ANNUAL REPORT - FEBRUARY 1, 1950 - FEBRUARY 1, 1951

1. PROJECT: NORTH CENTRAL REGIONAL PROJECT NC-7

The Introduction, Multiplication, Preservation, and Determination of Potential Value of New Plants for Industrial and Other Purposes and for the Preservation of Valuable Germ Plasm of Economic Plants.

2. COOPERATING AGENCIES AND PRINCIPAL LEADERS

State Agricultural Experiment Stations	Representative
Illinois	C. M. Woodworth
Indiana	H. H. Kramer
Iowa	I. J. Johnson
Kansas	H. H. Laude
Michigan	C. M. Harrison
Minnesota	W. H. Alderman
Missouri	Joe D. Baldridge
Nebraska	F. D. Keim
North Dakota	T. E. Stoa
Ohio	F. S. Howlett
South Dakota	S. A. McCrory
Wisconsin	D. C. Smith

U. S. Department of Agriculture

Bureau of Plant Industry, Soils and Agricultural Engineering	C. O. Erlanson
Soil Conservation Service	R. M. Ross

Regional Coordinator

Primary Plant Introduction Station Ames, Iowa	M. M. Hoover

3. NATURE OF WORK AND PRINCIPAL RESULTS OF THE YEAR

Project Objectives:

Major phases of work under Regional Project NC-7 consist of: (a) the development of land and building facilities at the Primary Plant Introduction Station to serve the North Central Region as a center for the multiplication, initial evaluation, storage and distribution of plant materials; (b) the establishment of secondary centers within the Region for the care of special classes of plant materials that, because of soil, climate or other requirements, cannot be grown advantageously and evaluated at the Primary Station; (c) cataloguing of plant materials now being used or in the process of development by plant breeders within the Region to serve as a reference for the exchange of breeding stocks; (d) storage of new introductions grown in this region and breeding stocks under conditions of controlled temperature and humidity as a safeguard against the loss of valuable germ plasm that now or at some future time may be essential in plant improvement and breeding programs; (e) through the facilities of the Primary Station provide assistance to all states of the Region in the screening and utilization of New Plants for crop improvement programs. Close integration of research work on the broad problems of plant improvement provides the most effective use of available facilities.

Primary Station - Buildings and Land

At this time it seems appropriate to re-examine the objectives for NC-7 in the light of progress and accomplishments during the past three years.

NC-7 is unique in that this is the first project designed to deal with the evaluation and preservation of plant materials on a regional basis. The Primary Station was organized and provided with staff, buildings, equipment and land to carry forward this regional function. All states of the Region looked toward the future when plant materials and services of this regional unit would be available to them.

The regional coordinator and staff were chosen to direct the work with full knowledge that staff responsibilities would be dual in character. The Regional Technical Committee provided guidance for the technical work of the Primary Station but staff functions were also recognized as a part of the administration of the local state Experiment Station.

Technical problems inherent in the handling of a wide assortment of plant species, many of which require special techniques for the production of good quality seed, have been largely overcome. There is reason to believe that this major objective of the Primary Station, namely the multiplication and initial evaluation of newly introduced crops, is being carried out to the satisfaction of the Regional Technical Committee and the plant breeders of the Region.

The building program started in 1947 is nearing completion. These buildings consist of a brick tile 16' x 75' headhouse with two 30' x 40' greenhouse units located on the Iowa State College campus. A steel quonset

type 36' x 90' seed cleaning and equipment storage building is located one mile south of the college campus on land that serves as the field headquarters of the Primary Station. In addition, a concrete seed storage building, donated by the Soil Conservation Service and located at the field headquarters, has been equipped with temperature and humidity controls for the safe storage of original seed packets and increase seed. The capacity of this seed storage building is limited and, although adequate for present Primary Station needs, it will not have sufficient storage beyond this next fiscal year if the number of new accessions continues to increase at the same rate as during the past three year period.

Approximately 30 acres of land has been used for seed production and preliminary evaluation during the past two years. This acreage has not been sufficient to provide for soil building rotations, or for the establishment of perennial grasses, legumes and woody species.

As the program of the Primary Station expands, additional land will be needed to develop a proper rotation system and to provide for perennial grass, legume and woody introductions. An Experiment Station Committee is now making a study of these needs and it is anticipated that the necessary adjustments to meet land needs will be made.

Cooperation with National Project RM-b 111

The Division of Plant Exploration has cooperated with NC-7 by paying a portion of the salary of the Coordinator and his technical assistant, by furnishing certain office equipment and supplies and by contributing the assistance of its Headquarters technical staff. The Division of Plant Exploration and Introduction, through its Headquarters Office, Beltsville, Maryland, has supplied the Primary Station with new introductions as they have been received and cleared through the Inspection House.

Primary Station Production Program

Plant accessions received by the Primary Station number 7,627 and represent 134 genera and species. Approximately ten per cent of these accessions have either failed to germinate or have been found to be poorly adapted and have been returned to the Headquarters Office at Beltsville, Maryland, for reassignment. Approximately 65 per cent have been grown successfully and seed lists with agronomic observations of field performance have been distributed to research workers in the several states of this region and to other regions through their cooperating regional projects. Approximately 25 per cent of the accessions remain to be grown for initial observation and seed increase and these will constitute the major part of the Primary Station production program for 1951.

Table I presents the summary of plant production work of the Primary Introduction Station for 1949-1950. Introductions are divided into major crop groups in accordance with Division technical staff responsibilities.

Table I. Plant genera represented by the number of accessions received, and the number returned or nonviable, established and increased by the Primary Station for 1949-1950.

GROUP I FIELD CROPS AND GRASSES

Genera (1)	Number of Accessions			
	Received	Returned or Non-viable	Established	Increased
Aegilops	49			49
Agropyron	41		30	2
Agrostis	3			
Andropogon	61	36 (2)	21	
Arrhenatherum elatius	1			
Bouteloua	2		1	
Brachypodium	1		1	
Briza	1			
Bromus	70	31	25	9
Calamagrostis	2			
Chrysopogon	2			
Cynosurus	1			
Dactylis	49		37	
Elymus	2			
Euchlena	1			
Festuca	12		7	
Haynaldia	2			
Helianthus	119	6		113
Holcus lanatus	1			
Linum	1	1		
Lolium	22		4	11
Phalaris	33		5	27
Phleum	8		1	
Poa	7		1	
Sorghum	175	175		
Stipa	9		4	
Trisetum	1			
Zea mays	697	40		611

GROUP I LEGUMES

Genera	Number of Accessions			
	Received	Returned or Non-viable	Established	Increased
Astragalus	7		7	
Cajanus cajan	1	1		
Canavalia	1	1		
Cassia	1	1		
Coronilla	2		2	
Crotolaria	2	2		
Cyamopsis	22	22		
Desmodium	1	1		
Dolichos lablab	1	1		

GROUP I LEGUMES (Continued)

Genera	Number of accessions			
	Received	Returned or Non-viable	Established	Increased
Glycine	1	1		
Hedysarum	2		2	
Indigofera	1	1		
Lathyrus	20			16
Lotus	6		5	
Medicago	102		95	
Melilotus	21		14	
Onobrychis	9		5	
Ornithopus sativus	2			
Pachyrhinus erosus	1	1		
Pueraria phaseoloides	1	1		
Scorpurus sulcata	1			
Stizolobium deeringianum	3	3		
Tephrosia	1	1		
Thermopsis	1			
Trifolium	40		21	
Vicia	6			5

GROUP II FRUITS AND VEGETABLES

Genera	Number of accessions			
	Received	Returned or Non-viable	Established	Increased
Abelmoschus esculentus	4			2
Allium cepa	122	19	71	23
Allium porrum	80	8	48	27
Apium graveolens	45	5	23	17
Asparagus	8		7	1
Beta	139	1		45
Brassica	277		17	61
Capsicum	339	14	1	284
Citrullus	326	2		206
Cucumis melo	487			197
Cucumis sativus	263	3		92
Cucurbita	381	12		176
Daucus carota	120	5	56	41
Fragaria	3			
Lactuca	146	7		97
Lycopersicon	983	3		979
Malus	1		1	
Pastinacea	1			
Petroselinum crispum	82	2	78	
Phaseolus	951	250		687
Pisum	197	7		181
Prunus	12		2	

GROUP II FRUITS AND VEGETABLES (Continued)

Genera	Number of Accessions			
	Received	Returned or Non-viable	Established	Increased
Pyrus	2		1	
Raphanus	216		35	47
Solanum melongena	189	7	2	175
Solanum sp.	1			
Spinacea	111			17

GROUP III FOREST, ORNAMENTAL, OIL AND SPECIAL CROPS

Genera	Number of Accessions			
	Received	Returned or Non-viable	Established	Increased
Abies	3			
Ageratum	1			
Amaranthus	2			
Anethum graveolens	52			42
Antirrhinum majus	2			1
Atriplex	1			
Betula	4			
Calendula	1			1
Carthamus	5			4
Cedrus	1			
Chrysanthemum	3			1
Cichorum	1		1	
Coriandrum	18			12
Cuminum	10			1
Cyclanthera	1			
Dahlia	1		1	
Delphinium	1			1
Dianthus	5		2	2
Eruca	15			10
Glycyrrhiza	1		1	
Hedera helix	1		1	
Helianthus strumosus	1			
Heliopsis scabra	1			
Impatiens balsmina	1			1
Ipomea	1			
Lepedium	44			38
Ligustrum	1			
Mentha	3		1	2
Metasequoia	1		1	
Nigella	20			14
Ocimum basilicum	15			13
Papaver	52			11
Perilla	11			
Petunia	1			1
Phlox	2			
Picea	1			
Picris	1			
Pimpinella anisum	14			2
Pinus	3		2	

GROUP III FOREST, ORNAMENTAL, OIL AND SPECIAL CROPS (Continued)

Genera	Number of Accessions			
	Received	Returned or Non-viable	Established	Increased
Portulaca	32			
Rheum	2	1	1	
Ricinus	19	19		
Rosa	3			
Rubus	18		13	
Rumex	33			
Salvia	1	1		
Sesamum	89	89		
Smilax	2			
Tagetes	3			2
Thuja	1		1	
Tulipa	1			
Zinnia	2			1
Ziziphus	2	2		

(1) Certain genera, only one species represented.
(2) Andropogon clones established at Kansas and Nebraska.

Table II. Summary by crop groups of genera and accessions received, returned, established and increased by the Primary Plant Introduction Station, 1949-1950.

	Genera	Number of Accession			
		Received	Returned or Non-viable	Established	Increased
Group I Field Crops and Grasses	28	1375	289	137	822
Group I Legumes	26	256	37	151	21
Group II Fruits and Vegetables	27	5486	345	342	3355
Group III Forest, Ornamental, Oil and Special Crops	53	510	112	25	160
	134	7627	783	655	4358

Group I Field Crops and Grasses

This group contains 1,375 accessions representing 28 genera. Establishment has been successful with 137 and seed increase has been obtained from 822 accessions. The 289 accessions listed as returned or non-viable are in most instances made available for observational planting in some other Region. For example, the 40 accessions of Zea mays were from Guatemala or other tropical countries and did not mature seed at Ames. These were sent to the Southern Region where they may be increased without difficulty. All accessions of sorghum were returned to the National Headquarters Office for reassignment. Henceforth all sorghums will be observed initially and seed increased under the supervision of the Coordinator of the Southern Region.

Group I Legumes

This group consists of 256 accessions representing 26 genera. Establishment has been successful with 151, of which alfalfa numbers 95. All accessions of guar were returned for reassignment to the Southern Region, since this crop was found to require a longer growing season than that normal to the North Central Region.

Group II Fruits and Vegetables

This group consists of 5,486 accessions representing 27 genera. There are a relatively large number of biennial crops that are shown in the table as established when they have been grown one year and are held in storage as roots. Some of the vegetable accessions are particularly difficult to grow for seed because of the special precautions required to insure controlled pollination.

Group III Forest, Ornamental, Oil and Special Crops

This group is comprised of 510 accessions with 53 genera represented. Two oil crops, castor beans and sesame, were returned for reassignment to the Southern Region. Many of the other species are perennial in habit and additional time is required for full establishment.

Cooperation with States of the North Central Region

Cooperation between the Primary Station and the several states of the Region consists of (a) testing and evaluation of new accessions, (b) growing seeds for the Primary Station on a contract basis, (c) development of a catalog or inventory of breeding stocks maintained for research by Experiment Station staff members of the several states, (d) propagation by the Primary Station of woody species for use in windbreak, ornamental and homestead plantings as requested by the several states of the Region, (e) progress in research on formal state projects receiving NC-7 funds.

Interest by plant breeders in the program of work under NC-7 is shown by the number of requests for new accessions as seed becomes available from the annual list prepared and distributed by the Primary Station. A total of 7,647 seed packets have been sent to research workers from plant materials available on the 1949 seed list. The North Central Region requested 3,867 of these packets and distribution was made to every state of the Region. This region-wide interest, along with the initiation of intensive research on these materials, indicates a research program of considerable volume has been enriched by a wealth of plant material not available prior to the organization of the NC-7 project. Performance of the new plant materials observed by the research workers is reported to the Primary Station where it is maintained currently in the accessions record file.

Requests from outside the Region numbered 3,125 packets and the National Headquarters Office received 655 packets primarily for redistribution to Experiment Stations of the Western states where no Primary Station has as yet been organized.

As a result of the first seed production season, it was learned that climatic conditions at Ames did not permit certain crops to mature properly. However, many of these crops can be grown with reasonable assurance of success

in other North Central States. Accordingly, the Primary Station arranged with interested project leaders at Wisconsin, Michigan, Ohio and Indiana for the initial observation and seed increase of certain crops on a per accession contract basis. Such crops as peas, spinach, beans, lettuce, carrots, onions, celery and muskmelons have been grown in this manner. Although this seed contract work has been in operation but one year, the results have been satisfactory and all parties to the contract seem well pleased. The Primary Station accomplishes its objective of initial observation and multiplication of seed with a minimum of risk in the loss of the original seed. The project leader in the state who supervises the work has an opportunity to see the new materials and is reimbursed for doing a job for the Primary Station that he would not ordinarily do in carrying out his research activities.

Several states have made progress in completing an inventory of breeding stocks being maintained by research workers. These inventories have been mimeographed by the Primary Station and distributed to research workers through the Region where they serve as a catalog of breeding stocks available for exchange with other Experiment Stations.

Several states in the Great Plains area of the Region have indicated interest in adapted woody perennials for use in shelter belt, ornamental, homestead and wildlife plantings. The facilities of the Primary Station have been used to assemble, propagate and distribute twenty-five species, mostly of foreign origin, for observational trial in the western states of the Region. The Primary Station will maintain a limited number of these woody species as specimens and as a source of propagation wood for increase.

Report of Research Projects Receiving NC-7 Assistance

Illinois: The Illinois Experiment Station does not have an organized project receiving 9b-3 funds under NC-7. However, the Illinois Experiment Station conducts research with New Crops with special reference to their industrial utilization. This research deals with the determination of cultural practices, yields and adaptation of many of the new crops available through the Regional NC-7 project. The Illinois Experiment Station has also been very active in the evaluation of new introductions supplied by the Primary Introduction Station.

Indiana: The collection, preservation and testing of Prunus for cherry leaf spot (Coccomyces) resistance. $1000 Annually since 7-1-50

Progress: Approximately 50 items of Prunus, including clones and seedlings, have been established in a three acre orchard. Additional establishment of 29 items of Prunus plant introductions have been made. All of these were grown in the greenhouse for inoculation studies with a number of isolates of Coccomyces. Additional artificial field inoculations will be made and severity of attack of leaf spot will be determined. The field planting will receive only a minimum fungicidal treatment. Additional items will be established as they are procured. There has not been sufficient time to obtain data from these plantings.

Iowa: Except for the formal cooperation between the Primary Station and the Iowa Experiment Station as described throughout the body of this

report. there are no projects of the Iowa Experiment Station that receive 9b-3 funds under NC-7. However, there are many closely related research activities conducted by the Iowa Station. In addition, various crop sections of the station have given assistance to the Primary Station in the evaluation of new materials. Staff members have always been helpful in offering technical assistance and suggestions in the conduct of the work.

Kansas: Multiplication, preservation and determination of potential value of forage grasses and legumes. $2000 Annually since 7-1-49

Progress: The preliminary evaluation nursery of more than 14,000 spaced plants has been established and observed. Included were 21 species of grasses and 20 species of legumes involving 11,578 and 2,510 respectively of spaced plants on which field notes were taken on such characters as vigor, leafiness, aggressiveness, earliness and freedom from disease. Individual plants showing superior qualities in one or more of the above characters were harvested and this open-pollinated seed is available in small amounts.

Kansas: Maintenance of viable seed of open-pollinated corn varieties. $500 Annually since 7-1-50

Progress: Nineteen open-pollinated varieties were grown for hand pollination by sibbing and selfing within varieties. In addition, isolated plantings of 12 strains of Reid Type, 12 strains of Midland Type, and 12 strains of Early White were composited and permitted to inter-pollinate. Maintenance of these strains of corn assures a reservoir of germ plasm which otherwise would be irretrievably lost.

Michigan: Maintenance of basic mint breeding stocks. Mint species and species hybrids are maintained by the Michigan Agricultural Experiment Station for research and breeding for resistance to verticillium wilt. NC-7 funds are no longer used in support of this work. However, these breeders stocks are available to other research workers in the Region. The Michigan Experiment Station has been very active and helpful in giving assistance to the Primary Station in the production of seed of several vegetable crops on a per accession contract basis.

Minnesota: Testing newly introduced plants for susceptibility or resistance to diseases - Wheat. $1000 Annually since 7-1-47

Progress: Research on this project has continued along the same lines as reported for previous years. A disease garden at University Farm, St. Paul, has been planted continuously with wheat for 25 years. Optimum conditions for disease infestation are maintained. New introductions, when grown under these conditions and examined for resistance, will provide the wheat breeder with basic plant material for a breeding and improvement program. More than 2,000 accessions have been classified for resistance and the results made available to cooperating research workers. Basic information of this kind is essential to plant breeders and the project should be continued until all introductions and new varieties and strains developed by wheat breeders are tested for disease resistance.

Minnesota: Introduction, preservation and evaluation of stone fruits of probable potential value to the North Central Region. $1000 Annually since 7-1-50

Progress: A new orchard containing material of genetic interest consisting of about 40 hybrids between species of stone fruits was started in 1950. Other wide cross hybrids were budded and will be ready for planting in 1952. Twelve hybrids between sand cherry x apricot are ready for planting this spring. New plant material is being assembled from other stations, particularly from the Dominion Experiment Station at Morden, Manitoba. Many varieties and selections from the regular test orchards of the Horticulture Research Farm have been designated as a part of this NC-7 project and will be maintained because of their special value for this work.

Missouri: Missouri receives no 9b-3 funds under NC-7 in support of organized research projects. However, the state has assisted actively in the testing and evaluation of new introductions as seed has become available from increase by the Primary Station.

Nebraska: Preservation of Alfalfa clones and seed stocks needed in Alfalfa improvement. $500 Annually since 7-1-49

Progress: The Alfalfa germ plasm preservation nursery includes approximately 130 "C" clones designated by Alfalfa Conference numbers, 170 desirable clones obtained by the Nebraska Experiment Station, and 80 foreign plant introductions. Field notes are recorded for agronomic characters, stem and foliar diseases, growth habit, flower color and general vigor. One foreign accession was found to be highly pubescent and showed no leaf hopper yellowing. Four foreign accessions of a planting of 22 failed to survive the winter of 1949-1950 and several other accessions showed sparse weak growth, probably as a result of susceptibility to winter conditions.

Nebraska: Preservation of viable seed stocks of open-pollinated regional strains or varieties of corn. $600 Annually since 7-1-50

Progress: This project is concerned with the maintenance of viable seed stocks of corn strains and varieties which were collected in the state before they were completely replaced with corn hybrids. Thirteen separate lots of material, several representing composites of selected strains within a given area, are being maintained. Four of these lots were grown in isolated blocks of one-fourth to one-half acre in 1950. The purpose of preserving the different regional strains is to provide a suitable source of new germ plasm in future corn breeding work.

Nebraska: Preservation and preliminary evaluation of important native and introduced grasses considered valuable in improvement for forage and conservation purposes. $1200 Annually since 7-1-49

Progress: The spaced-plant and clonal observational nursery consisted of 8,400 seedlings of 225 accessions of 29 different species. Seedlings were started in the greenhouse and later transplanted to the field as

indiviual plants for observation. Greenhouse and field experiments were conducted to evaluate the responses of certain warm-season grasses grown in combination with selected cool-season grasses. A suitable combination as a mixture is sought to provide a maximum seasonal growth and production and to afford competition with weeds throughout the season.

North Dakota: Preservation of certain physiologic races of flax rust, Melampsora lini. $500 Annually since 7-1-50

Progress: Approximately 50 races of flax rust necessary to differentiate and identify the rust-conditioning genes in flax have been run through their selective differential hosts. This procedure must be repeated about every six months to maintain these races. Several widely-grown varieties and about one-third of the hybrid selection of flax were found to be impure for rust reaction. Flax breeders have been informed of the facts so they can re-select flax varieties for purity of rust reaction. Plant breeders in the United States and Canada have been requested to submit their advanced material for test and avoid the waste of time and labor in testing impure or mixed lots in the regional flax variety yield trial nursery.

North Dakota: Preservation of viable seed stocks of open-pollinated strains or varieties of corn grown in the Northern Great Plains. $500 Annually since 7-1-49

Progress: Descriptive data relating to maturity, plant height and appearance, ear height, lodging, smut and corn borer reaction were recorded. Sixty-seven strains classified into sub-classes as 20 flints, 10 semi-dent, 14 flour, 11 sweet and five pop were included in this test. Fifty seed samples of 60 varieties were sent to research or service agencies. A breeding program was started by selfing and selection in corn borer tolerant, Alta Yellow dent, Rosebud blue flour and Mitchell sweet,

Ohio: Multiplication, preservation and determination of potential value of pear varieties for North Central states introduced into and collected within the United States. $500 Annually since 7-1-49

Progress: Three hundred Bartlett pear seedlings were budded in August to Old Home for the purpose of enlarging pear plantings to include three trees of each variety. Varieties received from the Division of Plant Exploration and Introduction will be established on the Old Home framework. The complete description of the fruit of all varieties which have now borne was completed in the late summer and fall of 1950 and is available for all cooperating agencies upon request. This pear collection is a source of scions and bud wood for use of nurserymen, fruit growers and cooperating agencies.

Ohio: The maintenance of two or more nurseries of vegetatively propagated timothy strains possessing specific plant characteristics. $500 Annually since 7-1-50

Progress: A new planting of timothy clones consisting of 84 strains of five maturity groups was made in 1950. A new crossing block of early-maturing strains was established. Tests of Marietta, Lorain, Hopkins and ordinary timothy were started on six of the over-the-state experimental farms. Yield data and chemical analysis will be secured in 1951. Lorain, a late-maturing variety of timothy, is being carried on through the cooperation of the Ohio Seed Improvement Association and the Soil Conservation Nursery at Zanesville, Ohio.

Ohio: The evaluation of the collection of domestic and wild species of tomato and the maintenance of the desirable accessions and valuable breeding stocks. $1000 Annually since 7-1-49

Progress: Four hundred and seventy-one accessions of tomato were evaluated for type and species; vine characters, of size, growth habit and pubescence; foliage character, wilty leaflets and size of leaflets; fruit characters, hairiness, type and amount of cracking, size, setting, maturity, flesh color, intensity of flesh color, skin color, locules, shape, fasciation and type of ripening. In addition, 23 strains having known gene markers were grown. The results of this work makes it possible for tomato breeders to select from the published seed lists certain breeding material which will be of direct value to them.

South Dakota: The collecting, preserving, cataloging, propagating and testing of fruit plants having potential genetic value.
$2500 Annually since 7-1-47

Progress: Substantial progress has been made with this project. The Hansen collection of fruit plants assembled at Brookings has now largely been planted in one orchard and designated as the Hansen Foundation Orchard. Harbin Manchu Crab is giving promise as a semi-dwarfing hardy root stock. Nine experiment stations of the North Central Region have received nearly 4,000 items of planting material propagated under this project. Evaluation of all species is being continued. This material is of value largely as genetic stock. Since most of this is of Siberian origin, it would be impossible to collect at present, and likely is the only collection of such material available.

Wisconsin: Wisconsin has no formal NC-7 Projects except the work with potatoes at Sturgeon Bay, which was designated the Inter-Regional Potato Station IR-1 on July 1, 1950. The annual report from IR-1 will be made directly to the Administrative Adviser.

The Wisconsin Experiment Station, in addition to assisting the Primary Station in the production of seed, has been very active and helpful in evaluation and testing of new accessions as they have become available for distribution.

4. APPLICATION OF RESULTS AND BENEFITS REALIZED

The research work envisioned under the NC-7 project has not been in operation long enough to single out specific benefits with certainty. However, in the relatively short time since the start of this work a few basic facts are evident. The Region is making rapid progress in working as a completely integrated group toward the solution of problems concerned with the evaluation, preservation and use of new crops. This project has brought to the attention of research workers a wealth of plant materials not previously available to them. In doing so, the project has been instrumental in setting into motion a basic research program of wide scope that promises to contribute fundamental knowledge to American agriculture.

Several examples of plant accessions possessing outstanding quality have come to light, as for example: an alfalfa introduction from Arabia, having heavy pubescence, showed no evidence of yellowing from leaf hopper injury when adjacent accessions were severely injured. A pea accession introduced from Peru, and reported to be resistant to mildew, was found to be an excellent pea and gave double yield of any other of the 140 introductions under observation. Several corn introductions were excellent in appearance and in addition to making good comparative growth and yield ranked very favorably in apparent corn borer tolerance.

5. WORK PLANNED FOR NEXT YEAR

Examination of the items listed in Table I indicates a production program for the Primary Station in 1951 to be about the same size as that of the past two seasons. In addition to the program of preliminary evaluation and multiplication at the Primary Station, contracts will be developed for similar work in cooperation with selected State Agricultural Experiment Stations.

All states of the Region have not completed their work on an inventory of breeding stocks maintained by state workers. Each state will be encouraged and if necessary given assistance by the Primary Station in completing this work as rapidly as possible.

There are now nearly 4,000 new accessions in the hands of research workers in the North Central Region that are being evaluated. In order to keep currently informed of the progress being made in the evaluation of these materials, each worker is urged to return his observational information and performance data to the Primary Station. It is hoped that plans may be developed for the completion of a list of species, strains and special stocks that should be included in a planned program of seed preservation.

6. PUBLICATIONS

Increase seed lists for 1949-1950

7. APPROVED:

L. J. Johnson
Chairman, Technical Committee

W. V. Lambert
Regional Administrative Adviser