

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

Horticulture Building  
Georgia Agricultural Experiment Station  
Experiment, Georgia  
May 7-8, 1954

Members Present:

- Administrative Advisor - R. D. Lewis, Director, Texas Agr. Expt. Sta.  
College Station, Texas
- Regional Coordinator - Edwin James, Experiment, Georgia
- U.S.D.A. - W. H. Hodge, Assistant Head, Section of Plant Introduction, A.R.S.  
C. L. LeFebvre, Office of Experiment Stations, A.R.S.
- Alabama - W. R. Langford, Agr. Expt. Sta., Auburn, Alabama
- Arkansas - R. L. Thurman, Agr. Expt. Sta., Fayetteville, Arkansas
- Florida - F. H. Hull, Agr. Expt. Sta., Gainesville, Florida
- Georgia - O. E. Sell, Agr. Expt. Sta., Experiment, Georgia  
A. H. Dempsey, Agr. Expt. Sta., Experiment, Georgia  
F. F. Cowart, Resident Director, Agr. Expt. Sta., Experiment, Ga.
- Kentucky - E. N. Fergus, Agr. Expt. Sta., Lexington, Kentucky
- Louisiana - J. C. Miller, Agr. Expt. Sta., Baton Rouge, Louisiana
- Mississippi - H. W. Bennett, Agr. Expt. Sta., State College, Mississippi
- North Carolina - F. D. Cochran, Agr. Expt. Sta., Raleigh, North Carolina
- Oklahoma - L. L. Ligon, Agr. Expt. Sta., Stillwater, Oklahoma
- Puerto Rico - Jose Muratti, P. R. Hdqrs. Expt. Sta., Rio Piedras, P. R.
- South Carolina - J. A. Martin, Agr. Expt. Sta., Clemson, South Carolina
- Tennessee - J. K. Underwood, Agr. Expt. Sta., Knoxville, Tennessee
- Texas - R. G. Reeves, Agr. Expt. Sta., College Station, Texas
- Virginia - Not represented.

The 1954 meeting of the Technical Committee was held at the Primary Station, Experiment, Georgia. The meeting was called to order by Chairman Sell. Dr. F. F. Cowart, Resident Director, welcomed the group to the Station. Reports on state projects were the first order of business.

#### State Reports

Alabama - Received 56 accessions, 39 of which were ornamentals. Okra screening for nematode resistance being conducted; Capsicum accessions 152225 and 152333 basis for publication in "Phytopathology" concerning nature of tobacco mosaic and tobacco etch resistance. Considerable interest reported in both horticultural and forage plants.

Arkansas - Approximately 98 accessions received in 1953. Accessions Nos. 152195, 152197-A, 179554, 145198-B, 124600, 180494 of cowpeas show resistance to cercospora leaf spot. Cucumber lines Nos. 171604 and 164816 being used in breeding program. Sorghum No. 181076 is resistant to lodging, has large stalk, and is a high seed producer. P. I. No. 184339 Bermuda grass is being increased for possible release. Additional interest in castor beans, vetch, lespedeza, corn, millet, and various trees and shrubs.

Florida - Testing being conducted at the Main Station and the various branch stations with horticultural and field crops. Tests were conducted on 333 accessions, including 186 peppers. Tomato accession No. 129152 is apparently immune to gray leafspot, early blight, and phoma rot. Considerable interest reported in Papaya, Lotus, Solanum, and Gladiolus. Very active evaluation program in progress on tomatoes and forage plants. Some contractual work on Phaseolus done with the Primary Station. Hull discussed a new state supporting project. Motion

made by Miller that project be approved, seconded by Bennett, passed. McCloud published paper on forage and cover crop introductions in "Soil Science of Florida."

Georgia - A total of 471 accessions were received during the past year with particular emphasis on forage grasses and legumes. The Coastal Plains Station is screening all Cynodon, Paspalum, and some Pennisetum species. The Station at Experiment, Georgia, is screening cantaloupes for downy mildew resistance. Several okra accessions have shown promise as sources of wilt resistance, and are being used in the breeding program. Bahia grass No. 158822, which is immune to ergot, has shown promise in the coastal plains. A seed supply enough to plant 400 acres is on hand, and 100 seed lots have been sent to county agents in the coastal plains. Wild peanuts from South America show promise as summer legumes. The Athens Station found corn introductions 162703 and 185665 of value as inbred lines.

Kentucky - Received 130 accessions since beginning of project. These were mostly ornamental and other horticultural plants until last year when 56 forage accessions were received.

Rubus No. 188872 is vigorous, disease resistant and produces good quality fruit. Kentucky 101 and 215 red clovers and Kentucky 31 tall fescue were results of explorations in the State. Under the state supporting project RM59, such state explorations will continue.

Louisiana - Received 361 accessions. All Allium introductions tested for resistance to downy mildew. Sweet potato introductions sent in by Correll and Miller last year from West Indies are being evaluated for horticultural characters and tested for resistance to diseases. From approximately 200 such accessions tested, 9 are resistant to wilt and

7 show some resistance to black rot. P. I. 153655, introduced from Tinnian Island, is being used as a source of wilt resistance in the sweet potato breeding program. An okra introduction from the Gold Coast of Africa has been useful in breeding for improved okra types for freezing.

Mississippi - Several hundred accessions have been tested, of which the major portion have been sweet potatoes, edible field peas, and English peas. Considerable interest being shown in the Sart sorghum resulting from P. I. No. 152945 primarily because of its non-lodging and high sugar characteristics. This sorghum introduction is being used in its original form. The Southern Mississippi Station is working on Sanyo millet P. I. No. 168488. About a dozen lines are being tested for silage. Five accessions of orchard grass appear to be heat tolerant. One rye grass introduction has been found to be resistant to crown rust. Tomato and okra introductions are also being tested.

North Carolina - Received 869 accessions during the year with particular activity in vegetable crops including beans, sweet potatoes, tomatoes, squash, cantaloupes, watermelons, and Irish potatoes. Other introductions being tested are Rubus, corn, peanuts and Medicagos. In snap beans root rot resistance has been noted in P. I. Nos. 165419, 165453, 165455, 167203, 169733, and 193006. Sweet potato introductions are being evaluated for desirable horticultural characters and resistance to fusarium wilt and internal cork. In cucurbits, accessions are being tested for resistance to downy mildew, anthracnose and scab. Tuber bearing species of Solanum are being tested for bacterial wilt and late blight resistance. In corn P. I. Nos. 161418, 162420, 185664,

and 185665 are being inbred for desirable characteristics. Wild species of peanuts being tested for resistance to cercospora leafspot. Difficulty has been experienced in obtaining crosses. Many Rubus introductions have been tested, and some species found to be resistant to disease, particularly anthracnose. These have been used in the breeding program and several varieties resulting from hybridization have been developed and released. Some Medicago accessions from Turkey and Syria have shown resistance to black stem disease.

Oklahoma - Special attention given to testing grasses and legumes which account for 588 of 743 accessions received. In addition to two large nurseries at the Main Station, additional testing is being done at The Samuel Roberts Noble Foundation at Ardmore. Other crops being tested are sorghum, sesame, guar, peanuts, castor beans, safflower, crotalaria, sesbania, sunflower, field peas, and a number of vegetables. A sorghum introduction from Ethiopia, having yellow endosperm, shows promise. Guar produces well in Oklahoma and may be planted after small grain. A total of 48 introductions are now in tests and a breeding program is being initiated; yields per acre have exceeded 1000 lbs. A new peanut variety, Argentine, from P. I. No. 121070 is ready for release.

Puerto Rico - Received 374 accessions over half of which were grasses, several of which show promise and have been placed in replicated clipping tests. A coffee substation is being maintained in the interior of the island, where both new and old world species and varieties are being tested. Tropical fruits such as citrus, avocados, guavas, etc., are being introduced for testing. Other plants being tested include sweet potatoes, pigeon peas, papayas, castor beans, and strawberries.

South Carolina - Continued cooperation in the increase and evaluation of sesame, pepper, and okra. Selection work with sesame is continuing with advanced lines, R44, R47, C323, and C329, resulting from multiple crosses involving 32 lines. A detailed report on "Sesame Breeding Program" is attached. Cynodon No. 184339 has been increased for trial as a lawn grass. Eight Capsicum accessions received in 1953 have value either as breeding lines or for use as ornamentals. The Truck Crops Station is currently using several cucumber introductions in its breeding program. Interest in okra introductions primarily as source of resistance to nematodes. Fifteen lines of Chufa being retained for further yield tests. One hundred accessions of sunflowers in tests. Cantaloupe introductions resistant to foliage diseases showed promise last year.

Tennessee - Approximately 240 accessions have been tested since 1950.

About two-thirds of these have been legumes, including Melilotus, Lespedeza, Lathyrus, Medicago, Trifolium and Vicia. Cytogenetic studies are being conducted with various legumes. Several species of Lycopersicon are being tested for resistance to diseases and nematode. These include pimpinellifolium, hirsutum, esculentum, and peruvianum. Two species of Fragaria are being tested for resistance to root rot. Vicia atropurpurea, P. I. 170008, has shown promise in tests for two years. Phalaris paradoxa, No. 197957, appears to be adapted as a winter annual. Its yields are slightly below that of rye grass. Ten introductions of ornamental plants are being tested at present.

Texas - Extensive statewide testing of new plants in 1953 totaled 1,114 accessions with the major emphasis placed on forage grasses and legumes.

Pennisetum ciliare (Blue Buffel) No. 133898 and P. I. 153671 (Common Buffel) were released for agricultural use. Advanced testing underway on Andropogon saccharoides Nos. 202212 and RF472 and Andropogon annulatus No. 181009. Other forage and range plants in advanced tests are Cenchrus myosuroides RF 158, Trichloris pleuriflora RF454, and T. crinata P. I. 162188. Extensive testing of sesame accessions being conducted with major emphasis on the development of high yielding, high oil content, indehiscent lines. Tephrosia P. I. 161735 being tested for its value as a source of rotenoid. The leaves contain around 3.5% rotenone which has approximately the same insecticidal value as commercial rotenone. Other plants being tested are sunchoke, castor beans, grapes, and roses.

#### New and Revised Projects

Dr. Lewis indicated that the general attitude of the Southern Regional Research Committee is that fairly regular revisions should be in order on regional projects. He pointed out that the S-9 project has been in operation five years, and eleven of the fourteen states have state-contributing projects to S-9. After some discussion of the objectives and procedure of the project outline, a motion to revise the regional project was made by Hull. The motion was seconded by Miller and passed. Dr. James was instructed to send a copy of the present S-9 project to each member of the technical committee. Suggestions for revision of project to be returned to Dr. James for drawing up a revised project statement by the executive committee by October first. After completion of the revision of S-9, consideration of revision of state projects was suggested. Several states indicated that new and revised projects were anticipated and under development.

Report of Primary Station

James reported on expenditures and improvements at the Primary Station, also discussed plans for improvements in 1955. Hull made motion that balance from regional travel fund be transferred for use by the Primary Station. This motion was seconded and passed. A discussion on the regional travel fund for S-9 followed. Fergus and other expressed concern over the elimination of the regional travel fund for S-9 because of the possibility that fewer states will participate in the Technical Committee meetings. A motion was made by Fergus, seconded by Miller, that the committee express concern over this matter and recommend that the Directors provide means for future participation. The motion passed.

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SOUTHERN REGION  
PLANT INTRODUCTION STATION  
Financial Statement 1953-1954  
BUDGET

9b3		\$ 20,000.00
U. S. D. A.		4,040.00
State		450.00
Credit (Entomology Department)		20.00
		<u>\$ 24,510.00</u>
Personal Services:		
Coordinator	\$ 7,240.00	
Assistant	3,800.00	
Secretary	930.00	
Field Foreman	<u>1,992.00</u>	
Total Personal Services		\$ 13,962.00
Travel:		
Trust Fund	\$ 1,500.00	
Coordinator	<u>1,000.00</u>	
Total Travel		2,500.00
Expenses:		
Operating Expense	\$ 2,000.00	
Labor	<u>3,048.00</u>	
Total Expenses		5,048.00
Capital Outlay		<u>3,000.00</u>
		<u>\$ 24,510.00</u>

EXPENDITURES - May 1, 1954

Total Funds		\$ 24,510.00
Travel	\$ 803.11	
Capital Outlay	2,587.19	
Capital Outlay on Order:		
Irrigation Pipe	\$ 270.00	
Aspirator	235.00	
Hammermill	<u>82.87</u>	
Total Cap. Outlay on Order		587.87
Operating Expense	\$ 1,833.91	
Op. Expense Outstanding	<u>177.78</u>	
Total Operating Expense		2,011.69
Labor		1,258.91
Personal Services (Fixed)		<u>13,962.00</u>
Total Expenditures		<u>21,210.77</u>
Balance, May 1		\$ 3,299.23

EXPECTED EXPENDITURES May - June, 1954

Committee Travel	\$ 1,500.00
Labor	850.00
Operating Expense	200.00
Electric Motor	122.00
Travel	150.00
Hydraulic Lift, (G Tractor)	120.00
Bee Cages	<u>357.23</u>
Total	\$ <u>3,299.23</u>

PROPOSED BUDGET 1954-1955

9b3: Primary Station	\$ 20,000.00
Puerto Rico Agr. Expt. Sta.	4,000.00
U. S. D. A.	4,140.00
State	<u>520.00</u>
	\$ 28,660.00

Personal Services:		
Coordinator	\$ 7,340.00	
Assistant	4,200.00	
Secretary	2,100.00	
Labor	<u>3,620.00</u>	
Total Personal Services		\$ 17,260.00
Capital Outlay		2,650.00
Travel		1,150.00
Operating Expense (Including Contracts)		3,600.00
Puerto Rico Agr. Expt. Sta. Project		<u>4,000.00</u>
		\$ 28,660.00

Report on the Activities of The Section of Plant Introduction, A.R.S.

Hodge reported on the highlights of the activities of the Section of Plant Introduction. Activities of the Section in addition to the New Crops Program were discussed.

One of the services that continues to be very active is in the field of International exchange of plant materials. The increase of the U. S. Technical Cooperation Missions has resulted in much demand for the introduction of domestic seed stock shipments to foreign countries. These are being tested to determine whether American varieties are adapted to foreign areas with similar environments. In addition to this activity the Section has five other general projects operating. These are as follows:

1. Fruits and Vegetables. During the past year 457 fruit and nut introductions and 1,389 vegetable seed lots were received from foreign countries.

2. Field Crops. Of the field crops being brought in under our National Cooperative program, soybeans, small grains and cotton are not handled through the regional coordinators. These are handled through the Federal crop units who report their activities directly to the Section of Plant Introduction. Considerable emphasis has been placed on the screening of the world collections of wheat, barley, oats, and rice. Three hundred and fifty cotton introductions have been brought in during the last year.

3. Specialty Crops. This group includes a large group of more or less unclassified crops, such as Dioscorea, Rhododendron, Vinca, coffee, black pepper, candelilla, Jojoba, bamboo, etc., Dioscorea being produced as a source of cortisone.

4. Plant Identification and Bibliographic Investigations. Staff of botanists who handle service work for the Section. As a part of their work taxonomic research on economic genera. has been accomplished.

5. National Cooperative Program. The Federal project b-11-5 is the cooperative project with the Regional New Crops projects. Of the ten plant explorations suggested by the four regions at the last meeting of the National Coordinating Committee, six have already been acted upon. Drs. Miller and Correll conducted the exploration for sweet potatoes in the Caribbean area. Dr. Gentry initiated an exploration in Afghanistan primarily for grasses and legumes. Domestic explorations for grasses and legumes in the central Great Plains, and in the southwestern United States and Mexico have been active.

With the activation of a new Primary Station at Geneva, New York, during the past year, all regions are now represented by formal New Crops Projects. The activities of other regional projects were discussed by Hodge, along with the inter-regional (IR-1) potato introduction project at Sturgeon Bay, Wisconsin.

Dr. Hodge stated that when all services of the Section of Plant Introduction to the Primary Stations are considered, the Southern region is supported to the extent of \$16,805.00 in direct and indirect aid by Federal funds.

Report on the National Coordinating Committee

Dr. Lewis reported on the meeting of the National Coordinating Committee held May 12-13, 1953, in Denver, Colorado.

The National Seed Storage Committee is preparing a statement for renewed attempt to get fund allocation. A list of 10 plant explorations were proposed for consideration by the Section of Plant Introduction. They are as follows:

1. Exploration for sweet potato breeding stock in the Caribbean area.
2. Exploration for forage and soil-improving crops in the South.
3. Exploration for grasses and legumes in southwestern United States.

4. Exploration for tobacco breeding stock which might have resistance to "wide leaf root-knot."
5. Continued exploration for grasses and legumes in the central Great Plains.
6. Exploration in northeastern United States for better blueberry stocks, endemic races of white clover, alfalfa, and timothy.
7. Exploration for endemic races of beans in West Virginia and adjacent areas.
8. Exploration for grasses, legumes, and woody ornamentals in northwestern United States and Canada.
9. Exploration for grasses and legumes, deciduous fruits and other crops in the Middle East and southern Asia.
10. Continued exploration for potatoes in Andean South America for breeding stocks and systematic clarification of wild species. Dr. Lewis directed attention to the fact that the first four were formally proposed by the Southern Region and that the first three have been already initiated.

Suggestions for Continued or New Explorations

Hodge indicated that funds were available for about one foreign exploration each year. Continuation of grass and legume explorations in Southwest and Mexico by Dr. Reeves was already budgeted. July, 1955 appears to be about first date that new explorations could be undertaken. Suggestions for new explorations were made by each state represented. It was suggested by Dr. Sell that each state present its specific needs at a later date, so that formal and accurate proposals could be drawn up for new explorations. This is to be accomplished during the year for presentation at the next meeting of the National Coordinating Committee. The explorations suggested based on the needs of the various states are as follows:

Florida - Subtropical ornamentals. Grasses and legumes with particular emphasis on summer legumes for permanent pastures.

Georgia - Disease resistant grasses and legumes. Virus resistant lupines from the Southwest.

Kentucky - Lotus and Trifoliums resistant to virus. Rhizoctonia resistant grasses.

Louisiana - Continue sweet potato exploration in the Caribbean area including Central American countries and Mexico and also New Zealand. Introduction of possible winter cash crops.

Mississippi - Summer legumes for pastures. Winter grasses. Christmas trees.

North Carolina - Cucumbers, cantaloupes and watermelons for resistance to mildew from southeast Asia. Tomatoes from southeast Asia. Sweet potatoes resistant to internal cork. Legumes and grasses.

Oklahoma - Grasses and legumes, particularly alfalfa.

Puerto Rico - Tropical fruits, emphasis on papaya.

South Carolina - Continued introduction of sesame peppers and okra. Additional chufa introductions also needed.

Tennessee - Disease resistant Trifolium and Lotus. Orchard grasses resistant to anthracnose and billbug. Also late flowering peaches.

Texas - Alfalfa adapted to the South. Disease resistant peanuts. Rhodes grass resistant to insects. Dr. Lewis called attention to the following points in summary:

1. Disease resistance in crops were mentioned most frequently.
2. Has adequate consideration been given to "new crops for industrial utilization?"
3. The possibility of corresponding climatic areas in South America as a scene of future explorations.

Progress and Further Needs in Publications

Dr. James indicated that a report on the progress and use of plant introductions in the South was being assembled for publication in the next year as a Regional Project Report. Cochran pointed out that a panel program was scheduled for the American Society for Horticultural Science meetings at Gainesville, Florida on the use of plant introductions in vegetable crops research.

Next Meeting

Invitations for the next meeting place were received from Clemson College, South Carolina, the University of Florida, and the Coconut Grove Station, Miami, Florida. The Executive Committee was requested to act on the place and date of the next meeting.

Election of Officers

F. D. Cochran and A. H. Dempsey were elected chairman and secretary, respectively. The Committee extended a hearty vote of thanks to retiring Chairman O. E. Sell for his excellent service during the past five years.

Respectfully submitted,

*F. D. Cochran*

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F. D. Cochran, Secretary