PROGRAM

OPENING SESSION—MONDAY, OCTOBER 25

Welcome to Delegates
F. A. Graugnard, Jr., General Chairman

General Information
Denver T. Loupe, General Secretary-Treasurer

FIELD TOURS

Agricultural Tours
TUESDAY, OCTOBER 26
Trip to St. James to observe demonstrations of planting, cultivating, and harvesting of sugarcane and heat treatment with hot air ovens for the control of Ratoon Stunting Disease. Demonstrations arranged through courtesy of the St. James Sugar Cooperative. Luncheon at Guy Caire’s Camp. Return to New Orleans in afternoon.

WEDNESDAY, OCTOBER 27
Tour of facilities and research activities at US Sugarcane Field Station, Houma, operated by the USDA, and demonstrations of equipment for sugarcane production and harvesting manufactured by Thomson International and Cane Machinery and Engineering Company (Cameco) at Thibodaux. Lunch at Cameco. Return to New Orleans in afternoon.

THURSDAY, OCTOBER 28
Visit to a sugarcane plantation on which various types of research is being conducted by scientists of the Louisiana Agricultural Experiment Station and the USDA. Research to be demonstrated and discussed includes yield trials of commercially grown and experimental varieties, effects of RSD and Mosaic, use of herbicides in weed control, and nematode control. Lunch at American Legion Home, Franklin. Spend night at Lafayette.

FRIDAY, OCTOBER 29
Demonstrations of aerial application of pesticides in sugarcane by airplane and helicopter. A tour of the facilities of the J & L Engineering Company for discussions and demonstrations of the latest equipment designed and manufactured by this firm. A visit to a typical Louisiana family-type sugarcane plantation. Lunch at Sugarcane Festival Fairgrounds, New Iberia. Spend night in Baton Rouge.

SATURDAY, OCTOBER 30
Tour of sugarcane research facilities and programs of the Louisiana Agricultural Experiment Station, Baton Rouge. Lunch at Student Union Building, Louisiana State University. Return to New Orleans in afternoon.

Manufacturing Tours
TUESDAY, OCTOBER 26
Tour of Leighton raw sugar factory, Thibodaux, and Valentine Pulp and

**WEDNESDAY, OCTOBER 27**
Field demonstrations of mechanized harvesting and cane handling in the field and at the factory and tour of St. James Sugar Cooperative Factory, St. James. Lunch at Guy Caire’s Camp, St. James. Return to New Orleans.

**THURSDAY, OCTOBER 28**
Tour of Colonial Sugar Refinery and St. Mary Sugar Cooperative raw sugar factory. Lunch enroute from Colonial Sugar Refinery. Spend night in Lafayette.

**FRIDAY, OCTOBER 29**
Tour of Cajun and Iberia Sugar Cooperative raw sugar factories. Lunch at Sugarcane Festival Fairgrounds, New Iberia. Spend night in Baton Rouge.

**SATURDAY, OCTOBER 30**
Tour of Audubon Sugar Factory, Computer Center and Chemical Engineering Department of Louisiana State University. Lunch at Student Union Building, Louisiana State University. Return to New Orleans.

**FIRST PLENARY SESSION—MONDAY, NOVEMBER 1**

**Welcome**
James H. Thibaut  
President, American Sugar Cane League

**Address**
Honorable Allen J. Ellender  
United States Senator, State of Louisiana

**The Louisiana Sugar Industry**
F. A. Graugnard, Jr.  
General Chairman, 14th Congress, ISSCT

**TECHNICAL SECTION MEETINGS — NOVEMBER 1-5**

**General Session**

Chairman: Joe E. Clayton

Date: November 1 (Afternoon)

**Topics:**

1. The Thomson harvesting and loading system for sugarcane — Thomson Machinery Co.
2. The cut-load system of harvesting sugarcane—Massey-Ferguson Co.
4. The Cameco system for harvesting and handling sugarcane—Cane Machinery and Engineering Co.
5. Combined efforts of producers, manufacturers and researchers to harvest and clean recumbent sugarcane—Joe E. Clayton.

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1 Papers for these topics were not prepared and preprinted and do not appear in these Proceedings.
Agriculural Sections
AGRICULTURAL ENGINEERING
Chairman: N. J. King
No. half day sessions: 1

Papers:
Development of an auger harvesting system for recumbent sugarcane—Joe E. Clayton
Systems for cleaning immature tops and other trash from sugarcane—Joe E. Clayton and Hiram D. Whittemore
Two-row sugarcane harvesting combine—Rafael Fanjul
A mechanical equipment management system—John F. Cykler
Field mechanization in the Puerto Rican sugar industry—Richard T. Symes
Mechanical harvesting in Jamaica—J. C. van Groenigen
The power budget of sugarcane production—Ralf O. Petersen

BREEDING AND GENETICS
Chairman: J. Daniels
No. half day sessions: 6

Papers:
Description of sugarcane clones. 1. Agricultural description—J. Daniels
Description of sugarcane clones. 2. Genetical and disease resistance information—P. B. Hutchinson and J. Daniels
Description of sugarcane clones. 3. Botanical description—J. C. Skinner
A rating scale for sugarcane characteristics—P. B. Hutchinson and J. Daniels
Effect of maturity on milling quality of five sugarcane varieties—Leo P. Hebert
Maturity studies of commercial sugarcane varieties in Florida—Leo P. Hebert and Edwin R. Rice
The Louisiana varietal programs and their impact on yields of cane and sugar—St. John P. Chilton
Selection in sugarcane: A review—J. C. Skinner
Morphological and physiological bases of differences in quality between sugarcane clones—D. MacColl
Selection methods to increase mosaic resistance and sucrose content—L. Anzalone, Jr.
The reduction of the intergeneration interval in the Fiji breeding programme—J. Daniels and N. D. Stevenson
Nobilization of sugarcane—B. T. Roach
The role of *Saccharum spontaneum* in sugarcane breeding—R. R. Panje

Utilization of noble and *Saccharum spontaneum* germplasm in the West Indies—D. I. T. Walker

Breeding sugarcane varieties for Louisiana with new germplasm—P. H. Dunckelman and R. D. Breaux

Taxonomy of *Saccharum* relatives: *Sclerostachya*, *Narenga*, and *Erianthus*—Carl O. Grass

Isoenzymes as a method of varietal identification in sugarcane—J. C. Waldron and K. T. Glasziou

Some current issues in population genetics in relation to sugarcane breeding—A. H. D. Brown

Genetic behavior of resistance in sugarcane to the sugarcane borer, *Diatraea saccharalis* (F.)—D. P. Viator and M. T. Henderson


Selection for erectness in sugarcane in Louisiana—R. D. Breaux

Associations among yield and quality components in sugarcane hybrid progenies—Jorge A. Mariotti

Cytogenetics of sugarcane—D. Jagathesan

Flower induction of *Saccharum* species and hybrid clones—Harry F. Clements

The photoperiodic control of flowering in *Saccharum*—M. H. R. Julien

Shoot apex development in early-, mid-, and late-season flowering sugarcane clones—Norman I. James and Jimmy D. Miller

Photoperiod control in the USDA sugarcane crossing program—Norman I. James and Jimmy D. Miller

Growth and flowering of sugarcane in relation to photoperiod and air humidity—M. H. Amin, E. S. Kassem, M. Bayoumi, and Z. A. Menshawi

Flowering of sugarcane with reference to induction and inhibition—E. D. Paliatseas

The role of leaves in production of flowering stimulus in sugarcane—Teh-ling Chu and J. L. Serapion

New procedures for sugarcane breeders—Don J. Heinz

Brittleness of sugarcane varieties in Louisiana—H. P. Fanguy

Rapid screening methods for sugarcane. IV. A pot method of growing and ripening sugarcane—N. D. Stevenson and J. Daniels

A field method for selecting for fiber content in sugarcane varieties—J. E. Irvine

Gamma irradiation-induced mutations in sugarcane—R. Urata and Don J. Heinz

Radiosensitivity and mutants in sugarcane—P. Seshagiri Rao

ENTOMOLOGY

Chairman: G. Wilson

Co-Chairman: S. D. Hensley
Vice-Chairman: L. J. Charpentier
No. half day sessions: 5

Papers:
Accidental introduction of *Diatraea centrorella* (Moschl.) into Abaco, Bahamas, and attempts at its control—M. N. Beg and F. D. Bennett

Effect of dates of planting on infestations of *Chilo agamemnon* Bles. in sugarcane in UAR—M. T. Kira and Hazem El-Sherif

Estimation of losses in cane and sugar yields caused by infestations of *Chilo agamemnon* Bles.—M. T. Kira and Hazem El-Sherif

*Eldana saccharina* Wlk. (Lepidoptera: Pryalidae), a pest of sugarcane in East Africa—D. J. Girling

A consolidated list of wild and cultivated plant species attacked by sugarcane borers in North India—K. Ramachandran Nair, Satya Prakash, and Sudha Nagarkatti

Differential survival of *Diatraea saccharalis* (F.) larvae on 2 varieties of sugarcane—Grady E. Coburn and S. D. Hensley

Role of predaceous arthropods of the sugarcane borer, *Diatraea saccharalis* (F.), in Louisiana—Ahmed A. Negm and S. D. Hensley

Control of the sugarcane borer, *Diatraea saccharalis* (F.), in Louisiana—S. D. Hensley

A comparison of 3 artificial diets for the sugarcane borer—James W. Sanford


The white scale, *Aulacaspis tegalensis* (Tehnt.), on sugarcane—J. R. Williams

Mating behavior and dispersion of the pasture soldier fly, *Inopus rubriceps*—A. W. Osborn and E. J. Halbert

Host parasite interrelations of West Indian canefly, *Saccharosy whole saccharivora* (Westw.) (Hom., Delphacidae)—J. H. Frank

*Lixophaga diatraeae* Towns reared on non-congeneric lepidopterous hosts—J. Etienne

Rat damage and control in the Florida sugarcane industry—Harry H. Samol

Insecticidal control of the sugarcane froghopper—D. E. Evans and D. A. Buxo

Insecticide use against *Numicia viridis* Muir (Homoptera: Tropiduchidae)—A. J. M. Carnegie

Notes on a recent outbreak of *Aulacaspis tegalensis* (Homoptera, Diaspididae) on sugarcane in Tanzania—D. W. Fewkes

Nymphal growth of *Yangula guttulata* Sign., a harmful cicada of sugarcane in Madagascar—M. Betbeder-Matibet

Fungi parasitic on the nymph of *Mogannia hebes* Walker in Taiwan—L. S. Leu and Z. N. Wang

Dynamics of a sparse population of the rat *Melomys littoralis* Lonnberg (Muridae) in sugarcane and natural vegetation—T. D. Redhead
A study of destructive rodents of Haft Tappeh—Hamid Azizi and Kenneth A. Sund
Rat damage to sugarcane in Florida—Harry H. Samol
Pocket gopher pest species in Mexico cane areas—Carlota M. Riess and Silverio Flores

EXTENSION EDUCATION
Chairman: Charles A. Miller
No. half day sessions: 1

Papers:
Progress report on training of personnel in Mexico for the sugar industry—Alfonso Gonzalez Gallardo and Silverio Flores
Scope of extension education in the Indian sugar industry—Anil C. Raha
Extension education in South Africa—C. Whitehead and J. Wilson
Louisiana sugarcane cultural practices and extension activities—Charles A. Miller and Denver T. Loupe
The cooperative extension function in Louisiana—L. L. Pesson
4-H Club activities in the Louisiana sugar industry—Dalton P. Landry

FERTILIZATION, SOILS, AND CULTURAL PRACTICES
Chairman: George Samuels
No. half day sessions: 4

Papers:
Long-term effects of manuring, cropping and cultivation practices on cane yield and soil properties—P. M. Joshi and G. K. Zende
Cultural methods for sugarcane production in the subtropics—R. R. Panje
Sweet sorghum as a potential sugar crop in South Texas—W. R. Cowley and B. A. Smith
Effects of varying numbers of cultivation on sugarcane production in Louisiana—Ray Ricaud
Influence of interrow spacing and planting rate on stalk population and cane yield in Louisiana—R. J. Matherne
Sugarcane planting date trials in Mozambique—F. Mendes Ramos and J. de Sousa Melo
Influence of water deficiency and excess on growth and leaf nutrient element content of sugarcane—George Samuels
The crop logging system for sugarcane production: 1971 edition—Harry F. Clements
Light- and nitrogen-sensitive ATP-ases in sugarcane leaves—Alex G. Alexander, R. Montalvo-Zapata, and Ashok Kumar
Effects of ground-water table and soil compaction on nutrient element uptake and growth of sugarcane—T. C. Juang and G. Uehara
Croplogging as a means of controlling sugarcane fertilization in small holdings—M. Lakshmikantham, G. Narasimha Rao, P. Hanuman
Relationship between fertilizer and leaf-blade P and S and sugarcane yield in Louisiana—Laron E. Golden
Effect of time of sampling in sugarcane on foliar analysis in Venezuela—Felipe Gomez-Alvarez
Effects of flooding on sugarcane growth. 1. Stage of growth and duration of flooding—P. W. D. Webster and B. W. Eavis
Effects of flooding on sugarcane growth. 2. Benefits during subsequent drought—B. W. Eavis
The effect of water table depth on the yield of sugarcane—Raul Perez Escolar, William F. Allison, and Juan Juárez, Jr.
Water, a key to sugar production—Roger P. Humbert
Root studies of outstanding sugarcane varieties of Bihar, India—O. P. Negi, S. P. Naithani, and S. Poddar
Anatomy of the branch roots of sugarcane—Beatrice B. Exner
Factors affecting the sprouting and growth of sett roots in sugarcane—B. R. Panje, P. S. Mathur, and M. P. Motiwale
Effectiveness of nitrification inhibitors formulated with anhydrous ammonia when applied to sugarcane in Louisiana—J. F. Parr, B. R. Carroll, and S. Smith
Appraisal of soil salinity for land reclamation in lower Iraq—Donald P. Gowing and Norman Rozell
Foliar symptoms of silicon deficiency in the sugarcane plant—Y. Wong You Cheong, A. Heitz, and J. Deville
The effect of silicon on enzyme activity in vitro and sucrose production in sugarcane leaves—Y. Wong You Cheong, A. Heitz, and J. Deville
Effect of burning and chopping on sugarcane deterioration in the UAR—M. H. Amin, Ahmed A. El-Beldawi, Gad El Kareem Sayed, and Ahmed T. Habib
Inversion control in sugarcane juice by sodium metasilicate—Alex G. Alexander, Nilsa Acín-Díaz, and R. Montalvo-Zapata

IRRIGATION

Chairman: T. G. Cleasby
No. half day sessions: 2

Papers:
Use of water by sugarcane in Hawaii measured by hydraulic lysimeters—Paul C. Ekern
Estimating water use by sugarcane from meteorological and crop parameters—G. D. Thompson and J. P. Boyce
The sugarcane plant in the soil-plant-atmosphere continuum—J. C. Mongelard and L. G. Nickell
Some effects of water-table level on the growth of sugarcane—J. M. Gosnell
Effect of irrigation intervals on sugarcane yield in UAR—M. H. Amin, M. Bayoumi, Z. A. Menshawi, and M. M. Abdalla
Soil moisture regimes and N levels: Effects on yield and quality of sugarcane—P. P. Singh and Govindra Singh

Determination of the value of water in sugarcane production: A Plantation method—Phil Scott

Irrigation of sugarcane on an estate and its integration with other operations—J. N. S. Hill

Methods of surface irrigation in sugarcane—J. M. Gosnell and T. L. Pearse

Land grading for surface irrigation of sugarcane—T. Chinloy and J. A. Kelly

Soil water infiltration and redistribution under furrow and sprinkler irrigation—G. Uehara, T. C. Juang, and M. Isobe

Irrigation practices in the Queensland sugar industry—K. C. Leverington

Sugarcane root development into soil at various moisture contents—Albert Trouse

**Pathology**

*Chairman: C. G. Hughes*

*No. half day sessions: 5*

**Papers:**

Leaf-scald disease: Introduction—B. T. Egan

Testing sugarcane varieties for leaf scald resistance—H. Koike

Breeding for resistance to leaf scald disease—B. T. Egan

The elimination of leaf scald from infected planting material—D. R. L. Steindl

International exchange of varieties: Introduction—C. G. Hughes

Disease resistant sugarcane clones—P. B. Hutchinson

The world collection and international exchange of sugarcane varieties—R. E. Coleman

Post-entry sugarcane quarantine—G. M. Thomson and J. Wilson

How the Louisiana sugarcane industry helps in variety development and increase programs—Lloyd L. Lauden

Occurrence of strains A and F of sugarcane mosaic virus in Uttar Pradesh (India)—K. S. Bhargava, R. D. Joshi, and Narayan Rishi

Control of sugarcane mosaic by serial heat treatment—G. T. A. Benda


Reciprocal transmission of sugarcane and johnsongrass mosaic viruses: A summary report—I. L. Forbes, Mike Giamalva, and Grady Coburn

Purification and serology of sugarcane mosaic virus—H. Handojo and D. Noordam

Reaction to ratoon stunting disease of new sugarcane varieties grown commercially in Louisiana—R. J. Steib


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1. Paper was not preprinted for Congress or printed in Proceedings.
PROGRAM

Temperatures and treatment durations with hot air for control of ratoon stunting disease in Louisiana—D. M. Tantera and R. J. Steib

Further experience with the insectary method of testing sugarcane varieties for resistance to Fiji disease—A. A. Husain and P. B. Hutchinson

The control of sugarcane diseases in Fiji—J. Daniels, A. A. Husain, and P. B. Hutchinson

Research on grassy shoot disease of sugarcane in Maharashtra State—G. K. Zende and N. B. Shaikh

Effects of some nematicides on plant nematodes and sugarcane yields—Wray Birchfield

Air pressure incorporation of fungicides for the control of red rot—L. Anzalone, Jr.

The effects of certain soil organic amendments on chlorotic streak infection—Claude Ricaud

Microbial populations in soils cropped to five varieties of sugarcane—Shaw-ming Yang

The pineapple disease of sugarcane in Puerto Rico—Lii-Jang Liu, A. C. Monllor, and Julia Mignucci

Sugarcane diseases in Mozambique—A. no Rosario Noronha

STATISTICS

Chairman: Basilio A. Rojas

No. half day sessions: 1

Papers:

Relationship between yield components in infield and outfield trials—A. I. Allam, P. E. Schilling, and K. L. Koonce

Economic aspects of the analysis of sugarcane experiments—A. M. Garza

Optimum economic use of fertilizers for sugarcane based on leaf analysis—B. G. Capo

Design and statistical analysis of field trials for sugarcane froghopper control—D. W. Fewkes

The orthogonalized San Cristobal design—Basilio A. Rojas

WEED CONTROL, PLANT PHYSIOLOGY, AND BIOCHEMISTRY

Chairman: H. W. Hilton

No. half day sessions: 2

Papers:

Soluble polysaccharides as a quality indicator in sugarcane—J. E. Irvine

Essentiality of chlorine for optimum growth of sugarcane—John E. Bowen

Biochemical and physiological effects of boron in sugarcane—John E. Bowen

A review of recent work on chemical ripening of sugarcane—R. A. Yates
Photosynthetic rate in sugarcane: Effect of virus diseases, genetic disorders, and freezing—J. E. Irvine
Sugarcane anthocyanins as color precursors and phytoalexins—P. Smith and P. M. Hall
Recent results of research on photosynthesis in sugarcane—D. Gross, C. W. Balder, J. Coombs, C. Bucke, and A. W. Gordon
Preemergence and postemergence herbicide treatments of sugarcane fields in Mauritius—J. Cyril Mongelard
Influence of winter weeds on growth and yield of sugarcane—Rex W. Millhollen
Johnsongrass infestation in Louisiana sugarcane—Ernest R. Stamper
Chemical weed control for Hawaiian plantations—H. W. Hilton and R. V. Osgood
Weed control practices on a South African sugar estate—E. C. Gilfillan

Manufacturing Sections

BY-PRODUCTS
Chairman: C. W. Davis
No. half day sessions: 1
Papers:
Review of progress with bagasse for use in industry—Joseph E. Atchison
Review of bagasse depithing—Joseph E. Atchison
Centrifugal wet depithing—Eduardo J. Villavicencio

ENGINEERING
Chairman: J. R. Allen
No. half day sessions: 3
Papers:
Extraction properties of crushed or shredded cane—H. Bruniche-Olsen and Ane-Grete Bundgaard
A washing process for the separation of juice from distintegrated cane fiber—John Farmer
The mechanism of extraction in the cane sugar diffusion process—P. W. Rein
Experiences with cane diffusion in Queensland—D. H. Foster and D. S. Shann
The maceration process in cane diffusion—Marcel Barre
Electric power factor in the cane sugar factory—K. S. Arnold
Some design and installation aspects of sugar mill final reduction gears—D. C. D. Coope
Bagasse storage and handling in Queensland—D. J. Muir
Traffic lights for rail crossings—S. R. Reichard and J. R. Allen
Application of magnetic separators in the sugar industry—A. A. Stent and Ted W. Vorfeld
Milling research in the University of Queensland—Mansergh Shaw
Steam utilization in a raw sugar factory—J. A. McGinn
Design of steam systems and modifications by computer aid—D. B. Batstone
The French screw press on cusc-cush—a step toward maximizing milling capacity—W. Bradley Kimbrough
The French screw press on Osceola Farms Company—Rafael Fanjul
Dry vs wet cane cleaning at Laupahoehoe Sugar Company—F. H. Middleton, L. J. Rhodes, G. E. Sloane, and W. O. Gibson

PROCESSING

Chairman: John H. Payne
No. half day sessions: 5

Papers:
The development of a trayless high capacity clarifier—D. J. Hale and E. Whayman
Effet condenser performance—P. N. Stewart
Vacuum pan construction and automation—Rud Frik Madsen
Improvement in evaporator operation using a new antiscalant—Rodolfo Schaer
Entrainment prevention in sugar mill evaporation plant—R. Frew
The disposal of sugar mill effluents in Queensland—D. Bevan
Pollution and pollution abatement in the Natal sugar industry—P. H. Kemp and S. M. H. Cox
Treatment of effluent from raw sugar factories—J. R. Miller
Handling of sugar factory waste streams—James C. P. Chen, Calvin O. Walters, Jr., Felix J. Blanchard, Mario P. Caballero, and Robert W. Picou
Raw sugar factory wastes and their control—E. R. Hendrickson and F. A. Grillot, Jr.
The control of boiler flyash emission in Queensland sugar mills—R. N. Cullen and P. C. Ivin
Study of plantation white sugar by carbonation-phosphatation—S. L. Sang, Z. H. Hsu, and H. T. Cheng
Color development in plantation white sugar manufacture—Wei Chen
The Talofloc decolorization process—M. C. Bennett, F. J. Gardiner, J. C. Abram, and J. T. Rundell
Identification of cane pigments that persist into refined sugar—Leon Farber and Frank G. Carpenter
Crystal size distribution by direct weighing—P. G. Wright, and E. T. White
Quantities in sugar technological calculations—H. J. Delavier
Analytical techniques for colour studies—P. Smith and P. E. Gregory
Automated determination of starch in raw sugar—S. L. Sang, W. C. Cheng, and P. H. Su
Starch determination in raw sugar by colorimetric methods—M. Matic
Dextrans and dextranase—R. H. Tilbury
Rheological properties of carbonation cane juice—Anil C. Raha
The evolution of a new look in South African raw sugar—J. B. Alexander
Cane sampling by coring, hydraulic press, and automatic saccharimetry—Y. Lemaire
Preliminary pilot plant studies of the production of raw sugar from sorghum—B. A. Smith, R. V. Romo, R. C. Smith, and W. R. Cowley

SECOND PLENARY SESSION — FRIDAY, NOVEMBER 5

Report of General Secretary-Treasurer
Report of Constitution Committee—Don J. Heinz
Report of Resolutions Committee—Dudley Smith
Report of committee to select meeting place for XV Congress—Robert Antoine
Election of officers for XV Congress
Presentation of Cecil Murray Award—John J. Seip
Presentation of Canal Street Farmer Certificates—Ramon E. Billeaud
Closing remarks by General Chairman
Announcements