

To the Joint Commission on  
Scientific and Technical  
Cooperation: USA-USSR

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*Ray*

Washington, D. C. October 30, 1974

*FORESTRY*

REPORT

The Joint USA-USSR Working Group on Scientific and Technical Cooperation in Forestry transmits to the USA-USSR Joint Commission the Minutes of the Meeting between the leader of the USSR Delegation - Mr. G. I. Vorobyov, Chairman of the State Forestry Committee, USSR Council of Ministers, and of the leader of the USA Delegation - Mr. J. R. McGuire, Chief, Forest Service, U. S. Department of Agriculture--as well as Minutes of the Second Meeting of the USA-USSR Working Group with appropriate appendices.

The Delegations request the Joint Commission to approve this program so that further scientific and technical cooperation may go forward as rapidly as possible.

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*John McGuire*  
J. R. McGuire  
Chief, Forest Service  
U. S. Department of Agriculture

*G. I. Vorobyov*  
G. I. Vorobyov  
Chairman, State Forestry  
Committee  
USSR Council of Ministers

**\*USDA Waiver Letter In ERU File\***

of the meeting of the Chairman of the State Forestry Committee, USSR Council of Ministers and the Leader of the U.S. Forestry Delegation on Scientific and Technical cooperation in Forestry

During the period of October 18 to October 30, 1974, talks between the delegations of the State Forestry Committee, USSR Council of Ministers and the USA headed by the Forest Service, Department of Agriculture, on Scientific and Technical Cooperation in Forestry were held in Washington, D.C.

The Participants were:

on the American side:

J. R. McGuire	Chief, Forest Service, U.S. Department of Agriculture
M. B. Dickerman	Deputy Chief for Research Forest Service
R. W. Brandt	Director of International Forestry Forest Service
L. Biddison	Assistant Regional Forester Division of Fire and Air Management Forest Service
E. Ellwood	Dean, School of Forest Resources North Carolina State University
O. Traczewitz	Director of Woodlands, International Paper Company

on the Soviet side:

G. Vorobyov	Chairman, State Forestry Committee USSR Council of Ministers
N. Moissejev	Chief, Department of Science, Introduction of Advanced Methods and Foreign Relations

P. I. Moroz	Chief of the All Union Forestry Planning Association
E. S. Artsybashev	Chief of the Forestry Fire Branch of the Leningrad Scientific-Research Institute on Forestry
K. T. Gaftanyuk	Chief of the L'vov Forestry Administration
N. N. Larionova	Senior Engineer, Foreign Relations Department, USSR State Forest Economy

During the talks the delegations confirmed interest in subject areas discussed previously, and outlined possible new approaches to Scientific and Technical Cooperation in Forestry and expressed satisfaction with the results of cooperative work performed since the first meeting in 1973.

The plan for Scientific and Technical Cooperation for 1974-79 continues to be directed toward solving the following main problems of mutual interest:

- I. Effective methods and means of detection, prevention, and control of forest fires;
- II. Integrated control of forest insects and diseases;
- III. Classification of forest biogeocenosis and determination of their biological productivity potential;
- IV. Development of improved technological processes of forest harvesting;
- V. Reforestation and afforestation.

The delegations noted that all listed subjects are directly connected with the environment.

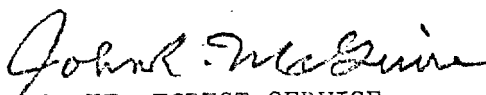
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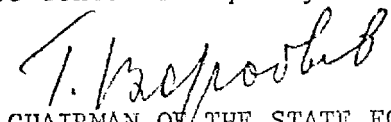
the work plan of the joint scientific-research of the USSR and the USA in the field of forestry for 1974-1979, specified the topics of scientific-technical cooperation, and also approved the minutes of the second meeting of the working group (with appendices including the work plan) and specific research methods for 1975 on the topic, "Techniques and Tactics of Extinguishing Forest Fires with Chemical Substances on the Ground and from the Air," the implementation of which is provided by the Soviet-American plan for scientific-technical cooperation for 1974-1979.

During the visit in the USA, the Russian Delegation became acquainted with activities of the Forest Insect and Disease Laboratory and Yale University at New Haven, Connecticut; the North Central Forest Experiment Station and University of Minnesota in Minneapolis; the Forestry Sciences Laboratory and Oregon State University at Corvallis, Oregon; and the Forest Fire Laboratories at Missoula, Montana. The USSR foresters also visited the Western Forestry Center at Portland, Oregon.

Both parties note with satisfaction that their meeting proceeded in an amicable and business-like atmosphere, and will contribute to a strengthening of cooperation in the field of forestry. The parties agreed that further exchanges can be carried forth on a scientist-to-scientist basis in line with the above program areas.

These minutes have been drawn up in Washington, D.C., on October 30, 1974, in Russian and in English, and these two texts are equally valid.

  
CHIEF, FOREST SERVICE  
U.S. DEPARTMENT OF  
AGRICULTURE

  
CHAIRMAN OF THE STATE FORESTRY  
COMMITTEE OF THE USSR COUNCIL  
OF MINISTERS

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M I N U T E S

of the Second Meeting of the Joint American-Soviet Working Group of Experts on Scientific and Technical Cooperation in the Field of Forestry

In accordance with the Agreement between the Governments of the USA and USSR for cooperation in the fields of Science and Technology, signed on May 24, 1972, and with the decision of the First Session of the American-Soviet Joint Commission on Scientific and Technical Cooperation, the second meeting of the Joint American-Soviet Working Group of experts on Scientific and Technical Cooperation in the Field of Forestry was held.

The meeting took place in Washington, D. C., from October 18 to October 30, 1974.

The Working Group of the Soviet Delegation was headed by N. Moissejev, Chief of the Department of Research, Introduction of Progressive Innovation and Foreign Relations, State Forestry Committee, USSR Council of Ministers.

The Working Group of the American Delegation was headed by M. B. Dickerman, Deputy Chief for Research, Forest Service, U. S. Department of Agriculture.

Scientific-technical cooperation in the field of forestry for the period between the First and Second meetings was summed up at the meeting of the working group; measures for implementing topics of scientific-technical cooperation, planned at the First meeting, were examined; work plans for scientific-research for 1974-1979 were prepared and approved; the time and place for holding the Third meeting of the working group was agreed.

Specifically, the following agreements were reached:

1. The working group evaluated positively the results of scientific-technical cooperation in the field of forestry during the period between the first and second meetings of the working group.

2. In the course of implementing Soviet-American cooperation, the sides exchanged scientific-technical information on forestry questions of interest to them.

3. The working group acknowledges the necessity of developing scientific-technical cooperation in the directions and manner adopted at the previous meeting in September 1973 in Moscow (according to Appendix 1 of the minutes of the first meeting).

4. The working group further developed and generally approved a work plan (Appendix 1) of joint scientific-research between the USSR and the USA in the field of forestry for 1975-1979, and approved research methods for 1975 on the topic: "Techniques and Tactics of Extinguishing Forest Fires with Chemical Substances on the Ground and from the Air." (Appendix 2).

5. The working group acknowledged the usefulness of the topics adopted at the first meeting for further mutually beneficial cooperation in the field of forestry. (Appendix 3).

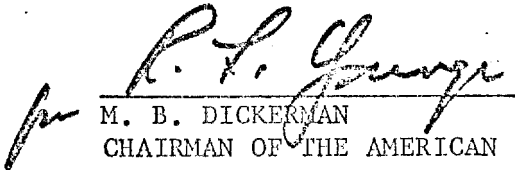
6. An understanding was reached on carrying out a periodic mutual exchange of groups of experts during 1975 for the purpose of reviewing the implementation of joint work, for discussion of the results of research carried out, and for exchange of mutual information. Specific dates and the places for conducting mutual visits will be agreed during the course of work.

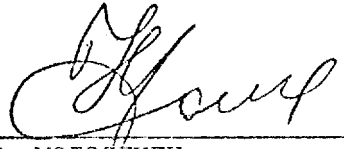
7. The working group recognizes that the mutual exchange of information materials must be executed in compliance with the legislation of each of the sides. Any information acquired in the course of scientific and technical cooperation may be transmitted to a third party upon agreement between the two contracting sides.

8. Members of the working group pointed out, with pleasure, the mutual understanding and business atmosphere of the meeting.

9. The working group agreed that further exchanges can be carried forth on a scientist-to-scientist basis in line with the above program areas if the proposed program is approved by the Joint Commission.

The Minutes are recorded and signed in Washington, D. C., on October 30, 1974, two copies, in English and Russian. Both texts are equally valid.

  
M. B. DICKERMAN  
CHAIRMAN OF THE AMERICAN PART  
OF THE WORKING GROUP IN THE  
FIELD OF FORESTRY

  
N. MOISSEYEV  
CHAIRMAN OF THE SOVIET PART  
OF THE WORKING GROUP IN THE  
FIELD OF FORESTRY

THE PROBLEMS SUBJECTED TO JOINT WORK IN FURTHEREXPANSION OF COOPERATION

1. Genetics. Selection, introduction, and forest seed production.
2. Establishment of high-productive and early-maturing plantations, including utilization of effluents for the purposes of irrigation.
3. Development of methods of forest inventory and forest organization with the use of measurement techniques and air survey (aerial photography).
4. Economics and organization of multipurpose forestry.
5. Interrelationships of the forest and the environment.
6. Dutch elm disease in shelterbelts and methods of its control.
7. Establishment and maintenance of forest stands optimal structure.
8. Biological and chemical methods of control *Fomes annosus*.
9. Training of scientific personnel by means of postgraduate (studentship) and by skill improvement of managing personnel.



APPROVED:

*Robert McGuire*  
R. MCGUIRE  
CHIEF, FOREST SERVICE  
U.S. DEPARTMENT OF AGRICULTURE

APPROVED:

WORKING PLAN FOR USSR AND USA JOINT RESEARCH  
IN THE FIELD OF FORESTRY  
FOR 1974-1979

*T. Vorobyov*  
G. I. VOROBYOV  
CHAIRMAN, STATE FORESTRY  
COMMITTEE  
USSR COUNCIL OF MINISTERS

I Domination of subjects and stages of research activities		Participant Organizations		Date of Fulfillment	Beginning	Termination	Forms of Cooperation
1	2	3	4	5	6	7	

I. Development of effective methods and means of detection, prevention, and forest fire controls.

State Forestry Committee, USSR Council of Ministers	USSR	USA	1974	1979	
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Technique and tactics of detection, prevention, and control of forest fires, particularly with the use of aircraft and chemicals.

LennIIKH Central base for aircraft forests protection	USSR	USA Forest Fire Laboratory, Missoula (Montana), San-Dimas Equipment Development Center.	1974	1977	
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a) Development of techniques and tactics of forest fire control (extinguishing) with the application of chemicals on the ground and from air.

"	"	"	1974	1977	
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(1) Development and Coordination of the exchange program and methods of conducting experiments.

LennIIKH Central base for aircraft forest protection.	USSA Forest Service Washington, D. C.	1974	1974	Exchange of information, programs and methods of research.
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(2) Conduct comparative tests of the most effective chemicals on the air and ground and development of recommendation for their use.

LennIILKH  
Central base for aircraft forest protection.  
Forest Fire Laboratory, Missoula (Montana). San-Dimas Equipment Center.  
1975  
1976

Dispatch of American specialists to USSR to conduct experiments. Exchange of samples of chemicals.

(3) Evaluation of methods of forest fire control (extinguishing) with chemicals from the air and development of recommendation for their use.

LennIILKH  
Central base for aircraft forest protection.  
Forest Fire Laboratory, Missoula (Montana). San-Dimas Equipment Center.  
1976  
1977

Dispatch of USSR specialists to USA. Exchange of information.

Development and operation of automated systems for forest fire protection.

LennIILKH  
USDA Forest Service Washington, D. C.  
1974  
1976

Exchange of information.

Artificial inducing of precipitation and prevention of lightning in forest fire control.

LennIILKH  
Forest Fire Laboratory, Missoula (Montana)  
1974  
1975

Exchange of information.

Additional items of interest:

a) Detection of forest fires with the use of infrared equipment.

LennIILKH  
Forest Fire Laboratory, Riverside, California.  
1974  
1976

Exchange of information.

b) Forest fire hazard rating by weather elements.

LennIILKH  
USDA, Forest Service  
1974  
1975

Dispatch of specialists to USSR and exchange of information.

Development of mathematical model for forest fire behavior.

DalnIILKH  
Forest Fire Laboratory, Missoula (Montana)  
1974  
1975

Exchange of information.

d) Ground equipment for forest fire control.

LennIILKH  
VNIMLesKHoz  
DalnIILKH  
San-Dimas Equipment Development Center  
1974  
1976

Exchange of information.

1 2 3 4 5 6 7

II Integrated control of forest pests and diseases.

State Forestry Committee, USSR Council of Ministers. USDA, Forest Service Washington, D.C.

1974 1979

1. Integrated control of Gypsy moth (Porthetria dispar).

VNIITM UkrNIILKH

Laboratory of Forest Insects and Diseases - Connecticut and Oregon.

1974 1979

(a) Methods of Gypsy moth assessment and forecasting of populations.

VNIITM UkrNIILKH

- Assessment and forecasting methods for Gypsy moth.

" " " "

1974 1975

Exchange of Information

- Analysis of Gypsy moth outbreaks and modifying factors in dynamics of its population.

" " " "

1975 1976

Exchange of Information

- Prediction of Gypsy moth outbreaks and tests under field conditions.

" " " "

1976 1979

Exchange of Information

(b) Methods and techniques of Gypsy moth control with the use of attractants.

" " " "

1974 1979

- Determination of trends in application of Gypsy moth attractants and development of program and methods of research.

VNIITM " "

1974 4th Qtr. 1975

Exchange of Information

	1	2	3	4	5	6	7
		- use of attractants in detection of Gypsy moth.	VNIIM	Laboratory of Forest Insects and Diseases - Connecticut and Oregon.	1975	1976	Joint work.
		- development of methods and technique of attractant application in control of Gypsy moth.	VNIIM	"	1977	1979	Joint work. Exchange of results of Exchange of specialists.
2.		Improvement of microbiological and chemical methods for control of forest insects.	VNIIM UKRNIILKHA	Pacific Northwest Forest Experiment Station, Oregon.	1975	1979	Development of detailed plan and research program by USA.

	1	2	3	4	5	6	7
1.	Classification of forest biogeocoenoses and determination of their productivity.	USSR Academy of Sciences, State Forestry Comm.	USDA, Forest Service.	1974	1979	Continued exchange of information.	
2.	Development and specification of classification of forest biogeocoenoses.	Forest Laboratory of USSR Academy of Sciences; VNIILM.	Forest Laboratory, Intermountain Forest Experiment Station, Missoula, Montana.	1974	1975	Exchange of information.	
3.	Determination of potential productivity of forests (bearing in mind the multiple use of forests).	Forest Laboratory of USSR Academy of Sciences, VNIILM, LenninIKH.	Southeastern Forest Experiment Station, Asheville, N.C.	1975	1976	Exchange of information.	
4.	Influence of forestry activities on dynamics of forest biogeocoenoses, including use of chemicals in forest management stages.	VNIILM, LenninIKH.	Asheville, N.C.	1975	1979		
5.	(a) Development of program and methods of joint research.			1975	1975	Exchange of information. Development of detailed research program by U.S.A. by 1975.	

	1	2	3	4	5	6	7
IV							
Development of improved technological processes and means of mechanization of forest harvesting.			State Forestry Committee, USSR Council of Ministers.	USDA, Forest Service Washington, D.C.	1974	1979	Exchange of Information.
1. Technology of clearcutting and clearing the site.			VNIIM, Leningrad Forestry Research Institute.	Forest Service, Research Washington, D.C.	1974	1975	Exchange of Information.
2. Study of changes in the forest environment as a result of cutting and mechanical logging.			All-Union Research Institute for Forestry and Mechanization.	Pacific Northwest Forest Experiment Station, Portland, Oregon.	1975		Exchange of Information.
3. Development of technology and means of mechanization of partial cuttings.			VNIIM, Tbilice Institute of Forestry Sochi Forest Experiment Station.	Forest Service, Research, Washington, D.C.	1974	1977	Exchange of Information.
(a) Development of technology and means of mechanization of shelterwood and selection cuttings, with use of machinery and equipment (for mountain regions and flat lands).			"	"	1974	1977	Exchange of Information.
(a.1) Analysis of completed research and scientific-technical developments on principal cuttings.			"	"	1974	1975	Exchange of Information.
(a.2) Methods of appraising environmental impact of shelterwood and selection cuttings.			"	"	1974	1976	Exchange of Information.

	1	2	3	4	5	6	7
(a.3)	Development of forest management and mechanical requirements for machinery used for principal cuttings under various forest conditions.	VNIIIM, Tbilice Institute of Forestry, Sochi Forest Experiment Station.	Forest Service, Research, Washington, D.C.	2nd Qtr. 1975 3rd & 4th	1976	Exchange of information. Dispatching of experts.	
b.	Development of technology and means of mechanization for thinning.	VNIIIM	Forest Service, Research, Washington, D.C.	1975	1975	Exchange of information.	
(b.1)	Development of program forests in flat lands. Analysis of completed research and scientific and technical developments on the problem of thinning.	"	"	1976	Exchange of information.		
(b.2)	Development of forest management and methods for joint work technical and requirements for machinery used for thinnings under various forest conditions.	"	"	1977	Exchange of information. Dispatching of specialists.		
4.	Economic evaluation of forest productivity as applied to classification.	"	Scientific Forestry Laboratory, Intermountain Experimental Forest Station, (Idaho).	1976	Exchange of information.		

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<p>V. Reforestation and afforestation of shelterbelts</p>	<p>State Forestry Committee Vaskhnii</p>	<p>USDA Forest Service</p>	<p>1974</p>	<p>1979</p>	<p></p>
<p>Introduction, selection breeding and seed production of tree species.</p>	<p>Vnialmi Vnillm Uknillkha</p>	<p>Research Department, Forest Service Washington, D.C.</p>	<p>1974</p>	<p>1979</p>	<p>Exchange of information Exchange of selected stock. Joint research</p>
<p>a) Working out the joint program and methods of research.</p>	<p>"</p>	<p>"</p>	<p>1975 4th Qtr.</p>	<p>1976</p>	<p>Exchange of research programs.</p>
<p>b) Identification and application of genetic and selection methods for increasing efficiency.</p>	<p>"</p>	<p>"</p>	<p>1975 4th Qtr.</p>	<p></p>	<p>Exchange of selected stock. Joint field experiments in USSR and USA with the use of selected stock</p>
<p>c) Studies of growth and state of various hybrid plants on test plots with the use of biometric, physiological, electrophysiological and biochemical methods. Development of vegetative reproduction methods for the most valuable selected plants.</p>	<p>"</p>	<p>"</p>	<p>1976</p>	<p>1979</p>	<p>Recommendation of the most prospective assortment of hybrid plants and forms for the purpose of protective reforestation and their forestry and biological characteristics. Reciprocal business trips of experts from both sides to USSR and USA.</p>
<p>d) Coordination of principles and methods of research conducted on various species.</p>	<p>"</p>	<p>"</p>	<p>1975 4th Qtr.</p>	<p>1976</p>	<p>Mutual exchange of materials for coordination.</p>



1 2 3 4 5 6 7

e) Studies on consequences of using seeds of various species, ecotypes and forms with the aim of selecting best prospects and determining targets for joint experiments on seed production.

Vnialmi Vniilm Ukrnilkha

Research Department, Forest Service Washington, D.C.

1975 1975 4th Qtr.

Exchange of reports on research results.

f) Parallel experiments, based on application of similar vegetative stock or similar research methods.

" "

1976 1979

Exchange of annual reports on research results of specified program and methods. Reciprocal business trips of experts

g) Summing up results of joint research.

" "

Exchange of reports on research results on subject and recommendations on seed growing protective reforestation. Joint discussion results of subject study making decision on the prospects of further cooperation.

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2 Establishment of shelterbelts in various natural conditions and their tending. UNIAIMI UKRNIIKH

Rocky Mountain Forest Experiment Center, Lincoln, Nebraska

1974

1979

Exchange of information. Preparation of joint work program

a) Studies on reclamation, preparation, and nutrition of soils with application of ameliorants or without them.

"

"

1974

1979

Exchange of information on the state of subject. Working out of research program.

"

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1974

1975

Exchange of published papers.

Specification of research program.

"

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1974

1976

Exchange of programs and scientific reports. Reciprocal business trips of experts.

b) Testing and technology of herbicides in control of weedy vegetations.

"

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1974

1979

Exchange of information on the state of subject. Working out of research program.

"

"

1974

1975

Exchange of published papers.

Specification of research program.

"

"

1976

1976

Exchange of programs and scientific reports. Reciprocal business trips of experts.

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c) Effects of shelterbelts on agriculture and wildlife. VNIAIMI  
UKRNIIKXH Rocky Mountain Forest Experiment Center, Lincoln, Nebraska 1974 1979

Exchange of information on the state of subject. Working out research program. " " " " 1974 1975 Exchange of published papers.

d) Specification of research program. " " " " 1974 1975 Exchange of programs and scientific reports.  
Specific mixtures and spacing within and between shelterbelts on nonirrigated and irrigated lands. " " " " 1974 1979 Exchange of published papers.

Exchange of information on the state of subject. Working out research program. " " " " 1975 1975 Exchange of programs and scientific reports.

Specification of research program. " " " " 1975 1975 Exchange of programs and scientific reports.

e) Summary and recommendations. " " " " 1979 1979 Exchange of reports of research results and recommendations.

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		Technology and large-scale mechanization of reforestation activities.	Lennilikh VNILM Latnilikh	Laboratory of forest field shelterbelts, Experimental Center, Region of Rocky Mountains, Bottineau (N. Dakota)	1974	1979	
a)	Production of planting stock with enclosed root system.	"	"	"	1974	1979	
	Exchange of information on the state of subject on production of planting stock with enclosed root system. Working out of research program.	"	"	"	1974	1975	Exchange of published papers.
	Specification of research programs. Laying out experiments on production of planting stock with enclosed root system from seedlings by various methods. (Placement of seedling roots into subpressed substrate, briquettes and containers.) Mechanization of operations.	"	"	"	1975	1976	Exchange of programs and scientific reports. Reciprocal business trips of experts.
	Studies on determination of dates and conditions of planting stock growing with enclosed root system from seedlings in connection with briquette sizes.	"	"	"	1975	1976	Exchange of scientific reports.

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Analysis of existing mechanization on production of planting stock with enclosed root system and working out agriculture requirements for new machinery.  
Lennilikh  
VniliM  
LatniliKHP

Laboratory of forest field shelterbelts, Experimental Center, Region of Rocky Mountains, Bottineau (N. Dakota)  
1975  
1977

Exchange of scientific reports.

Experiments on growing seedlings with enclosed root system by sowing seeds into briquettes and containers. Mechanization of operations.

Exchange of scientific reports.

Prospective production methods of planting stock with enclosed root system based on results achieved.

Exchange of summarized scientific reports. Reciprocal business trip of experts.

Mechanization and automation of operation on growing of planting stock in conditions of controlled environment.

Exchange of published papers.

Exchange of information on mechanization of operations for growing planting stock in plastic greenhouses. Working out of research programs.

Specification of research program. Development of machinery for growing of seedlings in conditions of controlled environment.

Exchange of scientific reports. Bilateral business trips of experts.

Test of existing machinery and equipment in conditions of controlled environment.

Exchange of scientific reports.

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	2	3	4	5	6	7
	Development of necessary machinery for large scale mechanization of seedlings growing in greenhouses.	LennIIKHX VNIIIM LennIIKHP	Laboratory of forest field shelterbelts, Experimental Center, Region of Rocky Mountains, Bottineau (N. Dakota)		1977	Exchange of scientific reports.
	Testing of machinery complex including recently ones developed in conditions of controlled environment.	"	"		1978	Exchange of scientific reports.
	Continuation of tests and working out recommendations on complex of machinery for growing of seedlings in conditions of controlled environment.	"	"		1979	Exchange of scientific reports. Reciprocal business trips of experts.
c)	Mechanization of reforestation activities.	VNIIIM LennIIKHX	"	1974	1979	
	Exchange of information on establishment of coniferous plantations on cutovers in conditions of intensive alternation of species.	"	"		1975	Exchange of published papers.
	Exchange of information on reforestation activities on drained excessive waterlogged soils.	LennIIKHX VNIIIM	"		1975	Exchange of published papers.
	Development of research program.	VNIIIM LennIIKHX	"		1975	Exchange of published papers.

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<p>Experiments on mechanization of activities on fresh cutovers in conditions of quick alternation of species.</p>	VNIIIM	<p>Laboratory of forest field shelter-belts, Experimental Center, Region of Rocky Mountains, Bottineau (N. Dakota)</p>	1975	<p>Exchange of scientific papers.</p>	
<p>Experiments on establishment of plantations on water-logged soils with the use of briquettes (soil preparation, planting).</p>	LennIIIKM	"	1975	<p>Exchange of scientific papers.</p>	
<p>Specification of research program.</p>	VNIIIM LennIIIKH	"	1975	<p>Reciprocal business trips of experts.</p>	
<p>Field experiments with reforestation methods based on large-scale mechanization and application of chemicals under conditions of species alternation.</p>	VNIIIM	"	1976	<p>Exchange of scientific papers.</p>	
<p>Laying out of experiments using briquettes on establishment of forest cultures and plantations on drained lands.</p>	LennIIIKH	"	1976	<p>Exchange of scientific papers.</p>	

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Studies of pine and spruce cultures on quickly over-growing cutovers under large-scale mechanization of operations with the use of transplants.	VNIILM		Laboratory of forest field shelter-belts, Experimental Center, Region of Rocky Mountains, Bottineau (N. Dakota)		1977	Exchange of scientific papers.
Large-scale mechanization of activities of establishment of forest plantation with briquettes.	LennIILKH		"		1977	Exchange of scientific papers.
Studies on large-scale mechanization and application of chemicals in establishment of forest plantations on cut-land under conditions of species alteration.	VNIILM		"		1978	Exchange of scientific papers.
Silvicultural and economic appraisal of methods of reforestation and establishment of plantation type forest stands by using planting stock with enclosed root system.	LennIILKH		"		1978	Exchange of scientific papers.
Analysis of prospective methods of mechanization and application of chemicals for cutover reforestation with the use of transplants and briquettes.	VNIILM LennIILKH		"		1978 1979	Exchange of scientific papers. Reciprocal business trips of experts.



d) Summary and recommendations

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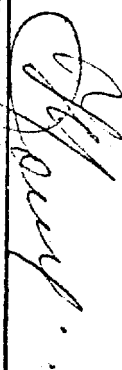
M. B. DICKERMAN

CHAIRMAN OF THE AMERICAN PART  
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FIELD OF FORESTRY



N. MOISSEYEV

CHAIRMAN OF THE SOVIET PART  
OF THE WORKING GROUP IN THE  
FIELD OF FORESTRY



1979

Exchange of reports  
of research results  
and recommendations

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To the Joint Commission on  
Scientific and Technical  
Cooperation: USA-USSR

*R*

Washington, D. C. October 30, 1974

R E P O R T

The Joint USA-USSR Working Group on Scientific and Technical Cooperation in Forestry transmits to the USA-USSR Joint Commission the Minutes of the Meeting between the leader of the USSR Delegation - Mr. G. I. Vorobyov, Chairman of the State Forestry Committee, USSR Council of Ministers, and of the leader of the USA Delegation - Mr. J. R. McGuire, Chief, Forest Service, U. S. Department of Agriculture--as well as Minutes of the Second Meeting of the USA-USSR Working Group with appropriate appendices.

The Delegations request the Joint Commission to approve this program so that further scientific and technical cooperation may go forward as rapidly as possible.

*John R. McGuire*

J. R. McGuire  
Chief, Forest Service  
U. S. Department of Agriculture

*G. I. Vorobyov*

G. I. Vorobyov  
Chairman, State Forestry  
Committee  
USSR Council of Ministers

*ScT - Forestry*

MINUTES

of the meeting of the Chairman of the State Forestry Committee, USSR Council of Ministers and the Leader of the U.S. Forestry Delegation on Scientific and Technical cooperation in Forestry

During the period of October 18 to October 30, 1974, talks between the delegations of the State Forestry Committee, USSR Council of Ministers and the USA headed by the Forest Service, Department of Agriculture, on Scientific and Technical Cooperation in Forestry were held in Washington, D.C.

The Participants were:

on the American side:

J. R. McGuire

Chief, Forest Service, U.S.  
Department of Agriculture

M. B. Dickerman

Deputy Chief for Research  
Forest Service

R. W. Brandt

Director of International Forestry  
Forest Service

L. Biddison

Assistant Regional Forester  
Division of Fire and Air Management  
Forest Service

E. Ellwood

Dean, School of Forest Resources  
North Carolina State University

O. Traczewitz

Director of Woodlands, International  
Paper Company

on the Soviet side:

G. Vorobyov

Chairman, State Forestry Committee  
USSR Council of Ministers

N. Moissejev

Chief, Department of Science,  
Introduction of Advanced Methods  
and Foreign Relations

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29 JAN 1975

P. I. Moroz	Chief of the All Union Forestry Planning Association
E. S. Artsybashev	Chief of the Forestry Fire Branch of the Leningrad Scientific-Research Institute on Forestry
K. T. Gaftanyuk	Chief of the L'vov Forestry Administration
N. N. Larionova	Senior Engineer, Foreign Relations Department, USSR State Forest Economy

During the talks the delegations confirmed interest in subject areas discussed previously, and outlined possible new approaches to Scientific and Technical Cooperation in Forestry and expressed satisfaction with the results of cooperative work performed since the first meeting in 1973.

The plan for Scientific and Technical Cooperation for 1974-79 continues to be directed toward solving the following main problems of mutual interest:

- I. Effective methods and means of detection, prevention, and control of forest fires;
- II. Integrated control of forest insects and diseases;
- III. Classification of forest biogeocenosis and determination of their biological productivity potential;
- IV. Development of improved technological processes of forest harvesting;
- V. Reforestation and afforestation.

The delegations noted that all listed subjects are directly connected with the environment.

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the work plan of the joint scientific-research of the USSR and the USA in the field of forestry for 1974-1979, specified the topics of scientific-technical cooperation, and also approved the minutes of the second meeting of the working group (with appendices including the work plan) and specific research methods for 1975 on the topic, "Techniques and Tactics of Extinguishing Forest Fires with Chemical Substances on the Ground and from the Air," the implementation of which is provided by the Soviet-American plan for scientific-technical cooperation for 1974-1979.

During the visit in the USA, the Russian Delegation became acquainted with activities of the Forest Insect and Disease Laboratory and Yale University at New Haven, Connecticut; the North Central Forest Experiment Station and University of Minnesota in Minneapolis; the Forestry Sciences Laboratory and Oregon State University at Corvallis, Oregon; and the Forest Fire Laboratories at Missoula, Montana. The USSR foresters also visited the Western Forestry Center at Portland, Oregon.

Both parties note with satisfaction that their meeting proceeded in an amicable and business-like atmosphere, and will contribute to a strengthening of cooperation in the field of forestry. The parties agreed that further exchanges can be carried forth on a scientist-to-scientist basis in line with the above program areas.

These minutes have been drawn up in Washington, D.C., on October 30, 1974, in Russian and in English, and these two texts are equally valid.

*John McGuire*  
CHIEF, FOREST SERVICE  
U.S. DEPARTMENT OF  
AGRICULTURE

*T. Repovch*  
CHAIRMAN OF THE STATE FORESTRY  
COMMITTEE OF THE USSR COUNCIL  
OF MINISTERS

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M I N U T E S

of the Second Meeting of the Joint American-Soviet Working Group of Experts on Scientific and Technical Cooperation in the Field of Forestry

In accordance with the Agreement between the Governments of the USA and USSR for cooperation in the fields of Science and Technology, signed on May 24, 1972, and with the decision of the First Session of the American-Soviet Joint Commission on Scientific and Technical Cooperation, the second meeting of the Joint American-Soviet Working Group of experts on Scientific and Technical Cooperation in the Field of Forestry was held.

The meeting took place in Washington, D. C., from October 18 to October 30, 1974.

The Working Group of the Soviet Delegation was headed by N. Moissejev, Chief of the Department of Research, Introduction of Progressive Innovation and Foreign Relations, State Forestry Committee, USSR Council of Ministers.

The Working Group of the American Delegation was headed by M. B. Dickerman, Deputy Chief for Research, Forest Service, U. S. Department of Agriculture.

Scientific-technical cooperation in the field of forestry for the period between the First and Second meetings was summed up at the meeting of the working group; measures for implementing topics of scientific-technical cooperation, planned at the First meeting, were examined; work plans for scientific-research for 1974-1979 were prepared and approved; the time and place for holding the Third meeting of the working group was agreed.



Specifically, the following agreements were reached:

1. The working group evaluated positively the results of scientific-technical cooperation in the field of forestry during the period between the first and second meetings of the working group.

2. In the course of implementing Soviet-American cooperation, the sides exchanged scientific-technical information on forestry questions of interest to them.

3. The working group acknowledges the necessity of developing scientific-technical cooperation in the directions and manner adopted at the previous meeting in September 1973 in Moscow (according to Appendix 1 of the minutes of the first meeting).

4. The working group further developed and generally approved a work plan (Appendix 1) of joint scientific-research between the USSR and the USA in the field of forestry for 1975-1979, and approved research methods for 1975 on the topic: "Techniques and Tactics of Extinguishing Forest Fires with Chemical Substances on the Ground and from the Air." (~~Appendix 2~~)

5. The working group acknowledged the usefulness of the topics adopted at the first meeting for further mutually beneficial cooperation in the field of forestry. (Appendix 3).

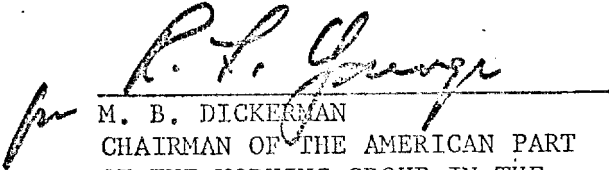
6. An understanding was reached on carrying out a periodic mutual exchange of groups of experts during 1975 for the purpose of reviewing the implementation of joint work, for discussion of the results of research carried out, and for exchange of mutual information. Specific dates and the places for conducting mutual visits will be agreed during the course of work.

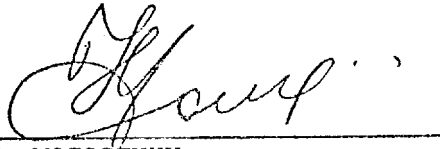
7. The working group recognizes that the mutual exchange of information materials must be executed in compliance with the legislation of each of the sides. Any information acquired in the course of scientific and technical cooperation may be transmitted to a third party upon agreement between the two contracting sides.

8. Members of the working group pointed out, with pleasure, the mutual understanding and business atmosphere of the meeting.

9. The working group agreed that further exchanges can be carried forth on a scientist-to-scientist basis in line with the above program areas if the proposed program is approved by the Joint Commission.

The Minutes are recorded and signed in Washington, D. C., on October 30, 1974, two copies, in English and Russian. Both texts are equally valid.

  
M. B. DICKERMAN  
CHAIRMAN OF THE AMERICAN PART  
OF THE WORKING GROUP IN THE  
FIELD OF FORESTRY

  
N. MOISSEYEV  
CHAIRMAN OF THE SOVIET PART  
OF THE WORKING GROUP IN THE  
FIELD OF FORESTRY

THE PROBLEMS SUBJECTED TO JOINT WORK IN FURTHEREXPANSION OF COOPERATION

1. Genetics. Selection, introduction, and forest seed production.
2. Establishment of high-productive and early-maturing plantations, including utilization of effluents for the purposes of irrigation.
3. Development of methods of forest inventory and forest organization with the use of measurement techniques and air survey (aerial photography).
4. Economics and organization of multipurpose forestry.
5. Interrelationships of the forest and the environment.
6. Dutch elm disease in shelterbelts and methods of its control.
7. Establishment and maintenance of forest stands optimal structure.
8. Biological and chemical methods of control *Fomes annosus*.
9. Training of scientific personnel by means of postgraduate (studentship) and by skill improvement of managing personnel.

APPROVED:

*Robert McGuire*  
 R. MCGUIRE  
 CHIEF, FOREST SERVICE  
 U.S. DEPARTMENT OF AGRICULTURE

APPROVED:

*T. Vorobyov*  
 G. I. VOROBYOV  
 CHAIRMAN, STATE FORESTRY  
 COMMITTEE  
 USSR COUNCIL OF MINISTERS

WORKING PLAN FOR USSR AND USA JOINT RESEARCH  
 IN THE FIELD OF FORESTRY  
 FOR 1974-1979

Determination of subjects and stages of research activities	Participant Organizations	Date of Fulfillment	Forms of Cooperation
2 Development of effective methods and means of detection, prevention, and forest fire controls.	USSR 3 USA 4	1974	Beginning 5 Termination 6 Cooperation 7
1 Technique and tactics of detection, prevention, and control of forest fires, particularly with the use of aircraft and chemicals.	USSR State Forestry Committee, USSR Council of Ministers	1974	1979
a) Development of techniques and tactics of forest fire control (distinguishing) with the application of chemicals on the ground and from air.	LenNILKH Central base for aircraft forests protection	1974	1977
(1) Development and Coordination of the exchange program and methods of conducting experiments.	USSR Central base for aircraft forest protection.	1974	1977
Exchange of information, programs and methods of research.	USSA Forest Service Washington, D. C.	1974	1974

(2) Conduct comparative tests of the most effective chemicals on the air and ground and development of recommendation for their use.

LenNIIILKH  
Central base for aircraft forest protection.

Forest Fire Laboratory, Missoula (Montana). San-Dimas Equipment Center.

1976

Dispatch of American specialists to USSR to conduct experiments. Exchange of samples of chemicals.

(3) Evaluation of methods of forest fire control (extinguishing) with chemicals from the air and development of recommendation for their use.

LenNIIILKH  
Central base for aircraft forest protection.

Forest Fire Laboratory, Missoula (Montana). San-Dimas Equipment Center.

1977

Dispatch of USSR specialists USA. Exchange of information.

2 Development and operation of automated systems for forest fire protection.

LenNIIILKH

USDA Forest Service Washington, D. C.

1976

Exchange of information.

3 Artificial inducing of precipitation and prevention of lightning in forest fire control.

LenNIIILKH

Forest Fire Laboratory, Missoula (Montana)

1975

Exchange of information.

4 Additional items of interest:

a) Detection of forest fires with the use of infrared equipment.

LenNIIILKH

Forest Fire Laboratory, Riverside, California.

1976

Exchange of information.

b) Forest fire hazard rating by weather elements.

LenNIIILKH

USDA, Forest Service

1975

Dispatch of specialists USSR and exchange of information.

Development of mathematical model for forest fire behavior.

DalNIIILKH

Forest Fire Laboratory, Missoula (Montana)

1975

Exchange of information.

d) Ground equipment for forest fire control.

LenNIIILKH  
VNIIMLesKHoz  
DalNIIILKH

San-Dimas Equipment Development Center

1976

Exchange of information.

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II. Integrated control of forest pests and diseases.

1. Integrated control of Gypsy moth (Porthetria dispar).

(a) Methods of Gypsy moth assessment and forecasting of populations.

- Assessment and forecasting methods for Gypsy moth.

- Analysis of Gypsy moth outbreaks and modifying factors in dynamics of its population.

- Prediction of Gypsy moth outbreaks and tests under field conditions.

(b) Methods and techniques of Gypsy moth control with the use of attractants.

- Determination of trends in application of Gypsy moth attractants and development of program and methods of research.

USDA, Forest Service Washington, D.C.	1974	1979	Exchange of information.
Laboratory of Forest Insects and Diseases - Connecticut and Oregon.	1974	1979	Exchange of information.
"	1974	1979	Exchange of information.
"	1974	1975	Exchange of information.
"	1975	1976	Exchange of information.
"	1976	1979	Exchange of information.
"	1974	1979	Exchange of information.
"	1974	4th Qtr. 1975	Exchange of information.

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- use of attractants in detection of Gypsy moth.	VNIILM	Laboratory of Forest Insects and Diseases - Connecticut and Oregon.	1975	1976	Joint work.
- development of methods and technique of attractant application in control of Gypsy moth.	VNIILM	"	1977	1979	Exchanged of results, Exchanged of specialists.
2. Improvement of microbiological and chemical methods for control of forest insects.	VNIILM UkrNIILKHA	Pacific Northwest Forest Experiment Station, Oregon.	1975	1979	Development of detailed plan and research program by USA.

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1. Classification of forest biogeocoenoses and determination of their productivity.	USSR Academy of Sciences, State Forestry Comm.	USDA, Forest Service.	1974	1979	Continue exchange of information.
1. Development and specification of classification of forest biogeocoenoses.	Forest Laboratory of USSR Academy of Sciences; VNIILM.	Forest Laboratory, Intermountain Forest Experiment Station, Missoula, Montana.	1974	1975	Exchange of information.
2. Determination of potential productivity of forests (bearing in mind the multiple use of forests).	Forest Laboratory of USSR Academy of Sciences, VNIILM, Lennilkh.	Southeastern Forest Experiment Station, Asheville, N.C.	1975	1976	Exchange of information.
3. Influence of forestry activities on dynamics of forest biogeocoenoses, including use of chemicals in forest management stages.	VNIILM, Lennilkh.	Asheville, N.C.	1975	1979	Exchange of information.
(a) Development of program and methods of joint research.			1975	1975	Development of detailed search program by U.S.A. side by 1975.



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IV

Development of improved technological processes and means of mechanization of forest harvesting.

Technology of clearcutting and clearing the site.

Study of changes in the forest environment as a result of cutting and mechanical logging.

Development of technology and means of mechanization of partial cuttings.

(a) Development of technology and means of mechanization of shelterwood and selection cuttings, with use of machinery and equipment (for mountain regions and flat lands).

(a.1) Analysis of completed research and scientific-technical developments on principal cuttings.

(a.2) Methods of appraising environmental impact of shelterwood and selection cuttings.

State Forestry Committee, USSR Council of Ministers.  
USDA, Forest Service Washington, D.C.

VNIILM, Leningrad Forestry Research Institute.  
Forest Service, Research Washington, D.C.

All-Union Research Institute for Forestry and Mechanization.  
Pacific Northwest Forest Experiment Station, Portland, Oregon.

VNIILM, Tbilice Institute of Forestry Forest Experiment Station.  
Forest Service, Research, Washington, D.C.

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(a.3)	Development of forest management and mechanical requirements for machinery used for principal cuttings under various forest conditions.	VNIIIM , Tbilice Institute of Forestry, Sochi Forest Experiment Station.	Forest Service, Research, Washington, D.C.	2nd Qtr. 1975 3rd & 4th	1976 1979	Exchange of information. Dispatching of experts.
b.	Development of technology and means of mechanization for thinning.	VNIIIM	Forest Service, Research, Washington, D.C.	1975	1975	Exchange of information.
(b.1)	Development of program forests in flat lands. Analysis of completed research and scientific and technical developments on the problem of thinning.	"	"	"	1976	Exchange of information.
(b.2)	Development of forest management and methods for joint work technical and requirements for machinery used for thinnings under various forest conditions.	"	"	"	1977	Exchange of information. Dispatch of specialists.
4.	Economic evaluation of forest productivity as applied to classification.	"	Scientific Forestry Laboratory, Intermountain Experimental Forest Station, (Idaho).	"	1976	Exchange of information.



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- e) Studies on consequences of using seeds of various species, ecotypes and forms with the aim of selecting best prospects and determining targets for joint experiments on seed production.
 

Vniialmi Vniilm	Research Depart- ment, Forest Service Washington, D.C.	1975	1975	Exchange of reports on research results.
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- f) Parallel experiments, based on application of similar vegetative stock or similar research methods.
 

"	"	1976	1979	Exchange of annual reports on research results of specified program and methods. Reciprocal business trips of experts
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- g) Summing up results of joint research.
 

"	"			Exchange of reports on research results on subject and recommendations on seed growing pro- tective reforestation. Joint discussion results of subject study making decision on the prospects further cooperation.
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2. Establishment of shelterbelts in various natural conditions and their tending.	UNIALMI UkrNIILKH	Rocky Mountain Forest Experiment Center, Lincoln, Nebraska	1974	1979	Exchange of information. Preparation of joint work program.
a) Studies on reclamation, preparation, and nutrition of soils with application of ameliorants or without them.	"	"	1974	1979	
Exchange of information on the state of subject. Working out of research program.	"	"	1974	1975	Exchange of published papers.
b) Specification of research program.	"	"	1974	1976 2nd Qtr.	Exchange of programs and scientific reports. Reciprocal business trips of experts.
Testing and technology of herbicides in control of weedy vegetations.	"	"	1974	1979	
Exchange of information on the state of subject. Working out of research program.	"	"	1974	1975	Exchange of published papers.
Specification of research program.	"	"	1974	1976 2nd Qtr.	Exchange of programs and scientific reports. Reciprocal business trips of experts.

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c)	Effects of shelterbelts on agriculture and wildlife.	VNIALMI UkrNIIKHK	Rocky Mountain Forest Experiment Center, Lincoln, Nebraska	1974	1979	
d)	Exchange of information on the state of subject. Working out research program.	"	"	1974	1975	Exchange of published papers.
e)	Specification of research program.	"	"	1975	1975	Exchange of programs and scientific reports.
	Specific mixtures and spacing within and between shelterbelts on nonirrigated and irrigated lands.	"	"	1974	1979	
	Exchange of information on the state of subject. Working out research program.	"	"	1975	1975	Exchange of published papers.
	Specification of research program.	"	"	1975	1975	Exchange of programs and scientific reports.
e)	Summary and recommendations.	"	"	1979	1979	Exchange of reports of research results and recommendations.

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3.	Technology and large-scale mechanization of reforestation activities.	LenNIIKHX VNIILM LatNIIKHP	Laboratory of forest field shelterbelts, Experimental Center, Region of Rocky Mountains, Bottineau (N. Dakota)	1974	1979	
a)	Production of planting stock with enclosed root system.	"	"	1974	1979	
	Exchange of information on the state of subject on production of planting stock with enclosed root system. Working out of research program.	"	"	1974	1975	Exchange of published papers.
	Specification of research programs. Laying out experiments on production of planting stock with enclosed root system from seedlings by various methods. (Placement of seedling roots into subpressed substrate, briquettes and containers.) Mechanization of operations.	"	"	1975	1976	Exchange of programs and scientific reports. Reciprocal business trips of experts.
	Studies on determination of dates and conditions of planting stock growing with enclosed root system from seedlings in connection with briquette sizes.	"	"	1975	1976	Exchange of scientific reports.

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<p>Analysis of existing mechanization on production of planting stock with enclosed root system and working out agriculture requirements for new machinery.</p>	<p>LennIILKH VNIILM LatNIILKHP</p>	<p>Laboratory of forest field shelterbelts, Experimental Center, Region of Rocky Mountains, Bottineau (N. Dakota)</p>	<p>1975</p>	<p>1977</p>	<p>Exchange of scientific reports.</p>
<p>Experiments on growing seedlings with enclosed root system by sowing seeds into briquettes and containers. Mechanization of operations.</p>	<p>"</p>	<p>"</p>	<p>1975</p>	<p>1978</p>	<p>Exchange of scientific reports.</p>
<p>Prospective production methods of planting stock with enclosed root system based on results achieved.</p>	<p>"</p>	<p>"</p>	<p>1976</p>	<p>1979</p>	<p>Exchange of summarized scientific reports. Reciprocal business trip of experts.</p>
<p>Mechanization and automation of operation on growing of planting stock in conditions of controlled environment.</p>	<p>"</p>	<p>"</p>	<p>1974</p>	<p>1979</p>	<p>Exchange of published papers.</p>
<p>Exchange of information on mechanization of operations for growing planting stock in plastic greenhouses. Working out of research programs.</p>	<p>"</p>	<p>"</p>	<p>1974</p>	<p>1975</p>	<p>Exchange of scientific reports. Bilateral business trips of experts.</p>
<p>Specification of research program. Development of machinery for growing of seedlings in conditions of controlled environment.</p>	<p>"</p>	<p>"</p>	<p>1975</p>	<p>1976</p>	<p>Exchange of scientific reports. Exchange of scientific reports.</p>
<p>Test of existing machinery and equipment in conditions of controlled environment.</p>	<p>"</p>	<p>"</p>	<p>1975</p>	<p>1976</p>	<p>Exchange of scientific reports.</p>

b)



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Development of necessary machinery for large scale mechanization of seedlings growing in greenhouses.	LenNIILKH VNIILM LatNIILKHP	Laboratory of forest field shelterbelts, Experimental Center, Region of Rocky Mountains, Bottineau (N. Dakota)	1977	Exchange of scientific reports.
Testing of machinery complex including recently developed in conditions of controlled environment.	"	"	1978	Exchange of scientific reports.
Continuation of tests and working out recommendations on complex of machinery for growing of seedlings in conditions of controlled environment.	"	"	1978	Exchange of scientific reports. Reciprocal business trips of experts.
Mechanization of reforestation activities.	VNIILM LenNIILKH	"	1974	Exchange of published papers.
Exchange of information on establishment of coniferous plantations on cutovers in conditions of intensive alternation of species.	"	"	1975	Exchange of published papers.
Exchange of information on reforestation activities on drained excessive water-logged soils.	LenNIILKH VNIILM	"	1975	Exchange of published papers.
Development of research program.	VNIILM LenNIILKH	"	1975	Exchange of published papers.

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<p>Experiments on mechanization of activities on fresh cutovers in conditions of quick alternation of species.</p>	<p>VNIILM</p>	<p>Laboratory of forest field shelter-belts, Experimental Center, Region of Rocky Mountains, Bottineau (N. Dakota)</p>	<p>1975</p>	<p>Exchange of scientific papers.</p>
<p>Experiments on establishment of plantations on water-logged soils with the use of briquettes (soil preparation, planting).</p>	<p>LenNIIKMK</p>	<p>"</p>	<p>1975</p>	<p>Exchange of scientific papers.</p>
<p>Specification of research program.</p>	<p>VNIILM LenNIIKMKH</p>	<p>"</p>	<p>1975</p>	<p>Reciprocal business trips of experts.</p>
<p>Field experiments with reforestation methods based on large-scale mechanization and application of chemicals under conditions of species alternation.</p>	<p>VNIILM</p>	<p>"</p>	<p>1976</p>	<p>Exchange of scientific papers.</p>
<p>Laying out of experiments using briquettes on establishment of forest cultures and plantations on drained lands.</p>	<p>LenNIIKMKH</p>	<p>"</p>	<p>1976</p>	<p>Exchange of scientific papers.</p>

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Studies of pine and spruce cultures on quickly over-growing cutovers under large-scale mechanization of operations with the use of transplants.	VNIILM	Laboratory of forest field shelter-belts, Experimental Center, Region of Rocky Mountains, Bottineau (N. Dakota)		1977	Exchange of scientific papers.
Large-scale mechanization of activities of establishment of forest plantation with briquettes.	LenNIIILKH	"		1977	Exchange of scientific papers.
Studies on large-scale mechanization and application of chemicals in establishment of forest plantations on cut-land under conditions of species alteration.	VNIILM	"		1978	Exchange of scientific papers.
Silvicultural and economic appraisal of methods of reforestation and establishment of plantation type forest stands by using planting stock with enclosed root system.	LenNIIILKH	"		1978	Exchange of scientific papers.
Analysis of prospective methods of mechanization and application of chemicals for cutover reforestation with the use of transplants and briquettes.	VNIILM LenNIIILKH	"	1978	1979	Exchange of scientific papers. Reciprocal business trips of experts.

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Exchange of reports  
of research results  
and recommendations

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d) Summary and recommendations

*P. L. Young*  
M. B. DICKERMAN  
CHAIRMAN OF THE AMERICAN PART  
OF THE WORKING GROUP IN THE  
FIELD OF FORESTRY

*N. Moissejev*

N. MOISSEYEV  
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