

Minutes of the Meeting of the Technical Committee
SOUTHERN REGIONAL COOPERATIVE PROJECT S-9, ON "NEW PLANTS"

Pleasant Hall, Louisiana State University
Baton Rouge, Louisiana, March 5-6, 1953

Members Present:

Administrative Advisor - R. D. Lewis, Texas Agr. Sta.,
College Station, Texas

Regional Coordinator - Edwin James, Experiment, Georgia

U.S.D.A. - C. O. Erlanson and W. H. Hodge - Division of Plant
Exploration and Introduction, Beltsville, Maryland

Alabama - Not represented.

Arkansas - R. L. Thurman, Arkansas Agr. Exp. Sta., Fayetteville,
Ark.

Florida - Fred H. Hull, Florida Agr. Exp. Sta., Gainesville, Fla.

Georgia - O. E. Sell, Georgia Agr. Exp. Sta., Experiment, Ga.

Kentucky - E. N. Fergus, Kentucky Agr. Exp. Sta., Lexington, Ky.

Louisiana - J. C. Miller, Louisiana Agr. Exp. Sta., Baton Rouge,
La.

Mississippi - J. P. Overcash, Mississippi Agr. Exp. Sta.,
State College, Miss.

North Carolina - Fred D. Cochran, N. C. Agr. Exp. Sta., Raleigh,
N. C.

Oklahoma - Not represented.

Puerto Rico - J. Velez Fortuna, Insular Agr. Exp. Sta., Rio
Piedras, Puerto Rico.

South Carolina - J. A. Martin, S. C. Agr. Exp. Sta., Clemson
College, S. C.

Tennessee - J. K. Underwood, Tenn. Agr. Exp. Sta., Knoxville,
Tenn.

Texas - R. G. Reeves, Texas Agr. Exp. Sta., College Station,
Texas.

Virginia - Not represented.

The 1953 meeting of the Technical Committee was held in Pleasant Hall on the campus of the Louisiana State University. The meeting was called to order at 7:30 p.m., March 5 by Chairman Sell. Dr. Julian C. Miller welcomed the group to the campus. Reports on state supporting projects to regional S-9 were the first order of business.

State Reports

Arkansas - Interest in sorghum and corn introductions for use in breeding programs. Total of 403 accessions received, 386 cowpeas screened for fusarium wilt and nematode resistance, and horticultural qualities. Interested also in five accessions of lespedeza.

Florida - Wide interest and utilization of plant introductions. Accessions numbering 333 were received, 186 peppers. Tomato introduction No. 129152 found to be immune to gray leafspot, early blight, and phoma rot. Considerable interest in Papayas, Lotus, Solanum, and gladiolus. Very active programs for evaluating tomatoes and forage species are underway. Heavy interest in forage introductions indicated. Some Phaseolus contracting with Primary Station.

Georgia - Tested 618 accessions in 1952. Assisted primary station in screening and increasing of 378 cowpea accessions for resistance to fusarium wilt and mosaic, and 423 Citrullus and Cucumis accessions for resistance to downy and powdery mildew. Cantaloupe No. 177334, resistant to downy mildew, now being used in breeding program. Forage sub-committee testing three rye grass introductions on state wide basis. The Coastal Plains Station at Tifton, Ga., cooperates on testing and maintaining all Paspalum accessions. Plant pathologists assist primary station on disease readings on all species grown.

Kentucky - Received 27 accessions with most attention on forage. One accession of Bromus shows promise. State supporting project previously submitted was approved by the committee.

Louisiana - Eighteen accessions of Dioscorea being tested for yields. Some look promising. Selection of Phaseolus accession No. 182026 may be worthy of release soon. Allium accessions being tested for resistance to downy mildew. Many species of Allium are difficult to maintain. Okra testing for yield, processing quality and oil content. Irish potato introductions received from IR-1 being used in breeding.

Mississippi - Received 323 accessions. Interested in Lycopersicon, Capsicum, Rubus, and Fragaria. Tomato accessions tested for resistance to Sclerotium rolfsii. Apple and pear stocks are also being tested.

North Carolina - Received over 300 accessions. One hundred and seventeen Cucurbita lines tested for resistance to scab. Citrullus lines 173669 and 173234 appear to have resistance to downy mildew and anthracnose. Tests conducted on 53 alfalfa introductions indicate greater average resistance to black stem of introductions from Turkey and Syria as compared with accessions from Arabia and India. Three corn accessions, Nos. 162929, 167422, and 16240 are being used in breeding program. From 140 lines of Lycopersicon, nine were selected for further testing to late blight and southern bacterial wilt. Interest in Irish potato introductions, and in phaseolus.

South Carolina - Summarized breeding and testing of sesame. Good possibility for new oil crop in the South. Breeding for indehiscent type, high yield, high oil content, and disease resistance. Increased 54 sesame and 90 pepper introductions on contractual basis with primary station.

Other accessions, totaling 242 consist mainly of forage plants and vegetables. A new lettuce variety has been released, having as one parent P.I. No. 120695. Chufa introduction No. 184949 found to be productive and is being used as source of feed for wild life. Cucumber accession No. 197087 found to be immune to anthracnose and is being used in breeding. Some of the late maturing lines of okra seem to have resistance to nematodes. Pungent pepper lines being tested for resistance to root knot and mosaic.

Tennessee - Work underway on developing disease resistance in Solanum, Lycopersicon, and Fragaria. Testing introductions of Trifolium, Hordeum, Cynodon, and Paspalum. Increasing Ilex cornuta var. rotunda (No. 143795) for distribution.

Motion by James that proposed state supporting project submitted by Tennessee be approved by the committee was seconded and passed.

Texas - Received 725 accessions last year. Fairly large number of accessions tested have promise. Three ornamentals, Ficus macrophylla (No. 183874), Hoya sp. (No. 190391), and Ilex cornuta, var. rotunda have been found promising. Six castor bean introductions are promising, with No. 179731 acceptable as commercial variety. Twelve accessions of sunflowers and sixteen sesame accessions, outstanding in certain characters, are being used in breeding programs. Four rye grass accessions, numbers 162678, 187220, 189150, and 196538 have been selected for use in breeding. Cynodon magennisii (No. 184339) is showing promise as a turf grass. Three lines of sorghum are being used in breeding. Cantaloupe No. 182959 appears to be resistant to drought and downy mildew. Eighteen forage grasses and legumes show sufficient promise to be put

into replicated tests. Five grape accessions show promise, especially worthy of mention is W.G. 33126 as a table grape. Considerable testing of Citrus and Lycopersicon accessions is underway for disease and drought resistance.

Report on S-9

James discussed expenditure of funds for the fiscal year of 1952-53. Following is a financial summary, exclusive of \$1200 trust fund held by the Texas Agr. Exp. Station for regional travel.

Budget:	S-9 Allocation - 90-3	16,000.00
	Stage and Sales	228.00
		<u>17,028.00</u>
	Credit on Irrigation Pipe, May 1952	30.00
		<u>17,058.00</u>

Fixed Costs:

<u>Salaries</u>		
	(3,740.00	USDA)
Coordinator	3,200.00	
Assistant	3,600.00	
Secretary	1,800.00	
Field Supervisor	<u>1,872.00</u>	
	10,472.00	<u>10,472.00</u>
Balance for other expenses		<u>6,586.00</u>

Other Expenses:

<u>Budget</u>		<u>Spent</u>
Travel	600.00	587.66
Capital Outlay	1,050.00	2,042.23
Operating Expense	2,783.00	867.24
Labor	<u>3,143.00</u>	<u>1,208.92</u>
	6,536.00	4,706.05

Unpaid Obligations:

South Carolina Contract	94.50
Florida Contract	109.00
Puerto Rico Contract	<u>198.50</u>
	5,108.05
Balance	<u>1,477.95</u>
	<u>6,586.00</u>

Dr. Lewis suggested that the regional travel fund would be handled by the primary station henceforth instead of by the Texas Agr. Exp. Sta. The 1953-54 budget for S-9 is as follows.

Regional Research Fund S-9	16,800.00
State	250.00
U.S.D.A.	<u>4,040.00</u>
	21,090.00

Capital Outlay	2,500.00
Operating Expense	1,500.00

Salaries:

Coordinator	3,200.00	
	<u>4,040.00</u>	7,240.00
Assistant		3,800.00
Secretary		1,860.00
Labor		<u>4,190.00</u>
		17,090.00
		<u>21,090.00</u>

Regional Travel (Trust fund for travel by members of Technical Committee)	
	1,200.00

James pointed out various operational needs during the ensuing year, the major items being a vehicle for travel, refrigerating equipment for seed storage, and the installation of a heating system in the greenhouse.

Contractual arrangements for increasing and maintaining stocks were discussed. Lewis pointed out that the project is obligated to an increase in contractual arrangements if S-9 gets increased funds. Reeves made motion that the regional coordinator set up a maximum of 10% of the budget, exclusive of the trust fund, for contractual work. This was seconded by Miller and passed unanimously.

National Plant Introduction Program

Dr. W. H. Hodge furnished the report on the activity of the Division of Plant Exploration and Introduction.

The Division at present directs five Work Projects involving plant introduction, testing, and maintenance of basic stocks. Each of these Work Projects is directed by a supervisory leader at Beltsville. For example, the Introduction and Evaluation of Fruit and Vegetable Crops is headed by Dr. W. E. Whitehouse; Field Crops by Mr. H. L. Hyland; Specialty Crops by Dr. D. S. Correll; Plant

Identification and Bibliographical Investigations by Dr. S. F. Blake; and the National Cooperative Program (b-11-5, formerly called RMA b-111) by Dr. W. H. Hodge.

It should be pointed out the Division is concerned with a number of activities besides the part it plays in the New Crops Program and some of these include International Exchange of agricultural materials, federal research on new or little known crops, and the like. Several examples of the latter may be given. One of the Division research projects, cooperative at present only with other federal agencies, involves the exploration for procurement and preliminary evaluation of plants that are possible sources of cortisone. Several explorers have been in the field since the initiation of this work in 1949, and such possible sources as the genera Strophanthus, Agave, and Dioscorea as well as their close relatives have been thoroughly sampled. If one of these plants proves its worth as a commercially-feasible crop, it will likely be in the warmer parts of the southern or western regions.

Another project initiated by the Division is a contractual arrangement with the Engineering Experiment Station of the Georgia Institute of Technology to investigate the needs of industry for plant-derived raw materials. Under this arrangement market surveys have been made for various commodities worthy of possible future development. Among the latter are such items as jojoba, candelilla, and bamboo. Publications have already appeared reporting on their findings and others are in preparation. Partly as a result of Georgia Tech's investigations the Division has placed another contract with the School of Engineering at Clemson College for an investigation of the physical and certain other properties of such bamboos as can be grown in the southern part of the United States. A contract with the Herty Foundation of Savannah has been initiated to determine the usefulness of bamboos for pulp.

International Exchange of Plant Material:

During the last year 5,600 introductions of seeds and plants were received from abroad. The screening of this material is largely carried out cooperatively with state experiment stations and coordinated on a regional basis. Much of the plant material that is available through the State and Federal research programs of the United States is of high interest to breeders in foreign countries. The Bureau attempts to assist other countries with research stocks wherever possible. In the past year 8,000 shipments of agricultural and wild plant materials were sent to 76 countries for trial, together with advice on how best the materials might be utilized.

Exploration:

Exploration by Dr. W. A. Archer in Ethiopia, though terminated in 1951, has not previously been reported to the S-9 committee. This exploration resulted in approximately 1,600 collections, of which about 500 were wheats and barleys of much interest to breeders. It is hoped that in the wheats some resistance to strains of wheat rust, now seriously affecting our commercial varieties, may be found. Ethiopia is in the center of an area rich in rust resistance.

Dr. A. A. Beetle, agronomist of the University of Wyoming, recently completed an exploration in southern South America where he searched for hardy, drouth-resistant grasses and legumes. The first half of his work was centered in Patagonia, but he later transferred activities to northern Argentina and later Uruguay, ending his work finally in the State of Rio Grande do Sul in southern Brazil. Dr. Beetle's field work resulted in the introduction of approximately 800 species, mostly grasses.

Dr. R. K. Godfrey, a botanist on loan from the North Carolina State College at Raleigh, left last August for exploration in Turkey where he spent three months searching primarily for forage plants and especially hardy, drouth-resistant wild grasses and legumes. His collections have supplemented those made four years ago by Dr. Jack R. Harlan, who, however, collected cultivated plants entirely. Turkey is one of the main centers-of-origin for many domesticated plants and so it was felt worthwhile to attempt to get as many related wild species as possible for breeding work. Since mid-November Dr. Godfrey has been working in South Africa where he is continuing the search for wild grasses with drouth-resistance and with forage value. This field work will terminate the end of this month. Approximately 1,800 collections already have been made in these two areas though only one-half are concerned with the present program.

These three explorations have been undertaken following the priority plan set up under the National Cooperative Program. A great number of requests for special items in these areas were received prior to the explorations. Insofar as possible plant explorers do all they can to obtain the materials requested, which are distributed as available through the Regional Coordinators. Future explorations will be discussed at the Denver meeting of the National Cooperative Program. Recommendations on proposed explorations by the S-9 committee should be forwarded to the National Committee.

National Cooperative Program:

A meeting of the National Coordinating Committee for the National Cooperative Program has been called May 11, 12, and 13 at Denver. An informal meeting of Regional Coordinators was scheduled at Ithaca, New York, September 6 and 7, immediately prior to the AIBS meetings. Another meeting of Regional Coordinators will be scheduled in conjunction with the National Coordinating Committee.

In January, 1952, Dr. W. H. Hodge was placed in charge of the Division's activity in the National Cooperative Program at the headquarters station in Beltsville, Maryland, thus relieving Mr. C. O. Erlanson of some of the burden of increased Division work; Dr. Hodge is the Division's representative on the Regional Technical Committees.

The preparation of a national list of workers and their special interests by crops was begun. When brought together, this list should aid in the more efficient distribution of new introductions for testing. Regional lists have already been completed by the several coordinators.

Budget Outlook:

The annual allotments that the Division of Plant Exploration and Introduction has been contributing towards the support of the several regional Projects falling under the National Cooperative Program and including the S-9 Project, remain the same during the present year, nor will there be any additional Division funds available for these projects during the fiscal years of either 1953 or 1954, the budgets for which have already been prepared.

National Seed Storage Facility:

As you probably knew, this facility had been proposed during the past few years and a tentative location had been set for Fort Collins, Colorado. It was hoped that funds would be allocated for this facility in the near future but this hope proved to be unwarranted. A supplementary request of \$350,000 to construct national seed storage facilities was turned down.

Erlanson discussed the maize collections of the western hemisphere by the National Research Council. Five ounces of each collection held in the United States. Plant Breeders may secure materials from this program from each of three centers (1) Rockyfeller Center, Mexico City, Mexico, (2) Piracicaba, Brazil, S. A., and (3) Medellin, Colombia, S.A. Inventories

of material available sent out by the Division of Plant Exploration and Introduction.

Committee Actions and Approvals

Proposals for New Plant Explorations:

The committee, after some discussion, decided to request explorations in the following crops -

- (1) Ipomoea - resistance to virus and fungus diseases very urgently needed. Miller and Cochran were asked to prepare statement of request.
- (2) Domestic grasses and legumes (including lupines) from the Southwest. Reeves was asked to prepare request.
- (3) Forage plants - Sell and Fergus were asked to prepare this request.
- (4) Avocado stocks - Adriance of Texas to prepare a report to Erlanson.

It was suggested that these requests be sent to Dr. Lewis for further discussion at the meeting of the National Coordinating Committee meeting in Denver.

Publicity:

Lewis discussed the need for prompt publication of information resulting from the new plants program. Miller made motion that publications and news releases be prepared covering the introductions of economic value and that James make specific request from members of participating group for desired material. The motion was seconded and passed.

Election of Officers:

O. E. Sell and F. D. Cochran were re-elected chairman and secretary, respectively.