

**SOUTHWESTERN BRANCH  
ENTOMOLOGICAL SOCIETY  
OF AMERICA**

*Twenty-Ninth Annual Meeting*

**THE ST. ANTHONY HOTEL  
SAN ANTONIO, TEXAS**

February 9-11, 1981

## MEETING NOTES

REGISTRATION FEES: ESA Members \$5.00; ESA Student Members \$1.00; and Non-Members \$10.00. Honorary Members, Emeritus Members and Non-Members giving invitational papers are not assessed registration fees.

ARPE INFORMATION DESK: Information on the American Registry of Professional Entomologists and ESA's professional certification program will be offered at a desk located in the registration area. The desk will be staffed by a representative of the Registry and ARPE members and will operate the same hours as the ESA Registration Desk.

MEETING SCHEDULE: Moderators and those presiding at special interest sessions or paper presentations should obtain pointers and timers at the Registration Desk. It is the presiding individual's responsibility to keep speakers on schedule. If a speaker is not able to make a presentation on schedule, the presiding party should insure that the next speaker does not begin until his/her scheduled time. Sessions should not get ahead or behind schedule.

AUDIO-VISUAL: Individuals who have slides to be used in their presentations should turn these materials in as early as possible after Registration to the individual scheduled to preside at his/her session. Each slide should be labelled with the presenting individual's name and presentation time and a small dot should be located at the lower left-hand corner of the slide frame as the slide is held to be read. Only projectors for 35mm slides will be provided. Please design your printed matter for projection so that it can easily be read by your audience.

MEETING SITE: The meeting will be held in the St. Anthony Hotel. The hotel is located in downtown San Antonio at 300 E. Travis.

## PROGRAM HIGHLIGHTS

### Monday, February 9

- 2:00 P.M. Executive Committee Meeting, Room 346
- 7:00 P.M. Annual Meeting of the Southwestern Entomological Society, Room 360

### Tuesday, February 10

- 8:30 A.M. General Session — SWB/ESA Business Meeting, Anacacho Room
- 10:30 A.M. General Session, Invitational Address by E.F. Knipling, "Some Views on Pest Management Strategies for the Future", Anacacho Room
- 7:00 P.M. ARPE Southwestern Regional Meeting, Navarro Room

### Wednesday, February 11

- 8:30 A.M. Final Business Meeting - Southwestern Branch ESA, Peraux Room

**PROGRAM**  
**TWENTY-NINTH ANNUAL MEETING**  
Southwestern Branch Entomological  
Society of America

**MONDAY, February 9**

- P.M.**  
2:00 Executive Committee Meeting, Room 346  
3:00-6:00 Registration, Lobby  
3:00-5:00 Informal Get-Together, Refreshments, courtesy  
Southwestern Branch ESA, Peraux Room  
3:00-6:00 ARPE Information Desk, Lobby
- EVENING**  
7:00-8:00 Fifth Annual Meeting of the Southwestern Entomological Society, W.W. Gibson, presiding.  
Room 360.

**TUESDAY, February 10**

- A.M.**  
8:00-10:00 Registration, Lobby  
8:00-10:00 ARPE Information Desk, Lobby  
8:30-10:00 Associates Hospitality, Informal Coffee, Refreshments courtesy Southwestern Branch ESA, Room 350  
8:30 **GENERAL SESSION, Anacacho Room (located by Garage Entrance)**  
Invocation  
Address of Welcome  
Address of President, Southwestern Branch Entomological Society of America — Horace W. Van Cleave  
Announcements and Committee Appointments  
Report of the Southwestern Branch Member of the Governing Board, Entomological Society of America — S. E. Kunz  
Presentation of Awards and Recognition of Achievements — M. K. Harris, Awards Committee Chairman  
10:00 **RECESS**  
10:30 Invitational Address: "Some Views on Pest Management Strategies for the Future." E.F. Knippling, U.S.D.A., SEA-AR, Beltsville, Maryland

**TUESDAY, February 10**  
**ANACACHO ROOM**  
**ECOLOGY, BEHAVIOR, AND BIONOMICS**  
J.C. Owens, Presiding

- P.M.**  
1:30 **DEFOLIATION OF SAND SHINNERY OAK IN WEST TEXAS BY *HEMILEUCA* SP. LARVAE.** J. K. Wangberg, B.R. McPherson, and S.L. Sickerman, Department of Entomology, Texas Tech University, Lubbock, Texas.  
1:40 **THE USE OF HABITAT TO PREDICT SURVIVAL OF RANGE CATERPILLAR.** W.D. Beavis and J.C. Owens, Department of Entomology and Plant Pathology, New Mexico State University, Las Cruces, New Mexico, and Melchor Ortiz, Department of Experimental Statistics, New Mexico State University, Las Cruces, New Mexico.

- 1:50 PATTERNS OF FLIGHT BEHAVIORS IN THE RANGE CATERPILLAR, *HEMILEUCA OLIVIAE* COCKERELL. T. S. Bellows and J.C. Owens, Department Entomology and Plant Pathology, New Mexico State University, Las Cruces, New Mexico.
- 2:00 THE ROLES OF VERTEBRATE PREDATION IN POPULATION DYNAMICS OF THE RANGE CATERPILLAR, *HEMILEUCA OLIVIAE* COCKERELL. C. Rebar and T.S. Bellows, Department of Entomology and Plant Pathology, New Mexico State University, Las Cruces, New Mexico.
- 2:10 LARVAL MORTALITY OF THE RANGE CATERPILLAR IN RELATION TO PLANT PRODUCTIVITY. J.A. Ludwig and T.S. Bellows, Department of Biology and Department of Entomology & Plant Pathology, New Mexico State University, Las Cruces, New Mexico.
- 2:20 A RELATIONSHIP BETWEEN THE NUMBER OF EGGS AND THE SIZE OF THE EGG MASS OF THE RANGE CATERPILLAR (*HEMILEUCA OLIVIAE* COCKERELL). M. Ortiz, Department of Experimental Statistics, New Mexico State University, Las Cruces, New Mexico, J. Owens and E. Huddleston, Department of Entomology and Plant Pathology, New Mexico State University, Las Cruces, New Mexico.
- 2:30 LARVAL ACTIVITY AND HABITAT OF THE RANGE CATERPILLAR, *HEMILEUCA OLIVIAE*. J. D. Hansen, Department of Entomology and Plant Pathology, New Mexico State University, Las Cruces, New Mexico.
- 2:40 INSECTS ATTACKING GUAYULE, *PARTHENIUM ARGENTATUM*, IN TEXAS. J. V. Richerson, Department of Biology, Sul Ross State University, Alpine, Texas.
- 2:50 AN INTEGRATED SENSING AND DATA ACQUISITION SYSTEM DESIGNED FOR UNATTENDED, CONTINUOUS MONITORING OF MICROCLIMATE. P. Teel, G. Huebner, Jr., and S. C. Fleetwood, Entomology Department, Texas A&M University, College Station, Texas.
- 3:00 INDEX OF ABUNDANCE, A TOOL FOR AREA-WIDE INSECT SURVEYS. B. M. Drees, Texas Agricultural Extension Service, College Station, Texas.
- 3:10 RECESS
- 3:30 INSECTS IN ARGENTINA FOR BIOLOGICAL CONTROL OF PERENNIAL BROOMWEED, *GUTIERREZIA* SPP. C.J. DeLoach, USDA, SEA-AR, Grassland, Soil and Water Research Laboratory, Temple, Texas.
- 3:40 HOST PLANT RELATIONSHIPS AMONG LEPIDOPTEROUS LEAF TIERS ON PERENNIAL BROOMWEED IN WEST TEXAS AND EASTERN NEW MEXICO. C.K. Pinson, J.K. Wangberg, and B.R. McPherson, Department of Entomology, Texas Tech University, Lubbock, Texas.
- 3:50 DEVELOPMENTALLY ACQUIRED HOST PLANT RESISTANCE IN TEXAS MOUNTAIN LAUREL, A NATIVE ORNAMENTAL, TO THE *GENISTA* CATERPILLAR, R.L. Crocker and G.L. Simpson, Texas A&M Research and Extension Center of Dallas.
- 4:00 FOLIAGE-FEEDING LEPIDOPTERA ON MESQUITE C.J. DeLoach, R. Psenciki, and T. Robbins, USDA, SEA-AR, Grassland, Soil and Water Research Laboratory, Temple, Texas.
- 4:10 PHEROMONE STUDIES ON THE BLISTER CONEWORM, *DIORYCTRIA CLARIORALIS* (WALKER) (LEPIDOPTERA: PYRALIDAE). R.S. Cameron, Texas Forest Service, Pest Control Section, Lufkin, Texas.

- 4:20 KAIROMONE RESPONSE PREFERENCES OF *THANASIMUS DUBIUS*, *TEMNOCHILA VIRESCENS* AND *MONOCHAMUS* SPP. TO MIXTURES OF SOUTHERN PINE BARK BEETLE SYNTHETIC BEHAVIORAL CHEMICALS. R.F. Billings and R.S. Cameron, Forest Pest Control Section, Texas Forest Service, Lufkin, Texas.
- 4:30 NANTUCKET PINE TIP MOTH INFESTATIONS RELATED TO SITE/STAND CONDITIONS IN NACOGDOCHES COUNTY, TEXAS, PLANTATIONS. M.N. White, D.L. Kulhavy, P.L. Blanchette, and B.J. Bentz, School of Forestry, Stephen F. Austin State University, Nacogdoches, Texas.
- 4:40 SOUTHERN PINE BEETLE HAZARD RATING ON SAM RAYBURN RESERVOIR RECREATION AREAS. R.A. Mask, D.L. Kulhavy, and M.L. Legg, School of Forestry, Stephen F. Austin State University, Nacogdoches, Texas.
- 4:50 EFFECT OF FLIGHT ACTIVITY ON LABORATORY RESPONSE OF THE SOUTHERN PINE BEETLE TO BARK BEETLE ATTRACTANTS. N.A. Andryszak, T.L. Payne, P.M. Billings, and J.M. Benenati, Department of Entomology, Texas A&M University, College Station, Texas.
- 5:00 LABORATORY DETERMINATION OF THE SOURCES OF ATTRACTION FOR THE SOUTHERN PINE BEETLE. J.D. Delorme and T.L. Payne, Department of Entomology, Texas A&M University, College Station, Texas.

**TUESDAY, February 10**  
**NAVARRO ROOM**  
**ECOLOGY, BEHAVIOR AND BIONOMICS**  
 D.P. Bartell, Presiding

- P.M.
- 1:30 INFLUENCE OF MOISTURE STRESS ON GREENBUG REPRODUCTION. J.T. Need and R. D. Eikenbary, Department of Entomology, Oklahoma State University, Stillwater, Oklahoma.
- 1:40 THE NATURAL ENEMIES OF GREENBUG: A REVIEW. F.E. Gilstrap, Department of Entomology, Texas A&M University, College Station, Texas.
- 1:50 COLONIZATION OF COTTON BY PREDACEOUS ARTHROPODS. D.A. Dean and W.L. Sterling, Department of Entomology, Texas A&M University, College Station, Texas.
- 2:00 PROSPECTS FOR SAND SHINNERY OAK MANAGEMENT FOR BOLL WEEVIL CONTROL IN OVERWINTERING HABITAT. J.E. Slosser, Texas Agricultural Experiment Station, Vernon, Texas, and D.G. Foster, Texas Agricultural Extension Service, Stanton, Texas.
- 2:10 SURVIVAL OF BOLL WEEVIL COHORTS ENTERING WINTER HABITAT AT DIFFERENT TIMES. S.C. Carroll and D.R. Rummel, Texas Agricultural Experiment Station, Lubbock, Texas.
- 2:20 A SELF-MARKING AND RELEASE DEVICE FOR BOLL WEEVIL RELEASE-RECAPTURE STUDIES. J.R. Price and J.E. Slosser, Texas Agricultural Experiment Station, Vernon, Texas.
- 2:30 LAMINATED PLASTIC AS A DISPENSER FOR COMPONENTS OF THE CORN EARWORM, *HELIOTHIS ZEA*, PHEROMONE. J.D. Lopez, Jr., USDA-AR, Cotton Insects Research Laboratory, College Station, Texas.

- 2:40 EVALUATION OF PHEROMONE COMPONENTS AND THEIR DEGRADATION PRODUCTS ON *HELIOTHIS ZEA* AND *HELIOTHIS VIRESCENS*. T.N. Shaver and J.D. Lopez, Jr., USDA, SEA-AR, Cotton Insects Research Laboratory, and A.W. Hartstack, Jr., USDA, SEA-AR, Pest Control Equipment and Methods Research, College Station, Texas.
- 2:50 DISRUPTING MATING BEHAVIOR OF *HELIOTHIS* SPECIES BY DISPENSING SEX PHEROMONE COMPONENTS. D.E. Hendricks, USDA, SEA-AR, Brownsville, Texas.
- 3:00 WITHIN FIELD DISTRIBUTION OF AGROMYZID LEAF MINERS ON BELL PEPPERS. L.D. Chandler, M. Torres, and S.M. Corcoran, USDA, SEA-AR, Subtropical Fruit & Vegetable Research, Weslaco, Texas.
- 3:10 RECESS
- 3:30 SOME ASPECTS OF THE BIOLOGY OF SORGHAM MIDGE PARASITES. C.L. Lippincott and G.L. Teetes, Department of Entomology, Texas A&M University, College Station, Texas.
- 3:40 SEASONAL INCIDENCE OF BLUE ALFALFA APHID IN OKLAHOMA. R. Berberet and K.M. Senst, Department of Entomology, Oklahoma State University, Stillwater, Oklahoma.
- 3:50 SUNFLOWER STEM WEEVIL: OVERWINTERING AND SPRING EMERGENCE ON THE HIGH PLAINS. C.E. Rogers, USDA, SEA-AR, Conservation and Production Research Laboratory, Bushland, Texas.
- 4:00 INTRA-PLANT DISTRIBUTION OF THRIPS ON ONIONS IN THE HIGH PLAINS OF TEXAS. M.A. Scott and D.P. Bartell, Department of Entomology, Texas Tech University, Lubbock, Texas.
- 4:10 PARASITOID FAUNA AND PARASITISM RATES OF *HELIOTHIS ZEA* (BODDIE) EGGS ON TWO HOST PLANTS. J.C. Segers, J.H. Benedict, C.A. Goodpasture, and D.M. George, Texas A&M University Agricultural Experiment Station, Corpus Christi, Texas.
- 4:20 NATURAL ENEMIES OF MEDFLY (*CERATITIS CAPITATA*) IN COSTA RICA. R.A. Wharton and F.E. Gilstrap, Department of Entomology, Texas A&M University, College Station, Texas, R. Rhode and W. Hart, USDA, Citrus Insects Laboratory, Weslaco, Texas.
- 4:30 A COMPARISON OF THE HOST RACES OF THE APPLE MAGGOT (*RHAGOLETIS POMONELLA*). S.R. Diehl, The University of Texas at Austin, Austin, Texas.
- 4:40 *CEROPLASTES CIRRIPEIFORMIS* PARASITE COMPLEX ON TEXAS CITRUS. H.A. Dean, Texas Agricultural Experiment Station, Weslaco, Texas, and Dale Meyerdirk, USDA Citrus Insects Research, Weslaco, Texas.
- 4:50 PARASITES OF LEPIDOPTEROUS LARVAE IN ALFALFA IN OKLAHOMA. K.M. Senst and R. Berberet, Department of Entomology, Oklahoma State University, Stillwater, Oklahoma.
- 5:00 KLEINGRASS AND WEEPING LOVEGRASS TUSSOCKS AS OVERWINTERING MICROHABITAT FOR *HIPPODAMIA CONVERGENS* (COLEOPTERA: COCCINELLIDAE). J. Yanes, Jr., B.O. Cartwright, and R.D. Eikenbary, Department of Entomology, Oklahoma State University, Stillwater, Oklahoma.

**TUESDAY, February 10**  
ROOM 360  
CROP PROTECTION ENTOMOLOGY  
C.E. Rogers, Presiding

- P.M.
- 1:30 EFFECTS OF SELECTED BUFFELGRASS HYBRIDS ON NYMPHAL DEVELOPMENT OF *AENEOLAMIA ALBOFASCIATA* AND *PROSAPIA SIMULANS*. H.W. Head, H.W. Van Cleave, Department of Entomology, Texas A&M University, College Station, Texas, and D. Enkerlin S., Instituto Tecnológico de Estudios Superiores de Monterrey, Monterrey, Nueva Leon, Mexico.
- 1:40 A STATIC ECONOMIC THRESHOLD FOR PECAN WEEVIL. J.A. Jackman, Texas Agricultural Extension Service, College Station, Texas, and M.K. Harris, Department of Entomology, Texas A&M University, College Station, Texas.
- 1:50 PECAN WEEVIL MANAGEMENT PROGRAM IN GLASSCOCK COUNTY. C. Neeb, Texas Agricultural Extension Service, Ft. Stockton, Texas, and D.G. Foster, Texas Agricultural Extension Service, Stanton, Texas.
- 2:00 A NEW METHOD TO ESTIMATE YIELD LOSS FROM RICE STINK BUG. C.C. Bowling, TAMU Research and Extension Center, Beaumont, Texas.
- 2:10 YIELD LOSSES BY SOUTHWESTERN CORN BORER STALK TUNNELING. J.L. Gaillard, Corn Entomologist, Inla, Mexico.
- 2:20 ORTHENE 80 SEED PROTECTANT: CUTWORM AND SEED CORN MAGGOT CONTROL. A.D. Fulford, Chevron Chemical Company, Greenville, Mississippi.
- 2:30 NONTARGET INSECTICIDES INFLUENCING SECONDARY OUTBREAKS OF THE BANKS GRASS MITE. E.D. Bynum, Jr. and T.L. Archer, Texas A&M University Agricultural Research and Extension Center, Lubbock, Texas.
- 2:40 PROBLEMS ENCOUNTERED IN ORGANIZING A PEST MANAGEMENT PROGRAM ON COTTON, GRAIN SORGHUM AND SMALL GRAINS IN THE TEXAS BLACKLANDS. W.E. Buxkemper, Texas Agricultural Extension Service, Hillsboro, Texas.
- 2:50 FLEAHOPPER CONTROL, NORTHERN BLACKLANDS, COMPARISON OF TWO APPLICATION SCHEDULES. W.C. Langston and M.F. Schuster, Texas A&M University Agricultural Research and Extension Center, Dallas, Texas.
- 3:00 VALUE OF UNIFORM PLANTING FOR BOLL WEEVIL CONTROL IN THE ROLLING PLAINS. E.P. Boring, III, Texas Agricultural Extension Service, Vernon, Texas.
- 3:10 RECESS
- 3:30 DELAYED UNIFORM PLANTING OF COTTON TO SUPPRESS WEEVIL POPULATIONS IN THE SOUTHERN ROLLING PLAINS OF TEXAS. T.W. Fuchs, Texas Agricultural Extension Service, San Angelo, Texas.
- 3:40 ANALYSIS OF MULTI-CHARACTER INSECT RESISTANCE IN COTTON. R.E. Anderson and M.F. Schuster, Texas A&M University, Agricultural Research and Extension Center, Dallas, Texas.
- 3:50 POUNCE INSECTICIDE: REDUCED VOLUME APPLICATION FOR COTTON INSECT CONTROL. E.V. Gage, FMC Corporation, Agricultural Chemical Group, San Antonio, Texas.

- 4:00 CYNÆUS ANGUSTUS: A NUISANCE PEST ASSOCIATED WITH COTTON GIN TRASH IN THE HIGH PLAINS. W.P. Morrison, Department of Entomology, Texas Tech University, Lubbock, Texas, F.V. Dunkel, Department of Entomology, University of Minnesota, St. Paul, Minnesota, R.G. Thompson, Texas Agricultural Extension Service, Lubbock, Texas.
- 4:10 CONTROL OF *HELIOTHIS* SPP. IN COTTON USING MICROBIAL INSECTICIDES WITH A FEEDING STIMULANT. D. Myers, Texas A&M University, Department of Entomology, College Station, Texas.
- 4:20 ECONOMIC IMPACT OF *HELIOTHIS* SPP. ON HIGH PLAINS COTTON PRODUCTION. J.F. Leser, Texas Agricultural Extension Service, Texas A&M University, Lubbock, Texas.
- 4:30 HIGH TANNIN COTTON RESISTANCE TO *HELIOTHIS* SPP. by M.F. Schuster, W.C. Langston and R.E. Anderson, Texas A&M University Agricultural Research and Extension Center, Dallas, Texas.
- 4:40 TOLERANCE OF COMMERCIAL COTTON VARIETIES TO *HELIOTHIS* ZEA. K.S. Nussett and J.H. Young, Entomology Department, Oklahoma State University, Stillwater, Oklahoma.
- 4:50 REVIEW OF COTTON INSECT RESEARCH AT UVALDE, TEXAS. J.K. Walker, Department of Entomology, Texas A&M University, College Station, Texas.
- 5:00 MODELLING CONSUMPTION AND ECONOMIC INJURY LEVEL IN THE RANGE CATERPILLAR, *HEMILEUCA OLIVIAE* COCKERELL. M.H. Lewis and T.S. Bellows, Department of Entomology and Plant Pathology, New Mexico State University, Las Cruces, New Mexico.

**TUESDAY, February 10**  
 ROOM 357  
 MEDICAL AND VETERINARY ENTOMOLOGY  
 R.E. Wright, Presiding

- P.M.
- 1:30 PARASITES OF THE HORN FLY IN CENTRAL TEXAS. R.L. Harris and J.W. Summerlin, USDA, SEA-AR, College Station, Texas.
- 1:40 THE EFFECT OF DUNG BEETLES ON HORN FLY PARASITISM BY *SPALANGIA ENDIUS* AND *MUCIDIFURAX RAPTOR*. T. Stodgel and D.E. Bay, Department of Entomology, Texas A&M University, College Station, Texas.
- 1:50 SOME STUDIES ON HORN FLY DISPERSAL. W.F. Chamberlain, USDA, SEA-AR, U.S. Livestock Insects Laboratory, Kerrville, Texas.
- 2:00 LARVICIDAL ACTIVITY OF MERCK MK-933 AGAINST DUNG-BREEDING FLIES. J.A. Miller, S.E. Kunz, and D.D. Oehler, USDA, SEA-AR, U.S. Livestock Insects Laboratory, Kerrville, Texas, and R.W. Miller, USDA, SEA-AR, Livestock Insects Laboratory, Beltsville, Maryland.
- 2:10 ACTIVITY OF IVERMECTIN AGAINST HORN FLIES AND STABLE FLIES IN AGING MANURE. C.S. Schmidt, USDA, SEA-AR, U.S. Livestock Insects Laboratory, Kerrville, Texas.
- 2:20 EVALUATION OF PERMETHRIN FOR STABLE FLY CONTROL ON HORSES IN THE PHILIPPINES. J.T. Lang, USAF School of Aerospace Medicine, Epidemiology Division, Brooks AFB, Texas.

- 2:30 MANAGEMENT OF AN INSECTICIDE — RESISTANT POPULATION OF THE HOUSE FLY, *MUSCA DOMESTICA* L., BY THE USE OF A NEW BENZYL PHENOL CHEMOSTERILANT, J2644. S.C. Rawlins, USDA, SEA-AR, Screwworm Research, Mission, Texas.
- 2:40 EFFICACY AND MODE OF ACTION OF INSECTICIDE-IMPREGNATED EAR TAGS AND LEG BANDS AGAINST CATTLE GRUBS. S.E. Kunz and J.A. Miller, USDA, SEA-AR, U.S. Livestock Insects Laboratory, Kerrville, Texas.
- 2:50 EVALUATION OF CGA-72662 AS A FEED ADDITIVE AND AS A RESIDUAL SPRAY FOR THE CONTROL OF HOUSE FLIES BREEDING IN POULTRY MANURE. C.L. Cole, Texas Agricultural Extension Service, Bryan, Texas.
- 3:00 SOUTHERN BUFFALO GNAT, *CNEPHIA PECUARUM* (RILEY), OUTBREAKS IN NORTHEAST TEXAS. J.V. Robinson, Texas Agricultural Extension Service, Overton, Texas.
- 3:10 RECESS
- 3:30 CURRENT STATUS OF THE SCREWORM ERADICATION PROGRAM. O.H. Graham and J.P. Spencer, USDA, SEA-AR, Screwworm Research, Mission, Texas.
- 3:40 MARK-RELEASE-RECAPTURE STUDIES OF IRRADIATED SCREWORMS IN SOUTH TEXAS AND VERACRUZ, MEXICO. R.D. Peterson II, USDA, SEA-AR, Screwworm Research, Mission, Texas.
- 3:50 A SURVEY OF THE SCREWORM (*COCHLIOMYIA HOMINIVORAX*, *COQUEREL*) IN THE HIGHLANDS OF CHIAPAS, MEXICO. J.W. Mackley, USDA, SEA-AR, Screwworm Research Laboratory, Tuxtla Gutierrez, Chiapas, Mexico.
- 4:00 DIRECTIONAL SELECTION FOR PUPAL WEIGHT AND ITS HERITABILITY IN THE SCREWORM, *COCHLIOMYIA HOMINIVORAX* (COQUEREL). D.O. McInnis, USDA, SEA-AR, Screwworm Research, Mission, Texas.
- 4:10 EVALUATION OF SCREWORM CANDIDATE STRAINS IN MEXICO. J.P. Spencer, USDA, SEA-AR, Screwworm Research, Mission, Texas.
- 4:20 SCREWORM ADULT SUPPRESSION SYSTEM (SWASS) EVALUATION IN COLIMA, COLIMA, MEXICO. F.H. Tannahill, USDA, SEA-AR, Screwworm Research, Mission, Texas.
- 4:30 U.S. AIR FORCE DENGUE PREVENTION AND CONTROL PROGRAM. D.D. Pinkovsky, USAF, BSC, U.S. Air Force School of Aerospace Medicine, San Antonio, Texas.
- 4:40 THE ABILITY OF THE FACE FLY: *MUSCA AUTUMNALIS* (DeGEER), TO TRANSMIT *MORAXELLA BOVIS* UNDER LABORATORY CONDITIONS. J.J. Arends, P.B. Barto, and R.E. Wright, Oklahoma State University, Stillwater, Oklahoma.
- 4:50 USAF PLAGUE SURVEILLANCE PROGRAM. B.J. Muse, U.S. Air Force, Brooks AFB, Texas.
- 5:00 THE HOST ASSOCIATIONS OF A FLEA, *CERATOPHYLLUS CELSUS*, JORDAN. C.E. Hopla, Department of Zoology, Oklahoma University, Norman, Oklahoma.
- 5:10 OBSERVATIONS ON POPULATION DYNAMICS OF THE SWALLOW BUG *OECIACUS VICARIUS*, HORVATH. J.E. Loye, Department of Zoology, Oklahoma University, Norman, Oklahoma.
- 5:20 INGESTION OF ERYTHROCYTES BY *PSOROPTES OVIS* (HERING). F.C. Wright, USDA, SEA-AR, U.S. Livestock Insects Laboratory, Kerrville, Texas, and J.R. DeLoach, USDA, SEA-AR, Veterinary Toxicology & Entomology Research Laboratory, College Station, Texas.

- 5:30 SUSCEPTIBILITY OF SCABIES-NAIVE HEREFORD AND BRAHMAN CALVES TO *PSOROPTES OVIS* INFESTATIONS. W.F. Fisher and F.C. Wright, USDA, SEA-AR, U.S. Livestock Insects Laboratory, Kerrville, Texas.
- 5:40 ATTACHMENT AND MATING BEHAVIOR OF THE MITE, *PSOROPTES OVIS*. F.S. Gulllot, USDA, SEA-AR, U.S. Livestock Insects Laboratory, Kerrville, Texas.

**TUESDAY, February 10**  
SPECIAL INTEREST SESSION

EVENING  
7:00-9:00

ARPE SOUTHWESTERN REGIONAL MEETING:  
"Task Assignments for the Formation of the Texas State Association of ARPE," J.K. Olson, Southwestern Regional Representative to ARPE Governing Council, Presiding. Navarro Room.

**WEDNESDAY, February 11**  
ROOM 360  
ECOLOGY, BEHAVIOR, AND BIONOMICS  
F.E. Gilstrap, Presiding

A.M.

- 10:30 NOTES ON THE DISTRIBUTION, ECOLOGY AND MORPHOLOGY OF THE MITE GENUS *NANORCHESTES*. R.W. Strandmann, Department of Biology, Southwest Texas State University, San Marcos, Texas.
- 10:40 THE INFLUENCE OF LEAF STRESS ON BANKS GRASS MITE-HOST RELATIONS. T.L. Archer, and E.D. Bynum, Jr., Texas A&M University Agricultural Research and Extension Center, Lubbock, Texas.
- 10:50 VECTOR FEEDING APPARATUSES, FEEDING BEHAVIOR, AND PLANT VIRUS TRANSMISSION. K.F. Harris and S.A. Childress, Department of Entomology, Texas A&M University, College Station, Texas.
- 11:00 TERMITES AS PERCEIVED BY ARCHITECTS, BUILDING CONTRACTORS, PEST CONTROL OPERATORS, AND THE GENERAL PUBLIC IN TEXAS. T.A. Granovsky and P.J. Hamman, Department of Entomology, Texas A&M University, College Station, Texas.
- 11:10 TEXAS TERMITE SURVEY. H.N. Howell, Jr. TAES, Department of Entomology, College Station, Texas.
- 11:20 SURVEY OF AUCHENORRHYNCHA (INSECTA: HOMOPTERA) AS POTENTIAL VECTORS OF LETHAL YELLOWING DISEASE OF ORNAMENTAL DATE PALMS IN SOUTH TEXAS. D.E. Meyerdirk, USDA, SEA, AR, Citrus Insects Research, Weslaco, Texas.
- 11:30 LESSER CORNSTALK BORER PARASITE GUILD. J.W. Smith, Jr., Department of Entomology, Texas A&M University, College Station, Texas.
- 11:40 APHID POPULATIONS AND THE SPREAD OF PEANUT MOTTLE VIRUS. H.B. Highland and J. Demski, University of Georgia Agricultural Experiment Station, The Georgia Experiment Station, Experiment, Georgia.
- 11:50 BEETLES AS POTENTIAL PESTS OF GUAYULE, *PARthenium ARGENTATUM* GRAY. L.A. Aguirre and J. Corrales Universidad Autonoma Agraria "Antonio Narro" Saltillo, Coah. Mex.

WEDNESDAY, February 11  
PERAUX ROOM  
MEDICAL AND VETERINARY ENTOMOLOGY  
F.S. Guillot, Presiding

- A.M.
- 10:30 CONTROL OF *PSOROPTES OVIS* ON DESERT BIGHORN SHEEP. H.G. Kinzer and W.E. Houghton, Entomology and Plant Pathology, New Mexico State University, Las Cruces, New Mexico, W.P. Meleney, USDA, SEA-AR, U.S. Livestock Insects Laboratory, Kerrville, Texas, and B. Lange, National Wildlife Disease Center, Madison, Wisconsin.
- 10:40 INFECTIVITY OF THE MITE, *PSOROPTES OVIS* AFTER TREATMENT WITH IVERMECTIN® MK-933 AND TRANSFER TO STANCHIONED, UNTREATED HEREFORD CALVES. F.S. Guillot and W.P. Meleney, USDA, SEA-AR, U.S. Livestock Insects Laboratory, Kerrville, Texas.
- 10:50 RESIDUAL EFFECTIVENESS OF IVERMECTIN® AND TOXAPHENE AGAINST *PSOROPTES OVIS* (ACARINA: PSOROPTIDAE) OF CATTLE. W.P. Meleney, F.C. Wright, and F.S. Guillot, USDA, SEA-AR, U.S. Livestock Insects Laboratory, Kerrville, Texas.
- 11:00 SUSCEPTIBILITY OF GULF COAST TICKS TO HEAT AND THE POTENTIAL OF PRESCRIBED BURNING FOR TICK MANAGEMENT. T.W. Oldham, Weider Wildlife Foundation, Sinton, Texas and Department of Range Sci., Texas A&M University, College Station, Texas, P.D. Teel, Department of Entomology, Texas A&M University, College Station, Texas, and C.J. Scifres, Department of Range Science, Texas A&M University, College Station, Texas.
- 11:10 PERFORMANCE OF LONE STAR TICKS IN NATURAL AND UNNATURAL ENVIRONMENTS. H.G. Koch, USDA, SEA-AR, Lone Star Tick Research Laboratory, Poteau, Oklahoma.
- 11:20 FACTORS AFFECTING DEGRADATION OF SUSTAINED-RELEASE BOLUSES. J.L. Riner and J.A. Hair, Department of Entomology, Oklahoma State University, Stillwater, Oklahoma.
- 11:30 ULTRASTRUCTURE OF *ANAPLASMA MARGINALE* THEILER IN *DERMACENTOR ANDERSONI* STILES. K.M. Kocan, J.A. Hair, and S.A. Ewing, Oklahoma State University, Stillwater, Oklahoma.
- 11:40 CHEMOPROPHYLAXIS OF A HEMATOPROTOZOAN DISEASE OF CATTLE. R.L. Byford and J.A. Hair, Department of Entomology, Oklahoma State University, Stillwater Oklahoma.
- 11:50 OVIPOSITIONAL AND MORPHOLOGICAL COMPARISON OF SIX STRAINS OF THE SOUTHERN CATTLE TICK. R.B. Davey, USDA, SEA-AR, Cattle Fever Tick Research Laboratory, Falcon Heights, Texas, and R.L. Osburn, USDA, SEA-AR, U.S. Livestock Insects Laboratory, Kerrville Texas.
- 12:00 SUSCEPTIBILITY OF STRAINS OF *BOOPHILUS MICROPLUS* TO ACARICIDES. R.O. Drummond, USDA, SEA-AR, U.S. Livestock Insects Laboratory, Kerrville, Texas.
- 12:10 BIOLOGY OF THE TROPICAL BONT TICK *AMBLYOMMA VARIEGATUM* (FABRICIUS), IN PUERTO RICO. G.I. Garrís, USDA, SEA-AR, Tropical Tick Research Laboratory, Mayaguez, Puerto Rico.
- 12:20 CROSS-MATING STUDIES ON *AMBLYOMMA* TICKS. R.L. Osburn, USDA, SEA-AR, U.S. Livestock Insects Laboratory, Kerrville, Texas.

- 12:30 ASPECTS OF THE LIFE HISTORY AND BIOLOGY OF *ORNITHODOROS TURICATA*. J.E. George and S.E. Ernst, USDA, SEA, AR, U.S. Livestock Insects Laboratory, Kerrville, Texas.
- 12:40 EFFICACY OF IVERMECTIN® AGAINST LONE STAR TICKS. J.L. Lancaster, Jr. and J.S. Simco, Department of Entomology, University of Arkansas, Fayetteville, Arkansas.

**WEDNESDAY, February 11**

ROOM 360

GENETICS, PHYSIOLOGY, BIOCHEMISTRY, AND TOXICOLOGY

J.K. Wangberg, Presiding

A.M.

- 10:30 SENSILLA ON THE ANTENNAL CLUB OF THE DOUGLAS-FIR BEETLE, *DENDROCTONUS PSEUDOTSUGAE* HOPKINS (COLEOPTERA: SCOLYTIDAE). J.C. Dickens, T.L. Payne, and A. Gutmann, Department of Entomology, Texas A&M University, College Station, Texas.
- 10:40 ARTIFICIAL DIETS FOR THE RANGE CATERPILLAR (LEPIDOPTERA: SATURNIIDAE). C.M. Sutherland, J.C. Owens, and E.W. Huddleston, Department of Entomology and Plant Pathology, New Mexico State University, Las Cruces, New Mexico.
- 10:50 THE EFFECT OF PHOTOPERIOD AND TEMPERATURE ON THE SIZE AND FECUNDITY OF BLACK-MARGINED APHID, *MONELLIA CARYELLA* (FITCH) THROUGH CONTINUOUS GENERATIONS. D.E. Sears and H.W. Van Cleave, Department of Entomology, Texas A&M University, College Station, Texas.
- 11:00 GENETIC VARIATION AMONG POPULATIONS OF BOLL WEEVIL IN MEXICO. J.R. Cate, Department of Entomology, Texas A&M University, College Station, Texas, and D.T. North, USDA/SEA Radiation and Metabolism Research Laboratory, Fargo, North Dakota.
- 11:10 THE EFFECTS OF DIETARY NITROGEN ON DEVELOPMENT AND REPRODUCTION IN THE BOLL WEEVIL *ANTHONOMUS GRANDIS*. R.A. Hilliard and L.L. Keeley, Department of Entomology, Texas A&M University, College Station, Texas.
- 11:20 <sup>35</sup>S-CYSTEINE INCORPORATION INTO THE NEUROSECRETORY MATERIAL OF THE ADULT COCKROACH *CORPUS CARDIACUM*. E.L. Smith and L.L. Keeley, Department of Entomology, Texas A&M University, College Station, Texas.
- 11:30 A SURVEY OF PESTICIDE USE PATTERNS IN TEXAS HOMES. R. Holloway, Department of Entomology, Texas A&M University, College Station, Texas, and A.G. Cosby, Department of Rural Sociology, Texas A&M University, College Station, Texas.
- 11:40 PHYSIOLOGICAL ACTIVITY OF OVERWINTERING BOLL WEEVILS IN SUBTROPICAL AREAS OF THE RIO GRANDE VALLEY OF TEXAS. A.A. Guerra, USDA, SEA, AR, Subtropical Texas Area, Cotton Insects Research, Brownsville, Texas.

INDEX OF AUTHORS

AUTHOR	PAGE NO.	AUTHOR	PAGE NO.
Aguirre, L. A.	10	Gage, E. V.	7
Anderson, R. E.	7, 8	Gallardo, J. L.	7
Andryszak, N. A.	5	Garris, G. I.	11
Archer, T. L.	7, 10	George, D. M.	6
Arends, J. J.	9	George, J. E.	12
		Gilstrap, F. E.	5, 6
		Goodpasture, C. A.	6
Bartell, D. P.	6	Graham, O. H.	9
Barto, P. B.	9	Granovsky, T. A.	10
Bay, D. E.	8	Guerra, A. A.	12
Beavis, W. D.	3	Guillot, F. S.	10, 11
Bellows, T. S.	4, 8	Gutmann, A.	12
Benedict, J. H.	6		
Benenati, J. M.	5	Hair, J. A.	11
Bentz, B. J.	5	Hamman, P. J.	10
Berberet, R.	6	Hansen, J. D.	4
Billings, P. M.	5	Harris, K. F.	10
Billings, R. F.	5	Harris, M. K.	7
Blanchette, P. L.	5	Harris, R. L.	8
Boring, E. P., III.	7	Hart, W.	6
Bowling, C. C.	7	Hartstack, A. W., Jr.	6
Buxkemper, W. E.	7	Head, H. W.	7
Byford, R. L.	11	Hendricks, D. E.	6
Bynum, E. D., Jr.	7, 10	Highland, H. B.	10
		Hilliard, R. A.	12
		Holloway, R. L.	12
Cameron, R. S.	4, 5	Hopla, C. E.	9
Carroll, S. C.	5	Houghton, W. E.	11
Cartwright, B. O.	6	Howell, H. N., Jr.	10
Cate, J. R.	12	Huddleston, E. W.	4, 12
Chamberlain, W. F.	8	Huebner, G., Jr.	4
Chandler, L. D.	6		
Childress, S. A.	10	Jackman, J. A.	7
Cole, C. L.	9		
Corcoran, S. M.	6	Keeley, L. L.	12
Corrales, J.	10	Kinzer, H. G.	11
Cosby, A. G.	12	Knipling, E. F.	3
Crocker, R. L.	4	Kocan, K. M.	11
		Koch, H. G.	11
		Kulhavy, D. L.	5
		Kunz, S. E.	8, 9
Davey, R. B.	11		
Dean, D. A.	5	Lancaster, J. L., Jr.	12
Dean, H. A.	6	Lang, J. T.	8
DeLoach, C. J.	4	Lange, B.	11
DeLoach, J. R.	9	Lanston, W. C.	7, 8
Delorme, J. D.	5	Legg, M. L.	5
Demski, J.	10	Leser, J. F.	8
Dickens, J. C.	12	Lewis, M. H.	8
Diehl, S. R.	6	Lippincott, C. L.	6
Drees, B. M.	4	Lopez, J. D., Jr.	5, 6
Drummond, R. O.	11	Loye, J. E.	9
Dunkel, F. V.	8	Ludwig, J. A.	4
Eikenbary, R. D.	5, 6	Mackley, J. W.	9
Enkerlin, S. D.	7	Mask, R. A.	5
Ernst, S. E.	12	McInnis, D. O.	9
Ewing, S. A.	11	McPherson, B. R.	3, 4
		Meleney, W. P.	11
		Meyerdirk, D. E.	6, 10
		Miller, J. A.	8, 9
Fisher, W. F.	10		
Fleetwood, S. C.	4		
Foster, D. G.	5, 7		
Fuchs, T. W.	7		
Fulford, A. D.	7		

<b>AUTHOR</b>	<b>PAGE NO.</b>	<b>AUTHOR</b>	<b>PAGE NO.</b>
Miller, R. W.	8	Scott, M. A.	6
Morrison, W. P.	8	Sears, D. E.	12
Muse, B. J.	9	Segers, J. C.	6
Myers, D.	8	Senst, K. M.	6
		Shaver, T. N.	6
		Sickerman, S. L.	3
Neeb, C.	7	Simco, J. S.	12
Need, J. T.	5	Simpson, G. L.	4
North, D. T.	12	Slosser, J. E.	5
Nussett, K. S.	8	Smith, E. L.	12
		Smith, J. W., Jr.	10
Oehler, D. D.	8	Spencer, J. P.	9
Oldham, T. W.	11	Sterling, W. L.	5
Ortiz, M.	3, 4	Stodgel, T.	8
Osburn, R. L.	11	Strandtmann, R. W.	10
Owens, J. C.	3, 4, 12	Summerlin, J. W.	8
		Sutherland, C. M.	12
Payne, T. L.	5, 12	Tannahill, F. H.	9
Peterson, R. D., II.	9	Teel, P. D.	4, 11
Pinkovsky, D. D.	9	Teetes, G. L.	6
Pinson, C. K.	4	Thompson, R. G.	8
Price, J. R.	5	Torres, M.	6
Psenciki, R.	4		
		Van Cleave, H. W.	7, 12
Rawlins, S. C.	9		
Rebar, C.	4	Walker, J. K.	8
Rhode, R.	6	Wangberg, J. K.	3, 4
Richerson, J. V.	4	Wharton, R. A.	6
Riner, J. L.	11	White, M. N.	5
Robbins, T.	4	Wright, F. C.	9, 10, 11
Robinson, J. V.	9	Wright, R. E.	9
Rogers, C. E.	6		
Rummel, D. R.	5		
		Yanes, J., Jr.	6
Schmidt, C. D.	8	Young, J. H.	8
Schuster, M. F.	7		
Scifres, C. J.	11		

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