Forestal del Estado.

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J. ROJAS, Ingeniero de Montes, Distrito Forestal de Granada.

J.M. SANZ-PASTOR, Ingeniero del Patrimonio Forestal del Estado, Jefe de la División Hidrológico-Forestal del Tajo, Ferraz 16, Madrid.

A. YLLA, Ingeniero de Montes, Distrito Forestal de Gerona.

Switzerland: E. GAILLARD, Inspecteur Fédéral des Forêts, 26 Sulgenauweg, Berne.

Turkey: T. EREN, Director of the Reforestation and Nurseries Division, Orman Umum Müdürlügü, Sube 9 Md., Ankara.

F. SAATCIOĞLU, Professor of Silviculture, Orman Fakültesi, Istanbul Universitesi, Istanbul.

United Kingdom: T.R. PEACE, Forest Pathologist, Forestry Commission, Forest Research Station, Alice Holt Lodge, Wrecclesham, Farnham, Surrey, England.

C.S. BROWN, Estate Agent and Forester, Bryant and May Limited, Sandbank, Dunoon, Argyll, Scotland.

W.G. PLAYLE, Landowner, Badmontisfield Hall, Wickhambrook, Newmarket, Suffolk, England.

Note: The names of the official representatives on the International Poplar Commission are underlined.

(b) Non-Member Countries

Finland: H. BROTHERUS, Consul of Finland at Madrid.

Greece: A. CHRISTODOULOPOULOS, Director-General of Forests, Ministry of Agriculture, Athens.

A. GEORGOPOULOS, Director of the Forest Research Institute, Athens.

Pakistan: N. AHMED, Agricultural Attaché, Embassy of Pakistan, Via G. Mangili 30, Rome.

United States of America: E.J. SCHREINER, In charge, Forest Genetics Research, Northeastern Forest Experiment Station, c/o Morris Arboretum, Philadelphia 18, Pa.

J.R. HANSBROUGH, Chief, Division of Forest Disease Research, Northeastern Forest Experiment Station, Upper Darby, Pa.

B. OBSERVERS

International Union of Forest Research Organizations:

A. PAVARI, Chairman of IUFRO, Via delle Cascine 1, Firenze, Italy.
H. van VLOTEN, Vice-Chairman of IUFRO, Postbus 23, Wageningen, Netherlands.

AGENDA

1. Adoption of the Agenda
2. Report on the activities of the Secretariat
3. Reports on the activities of National Commissions

   a) Note of the Secretariat
   b) National reports

4. Nomenclature and Registration of Names - Report of the Standing Executive Committee
5. Statistical Methods in Experiments - Report of the Sub-Committee
6. Utilization of poplar wood - Report of the Working Party
7. "Black Heartwood" - Proposals of the National Commission of the Netherlands
8. Bark injuries caused by mammals
9. Near East Poplar Conference - Report of the Conference
10. Poplar Study
11. Technical communications
12. Study tours - Summary of observations
13. Admission of new members
14. Date and place of the next meeting
15. Partial renewal of the Standing Executive Committee
16. Election of Chairman and Vice-Chairman
17. Other business

LIST OF THE DOCUMENTS SUBMITTED AND STATEMENTS MADE IN THE COURSE OF THE SESSION

(a) Documents prepared or duplicated by the Secretariat:

- Report of the Near East Poplar Conference (Doc. FAO/CIP/72)
- Provisional Agenda for the 8th Session of the Commission (Doc. FAO/CIP/73)
- Report on the Activities of the Secretariat (Doc. FAO/CIP/74)
- Reports on the Activities of the National Commissions - Note of the Secretariat (Doc. FAO/CIP/75)
- Reports on the Activities of the National Commissions - UNITED KINGDOM (Doc. FAO/CIP/75-A) (English only)
- Reports on the Activities of the National Commissions - UNITED KINGDOM: Experiments in Great Britain on age/type of poplar planting stock and treatments at the time of planting, by J. Jobling and T.R. Peace (Doc. FAO/CIP/75-A Add. 1) (English only)
- Reports on the Activities of the National Commissions - FRANCE (Doc. FAO/CIP/75-B) (French only)
- Reports on the Activities of the National Commissions - FRANCE: Essais sur la résistance mécanique du bois de peuplier, by J. Venet (Doc. FAO/CIP/75-B Ann. 1) (French only)
- Reports on the Activities of the National Commissions - SWITZERLAND (Doc. FAO/CIP/75-C) (French only)
- Reports on the Activities of the National Commissions - BELGIUM (Doc. FAO/CIP/75-D) (French only)
- Reports on the Activities of the National Commissions - BELGIUM: Special reports (Doc. FAO/CIP/75-D Add. 1) (French only)
  - Contribution à l'étude de la gélivure des peupliers euraméricains en Belgique, by A. Poskin and P. Flon
  - La teneur en eau des tiges de peupliers américains en Belgique, by P. Roosen
  - Différentes relations entre l'apparition de la gélivure chez le peuplier euraméricain et les principaux caractères morphologiques du sol en Belgique, by A. Pecrot.
  - Essais industriels sur le bois du Peuplier de Sélys (*P. x euramericana* cv. 'serotina de Sélys'), by Fr. Dubois
  - Accroissements annuels en circonférence des peupliers de culture en Belgique, by A. Poskin
  - Quelques observations et considérations sur *Sciapteron (Sesia) tabaniforme* Rott en Belgique, by R. Breny

- Compte-rendu d'une étude sur le bois pelucheux du peuplier belge en considération de son rôle dans l'industrie allumettière, by C. Muhle-Larsen

- Reports on the Activities of the National Commissions - AUSTRIA (Doc. FAO/CIP/75-E) (French only)
- Reports on the Activities of the National Commissions - GERMANY (Doc. FAO/CIP/75-F) (French only)
- Reports on the Activities of the National Commissions - NETHERLANDS (Doc. FAO/CIP/75-G) (English only)
- Reports on the Activities of the National Commissions - ITALY (Doc. FAO/CIP/75-H) (French only)
- Reports on the Activities of the National Commissions - ITALY (Doc. FAO/CIP/75-H Add. 1) (French only)
- Reports on the Activities of the National Commissions - TURKEY (Doc. FAO/CIP/75-I) (English only)
- Reports on the Activities of the National Commissions - SWEDEN (Doc. FAO/CIP/75-J) (English only)
- Reports on the Activities of the National Commissions - SPAIN (Doc. FAO/CIP/75-K) (French only)
- Reports on the Activities of the National Commissions - SPAIN: Génétique et sélection des peupliers espagnols, by J. Elorrieta Artaza (Doc. FAO/CIP/75-K Add. 1) (French only)
- Reports on the Activities of the National Commissions - SPAIN: Les peupliers et l'hydrologie forestière, by J.M. Sanz-Pastor (Doc. FAO/CIP/75-K Add. 2) (French only)
- Reports on the Activities of the National Commissions - SPAIN: L'utilisation du bois de peuplier en Espagne - son emploi en ébénisterie, by F. Najera (Doc. FAO/CIP/75-K Add. 3) (French only)
- Reports on the Activities of the National Commissions - SPAIN: Reboisement populicole en Espagne, by F. López-Cadenas (Doc. FAO/CIP/75-K Add. 4) (French only)
- Reports on the Activities of the National Commissions - SPAIN: Lutte contre les parasites térébrants du peuplier, by J. Torrent Guasp (Doc. FAO/CIP/75-K Add. 5) (French only)
- Reports on the Activities of the National Commissions - SPAIN: Faune entomologique du peuplier, by G. Ceballos Fernández de Córdoba and E. Zarco (Doc. FAO/CIP/75-K Add. 6) (French only)
- Reports on the Activities of the National Commissions - SPAIN: Le peuplier blanc d'Alfambra, by B. Frontera Marqués (Doc. FAO/CIP/75-K Add. 7) (French only)
- Reports on the Activities of the National Commissions - SPAIN: Les champignons et les maladies des peupliers en Espagne, y compris les pourritures et les altérations chromatiques de leur bois, by J. Benito Martinez (Doc. FAO/CIP/75-K Add. 8) (French and Spanish)

- Reports on the Activities of the National Commissions - SPAIN: Les peupliers dans les nouveaux terrains d'irrigation de l'Espagne, by A. Gonzales Regueral (Doc. FAO/CIP/75-K Add. 9) (French and Spanish)
- Reports on the Activities of the National Commissions - SPAIN: L'influence du peuplier sur la richesse biogénique des eaux continentales, by J. Foxa Torroba (Doc. FAO/CIP/75-K Add. 10) (French only)
- Report of the Standing Executive Committee on the application to the genus *Populus* of the rules laid down in the International Code of Nomenclature for Cultivated Plants (Doc. FAO/CIP/76)
- Nomenclature and Registration of poplar names - Note of the Standing Executive Committee (Doc. FAO/CIP/76 Add. 1)
- Statistical methods in experiments - Note of the Secretariat (Doc. FAO/CIP/77)
- Black heartwood: Report of the National Poplar Commission of the Netherlands (Doc. FAO/CIP/78-A) (English only)
- Black heartwood: Report by T. R. Peace (Doc. FAO/CIP/78-B) (English only)
- Black heartwood: Report of the National Poplar Commission of Belgium (Doc. FAO/CIP/78-C) (French only)
- Technical communications: De l'hivernage d'une tordeuse des peupliers, by E. de Bellis (Doc. FAO/CIP/79-A) (French only)
- Technical communications: De l'origine des peupliers, by R. Régnier (Doc. FAO/CIP/79-B) (French only)
- Technical communications: Dimensional data about wood fibers in *P.* x *euramericana* cv. 'I-214', by G. Scaramuzzi (Doc. FAO/CIP/79-C) (English only)
- Technical communications: Variations in moisture content, basic density and ovendry density in *P.* x *euramericana* cv. 'I-214', by P. Curró (Doc. FAO/CIP/79-D) (English only)
- Technical communications: Essais comparatifs d'engrais, en surface et en profondeur, en populiculture spécialisée, by G. Gambi (Doc. FAO/CIP/79-E) (French only)
- Technical communications: Détermination de l'époque d'abattage des peupliers en fonction de la forme du fût, by E. Allegri (Doc. FAO/CIP/79-F) (French only)
- Technical communications: Note sur les peupliers du Cachemire, by R. Rol (Doc. FAO/CIP/79-G) (French only)
- Technical communications: Récentes introductions de peupliers des Etats-Unis en France, by J. Chardenon (Doc. FAO/CIP/79-H) (French only)
- Report of the 4th Session of the Working Party on Wood Utilization (Doc. FAO/CIP/80)
- Effect of surface sterilization on survival and growth of field-planted hybrid poplar cuttings, by H. F. Ford and A. M. Waterman (Doc. FAO/55/3/2025) (English only)

- Additional information on the surface sterilization of poplar cuttings, by K. F. Aldrich and A. M. Waterman (Doc. FAO/55/3/2026) (English only)

(b) Documents presented by Delegations

- Le bois de quelques peupliers de culture en Suisse by O. Lenz (reprinted from the "Annales de l'Institut fédéral de recherches forestières", XXX Volume, Zurich 1954)
- Compte-rendu des recherches sur le peuplier robusta poursuivies en 1954 pour le compte de la Commission Nationale du Peuplier, by the "Centre Technique du Bois", 14 Avenue de Saint-Mandé, Paris
- Etude des temps et du rendement dans l'exploitation d'un peuplement de *P.* x *euramericana* cv. 'I-214', by G. Giordano (reprinted from the "Bollettino dell'Ente Nazionale per la Cellulosa e per la Carta", Rome, September 1954
- Productivity of some European poplar plantations, by E. J. Schreiner, Northeastern Forest Experiment Station, Morris Arboretum, Philadelphia 18, Pa., USA
- Report of the Greek Delegation
- Some notes on the relation between growth place and specific gravity, by G. M. C. Koning-Vrolijk and K. Griffioen, Forest Products Research Institute T. N. O., Netherlands
- Observations de la Commission Nationale Belge du Peuplier sur le compte-rendu des recherches sur le peuplier robusta poursuivies en 1953 par le Centre Technique du Bois à Paris
- A brief note about the Forest Service of Turkey and the Statutes of the Turkish National Poplar Commission
- Le peuplier en Iran, by H. Sabeti, Commission Nationale du Peuplier, Ministère de l'Agriculture, Téhéran
- Réponses au questionnaire relatif aux mesures et observations dans les essais sur les peupliers, by E. Badoux, Institut fédéral de recherches forestières, Zürich

(c) Verbal Statements (texts left with the Secretariat)

- Poplar Diseases Research in the United States, by J. R. Hansbrough, North-eastern Forest Experiment Station, 102 Motors Avenue, Upper Darby, Pa., USA
- Populiculture en Argentine, by A. M. Seoane, M. Ugarte 1565, Olivos, Buenos Aires
- Importance of poplars in Pakistan, by N. Ahmed, Agricultural Attaché, Embassy of Pakistan, Rome, Italy

N.B. The documents listed under "(a)" may be obtained from the Secretariat of the International Poplar Commission, in either English or French, except when otherwise indicated.

NOTE BY THE SECRETARIAT ON THE ACTIVITIES CARRIED OUT IN 1954 BY NATIONAL COMMISSIONS OF MEMBER GOVERNMENTS AND BY OTHER INTERESTED GOVERNMENTS

The interest aroused by poplars in the member and non-member countries of the International Commission continues to grow and is reflected in the increased activities of the National Commissions of Member Governments.

I. GENERAL INFORMATION

A. *Administration and other activities of the National Commissions*

The National Commissions in several countries defined their constitution more explicitly and in some cases established special Working Parties for the study of poplar diseases and timber utilization. Regional meetings are being organized.

In the UNITED KINGDOM, the Forestry Commission continues to function as the National Commission.

In FRANCE, a decree prescribed the composition of the National Commission. The latter, under the chairmanship of the Directeur-Général des Eaux et Forêts, is composed of representatives of all the sectors concerned and may hear, in an advisory capacity, any prominent person whose advice it would like to have. A Regional Congress with 200 participants was organized in the northeast in April 1954.

In SWITZERLAND, the Interim Working Committee of 9 members gave, in 1954, the final touches to the statutes of the Swiss Community for poplar production, and they are to be submitted in 1955 to the Cantonal Inspectors' Meeting. Once the statutes are approved, the community will be definitively established.

In GERMANY, the National Commission elected a new General Committee with Regierungs präsident Dr. Warsch as chairman and Landforstmeister Wemper as vice-chairman. Dr. Bauer continues to act as delegate to the International Commission. The Commission held two meetings and the German Poplar Society one. Regional meetings were organized. The German Poplar Society has already produced, and continues to produce, propaganda and educational films for the Society and its branches. Agricultural and horticultural exhibitions provided an opportunity for successful propaganda on poplar growing.

In the NETHERLANDS, the Commission continues to function under the chairmanship of Prof. Houtzagers. It had to deplore the death of Engineer

Bienfait who had hirtherto taken an active part in the International Commission's Working Party on Utilization. A Working Party on Wood Technology has been established. A pamphlet on poplar cultivation has been distributed among the pupils of the Schools of Agriculture and courses on this subject have been given in the agricultural colleges.

In BELGIUM, the National Committee has been particularly active and its progress report includes the findings of various technical studies. Propaganda is being spread by the publication in the 'Bulletin de la Société Royale de Belgique' of a column entitled "Advice to poplar planters", in which planters are regularly informed of questions concerning poplar growing and care.

In AUSTRIA, the National Commission continues to function under the chairmanship of Dr. W.W. Wettstein. Courses of instruction with practical planting work have been organized and close relations have been established with the representatives of industries interested in poplar wood.

In TURKEY, the National Commission has been organized and new statutes have been prepared. Under these statutes, which will be submitted to the Government for approval, the National Commission will comprise representatives of the following government offices and institutions: the Forestry Department; the Faculty of Forestry of Istanbul University; the Faculty of Agriculture of Ankara University; the Agriculture and Budget Committee of the Grand National Assembly of Turkey; the Department of Agriculture, the Agricultural Bank, the Department of State farms and State lands; Turkish Forestry Associations and the Press Associations of Ankara and Istanbul; companies utilizing poplar wood; cooperatives and private poplar planters. The statutes prescribe the functions of the Commission and its work program and also provide for a standing executive committee to implement the decisions taken by the Commission, the chairman of which is the Director of the Forestry Department. A national poplar congress, which could not be held in 1954, will take place in September 1955 and will include a study tour.

In ITALY, the National Commission continues to function within the Ministry of Agriculture and Forestry and, more particularly, under the General Department of Mountain and Forest Economy. It holds meetings and gives lectures at the headquarters of the Provincial Poplar Commissions, Chambers of Commerce and various economic and technical bodies. A particularly important regional congress was held at Rovigo in October 1954. The National Commission has rendered great technical assistance to poplar growers through the Provincial Poplar Commissions, the technicians of the 'Ente Nazionale per la Cellulosa e per la Carta' (the National Pulp and Paper Organization) and the Poplar Cultivation Institute of Casale Monferrato.

In SPAIN, the National Commission is presided over by Mr. Paulino Martinez Hermosilla, Director-General of Forests, Wild Life and River Fisheries, and Director-General of the State Forest Resources. Some members of the Commission were entrusted with the task of investigating

the traditional methods of cultivation, with a view to improving them and ensuring maximum productivity. Propaganda is being spread through the press and radio and a film is being made. Three regional congresses have been organized.

National Poplar Commissions were set up in Argentina, Iran and Syria.1/ A Poplar Committee is being established in Canada, which may eventually be transformed into a National Commission.

B. Legislation, Laws, Decrees, etc.

In 1954, important texts were published or drafted for legislation.

In BELGIUM, the National Commission secured the insertion of a special item for poplar wood in the customs nomenclature. As from 1 January, the place of entry dues in the tariff schedule is to be changed and poplar will be given a separate line under uncut roundwoods (distinguishing it from pulp wood, lumber, veneer wood and other timber), in hewn or sawn squared timber, pit-sawn timber, veneers and plywood.

The 'Bulletin de la Société Royal de Belgique' continues to publish the list of nurseries that allow varietal control as well as their available stock of young poplar plants. The 'O.N.D.A.H.' has extended its supervision over growing stock (903,000 plants in 1954 as compared with 642,000 in 1953).

In AUSTRIA, a special law on the registration of poplar types is being drafted, the purpose of which is to prevent the importation of worthless stock or the uncontrolled growing of inferior plants in the country.

In NETHERLANDS, according to instructions issued by the Director of Crown Forests, the reporting of fellings of poplar in row plantations and of poplar on farmland is not compulsory. This measure will encourage farmers to plant this species on their plots. The NAKB continues its inspections and issues certificates of origin.

In TURKEY, there has been no change in the legislation described at the Damascus Conference, except that credit for poplar planters has, for the first time, been provided by the Agricultural Bank, for 1955.

In ITALY, the Department of Forestry is studying with the competent Ministries the amendments to be made to measures which prevent the proper utilization of the banks of waterways.

In SPAIN, decrees and instructions were published concerning assistance to reforestation with poplar, delimiting the river banks to be planted with poplar and reducing the irrigable areas under poplar.

1/ Since the drawing up of this report, National Commissions have been set up, or are being considered, in Egypt, Iraq and Pakistan.

C. *Economic and Statistical Data*

In general, homogeneous statistical data on size of plantations and on cut are still not available. On the other hand, some data on annual plantings have been reported.

In the UNITED KINGDOM, there has been subsidized planting of 400 ha since 1950.

In AUSTRIA, 750,000 poplars were planted in 1954.

In GERMANY, 8,000,000 poplars were planted in 1954 and the Commission approached the Ministry of Food, Agriculture and Forests of the Federal Republic with a request that a survey be made and the findings published in 1956.

In the NETHERLANDS, no new statistics have been compiled since the 1942 survey (4,385 ha of plantations and 16,000 km of row plantations). In 1954, fellings amounted to 120,000 m^3.

In TURKEY, there are 37,500,000 poplar trees planted in stands and 10,800,000 in row plantations. No figures are available for natural stands and isolated poplars. Annual cut is estimated at 150,000 m^3 of saw.logs, 4,000 m^3 of pulpwood and 50,000 m^3 of fuelwood.

In ITALY, various meetings were organized in 1954 by the Rome Central (Statistics) Institute and a Commission was established to draw up a survey program which will study separately plantations in stands, streambank and wayside plantations, and trees in clumps. No information is available on private nurseries. On the other hand, the nurseries of the Forestry Department supplied 2,000,000 plants in 1954, and those of the 'Ente Nazionale per la Cellulosa e per la Carta', 783,000 plants and 193,000 cuttings.

In TURKEY, 2,104,000 selected plants were distributed in 1954.

In AUSTRIA, the authorities responsible for roads and canals have examined the possibilities of using poplar.

In SPAIN, State nurseries delivered 3,000,000 plants and the report gives also the following data:

New afforestation.	3,747 ha
Total area on 31.12.1953	60,350 ha
Annual cut	489,890 m^3

In GREECE, the Directorate of Forests discovered, by means of an investigation carried out by correspondence, that 75,000 poplars had been planted in 1954/55 either by the State or private individuals.

D. *Publications*

Abundant literature is still being published and long lists of publications are given in the reports of Germany, Italy, the Netherlands and Turkey. In Iran and Syria general reports on poplar cultivation in these

countries, and containing many photographs, were distributed to everyone concerned.

E. Contacts with other countries, members or not of the International Commission

The reports refer to all the frequent contacts between experts of the various countries interested in poplar cultivation as well as to exchanges of plant material between non-member or member countries of the Commission.

FRANCE, ITALY, the NETHERLANDS, SPAIN, TURKEY and the UNITED KINGDOM were represented at the Damascus Near East Poplar Conference in April 1954, where resolutions were adopted on the establishment in Turkey of a Near East Poplar Research Station and of a populetum for various types of poplar of the Mediterranean area and the Near East at the Rome Agricultural and Forestry Experiment Center of the 'Ente Nazionale per la Cellulosa e per la Carta'.

II. INVESTIGATIONS, STUDIES, etc.

A. *Permanent program*

1. GENERAL

a) Measures for the application of varietal control: Varietal control is being developed in all countries mostly under voluntary acceptance systems or by the concentration of production in supervised nurseries.

In AUSTRIA, the trend is toward concentration of the production of cuttings in supervised nurseries and 18 elite trees were recognized in 1954 with a view to their being propagated and used for the production of cuttings of certified origin, and for selection for the seven cultivation districts.

In SWITZERLAND, parent stock required by the country is grown in a single nursery supervised by the School of Forestry, which undertakes to supply all the members of the community and not to deliver parent stock to non-member producers.

In BELGIUM, supervision continues to be exercised by the O.N.D.A.H., which has undertaken to supply nurserymen with cuttings of approved varieties and to inspect growing stock (903,000 poplar plants in 1954 against 642,000 in 1953).

In the UNITED KINGDOM, 39,350 cuttings of approved types ('Eugenii', 'Gelrica', 'Robusta', 'Serotina', 'Serotina erecta') were distributed in February 1954 to the nurseries of the Forestry Commission, private nurseries, private land-owners and the Land Department of Eire. 33,700 cuttings are still available.

In FRANCE, varietal control continues in accordance with the Decree of 30 October 1951; 30,000 cuttings of 12 different clones taken from the parent stock of the Vineuil populetum were distributed to 36 recipients.

The Federation of Horticulturists and Nurserymen, Forest Tree Nurserymen's Section, published a standard catalogue. Catalogues not in conformity therewith were sent to the Service for the repression of fraud.

In the NETHERLANDS, the NAKB carried out 1,140,000 inspections and issued 360,000 certificates in 1953-54.

In ITALY, varietal control is still being studied and the role which the 'Ente Nazionale per la Cellulosa e per la Carta' could play in carrying out such control is stressed. This body has certification bands attached to plants grown in its nurseries and in those established from stock provided by the Casale Monferrato Institute.

In TURKEY, selected clones are carefully cultivated and observed in State nurseries. It has still not been possible, however, to establish any control.

In SPAIN, the official services decided to ensure the production of plants required by private owners. Certified cuttings will be shipped in packages of 25.

BELGIUM, FRANCE, the NETHERLANDS and the UNITED KINGDOM have forwarded to the Secretariat of the Commission the list of types for which homologation and registration were requested.

b) Cultivation: Cultivation questions are amply dealt with in all the reports.

It may be pointed out in the first place that collections of varieties or populetums, on which cultivation experiments may or may not be made, are coming into being almost everywhere.

In the UNITED KINGDOM, experiments are being continued on various types of plants for setting out (age, topping), on treatment when being planted (application of compost, manuring, liming), on maintenance of plants, on products used in chemical weed control and their effects (withering of poplars or reduction in growth vigor). In nurseries the spacing of cuttings in rows is still being studied, in view of the favorable results obtained by wider spacing of one-year-old plants (only *P. eugenii* among the 12 types used failed to react to wider spacings of 45-60 cm), manuring and application of fertilizers, etc.

In FRANCE, the systematic experimentation program launched in 1951 was continued in 1954 and 4 new populetums were established with the setting out in 7 m x 7 m spacings of plants of several clones, mostly with replication.

In SWITZERLAND, the measuring of height increment on trial sites continues, though hindered by bad weather, together with the determination of the influence of the climatic differences in growth years. Research is being conducted on the phenology of various clones and hydroponics.

In BELGIUM, a detailed trial site study was made of growth in relation to the types cultivated, infestation by pests, utilization of the underwood and prunings, closing of the canopy, clearings and the beginning of growth in the spring. Data are also given on annual increment in height

of several types and on the analysis of a clump of 140-year-old *Populus euramericana*. The conclusions of "Advice to Poplar Planters" on plantation spacing in which wide spacing is advocated, are summarized in the report.

In GERMANY, many trial sites are being studied to determine the yield of poplar groves in volume and cash. The yield of various types according to ecological conditions is also being studied. Studies are also being conducted on cultivation methods, windbreaks and shelter belts, cultivation on wet and sour soils and fertilizers.

In GREECE, studies are being carried forward on thinning, rejuvenation of poplar stands, growth of various clones, ecology, and selection of poplar types suited to certain sites.

In ITALY, the cultivation experiments conducted under the auspices of the Casale Monferrato Institute are being continued both on the Institute's land and on that of some enlightened private owners. They cover planting methods, association with agricultural crops, application of fertilizers, mechanization of work, etc. A populetum has been established at Casale (67 clones), laid out in quincunxes, with 10 m spacing, and surveys carried out in various parts of Italy showed that I-214 has been the most successful of cultivated poplars.

In the NETHERLANDS, experiments with dense plantations on the polder of the northeast (2.65 m) as well as with rotations and dense plantations with clearings have been made. They need to be followed up.

In TURKEY, primitive poplar-growing methods are still followed by planters, but the State nurseries are raising plants scientifically and suggesting better cultivation methods.

In SPAIN, vast cultivation experiments are under way, with various spacings (from 2 m x 2 m to 6 m x 8 m) and determination of the degree of light intensity in the period of active growth. It will thus be possible to recommend the best spacing for each area.

c) *Protection:* No serious attack in the plantations was reported in 1954, but considerable *Dothichiza populea* damage in young plantations due to climatic conditions was reported, particularly in the United Kingdom, France, Belgium and the Netherlands. That is why special studies on this parasite are being undertaken in France, a survey based on questionnaires, prior to research, is under way in Belgium and a special study group is carrying on its experiments in the Netherlands. In the latter country, the findings of the survey on the 1951 *Dothichiza* infection are now partially known. This survey made it possible to draw conclusions as to the susceptibility of the various types, the influence of the soil and the water table, and perhaps also the effect of manurial applications in the nursery where the plants were produced.

In GERMANY, the disease due to *Cytospora* is being studied, and the report points out the dangers of certain treatments for the control of the poplar borer *(Saperda populnea)*.

In the NETHERLANDS, research on bacterial canker continues and

already shows the great influence of the climate, before and after inoculation, on artificial infection. Localized *Leucoma salicis* L., *Cossus cossus* L. and *Saperda carcharias* infestation is reported.

In BELGIUM, some attacks of *Pemphigus* are reported and the damage due to *Sciapteron tabaniforme* Rott. is the subject of a special report.

In FRANCE, the 'brown spot' disease ('Braunflecken(g)rind', 'maladie de la tache brune') reported since 1949, especially on 'robusta' poplars, appears to be spreading to some extent, but seems to be dangerous only when environmental conditions are unfavourable. Wood mice and field moles frequently cause serious damage in young plantations.

In TURKEY, damage by *Serapteron tabaniforme* and borers as well as root rot are reported. Exchanges of cuttings with other countries are made in accordance with the Commission's recommendations in order to ensure plant protection.

In ITALY, due to climatic conditions, only slight attacks by leafeaters were observed. Nevertheless, efforts are being made to establish a joint control organization. As regards research, observations were made on the withering of poplars in nurseries, canker du. to *Dothichiza* and on *Semasia* spp. *Epiblema misella* greatly hampered hybridization work in green-houses through the destruction of the capsules of the flower-bearing branches of white poplars. Finally, field tests are being made for the control of *Stilpnotia salicis*.

In the UNITED KINGDOM, artificial inoculations of bacterial cankers and observations on *Melampsora* rust continue. Tests with 5 rodent repellents for the protection of young plantations are under way.

In SPAIN, the Commission's recommendations on exchanges of plant stock are being carefully followed. Special reports deal with pests of poplars, the funghi observed and wood-eating insects.

Reference is made to the damage done by rabbits this year and the drawbacks of treatment with creosote or tar. Information is given concering fences of rope impregnated with special compounds ('Salvacultivo Cuni'). Damage by deer and countermeasures, i.e. individual fences near game preserves, are also mentioned.

In GREECE, damage by *Capnodis* is reported; direct control measures have been taken.

2. BLACK POPLARS

Black poplars continue to be the subject of the experiments referred to under the heading of cultivation.

In FRANCE, experiments on the propagation of various clones by cuttings are being continued in order to discover the respective effects of external and internal conditions. The most outstanding results obtained with certain clones of *Populus euramericana* are given in the report (the average rate of take was 75% in 1954 with considerable differences among clones).

In BELGIUM, the work of selecting and propagating new types continues

at the Institut de Grammont where 157 types, the result of a first selection, were examined in 1954. These types are derived from artificial cross-pollination of hybrids of the Aigeiros section (115) and a selection of natural seeds from Italy (42). A comparative study has been started on the development of the young plants and the coloring of the wood in poplars derived from seeds or cuttings.

In GERMANY, five varietal nurseries are being established in various climatic areas, and an inventory of German clones has been made. In genetics, the degeneration of the various poplar races is under study and the selection, on physiological and ecological bases, of drought-resistant poplars with a high cellulose content and site-adapted is being pursued.

In the NETHERLANDS, *P. deltoides* ♀ (Vermont, U.S.A.), *P. deltoides* ssp. *angulata* ♀ (Netherlands) and *P. nigra* ♀ were fertilized this year with pollen of various species. Crossings of the previous years were propagated by cuttings for clone experiments.

In SPAIN, studies continue and a report on genetics and selection has been written.

3. WHITE POPLARS

Many studies have been reported.

In the UNITED KINGDOM, some local types of *P. tremula* were fertilized with the pollen of *P. tremuloides* from Canada. Experiments on topping before transplanting of *P. tremula* x *tremuloides* plants already picked out showed a better take and height increment.

In FRANCE, the identification and inventorying of white poplars in Morocco and aspens in the Alps were continued. Experiments in propagation by cuttings continue. A plantation of aspens for comparative tests was established at Nancy.

In BELGIUM, observations were made on the flowering of the aspen at Hautrage and were the subject of a paper submitted to the Eighth International Botanical Congress. An account was also given at the same Congress of variations in the size of the stomata in the genus *Populus* and the report summarizes findings in regard to Leuce section.

In SWITZERLAND, aspens and grey poplars were studied methodically at several trial sites.

In AUSTRIA, special attention is being given to the selection of *P. tremula* for mountain regions and of *P. alba* for the Danube region, and in 1956 it will be possible to deliver 60,000 seedlings derived from artificial crossings.

In SWEDEN, further observations were made on the hybrids of a Japanese aspen *P. tremula davidiana* with *P. tremula* of Sweden and *P. tremuloides* and resistance to *Melampsora rostrupii* infestation was studied.

This disease which attacked *P. tremula* x *tremuloides* has now been recognized and studied; it was caused by a saprophytic fungus *Valsa nivea*.

In GERMANY, studies continue, particularly on the application of

fertilizers, cultivation on unfavorable sites, and in genetics.

In the NETHERLANDS, experiments in vegetative propagation are carried out on *P.* x *euramericana* with slips taken from one-year or older seedlings, with root cuttings and by grafting. The results are very encouraging. Incrosses in this section are being made and the plants derived from seed imported from Canada and the U.S.A. are being studied, as is also susceptibility to rust (*Melampsora* sp.).

In ITALY, the study of artificial hybridization of *P. alba* ♀ with the pollen of *P. tremuloides* and *P. grandidentata* from the U.S.A. is being continued.

In SPAIN, studies are being done and a report has been drawn up on white poplars of Alfambra.

4. OTHER SECTIONS

Few results are reported.

In the UNITED KINGDOM, *P. trichocarpa* and its hybrids continue to figure in tests on resistance to bacterial canker. A special collection of all the old *P. trichocarpa* trees has been made to determine whether they all come from a single clone.

In FRANCE, thriving *P. lasiocarpa* seedlings have been obtained from self-pollination of this monoecious species.

B. Special studies

1. BLACK HEART WOOD

This appears as a special topic on the agenda at the request of the Netherlands National Commission (see special reports), but some information is given in these reports.

In FRANCE, industrialists do not seem to be much concerned about this defect.

In the NETHERLANDS, an initial inquiry showed that black heart wood has little effect on the working of wood and that the coloring disappears after seasoning.

2. CRACKING

In BELGIUM, a sub-commission set up for this study published its conclusions in three reports, annexed to the general report, on frost-cracking, moisture content, and the relations between the appearance of frost-cracking in *Populus euramericana* and the morphological properties of the soil.

In ITALY, such studies are being carried on along the Po River.

3. POPLAR CULTIVATION ON FARM LANDS

So far no definitive result can be reported.

In the UNITED KINGDOM, observations have been made on various clones to check on their wind resistance.

In the NETHERLANDS, studies are continuing and are all the more necessary because of the objections sometimes raised by farmers to row plantations.

In SPAIN, a study on poplars in the newly-irrigated lands has been drawn up.

4. OTHER STUDIES

The report of Spain mentions studies on:

(i) the effect of poplars on the biogenic resources of inland waters;
(ii) the use of poplar leaves as fodder;
(iii) poplars and forest hydrology.

III. UTILIZATION OF POPLAR WOOD

Tests on characteristics and utilization of such wood have been continued in member countries mostly by groups of specialists. Apart from the above-mentioned particulars on black heartwood and cracking, which also concern utilization, the reports contain the following information:

1. FRANCE: At the technological laboratory of the Nancy School of Forestry, tests were made on some specimens of cultivated aspen and poplar (*P. deltoides* 'Cardin', *P.* x *euramericana* 'regenerata', *P.* x *euramericana* 'robusta', *P. deltoides* 'monilifera'), together with tests on other forest tree species: breaking load under pressure and breaking stress under bending. It appears that despite their rapid growth, poplars can supply wood which has considerably greater mechanical strength than spruce grown under the same site conditions.

2. NETHERLANDS: Simplified tests continue and now relate to five types: *P.* 'marilandica', *P.* 'gelrica', *P.* 'serotina', *P.* 'robusta' and *P. deltoides missouriensis*.

3. ITALY: Technological tests and histological analyses are being carried out in laboratories. Tests are also being made in industrial plants and it is pointed out that the various properties of the timber are derived not only from the type of poplar but also from the site and cultivation methods.

4. UNITED KINGDOM: The Working Party on Wood for Matches, set up in 1950, has published its report. This shows that among the many woods other than poplar tested, only *Pinus radiata* of New Zealand was suitable for the manufacture of matches and that the match industry will therefore continue to rely mainly on poplar.

5. BELGIUM: (a) The Sub-commission on Technology has undertaken tests on various types of poplar on the basis of the plan followed by the Paris Centre Technique du Bois. The tests will concern types extracted from the Union Allumettière's stands and peeled by it, then sent to a private firm for sawing, and to the Gembloux forestry laboratory for the laboratory tests. Each log has a file-card or form, of which a specimen is given.

(b) The Société Nationale des Chemins de Fer Belges expressed its agreement to the use of poplar wood for the floors of railway coaches and made allocations accordingly. Following tests on shrinkage during seasoning, it was decided to request the same, not larger, sizes for poplar as for all other accepted species.

(c) Very thorough studies attached to the report relate to:

(i) the moisture content of the trunks of *Populus euramericana*, together with preliminary conclusions on their moisture content, according to the place in the trunk, the variety, site and season, and its connections with the occurrence of frost-cracking.

(ii) Industrial tests on Selys poplar wood. The description and size of the logs dealt with are given together with their sawn timber yield, and comments are made on the advantages and drawbacks of this type of poplar.

(iii) Shaggy wood in the match industry. The study aimed at determining the types and cultivation conditions that produce shaggy wood, the connections between the occurrence of such wood and the tree's external aspect, and the percentage of shaggy wood in relation to peeled wood. In conclusion, the study shows that it has not been possible to discover connections between the types or cultivation conditions and the occurrence of shaggy wood, which is found above all at the bottom of the trunk and in the center of the tree, that 90% of the peeled wood was not shaggy and finally, that the shaggy wood did not seem to correspond to the definitions usually given of "gelatinous wood" or "tension wood".

6. SWITZERLAND: The report gives an analysis of a study on the wood of several cultivated poplars in Switzerland and the conclusions drawn: the behavior of cultivated poplars in peeling and cutting depends above all on the conditions of growth and not on their type.

7. SPAIN: The report mentions a study on the utilization of poplar wood and its use in cabinet-making.

NOMENCLATURE AND REGISTRATION OF POPLAR NAMES

I. NOTE OF THE STANDING EXECUTIVE COMMITTEE

1. At its last session held in Germany in 1953 the International Poplar Commission stressed the importance of the new horticultural nomenclature, codified in 1952 by the International Horticultural Congress. The Commission therefore decided to set up a Subcommittee composed of members of its Standing Executive Committee, namely Messrs. Houtzagers, Peace, Piccarolo and Pourtet, to study the possibilities of adapting the nomenclature, already adopted by the Commission, to the new rules of horticultural nomenclature, and also the best means of establishing registration of poplar names.

The provisional report of this Subcommittee was discussed by the Commission's Executive Committee at its 9th session, which took place in Rome at the end of March 1954. It was agreed that the report should be revised in the light of the discussions held during that meeting, to constitute the Executive Committee's report on this topic to the 8th Session of the Commission (Document FAO/CIP/76). The Executive Committee further suggested that Member Governments be invited to submit lists of poplar names, with the relative description cards, for possible registration, so that a provisional list could be drawn up. Five Member Governments have to date proposed poplar names for registration and the Secretariat has submitted them with its comments to the Executive Committee.

2. It might prove helpful to report very briefly on the existing situation as regards nomenclature.

(a) The International Botanical Congresses held since the beginning of the century have worked out rules of botanical nomenclature which apply to wild plants or to plants that, when cultivated, do not differ in any essential from their wild stock. These rules have been assembled in an International Code of Botanical Nomenclature.

Special rules, on the other hand, apply to the method of naming the particular forms that have originated or are maintained only in cultivation, which have been drawn up by International Horticultural Congresses and codified in an International Code of Nomenclature for Cultivated Plants.

(b) All wild poplars belong to collective species designated in accordance with the rules of botanical nomenclature, that is, by a Latin binomial followed by the name of the person who first described the species.

Still, apart from certain regions where wild species are exploited, the poplar grower and user generally know only of variants maintained solely by cultivation (clones or cultivars), which must be designated in accordance with very precise rules to avoid confusing them with wild variants. In view, furthermore, of the frequent occurrence of new or allegedly new varieties of cultivated plants, the International Code of Nomenclature for Cultivated Plants provides for the setting up of an International Registration Authority for each extensive genus, to maintain and publish an International Register of cultivar-names.

(c) From the above it appears that the rules of the International Code of Nomenclature for Cultivated Plants, and therefore also those concerning registration of cultivar-names, apply only to cultivated poplars. Names of wild poplars should not therefore be submitted for registration under the provisions of the code mentioned above. In short, the lists of poplar names to be registered are quite different from the lists of poplars in the possession of the National Poplar Commissions, which some Member Governments distribute periodically.

3. On the basis of the Secretariat's report and of the considerations made above, the Executive Committee decided to suggest to the Commission that registration should be limited to cultivated and well identified poplars.

This suggestion is quite in line with Article C.5 of the International Code of Nomenclature for Cultivated Plants, which states that the International Registration Authority should maintain and publish an International Register of cultivar-names for each extensive genus. This register should contain only the names of poplars originating or maintained solely in cultivation, as the naming of those which occur in the wild, or do not differ in any essential from their wild stock when in cultivation, are subject to the provisions set out in the International Code of Botanical Nomenclature.

4. If the Commission approves the proposals of its Executive Committee on the application to poplars of the rules laid down in the International Code of Nomenclature for Cultivated Plants (Document FAO/CIP/76), it is suggested that a Subcommittee be appointed to consider all poplar names submitted to the Commission for registration.

The Commission might perhaps wish to recommend, that this Subcommittee, to begin its activities, undertake to review the lists of poplar names already submitted, or that will be submitted to the Secretariat in the future, with a view to:

(i) determining whether the names proposed conform to the rules set forth in the International Code of Nomenclature for Cultivated Plants;
(ii) suggesting a name for registration if the same name is proposed for more than one poplar cultivar or whether more than one name is proposed for the same cultivar.

The Subcommittee might also be asked to work out for the consideration of the Commission, detailed proposals as to the best procedure to follow for the registration of names of poplar cultivars.

To enable the Subcommittee to properly carry out its work, with special reference to sub-paragraph 4(ii) above, the Commission might wish to stress that it is indispensable that each name proposed for registration be accompanied by the relative description card.

II. REPORT OF THE STANDING EXECUTIVE COMMITTEE ON THE APPLICATION TO THE GENUS POPULUS OF THE RULES LAID DOWN IN THE INTERNATIONAL CODE OF NOMENCLATURE FOR CULTIVATED PLANTS

INTRODUCTION

The International Botanical Congresses held since the beginning of the century have worked out rules of botanical nomenclature which, following the Stockholm Congress, have been assembled in an "International Code of Botanical Nomenclature", the purpose of which is defined in the early Articles: "Botany can make no progress without the use, by the great majority of botanists in all countries of a regular system of nomenclature The Code of Nomenclature must be simple and based on reasonably clear and cogent arguments, so that everyone can understand and agree to accept it. The main thing is to fix the names and to avoid or reject the use of formulae and names that can lead to error or ambiguity and make for confusion in the science."

These rules apply to wild plants or to plants which, put into cultivation, do not differ in any essential from their wild stock.

On the other hand, the method of naming the "special forms that have originated or are maintained in cultivation" is laid down in special rules drawn up by the Botanical Congresses and codified in 1952 by the International Horticultural Congress. Those rules were published recently by The Royal Horticultural Society, Vincent Square, London, S.W.1 ("International Code of Nomenclature for Cultivated Plants", price 1/-), and it is hoped that translations into other languages will be available shortly. It has, in fact, been considered that while cultivated plants are of considerable value to civilization, they cannot be named according to botanical rules and that, because of the frequent occurrence of new or allegedly new varieties, the creation of an international system of registration is a matter of urgency.

In 1949 and 1950, the International Poplar Commission adopted the principles of nomenclature applicable to the genus *Populus* on the basis of the conclusions of the Botanical Congresses. These rules, which are valid for specific and supraspecific divisions, are enumerated hereunder.

The genus *Populus* belongs to the *Salicaceae* family and is divided into 5 sections:

Section *Turanga* Section *Aigeiros*
Leuce *Tacamahaca*
Section *Leucoides*

All the wild poplars within these sections belong to collective species designated in accordance with the rules of botanical nomenclature, that is to say, by a Latin binomial followed by the name of the person who first described the species (Latin name and epithet being underlined in manuscript and italicized in print; Article 82 G of the Code recommends that the initial letter of the epithet not be capitalized).

A poplar must thus always be designated by indicating the section and the species to which it belongs; this rule is compulsory not only to avoid misunderstanding in the interpretation of reports on studies and experiments or even of papers on trade or industry, but also because the fact that it belongs to a particular section or collective species is shown up in practical work by morphological and ecological differences.

Still, apart from certain regions where wild species are exploited (for instance, *Populus tremula* L. in Scandinavia, *P. tremuloides* Michx. in North America), the poplar grower and user generally know only of clones, variants maintained only through cultivation that have absolutely stable characteristics owing to exclusively vegetative propagation.

They must therefore be designated in accordance with very precise rules so that they can be distinguished even typographically, in order to avoid confusing them with wild variants.

The purpose of this report, drawn up by the Subcommittee composed of Messrs. G. Houtzagers, T.R. Peace, G. Piccarolo and J. Pourtet, appointed by the 7th Session of the International Poplar Commission, is the application to poplars of the rules laid down in the International Code of Nomenclature for Cultivated Plants; the examples will be taken from Section *Aigeiros*, the specific nomenclature for which alone has been defined by the International Poplar Commission and in which, above all, the types of economic value are almost exclusively cultivated variants.

If these proposals are approved, the International Committee on Horticultural Nomenclature and Registration will be so notified and also advised of the names of the species adopted and, in particular, of the collective name *P.* x *euramericana* grouping all the hybrids (F_1, F_2, .. F_x) of *P. nigra* x *P. deltoides*.

STUDY OF THE ARTICLES OF THE INTERNATIONAL CODE OF NOMENCLATURE FOR CULTIVATED PLANTS

The full Code is much too long to be reproduced here. It contains detailed explanations and many notes as well as a large number of examples; a summary, however, has been published in which the Articles are numbered as in the Code proper and, as a rule, these summarized Articles have been used for this report. Articles or parts of Articles not relating to the poplar have been omitted for the sake of brevity.

Articles of the abridged Code	Comments
SECTION A: General Considerations and Guiding Principles	
Art. C. 1. The aim of this code is to promote uniformity, accuracy and fixity in the use of names with the minimum disturbance of existing nomenclature.	
Art. C. 2. The principles and rules of the International Code of Botanical Nomenclature govern the use of botanical names (i.e. Latin names) for cultivated plants. The following regulations are designed for the naming of those cultivated plants that are not covered by provisions of the Botanical Code.	
SECTION B: Categories and their Designations	
Art. C. 3. The name of a cultivated plant usually has three parts: the generic, the specific, and varietal designations. Thus, in the full name *Sedum spectabile* 'Brilliant', *Sedum* indicates the genus and *spectabile* a particular species; 'Brilliant' is the varietal designation (called a cultivar-name in the following Code). For purposes of nomenclature, inter-generic hybrid groups are treated as genera, and hybrids between species are treated as species. The Code provides that the term "variety" (abbreviated as var. or v.) be reserved for those forms of cultivated plants that are known to occur in the wild and have names in Latin language (the botanical varieties), and that the term "cultivar" (abbreviated as cv.) be applied to those special forms that have originated or are maintained only in cultivation.	The Subcommittee considers that cultivated black poplars can in no event be regarded as botanical varieties, even if designated by a Latin name; they are, in fact, vegetatively propagated and, consequently, each form is represented by a single sex, generally constituting a clone (or sometimes a group of clones also resulting from vegetative variations). Such poplars are therefore "cultivars" and will be named in accordance with the rules of Section F of this Code (see Articles C. 15 to 23 hereunder).
Art. C. 4. In large and complicated groups it is sometimes necessary to supplement the three usual categories with others, such as series, subspecies or convariety.	

SECTION C: Registration

Art. C.5. The aim of registration is to avoid using the same name for different plants and creating unnecessary names. It is recommended that an International Registration Authority should be set up for each extensive genus or group to maintain and publish an International Register of cultivar-names, with supplements or new editions as needed. All registered names should be in accordance with this Code.

It is suggested that the International Poplar Commission become the International Registration Authority and that all names should, in the first instance, be submitted to a Subcommittee to be appointed for that purpose:
- Each country should submit a list of the names of its cultivated poplars whether such poplars have been raised in the country or have originated in other countries, if they are considered worth registering.
- Naturally the preference of the country of origin and the raiser, in particular, shall prevail in the final choice of name.

Names should only be registered when the poplars under consideration are clearly distinguished from other known types and conform to the rules set forth hereinafter.

SECTION D: Priority and Publication

Art. C.6. A legitimate name is one in accordance with this Code. In principle, the correct name is the earliest legitimate name.

The National Commissions should bear this Article in mind when drawing up the preliminary lists in which they should include the date of introduction of each name, whenever possible, and particularly <u>when there is no doubt about the identity of the poplar named.</u>

Art. C.7. A name has no standing under this Code unless validly published or officially registered.	
Art. C.8.(a). Valid publication consists of the sale or distribution of printed matter giving the name and description of the plant concerned, in any language using the Roman alphabet. Mention of a name in a catalogue or list, even with an illustration, is not considered in itself to be valid publication. (b). Registration by an internationally recognized Registration Authority is to be considered as valid publication.	
Art. C.9. The name and description must be published in a dated catalogue, technical work or periodical.	For most poplars the registration provided for in Article C.5. will be the first valid publication; in fact, descriptions are generally inaccurate and rarely concern a cultivar since they frequently indicate the presence of the two sexes, whereas each poplar cultivar is vegetatively propagated in only one sex. The list of registered names will be published, followed by annual supplements, until a new edition is deemed necessary.
Art. C.10. When revival of the earliest published cultivar-name would cause confusion, it is to be listed a synonym.	This will frequently occur in the case of poplars; and it should never be forgotten that the main purpose of the Code is to avoid error and misunderstanding, a principle which must come before any question of priority.
Art. C.11. When two or more cultivars are widely grown under the same cultivar-name, the official registration authority may decide	The example of the two clones cultivated in Great Britain under the name

for which one it is to be retained.

Art. C.12. To establish an adequate basis of priority for the nomenclature of a group, an international register or other list of cultivars may be taken as the starting point, if approved by the International Registration Authority of the group. In the absence of an International Registration Authority, a list of work dealing with a group may be approved by the International Committee on Horticultural Nomenclature and Registration. In groups not thus provided for, the starting point of nomenclature shall be the year 1953.

SECTION E: *Translations, Transliterations and Commercial Synonyms*

Art. C.13. When a cultivar is introduced from one country to another, its name should preferably remain unchanged. Sometimes, however, it may be desirable to translate a name, to use a transliteration or, in exceptional cases, even to change the name. New names (known as "commercial synonyms") should be followed by an indication of the original name when used in catalogues, etc..

Art. C.14. Names first published in languages not using the Roman alphabet are to be transliterated or translated.

It is suggested that transliteration be adopted rather than the literal translation of the word used in the original language

SECTION F *Formation and Use of Cultivar-names*

Art. C.15. From 1 January 1954 onward no new cultivars should be named in Latin.

Art. C.16. The cultivar-name should begin with a capital letter except in the case mentioned in Art. C.17. It should be distinguished typographically from a Latin botanical name, preferably by enclosing it in single quotation marks.

Populus eugenei illustrates this.

There is no old list of poplars that can be used as a basis for registration: therefore the list approved by the International Poplar Commission, as the registration authority, will serve as the starting point.

Art. C.17. When a cultivar has been given a Latin name before 1 January 1954, this should not be rejected; however, it is desirable that such cultivar-names be distinguished typographically (e.g. by the use of single quotation marks) from the Latin words used to designate botanical varieties, e.g. *Thuya orientalis* 'elegantissima'.

This applies to poplars, the cultivar-names of which are Latin words: e.g. *Populus nigra* L. 'italica'.

No author's name will be added to a cultivar-name even if this is in Latin and has, in the past, included an author's name.

Another example: *Populus* x *euramericana* 'robusta' or Poplar 'robusta'.

Art. C.18. The cultivar-name may be attached either to a scientific name or to one in common language, e.g. *Syringa vulgaris* 'Mont Blanc', Lilac 'Mont Blanc'.

Art. C.20. The same cultivar-name should not be used twice in the same genus.

Art. C.21(a). A cultivar-name should consist of not more than 2 words.*

(b). A cultivar-name should be distinctive, e.g. Rose 'Yellow Queen', not Rose 'Yellow'.

Art. C.22. From 1 January 1954 onward the word "variety" or any of its equivalents is not to be used as part of a new cultivar-name, e.g. *Crocus sieberi* 'Hubert Edelsten' and not *C. Sieberi* 'Edelsten's variety'.

Art. C.23. The following should be avoided when naming a new cultivar:

(a). names likely to be confused within the same genus, e.g. 'Warner', 'Werner' and 'Warnaer'.

(b). forms of address liable to be confused, e.g. 'Mr.', 'Mrs.' and 'Miss'.

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* In French, because of the frequent need to use the articles, the two-word limit will not always be observed.

(c). the scientific or vernacular name of a genus, e.g. Rosa 'Camellia', Plum 'Apricot'.	In France, the cultivar-name Poplar 'Eucalypt' was rejected in 1950.
(d). names of countries or states without a qualifying word, e.g. 'Oregon Wonder' would be legitimate, but not plain 'Oregon'.	This is not incompatible with the naming of poplar cultivars such as serotina de Champagne and robusta Zeeland', since the whole phrase accurately reflects the regional name and there is no risk of confusion with another product of the region, as was the case with the example quoted in (d).
(e). numerals, either alone or attached to a word, except as custom in certain groups dictates otherwise; in general, numerals are to be regarded as useful temporary designations while cultivars are under trial. A cultivar-name is not to be substituted for such a designation without the permission of the raiser or introducer. Example: Pea 'Mansholt 710/41', named Pea 'Emigrant' when put in commerce.	The International Poplar Commission has already agreed to the designation of new cultivars by a numeral preceded by the letters indicating the raiser or the introducer country; the Subcommittee proposes temporary retention of numerals for cultivars still under trial, and recommends that these numerals be preceded or followed by the name of the place of origin or cultivation (e.g. Casale 214 or Wageningen 120). The Committee deems it desirable that when a cultivar is found to be of lasting value, a common name should be substituted for the numeral by the raiser or introducer or with their consent.
(f). names of politically conspicuous persons.	
(g). exaggeration or use of superlatives; thus 'Earliest of All' may be made inaccurate by the introduction of an even earlier sort.	
(h). single letters as the first part of a cultivar-name.	

(j). the articles "a" and "the", unless required by linguistic custom; e.g. 'Colonel' would be legitimate, not 'The Colonel'; but 'La Rochelle' and not 'Rochelle'.

(k). abbreviations for personal and geographical names; e.g. 'Mount Kisco' and not 'Mt. Kisco'.

(l). excessively long words and those difficult to pronounce correctly, e.g. 'Diplomagartenbauinspektor'

SECTION G: *Names of Hybrids Originating in Cultivation*

Art. C.24. The first word in the name of a hybrid is the name of the genus ... The last part of the name of a hybrid is a cultivar-name, applying to a single hybrid form, and is subject to the regulations of this Code.

Parentage may be indicated by a formula placed between the generic and cultivar names, e.g. *Rubus (rusticana inermis x thyrsiger)* 'Merton Hornless'. Collective designations (in common language or of hybrid groups also may be used, e.g. Rose (Hybrid Tea) 'Richmond' *Viburnum* x *bodnantense* 'Dawn'.

For brevity, or when the exact parentage is unknown, the cultivar-name may directly follow the name of the genus, e.g. *Iris* 'Ambassadeur'.

Art. C.25. Designation of hybrid groups by means of formulae, or collective names in Latin form, is governed by the regulations of the International Code of Botanical Nomenclature. The following parallel regulations have been set up for use with groups designated primarily in common language:

(a). hybrids are denoted by a formula consisting of the names of the parents in alphabetical order linked by the multiplication sign. Even in groups where it is customary to place the name of the female first, the sex of the parents should be clearly indicated.

(b). a collective designation may be substituted for the formula. Thus the

The Subcommittee suggests that, for naming a new inter-specific hybrid, use may be made of the names of the parents followed by a cultivar-name; the latter alone could be used in general practice.

collective designation *Camellia* x *williamsii* covers all the cultivars (e.g. 'Donation', 'Mary Christian', etc.) derived from *C. japonica* x *C. saluenensis*.

When the collective designation is a phrase in common language it may be expedient to place it in parenthesis, e.g. *Lilium* (Bellingham Hybrids) 'Skuksan'; here 'Skuksan', the cultivar-name, belongs to only one hybrid form (clone) of the Bellingham Hybrids, which have been derived from *L. humboldtii* x *L. pardanium*.

(f). the use of the name of only one parent species to designate a hybrid group should be avoided. Designation such as *Rhododendron* 'Fortunei Hybrids' should be used only when the other parent is unknown or complex and the group has well-marked characters derived from the species indicated.

(g). a collective name of Latin form is subject to the rules laid down in the Botanical Code, e.g. the original description must be in the Latin language, etc..

Populus x *euramericana* (Dode) Guinier was thus described in a communication of Mr. Ph. Guinier to the International Botanical Congress held in Stockholm in 1950.

(h). if the collective name is not of Latin form, no Latin description is required. Publication of such names then follows the provisions of this Code regarding the naming of cultivars.

(j). a word formed from parts of the Latin names of the parental species may be used as a collective designation, but its publication must be accompanied by a description in Latin.

(k). in major hybrid complexes subsidiary groups may be designated.

SECTION H: Names of Latin Form applied to Hybrids in General

Art. C.26. When names of Latin form are to be given to hybrids, the procedure should follow the rules laid down in the International Code of Botanical Nomenclature.

Article 15 of the Code studied expressly prohibits the use of Latin names to designate cultivars;

Article C.26. can therefore only apply to natural hybrids, to which the rules of botanical nomenclature will apply.

SECTION J: *Names of Bud-mutants (Sports) and Re-selected and Improved Cultivars*

Art. C.27. The name of a bud-mutant or sport should, if possible, link it with the parent, e.g. 'Crimson Bramley' apple arose from 'Bramley's Seedling' apple.

Art. C.28. When a cultivar, through a continuous selection, becomes so distinct from the original that it can be regarded as a new cultivar, it should be given a new name. When, however, it has not become so distinct, the re-selected cultivar should keep its original name but have added to this the name of the selector or some other convenient designation.

For example: Cabbage 'Wisconsin All Seasons' is a selection from 'All Seasons'.

This method has been adopted to designate poplar cultivars selected or bud-mutant from an old cultivar. Example: in France the Poplars 'serotina de Champagne' and 'serotina du Poitou' are derived from *P.* x *euramericana* 'serotina' and possess many of the latter's characters.

Another example: Poplar 'robusta Bachelier' derived in Germany from *P.* x *euramericana* 'robusta'.

SECTION K: *Special categories and their designation*

Articles C.29. *et seqq.* deal with cultivated plants that have to be placed in special categories; their nomenclature is governed by the the regulations of this Code:

All these detailed specifications, indispensable in scientific work, will seldom be necessary for poplar growers.

Hybrid group: originating from the crossing of more than 2 species.

Convariety: a group of closely related cultivars.

Line (ln): a group of uniform appearance, sexually propagated and kept uniform by selection.

Clone (Cl):	genetically uniform plants derived from a single plant and propagated exclusively by vegetative means.	Poplar cultivars are clones or groups of clones.
	This category is equivalent by definition to the cultivar and takes its place in groups where accuracy of nomenclature is of primary importance in practice.	
Polyploids:	These will be differentiated by an appropriate symbol or given a new name.	

APPLICATION OF THE CODE'S REGULATIONS TO SOME EXAMPLES TAKEN FROM THE GENUS "POPULUS"

It was recalled in the introduction that all poplars are classified as belonging to certain species in accordance with the rules of botanical nomenclature.

The International Poplar Commission in 1949 decided on the names of the main species of the *Aigeiros* section, to which most cultivated poplars belong:

Populus nigra L. — *Populus deltoides* Marsh.
Populus x *euramericana* (Dode) Guinier

These species may have wild variants that will be designated by infraspecific epithets in accordance with the same rules of botanical nomenclature:

Example: *Populus nigra* L. var. *betulifolia* Torr.
Populus deltoides Marsh. s. sp. *angulata* Sarg.

Specimen of Proposed Registration List

NOTE: The first two columns give the full cultivar-name; the abbreviation cv. may be omitted before the cultivar-name proper.

Name of species	Cultivar-name	Common name
Populus nigra L.	cv. 'italica'	Poplar 'italica'

Remarks - The terms "Italian poplar", "Lombardy poplar" are bad in that they tend to be confused with other poplars cultivated or produced in Italy.
The term Poplar 'Pyramidal' comprises ♂ P. 'italica' and some ♀ poplars in Yugoslavia, for instance.

Populus nigra L.	cv. 'Vert de Garonne'	P. 'Vert de Garonne'
Populus nigra L.	cv. 'Hamoui'	P. 'Hamoui'
Populus deltoides Marsh s. sp. *angulata* Ait	cv. 'Carolin'	P. 'Carolin'

Remarks - The name 'Carolin', exclusively used for over 50 years in south-western France to designate a well-defined and well-known male cultivar, is thus substituted for 'carolinensis' which can lead to confusion with a wild American variety. It had recently been adopted in application of the rules of botanical nomenclature.

Populus x *euramericana*	cv. 'robusta'	P. 'robusta'
- -	cv. 'robusta bachelieri'	P. 'robusta Bachelieri'
- -	cv. 'gelrica'	P. 'gelrica'

Remarks - The last of these names designates exclusively the clone known by that name and which, in England, is resistant to bacterial canker. It will no longer be applied to the closely related cultivar, which is susceptible to the disease.

Populus x *euramericana*	cv. 'I-214 Casale'	P. 'I-214 Casale' or P. 'Glory of Italy'

Remarks - This imaginary name "Glory of Italy" is only mentioned to suggest the possible substitution of a cultivar-name (common or fancy name) for the numeral employed during the trial period.

For poplars of other sections the same rules will be adopted, taking into consideration the decisions that will be taken by the International Commission when these sections are studied in detail.

POPLAR STUDY

PLAN AND NAMES OF THE VARIOUS AUTHORS*

INTRODUCTION, by Ph. Guinier

I. DENDROLOGY AND RANGE OF POPLAR TYPES, by G. Houtzagers and J. Pourtet

- A. Systematic classification, order, family and genus
- B. Detailed study of the chief poplars in each section:
  1. Section *Turanga*
  2. Section *Leuce*
  3. Section *Aigeiros*
  4. Section *Tacamahaca*
  5. Section *Leucoides*
- C. Varietal control
- D. International registration of poplar names

II. CULTURE OF POPLARS

- A. Propagation and nursery practice, by A. Herbignat and G. Piccarolo
  1. Nursery practice
     a) Propagation by cuttings
     b) Propagation by root suckers
     c) Propagation by seed
  2. Direct planting or propagation by sets

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* Provisional translation of the original French text.

B. Intensive culture of poplars or "poplar arboriculture", by A. Herbignat and G. Piccarolo

1. Plantations
2. Row plantings
3. Rate of growth
4. Yield and economic data

C. The culture of poplars in the forest or "poplar silviculture", by F.W. Bauer and E. Gaillard

1. Natural stands and their silvicultural systems
2. The culture of poplars in alluvial forests
3. The culture of poplars in non-alluvial forests

III. POPLAR PESTS AND DISEASES, by R. Régnier and T.R. Peace

A. Pests

1. Damage by insects and acarids

a) Notes on the methods of control of injurious insects and acarids on poplars
b) Control measures for attacks on:

(i) roots
(ii) wood
(iii) buds, young shoots and leaves

2. Protection from rodents, game animals and livestock

B. Diseases

1. Diseases caused by inorganic agencies
2. Diseases caused by fungi and bacteria

a) leaves and succulent shoots
b) twigs, branches and trunk
c) roots
d) heartwood

3. Virus diseases
4. Diseases due to higher plants
5. Distribution of the principal diseases
6. Symptoms of the principal diseases
7. Control of poplar diseases

IV. GENETICS AND BREEDING OF POPLARS, by H. Johnsson

A. Genetical and biological facts of importance for poplar breeding
B. Aims of breeding
C. Breeding methods

1. Selection in existent populations, natural and cultivated
2. Selection in artificially produced plantations
3. Breeding in connection with sexual reproduction

D. Statistical research methods
E. Breeding institutes and activities in various countries.

V. PROPERTIES AND USES OF POPLAR WOOD AND POPLAR LOGGING OPERATIONS, by G. Giordano

A. Properties of poplar wood

1. Microscopic features
2. Macroscopic features
3. Physical properties
4. Chemical composition of poplar wood

B. Defects in poplar wood

1. Defects in the shape of the tree
2. Defects in tissue anatomy
3. Molds and stains
4. Tissue alterations caused by hail
5. Insect holes, bird pecks and decay

C. Logging operations
D. Uses of poplar wood.

- Alphabetic list of names of the poplar species, varieties and types mentioned in the publication
- Alphabetic list of pests mentioned
- Alphabetic list of diseases mentioned
- List of illustrations
- Bibliography

WORKING PARTY ON WOOD UTILIZATION

REPORT OF THE 4th SESSION
(Barcelona, 18-19 April 1955)

1. The Working Party met at Barcelona on 18 and 19 April 1955, at the Hotel Arycasa, with Mr. G. Giordano (Italy) as Chairman.

The meeting was attended by Messrs. W. Wettstein (Austria), J. Campredon, P. Allouard, J. Chardenon and M. Silberberg (France), H. Sabeti (Iran), G. Houtzagers, K. Griffioen and F.W. Burger (Netherlands), F. Najera y Angulo and C. Peraza (Spain), and E. Gaillard (Switzerland). The secretariat consisted of Messrs. R.G. Fontaine and O. Fugalli (FAO).

The members of the Working Party were grieved to learn, before starting their discussions, of the death of Professor Bienfait who had been an active member of the Working Party, and condoled with Mr. Houtzagers, Chairman of the National Commission of the Netherlands, on this sad event.

2. The Working Party took note of the reports of delegations on the technological studies being carried out in their countries. The care given to these studies gives a clear indication that wood utilization has now become one of the basic elements of poplar cultivation and acts as a guide in the choice of clones and cultivation techniques. A list of the papers presented appears in Appendix 3 to the General Report.

The Working Party recognized that the following main conclusions could be drawn from the reports mentioned above:

(a) All countries are well aware that practical or semi-industrial tests must be carried out in addition to laboratory tests, which alone have often proved insufficient to determine the suitability of timber to the various end-uses.

It is always possible to follow certain general rules in carrying out practical or semi-industrial tests, rules which can be applied by various countries and industries. The method proposed by the French delegation and employed by Mr. Campredon in the investigation of 'robusta' poplar for example, might be taken as a guide for similar work in other countries. It should, in fact, be pointed out that a tree is almost never entirely utilized by a single industry and it is consequently necessary to take into consideration all its possible end-uses.

(b) Wood defects have already been studied for many years, but the intensity of the enquiry should be increased with a view to determining their causes and the exact extent to which they limit the suitability of timber for certain uses.

(c) The Working Party also acknowledges the importance industrially of poplar wood and therefore thought it advisable to recommend that the following operations should be improved by all possible means: exploitation, organization of logging camps and mill yards, and all accessory operations with particular attention to barking. It was decided to place these topics on the agenda of the Working Party's next meeting.

3. The Working Party also examined the poplar wood sample test form already adopted by the Commission during previous sessions, as well as the form for measurements on poplar wood samples at time of felling which the Near East Poplar Conference recommended for adoption.

The Working Party were agreed on the usefulness of the former, but decided that it should be revised with a view to simplification and to bring it more in line with the needs of the various wood using industries. A select committee was therefore set up consisting of 4 members (one representing France, one Spain, one Belgium and the Netherlands, and one Austria and Germany) to propose amendments to the form in question in direct liaison with the Chairman of the Working Party.

The Working Party also decided to invite the Commission to recommend that Member Governments should envisage the use of the form for measurements on poplar wood samples at time of felling, which was already approved at the Near East Poplar Conference.

AD HOC WORKING PARTY ON POPLAR DISEASES
(Madrid, 27 May 1955)

LIST OF PARTICIPANTS

Chairman	:	H. van VLOTEN (Netherlands)
Members	:	A. HERBIGNAT (Belgium) R. ROL (France) R. MÜLLER (Germany) E. ROHMEDER (Germany) G. HOUTZAGERS (Netherlands) F.W. BURGER (Netherlands) J. BENITO MARTINEZ (Spain) T.R. PEACE (United Kingdom) J.R. HANSBROUGH (USA)
Rapporteur	:	B. TARIS (France)
Secretary	:	O. FUGALLI (FAO)

DESCRIPTION CARD
OF SPONTANEOUS OR CULTIVATED POPLARS

I. GENERAL INFORMATION

Section : . . . . . .

Common name : . . . . . .

Latin name of species : . . . . . .
(to which it is related)
Name it is proposed to homologate : . . . . . .

Trees considered : cultivated or spontaneous (1) . . . . . .

Site description of type under consideration :

a) Geographic location (region : . . . . . .
(locality : . . . . . .
(altitude : . . . . . .

(Location of site or sites where analogous types are observed and, if possible, an indication of their extent : . . . . . .
. . . . .)

b) Soil : . . . . . .

c) Climate :(2) . . . . . .

II. BOTANICAL INFORMATION

Sex : . . . . . .

Date of foliation : . . . . . .

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(1) Delete what does not apply
(2) Climate should be defined either by relating it to a well known classification or by giving as much information as possible on temperature, precipitation, etc.

Date of defoliation : early - late - intermediate (1)

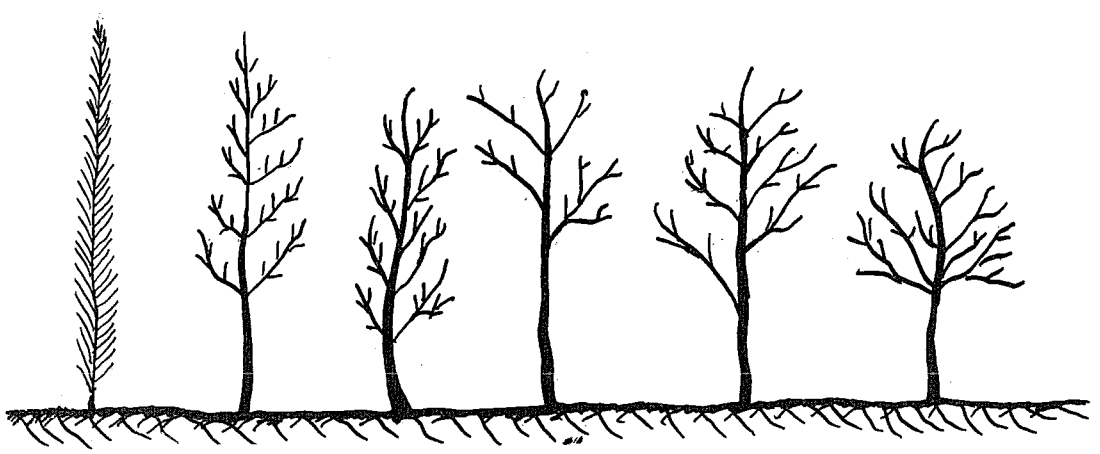
Long-shoot leaves (Healthy non-branching shoots of the year)	(Shape (sketch)	
	(Pétiole (average length	
	((cross-section (circular or flattened) (1)	
	(Colour on foliation	
	(Possible presence of "downiness"	(upper side
	(on adult leaves	(lower side
Short-shoot leaves	(Shape (sketch)	
	(Pétiole (average length	
	((cross-section (circular or flattened) (1)	
	(Colour on foliation	
	(possible presence of "downiness"	(upper side
	(on adult leaves	(lower side

Male flowers (2) : date of flowering - appearance . . . . . .

Female flowers (2) : date of flowering - appearance . . . . . .

Fruit : length and appearance of clusters . . . . . .
shape and number of capsule valves . . . . . .

Habit (at from 5 to 20 years of age, and not deformed by pruning)
(check corresponding silhouette and if possible attach a photo of the tree)



Trunk : very straight - fairly straight - forked or branching near ground (1)

(1) Delete what does not apply
(2) For cultivated types, delete what does not apply

Appearance, colour and thickness of bark	(young trees : . . . . . . (adult trees (over 20 years): . . .
Branches	(shape, dimension and (disposition of branches: . . . . . (colour of woody branches: . . . .

III. INFORMATION ON PESTS AND DISEASES

Leaf parasites : . . . . . .

Branch parasites : . . . . . .

Trunk parasites : . . . . . .

Note: For each parasite indicate incidence and damage observed.

IV. INFORMATION ON USE OF POPLAR UNDER CONSIDERATION

Cultural (or silvicultural) methods : . . . . . .

. . . . . .

Methods of propagation: by growing cuttings in nursery
by planting cuttings direct
use of root-suckers
others

V. INFORMATION ON USE OF WOOD

Size and age of tree at felling : . . . . . .

Logging methods (felling, transport and bucking) : . . . . . .

Uses : a) according to conversion method : sawing, slicing, peeling, pulping . . . . . .
b) according to products : packaging, plywood, matches, carpentry, fuelwood and paper pulp . . . . . .

Wood properties : . . . . . .

II. SPECIAL REPORT

OBSERVATIONS MADE DURING THE STUDY TOURS IN SPAIN OF THE INTERNATIONAL POPLAR COMMISSION APRIL 1955

(Barcelona - Zaragoza - Madrid - Granada)

A. Identification of poplars, by G. Houtzagers, J. Pourtet and J. Elorrieta

B. Poplar cultivation, by E. Allegri, F.W. Bauer, E. Gaillard and F. Jaime Fanlo

C. Poplar pests and diseases:

(a) Insects and acarids attacking poplars, by R. Régnier and G. Ceballos

(b) Poplar diseases, by T.R. Peace, H. van Vloten and J. Benito Martinez

D. The utilization of poplar wood, by G. Giordano and F. Najera

A. IDENTIFICATION OF POPLARS

by

G. Houtzagers, J. Pourtet and J. Elorrieta

In a brief review of the various species and clones of poplars examined by us during our visits, we shall limit our study to those types which, in our opinion, have a commercial value.

We shall disregard therefore the species and hybrids with which experiments are just beginning to be made, particularly in the Research Institute of Madrid, in spite of the great importance already attained by that collection.

Among the specimens of the Section *Leuce* we must mention *Populus alba* L. - found, for instance, along the banks of the Ebro, which is related to the *hickeliana* or *subintegerrima* varieties, with non palmatilobate, long-shoot leaves. Next, especially *P. alba* cv. 'bolleana', widely cultivated in rows and in ornamental plantations, which often thrive with great vigor and excellent form of the trunk. Its pollen was used by Dr. Elorrieta for crossings with *P. tremula* L. as female. Among the very many seedlings obtained, those that are now propagated by cuttings in the nursery of the Forestry Research Institute of Madrid show great variations in leaf morphology, growth, date of foliation, etc. Some of them seem very interesting and the remarkable feature is that these hybrids are easily reproduced by cuttings as *P. alba* cv. 'bolleana'.

Poplars of the Section *Aigeiros* make up practically all of the poplars at present cultivated for commercial purposes. Only in some plantations at Pastriz - on the banks of the Ebro in the proximity of Zagaroza, we found *P. alba* on the most unfavourable soil because of the salt and pebbles.

Within this section one must above all mention *Populus nigra* L. In Spain it marks out the valleys and dales everywhere and can reach very great dimensions. Sometimes it is spontaneous, but more frequently selected clones are grown and perhaps also hybrids with American poplars or with *P. nigra* cv. 'italica'. As in the case of the 'Vert de Garonne' types *P. nigra* is strongly predominant as shown by the dark green foliage, small leaves, diamond-shaped blade with a cuneiform base, the frequent presence of eipicormic branches on the trunk, the absence of ridges on the vigorous branches, and round lenticels. Very fastigiate and well-shaped trees are often found. From the point of view of cultivation it seems unnecessary to try to relate these types to the various known varieties or types, but rather more interesting to seek trees with good shape and rapid growth and to propagate them as "clones" under local names in accordance with the rules of the international nomenclature. Numerous types exist but we shall limit our

description to those which seemed best defined:

(a) *Populus nigra* cv. 'Bordils': male type cultivated in the region of Bordils (in the proximity of Gerona in northeast Spain) for the last 90 years. It is very fastigiate. Its rate of growth at the beginning is somewhat slower than that of the cultivar 'Poncella', mentioned below, but it seems that after some 15 years it makes up for this delay and even surpasses the rate of growth of the 'Poncella'.

Its foliation starts a few days later than that of 'Poncella'. Spanish botanists relate it to *P. nigra* s. sp. *bisattenuata;* it would seem to require a rich moist soil.

(b) *Populus nigra* cv. 'Poncella': also male, comes into leaf earlier, is less fastigiate, has a less "improved" appearance, is closer to *P. nigra typica*. It would seem to be able to grow on drier soil of lower quality.

(c) *Populus nigra* cv. 'Blanquillo de Granada', which we found along the banks of the Genil, a tributary of the Guadalquivir, in the poplar plantation of Santa-Fé. This plantation, in the proximity of Granada, is about 8 Kms long and 1.25 Km wide, or approximately 1,000 ha. A male very fastigiate clone which comes early into leaf; since it occurs much farther south than the previous two, a comparison of its date of leafing with those of the other two clones is not feasible. In any case, its foliation is the earliest of all in the region in which we found it. It grows less rapidly and its trunk is not as straight as that of the 'Negrito de Granada', a Euramerican poplar coming into leaf somewhat later, which was often found together with the 'Blanquillo' and which will be described below. The wood of the 'Blanquillo' is, however, of better quality and more durable than that of the 'Negrito'.

The measurements made by us in this plantation on 20 trees of eleven years and spaced 2m x 2m (after thinning in the sixth year) gave us an average circumference of 45 cm.

As to the American poplars (*P. deltoides* Marsh.) we found the following types in Northeastern Spain related to the subspecies *angulata:*

(a) *Populus deltoides angulata* cv. 'Carolin' in the plantations at Bordils, Gerona: male clone, comes early into leaf (a few days later than 'Poncella'). The date of leafing and the colour of its foliage, shape and size of the leaves, its furrowed bark with the characteristic corky ridges, its responsiveness to phototropism and also its sinuous trunk are the same as in the French 'Carolin' which we had seen a few days earlier with the members of the French National Poplar Commission in the Garonne valley.

(b) *Populus deltoides angulata* cv. 'Bor', a male clone coming into leaf somewhat later than the last, presenting a furrowed bark at an extremely early stage; good in shape, propably less responsive to phototropism.

(c) The female of the *Populus deltoides angulata* of which we saw a few trees in the Bordils plantations. These were the only ones not yet in leaf, thus clearly showing their late date of foliation. Not very good in shape and of medium growth, they were apparently introduced 25 years ago from a nursery in Angers (France).

With regard to the Euramerican poplars (*Populus* x *euramericana* (Dode) Guinier) it must first be pointed out that one almost never finds in this country the types that make up the poplar plantations of western Europe. It is also worth mentioning that the same phenomenon is observed in France, though to a lesser degree, in the Garonne valley. It appears then that if the Pyrenees played some role, the ecological conditions different from those of the important poplar-growing regions of France, Belgium, Holland, England and western Germany have had a decisive influence on the empirical selection that led to the choice of types cultivated. It can also be supposed that among the clones previously imported from North America, those related to the subspecies *monilifera* have remained rather in northern Europe, and that the types of the subspecies *angulata* have remained in the more southern regions, so that the Euramerican poplars of the more northern climes are *P. nigra* x *P. deltoides monilifera* hybrids, and the southern Euramericans are *P. nigra* x *P. deltoides angulata* hybrids. The following are to be mentioned within the scope of this survey:

(a) *Populus euramericana* cv. 'Canada blanc' : male hybrid of magnificent form and vigor, reddish-green foliage, date of foliation approximately the same as that of the 'Bordils' or a few days later. Good shape, straight bole, branches somewhat spread. Very rapid growth. Smooth, white, pruinose bark, with horizontal scars in slight relief. Its properties and superiority are particularly marked in Bordils where we came across this excellent type for the first time and where, in the eighth year, the circumference already reached 80 cm (spacing : 5 m x 4 m).

(b) At Hostalrich, between Gerona and Barcelona, on drier and more acid soil, affected by the cold winds of the Pyrenees, we found female poplars, very similar to the 'Canada blanc' but coming into leaf somewhat earlier.

(c) *Populus euramericana* cv. 'Canada noir' : male hybrid, also having a very smooth, white and pruinose bark, coming into leaf later than the 'Canada blanc', which we were also able to examine at Bordils and Hostalrich. It is called "black" because of its leaves of a darker green and a more brownish foliage. The 'Canada noir' has a very good shape but as a whole it is inferior to the 'Canada blanc'.1/(1)

(d) *Populus euramericana* cv. 'Pinsèque', which we were able to study on the banks of the Ebro river at Pastriz (Zaragoza); its sex (probably male according to Elorrieta), is unknown to us. It originates from the plantations of the Jiloca, probably as natural seedling, and is striking for its excellent growth. It bears a strong resemblance to the 'Canada blanc' with a very straight bole and white bark; however, the bark has few ridges, and certainly less than the *angulata* types. Its lenticels are almost exclusively roundish, the young lignifield twigs are angular and grey, its leaf-stalks and shoots are green, the leaves light green and somewhat

1/ One of the authors of this paper, Mr. Pourtet, taking into account the morphology of the trees and the names used in certain Spanish papers (angulata, cordata, carolina, robusta) believes this poplar to be *P.* x *euramericana* cv. 'robusta'.

resembling in shape and colour those of *Populus* x *euramericana* cv. 'marilandica'. It comes into leaf rather early but in any case later than *P. nigra* in this region. The base of the blade is often somewhat wedge-shaped and the edges are ciliate with rather coarse teeth.

(e) *Populus euramericana* cv. 'Negrito de Granada' has an excellent shape and is widely cultivated along the banks of the Genil at Santa-Fé. It is a tree of very good growth, with a spreading habit, straight trunk and a very white bark, and takes its name of Negrito from its brown foliage in the spring. This is in contrast with *P. nigra* cv. 'Blanquillo de Granada', a selection or hybrid mentioned above, that occurs frequently in the same region, with a much less white bark and darker green leaves. The rate of growth of the 'Negrito' is much higher than that of the 'Blanquillo de Granada' but the wood of the latter is better. The 'Negrito' comes into leaf rather early, but in any case a few days later than the 'Blanquillo'. We were not able to observe its flowers but, according to Elorrieta, it must rather be a group of clones as there are male and female trees.

In order to give an idea of the production possibilities of the 'Negrito' it is worth mentioning that the average yearly growth of the eleven-year old plantation visited, which will be cut next year, was of 38 m3 (average diameter 15 cm; maximum diameter 22 cm; height 22 m up to a diameter of 4 cm).

(f) *Populus euramericana* cv. 'Chopa' ; female clone of very good growth, observed by us at Santa-Fé. It is considered a 'Carolin' in Granada, but is almost certainly a Euramerican hybrid (perhaps *P. nigra* x *P. deltoides angulata* according to Elorrieta). It is remarkable for its very rapid growth, smooth bark and excellent pruning, but on the other hand is very responsive to phototropism and very crooked. The large long-shoot leaves are broader than long, and the short-shoot leaves are often rhombic, resembling those of *P. nigra*. The non lignified shoots are green with ridges. The wood is very white. It seems to propagate poorly by cuttings.

Finally, it is possible that some specimens of the classic types of western Europe may still be found in northern Spain. It may also be that the very late poplars with deciduous female catkins we saw in the vicinity of Pastriz are related to *Populus euramericana* cv. 'regenerata'.

It is also possible that the late female poplars with very long and very numerous clusters, observed along certain roads, particularly from Zaragoza to Alhama, are related to *Populus deltoides monilifera* cv. 'virginiana'.

From the above it can be gathered that during our study tours we were able to see quite a large number of new types heretofore unknown in the more northern countries. In the case of some of them it will perhaps be possible, after more accurate study, to relate them more or less closely to types already known; however, we do not consider that to be either necessary or useful. They are by and large of different origin, frequently spontaneous hybrids of other parents.

A more accurate identification of these various cultivated types, and perhaps of other types which could be of interest, must be made by means of comparative cultivation in the country itself, in experimental plots or in collections such as that already begun in the Research Institute of Madrid. But it will doubtlessly also be of value to other countries, which are now able to take note of a dozen new types clearly distinguished in their country of origin and, as we saw, the majority of which are of excellent growth, to compare them with their own poplars with a view to establishing whether some of the new clones could not be of value for their poplar growing as well.

Our Spanish hosts will no doubt provide the cuttings necessary for this purpose.

B. POPLAR CULTIVATION

by

E. Allegri, F.W. Bauer, E. Gaillard and F. Jaime Fanlo

The participants were able to study poplar cultivation in the Province of Gerona, in Aragon and in Andalusia (Granada).

I. POPLAR CULTIVATION IN THE GERONA PROVINCE

The plantations visited were located in the basin of the Ter and Tordera rivers, where a tradition of poplar cultivation has existed for some hundred years. The plantations cover an area of approximately 3,000 ha.

1. Plantations in the Bordils (Ter) region

At Bordils a system of cultivation is applied which probably does not exist anywhere else. The lands bordering on the river Ter were originally communally owned and were later, towards the middle of the last century, parcelled out among the inhabitants of the various villages. Each landowner received a fairly long and narrow strip at right angles to the river; this was done so that everyone should have an equal share of fertile and less fertile ground. These same strips have since become even narrower by dint of division through inheritance, and since, by ancient Sanctacilia law there must be a space of 4 m between rows belonging to different owners, it is clear how difficult it must be to utilize the remaining surface rationally without the poplars suffering from the proximity of those on the adjacent strip. This leads to considerable competition between the owners, each striving for a higher and better production than his rival. To this end they resort to all kinds of experimental clones and to all the fertilizers which they think might be best. This has eventually led to almost instinctive selection practices. Consequently the black poplar 'Bordils' (named after the locality) can today be considered as a clone. The other poplars cultivated are Euramerican hybrids, introduced a long time ago. Most of the planters prefer cultivating one type of poplar only (for example the 'Bordils' etc.).

Spacing between the rows varies, as this depends on the width of the strips. Generally the plants are from 3 to 4 m and the rows from 6 to 7 m apart (we have also observed 10 m).

The soil is alluvial, calcareous and of good fertility. Plantations must be irrigated during the summer owing to insufficient rainfall.

It must be noted that all the planters in the same zone exploit their poplars at the same time so as to comply with the community regulations. Rotation is generally fixed at 12 years, which seems insufficient if the soil is to be used to the full. In fact, this short rotation might be the reason for the rather low output of 18,000 m3 a year for an area of 3,000 ha.

Planting is carried out by using one year-old rooted plants from 1.50 m sets, grown in the owner's nursery. Poplars are generally associated with other crops (grasses and legumes), but only during the first two or three years.

In some areas, plane trees have also been planted among the poplars in the past few years. This practice is now declining, however, because of the fall in market price of tanning products. Although the plane mixes very well with other trees, it should not be interspersed with poplars but should be planted in clumps, since it does not attain the dimensions necessary for commercial exploitation at the same time as the poplar - and it does not need to be planted on such good quality soil.

Although fairly good cultural practices had been observed in the plantations it was noted, in some areas, that pruning operations had often been made too late frequently leaving stubs, which were bound to lower the quality of the wood.

The wood produced is of small dimensions but meets the needs of local industry. It would undoubtedly be more profitable to raise trees of larger size - when there is a market for them, but this would call for a regrouping of the estates in order to obtain plots of more rational dimensions.

The way in which all the inconveniences of excessive parcelling and dispersion of property have been overcome by cultivating dense poplar plantations, and also the discipline exercised in their exploitation, are unique and deserve the highest praise. In this respect the Bordils poplar plantations can serve as a model.

2. *Plantations in the Hostalrich (Tordera) region*

In this region the cultivated area is of about 500 ha and is made up solely of private estates. This eliminates the problem of plot distribution. Closer to the Montseny chain (1,714 m), rainfall is more abundant than in the Ter region (700-800 mm a year), so that poplars can be cultivated without having to resort to irrigation.

The soil is siliceous and a total lack of calcium carbonate obtains almost everywhere.

On the "Casa Noca de March" estate, belonging to Mr. Santiago Llensá de Gelcén, botanist and poplar expert, some good results have been obtained with a Euramerican hybrid named locally 'Canadiense blanco', which is of good growth, sturdiness and habit; it is well adapted to that site.

The spacing adopted is 5 x 5 m, which appears rational since the poplars are exploited when 15 years old.

The yield per hectare hardly ever exceeds 10 m3 a year.

There is no demand within the province for the produce, which is sent to the main markets of Barcelona, the Levantine region, Majorca, and the Canary Islands, where it is used for the manufacture of cases, packaging, plywood and woodworks.

To conclude, we would wish to report that the land use in this region is almost perfect; the trend is, in fact, to reserve the very fertile soils for agriculture, the good ones for poplar cultivation, and the poorest for cork-oak and pine forests.

II. POPLAR CULTIVATION IN ARAGONA

The main object of the visit was to show the members of the International Poplar Commission the work carried out by the Patrimonio Forestal del Estado (PFE), in compliance with the law passed on 18 October 1941 on riverbank afforestation, which provides that the PFE can undertake protection works and reclaim unproductive lands for poplar cultivation.

The procedure followed is relatively simple and consists mainly in the delimitation of the lands to be put under cultivation, after which operations are immediately begun. Property questions will later be taken care of by other regulations; this allows for immediate implementation of any working plan, whilst safeguarding the interests of the owners.

Since the land in question is generally untilled, the quality of the soil varies greatly; in places it is deep and fertile, whereas adjoining areas are stony and sometimes even somewhat saline.

The vast afforestation operations undertaken in the flood areas of the Cinca and Ebro seem to be seriously threatened by peak-floods and storms. The soil would be so soft after several days of flooding that if a storm came it could easily uproot all the poplars. Experience has proved that it is impossible to maintain poplars in such exposed conditions without mixing them with willows. Moreover, the filling would be better done with willow fascines than with a 3 x 3 m spaced plantation, which in our opinion only increases the risk, especially when the floods carry bed-load material.

The question thus arises as to whether it would not be better to establish proper alluvial forests in accordance with approved principles of forest economy rather than plantations of an agricultural character.

1. Operations at Fraga (Huesca), Cinca river

The Cinca river is one of the main tributaries of the Ebro. The area fit for afforestation along the river banks has been estimated at 3,000 ha, of which 800 have already been planted.

It was possible to see in Fraga how the problem of protecting the soil was solved by a number of structures aimed at preventing the river from wandering and bank-erosion. Very dense plantations (3 x 3 m) were established with the object of slowing down the floods (the poplar plantation is,

in fact, here considered only as a measure of river-control).

2. *Operations at Pastriz (Zaragoza), Ebro river*

The problems encountered at Pastriz are identical with those at Fraga. While in some places the waters have a fertilizing action due to the silt they carry, in others they constitute a real danger to the plantations, which are damaged by the bed-load material. Here the problem is much more serious than in Fraga because the erosion caused by the Ebro constitutes a threat to the main Zaragoza-Castello highway and even to the Barcelona-Madrid railroad.

To counteract erosion, prevent the river from wandering, and encourage silting during floods, a planting-spacing varying from 2 to 4 m has been chosen. This density of plantation, which seemed justifiable during the early years, nevertheless called subsequently for thinnings. It might therefore be better to plant the poplars at a wider spacing, at the same time encouraging the establishment of a vigorous shrub undergrowth. The braking effect would be the same and the poplars, better protected, would grow sturdier.

In view of the large area to be afforested, all available poplar types have been used (Black poplars, 'Pinsèque', 'Negrito de Granada', and hybrids); wherever the soil was saline, the use of white poplars was resorted to. Other tree-species, such as willows and elms, have also been planted.

The climatic conditions of the region are favourable to the cultivation of poplars as the temperature hardly ever drops below -5°C, the maximum is 40°C in the shade, and the annual growing period is long. Since annual precipitations amount to only 300 - 350 mm, the plantations have to be irrigated once a fortnight throughout the summer. This is done by 30 HP motor-pumps which draw the water direct from the river.

The plant association characteristic of Pastriz is as follows:

Tamarix gallica
Populus alba
Salix spp.
Andriala ragusina
Inula viscosa

This halophytic vegetation clearly indicates the salinity of the soil, which has in many places thwarted the initial poplar plantations, which have had to be replaced by *P. alba*. This salinity, however, may be expected to diminish through irrigation, as has occurred in the higher reaches of the river.

The plantations so far established show variations in growth, the conclusion being that on the poorest soils it would be better to replace poplars with other less demanding species. It was noted at Pastriz that the original 3 x 3 m spacing had been extended to 4 x 4 m, which seems more appropriate. These plantations are still too young to allow for any estimations to be made as to their yield, but an annual production of 5 m3 per hectare can be expected.

As a whole the PFE activities represent a praiseworthy effort, promising good results.

III. POPLAR CULTIVATION IN GRANADA (SANTA-FE)

Poplar cultivation is of considerable importance in the province of Granada, occupying as it does an area of more than 7,000 ha, of which 3,000 are located in the Rio Genil basin.

Exceptionally fertile soils are to be found in this region owing to the periodic floods which carry fertilizing silt with them. Further advantages are the great luminosity and the temperate climate, which is very favourable throughout the poplars' vegetation period.

All the plantings are carried out on private lands, some of which cover an area of up to 150 ha. Practically speaking, two poplar types are cultivated : the 'Blanquillo', related to *P. nigra* and the 'Negrito', which has the same characteristics as a Euramerican hybrid. Some isolated instances of 'Chopa' (*P. x euramericana*) can also be seen.

It was found that the 'Blanquillo' grows faster than the 'Negrito' in the first two or three years, but the latter soon catches up and subsequently surpasses it in quality. The 'Negrito' is remarkable for its bole, which is smooth, straight and without defects. The 'Chopa' stands out by its extremely rapid growth; unfortunately it has a crooked habit.

The Forestry Research Institute is now experimenting on hybridisation between the 'Chopa' and the 'Negrito', hoping to obtain a clone with the combined qualities of both parents.

On areas where there is no flood risk, inter-row agricultural crops are grown with poplars during the first two years. The tree crop thus benefits from the agricultural fertilizers and manure.

There are nurseries for the two main cultivated types. Cuttings are sometimes planted at a 45 x 50 cm, and sometimes at a 1 x 1 m interval. In the first instance the rooted cuttings are lifted during the first 2 to 3 years for planting out elsewhere. In the second the plantation is subsequently thinned by taking out every other plant in order to arrive at a final spacing of 2 x 2 m. The plants that have been lifted are also planted out elsewhere.

In this region sets are always from 3 to 5 m long and have no roots. They are placed in the ground with an iron planting-tool to depths varying from 50 cm to 1 m.

A rotation of 10 to 12 years is generally adopted. The wood thus obtained answers to the needs of the rural economy and local industry, especially where there is a demand for small roofing timbers and pit-props.

Cultivation techniques consist in pruning in the second year and a light thinning in the sixth. In addition the plantations are irrigated once a fortnight in summer.

The main characteristic of these plantations is their great density. There is a tendency, however, to widen the spacing to obtain trees of a larger diameter for sawing. It goes without saying that other markets will have to be found for these new categories. It explains why the building of pilot-factories is being contemplated in this region.

The average growth is estimated at about 25 m3 per ha a year; this

growth can even attain 35 to 38 m3 in the case of the 'Negrito'.

In 1954 experiments were started with pure Euramerican, Dutch and Italian clones, planted at a distance of 4 to 5 m. Considering the conditions of luminosity, temperature and soil obtaining, we do not believe yields could be obtained with other cultivars that would surpass or even equal those of the record breaking 'Negrito'.

The health conditions in all the plantations visited were very satisfactory.

Spontaneous white poplars have been found along the rivers, but these are as yet very little cultivated. A closer study of this section would seem to be worth while, since it could be of great value, on saline soils especially.

C.(a) INSECTS AND ACARIDS ATTACKING POPLARS

by

R. Régnier and G. Ceballos

Poplar groves were visited in four regions: Catalonia (Gerona), Aragon (vicinity of Zaragoza), Madrid (nurseries), and Andalusia (environs of Granada). Although everywhere we found poplars attacked by insect pests, especially wood-borers, we saw no evidence of pullulation; on the whole, the plantations visited were in satisfactory condition. The same cannot be said of the black and white roadside poplars, particularly in the Lerida sector, where the wood-borers appear to abound; keeping these infested trees must inevitably be a menace to poplar-growing in the region.

- In Gerona province, sporadic attacks by wood-borers (*Cossus*, *Sesiidae*, *Saperda carcharias* and *S. populnea*) were observed on the various poplars cultivated at Bordils. We also found some defoliators (*Melasoma*, *Phyllodecta*, *Chalcoides*, *Polydrosus*, *Phyllobius*) and, more especially on black poplars, galls of *Pemphigus* and some *Aphrophora*.

- In Zaragoza province, during our visit to the large, still young poplar plantation on the banks of the Ebro, we saw some infestation by *Saperda populnea* and *Sesiidae* (certainly *Sciapteron tabaniforme*), some bud deformation by *Eriophyes*, *Curculionidae*, and a few aphids (leaf lice).

- On the outskirts of Madrid, the excellent tending given to the nurseries of the Forestry Research Institute prevents the parasites from developing. Only in some rare instances did we find a few defoliators (*Curculionidae* and *Chrysomelidae*), very young larvae of *Dicranura vinula*, and some aphids infesting foliage. We also saw a colony of caterpillars, already big, that may be the *Eriogaster lanestris* sometimes found on *Salix*, and a few wood-borers, probably *Cryptorrhynchus lapathi*, on American poplars-mostly *P. wisliżenii* (Texas).

- In Granada province, our attention was particularly attracted by the magnificent Santa-Fé poplar plantations in the valley of the Genil river. Despite the density of the plantations and climatic conditions favorable to the development of many parasites, the trees appeared to be in very good condition. We were impressed by the small number of trees attacked, particularly by wood-borers, and we consider this to be an instructive example for poplar growers. In fact, over and over again during our inspections of poplar plantations in western Europe, whether in France, the Netherlands, Belgium or Germany, we found that plantations where there was constant humidity do not provide favorable conditions for the development of wood-borers; it is a well known fact that row plantations along-side watercourses and especially roads, are the most severely attacked. Now, the Santa-Fé plantations not only have their soil enriched by the considerable alluvial deposit left by the floods of the Genil river, but further, because of the irrigation practiced, they form a special biotype to which the most dangerous insect species do not seem able to adapt themselves.

It is also to be noted that large-scale infestation by *Lepidosaphes ulmi* of the smooth-barked Euramerican poplars is localized in drier spots, around a forest ranger's house, near the main road; these colonies of scale insects, that are to be found on the side most exposed to the light and over a length of 5 to 6 meters, cause a characteristic bursting of the bark.

Another interesting fact is that the pink, cauliflower-shaped galls caused by *Eriophyes populi* on the trunks, are localized on the black poplars. By killing the buds, these acarids prevent the epicormic branches, that are always numerous on the 'Negrito' poplars, from emerging, and so there is no need for pruning. The question arises as to whether in the special conditions of very dense planting under which these poplars are cultivated near Granada such infestation is not beneficial. It certainly would not be if the poplars were planted 200 to 300 to the hectare, as is done outside the Mediterranean Basin.

The slight infestations we saw of leafhoppers (*Idiocerus*), caterpillars, *Chrysomelidae* and *Curculionidae* defoliators, did not seem to cause any economic loss.

In short, we gained an excellent impression from the very fine Granada poplar plantations. True, the season was not far enough advanced to estimate the damage caused by many insects. It would be interesting if the Spanish entomologists were to follow the development of the various insects in relation to their environment, as such observations may be of value for the future of Mediterranean poplar-growing, particularly with regard to the control of wood-borers.

C.(b) POPLAR DISEASES

by

H. van Vloten, T.R. Peace and J. Benito Martinez

Remarkably little evidence of disease was seen during the course of the tours in Spain. It should of course be borne in mind that it was too early in the season for the development of some fungi, notably *Melampsora* rusts, but there is little reason to suppose that any seriously damaging diseases afflicted poplar in any of the areas visited.

The subject of the fungi occurring generally on poplar in Spain has already been covered very thoroughly, (FAO/CIP/75-K Add. 8) so that this short note will be confined to fungi and diseases actually seen during the tours.

At the time of year when the tours were made, spring defoliation by fungi such as *Venturia* or *Phyllosticta* might well have been found. In fact the only withering of young foliage seen was at Bordils, where it was undoubtedly due to late frost.

The only serious losses of young poplars observed were at Zaragoza, where on saline flats near the river, there was, in places, considerable die-back of newly planted trees. *Cytospora chrysosperma* was universally present on the affected stems. In most cases it might safely be regarded as a secondary parasite on trees which had not recovered from transplanting, but it also occurred on a few trees that appeared to be well established, and on these it did seem that it might be a real parasite.

Slime flux (exudation of sap fermented by bacteria and yeasts) occurred in several areas, notably Hostalrich. In nearly every case it appeared to be associated with attack by boring insects.

Small dead patches of bark strongly reminiscent of the localized bacterial infections of bark which occur in Italy, were noted on one tree at Hostalrich. This disease, which causes minor defects in the wood, and spoils it for veneering, is quite distinct from, and much less serious than, bacterial canker of poplar as known in northwest Europe.

Unexplained die-back of *P. nigra* cv. 'italica' was noted in several areas. It is of course well known both in Europe and America, that this variety is prone to die-back, which has been variously, but never very satisfactorily explained.

Evidence of the presence of *Melampsora* rust was found on fallen leaves of the previous year in several places, and also in the form of *caeomata* on *Allium* sp., but it was of course too early to observe actual attacks on poplar.

It will be noted that no poplar names, with the exception of *P. nigra* cv. 'italica' have been given above. It can be assumed that the other diseases mentioned occurred on the one or more of the forms of *Populus* x *euramericana* which are grown commercially in Spain.

D. THE UTILIZATION OF POPLAR WOOD

by

G. Giordano and F. Najera

The insufficiency of the timber obtained from Spanish forests in relation to the country's needs enhances considerably the value of tree plantations outside the forest, and in this respect, the poplar plays an extremely important part.

The traditional end-uses of poplar wood in Spain, however, have not yet been developed, as elsewhere, into definite forms of industrial utilization.

In Catalonia, the cultivar 'Bordils' is employed for the manufacture of mechanical pulp and cases for wine and champagne. The plantations near Zaragoza ('negrito' and 'Pinsèque') are due, in a region with a great lack of forest stands, to provide industrial timber (sawn wood, wood for furniture) and constructional timber, but above all wood for packaging.

In the surroundings of Granada, along the river Genil, the magnificent very dense plantations of 'Negrito' and of 'Blanquillo' provide trees of small dimension. The former is especially famous for its habit, which enables its utilization for poles and for the construction of light sheds for drying tobacco. Small as they are, these poplars are readily sold on the market for conversion into sawn wood or rafters; the very small logs are used for the manufacture of feet for chairs.

Even though the traditional end-uses of poplar wood are not as varied in Spain as in Central Europe and in Italy, the initiatives taken by some technicians and industries must not be overlooked. A very interesting exhibition was seen in Madrid of solid furniture and interior decorations made from blocks of poplar planks glued together. These are interesting achievements and all the delegates were struck by the pleasant look of the finished works made from a raw material with originally no particular attraction.