

LITERATURE CITED

- Abdel-Bary, A. A., S. M. Hassan, and K. Mohamed. 1968. Susceptibility of some cotton varieties to insect infestation. I. Infestation by thrips. *Cotton Grow. Rev.* 45: 296-305.
- Abdel-Gawaad, A. A. W., F. H. El-Gayar, A. S. Soliman, and O. A. Zaghloul. 1973. Studies on *Thrips tabaci* Lindeman. X. Mechanisms of resistance to *Thrips tabaci* L. in cotton varieties. *Z. Angew. Entomol.* 73: 251-255.
- Ables, J. R., J. L. Goodenough, A. W. Hartstack, and R. L. Ridgway. 1983. Entomophagous arthropods, pp. 103-128. In R. L. Ridgway, E. P. Lloyd, and W. H. Cross (eds.), *Cotton Insect Management with Special Reference to the Boll Weevil*. USDA Agr. Handb. No. 589.
- Ables, J. R., S. L. Jones, and D. W. McCommas Jr. 1978. Response of selected predator species to different densities of *Aphis gossypii* and *Heliothis virescens* eggs. *Environ. Entomol.* 7: 402-404.
- Ables, J. R., B. G. Reeves, R. K. Morrison, R. E. Kinzer, S. L. Jones, R. L. Ridgway, and D. L. Bull. 1979. Methods for the field release of insect parasites and predators. *Trans. ASAE* 22: 59-62.
- Abro, G. H., R. A. Dybas, A. St J. Green, and D. J. Wright. 1988. Toxicity of avermectin B1 against a susceptible laboratory strain and an insecticide-resistant strain of *Plutella xylostella* (Lepidoptera: Plutellidae). *J. Econ. Entomol.* 81: 1575-1580.
- Abu-El-Haj, S., M. A. H. Fahmy, and T. R. Fukuto. 1979. Insecticidal activity of 1,1,1-trichloro-2,2-bis(p-chlorophenyl)ethane (DDT) analogues. *J. Agric. Food Chem.* 27: 258-260.
- Adams, C. H., W. H. Cross, and H. C. Mitchell. 1969. Biology of *Bracon mellitor*, a parasite of the boll weevil. *J. Econ. Entomol.* 62: 889-895.
- Adams, C. J., C. A. Beasley, and T. J. Henneberry. 1987. Pink bollworm spring emergence related to weather parameters, pp. 276-281. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Adams, J. R., E. A. Stadelbacher, and G. J. Tompkins. 1979. A new virus-like particle isolated from the cotton bollworm *Heliothis zea*. 37th Ann. Proc. Electron Microscopy Soc. Amer. 52-53.
- Adams, M. E. 1986. Altering insect brain chemistry, pp. 163. In *USDA Yearbook of Agriculture*.
- Adams, M. E., and T. A. Miller. 1979. Site of action of pyrethroids: Repetitive "backfiring" in flight motor units of house fly. *Pestic. Biochem. Physiol.* 11: 218-231.
- Adams, M. E., and T. A. Miller. 1980. Neural and behavioral correlates of pyrethroid and DDT-type poisoning in the house fly, *Musca domestica* L. *Pestic. Biochem. Physiol.* 13: 137-147.
- Addor, R. W., T. J. Babcock, B. C. Black, D. G. Brown, R. E. Diehl, J. A. Furch, V. Kameswaran, V. M. Kamhl, K. A. Kremer, D. G. Kuhn, J. B. Lovell, G. T. Lowen, T. P. Miller, R. M. Peevey, J. K. Siddens, M. F. Treacy, S. H. Trotto, and D. P. Wright Jr. 1992. Insecticidal pyrroles: Discovery and overview, pp. 283-297. In D. R. Baker, J. G. Fenyes, and J. J. Steffens (eds.), *Synthesis and Chemistry of Agrochemicals III*. American Chemical Society, Washington, D.C.
- Adkisson, P. L. 1962. Timing of defoliants and desiccants to reduce populations of the pink bollworm in diapause. *J. Econ. Entomol.* 55: 949-951.
- Adkisson, P. L. 1964. Comparative effectiveness of several insecticides for controlling bollworms and tobacco budworms. *Tex. Agr. Exp. Sta. MP.* 709.
- Adkisson, P. L. 1965. Present status of insecticide resistance in certain geographical populations of bollworms in Texas. *Tex. Agric. Exp. Stn. PR-2358*.
- Adkisson, P. L. 1968. Development of resistance by the tobacco budworm to endrin and carbaryl. *J. Econ. Entomol.* 61: 37-40.
- Adkisson, P. L. 1969. How insects damage crops, pp. 155-164. In *How crops grow — a century later*. Conn. Agr. Exp. Stn. Bull. 708.
- Adkisson, P. L. 1986. Integrated pest management. *Bull. Entomol. Soc. Amer.* 32: 136-141.
- Adkisson, P. L., C. F. Bailey, and R. L. Hanna. 1964a. Effect of the bollworm, *Heliothis zea* on yield and quality of cotton. *J. Econ. Entomol.* 57: 448-450.
- Adkisson, P. L., R. J. Hanna, and C. F. Bailey. 1964b. Estimates of the numbers of *Heliothis* larvae

- per acre in cotton and their relation to the fruiting cycle and yield of the host. *J. Econ. Entomol.* 57: 657-663.
- Adkisson, P. L., C. F. Bailey, and A. Niles. 1966. Internal clocks and insect diapause. *Science* 154: 234-241.
- Adkisson, P. L., and S. J. Nemec. 1966. Comparative effectiveness of certain insecticides for killing bollworms and tobacco budworms. *Texas Agric. Exp. Sta. Bull.* 1048.
- Adkisson, P. L., and S. J. Nemec. 1967. Effectiveness of certain organophosphorus insecticides against chlorinated hydrocarbon-resistant bollworm and tobacco budworm larvae. *J. Econ. Entomol.* 60: 268-270.
- Adkisson, P. L., and S. J. Nemec. 1967. Insecticides for controlling the bollworm, tobacco budworm and boll weevil. *Tex. Agric. Exp. Stn. MP-837.*
- Adkisson, P. L., G. A. Niles, J. K. Walker, L. S. Bird, and H. B. Scott. 1982. Controlling cotton's insect pests: a new system. *Science* 216: 19-22.
- Adkisson, P. L., O. T. Robertson, and L. C. Fife. 1962. Planting date as a factor involved in pink bollworm control, pp. 16-20. *In* D. F. Martin, and R. D. Lewis (eds.), *A summary of recent research basic to the cultural control of pink bollworm*. TAEX MP-579.
- Adkisson, P. L., E. S. Vanderzant, D. L. Bull, and W. E. Allison. 1960. A wheat germ medium for rearing the pink bollworm. *J. Econ. Entomol.* 53: 759-761.
- Agee, H. R. 1986. Laboratory-reared boll weevils (Coleoptera: Curculionidae) are visually impaired. *J. Econ. Entomol.* 79: 900-902.
- Agnew, C. W., and W. L. Sterling. 1981. Predation of boll weevils in partially-open cotton bolls by the red imported fire ant. *Southwest. Entomol.* 6: 215-219.
- Agnew, C. W., and W. L. Sterling. 1982. Predation rates of the red imported fire ant on eggs of the tobacco budworm. *Prot. Ecol.* 4: 151-158.
- Agnew, C. W., W. L. Sterling, and D. A. Dean. 1981. Notes on the Chrysopidae and Hemerobiidae of Eastern Texas with keys for their identification. *Southwest. Entomol. Suppl.* 4: 1-20.
- Agnew, C. W., W. L. Sterling, and D. A. Dean. 1982. Influence of cotton nectar on red imported fire ants and other predators. *Environ. Entomol.* 11: 629-634.
- Agudelo, F., and L. A. Falcon. 1977. Some naturally occurring insect pathogens in Colombia. *Turrialba* 27: 423-424.
- Ahouissoussi, N., M. Wetzstein, and P. Duffy. 1993. Economic returns to the boll weevil eradication program. *J. Agric. Appl. Econ.* 25:
- Akesson, N. B., and R. Gibbs. 1988. Precision and safety with PARIS: Some basic challenges for aerial application. *NAAA-ASAE* 88-8008.
- Akesson, N. B., and W. E. Yates. 1974. The use of aircraft in agriculture. *Food and Agriculture Organization of the United Kingdom*, Rome, Italy.
- Akhurst, R. J., and W. M. Brooks. 1984. The distribution of entomophilic nematodes (Heterorhabditidae and Steinernematidae) in North Carolina. *J. Invertebr. Pathol.* 44: 140-145.
- Albertos, S. C. 1974. Studies on diapause induction and development of the pink bollworm, *Pectinophora gossypiella* (Saunders) (Lepidoptera: Gelechiidae), under controlled conditions. Ph.D. Thesis, University of California, Riverside.
- Aldrich, J. R. 1985. Pheromone of a true bug (Hemiptera-Heteroptera): Attractant for the predator, *Podisus maculiventris*, and kairomonal effects, pp. 95-119. *In* T. E. Acree, and D. M. Soderlund (eds.), *Semiochemistry: Flavors and Pheromones*. de Gruyter, Berlin.
- Aldrich, J. R. 1988a. Chemical ecology of the Heteroptera. *Annu. Rev. Entomol.* 33: 211-238.
- Aldrich, J. R. 1988b. Chemistry and biological activity of pentatomoid sex pheromones, pp. 417-431. *In* H. G. Cutler (ed.), *Biologically active natural products: potential use in agriculture*. ACS symposium series no. 380. American Chemical Society, Washington, DC.
- Aldrich, J. R. 1995. Chemical communication in the true bugs and parasitoid exploitation, pp. 318-363. *In* R. T. Carde, and W. J. Bell (eds.), *Chemical ecology of insects II*. Chapman and Hall, New York.

- Aldrich, J. R., M. S. Blum, H. A. Lloyd, and H. M. Fales. 1978. Pentatomid natural products: chemistry and morphology of the III-IV dorsal abdominal glands of adults. *J. Chem. Ecol.* 4: 161-172.
- Aldrich, J. R., J. P. Kochansky, and C. B. Abrams. 1984. Attractant for a beneficial insect and its parasitoids: pheromone of the predatory spined soldier bug, *Podisus maculiventris* (Hemiptera: Pentatomidae). *Environ. Entomol.* 13: 1031-1036.
- Aldrich, J. R., W. R. Lusby, B. E. Marron, K. C. Nicolaou, M. P. Hoffmann, and L. T. Wilson. 1989. Pheromone blends of green stink bugs and possible parasitoid selection. *Naturwissenschaften* 76: 173-175.
- Aldrich, J. R., J. E. Oliver, W. R. Lusby, J. P. Kochansky, and J. A. Lockwood. 1987. Pheromone strains of the cosmopolitan pest, *Nezara viridula* (Heteroptera: Pentatomidae). *J. Exp. Zool.* 244: 171-175.
- Alfiere, A. 1929. The introduction of a parasite [*Microbracon kirkpatricki* (Wilk.)] of the pink bollworm into Egypt. *Soc. Roy. Entomol. d'Egypte Bull.* 1928: 52-56.
- Allen C.T., and J. W. Norman Jr. 1982 - 1983. Management of cotton insects in the Lower Rio Grande Valley of Texas. *Tex. Agric. Ext. Serv. B-1210.*
- Allen, C.T. W. Multer, and P. Glogosa. 1985. Pink bollworm management program in Texas. *Texas Agric. Ext. Ser. Bull.* 1151.
- Allen, C. T., W. L. Multer, R. R. Minzenmayer, and J. S. Armstrong. 1987. Development of pyrethroid resistance in *Heliothis* populations in cotton in Texas, pp. 332-335. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Allen, C. T., and J. W. Norman Jr. 1982. Management of cotton insects in the Lower Rio Grande Valley of Texas. *Texas Agric. Ext. Serv., B-1210.*
- Allen, C. T., and J. W. Norman Jr. 1983. Management of cotton insects in the Lower Rio Grande Valley of Texas. *Texas Agric. Ext. Serv. B-1210.*
- Allen, G. E., B. G. Gregory, and J. R. Brazzel. 1967. Field evaluation of the *Heliothis* nuclear polyhedrosis virus into a biological control program for cotton. *J. Econ. Entomol.* 59: 1333-1336.
- Allen, G. E., B. G. Gregory, and T. L. Pate. 1967. Field evaluation of a nuclear-polyhedrosis virus in the control of *Heliothis zea* and *Heliothis virescens* on cotton. *J. Invertebr. Pathol.* 9: 40-42.
- Allen, R. M., H. Tucker, and T. A. Wilson. 1960. Leaf crumple virus disease of cotton in Arizona. *Plant Dis. Rep.* 44: 246-250.
- Almand, L. K., W. L. Sterling, and C. L. Green. 1976. Seasonal abundance and dispersal of cotton fleahopper as related to host plant phenology. *Texas Agr. Exp. Sta. Bull.* 1170.
- Altieri, M. A., W. J. Lewis, D. A. Nordlund, R. C. Gueldner, and J. W. Todd. 1981. Chemical interactions between plants and *Trichogramma* sp. wasps in Georgia soybean fields. *Protection Ecology* 3: 259-263.
- Altman, D. W., D. M. Stelly, and R. J. Kohel. 1987. Introgression of the glanded-plant and glandless-seed trait from *Gossypium sturtianum* Willis into cultivated upland cotton using ovule culture. *Crop. Sci.* 27: 880-884.
- Ames, B. N. 1989a. Mutagenesis and carcinogenesis: Endogenous and exogenous factors. *Environ. Mol. Mutagenesis* 14 (Suppl. 16): 66-78.
- Ames, B. N. 1989b. Endogenous oxidative DNA damage, aging, and cancer. *Free Rad. Res. Comm.* 7: 121-127.
- Anderson, J. M., R. R. Bridge, A. M. Heagler, and G. R. Tupper. 1976. The economic impact of recently developed early season cotton strains on firm and regional cropping systems and income, pp. 98-100. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Anderson, M. I. 1986. Low and slow. Calif. Farmer Publ., Co., San Francisco.
- Anderson, R. A., and M. F. Schuster. 1983. Phenology of the tarnished plant bug on natural host plants in relation to populations in cotton. *Southwest. Entomol.* 8: 131-136.
- Anderson, T. E. 1984. Distribution of the European corn borer, *Ostrinia nubilalis* (Hubner) (Lepidoptera: Pyralidae) as related to oviposition preference of the spring-colonizing generation in eastern North Carolina. *Environ. Entomol.* 13: 248-251.

- Anderson, T. E., J. R. Babu, R. A. Dybas, and H. Mehta. 1986. Avermectin B1: Ingestion and contact toxicity against *Spodoptera eridana* and *Heliothis virescens* (Lepidoptera: Noctuidae) and potentiation by oil and piperonyl butoxide. *J. Econ. Entomol.* 79: 197-201.
- Andrawes, N. R., and H. W. Dorough. 1967. Metabolic fate of carbaryl-naphthyl-C14 in boll weevils and bollworms. *J. Econ. Entomol.* 60: 453-456.
- Andreadis, T. G. 1987. Transmission, pp. 159-176. In J. R. Fuxa, and Y. Tanada (eds.), *Epizootiology of insect diseases*. John Wiley & Sons, Inc., New York.
- Andres, L. A. 1957. An ecological study of three species of *Tetranychus* (Acarina: Tetranychidae) and their response to temperature and humidity. Ph.D. dissertation, University of California, Berkeley.
- Andres, L. A., V. E. Burton, R. F. Smith, and J. E. Swift. 1955. DDT tolerance by lygus bugs on seed alfalfa. *J. Econ. Entomol.* 58: 509-513.
- Andrews, G. L. 1981. Optimum insect management trial, pp. 41-44. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Andrews, G. L., F. A. Harris, P. P. Sikorowski, and R. E. McLaughlin. 1975. Evaluation of *Heliothis* nuclear polyhedrosis virus in a cottonseed oil bait for control of *Heliothis virescens* and *H. zea* on cotton. *J. Econ. Entomol.* 68: 87-90.
- Andries, J. A., J. E. Jones, L. W. Sloane, and J. G. Marshall. 1970. Effects of super okra leaf shape on boll rot, yield, and other characters of upland cotton, *Gossypium hirsutum* L. *Crop. Sci.* 10: 403-407.
- Angus, T. A., and P. Luthy. 1971. Formulations of microbial insecticides, pp. 623-636. In H. D. Burgess, and N. W. Hussey (eds.), *Microbial control of insects and mites*. Academic Press, London.
- Anisimov, A. I. 1988. Investigations on sex linked recessive lethal mutations as a possible mechanism for the genetic control of lepidopterous pests, pp. 65-76. In *Modern insect control: nuclear techniques and biotechnology*. Proc. Symp. Vienna, 1987, IAEA Vienna.
- Anonymous. 1901. Save the cotton crop. Kill the boll weevils. Circular of the Eagle Printing Company, (June 1, 1901)
- Anonymous. 1947-1987. Annual Conference Report on Cotton Insect Research and Control. USDA, ARS Vol. 1-40.
- Anonymous. 1958. A report of the findings and a detailed supplemental statement on the boll weevil problem and research and facility needs to meet the problem. Prepared by The Working Group on Boll Weevil Research Problems appointed by The Office of Secretary, USDA in response to congressional requests for a report and proposals.
- Anonymous. 1975. Pest control: an assessment of present and alternative technologies. I. Contemporary pest control practices and prospects: the report of the executive committee. National Academy Sciences, Washington, D.C.
- Anonymous. 1976. Aerial application of agricultural chemicals. Mississippi Cooperative Extension Service. 973:25, Miss. State, MS.
- Anonymous. 1977. Review of the pink bollworm program. USDA Task Force, USDA Plant Protection and Quarantine, Animal and Plant Health Inspection Service.
- Anonymous. 1981. Biological evaluation report (Appendix A). Beltwide boll weevil/control insect management programs. USDA, Science and Education Administration, Washington, DC.
- Anonymous. 1981. Possibilities for the use of biotic agents in the control of the whitefly, *Bemisia tabaci*. *Biocontrol News and Information* 2: 1-7.
- Anonymous. 1981. The delphi: insecticide use and lint yields. Appendix E. USDA Economic Research Service, ERS Staff Report AGESS 810507.
- Anonymous. 1982. Oklahoma Agriculture 2000 Report, Oklahoma State University, pp. 142-143.
- Anonymous. 1984a. 37th Annual Conference Report on Cotton Insect Research and Control. USDA, ARS.
- Anonymous. 1984b. Integrated pest management for cotton in the Western Region of the United States. Univ. of Calif., Berkeley, Div. Agric. Sci., Publ. 3305.

- Anonymous. 1986. Cotton entomologists seek to delay pyrethroid resistance in insects. MAFES Res. Highlights 49: 8.
- Anonymous. 1988. Cotton management guide. Rhone-Poulenc Agricultural Company, 2 T.W. Alexander Drive, Research Triangle Park, N.C.
- Anonymous. 1988. Farm chemicals handbook. Meister Publishing, Salem.
- Anonymous. 1989. The great boll weevil conspiracy. Agrichemical Age 6-7.
- Anonymous. 1990a. Timing is of the essence. Agrichemical Age 34: 16.
- Anonymous. 1990b. News. Agrichemical Age 34: 20.
- Antle, J. M. 1983. Sequential decision making in production models. Amer. J. Agr. Econ. 65: 282-290.
- Argenine, J. A., J. M. Clark, and H. Lin. 1992. Genetics and biochemical mechanisms of abamectin resistance in two isogenic strains of Colorado potato beetle. Pestic. Biochem. Physiol. 44: 191-207.
- Armes, N. J., D. Jadhav, G. Bond, and A. King. 1992. Insecticide resistance in *Helicoverpa armigera* in South India. Pestic. Sci. 34: 355-364.
- Arnaud Jr., P. H. 1968. A host-parasite catalog of North American Tachinidae (Diptera). Misc. Pub. 1319.
- Arthur, F. H., and J. L. Zettler. 1991. Malathion resistance in *Tribolium castaneum* (Coleoptera: Tenebrionidae): Difference between discriminating concentration by topical applications and residual mortality on treated surfaces. J. Econ. Entomol. 84: 721-726.
- Aruga, H. 1971. Cytoplasmic polyhedrosis of the silkworm—historical, economical and epizootiological aspects, pp. 3-21. In H. Aruga, and Y. Tanada (eds.), The cytoplasmic-polyhedrosis virus of the silkworm. University of Tokyo Press, Tokyo.
- ASAE. 1983. Safety devices for applying liquid chemicals through irrigation systems. Engineering practice EP409, Agric. Engrs. Yearbook of Standards. ASAE, St. Joseph, MI.
- Ashley, T. R. 1979. Classification and distribution of fall armyworm parasites. Fla. Entomol. 62: 114-123.
- Askari, A., and J. M. Stern. 1972. Biology and feeding habits of *Orius tristis* color Hemiptera (Heteroptera) Anthocoridae. Ann. Entomol. Soc. Amer. 65: 96-100.
- Atim, A. B., and H. M. Graham. 1984. Predation of *Geocoris punctipes* by *Nabis alternatus*. Southwest. Entomol. 9: 227-231.
- Awad, T. M., and S. B. Vinson. 1968. The pickup and penetration of ulv and emulsifiable concentrate malathion formulations by tobacco budworm larvae. J. Econ. Entomol. 61: 242-245.
- Bache, D. H., and S. Uk. 1975. Transport of aerial spray. II. Transport within a crop canopy. Agric. Meteorol. 15: 371-377.
- Bacheler, J. S. 1988. Cotton production guide: insect scouting. CPG No. 13. January. North Carolina Agricultural Extension Service.
- Bacheler, J. S. *Heliothis* management in North Carolina with subeconomic boll weevils levels, pp. 183-184. In Proc. Beltwide Cotton Prod. Res. Conf.
- Bacheler, J. S., and J. R. Bradley Jr. 1975. Effect of temperature on development and mortality of the boll weevil egg stage. Environ. Entomol. 4: 319-320.
- Bacheler, J. S., J. W. Jones, J. R. Bradley Jr., and H. O. Bowen. 1975. The effect of temperature on development and mortality of boll weevil immature stages. Environ. Entomol. 4: 808-810.
- Bagwell, R. D., and N. P. Tugwell. 1992. Defining the period of boll susceptibility to insect damage in heat-units from flower, pp. 767-768. In Proc. Beltwide Cotton Prod. Res. Conf.
- Bailey, J. C. 1981. Growth comparison of *Heliothis virescens* (F.) larvae fed white, yellow and orange pollen, pp. 79. In Proc. Beltwide Cotton Prod. Res. Conf.
- Bailey, J. C. 1982. Influence of plant bug and leafhopper populations on glabrous and nectariless cottons. Environ. Entomol. 11: 1011-1013.
- Bailey, J. C., B. W. Hanny, and W. R. Meredith Jr. 1980. Combinations of resistant traits and insecticides: effect on cotton yield and insect populations. J. Econ. Entomol. 73: 58-60.
- Bailey, J. C., F. G. Maxwell, and J. N. Jenkins. 1967. Mortality of boll weevils in squares of genetically different lines of cotton. J. Econ. Entomol. 60: 1279-1280.

- Bailey, J. C., A. L. Scales, and W. R. Meredith Jr. 1984. Tarnished plant bug (Heteroptera: Miridae) nymph numbers decreased on caged nectarless cotton. *J. Econ. Entomol.* 77: 68-69.
- Bailey, S. F. 1938. Thrips of economic importance in California. *Calif. Agr. Exp. Sta. Circ.* 346.
- Baker, D. N., J. D. Hesketh, and W. G. Duncan. 1972. Simulation of growth and yield in cotton. I. Gross photosynthesis, respiration, and growth. *Crop. Sci.* 12: 431-435.
- Baker, D. N., J. R. Lambert, and J. M. McKinion. 1983. GOSSYM: a simulator of cotton crop growth and yield. *S. C. Agric. Exp. Stn. Tech. Bull.* 1089.
- Baker, E. W., and A. E. Pritchard. 1953. A guide to the spider mites of cotton. *Hilgardia* 22: 203-234.
- Baker, R., M. Borges, N. G. Cooke, and R. N. Herbert. 1987. Identification and synthesis of (*Z*)- $(1'S,3'R,4'S)(-)$ -2-(3',4'-epoxy-4'-methylcyclohexyl)-6-methylhepta-2,5-diene, the sex pheromone of the southern green stinkbug, *Nezara viridula* (L.). *Chem. Commun.* 414-416.
- Baker, T. C., R. T. Staten, and H. M. Flint. 1990. Use of pink bollworm pheromone in the southwestern United States, pp. 417-436. In R. L. Ridgway, R. M. Silverstein, and M. N. Inscoe (eds.), *Behavior-modifying Chemicals for Insect Management: Applications of Pheromones and Other Attractants*. Marcel Dekker, Inc., New York.
- Baldwin, J. L., J. S. Tynes, J. B. Graves, G. Burris, and S. Micinski. 1993. Control cotton insects. Louisiana State Univ. Coop. Ext. Service Pub. 1083.
- Ballard, W. W. 1951. Varietal differences in susceptibility to thrips injury in upland cotton. *Agron. J.* 43: 37-44.
- Ballou, H. A. 1919. The poisoning of the boll weevil. *Agric. News.* 18: 122-123.
- Bals, T. E. 1987. Economical pesticide application: the reasons for controlled droplet application, pp. 133-138. In G. B. Beestman and D. I. B. Vander Hooven (eds.), *Pesticide formulations and application systems*: Vol. 7. American Society for Testing and Materials, Philadelphia.
- Banks, W. A., B. M. Glancy, C. E. Stringer, D. P. Jouvenaz, C. S. Lofgren, and D. E. Weidhaas. 1973. Imported fire ants: eradication trials with mirex bait. *J. Econ. Entomol.* 66: 785-789.
- Barber, G. W. 1936. Method of rearing corn earworm larvae. *J. Econ. Entomol.* 29: 1175-1176.
- Barber, G. W. 1936. *Orius insidiosus* (Say), an important natural enemy of the corn earworm. *USDA Tech. Bull.* 504.
- Barber, G. W. 1937. Seasonal availability of food plants of two species of *Heliothis* in eastern Georgia. *J. Econ. Entomol.* 30: 150-158.
- Barbour, K. S. 1988. *Acrosternum hilare* (Say) in cotton: a study of direct and indirect feeding damage. M.S. Thesis, North Carolina State University, Raleigh.
- Barfield, C. S., P. J. H. Sharpe, and D. G. Bottrell. 1977. A temperature-driven developmental model for the parasite *Bracon mellitor* (Hymenoptera: Braconidae). *Can. Entomol.* 109: 1503-1514.
- Bariola, L. A. 1978. Suicidal emergence and reproduction by overwintered pink bollworm moths. *Environ. Entomol.* 7: 189-192.
- Bariola, L. A. 1983. Survival and emergence of overwintered pink bollworm moths (Lepidoptera: Gelechiidae). *Environ. Entomol.* 12: 1877-1881.
- Bariola, L. A. 1985. Evidence of resistance to synthetic prethroids in field populations of pink bollworms in Southern California, pp. 138. In Proc. Beltwide Cotton Prod. Res. Conf.
- Bariola, L. A., and T. J. Henneberry. 1987. Prep and Dropp for pink bollworm and boll weevil control in Arizona and Southern California, pp. 340. In Proc. Beltwide Cotton Prod. Res. Conf.
- Bariola, L. A., T. J. Henneberry, and T. Meng Jr. 1986. Plant growth regulators for pink bollworm and boll weevil control, pp. 235-238. In Proc. Beltwide Cotton Prod. Res. Conf.
- Bariola, L. A., J. C. Keller, D. L. Turley, and J. R. Farris. 1973. Migration and population studies of the pink bollworm in the arid West. *Environ. Entomol.* 2: 205-208.
- Bariola, L. A., D. L. Kittock, H. F. Arle, P. V. Vail, and T. J. Henneberry. 1976. Controlling pink bollworms: effects of chemical termination of cotton fruiting on populations of diapausing larvae. *J. Econ. Entomol.* 69: 633-636.
- Bariola, L. A., and P. D. Lingren. 1984. Comparative toxicities of selected insecticides against pink bollworm moths. *J. Econ. Entomol.* 77: 207-210.

- Bariola, L. A., R. L. Ridgway, and J. R. Coppedge. 1971. Large scale test of soil applied aldicarb for suppression of populations of the boll weevil. *J. Econ. Entomol.* 64: 1289-1284.
- Barker, G. L. 1982. Equation for estimating cotton preharvest losses. *Trans. ASAE.* Vol. 25.
- Barnes, W. W., and G. W. Ware. 1965. The absorption and metabolism of C14-labeled endosulfan in the house fly. *J. Econ. Entomol.* 58: 286-292.
- Barrow, D. N. 1894. Experiments in width of rows and distance. *Louisiana Agric. Exp. Stn. Bull.* 28.
- Barthel, W. F. 1961. Synthetic pyrethroids. *Advan. Pest Control Res.* 4: 33-41.
- Bartlett, A. C. 1967. Genetic markers in the boll weevil. *J. Hered.* 58: 159-163.
- Bartlett, A. C. 1985. Guidelines for genetic diversity in laboratory colony establishment and maintenance, pp. 7-17. In P. Singh and R. F. Moore (eds.), *Handbook of Insect Rearing*. Elsevier, New York.
- Bartlett, A. C. 1985. Movement and longevity of laboratory-reared pink bollworm moths. *Cotton, a College of Agriculture Report, Series P-63, Coop. Ext., Agric. Exp. Stn., Univ. Arizona, Tucson.*
- Bartlett, A. C. 1988. Induction and use of sex linked lethal mutations in the pink bollworm, pp. 85-96. In *Modern insect control: nuclear techniques and biotechnology*. Proc. Symp. Vienna, 1987, IAEA Vienna.
- Bartlett, A. C., and L. J. Lewis. 1987. Response of the pink bollworm (Lepidoptera: Gelechiidae) to long-term selection for the inability to diapause. *Ann. Entomol. Soc. Amer.* 80: 797-803.
- Bartlett, A. C., and P. D. Lingren. 1984. Monitoring pink bollworm (Lepidoptera: Gelechiidae) populations using the genetic marker sooty. *Environ. Entomol.* 13: 543-550.
- Bartlett, A. C., W. C. Randall, and J. E. May. 1983. Allozyme variation among populations of boll weevils in Arizona and Mexico. *Southwest. Entomol.* 8: 118-130.
- Bartlett, A. C., and W. W. Wolf. 1985. *Pectinophora gossypiella*, pp. 415-430. In P. Singh, and R. F. Moore (eds.), *Handbook of Insect Rearing*, Vol. 2 Elsevier, New York.
- Bartlett, B. R. 1956. Natural predators. Can selective insecticides help to preserve biotic control? *Agric. Chem.* 11: 42-44, 107-109.
- Batko, A. 1964. On the new genera: *Zoophthora* gen. nov., *Triplosporium* (Thaxter) gen. nov., and *Entomophaga* gen. nov. (Phycomycetes: Entomophthoraceae). *Bull. Polon. Acad. Sci. Ser. Sci. Biol.* 12: 323-326.
- Baumhover, A. J. 1966. Eradication of the screwworm fly, an agent of myiasis. *J. Amer. Med. Assoc.* 196: 240-248.
- Beards, G. W., and F. E. Strong. 1966. Photoperiod in relation to diapause in *Lygus hesperus* Knight. *Hilgardia* 37: 345-362.
- Beasley, C. A. 1990. Effects of extent and time of irrigations on winter survival and spring emergence patterns of pink bollworm, pp. 186-189. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Beasley, C. A. 1991. Winter irrigation reduces spring emergence of pink bollworm moths, pp. 943-944. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Beasley, C. A., T. J. Henneberry, C. Adams, and L. Yates. 1985. Gossyplure-baited traps as pink bollworm survey, detection, research and management tools in southwestern desert cotton growing areas. *Calif. Agric. Exp. Sta. Bull.* 1915.
- Beck, S. D., and F. G. Maxwell. 1976. Use of plant resistance, In C. B. Huffaker, and P. S. Messenger (eds.), *Theory and practice of biological control*. Academic Press, New York.
- Beckham, C. M. 1957. Hibernation sites of the boll weevil in relation to a small, Georgia Piedmont cotton field. *J. Econ. Entomol.* 50: 833-834.
- Beckham, C. M. 1963. Seasonal occurrence of hibernation in the boll weevil. *Mimeograph Series N.S. 164, Univ. Ga., Ga. Agric. Exp. Stn.*
- Beckham, C. M. 1970. Effect of nitrogen fertilization on the abundance of cotton insects. *J. Econ. Entomol.* 63: 1219-1220.
- Beckham, C. M. 1970. Influence of systemic insecticides on thrips control and yield of cotton. *J. Econ. Entomol.* 58: 1118-22.
- Beckham, C. M., and L. W. Morgan. 1960. On the flight distance of the boll weevil. *J. Econ. Entomol.* 53: 681-682.

- Beegle, C. C., H. T. Dulmage, D. A. Wolfenbarger, and E. Martinez. 1981. Persistence of *Bacillus thuringiensis* Berliner insecticidal activity on cotton foliage. Environ. Entomol. 10: 400-401.
- Beever, M., W. J. Lewis, H. R. Gross Jr., and D. A. Nordlund. 1981. Kairomones and their use for management of entomophagous insects: X. Laboratory studies on manipulation of host-finding behavior of *Trichogramma pretiosum* Riley with a kairomone extracted from *Heliothis zea* (Boddie) moth scales. J. Chem. Ecol. 7: 635-648.
- Bell, A. A., and R. D. Stipanovic. 1977. The chemical composition, biological activity and genetics of pigment glands in cotton, pp. 244. In Proc. Beltwide Cotton Prod. Res. Conf.
- Bell, A. A., R. D. Stipanovic, C. R. Howell, and M. E. Mace. 1974. Terpenoid aldehydes of *Gossypium*: isolation, quantitation, and occurrence, pp. 40-41. In Proc. Beltwide Cotton Prod. Res. Conf.
- Bell, K. O., and W. H. Whitcomb. 1964. Field studies on egg predators of the bollworm, *Heliothis zea* (Boddie). Fla. Entomol. 47: 171-180.
- Bell, M. R. 1983. Microbial agents, pp. 129-151. In R. L. Ridgway, E. P. Lloyd, and W. H. Cross (eds.), Cotton Insect Management with Special Reference to the Boll Weevil. USDA Agr. Handb. No. 589.
- Bell, M. R., and T. J. Henneberry. 1980. Entomopathogens for pink bollworm control, pp. 76-81. In H. M. Graham (ed.), Pink bollworm control in the Western United States. USDA, ARM-W-16.
- Bell, M. R., and R. F. Kanavel. 1975. Potential of bait formulations to increase effectiveness of nuclear polyhedrosis virus against the pink bollworm. J. Econ. Entomol. 68: 389-391.
- Bell, M. R., and R. F. Kanavel. 1977. Field tests of a nuclear polyhedrosis virus in a bait formulation for control of pink bollworm and *Heliothis* spp. on cotton in Arizona. J. Econ. Entomol. 70: 625-629.
- Bell, M. R., and R. F. Kanavel. 1978. Tobacco budworm: development of a spray adjuvant to increase effectiveness of a nuclear polyhedrosis virus. J. Econ. Entomol. 71: 350-352.
- Bell, M. R., and C. L. Romine. 1980. Tobacco budworm: Field evaluation of microbial control in cotton using *Bacillus thuringiensis* and a nuclear polyhedrosis virus with a feeding stimulant. J. Econ. Entomol. 73: 427-430.
- Bell, M. R., and C. L. Romine. 1982. Cotton leafperforator: effect of two microbial insecticides on field populations. J. Econ. Entomol. 75: 1140-1142.
- Bell, M. R., and C. L. Romine. 1986. *Heliothis virescens* and *H. zea*: Dosage effects of feeding mixtures of *Bacillus thuringiensis* and a nuclear polyhedrosis virus on mortality and growth. Environ. Entomol. 15: 1161-1165.
- Bellows Jr., T. S., T. M. Perring, R. J. Gill, and D. H. Headrick. 1994. Description of a species of *Bemisia* (Homoptera: Aleyrodidae). Ann. Entomol. Soc. Am. 87: 195-206.
- Benedict, J. H., D. W. Altman, E. S. Sachs, W. R. Deaton, and D. R. Ring. 1991. Field performance of cotton genetically-modified to express insecticidal protein from *Bacillus thuringiensis*. III. College Station, TX, pp. 577. In Proc. Beltwide Cotton Prod. Res. Conf.
- Benedict, J. H., D. W. Altman, P. F. Umbeck, and D. R. Ring. 1992. Behavior, growth, survival, and plant injury by *Heliothis virescens* (F.) (Lepidoptera: Nocutidae) on transgenic *Bt* cottons. J. Econ. Entomol. 85: 589-593.
- Benedict, J. H., K. M. El-Zik, L. R. Oliver, P. A. Roberts, and L. T. Wilson. 1989. Economic injury levels and thresholds for pests of cotton, pp. 121-153. In R. E. Frisbie, K. M. El-Zik, and L. T. Wilson (eds.), Integrated Pest Management Systems and Cotton Production. John Wiley and Sons, New York.
- Benedict, J. H., A. H. Hyer, T. F. Leigh, and W. M. Tingey. 1982. Evaluations of various cottons for resistance to *Lygus hesperus* Knight. USDA-ARS-ARM-W-33.
- Benedict, J. H., J. A. Landivar, B. R. Eddleman, D. R. Ring, A. W. Hartstack, and W. L. Sterling. 1991. ICEMM, an integrated crop ecosystem management model: Insect pest component, pp. 458-459. In Proc. Beltwide Cotton Prod. Res. Conf.
- Benedict, J. H., T. F. Leigh, J. L. Frazier, and A. H. Hyer. 1981. Ovipositional behavior of *Lygus hesperus* on two cotton genotypes. Ann. Entomol. Soc. Amer. 74: 392-394.

- Benedict, J. H., T. F. Leigh, A. H. Hyer, and P. F. Wynholds. 1981. Nectariless cotton: effect of growth, survival, and fecundity of *Lygus* bugs. *Crop. Sci.* 21: 28-30.
- Benedict, J. H., M. F. Treacy, D. W. Altman, and K. M. Schmidt. 1987. Preference of boll weevils and tobacco budworms for five species of *Gossypium*, pp. 92-93. In Proc. Beltwide Cotton Prod. Res. Conf.
- Benedict, J. H., M. F. Treacy, D. R. Ring, and G. C. Yencho. 1992. Behavior of pyrethroid-susceptible and -resistant *Heliothis virescens* (F.) (Lepidoptera, Noctuidae) larvae on cotton treated with insecticides. *J. Econ. Entomol.* 85: 2058-2063.
- Benedict, J. H., T. C. Urban, D. M. George, J. C. Segars, D. J. Anderson, G. M. McWhorter, and G. R. Zummo. 1985. Pheromone trap thresholds for management of overwintered boll weevils (Coleoptera: Curculionidae). *J. Econ. Entomol.* 78: 169-171.
- Bennett, R. L. 1904. Early cotton. *Texas Agric. Exp. Stn. Bull.* 75.
- Bennett, R. L. 1908. A method of breeding early cotton to escape boll weevil damage. *USDA Farmers' Bull.* 314.
- Bennett, R. S., E. K. Klaas, J. R. Coats, M. A. Mayse, and E. J. Kolbe. 1983. Fenvalerate residues in non-target organisms from Texas cotton fields. *Bull. Environ. Toxicol.* 31: 61-65.
- Benschoter, C. A., and M. P. Leal. 1974. Relation of cotton plant nectar to longevity and reproduction of the cotton leaf perforator in the laboratory. *J. Econ. Entomol.* 67: 217-218.
- Berger, R. S. 1963. Laboratory techniques for rearing *Heliothis* spp. on artificial medium. *USDA, ARS 33-84.*
- Berger, R. S., J. M. McGough, and D. F. Martin. 1965. Sex attractants of *Heliothis zea* and *H. virescens*. *J. Econ. Entomol.* 58: 1023-1024.
- Bergman, D., T. J. Henneberry, and L. A. Bariola. 1981. Overwintering and seasonal development of the pink bollworm in Arizona stub and planted cotton, pp. 66-69. In Proc. Beltwide Cotton Prod. Res. Conf.
- Bergman, D., T. J. Henneberry, and L. A. Bariola. 1982. Distribution of the boll weevil in southwestern Arizona cultivated cotton from 1978-1981, pp. 204-207. In Proc. Beltwide Cotton Prod. Res. Conf.
- Bergman, D., T. J. Henneberry, and L. A. Bariola. 1983. Overwintering boll weevil populations in southwestern Arizona cultivated cotton, pp. 182-185. In Proc. Beltwide Cotton Prod. Res. Conf.
- Bergman, D., T. J. Henneberry, L. A. Bariola, and J. M. Gillespie. 1983. Studies of pest and beneficial insects in Arizona stub and planted cotton. *USDA, Agric. Res. Serv., ARS Res. Results, ARR-W-32.*
- Bergold, G. H. 1963. The nature of nuclear-polyhedrosis viruses, pp. 413-456. In E. A. Steinhaus (ed.), *Insect pathology, an advanced treatise*, Vol. 1. Academic Press, New York.
- Berlinger, M. J. 1986. Host plant resistance to *Bemisia tabaci*. *Agric. Ecosys. Environ.* 17: 69-82.
- Berlinger, M. J., Z. Magel, and A. Benzoni. 1983. The importance of pH in food selection by the tobacco whitefly, *Bemisia tabaci*. *Phytoparasitica* 11: 151-160.
- Bernhardt, J. L., J. R. Phillips, and N. P. Tugwell. 1986. Position of the uppermost white bloom defined by node counts as an indicator for termination of insecticide treatments in cotton. *J. Econ. Entomol.* 79: 1430-1438.
- Berry, J. S., W. P. Kemp, and J. A. Onsager. 1991. Integration of simulation models and an expert system for management of rangeland grasshoppers. *AI Applications* 5: 1-14.
- Berry, P. A. 1947. *Anthonomus vestitus* and its natural enemies in Peru, and their importation into the United States. *J. Econ. Entomol.* 40: 801-804.
- Berryman, A. A. 1991. Population theory: an essential ingredient in pest predication, management and policy making. *Am. Entomol.* 37: 138-142.
- Berstein, C. 1984. Prey and predator emigration responses in the acarine system *Tetranychus urticae*-*Phytoseiulus persimilis*. *Oecologia* 61: 134-142.
- Bhardwaj, H. L., and J. B. Weaver Jr. 1983. Bollworm resistance in red leaf cotton, pp. 117-119. In Proc. Beltwide Cotton Prod. Res. Conf.
- Bhat, M. G., A. B. Joshi, and M. Singh. 1981a. Possibility of breaking association between hairiness

- and jassid (*Amrasca devastans* Distant) resistance in cotton (*Gossypium hirsutum* L.). Indian J. Agric. Res. 15: 236-240.
- Bhat, M. G., A. B. Joshi, S. L. Mehta, and M. Singh. 1981b. Biochemical basis of resistance to jassid in cotton. Crop. Improv. 8: 1-6.
- Bhat, M. G., A. B. Joshi, and M. Singh. 1982. Hairiness in relation to resistance to jassid (*Amrasca devastans* Distant) and other insect pests and quality characters in cotton (*Gossypium* spp.)—a review. Agric. Rev. 3: 1-8.
- Bhatkar, A. P. 1988. Confrontation behavior between *Solenopsis invicta*, *S. geminata*, and competitiveness of certain Florida ant species against *S. invicta*, pp. 445-464. In J. C. Trager (ed.), Advances in Myrmecology. E. J. Brill, Leiden.
- Bhatkar, A. P. 1989. Ecology and population structure of the imported fire ant, pp. 24-29. In S. B. Vinson, and J. Teer (eds.), The imported fire ant - assessment and recommendations. SCOT (Sportsmen Conservationist of Texas), Austin, Texas.
- Bibby, F. F. 1942. Some parasites of *H. armigera* (Hbn.) in Texas. J. Econ. Entomol. 35: 943-944.
- Bickley, W. E., and E. G. MacLeod. 1956. A synopsis of the Nearctic Chrysopidae with a key to the genera. Proc. Entomol. Soc. Wash. 58: 177-202.
- Bierl, B. A., M. Beroza, R. T. Staten, P. E. Sonnet, and V. E. Adler. 1974. The pink bollworm sex attractant. J. Econ. Entomol. 67: 211-216.
- Bigley, W. S., and F. W. Plapp. 1978. Metabolism of *cis*- and *trans*-(C14) permethrin by the tobacco budworm and the bollworm. J. Agric. Food Chem. 26: 1128-1134.
- Bilimoria, S. L. 1986. Ultrastructure of baculoviruses, pp. 37-60. In R. R. Granados, and B. A. Federici (eds.), The biology of Baculoviruses, Vol. I. CRC Press, Inc., Boca Raton.
- Bindra, O. S. 1985. Relation of cotton cultivars to the cotton-pest problem in the Sudan Gezira. Euphytica 34: 849-856.
- Bird, F. T., and M. M. Whalen. 1953. A virus disease of the European pine sawfly, *Neodiprion servifer* (Geoffr.). Can. Entomol. 85: 433-437.
- Bird, L. S. 1975. Tamcot SP21, SP23, SP37 cotton varieties. Texas Agr. Exp. Sta. L. 1351.
- Bird, L. S. 1979. Registration of TAMCOT CAMD-E cotton. Crop Sci. 19: 411-412.
- Bird, L. S. 1985. Host resistance and its management in cotton, pp. 493-511. In R. E. Frisbie and P. L. Adkisson (eds.), Integrated Pest Management on Major Agricultural Systems. Texas Agric. Expt. Sta. MP-1616.
- Bird, L. S., K. M. El-Zik, and P. M. Thaxton. 1986. Registration of (Tamcot CAB-CS) upland cotton. Crop. Sci. 26: 384-385.
- Bird, L. S., K. M. El-Zik, and P. M. Thaxton. 1988. Registration of 'Tamcot CD3H' cotton. Crop. Sci. 28: 574-575.
- Bird, L. S. 1976. Registration of TAMCOT SP21, TAMCOT SP23, and TAMCOT SP37 cottons. Crop. Sci. 16: 884.
- Birito, R. M., M. S. Vernon, and F. V. Sances. 1986. Physiological response of cotton plants to feeding of three *Tetranychus* spider mite species (Acari: Tetranychidae). J. Econ. Entomol. 79: 1217-1220.
- Bishopp, F. C., and C. R. Jones. 1907. The cotton bollworm. Farmers Bull. 290.
- Black, J. H., and T. F. Leigh. 1963. The biology of the boll weevil in relation to cotton type. J. Econ. Entomol. 56: 789-790.
- Blair, B. D. 1983. Cotton pest management: the national viewpoint, pp. 228-229. In Proc. Beltwide Cotton Prod. Res. Conf.
- Blair, B. W. 1986. Strategies to minimize resistance in arthropod pests to acaricides and synthetic pyrethroid insecticide in Zimbabwe, pp. 222-227. In Proceedings. IVe Congress Sur la Protection de la Santo Humaine et des Cultures en Milieu Tropical, Marseille.
- Bland, C. E., J. N. Couch, and S. Y. Newell. 1981. Identification of Coelomycetes, Saprolegniales and Lagenidiales, pp. 129-162. In H. D. Burges (ed.), Microbial control of pests and plant diseases 1970-1980. Academic Press, New York.

- Bloomquist, J. R., P. M. Adams, and D. M. Soderlund. 1987. Neurotoxic insecticides as antagonists of the GABA receptor function, pp. 97-106. In R. M. Hollingworth, and M. B. Green (eds.), *Sites of action for neurotoxic pesticides*. American Chemical Society, Washington, D.C.
- Bloomquist, J. R., and T. A. Miller. 1985. A simple bioassay for detecting and characterizing insecticide resistance. *Pestic. Sci.* 16: 611-614.
- Bloomquist, J. R., and T. A. Miller. 1986. Sodium channel neurotoxins as probes of the knockdown resistance mechanism. *Neurotoxicology* 7: 217-227.
- Boddie, J. W. 1850. Insect physiology. The bollworm. *S. Cultiv.* 8: 132.
- Bode, L. E., B. J. Butler, and C. E. Goering. 1976. Spray drift and recovery as affected by spray thickener, nozzle type and nozzle pressure. *Trans. ASAE* 19: 213-218.
- Bohmann, D. J., T. F. Watson, L. A. Crowder, and M. P. Jensen. 1988. Repression of permethrin resistance by chlordimeform in the tobacco budworm (*Lepidoptera: Noctuidae*). *J. Econ. Entomol.* 81: 1536-1538.
- Bohmfallk, G. T. 1982. Progress with the nuclear polyhedrosis virus of *Heliothis zea* by commercialization of Elcar, pp. 113-117. In *Proc. Third Internl. Colloq. Invertebr. Pathol.*
- Bohmfallk, G. T., R. E. Frisbie, W. L. Sterling, R. B. Metzer, and A. E. Knutson. 1983. Identification, biology, and sampling of cotton insects. *Tex. Agric. Extn. Serv. B-933.*
- Bohmont, B. L. 1981. The new pesticide users guide. B and K Enterprises, Inc., Fort Collins, CO.
- Bolton, B., J. B. Penn, F. T. Cooke, and A. M. Heagler. 1968. Days suitable for fieldwork - Mississippi River Delta cotton area. *D.A.E. Res. Rept. No. 384, Agric. Exp. Sta. Louisiana State University.*
- Bondy, F. F., and C. F. Rainwater. 1942. Boll weevil hibernation, survival, and emergence under South Carolina conditions. *J. Econ. Entomol.* 35: 495-498.
- Bonnen, C. A., and L. P. Gabbard. 1947. Cotton statistics for Texas. *Texas Agric. Exp. Stn. Circ.* 111.
- Bonner, C. M. 1988. Effects of herbicides and other soil applied pesticides on earliness: enhancement, retardation and phytotoxicity, pp. 23-25. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Boring III, E. P., T. W. Fuchs, J. F. Leser, and C. T. Allen. 1984. Management of cotton insects in the High Plains, Rolling Plains and Trans-Pecos areas of Texas. *Tex. Agric. Ext. Serv. B-1209.*
- Boring III, E. P., J. F. Leser, T. W. Fuchs, and C. T. Allen. 1989a. Management of cotton insects in the High Plains, Rolling Plains and Trans Pecos areas of Texas. *Texas Agric. Ext. Serv. B-1209.*
- Boring III, E. P., J. F. Leser, T. W. Fuchs, and C. T. Allen. 1989b. Suggested insecticides for management of cotton insects in the High Plains, Rolling Plains and Trans Pecos areas of Texas. *Tex. Agric. Ext. Serv. B-1209A.*
- Borkovec, A. B., C. W. Woods, and P. H. Terry. 1978. Boll weevil: chemosterilization by fumigation and dipping. *J. Econ. Entomol.* 17: 862-866.
- Borlaug, N. E. 1972. Mankind and civilization at another crossroad in balance with nature - a biological myth. *BioSci* 22: 41-44.
- Bottger, G. T., W. H. Cross, W. E. Gundersen, and G. P. Wene. 1964. Recent research on the boll weevil in northern Sonora, Mexico and the thurberia weevil in Arizona. *J. Econ. Entomol.* 57: 286-290.
- Bottrell, D. G. 1976. Biological control agents of the boll weevil, pp. 22-25. In *Proc. Conf. on Boll Weevil Suppression, Management and Elimination Technology*. USDA, ARS-S-71.
- Bottrell, D. G. 1979. Integrated pest management. U.S. Govt. Printing Office, Washington, D.C.
- Bottrell, D. G., and P. L. Adkisson. 1977. Cotton insect pest management. *Annu. Rev. Entomol.* 22: 451-481.
- Bottrell, D. G., and D. M. Arnold. 1968. Parasitism in fall populations of the bollworm and the tobacco budworm from cotton on the high and rolling plains. *Tex. Agr. Exp. Stn. Progr. Rept. 2628.*
- Bottrell, D. G., L. J. Wade, and D. L. Bruce. 1973. Boll weevils fail to develop resistance to malathion after several years of heavy exposure in Texas High Plains. *J. Econ. Entomol.* 66: 791-792.
- Bottrell, D. G., J. R. White, D. S. Moody, and D. D. Hardee. 1972. Overwintering habitats of the boll weevil in the Rolling Plains of Texas. *Environ. Entomol.* 65: 633-638.

- Bottrell, D. G., J. H. Young, R. G. Price, and R. H. Adams. 1968. Parasites reared from *Heliothis* spp. in Oklahoma in 1965-1966. Ann. Entomol. Soc. Amer. 61: 1053-1055.
- Boucias, D. G., and G. L. Nordin. 1978. A scanning electron microscope study of *Hyphantria cunea* CPV-infected midgut tissue. J. Invertebr. Pathol. 32: 229-233.
- Bourland, F. M. 1987. Registration of MISCOT 7813 and MISCOT 7841 germplasm lines of cotton. Crop. Sci. 27: 367.
- Bourland, F. M. 1988. Registration of MISCOT 7913-51, MISCOT 7913-83, and MISCOT 7913-84 germplasm lines of cotton. Crop. Sci. 28: 200-201.
- Bouse, L. F. 1969. Aerial-spray penetration through foliage canopies. Trans. ASAE 12: 86-89.
- Bouse, L. F., and J. B. Carlton. 1983. Factors affecting size distribution of vegetable oil spray droplets. ASAE and NAAA Paper No. AA-83-006.
- Bouse, L. F., J. B. Carlton, S. L. Jones, R. K. Morrison, and J. R. Ables. 1980. Broadcast aerial release of an egg parasite for lepidopterous insect control. Trans. ASAE 23: 1359-1368.
- Bouse, L. F., J. B. Carlton, and R. K. Morrison. 1981. Aerial application of insect egg parasites. Trans. ASAE 24: 1093-1098.
- Bouse, L. F., and R. K. Morrison. 1985. Transport, storage, and release of *Trichogramma pretiosum*. Southwest. Entomol. Suppl. 8: 36-48.
- Boving, P. A., and R. G. Winterfield. 1980. Testing selected nozzles for deposit efficiency in aerial application of spray. Trans. ASAE 23: 36-38.
- Bowden, R. O., R. G. Luttrell, and L. G. Brown. 1990. Cotton insect consultant for expert management (CIC-EM): an expert system for managing cotton insects, pp. 328-333. In Proc. Beltwide Cotton Prod. Res. Conf.
- Bowen, H. D., P. Hebblethwaite, and W. M. Carlton. 1952. Application of electrostatic charging to the deposition of insecticides and fungicides on plant surfaces. Agri. Engin. June: 347-350.
- Boyd, F. J. 1976. Boll weevil population levels during the inseason and reproduction-diapause control phases of the pilot boll weevil eradication experiment, pp. 75-89. In Proc. Conf. on Boll Weevil Suppression, Management and Elimination Technology. USDA, ARS-S-71.
- Boyd, F. J. 1976. Operational plan and execution of the pilot boll weevil eradication experiment, pp. 62-69. In Proc. Conf. on Boll Weevil Suppression, Management and Elimination Technology. USDA, ARS-S-71.
- Boyd, J. P. 1970. Feeding and searching behavior of *Chrysopa carnea* Stephens. Doctoral, Texas A&M University College Station, TX.
- Boyer, W. P., and R. Bell. 1961. The relationship of spider mite infestations in cotton to early season use of insecticides. J. Kansas Entomol. Soc. 34: 132-134.
- Boyer, W. P., L. O. Warren, and C. Lincoln. 1962. Cotton scouting in Arkansas. Univ. of Ark. Agri. Exp. Stn. Bull. 656.
- Boykin, L. S., and W. B. Campbell. 1984. Wind dispersal of two-spotted spider mite (Acari: Tetranychidae) in North Carolina peanut fields. Environ. Entomol. 13: 221-227.
- Boyle, W. W. 1957. On the mode of dissemination of the two-spotted spider mite, *Tetranychus telarius*. Proc. Hawaii Entomol. Soc. 16: 261-268.
- Bozeman, L. L. 1984. Cotton insect management suggestions for 1984. NM State Univ. Coop. Ext. Ser. Guide 400 J-7.
- Bradley Jr., J. R. 1988. Influence of habitat on the pest status and management of *Heliothis* species in the southern United States, In Evolution of insect pests: the pattern of variations. John Wiley and Sons, New York.
- Bradley Jr., J. R., and A. M. Agnello. 1986. Production practices: effects on cotton insect pest populations, pp. 135-138. In Proc. Beltwide Cotton Prod. Res. Conf.
- Bradley Jr., J. R., D. F. Clower, and J. B. Graves. 1968. Field studies of sex attraction in the boll weevil. J. Econ. Entomol. 61: 1457-1458.
- Bradley Jr., J. R., J. B. Graves, and D. F. Clower. 1966. Utilization of DDT resistance as a means of investigation of the possible existence of host-specific strains of the bollworm, *Heliothis zea*. J. Econ. Entomol. 59: 460-462.

- Bradley Jr., J. R., G. A. Herzog, S. H. Roach, R. E. Stinner, and L. I. Tang. 1986. Cultural control in southern U.S. cropping systems, pp. 22-27. In Theory and tactics of *Heliothis* population management: I - Cultural and biological control. S. Coop. Ser. Bull. No. 316.
- Bradley Jr., J. R., M. L. Lester, H. N. Pitre, S. H. Roach, and J. W. Smith. 1987. Interactions of insecticides and arthropod natural enemies of *Heliothis* spp., pp. 7-15. In J. C. Schneider, A. J. Hammond, D. M. Jackson, E. R. Mitchell, and R. T. Roush (eds.), Theory and Tactics of *Heliothis* Population Management II - Insecticidal and Insect Growth Regulator Control - South. Coop. Ser. Bull. 329.
- Bram, R. A., and W. E. Bickley. 1963. The green lacewings of the genus *Chrysopa* in Maryland (Neuroptera: Chrysopidae). Univ. of Maryland Agric. Exp. Stn. Bull. A-124.
- Brandenburg, R. L., and G. G. Kennedy. 1982. Intercrop relationships and spider mite dispersal in a corn/peanut agro-ecosystem. Entomol. Exp. Appl. 32: 269-276.
- Brantner, R., S. D. Wiyatt, J. F. Riggs, R. M. Albert, G. L. Shepler, G. H. Sullivan, and E. S. Dye. 1980. Arizona Agricultural Statistics. U.S. Dept. of Agri. and Univ. of Ariz. Bul. S-16.
- Brattsten, L. B. 1987a. Metabolic insecticide defenses in the boll weevil compared to those in a resistance-prone species. Biochem. Physiol. 27: 1-12.
- Brattsten, L. B. 1987b. Inducibility of metabolic insecticide defenses in boll weevils and tobacco budworm caterpillars. Pestic. Biochem. Physiol. 27: 13-23.
- Brazelton, R. W., N. B. Akesson, K. T. Maddy, and W. E. Yates. 1981. Progress in pesticide worker safety in California. ASAE Paper No. 81-5001.
- Brazzel, J. R. 1959. The effect of late-season applications of insecticide on diapausing boll weevils. J. Econ. Entomol. 52: 1042-1045.
- Brazzel, J. R. 1961. Boll weevil resistance to insecticides in Texas in 1960. Tex. Agr. Exp. Stn. Prog. Rep. 2171.
- Brazzel, J. R. 1963. Resistance to DDT in *Heliothis virescens*. J. Econ. Entomol. 56: 571-574.
- Brazzel, J. R. 1964. DDT resistance in *Heliothis zea*. J. Econ. Entomol. 57: 455-457.
- Brazzel, J. R. 1989. Boll weevil eradication - an update, pp. 218-220. In Proc. Beltwide Cotton Prod. Res. Conf.
- Brazzel, J. R., T. B. Davich, and L. D. Harris. 1961. A new approach to boll weevil control. J. Econ. Entomol. 54: 523-530.
- Brazzel, J. R., and J. C. Gaines. 1956. The effects of pink bollworm infestations on yield and quality of cotton. J. Econ. Entomol. 49: 852-854.
- Brazzel, J. R., and B. G. Hightower. 1960. A seasonal study of diapause, reproductive activity, and seasonal tolerance to insecticides in the boll weevil. J. Econ. Entomol. 53: 41-46.
- Brazzel, J. R., C. Lincoln, L. D. Newsom, F. J. Williams, J. S. Roussel, and G. Barnes. 1953. Bollworm and tobacco budworm as cotton pests in Louisiana and Arkansas. La. Tech. Bull. 482.
- Brazzel, J. R., and L. D. Newsom. 1959. Diapause in *Anthonomus grandis* Boh. J. Econ. Entomol. 52: 603-611.
- Brazzel, J. R., and W. Newton. 1963. Seasonal incidence of tobacco budworms on cotton in Texas. Tex. Agric. Exp. Stn. Prog. Rep. 2272.
- Brazzel, J. R., and O. E. Shipp. 1962. The status of boll weevil resistance to chlorinated hydrocarbon insecticides in Texas. J. Chem. Ecol. 55: 941-944.
- Brazzel, J. R., W. W. Watson, J. S. Hursh, and M. H. Adair. 1968. Relative efficiency of aerial application of ultra-low-volume and emulsifiable concentrate formulations of insecticides. J. Econ. Entomol. 64: 1537-1541.
- Brazzel, J. R., and C. A. Wilson. 1967. Trends in control of cotton pests. Amer. Bee. Journ. 107: 458-459.
- Breene, R. G., D. A. Dean, M. Nyffeler, and G. B. Edwards. 1993. Biology, predation ecology, and significance of spiders in Texas cotton ecosystems with a key to the species. Tex. Agric. Exp. Stn. Bull. 1711.
- Breene, R. G., A. W. Hartstack, W. L. Sterling, and M. Nyffeler. 1989a. Natural control of the cotton

- fleahopper, *Pseudatomoscelis seriatus* (Reuter) (Hemiptera: Miridae), in Texas. J. Appl. Entomol. 108: 298-305.
- Breene, R. G., W. L. Sterling, and D. A. Dean. 1989b. Predators of the cotton fleahopper on cotton. Southwest. Entomol. 14: 159-166.
- Breene, R. G., and W. L. Sterling. 1988. Quantitative phosphorus-32 labeling method for analysis of predators of the cotton fleahopper (Hemiptera: Miridae). J. Econ. Entomol. 81: 1494-1498.
- Breene, R. G., W. L. Sterling, and D. A. Dean. 1988. Spider and ant predators of the cotton fleahopper (Hemiptera, Miridae) on woolly croton. Southwest. Entomol. 13: 177-183.
- Breene, R. G., W. L. Sterling, and M. Nyffeler. 1990. Efficacy of spider and ant predators on the cotton fleahopper (Hemiptera: Miridae). Entomophaga 35: 393-401.
- Brer, H. 1985. Neurochemistry of cholinergic synapses in insects, pp. 89-99. In H. C. von Keyserlink, A. Jager, and C. von Szczepanski (eds.), Approaches to new leads for insecticides. Springer-Verlag, New York.
- Brett, C. H., R. R. Walton, and E. E. Ivy. 1946. The cotton fleahopper *Psallus seriatus* (Reut.) in Oklahoma. Tech. Bull. No. T-24. Okla. Agr. Exp. Sta.
- Brettel, J. H. 1983. Strategies for cotton bollworm control in Zimbabwe. Zimbabwe Agr. J. 80: 105-108.
- Brewer, F. D., and W. A. Jones Jr. 1985. Comparison of meridic and natural diets on the biology of *Nezara viridula* (Heteroptera: Pentatomidae) and eight other phytophagous Heteroptera. Ann. Entomol. Soc. Amer. 78: 620-625.
- Brewer, M. J., and J. T. Trumble. 1991. Classifying resistance severity in field populations: Sampling inspection plans for an insecticide resistance monitoring program. J. Econ. Entomol. 84: 379-389.
- Bridge, R. R. 1980. Registration of three germplasm lines of cotton. Crop. Sci. 20: 417-418.
- Bridge, R. R. 1986a. Registration of DES 35 cotton germplasm. Crop. Sci. 26: 650.
- Bridge, R. R. 1986b. Registration of 'DES 119' cotton. Crop. Sci. 26: 646.
- Bridge, R. R. 1987. Registration of DES-237-7 cotton germplasm. Crop. Sci. 27: 1316.
- Bridge, R. R. 1990. Improvements in cotton through genetics and breeding since 1975, pp. 16-18. In Proc. Beltwide Cotton Prod. Res. Conf.
- Bridge, R. R., and J. F. Chism. 1978a. Registration of DES 24 cotton. Crop. Sci. 18: 523.
- Bridge, R. R., and J. F. Chism. 1978b. Registration of DES 56 cotton. Crop. Sci. 18: 524.
- Bridge, R. R., J. F. Chism, and G. R. Tupper. 1975. The influence of row spacing on cotton variety performance. Mississippi Agric. and For. Exp. Sta. Delta Branch Bull. 816.
- Bridge, R. R., and L. D. McDonald. 1987. Beltwide efforts and trends in development of varieties for short season production systems, pp. 81-85. In Proc. Beltwide Cotton Prod. Res. Conf.
- Bridge, R. R., and W. R. Meredith Jr. 1983. Comparison performance of obsolete and current cotton cultivars. Crop. Sci. 23: 949-9552.
- Brito, R. M., V. M. Stern, and F. V. Sances. 1986. Physiological response of cotton plants to feeding of three tetranychus spider mite species (Acari: Tetranychidae). J. Econ. Entomol. 79: 1217-1220.
- Brooks, G. T. 1974. Chlorinated insecticides. Vol. 2., Biological and environmental aspects. CRC Press, Boca Raton.
- Brooks, W. M. 1974. Protozoan infections, pp. 237-300. In G. E. Cantwell (ed.), Insect Diseases. Marcel Dekker, New York.
- Brooks, W. M. 1988. Entomogenous protozoa, pp. 1-149. In C. M. Ignoffo, and N. B. Mandava (eds.), CRC handbook of natural pesticides vol. V, microbial insecticides, part A, entomogenous protozoa and fungi. CRC Press, Boca Raton.
- Brosten, D., and B. Simmonds. 1990. Cotton enters the environmental decade. Agrichem. Age.
- Brown Jr., W. L. 1968. An hypothesis concerning the function of the metapleural glands in ants. Am. Nat. 102: 188-191.
- Brown Jr., W. L., T. Eisner, and R. H. Whittaker. 1970. Allomones and kairomones: transspecific chemical messengers. BioScience 20: 21-22.

- Brown, A. W. A. 1951. Insect control by chemicals. John Wiley and Sons, New York.
- Brown, D. W., and D. A. Goyer. 1982. Effects of a predator complex on Lepidopterous defoliators of soybean. *Environ. Entomol.* 11: 385-389.
- Brown, H. B. 1923. Cotton spacing. *Mississippi Agr. Exp. Sta. Bull.* 212.
- Brown, H. B. 1938. Cotton. McGraw-Hill, New York.
- Brown, H. B. 1938a. Cultivated varieties of cotton, pp. 41-83. In *Cotton*. McGraw-Hill Book Co., New York and London.
- Brown, H. B. 1938b. Cotton breeding, pp. 183-215. In *Cotton*. McGraw-Hill Book Co., New York and London.
- Brown, H. B. 1938c. Cotton culture, pp. 281-305. In *Cotton*. McGraw-Hill Book Co., New York and London.
- Brown, H. B. 1938d. Fertilizers, manures, and rotations for cotton, pp. 229-253. In *Cotton*. McGraw-Hill Book Co., New York and London.
- Brown, H. B., and J. O. Ware. 1958. Cotton. McGraw-Hill Book Co., New York.
- Brown, H. B., and J. O. Ware. 1958a. Cotton insects, pp. 199. In *Cotton*. McGraw-Hill Book Co., New York, Toronto and London.
- Brown, H. B., and J. O. Ware. 1958b. Cotton culture, pp. 313-316. In *Cotton*. McGraw-Hill Book Co., New York, Toronto and London.
- Brown, J. K., and J. Bird. 1992. Whitefly-transmitted geminiviruses and associated disorders in the Americas and the Caribbean Basin. *Plant Disease* 76: 220-225.
- Brown, J. K., H. S. Costa, and J. Bird. 1991. Variation in *Bemisia tabaci* populations based upon geographic origin, silverleaf symptom induction, and esterase banding patterns. *Phytopath* 81: 1157.
- Brown, J. K., and M. R. Nelson. 1984. Geminate particles associated with cotton leaf crumple disease in Arizona. *Phytopathology* 74: 987-990.
- Brown, J. K., and M. R. Nelson. 1986. Host range study of the cotton leaf crumple virus. *Arizona Agric. Expt. Sta. Bull.*, P-63:171-176.
- Brown, L. G., A. W. Hartstack, D. W. Parvin Jr., and R. W. Skieh. 1979a. Computer simulation for establishing economic thresholds, pp. 75-84. In *Economic thresholds and sampling of *Heliothis* species on cotton, corn, soybeans, and other host plants*. S. Coop. Ser. Bull. 231.
- Brown, L. G., R. W. McClendon, and J. W. Jones. 1979b. Computer simulation of the interaction between the cotton crop and insect pests. *Trans. ASAE* 22: 771-774.
- Brown, L. G., J. W. Jones, J. D. Hesketh, J. D. Hartsog, F. D. Whisler, and F. A. Harris. 1985. COT-CROP: computer simulation of cotton growth and yield. *Miss. Agric. For. Exp. Sta. Inf. Bull.* 69.
- Brown, L. G., and R. W. McClendon. 1982. A new *Heliothis* spp. control strategy for the Mississippi Delta, pp. 191-195. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Brown, L. G., R. W. McClendon, and J. W. Jones. 1983. A cotton insect management simulation model, pp. 437-479. In R. L. Ridgway, E. P. Lloyd, and W. H. Cross (eds.), *Cotton Insect Management with Special Reference to the Boll Weevil*. USDA Agr. Handb. No. 589.
- Brown, T. M. 1981. Countermeasures for insecticide resistance. *Bull. Entomol. Soc. Amer.* 27: 198-202.
- Brown, T. M. 1991. Resistant acetylcholinesterase of the tobacco budworm, *Heliothis virescens*, pp. 185-195. In E. Hodgson, R. M. Roe, and N. Motoyama (ed.), *Pesticides and the Future: Toxicological Studies of Risks and Benefits*. Rev. Pestic. Toxicol. (1). North Carolina State University, Raleigh, North Carolina.
- Brown, T. M., and P. K. Bryson. 1992. Selective inhibitors of methyl parathion-resistant acetylcholinesterase from *Heliothis virescens*. *Pestic. Biochem. Physiol.* 44: 155-164.
- Brumley, J. M. 1987. New biopesticides for cotton, pp. 27-28. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Bryan, B. B., and E. L. Thomas Jr. 1958. Distribution of fertilizer materials applied through sprinkler irrigation systems. *Univ. Ark. Agric. Exp. Stn. Bull.* 598.

- Bryan, D. C., C. G. Jackson, E. G. Neemann, and R. Patana. 1972. Production of progeny and longevity of *Eucelatoria* sp. parasitic in *Heliothis* species. Environ. Entomol. 1: 23-26.
- Bryan, D. E., R. E. Fye, C. G. Jackson, and R. Patana. 1973a. Releases of *Bracon kirkpatricki* (Wilkinson) and *Chelonus blackburni* Cameron for pink bollworm control in Arizona. USDA Prod. Res. Rep. 150.
- Bryan, D. E., R. E. Fye, C. G. Jackson, and R. Patana. 1973b. Releases of parasites for suppression of pink bollworms in Arizona. USDA, ARS W-7.
- Bryan, D. E., R. E. Fye, C. G. Jackson, and R. Patana. 1976. Nonchemical control of pink bollworms. USDA, ARS W-39.
- Bryan, D. E., C. G. Jackson, and R. Patana. 1970. Biological comparison of two species of *Eucelatoria* parasitic in *Heliothis* spp. J. Econ. Entomol. 63: 1469-1472.
- Bryan, D. E., C. G. Jackson, and A. Stoner. 1969. Rearing cotton insect parasites in the laboratory. USDA Prod. Res. Rep. 109.
- Bryan, D. E., and R. F. Smith. 1956. The *Frankliniella occidentalis* (Pergande) complex in California (Thysanoptera: Thripidae). Univ. Calif. Publ. Entomol. 10: 359-410.
- Bryson, C. T., J. C. McCarty Jr., J. N. Jenkins, and W. L. Parrott. 1983. Frequency of pigment glands and capitate and covering trichomes in nascent leaves of selected cottons. Crop. Sci. 23: 369-371.
- Buchel, K. H. 1983. Chemistry of pesticides. John Wiley and Sons, New York.
- Bucher, G. E. 1963. Nonsporulating bacterial pathogens, pp. 117-147. In E. A. Steinhaus (ed.), Insect pathology, an advanced treatise, Vol. II. Academic Press, New York.
- Buford, W. T., J. N. Jenkins, and F. G. Maxwell. 1967. A laboratory technique to evaluate boll weevil oviposition preference among cotton lines. Crop Sci. 7: 579-581.
- Buford, W. T., J. N. Jenkins, and F. G. Maxwell. 1968. A boll weevil oviposition suppression factor in cotton. Crop Sci. 8: 647-649.
- Bull, D. L. 1968. Metabolism of *O,O*-dimethyl phosphorodithioate *S*-ester with 4-(mercaptopethyl)-2-methoxy-1,3,4-thiadiazolin-5-one (Geigy GS-13005) in plants and animals. J. Agric. Food Chem. 16: 610-616.
- Bull, D. L. 1978. Formulations of microbial insecticides: Microencapsulation and adjuvants. Misc. Publ. Entomol. Soc. Amer. 10: 11-20.
- Bull, D. L. 1979. Fate and efficacy of acephate after application to plants and insects. J. Agric. Food Chem. 27: 268-272.
- Bull, D. L. 1980. Fate and efficacy of sulprofos against certain insects associated with cotton. J. Econ. Entomol. 73: 262-264.
- Bull, D. L. 1986. Toxicity and pharmacodynamics of avermectin in the tobacco budworm, corn earworm and fall armyworm (Noctuidae: Lepidoptera). J. Agric. Food Chem. 34: 74-78.
- Bull, D. L., and R. J. Coleman. 1985. Effects of pesticides on *Trichogramma* spp. Southwest. Entomol. Suppl. 8: 156-168.
- Bull, D. L., R. L. Harris, and N. W. Prior. 1988. The contribution of metabolism to pyrethroid and DDT resistance in the horn fly (Diptera: Muscidae). J. Econ. Entomol. 81: 449-458.
- Bull, D. L., and G. W. Ivie. 1980. Activity and fate of diflubenzuron and certain derivatives in the boll weevil. Pestic. Biochem. Physiol. 13: 41-52.
- Bull, D. L., G. W. Ivie, N. W. Pryor, and V. S. House. 1983. Fate and efficacy of *O*-[4-[(4-chlorophenyl)thio]phenyl] *O*-ethyl *S*-propyl phosphorothioate (RH-0994) after application to the tobacco budworm (Lepidoptera: Noctuidae) and the boll weevil (Coleoptera: Curculionidae). J. Econ. Entomol. 76: 227-232.
- Bull, D. L., E. G. King, and J. E. Powell. 1989. Effects and fate of selected insecticides after application to *Microplitis croceipes*, pp. 59-70. In J. E. Powell, D. L. Bull, and E. G. King (Eds.), Biological control of *Heliothis* spp. by *Microplitis croceipes*. Southwest. Entomol. Suppl. 12.
- Bull, D. L., and D. A. Lindquist. 1964. Metabolism of 3-hydroxy-*N,N*-dimethylcrotonamide dimethyl phosphate by cotton plants, insects and rats. J. Agric. Food Chem. 12: 310-317.

- Bull, D. L., D. A. Lindquist, and J. R. Coppedge. 1967a. Metabolism of 2-methyl-2-(methylthio)propanaldehyde *O*(methylcarbamoyl)oxime (Temik, UC-21149) in insects. *J. Agric. Food Chem.* 15: 610-616.
- Bull, D. L., D. A. Linquist, and R. R. Grabbe. 1967b. Comparative fate of the geometric isomers of phosphamidon in plants and animals. *J. Econ. Entomol.* 60: 332-341.
- Bull, D. L., D. A. Lindquist, and J. Hacskeylo. 1963. Absorption and metabolism of dimethoate in bollworm and boll weevil. *J. Econ. Entomol.* 56: 129-134.
- Bull, D. L., and D. A. Linquist. 1966. Metabolism of 3-hydroxy-*N*-methyl-*cis*-crotonamide dimethyl phosphate (Azodrin) by insects and rats. *J. Agric. Food Chem.* 14: 105-109.
- Bull, D. L., F. W. Plapp Jr., and T. C. Sparks. 1987. Chemistry and mode of action of insecticides used to control *Heliothis* spp. on field and horticultural crops., pp. 37-54. In J. C. Schneider, A. M. Hammond, D. M. Jackson, E. R. Mitchell, and R. T. Roush (eds.), Theory and tactics of *Heliothis* population management II - Insecticidal and insect growth regulator control.
- Bull, D. L., N. W. Pryor, and E. G. King Jr. 1987. Pharmacodynamics of different insecticides in *Microplitis croceipes* (Hymenoptera: Braconidae), a parasite of lepidopteran larvae. *J. Econ. Entomol.* 80: 739-749.
- Bull, D. L., and R. L. Ridgway. 1969. Metabolism of trichlorfon in animals and plants. *J. Agric. Food Chem.* 17: 837-841.
- Bull, D. L., R. L. Ridgway, V. S. House, and N. W. Pryor. 1976. Improved formulation of the *Heliothis* nuclear polyhedrosis virus. *J. Econ. Entomol.* 69: 731-736.
- Bull, D. L., and C. J. Whitten. 1972. Factors influencing organophosphorus insecticide resistance in tobacco budworms. *J. Agric. Food Chem.* 20: 561-564.
- Bull, D. L., C. J. Whitten, and G. W. Ivie. 1976. Fate of *O*-ethyl *O*-[4-(methylthio)phenyl] *S*-propyl phosphorodithioate (BAY NTN 9306) in cotton plants and soil. *J. Agric. Food Chem.* 24: 601-605.
- Bullock, H. R. 1967. Persistence of *Heliothis* nuclear polyhedrosis virus on cotton foliage. *J. Invertebr. Pathol.* 9: 434-436.
- Bullock, H. R., and H. T. Dulmage. 1969. *Bacillus thuringiensis* against pink bollworms on cotton in field cages. *J. Econ. Entomol.* 62: 994-995.
- Burch, T. A. 1988. Selection of varieties, row spacing, and plant populations for earliness, pp. 20-23. In Proc. Beltwide Cotton Prod. Res. Conf.
- Buren, C. S., W. A. Banks, and B. M. Glancey. 1975. Biology and control of imported fire ants. *Annu. Rev. Entomol.* 20: 1-30.
- Burges, H. D. 1981. Strategy for the microbial control of insect pests in 1980 and beyond, pp. 798-836. In H. D. Burges (ed.), Microbial control of pests and plant diseases 1970-1980. Academic Press, New York.
- Burges, H. D., and N. W. Hussey. 1971. Introduction, pp. 1-11. In H. D. Burgess, and N. W. Hussey (eds.), Microbial control of insects and mites. Academic Press, New York.
- Burke, H. R., W. E. Clark, J. R. Cate, and P. A. Fryxell. 1986. Origin and dispersal of the boll weevil. *Bull. Entomol. Soc. Amer.* 32: 228-238.
- Burke, H. R., and D. F. Martin. 1956. The biology of three chrysopid predators of the cotton aphid. *J. Econ. Entomol.* 49: 698-700.
- Burks, M. L., and W. C. Nettles Jr. 1978. *Eucelatoria* sp.: effects of cuticular extracts from *Heliothis virescens* and other factors on oviposition. *Environ. Entomol.* 7: 897-900.
- Burleigh, J. G. 1975. Comparison of *Heliothis* spp. larval parasitism and *Spicaria* infection in closed and open canopy cotton varieties. *Environ. Entomol.* 4: 574-576.
- Burris, E., D. F. Clower, and J. E. Jones. 1982. Trap plantings and non-preference for boll weevil control, pp. 130-132. In Proc. Beltwide Cotton Prod. Res. Conf.
- Burris, E., K. J. Ratchford, H. C. Kinard, D. F. Clower, and J. E. Jones. 1981. Plant bug complex as affected by cotton genotypes, pp. 61. In Proc. Beltwide Cotton Prod. Res. Conf.
- Burrows, T. M., V. Sevacherian, H. Browning, and J. Baritelle. 1982. History and cost of the pink bollworm (Lepidoptera: Gelechiidae) in the Imperial Valley. *Bull. Entomol. Soc. Am.* 28: 286-290.

- Burt, E. C., E. P. Lloyd, D. B. Smith, W. P. Scott, J. R. McCoy, and F. C. Tingle. 1970. Boll weevil control with insecticide applied in sprays with narrow-spectrum droplet sizes. *J. Econ. Entomol.* 63: 365-370.
- Burt, E. C., and D. B. Smith. 1974. Effects of droplet sizes on deposition of ulv spray. *J. Econ. Entomol.* 67: 751-754.
- Burt, E. C., D. B. Smith, and E. P. Lloyd. 1966. A rotary disc device for applying ulv (undiluted) pesticides with ground equipment. *J. Econ. Entomol.* 59: 1487-1489.
- Burton, R. L. 1970. A low-cost artificial diet for the corn earworm. *J. Econ. Entomol.* 63: 1969-1970.
- Burton, R. L., and H. C. Cox. 1966. Air automated packaging machine for Lepidopterous larvae. *J. Econ. Entomol.* 59: 907-909.
- Burton, V. E. 1981. Insect and nematode recommendations for cotton. Univ. of Calif., Div. of Agric. Sci., Leaflet No. 2083.
- Bushell, M. J. 1990. Synthesis of some fluorinated non-ester pyrethroids, pp. 125-141. In L. Crombie (ed.), Recent advances in the chemistry of insect control II. Royal Society of Chemistry, Cambridge, U.K.
- Bushland, R. C. 1975. Screwworm research and eradication. *Bull. Entomol. Soc. Amer.* 21: 23-26.
- Bushland, R. C., and D. E. Hopkins. 1951. Experiments with screw-worm flies sterilized by X-rays. *J. Econ. Entomol.* 44: 725-731.
- Busk, A. 1917. The pink bollworm, *Pectinophora gossypiella*. *J. Agr. Res.* 9: 343-370.
- Busvine, J. R. 1951. Mechanism of resistance to insecticides in house flies. *Nature* 168: 193-195.
- Butler Jr., G. D. 1958. Braconid wasps reared from lepidopterous larvae in Arizona, 1957. *Pan-Pac. Entomol.* 34: 221-223.
- Butler Jr., G. D. 1966a. Insect predators of bollworm eggs. *Progressive Agric. in Arizona* 18: 26-27.
- Butler Jr., G. D. 1966b. Development of several predaceous Hemiptera in relation to temperature. *J. Econ. Entomol.* 59: 1306-1307.
- Butler Jr., G. D., J. M. Gillespie, T. J. Henneberry, and A. Zvirdzins. 1983. Seasonal movement of the pink bollworm *Pectinophora gossypiella* (Saunders) (Lepidoptera: Gelechiidae), pp. 205-208. In Proc. Beltwide Cotton Prod. Res. Conf.
- Butler Jr., G. D., and A. G. Hamilton. 1976. Temperature-dependent development rates for four strains of *Pectinophora gossypiella*. *Ann. Entomol. Soc. Amer.* 69: 450-452.
- Butler Jr., G. D., A. G. Hamilton, and J. D. Lopez Jr. 1983. *Cardiochiles nigriceps* (Hymenoptera: Braconidae): development time and fecundity in relation to temperature. *Ann. Entomol. Soc. Amer.* 76: 563-583.
- Butler Jr., G. D., and T. J. Henneberry. 1976. Biology, behavior, and effects of larvae of pink bollworm in cotton flowers. *Environ. Entomol.* 5: 970-972.
- Butler Jr., G. D., and T. J. Henneberry. 1984. *Bemisia tabaci*: effect of cotton leaf pubescence on abundance. *Southwest. Entomol.* 9: 91-94.
- Butler Jr., G. D., and T. J. Henneberry. 1986. *Bemisia tabaci* (Gennadius), a pest of cotton in the southwestern United States. *USDA Agr. Res. Serv. Tech. Bull.* 1707.
- Butler Jr., G. D., and T. J. Henneberry. 1988. Laboratory studies of *Chrysoperla carnea* predation on *Bemisia tabaci*. *Southwest. Entomol.* 13: 165-170.
- Butler Jr., G. D., and T. J. Henneberry. 1994. *Bemisia* and *Trialeurodes* (Hemiptera: Aleyrodidae), pp. 325-352. In G. A. Matthews, and J. P. Tunstall (eds.), *Insect Pests of Cotton*. University Press, Cambridge.
- Butler Jr., G. D., T. J. Henneberry, and R. J. Barker. 1983. Pink bollworm: comparison of commercial control with gossypol or insecticides. *USDA, Agric. Res. Serv. ARM-W-35*.
- Butler Jr., G. D., T. J. Henneberry, and A. C. Bartlett. 1985. *Heliothis virescens* (Lepidoptera: Noctuidae): Termination of summer diapause. *J. Econ. Entomol.* 78: 1287-1292.
- Butler Jr., G. D., T. J. Henneberry, and F. D. Wilson. 1986. *Bemisia tabaci* (Homoptera: Aleyrodidae) on cotton: adult activity and cultivar oviposition preference. *J. Econ. Entomol.* 79: 350-354.
- Butler Jr., G. D., T. R. Pfrimmer, and J. W. Davis. 1974. A model to describe the uniform buildup of populations of adult bollworms and cabbage loopers. *Environ. Entomol.* 3: 978-980.

- Butler Jr., G. D., D. Rimon, and T. J. Henneberry. 1988. *Bemisia tabaci* (Homoptera: Aleyrodidae): populations on different cotton varieties and cotton stickiness in Israel. *Plant Prot.* 7: 43-47.
- Butler Jr., G. D., and R. L. Ritchie Jr. 1970. Development of *Chrysopa carnea* at constant and fluctuating temperatures. *J. Econ. Entomol.* 63: 1028-1030.
- Butler Jr., G. D., and A. L. Wardecker. 1971. Temperature and the development of eggs and nymphs of *Lygus hesperus*. *Ann. Entomol. Soc. Amer.* 64: 144-145.
- Butler Jr., G. D., and F. L. Watson. 1980. Simulating the longevity of adult pink bollworms. *Ann. Entomol. Soc. Amer.* 73: 158-159.
- Butler Jr., G. D., and F. D. Wilson. 1984. Activity of adult whiteflies (Homoptera: Aleyrodidae) within plantings of different cotton strains and cultivars as determined by sticky-trap catches. *J. Econ. Entomol.* 77: 1137-1140.
- Butler Jr., G. D., F. D. Wilson, and T. J. Henneberry. 1985. Cotton leaf crumple virus disease in okra-leaf and normal-leaf cotton. *J. Econ. Entomol.* 78: 1500-1502.
- Buxkemper, W. E., H. A. Turney, and J. Cocke Jr. 1983. Management of cotton insects in the Texas Blacklands. *Tex. Agric. Ext. Serv. B-1205*.
- Byerly, K. F., A. P. Gutierrez, R. E. Jones, and R. E. Luck. 1978. A comparison of sampling methods for some arthropod populations in cotton. *Hilgardia* 46: 257-282.
- Byford, R. L., and T. C. Sparks. 1987. Chemical approaches to the management of resistant horn fly, *Haematobia irritans* (L.), populations, pp. 178-189. In M. G. Ford, D. W. Holloman, B. P. S. Khambay, and R. M. Sawicki (eds.), *Combating Resistance to Xenobiotics*. Ellis Horwood Ltd., Chichester, England.
- Byrne, D., and T. Bellows. 1991. Whitefly biology. *Annu. Rev. Entomol.* 36: 31-457.
- Byrne, D. N., S. L. Buchmann, and H. G. Spangler. 1988. Relationship between wing loading, wing-beat frequency and body mass in homopterous insects. *J. Exp. Biol.* 132: 1-15.
- Byrne, D. N., and P. K. von Bretzel. 1987. Similarity in flight activity rhythms in coexisting species of Aleyrodidae, *Bemisia tabaci* and *Trialeurodes abutilonea*. *Entomol. Exp. Appl.* 43: 215-219.
- Byrne, D. N., P. K. von Bretzel, and C. J. Hoffman. 1986. Impact of trap design and placement when monitoring for the bandedwinged whitefly and the sweetpotato whitefly (Homoptera: Aleyrodidae). *J. Econ. Entomol.* 79: 300-304.
- Byrne, F. J., I. Denholm, L. C. Birnie, A. L. Devonshire, and M. W. Rowland. 1992. Analysis of insecticide resistance in the whitefly, *Bemisia tabaci*, pp. 165-178. In I. Denholm, A. L. Devonshire, and D. W. Hollomon (Eds.), *Resistance 91: Achievements and developments in combating pesticide resistance*. Elsevier, London.
- Byrne, F. J., and A. L. Devonshire. 1991. Insensitive acetylcholinesterase and esterase polymorphism in susceptible and resistant populations of the tobacco whitefly *Bemisia tabaci* (Genn.). *Pestic. Biochem. Physiol.* 45: 34-42.
- Cabanillas, H. E., G. O. Poinar Jr., and J. R. Raulston. 1994. *Steinernema riobravis* n. sp. (Rhabditida: Steinernematidae) from Texas. *Fundam. Appl. Nematol.* 17: 123-131.
- Cadogan, B. L., B. F. Zylstra, C. Nystrom, L. B. Pollock, and P. M. Ebling. 1986. Spray deposits and drop size spectra from a high wing monoplane fitted with rotary atomizers. *Trans. ASAE* 29: 402-406.
- Cai, D., F. Xiang, X. Jaing, Z. Zhu, X. Hau, and Z. Dai. 1993. Fate of aldicarb in the vadose zone beneath a cotton field. *J. Contaminant Hydrology* 14: 129-142.
- Calderon, C. M. 1977. Effect of the nectarless character of cotton on the population dynamics of certain phytophagous and natural enemy insects. Doctoral, Mississippi State University. Mississippi State, MS.
- Callahan, P. S. 1962. Techniques for rearing the corn earworm, *Heliothis zea*. *J. Econ. Entomol.* 55: 453-457.
- Callahan, P. S., A. N. Sparks, J. W. Snow, and W. W. Copeland. 1972. Corn earworm moth vertical distribution in nocturnal flight. *Environ. Entomol.* 1: 497-503.
- Cameron, P. J., and E. W. Valentine. 1989. Importation and establishment of predators and parasitoids of *Heliothis* into New Zealand, pp. 397-410. In E. G. King and R. D. Jackson (eds.), *Proc.*

- Workshop on Biological Control of *Heliothis*: Increasing the Effectiveness of Natural Enemies. FERRO, USDA.
- Campanhola, C., B. F. McCutchen, E. H. Baehrecke, and F. W. Plapp. 1991. Biological constraints associated with resistance to pyrethroids in the tobacco budworm (Lepidoptera: Noctuidae). *J. Econ. Entomol.* 84: 1404-1411.
- Campanhola, C., and F. W. Plapp. 1987. Toxicity of pyrethroids and other insecticides against susceptible and resistant tobacco budworm larvae and synergism by chlordimeform, pp. 326-329. In Proc. Beltwide Cotton Prod. Res. Conf.
- Campion, D. G. 1994. Pheromones for the control of cotton pests, pp. 505-534. In G. A. Matthews, and J. P. Tunstall (eds.), *Insect Pests of Cotton*. University Press, Cambridge.
- Canerday, T. D. 1974. Response of bollworm and tobacco budworm in Georgia to methyl parathion. *J. Econ. Entomol.* 67: 299.
- Cannerday, T. D., and F. S. Arant. 1964. The effect of spider mite populations on yield and quality of cotton. *J. Econ. Entomol.* 57: 553-556.
- Cantelo, W. W., A. H. Baumhover, T. J. Henneberry, and J. W. Smith Jr. 1973. Attempted suppression of tobacco hornworm with sterile males. *Environ. Entomol.* 2: 48-54.
- Cantu, E., and D. A. Wolfenbarger. 1970. Toxicity of three pyrethroids to several insect pests of cotton. *J. Econ. Entomol.* 63: 1373-1374.
- Carey, G. P., T. Lescott, J. S. Robertson, L. K. Spencer, and D. C. Kelley. 1978. Three African isolates of small iridescent viruses: type 21 from *Heliothis armigera* (Lepidoptera: Noctuidae), type 23 from *Heteronychus arator* (Coleoptera: Scarabaeidae), and type 28 from *Lethocerus columbiae* (Hemiptera Heteroptera: Belostomatidae). *Virology* 85: 307-309.
- Carey, J. R. 1982. Demography of the two-spotted spider mite, *Tetranychus urticae* Koch. *Oecologia* 52: 389-395.
- Carey, J. R. 1983. Practical application of the stable age distribution analysis of a *Tetranychid mite* (Acarina: Tetranychidae) population outbreak. *Environ. Entomol.* 12: 10-18.
- Carlson, G. A. 1975. Control of a mobile pest: the imported fire ant. *S. J. Agric. Econ.* 7: 35-47.
- Carlson, G. A., and E. M. Castle. 1972. Economics of pest control, pp. 79-99. In Pest control strategies for the future. National Academy of Sciences, Washington, DC.
- Carlson, G. A., and D. V. DeBord. 1975. Public mosquito abatement. *J. Environ. Econ. Management* 3: 142-153.
- Carlson, G. A., G. Sappie, and M. Hammig. 1989. Economic returns to boll weevil eradication. Economic Research Service, U.S. Department of Agriculture, Washington, DC. Agricultural Economic Report No. 621.
- Carlson, G. A., and L. F. Sugiyama. 1983. Economic evaluation of the boll weevil eradication trial in North Carolina, 1979-1980, pp. 497-517. In R. L. Ridgway, E. P. Lloyd, and W. H. Cross (eds.), *Cotton Insect Management with Special Reference to the Boll Weevil*. USDA Agr. Handb. No. 589.
- Carlson, G. A., and L. F. Sugiyama. 1985. Economic evaluation of areawide cotton insect management: boll weevils in the Southeastern United States. NC Agri. Res. Serv., NC State Univ., Raleigh, NC. Bull. No. 473.
- Carner, G. R. 1976. A description of the life cycle of *Entomophthora* sp. in the two-spotted spider mite. *J. Invertebr. Pathol.* 28: 245-254.
- Carner, G. R., and T. D. Canerday. 1968. Field and laboratory investigations with *Entomophthora fresenii*, a pathogen of *Tetranychus* spp. *J. Econ. Entomol.* 61: 956-959.
- Carner, G. R., and T. D. Canerday. 1970. *Entomophthora* spp. as a factor in the regulation of the two-spotted spider mite on cotton. *J. Econ. Entomol.* 63: 638-640.
- Carner, G. R., and J. S. Hudson. 1981. Histopathology of an unidentified virus of *Heliothis zea* and *Heliothis virescens*. *Proc. S.E. Electron Microsc. Soc.* 4: 27.
- Carner, G. R., M. Shepard, and S. G. Turnipseed. 1975. Disease incidence in lepidopterous pests of soybeans. *J. Ga. Entomol. Soc.* 10: 99-105.

- Caron, R. E., and G. L. Lentz. 1988. Cotton insect and mite control. Univ. of Tennessee Ag. Ext. Ser. Pub. 387.
- Carpenter, J. E., and A. N. Sparks. 1982. Effects of vision on mating behavior of the male corn earworm. *J. Econ. Entomol.* 75:(248-250)
- Carpenter, J. E., A. N. Sparks, and H. L. Cromroy. 1987a. Corn earworm (Lepidoptera: Noctuidae): influence of irradiation and mating history on the mating propensity of females. *J. Econ. Entomol.* 80: 1233-1237.
- Carpenter, J. E., J. R. Young, H. L. Cromroy, and A. N. Sparks. 1987b. Corn earworm (Lepidoptera: Noctuidae): comparison of field survival of larvae from normal and irradiated parents. *J. Econ. Entomol.* 80: 883-886.
- Carpenter, J. E., J. R. Young, A. N. Sparks, H. L. Cromroy, and M. A. Chowdury. 1987c. Corn earworm (Lepidoptera: Noctuidae): effects of substerilizing doses of radiation and inherited sterility on reproduction. *J. Econ. Entomol.* 80: 483-489.
- Carruth, L. A., and L. Moore. 1973. Cotton scouting and pesticide use in Eastern Arizona. *J. Econ. Entomol.* 66: 187-190.
- Carter, C. C., T. N. Hunt, D. L. Kline, T. E. Reagan, and W. P. Barney. 1982. Insect and related pests of field crops, some important, common and potential pests in North Carolina, pp. 214. In T. N. Hunt, and J. R. Baker (eds.), North Carolina Agr. Ext. Ser. Pub. AG-271.
- Carter, F. L. 1990. Role of entomologists in producing quality cotton fiber, pp. 171-173. In Proc. Beltwide Cotton Prod. Res. Conf.
- Carter, F. L., and J. R. Phillips. 1968. Methyl parathion resistance in a laboratory strain of the bollworm. *J. Econ. Entomol.* 61: 1716-1718.
- Carter, F. L., and J. R. Phillips. 1973. Diapause in the boll weevil, *Anthonomus grandis* Boheman, as related to fruiting activity in the cotton plant. *Ark. Aca. Sci. Proc.* 27: 16-20.
- Carter, J. 1966. A complete insect control program. Ariz. Cotton Growers Assoc. Cotton Res. Notes.
- Cartwright, B. O., and J. W. Norman. 1987. Management of cotton insects in the Lower Rio Grande Valley of Texas. Tex. Agric. Ext. Serv. B-1210.
- Casey, J., and R. D. Lacewell. 1973. Estimated impact of withdrawing specified pesticides from cotton production. *So. J. Agr. Econ.* 5: 153-159.
- Cassidy, T. P., and T. C. Barber. 1939. Hemipterous insects of cotton in Arizona: their economic importance and control. *J. Econ. Entomol.* 32: 99-104.
- Cate, J. R. 1985. Cotton: Status and current limitations to biological control in Texas and Arkansas, pp. 537-556. In M. A. Hoy, and D. C. Herzog (eds.), Biological control in Agricultural IPM systems. Academic Press, Inc., New York.
- Cate, J. R. 1987. A method of rearing parasitoids of boll weevil without the host plant. *Southwestern Entomol.* 12: 211-215.
- Cate, J. R., G. L. Curry, and R. M. Feldman. 1979. A model for boll weevil ovipositional site selection. *Environ. Entomol.* 8: 917-921.
- Cate, J. R., P. C. Krauter, and K. E. Godfrey. 1990. Pests of cotton, pp. 17-29. In D. H. Habeck, F. D. Bennett, and J. H. Frank (eds.), Classical biological control in the southern United States. South. Coop. Ser. Bull. 355.
- Certain, G. 1988. Tackling *Heliothis* resistance. Ag. Consultant.
- Chakravorty, S. C., A. K. Basu, and V. M. Sahni. 1982. Variability in tannin and protein contents in fruiting parts in relation to the incidence of pink bollworm in cotton. *Indian J. Agric. Sci.* 52: 767-773.
- Chamberlin, F. S., and J. N. Tenhet. 1926. *Cariochiles nigriceps* Vier., an important parasite of the tobacco budworm, *H. virescens* Fab. *J. Agr. Res.* 33: 21-27.
- Chambers, D. L. 1977. Quality control in mass rearing. *Annu. Rev. Entomol.* 22: 289-308.
- Chambers, D. L., and T. R. Ashley. 1984. Putting the control in quality control in insect rearing, pp. 256-260. In E. G. King, and N. C. Leppla (eds.), Advances and challenges in insect rearing. USDA, Agric. Res. Serv., New Orleans.

- Champlain, R. A., and C. D. Butler Jr. 1967. Temperature effects on development of the egg and nymphal stages of *Lygus hesperus* (Hemiptera: Miridae). Ann. Entomol. Soc. Amer. 60: 519-521.
- Champlain, R. A., and L. L. Sholdt. 1966. Rearing *Geocoris punctipes*, a *Lygus* bug predator, in the laboratory. J. Econ. Entomol. 59: 1301.
- Champlain, R. A., and L. L. Sholdt. 1967a. Life history of *Geocoris punctipes* (Hemiptera: Lygaeidae) in the laboratory. Ann. Entomol. Soc. Amer. 60: 881-883.
- Champlain, R. A., and L. L. Sholdt. 1967b. Temperature range for the development of immature stages of *Geocoris punctipes* (Hemiptera: Lygaeidae). Ann. Entomol. Soc. Amer. 60: 883-885.
- Chan, B. G., and A. C. Waiss Jr. 1981. Evidence for acetogenic and shikimic pathways in cotton glands, pp. 49. In Proc. Beltwide Cotton Prod. Res. Conf.
- Chan, B. G., A. C. Waiss, and M. S. Lukefahr. 1978a. Condensed tannins, an antibiotic chemical from *Gossypium hirsutum*. J. Insect Physiol. 24: 113-118.
- Chan, B. G., A. C. Waiss, R. G. Binder, and C. A. Elliger. 1978b. Inhibition of lepidopterous larval growth by cotton constituents. Entomol. Exp. Appl. 24: 94-100.
- Chan, B. G., A. C. Waiss, W. L. Stanley, and A. E. Goodban. 1978c. A rapid diet preparation method for antibiotic phytochemical bioassay. J. Econ. Entomol. 71: 366-368.
- Chang, C. P., and F. W. Plapp Jr. 1983. DDT and synthetic pyrethroids: mode of action, selectivity, and mechanisms of synergism in the tobacco budworm (Lepidoptera: Noctuidae) and a predator, *Chrysopa carnea* Stephens (Neuroptera: Chrysopidae). J. Econ. Entomol. 76: 1206-1210.
- Chang, K. M., and C. O. Knowles. 1977. Formamidine acaricides. Toxicity and metabolism studies with twospotted spider mites, *Tetranychus urticae* Koch. J. Agric. Food Chem. 25: 493-501.
- Chang, K. M., and C. O. Knowles. 1978. Aldicarb metabolism in twospotted spider mites. J. Econ. Entomol. 71: 158-160.
- Chang, S. C., and J. B. Stokes. 1979. Conjugation: the major metabolic pathway of ^{14}C -diflubenzuron in the boll weevil. J. Econ. Entomol. 72: 15-19.
- Chang, S. C., and C. W. Woods. 1979. Metabolism of ^{14}C -penfluron in the boll weevil. J. Econ. Entomol. 72: 781-784.
- Chant, D. A. 1964. Strategy and tactics of insect control. Can. Entomol. 96: 182-201.
- Chapman, A. J., and H. S. Cavitt. 1934. The influence of soil moisture upon survival of the pink bollworm. J. Econ. Entomol. 27: 820-827.
- Chapman, A. J., and H. S. Cavitt. 1937. Possibilities of reducing overwintered pink bollworm population in the soil as shown by stripping tests. J. Econ. Entomol. 30: 837-838.
- Chauthani, A. R., and P. L. Adkisson. 1965. Comparison of two artificial diets for rearing *Heliothis zea* larvae for insecticide tests. J. Econ. Entomol. 58: 1163-1164.
- Cherry, E. T. 1974. Effect of plant bugs on cotton in West Tennessee. Tennessee Farm and Home Sci. Prog. Rep. 90.
- Chestnut, T. L., and W. H. Cross. 1971. Arthropod parasites of the boll weevil, *Anthonomus grandis*: comparison of their importance in the United States over a period of thirty-eight years. Ann. Entomol. Soc. Amer. 64: 549-557.
- Chiravathanapong, S., and H. N. Pitre. 1980. Effects of *Heliothis virescens* larval size on predation by *Geocoris punctipes*. Fla. Entomol. 63: 146-151.
- Chirl, A. A., and E. F. Legner. 1982. Host-searching kairomones alter behavior of *Chelonus* sp. nr. *curvimanus*, a hymenopterous parasite of the pink bollworm, *Pectinophora gossypiella* (Saunders). Environ. Entomol. 11: 452-455.
- Chow, P. N., C. A. Grant, A. M. Hinshelwood, and E. Simundson. 1988. Adjuvants and agrochemical, Vol. I. Mode of action and physiological activity, and vol. II recent development, application, and bibliography of agro-adjuvants. CRC Press, Boca Raton.
- Clancy, D. W. 1968. Distribution and parasitization of some *Lygus* spp. in western United States and central Mexico. J. Econ. Entomol. 61: 443-445.
- Clancy, D. W., and H. D. Pierce. 1966. Natural enemies of some *Lygus* bugs. J. Econ. Entomol. 59: 853-858.

- Clark, A. G., and N. A. Shamaan. 1984. Evidence that DDT-dehydrochlorinase from the house fly is a glutathione s-transferase. *Pestic. Biochem. Physiol.* 22: 249-261.
- Clark, E. W., and P. A. Glick. 1961. Some predators and scavengers feeding upon pink bollworm moths. *J. Econ. Entomol.* 54: 815-816.
- Clark, J. M., J. A. Argentine, H. Line, and X. Y. Gao. 1992. Mechanisms of abamectin resistance in the Colorado potato beetle, pp. 247-263. In C. A. Mullin, and J. G. Scott (eds.), *Molecular mechanisms of insecticide resistance*. American Chemical Society, Washington, D.C.
- Clark, L. R., P. W. Geier, R. D. Hughes, and R. F. Morris. 1967. *The ecology of insect populations in theory and practice*. Methuen & Co., London.
- Clark, P. S. 1988. Insect control for earliness: a private consultant's viewpoint, pp. 31. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Clarke, G. M., and J. A. McKenzie. 1987. Developmental stability of insecticide resistant phenotypes in blow fly; a result of canalizing natural selection. *Nature* 325: 345-346.
- Clausen, C. P. 1978. Introduced parasites and predators of arthropod pests and weeds: a world review. *USDA Agric. Handb.* 480.
- Clayton, T. E., and T. J. Henneberry. 1982. Pink bollworm: effect of soil moisture and temperature on moth emergence in field and laboratory studies. *Environ. Entomol.* 11: 147-149.
- Cleveland, T. C. 1982. Hibernation and host plant sequence studies of tarnished plant bugs, *Lygus lineolaris*, in the Mississippi Delta. *Environ. Entomol.* 11: 1049-1052.
- Cleveland, T. C. 1987. Predation by tarnished plant bugs (Heteroptera: Miridae) of *Heliothis* (Lepidoptera: Noctuidae) eggs and larvae. *Environ. Entomol.* 16: 37-40.
- Cleveland, T. C., B. W. Hanny, and J. Riley. 1981. Tobacco budworm: effect of larval feeding on presquaring cotton. *Environ. Entomol.* 10: 372-374.
- Cleveland, T. C., and G. L. Smith. 1964. Effects of post season applications of insecticides, defoliants, and desiccants on diapausing boll weevils. *J. Econ. Entomol.* 57: 527-529.
- Clower, D. F. 1980. Changes in *Heliothis* spp. attacking cotton in recent years and how they affected control, pp. 139-141. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Clower, D. F. 1984. Thrips, whitefly, and *Spodoptera* problems in the mid-south, pp. 182-183. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Clower, D. F. 1987. Insecticide resistance-a continuing challenge, pp. 214-215. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Clower, D. F., T. R. Pfrimmer, R. G. Luttrell, G. A. Herzog, J. R. Bradley Jr., J. R. Phillips, A. R. Hopkins, J. A. DuRant, G. L. Lentz, J. A. Harding, J. W. Davis, R. L. McGarr, R. L. Hanna, R. G. Price, and J. H. Young. 1987. Efficacy of chemical insecticides against *Heliothis* species on cotton, pp. 18-24. In J. C. Schneider, A. M. Hammond, D. M. Jackson, E. R. Mitchell, and R. T. Roush (eds.), *Theory and tactics of Heliothis population management, II - Insecticidal and insect growth regulator control*.
- Clower, D. F., B. Rogers, W. Mullins, D. Marsden, C. Staetz, B. Monke, J. Phelps, and G. Certain. 1992. Status of *Heliothis/Helicoverpa* resistance to pyrethroids in U.S. cotton: PEG-US 1991 update, pp. 739-743. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Clower, J. P., H. R. Mitchell, D. F. Clower, D. C. Rester, and J. B. Graves. 1982. Ultra-low volume application of insecticides in vegetable oil. *La. Agric.* 25: 22-24.
- Coad, B. R. 1918. Recent experimental work on poisoning cotton boll weevils. *USDA Bull.* No. 731.
- Coad, B. R. 1929. Organization and progress of pink bollworm research investigations. *J. Econ. Entomol.* 22: 743-750.
- Coad, B. R. 1931. Insects captured by airplane are found at surprising heights. *USDA Yearbook* 1931.
- Coad, B. R., and T. P. Cassidy. 1920. Cotton boll weevil control by the use of poison. *USDA Bull.* No. 875.
- Coad, B. R., E. Johnson, and G. L. McNeil. 1924. Dusting cotton from aeroplanes. *USDA Bull.* No. 1204.
- Coakley, J. M., F. G. Maxwell, and J. N. Jenkins. 1969. Influence of feeding, oviposition, and egg and larval development of the boll weevil on abscission of cotton squares. *J. Econ. Entomol.* 62: 244-245.

- Coats, J. R. 1982. Structure activity relationships in DDT analogs, pp. 29-43. In J. R. Coats (ed.), Insecticide mode of action. Academic Press, New York.
- Cobb, P. P., and M. H. Bass. 1968. Some effects of photoperiod, temperature, and food on the induction of diapause in the boll weevil. *J. Econ. Entomol.* 61: 624-625.
- Cochran, D. C. 1990. Efficacy of abamectin fed to German cockroaches (Dictyoptera: Blattellidae) resistant to pyrethroid. *J. Econ. Entomol.* 83: 1243-1245.
- Cochran, M. J., and W. G. Boggess. 1988. Integrated pest management: Risk implications for natural resources use, In W. Musser (ed.), Incorporation of risk in analysis of farm management decisions affecting natural resource use. Agric. Exp. Stn. Special Rep. 821. Oregon State University, Corvallis.
- Cochran, M. J., W. F. Nicholson, D. W. Parvin, R. Raskin, and J. R. Phillips. 1985. An assessment of the Arkansas experience with bollworm management communities: evaluated from three perspectives, In Proc. Beltwide Cotton Prod. Res. Conf.
- Cochrane, W. 1986. A new sheet of music: how Kennedy's farm advisor has changed his tune about commodity policy and why. *Choices* 1: 11-14.
- Cohen, A. C. 1982. Water and temperature relations of two hemipteran members of a predator-prey complex. *Environ. Entomol.* 11: 715-719.
- Cohen, A. C., and J. W. Debolt. 1983. Rearing *Geocoris punctipes* on insect eggs. *Southwest. Entomol.* 8: 61-64.
- Cohen, D. B. 1986. Ground water contamination by toxic substances-a California assessment, pp. 499-529. In W. Y. Garner, R. C. Honeycutt, and H. N. Nigg (eds.), Evaluation of pesticides in ground water. Symposium Series 315. American Chemical Society, Washington, D.C.
- Cohen, E. 1987. Interference with chitin biosynthesis in insects, pp. 43-73. In J. E. Wright, and A. Retnakaran (eds.), Chitin and Benzoylphenyl Ureas. Dr. W. Junl Publications, Dordrecht, Netherlands.
- Cohen, E. 1993. Chitin synthesis and degradation as targets for pesticide action. *Arch. Insect Biochem.* 22: 245-261.
- Cohen, S., J. Keren, I. Harpaz, and R. Bar-Joseph. 1986. Studies of the epidemiology of a whitefly-borne virus, tomato yellow curl virus, in the Jordan Valley. *Phytoparasitica* 14: 158.
- Cohen, S. Z., C. Eiden, and N. M. Lorber. 1986. Monitoring ground water for pesticides in the U.S.A., pp. 170-196. In W. Y. Garner, R. C. Honeycutt, and H. N. Nigg (eds.), Evaluation of pesticides in ground water. Symposium Series 315. American Chemical Society, Washington, D.C.
- Cohn, D. L. 1956. The life and times of king cotton. Oxford University Press, Inc., New York.
- Cole, C. L. 1970. Influence of certain seasonal changes on the life history and diapause of the boll weevil, *Anthonomus grandis* Boheman. Ph.D. Thesis, Texas A&M Univ., College Station.
- Cole, C. L. 1983. Management of cotton insects in South & East Texas counties. Tex. Agric. Ext. Serv. B-1204.
- Cole, C. L. 1988. Management of cotton insects in Blacklands, South & East Texas counties. Tex. Agric. Ext. Serv. B-1204.
- Cole, C. L., and P. L. Adkisson. 1981. Life history and fecundity of the boll weevil reared in constant and variable temperature regimens. *Southwest. Entomol.* 6: 298-302.
- Cole, L. M., R. A. Nicholson, and J. E. Casida. 1993. Action of phenylpyrazole insecticides at the GABA-gated chloride channel. *Pestic. Biochem. Physiol.* 46: 47-54.
- Collins, G. S., R. D. Lacewell, and J. Norman. 1979. Economic comparison of alternative cotton production practices: Texas Lower Rio Grande Valley. *So. J. of Agric. Econ.* 11: 79-82.
- Colliot, F., J. A. Kukorowski, D. W. Hawkins, and D. A. Roberts. 1992. Fipronil: A new soil and foliar broad spectrum insecticide, pp. 29-34. In Brighton Crop Protection Conference-Pests and Diseases,
- Colthern, C. R. 1986. Techniques for the assessment of carcinogenic risk due to drinking water contaminants, pp. 221-245. In C. P. Straub (ed.), Critical reviews in environmental control. CRC Press, Boca Raton.

- Columbus, E. R. 1987. Chemical residues on ginned lint, pp. 536-538. In Proc. Beltwide Cotton Prod. Res. Conf.
- Colvin, T. S., and J. H. Turner. 1976. Applying pesticides. Am. Assoc. Voc. Instr. Mat., Athens, GA.
- Combe, P. E. 1982. Visual behavior of the greenhouse whitefly, *Trialeurodes vaporariorum*. Physiol. Entomol. 7: 243-251.
- Condra, G. P., K. E. Lindsey, and C. W. Neeb. 1975. Proposal for an upland cotton demonstration in Reeves and Pecos counties. Tex. Agric. Ext. Serv. Mimeo.
- Cone, W. W., L. M. McDonough, J. C. Maltlen, and S. Burdajewicz. 1971a. Pheromone studies of the twospotted spider mite. I. Evidence of a sex pheromone. J. Econ. Entomol. 64:355-358.
- Cone, W. W., S. Predkl, and E. C. Klostermeyer. 1971b. Pheromone studies of the twospotted spider-mite. 2. Behavioral response of males to quiescent deutonymphs. J. Econ. Entomol. 64: 379-382.
- Conway, G. R. 1976. The utility of system analyses techniques in pest management and crop protection. Proc. 15th Intern. Cong. Entomol.
- Cook, O. F. 1904. Report on the habits of the kelep, or Guatemalan cotton boll weevil ant. USDA Bur. Entomol. Bull. 49.
- Cook, O. F. 1905. The social organization and breeding habits of the cotton protecting kelep of Guatemala. USDA Bur. Entomol. Tech. Ser. Bull. 10.
- Cook, O. F. 1913. A new system of cotton culture. USDA Bur. Plt. Ind. Circ. 115.
- Cooke Jr., F. T., and D. W. Parvin. 1983. The cost of insecticides used on cotton in the United States, pp. 29-52. In R. L. Ridgway, E. P. Lloyd, and W. H. Cross (eds.), Cotton Insect Management with Special Reference to the Boll Weevil. USDA Agr. Handb. No. 589.
- Cooke, F. T., D. W. Parkvin, and S. R. Spurlock. 1991. The costs of cotton harvesting systems in the Mississippi Delta, pp. 409-412. In Proc. Beltwide Cotton Prod. Res. Conf.
- Cool, M., and C. K. Jankowski. 1985. A survey of the metabolism of carbamate insecticides, pp. 87-142. In D. H. Huston, and T. R. Roberts (eds.), Insecticides. John Wiley and Sons, New York.
- Coppedge, J. R., D. A. Linquist, R. L. Ridgway, C. R. Cowan, and L. A. Bariola. 1969. Sidedress applications of Union Carbide-21149 for control of the overwintering boll weevil. J. Econ. Entomol. 62: 558-565.
- Coppedge, J. R., and R. L. Ridgway. 1973. The integration of selected boll weevil suppression techniques in an eradication experiment. USDA Prod. Res. Rep. No. 152.
- Coppock, S. 1962. Control cotton insects in New Mexico. NM State Univ. Coop. Ext. Ser. Circular 327.
- Corbett, J. R., K. Wright, and A. C. Baillie. 1984. The biochemical mode of action of pesticides. Academic Press, New York.
- Cosper, R. D., M. J. Gaylor, and J. C. Williams. 1983. Intraplant distribution of three insect predators on cotton, and seasonal effects of their distribution on vacuum sampler efficiency. Environ. Entomol. 12: 1568-1571.
- Costa, H. S., and J. K. Brown. 1991. Variation in biological characteristics and esterase patterns among populations of *Bemisia tabaci*, and the association of one population with silverleaf symptom induction. Entomol. Exp. Appl. 61: 211-219.
- Cotton, L. R., and H. B. Brown. 1934. Cotton spacing in Southern Louisiana in relation to certain plant characters. Louisiana Agric. Exp. Sta. Bull. 246.
- Coudriet, D. L., D. E. Meyerdirk, N. Prabhaker, and A. N. Kishaba. 1986. Bionomics of the sweetpotato whitefly (Homoptera: Aleyrodidae) on weed hosts in the Imperial Valley, California. Environ. Entomol. 15: 1179-1183.
- Coudriet, D. L., N. Prabhaker, A. N. Kishaba, and D. E. Meyerdirk. 1985. Variation in developmental rate on different hosts and overwintering of the sweetpotato whitefly, *Bemisia tabaci* (Homoptera: Aleyrodidae). Environ. Entomol. 14: 516-519.
- Coulson, J. R. 1987. Studies on the biological control of plant bugs (Heteroptera: Miridae): an introduction and history, 1961-83, pp. 1-12. In R. C. Hedlund, and H. M. Graham (eds.), Economic importance and biological control of *Lygus* and *Adelphocoris* in North America. USDA-ARS. ARS-64.

- Coulson, R. N., R. M. Feldman, P. J. H. Sharpe, P. E. Pulley, T. L. Wagner, and T. L. Payne. 1989a. An overview of the TAMBEETLE model of population dynamics of the southern pine beetle. *Holarctic Ecol.* 12: 445-450.
- Coulson, R. N., M. C. Saunders, D. K. Loh, F. L. Oliveria, D. Drummond, P. J. Barry, and K. M. Swain. 1989b. Knowledge system environment for integrated pest management in forest landscapes: the southern pine beetle (Coleoptera: Scolytidae). *Bull. Entomol. Soc. Amer.* 35: 26-32.
- Coulson, R. N., R. O. Flamm, F. L. Oliveria, D. Drummond, and C. N. Lovelady. 1990a. Implementation of emerging technologies: forestry. *Entomol. Soc. Amer. Cent. Symp., Entomol. Soc. Amer. Natl. Meeting, San Antonio, Texas, December* 11-14.
- Coulson, R. N., C. N. Lovelady, R. O. Flamm, S. L. Spradling, and M. C. Saunders. 1990b. Intelligent geographic information system for natural resource management. In M. G. Turner, and R. G. Gardner (eds.), *Quantitative methods in landscape ecology*. Springer-Verlag, New York.
- Cousins, S. E. 1991. Progress in the United States boll weevil eradication programs, pp. 609-610. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Cowan Jr., C. B., and J. W. Davis. 1967. Systemic insecticides for control of the boll weevil and the cotton fleahopper. *J. Econ. Entomol.* 60: 1038-1041.
- Cowan Jr., C. B., and M. J. Lukefahr. 1970. Characters of cotton plants that affect infestations of cotton fleahoppers, pp. 79-80. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Cowan, C. B., R. L. Ridgway, J. W. Davis, J. K. Walker, W. C. Watkins Jr., and R. F. Dudley. 1966. Systemic insecticides for control of cotton insects. *J. Econ. Entomol.* 59: 958-961.
- Cox, P. G., and N. W. Forrester. 1992. Economics of insecticide resistance management in *Heliothis armigera* (Lepidoptera: Noctuidae) in Australia. *J. Econ. Entomol.* 85: 1539-1550.
- Creech, R. G. 1987. How the COMAX-GOSSYM model works and what it can do, pp. 56-61. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Creeger, S. M. 1986. Considering pesticide potential for reaching ground water in the registration of pesticides, pp. 548-557. In W. Y. Garner, R. C. Honeycutt, and H. N. Nigg (eds.), *Evaluation of pesticides in ground water. Symp. Ser. 315*. American Chemical Society, Washington, D.C.
- Crocker, R. L., and W. H. Whitcomb. 1980. Feeding niches of the big-eyed bugs *Geocoris bullatus*, *G. punctipes*, and *G. uliginosus* (Hemiptera: Lygaeidae: Geocorinae). Environ. Entomol. 9: 508-513.
- Crocker, R. L., W. H. Whitcomb, and R. M. Ray. 1975. Effects of sex, developmental stage, and temperature on predation by *Geocoris punctipes*. *Environ. Entomol.* 4: 531-534.
- Croft, B. A. 1990. Developing a philosophy and program of pesticide resistance management, pp. 277-296. In R. T. Roush, and B. E. Tabashnik (eds.), *Pesticide resistance in arthropods*. Chapman & Hall, New York.
- Crombie (ed.), L. 1990. Recent advances in the chemistry of insect control II. Royal Society of Chemistry, Cambridge, U.K.
- Crosby, B. L., R. L. Byford, and T. C. Sparks. 1991. Bioassay for detecting active site insensitivity in horn fly (Diptera: Muscidae) larvae. *J. Econ. Entomol.* 84: 367-370.
- Crosby, C. R., and M. D. Leonard. 1914. The tarnished plant bug *Lygus pratensis* Linnaeus. N. Y. Agr. Exp. Sta. Bull. 346: 463-525.
- Cross, W. H. 1976. History of the boll weevil problem, pp. 1-2. In *Proc. Conf. on Boll Weevil Suppression, Management and Elimination Technology*. USDA, ARS-S-71.
- Cross, W. H. 1976. Relative populations and suggested long-range movements of boll weevils throughout the area of the pilot boll weevil eradication experiment as indicated by traps in 1973, pp. 103-107. In *Proc. Conf. on Boll Weevil Suppression, Management and Elimination Technology*. USDA, ARS-S-71.
- Cross, W. H. 1983. Ecology of cotton insects with special reference to the boll weevil, pp. 53-70. In R. L. Ridgway, E. P. Lloyd, and W. H. Cross (eds.), *Cotton Insect Management with Special Reference to the Boll Weevil*. USDA Agr. Handb. No. 589.
- Cross, W. H., and T. H. Chesnut. 1971. Arthropod parasites of the boll weevil, *Anthonomus grandis*: I. An annotated list. *Ann. Entomol. Soc. Amer.* 64: 516-527.

- Cross, W. H., D. D. Hardee, F. Nichols, H. C. Mitchell, E. B. Mitchell, P. M. Huddleston, and J. H. Tumlinson. 1969. Attraction of female boll weevils to trap baited with males or extract of males. *J. Econ. Entomol.* 62: 154-161.
- Cross, W. H., M. J. Lukefahr, P. A. Fryxell, and H. R. Burke. 1975. Host plants of the boll weevil. *Environ. Entomol.* 4: 19-26.
- Cross, W. H., W. L. McGovern, and H. C. Mitchell. 1969. Biology of *Bracon kirkpatricki* and field releases of the parasite for control of the boll weevil. *J. Econ. Entomol.* 62: 448-454.
- Cross, W. H., and H. C. Mitchell. 1966. Mating behavior of the female boll weevil. *J. Econ. Entomol.* 59: 1503-1506.
- Crowder, L. A., M. P. Jensen, and T. F. Watson. 1984. Pyrethroid resistance in the tobacco budworm, *Heliothis virescens*, pp. 229-231. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Crowder, L. A., M. S. Tollefson, and T. F. Watson. 1979. Dosage-mortality studies of synthetic pyrethroids and methyl parathion on the tobacco budworm in Central Arizona. *J. Econ. Entomol.* 72: 1-3.
- Culin, J., S. Brown, J. Rogers, D. Scarborough, A. Swift, B. Cotterill, and J. Kovach. 1990. A simulation model examining boll weevil dispersal: historical and current situations. *Environ. Entomol.* 19: 195-208.
- Culp, T. W. 1979. Registration of PEE DEE 695 and PEE DEE 875 germplasm lines of cotton. *Crop Sci.* 19: 751.
- Culp, T. W., A. R. Hopkins, and R. F. Moore. 1979. Resistance of cotton cultivars to insects, pp. 84. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Culp, T. W., A. R. Hopkins, and R. F. Moore. 1981. Response of six cultivars and breeding lines to *Heliothis* spp. under three insecticide regimes, pp. 83. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Culp, T. W., R. F. Moore, and J. B. Pitner. 1985. Registration of PD-2 cotton. *Crop Sci.* 25: 198-199.
- Cunningham, J. C., and J. F. Longworth. 1968. The identification of some cytoplasmic-polyhedrosis viruses. *J. Invertebr. Pathol.* 11: 196-202.
- Curl, L. F. 1949. The pink bollworm situation in the United States and Mexico in April 1949. Acco Press.
- Curry, G. L., and J. R. Cate. 1984. Strategies for cotton-boll weevil management in Texas, pp. 169-183. In G. R. Conway (ed.), *Pest and pathogen control: strategic, tactical, and policy models*. John Wiley & Sons, New York.
- Curry, G. L., J. R. Cate, and P. J. H. Sharpe. 1982. Cotton bud drying: contributions to boll weevil mortality. *Environ. Entomol.* 11: 345-350.
- Curry, G. L., and R. M. Feldman. 1987. Mathematical foundations of population dynamics. *Texas Engin. Exp. Stn. Monograph Ser.* 3. Texas A&M Univ. Press, College Station.
- Curry, G. L., R. M. Feldman, and K. C. Smith. 1978a. A stochastic model of a temperature-dependent population. *Theor. Popul. Biol.* 13: 197-213.
- Curry, G. L., R. M. Feldman, and P. J. H. Sharpe. 1978b. Foundations of stochastic development. *J. Theor. Biol.* 74: 397-410.
- Curry, G. L., P. J. H. Sharpe, D. W. DeMichele, and J. R. Cate. 1980. Towards a management model of the cotton-boll weevil ecosystem. *J. Environ. Mgt.* 11: 187-223.
- Curtis, C. F. 1968. Possible use of translocations to fix desirable genes in insect pest populations. *Nature (London)* 218: 368-369.
- Curtis, C. F. 1985. Theoretical models of the use of insecticide mixtures for the management of resistance. *Bull. Entomol. Res.* 75: 259-265.
- Cushman, R. A. 1911. Studies in the biology of the boll weevil in the Mississippi delta region of Louisiana. *J. Econ. Entomol.* 4: 432-448.
- Daly, J. C. 1988. Insecticide resistance in *Heliothis armigera* in Australia. *Pestic. Sci.* 23: 165-176.
- Danks, H. V., R. L. Rabb, and P. S. Southern. 1979. Biology of insect parasites of *Heliothis* larvae in North Carolina. *J. Ga. Entomol. Soc.* 14: 36-64.
- Daum, R. J., R. E. McLaughlin, and D. D. Hardee. 1967. Development of the bait principle for boll

- weevil control: cotton seed oil, a source of attractants and feeding stimulants for the boll weevil. *J. Econ. Entomol.* 60: 321-325.
- Dauterman, W. C. 1976. Extramicrosomal metabolism of insecticides. In C. F. Wilkinson (ed.), *Insecticide biochemistry and physiology*. Plenum Press, New York.
- Dauterman, W. C. 1985. Insect metabolism: extramicrosomal, pp. 713-730. In G. A. Kerkut, and L. I. Gilbert (eds.), *Comprehensive insect physiology biochemistry and pharmacology*. Vol. 12., Insect control. Pergamon Press, New York.
- Davich, T. B. 1976. Foreword, pp. I-II. In *Proc. Conf. on Boll Weevil Suppression, Management and Elimination Technology*. USDA, ARS-S-71.
- Davich, T. B., D. D. Hardee, and J. Alcala M. 1970. Long-range dispersal of boll weevils determined with wing traps baited with males. *J. Econ. Entomol.* 63: 1706-1708.
- Davich, T. B., J. C. Keller, E. B. Mitchell, P. A. Huddleston, R. Hill, D. A. Lindquist, G. H. McKibben, and W. H. Cross. 1965. Preliminary field experiments with sterile males for eradication of the boll weevil. *J. Econ. Entomol.* 58: 127-131.
- Davich, T. B., and D. A. Lindquist. 1962. Exploratory studies on gamma radiation for the sterilization of the boll weevil. *J. Econ. Entomol.* 55: 164-167.
- David, W. A. L. 1975. The status of viruses pathogenic for insects and mites. *Ann. Rev. Entomol.* 20: 97-117.
- Davidson, R. H., and W. F. Lyon. 1979. *Insect pests of farm, garden, and orchard*. 7th edition. John Wiley & Sons, New York.
- Davies, R. A. H. 1984. Insecticide resistance-an industry viewpoint, pp. 593-600. In *British Crop Protection Conf. Pest and Disease*,
- Davies, W. P. 1992. Prospects for pest resistance to pesticides, pp. 95-110. In A. A. Kadir, and H. S. Barlow (eds.), *Pest management and the environment in 2000*. CAB International.
- Davis Jr., L. D. 1981. Population dynamics of four species of *Geocoris* in peanut agroecosystem. Doctoral, Texas A&M University. College Station, TX.
- Davis, D. D., N. R. Malm, C. E. Barnes, and C. L. Roberts. 1978. Double-row cotton trials in New Mexico. *New Mexico Agric. Exp. Stn. Res. Rep.* 352.
- Davis, F. M., S. Malone, T. G. Oswalt, and W. C. Jordan. 1990. Medium-sized lepidopterous rearing system using multicellular rearing trays. *J. Econ. Entomol.* 83: 1535-1540.
- Davis, F. W., C. B. Cowan Jr., and C. R. Parenica. 1976. Boll weevil: survival in hibernation cages and in surface woods trash in central Texas. *J. Econ. Entomol.* 69: 797-799.
- Davis, J. W., C. B. Cowen Jr., and C. R. Parenica Jr. 1967. Emergence of overwintered boll weevils from hibernation sites near Waco, Texas. *J. Econ. Entomol.* 60: 1102-1104.
- Davis, J. W., D. A. Wolfenbarger, and J. A. Harding. 1977. Activity of several synthetic pyrethroids against the boll weevil and *Heliothis* spp. *Southwest. Entomol.* 2: 164-169.
- de Neufville, R., and J. H. Stafford. 1971. *Systems Analysis for Engineers and Managers*. McGraw Hill, New York.
- Dean, D. A., and W. L. Sterling. 1987. Distribution and abundance patterns of spiders inhabiting cotton in Texas. *Texas Agric. Exp. Stn. Bull.* 1566.
- Dean, D. A., and W. L. Sterling. 1992. Comparison of sampling methods to predict phenology of predaceous arthropods in a cotton agroecosystem. *Tex. Agric. Exp. Stn. Misc. Publ.* 1731.
- Dean, D. A., W. L. Sterling, and N. V. Horner. 1982. Spiders in eastern Texas cotton fields. *J. Arachnol.* 10: 251-60.
- Dean, D. A., W. L. Sterling, M. Nyffeler, and R. G. Breene. 1987. Foraging by selected spider predators on the cotton fleahopper and other prey. *Southwest. Entomol.* 12: 263-270.
- Deaton, W. R. 1991. Field performance of cotton genetically-modified to express insecticidal protein from *Bacillus thuringiensis*. I. Introduction, pp. 576. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Debolt, J. W. 1982. Meridic diet for rearing successive generations of *Lygus hesperus*. *Ann. Entomol. Soc. Amer.* 75: 119-122.
- Debott, J. W. 1987. Augmentation: rearing, release, and evaluation of plant bug parasites, pp. 82-87.

- In R. C. Hedlund, and H. M. Graham (eds.), Economic importance and biological control of *Lygus* and *Adelphocoris* in North America. USDA-ARS. ARS-64.
- Debolt, J. W., and R. Patana. 1985. *Lygus hesperus*, pp. 329-338. In P. Singh, and R. F. Moore (eds.), Handbook of Insect Rearing, Vol. 1 Elsevier, New York.
- DeBord, D. V. 1977. Cotton insect and weed loss analysis. The Cotton Foundation. National Cotton Council. Memphis, Tennessee.
- Decoursey, R. M., and C. O. Esselbaugh. 1962. Descriptions of the nymphal stages of some North American Pentatomidae (Hemiptera-Heteroptera). Ann. Entomol. Soc. Amer. 55: 323-342.
- Deitz, L. I., J. W. Van Duyn, J. R. Bradley Jr., R. L. Rabb, W. M. Brooks, and R. E. Stinner. 1976. A guide to the identification and biology of soybean arthropods in North Carolina. N. C. Agric. Exp. Stn. Tech. Bull. 238.
- DeLima, J. O. G., and T. F. Leigh. 1984. Effect of cotton genotypes on the western big-eyed bug (Heteroptera: Miridae). J. Econ. Entomol. 77: 898-902.
- DeLoach, C. J., and D. G. Peters. 1972. Effect of strip-planting vs solid-planting on predators of cotton insects in southeastern Missouri, 1969. Environ. Entomol. 1: 94-102.
- DeLuca, A. J., J. G. Simonson, and A. D. Larson. 1981. *Bacillus thuringiensis* distribution in soils of the United States. Can. Jour. Microbiol. 27: 865-870.
- DeMichele, D. W., and D. G. Bottrell. 1976. Systems approach to cotton insect pest management, pp. 200. In J. L. Apple, and R. F. Smith (eds.), Integrated pest management. Plenum Press, New York.
- DeMichele, D. W., G. L. Curry, P. J. H. Sharpe, and C. S. Barfield. 1976. Cotton bud drying: a theoretical model. Environ. Entomol. 5: 1011-1016.
- Denholm, I., A. Farnham, K. O'Dell, and R. M. Sawicki. 1983. Factors affecting resistance to insecticides in house flies, *Musca domestica* L. (Diptera: Muscidae). I. Long-term control with bioresmethrin of flies with strong pyrethroid-resistance potential. Bull. Entomol. Res. 73: 481-489.
- Denholm, I., and M. W. Rowland. 1992. Tactics for managing pesticide resistance in arthropods: Theory and practice. Annu. Rev. Entomol. 37: 91-112.
- Dennehy, T. J., and J. Granett. 1984. Spider mite resistance to dicofol in San Joaquin Valley cotton: inter- and intraspecific variability in susceptibility of three species of *Tetranychus* (Acari: Tetranychidae). J. Econ. Entomol. 77: 1381-1385.
- Dennehy, T. J., J. Granett, and T. F. Leigh. 1983. Relevance of slide-dip and residual bioassay comparisons to detection of resistance in spider mites. J. Econ. Entomol. 76: 1225-1230.
- Dennehy, T. J., J. Granett, T. F. Leigh, and A. Colvin. 1987. Laboratory and field investigations of spider mite (Acari: Tetranychidae) resistance to the selective acaricide propargite. J. Econ. Entomol. 80: 565-574.
- Desaiyah, D., L. K. Cutkomp, and R. B. Koch. 1973. Inhibition of spider mite ATPases by plictran and three organochlorine acaricides. Life Sci. 13: 1693-1703.
- Devonshire, A. L., and L. M. Field. 1991. Gene amplification and insecticide resistance. Annu. Rev. Entomol. 36: 1-23.
- Devonshire, A. L., and G. D. Moores. 1982. A carboxylesterase with broad substrate specificity causes organophosphorus, carbamate and pyrethroid resistance in peach-potato aphids (*Myzus persicae*). Pestic. Biochem. Physiol. 18: 235-246.
- Devonshire, A. L., G. D. Moores, and R. H. ffrench-Constant. 1986. Detection of insecticide resistance by immunological estimation of carboxylesterase activity in *Myzus persicae* (Sulzer) and cross reaction of the antiserum with *Phorodon humuli* (Schrank) (Hemiptera: Aphididae). Bull. Entomol. Soc. Amer. 76: 97-107.
- Devonshire, A. L., and R. M. Sawicki. 1979. Insecticide-resistant (*Myzus persicae*) as an example of evolution by gene duplication. Nature 270: 140-141.
- Dickens, J. C. 1989. Green leaf volatiles enhance aggregation pheromone of boll weevil *Anthonomus grandis*. Entomol. Exp. Appl. 52: 191-203.

- Dickens, J. C., and G. D. Prestwich. 1989. Differential recognition of geometric isomers by the boll weevil, *Anthonomus grandis* Boh. (Coleoptera: Curculionidae): evidence for only three essential components in aggregation pheromone. *J. Chem. Ecol.* 15: 529-540.
- Dickens, J. C., and H. R. Agee. 1987. Photosensitivity and spectral response of boll weevils reared on natural host and artificial larval diets supplemented with carotenoids. *J. Appl. Entomol.* 103: 185-192.
- Dickerson, W. A. 1986. Grandlure: use in boll weevil control and eradication programs in the United States. *Florida Entomol.* 69: 147-153.
- Dickerson, W. A., R. L. Ridgway, and F. R. Planer. 1987a. Southeastern Boll Weevil Eradication Program: improved pheromone traps and program status, pp. 335-337. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Dickerson, W. A., B. A. Leonhardt, and R. L. Ridgway. 1987b. Field bioassay and laboratory chemical analysis of controlled-release dispensers for the pheromone of the boll weevil, *Anthonomus grandis*, pp. 249-250. In *Proceedings, Intern. Symp. on Controlled Release of Bioactive Materials*, August 2-5, 1987, Toronto, Canada.
- Dickerson, W. A., R. L. Ridgway, F. R. Planer, J. R. Brazzel, and T. J. Bradway. 1986. Pheromone trap captures and insecticide use in the Southeastern boll weevil eradication program, pp. 231-232. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Dilday, R. H. 1986. Development of a cotton plant with glandless seed and glanded foliage and fruiting forms. *Crop Sci.* 26: 639-641.
- Dilday, R. H., H. Muramoto, and H. E. Brown. 1982. Potential development of a glanded cotton genotype which produces glandless seed, pp. 136. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Dilday, R. H., and T. N. Shaver. 1976a. Survey of the regional *Gossypium hirsutum* L. primitive race collection for flower bud gossypol. USDA Report ARS-S-80.
- Dilday, R. H., and T. N. Shaver. 1976b. Survey of the regional *Gossypium hirsutum* L. primitive race collection for flower bud gossypol and seasonal variation between years in gossypol percentage. USDA Report ARS-S-146.
- Dilday, R. H., and T. N. Shaver. 1980. Variability in flower-bud gossypol content and agronomic and fiber properties within the primitive race collection of cotton. *Crop Sci.* 20: 91-95.
- Dinkins, R. L., J. R. Brazzel, and C. A. Wilson. 1970a. Species and relative abundance of *Chrysopa*, *Geocoris*, and *Nabis* in Mississippi cotton fields. *J. Econ. Entomol.* 63: 660-661.
- Dinkins, R. L., J. R. Brazzel, and C. A. Wilson. 1970b. Seasonal incidence of major predaceous arthropods in Mississippi cotton fields. *J. Econ. Entomol.* 63: 814-817.
- Dittrich, V. 1967. A formamidine acaricide as an ovicide for three insect species. *J. Econ. Entomol.* 60: 13-156.
- Dittrich, V. 1969. Chlorophenamidine negatively correlated with OP resistance in a strain of two-spotted spider mite. *J. Econ. Entomol.* 65: 44-47.
- Dittrich, V., S. C. Hassan, and G. E. Ernst. 1985. Sudanese cotton and the whitefly: a case study of the emergence of a new primary pest. *Crop Prot.* 4: 161-176.
- Dittrich, W., S. O. Hassen, and G. H. Ernst. 1986. Development of a new primary pest of cotton in the Sudan: *Bemisia tabaci*, the whitefly. *Agric. Ecos. Environ.* 17: 1337-1342.
- Doane, C. C., and T. W. Brooks. 1981. Research and development of pheromones for insect control with emphasis on the pink bollworm, pp. 285-303. In E. Mitchell (ed.), *Management of Insect Pests - Concepts and Practice*. Plenum Press, New York.
- Doutt, R. L. 1964. Biological characteristics of entomophagous adults, pp. 145-167. In P. DeBach (ed.), *Biological control of insect pests and weeds*. Reinhold, New York.
- Doutt, R. L., and R. F. Smith. 1971. The pesticide syndrome, pp. 3-15. In C. B. Huffaker (ed.), *Biological control*. Plenum, New York.
- Doutt, R. L., and R. L. Smith. 1971. The pesticide syndrome-diagnosis and suggested prophylaxis, pp. 3-15. In C. B. Huffaker (ed.) *Biological Control*. Plenum, New York.
- Dover, B. D., D. H. Davies, and S. B. Vinson. 1988. Dose-dependent influence of *Campolexis*

- sonorensis* polydnavirus on the development and ecdysteroid titers of last-instar *Heliothis virescens* larvae. Archiv. of Insect Biochem. and Physiol. 8: 113-126.
- Dowd, P. F. 1989. In situ production of hydrolytic detoxifying enzymes by symbiont yeast in the cigarette beetle (Coleoptera: Anobiidae). J. Econ. Entomol. 82: 396-400.
- Dowd, P. F., C. C. Gagne, and T. C. Sparks. 1977. The involvement of hydrolysis in pyrethroid resistance in the tobacco budworm, *Heliothis virescens* (F.). Pestic. Biochem. Physiol. 28: 9-16.
- Dowd, P. F., and T. C. Sparks. 1987a. Comparisons of midgut, fat body, and cuticular enzymes from *Pseudoplusia includens* (Walker) and *Heliothis virescens* (F.) responsible for the hydrolysis of permethrin and fenvalerate. Pestic. Biochem. Physiol. 27: 309-317.
- Dowd, P. F., and T. C. Sparks. 1987b. Comparative hydrolysis of permethrin and fenvalerate in *Pseudoplusia includens* (Walker) and *Heliothis virescens* (F.). Pestic. Biochem. Physiol. 27: 123-131.
- Dowd, P. F., and T. C. Sparks. 1987c. Inhibition of *trans*-permethrin hydrolysis in *Pseudoplusia includens* (Walker) and the use of inhibitor as pyrethroid synergists. Pestic. Biochem. Physiol. 27: 237-245.
- Dowd, P. F., and T. C. Sparks. 1988. Relative toxicity and ester hydrolysis of pyrethroids in *Pseudoplusia includens* (Walker) and *Heliothis virescens* (L.). J. Econ. Entomol. 81: 1014-1018.
- Drabek, J., and R. Neuman. 1985. Proinsecticides, pp. 35-86. In D. H. Hutson, and T. R. Roberts (eds.), Insecticides. John Wiley and Sons, New York.
- Drake, V. A. 1985. Radar observations of moths migrating in a nocturnal low-level jet. Ecol. Entomol. 10: 259-265.
- Drake, V. A., and R. A. Farrow. 1988. The influence of atmospheric structure and motions on insect migration. Ann. Rev. Entomol. 33: 183-210.
- Drake, W. A. 1984. The vertical distribution of macro-insects migrating in the nocturnal boundary layer: a radar study. Boundary-Layer Meteorol 28: 353-374.
- Drost, Y. C., W. J. Lewis, and J. H. Tumlinson. 1987. Beneficial arthropod behavior mediated by airborne semiochemicals V. Influence of rearing method, host plant, and adult experience on host-searching behavior of *Microplitis croceipes* (Cresson), a larval parasitoid of "Heliothis". J. Chem. Ecol. 14: 1607-1616.
- Drost, Y. C., W. J. Lewis, P. O. Zannen, and M. A. Keller. 1986. Beneficial arthropod behavior mediated by airborne semiochemicals I. Flight behavior and preflight handling of *Microplitis croceipes* (Cresson). J. Chem. Ecol. 12: 1247-1262.
- Duce (ed.), I. R. 1992. Neurotox '91: Molecular basis of drug and pesticide action. Elsevier, New York.
- Ducoff, H. S., A. P. Vaughn, and J. L. Crossland. 1969. Dose-fractionation studies on adult flower beetles. Radiat. Res. 39: 472.
- Ducoff, H. S., A. P. Vaughn, and J. L. Crossland. 1971. Dose-fractionation and the sterilization of radiosensitive male confused flour beetles. J. Econ. Entomol. 64: 541-543.
- Duelli, P. 1980a. Preovipositionary migration flights in the green lacewing *Chrysopa carnea* (Planipennia: Chrysopidae). Behav. Ecol. Sociobiol. 7: 239-246.
- Duelli, P. 1980b. Adaptive dispersal and appetitive flight in the green lacewing *Chrysopa carnea*. Ecol. Entomol. 5: 213-220.
- Duffus, J. E., and R. A. Flock. 1982. Whitefly-transmitted disease complex of the Desert Southwest. Calif. Agric. 36: 4-6.
- Duffy, P. A., D. L. Cain, G. J. Young, and M. E. Wetzstein. 1994. Effects of the boll weevil eradication program on Alabama cotton farms. Dept. Agric. Econ., Auburn University, Alabama.
- Duggar, J. F. 1897. Experiments with cotton. Ala. Agr. Exp. Sta. Bull. 76.
- Duggar, J. F. 1898. Experiments with cotton. Ala. Agr. Exp. Sta. Bull. 89.
- Duggar, J. F. 1899. Results of experiments on cotton in Alabama. Ala. Agr. Exp. Sta. Bull. 107.
- Duggar, J. F. 1899. The manuring of cotton. Ala. Agr. Exp. Sta. Bull. 107.

- Duke, S. O., J. J. Menn, and J. R. Plimmer (eds.). 1993. Pest control with enhanced environmental safety. American Chemical Society, Washington, D.C.
- Dulmage, H. T. 1981. Insecticidal activity of isolates of *Bacillus thuringiensis* and their potential for pest control, pp. 193-222. In H. D. Burgess (ed.), Microbial control of pests and plant diseases 1970-1980. Academic Press, New York.
- Dulmage, H. T., H. M. Graham, and E. Martinez. 1978. Interactions between the tobacco budworm, *Heliothis virescens*, and the delta-endotoxin produced by the HD-1 isolate of Bt. var. Kurstaki: relationship between length of exposure to the toxin and survival. J. Invertebr. Pathol. 32: 40-50.
- Dunbar, D. M., and O. G. Bacon. 1972a. Influence of temperature on development and reproduction of *Geocoris atricolor*, *G. pallens*, and *G. punctipes* (Heteroptera: Lygaeidae) from California. Environ. Entomol. 1: 596-599.
- Dunbar, D. M., and O. G. Bacon. 1972b. Feeding, development, and reproduction of *Geocoris punctipes* (Heteroptera: Lygaeidae) on eight diets. Ann. Entomol. Soc. Amer. 65: 892-895.
- Duncombe, W. G. 1973. The acaricide spray rotation for cotton. Rhodesia Agr. J. 70: 115-118.
- Dunkelblum, E., and M. Kehat. 1989. Female sex pheromone components of *Heliothis peltigera* (Lepidoptera: Noctuidae). Chemical identification from gland extracts and male response. J. Chem. Ecol. 15: 2233-2245.
- Dunn, P. H., and B. J. Mechalis. 1963. The potential of *Beauveria bassiana* (Balsamo) Vuillemin as a microbial insecticide. J. Insect Pathol. 5: 451-459.
- Durkin, J. J. 1961. Control cotton insects in New Mexico. NM Coop. Ext. Serv. Circ. 321.
- Durkin, J. J. 1959. Use of *Trichogramma* wasps in cotton insect control. NM Coop. Ext. Serv. Insect Letter for May 4, 1959.
- Durkin, J. J. 1964. Control cotton insects in New Mexico. NM Coop. Ext. Serv. 400 J-10.
- Durkin, J. J. 1966a. Control cotton insects. NM Coop. Ext. Serv. Circ. 390.
- Durkin, J. J. 1966b. Control pink bollworms. NM Coop. Ext. Serv. 400-A-201.
- Durkin, J. J. 1967. Cotton stalks outlawed. NM Coop. Ext. Serv. Insect Letter. Dec. 5, 1967.
- Durkin, J. J. 1968. Control pink bollworms. NM Coop. Ext. Serv. 400 J-20.
- Durkin, J. J. 1973. Cotton insect management suggestions. NM Coop. Ext. Serv. Circ. 454.
- Durkin, J. J. 1978. Cotton insect management suggestions for 1978. NM Coop. Ext. Serv. Circ. 400 J-7.
- Durkin, J. J., and L. Gholson. 1980. Cotton insect management suggestions. NM Coop. Ext. Serv. Circ.
- Earle, M. W., S. S. Nilakhe, and L. A. Simmons. 1979. Mating ability of irradiated male boll weevils treated with diflubenzuron or penfluron. J. Econ. Entomol. 72: 334-336.
- Earle, N. W., and R. A. Leopold. 1975. Sterilization of the boll weevil: vacuum fumigation with hempa combined with feeding busulfan-treated diet. J. Econ. Entomol. 68: 283-286.
- Earle, N. W., and L. D. Newsom. 1964. Initiation of diapause in the boll weevil. J. Insect Physiol. 10: 131-139.
- Earle, N. W., and L. A. Simmons. 1979. Boll weevil: ability to fly affected by irradiated male boll weevils treated with diflubenzuron or penfluron. J. Econ. Entomol. 72: 334-336.
- Earle, N. W., L. A. Simmons, S. S. Nilakhe, E. J. Villavaso, G. H. McKibben, and P. P. Sikorowski. 1978. Pheromone production and sterility in boll weevils: effect of acute and fractionated gamma irradiation. J. Econ. Entomol. 71: 591-595.
- Eaton, F. M. 1931. Early defloration as a method of increasing cotton yields and the relation of fruitfulness to fiber and boll characteristics. J. Agr. Res. 42: 447-462.
- Eden, W. G. 1978. Eradication of plant pests. Bull. Entomol. Soc. Amer. 24: 52-54.
- Edson, K. M., S. B. Vinson, D. B. Stoltz, and M. D. Summers. 1981. Virus in a parasitoid wasp: suppression of the cellular immune response in the parasitoid's host. Science 211: 582-583.
- Edwards, D. R., N. C. Leppla, and W. A. Dickerson. 1987. Arthropod species in culture. Entomological Society of America.
- Eger Jr., J. E., W. L. Sterling, and A. W. Hartstack Jr. 1982. Population dynamics of *Heliothis* spp. on *Castilleja indivisa*, an unreported host plant, and *Lupinus texensis* in Texas. Environ. Entomol. 11: 327-333.

- Ehart, O. R., C. Chesters, and K. J. Sherman. 1986. Ground water regulations: impact, public acceptance, and enforcement, pp. 488-498. In W. Y. Garner, R. C. Honeycutt, and H. N. Nig (eds.), Evaluation of pesticides in ground water. Symposium Series 315. American Chemical Society, Washington, D.C.
- Ehler, L. E., K. G. Eveleens, and R. van den Bosch. 1973. An evaluation of some natural enemies of cabbage looper on cotton in California. Environ. Entomol. 2: 1009-1015.
- Ehler, L. E., and J. C. Miller. 1978. Biological control in temporary agroecosystems. Entomophaga 23: 207-212.
- Ehling, C. F., T. J. Henneberry, and L. A. Bariola. 1983. Chemical termination experiments at Brawley, pp. 56-58. In Proc. Beltwide Cotton Prod. Res. Conf.
- El-Sayed, G., and C. H. Knowles. 1984a. Formamidine synergism of pyrethroid toxicity to two-spotted spider mites (Acaria: Tetranychidae). J. Econ. Entomol. 77: 23-30.
- El-Sayed, G., and C. H. Knowles. 1984b. Synergism of insecticide activity to *Heliothis zea* (Boddie) (Lepidoptera: Noctuidae) by formanilides and formamidines. J. Econ. Entomol. 77: 872-875.
- El-Zik, K. M., and R. E. Frisbie. 1985. Integrated crop management systems for pest control and plant protection, pp. 21-122. In N. B. Mandava (ed.) CRC Handbook of Natural Pesticides: Methods, Vol. I. Theory, Practice and Detection. CRC Press, Inc., Boca Raton.
- Elbert, A., H. Overbeck, K. Iwaya, and S. Tsuboi. 1992. Imidacloprid, a novel systemic nitromethylene analogue insecticide for crop protection, pp. 21-28. In Brighton Crop Protection Conference-Pests and Diseases.
- Eldefrawi, M. E. 1985. Nicotine, pp. 263-272. In G. A. Kerkut, and L. I. Gilbert (eds.), Comprehensive Insect Physiology Biochemistry and Pharmacology, vol. 12. Pergamon Press, New York.
- Eldefrawi, M. E., and A. T. Eldefrawi. 1990. Nervous-system-based insecticides, pp. 155-207. In E. Hodgson, and R. J. Kuhr (eds.), Safer Insecticides: Development and Use. Marcel Dekker, New York.
- Elkarmi, L. A., M. K. Harris, and R. K. Morrison. 1987. Laboratory rearing of *Chrysoperla rufilabris* (Burmeister), a predator of insect pests of pecans. Southwest. Entomol. 12: 73-78.
- Eller, F. J., J. H. Tumlinson, and W. J. Lewis. 1987. Beneficial arthropod behavior mediated by airborne semiochemicals. II. Olfactometric studies of host-location by the parasitoid *Microplitis croceipes* (Cresson) (Hymenoptera: Braconidae). J. Chem. Ecol. 14: 425-434.
- Elliger, C. A., B. G. Chan, and A. C. Waiss Jr. 1978. Relative toxicity of minor cotton terpenoids compared to gossypol. J. Econ. Entomol. 71: 161-164.
- Elliot, F., and A. C. Gunter. 1952. Texas Agr. Ext. Ser. L. 173.
- Elliott, M. 1971. The relationship between the structure and the activity of pyrethroids. Bull. W. H. O. 44: 315-317.
- Elliott, M. 1976. Properties and applications of pyrethroids. Environ. Health Perspect. 14: 3-13.
- Elliott, M. 1977. Synthetic pyrethroids, pp. 1-28. In M. Elliott (ed.), Synthetic Pyrethroids. American Chemical Society, Washington, D.C.
- Elliott, M. 1985. Lipophilic insect control agents, pp. 73-102. In N. F. Janes (ed.), Recent Advances in the Chemistry of Insect Control. Royal Society of Chemistry, London.
- Elliott, M. 1990. Pyrethroid insecticides and human welfare, pp. 345-355. In J. E. Casida (ed.), Pesticide and Alternatives: Innovative Chemical and Biological Approaches to Pest Control. Elsevier, New York.
- Elliott, M., A. W. Farnham, N. F. Janes, P. H. Needham, D. A. Pulman, and J. H. Stevenson. 1973. A photostable pyrethroid. Nature 246: 169-170.
- Elliott, M., N. F. Janes, and C. Potter. 1978. The future of pyrethroids in insect control. Annu. Rev. Entomol. 23: 443-469.
- Ellsworth, P., L. Moore, and T. F. Watson. 1993. Insect pest management for cotton. Ariz. Coop. Ext. Publ. 193003.
- Elsey, K. D. 1974. Influence of plant host on searching speed of two predators. Entomophaga 19: 3-6.

- Elzen, G. W., S. H. Martin, and J. B. Graves. 1993. Characterization of tobacco budworm resistance: seasonal aspects and synergism, pp. 1024-1028. In Proc. Beltwide Cotton Prod. Res. Conf.
- Elzen, G. W., P. J. O'Brien, and J. E. Powell. 1989. Toxic and behavioral effects of selected insecticides on the *Heliothis* parasitoid *Microplitis croceipes*. Entomophaga 34: 87-94.
- Elzen, G. W., P. J. O'Brien, and G. L. Snodgrass. 1990. Toxicity various classes of insecticide to pyrethroid resistant *Heliothis virescens* larvae. Southwest. Entomol. 15: 33-37.
- Elzen, G. W., P. J. O'Brien, G. L. Snodgrass, and J. E. Powell. 1987. Susceptibility of the parasitoid *Microplitis croceipes* (Hymenoptera: Braconidae) to field rates of selected cotton insecticides. Entomophaga 32: 545-550.
- Elzen, G. W., and J. E. Powell. 1988. Mating behavior and sex pheromone response of the *Heliothis* parasitoid *Microplitis croceipes*, pp. 257-260. In Proc. Beltwide Cotton Prod. Res. Conf.
- Elzen, G. W., and J. E. Powell. 1989. Mate finding and mating behavior of *Microplitis croceipes*, pp. 49-52. In J. E. Powell, D. L. Bull, and E. G. King (eds.), Biological control of *Heliothis* spp. by *Microplitis croceipes*. Southwest. Entomol. Suppl. 12.
- Elzen, G. W., H. J. Williams, and S. B. Vinson. 1983. Response by the parasitoid *Campoletis sonorensis* (Hymenoptera: Ichneumonidae) to chemicals (synomones) in plants: implications for host habitat location. Environ. Entomol. 12: 1873-1877.
- Elzen, G. W., H. J. Williams, and S. B. Vinson. 1984a. Isolation and identification of cotton synomones mediating searching behavior by parasitoid *Campoletis sonorensis*. J. Chem. Ecol. 10: 1251-1264.
- Elzen, G. W., H. J. Williams, and S. B. Vinson. 1984b. Role of diet in host selection of *Heliothis virescens* by parasitoid *Campoletis sonorensis* (Hymenoptera: Ichneumonidae). J. Chem. Ecol. 10: 1535-1541.
- Elzen, G. W., H. J. Williams, S. B. Vinson, and J. E. Powell. 1987. Comparative flight behavior of parasitoids *Campoletis sonorensis* and *Microplitis croceipes*. Entomol. Exp. Appl. 445: 175-180.
- Enfield, F. D., D. T. North, R. Erickson, and L. Rotering. 1983. A selection plateau for radiation resistance in the cotton boll weevil. Theor. Appl. Genet. 65: 277-281.
- Enfield, F. D., D. T. North, and R. Erickson. 1981. Response to selection for resistance to gamma radiation in the cotton boll weevil. Ann. Entomol. Soc. Am. 74: 422-424.
- Entomological Society of America. 1989. Common names of insects and related organisms. Entomological Society of America, Lanham, Maryland.
- Esselbaugh, C. O. 1946. A study of the eggs of the Pentatomidae (Hemiptera). Ann. Entomol. Soc. Amer. 39: 667-691.
- Essig, E. O. 1926. Insects of Western North America. The MacMillan Co., New York.
- Essig, E. O., R. C. Dickson, R. F. Smith, and J. E. Swift. 1955. Common species of aphids found on alfalfa and clovers in California. Univ. Calif. Mimeo. No. 2.
- Eto, M. 1974. Organophosphorus Insecticides: Organic and Biological Chemistry. CRC Press, Cleveland.
- Eto, M. 1992. Rational approaches to finding agrochemical leads, pp. 147-161. In W. Draber, and T. Fujita (eds.), Rational approaches to structure, activity, and ecotoxicity of agrochemicals. CRC Press, Boca Raton, FL.
- Eto, M., S. Okabe, Y. Ozoe, and K. Maekawa. 1977. Oxidative activation of O,S-dimethyl phosphorothiolate. Pestic. Biochem. Physiol. 7: 367-377.
- Evans, P. D. 1985. Biogenic amines and second messenger systems, pp. 117-131. In H. C. von Keyserlingk, A. Jager, and S. C. von (eds.), Approaches to new leads for insecticides. Springer-Verlag, New York.
- Eveleens, K. G., R. van den Bosch, and L. E. Ehler. 1973. Secondary outbreak induction of beet armyworm by experimental insecticide applications in cotton in California. Environ. Entomol. 2: 497-503.
- Ewing, H. E. 1914. The common red spider or spider mite. Oreg. Agric. Exp. Stn. Bull. 121: 1-95.
- Ewing, K. P. 1929. Effects on the cotton plant of the feeding of certain Hemiptera of the family Miridae. J. Econ. Entomol. 22: 761-765.

- Ewing, K. P., and E. E. Ivy. 1943. Some factors influencing bollworm populations and damage. *J. Econ. Entomol.* 36: 602-606.
- Ewing, K. P., and C. R. Parencia Jr. 1950. Early-season applications of insecticides on a community-wide basis for cotton insect control in 1950. USDA, Bureau of Entomol. and Plant Quarantine E 810: 8.
- Eyer, J. R., and J. T. Medler. 1941. Control of thrips on seedling cotton. *J. Econ. Entomol.* 34: 726-727.
- Eyer, J. R., and J. T. Medler. 1942a. Control of hemipterous cotton insects by the use of dusts. *J. Econ. Entomol.* 35: 630-634.
- Eyer, J. R., and J. T. Medler. 1942b. Control of hemipterous cotton insects by insecticidal dusts. NM Agric. Exp. Sta. Press Bull. 949.
- Fadare, T. A. 1967. Susceptibility of the bollworm, *Heliothis zea* (Boddie), to DDT in Arizona. Masters Thesis, Univ. of Ariz.
- Falcon, L. A. 1971. Microbial control as a tool in integrated control programs, pp. 346-364. In C. B. Huffaker (ed.), *Biological control*. Plenum Press, New York.
- Falcon, L. A. 1978. Application technology: improving coverage with microdroplet applicator, In G. E. Allen, C. M. Ignoffo, and R. E. Jacques (eds.), *Proceeding, NSF-USDA-Univ. FL Workshop on Microbial Control of Insect Pests: Future Strategies in Pest Management Systems*.
- Falcon, L. A., R. van den Bosch, J. Gallagher, and A. Davidson. 1971. Investigations on the pest status of *Lygus hesperus* in cotton in central California. *J. Econ. Entomol.* 64: 56-61.
- Farlow, R. A., G. Giddard, R. Kepner, K. Umeda, and J. R. Whitehead. 1992. Efficacy of pirate insecticide-miticide against insect and mite pests of U. S. cotton, pp. 877-880. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Farr, C. R., and M. L. Lame. 1987. Late season agronomic evaluation of boll weevil control programs, pp. 341. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Farrar Jr., R. R., and J. R. Bradley Jr. 1985. Effect of within-plant distribution of *Heliothis zea* (Boddie) (Lepidoptera: Noctuidae) eggs and larvae on larva development and survival on cotton. *J. Econ. Entomol.* 78: 1233-1237.
- Farrow, R. A., and J. C. Daly. 1987. Long-range movement as an adaptive strategy in the genus *Heliothis* (Lepidoptera: Noctuidae): a review of its occurrence and detection in four pest species. *Aust. J. Zool.* 35: 1-24.
- Faulkner, L. R. 1950a. Thrips of economic importance in the Mesilla Valley of New Mexico. NM Agric. Exp. Sta. Press Bull. 11037.
- Faulkner, L. R. 1950b. New Mexico cotton insects of economic importance. NM Agric. Exp. Press Bull. 1039.
- Faust, R. M., and L. A. Bulla Jr. 1982. Bacteria and their toxins as insecticides, pp. 75-208. In E. Kurstak (ed.), *Microbial and viral pesticides*. Marcel Dekker, New York.
- Federici, B. A. 1983. Enveloped double-stranded DNA insect virus with novel structure and cytopathology. *Proc. Natl. Acad. Sci. USA* 80: 7664-7668.
- Federici, B. A. 1986. Ultrastructure of baculoviruses, pp. 61-68. In R. R. Granados, and B. A. Federici (eds.), *The biology of baculoviruses*, vol. I biological properties and molecular biology. CRC Press, Inc., Boca Raton.
- Feldman, R. M., and G. L. Curry. 1983. A PDE formulation and numerical solution for a boll weevil-cotton crop model. *Comp. & Maths. with Appl.* 9: 393-402.
- Feldman, R. M., and G. L. Curry. 1984. Mathematical foundations for modeling poikilotherm mortality. *Math. Biosci.* 71: 81-104.
- Feldman, R. M., G. L. Curry, and T. E. Wehrly. 1984. Statistical procedure for validating a simple population model. *Environ. Entomol.* 13: 1446-1451.
- Fenton, F. A. 1929. Biological notes on the pink bollworm (*Pectinophora gossypiella* Saunders) in Texas. *Inter. Congress Entomol.* 2: 439-447.
- Fenton, F. A., and E. W. Dunnam. 1928. Dispersal of the cotton-boll weevil, *Anthonomus grandis*. *Boh. J. Agric. Res.* 36: 135-149.

- Fenton, F. A., and E. W. Dunnam. 1929. Biology of the cotton boll weevil at Florence, South Carolina. USDA Tech. Bull. No. 112.
- Fenton, F. A., and W. L. Owen Jr. 1931. Hibernation of *Pectinophora gossypiella* in Texas. J. Econ. Entomol. 24: 1197-1207.
- Fenton, F. A., and W. L. Owen Jr. 1953. The pink bollworm of cotton in Texas. Misc. Publ., Texas Agric. Exp. Stn., Texas A&M College System, College Station, Texas.
- Ferguson, J. 1988. Breaking biotech barriers. Ag. Consultant 44: 5-6.
- Ferguson-Kolmes, L. A., J. G. Scott, and T. J. Dennehy. 1991. Dicofol resistance in *Tetranychus urticae* (Acari: Tetranychidae): Cross-resistance and pharmacokinetics. J. Econ. Entomol. 84: 41-48.
- Ferris, E. B. 1904. Report of work at McNeill Branch Station for 1903. Mississippi Agr. Exp. Sta. Bull. 83.
- Ferro, D. N. 1993. Potential for resistance to *Bacillus thuringiensis*: Colorado potato beetle (Coleoptera: Chrysomelidae)-A model system. Am. Entomol. 39: 38-44.
- Ferron, P. 1978. Biological control of insect pests by entomogenous fungi. Ann. Rev. Entomol. 23: 409-442.
- Ferron, P. 1981. Pest control by the fungi *Beauveria* and *Metarhizium*, pp. 465-482. In H. D. Burges (ed.), Microbial control of pests and plant diseases. Academic Press, New York.
- ffrench-Constant, R. H., S. J. Clark, and A. L. Devonshire. 1988a. Effect of decline of insecticide residues on selection for insecticide resistance in *Myzus persicae* (Sulzer) (Hemiptera: Aphididae). Bull. Entomol. Soc. Amer. 78: 19-29.
- ffrench-Constant, R. H., A. L. Devonshire, and R. D. White. 1988b. Spontaneous loss and reselection of resistance in extremely resistant *Myzus persicae* (Sulzer). Pestic. Biochem. Physiol. 30: 1-10.
- Field, L. M., A. L. Devonshire, and B. G. Forde. 1988. Molecular evidence that insecticide resistance in peach-potato aphids (*Myzus persicae* Sulz.) results from amplification of an esterase gene. Biochem. J. 251: 309-312.
- Fife, L. D., I. Shiller, and A. J. Chapman. 1947. Pink bollworm carryover from one cotton crop to the next in the lower Rio Grande Valley. J. Econ. Entomol. 40: 540-545.
- Fillman, D. A., and W. L. Sterling. 1983. Killing power of the red imported fire ant (Hym.: Formicidae): a key predator of the boll weevil (Col.: Curculionidae). Entomophaga 28: 339-344.
- Fillman, D. A., and W. L. Sterling. 1985. Inaction levels for the red imported fire ant, *Solenopsis invicta* (Hym.: Formicidae): a predator of the boll weevil, *Anthonomus grandis* (Col.: Curculionidae). Agric. Ecosys. Environ. 13: 93-102.
- Fincher, G. T., and H. O. Lund. 1967. Notes on the biology of the imported fire ant, *Solenopsis saevissima richteri* Forel in Georgia. J. Ga. Entomol. Soc. 2: 91-94.
- Finney, J. R. 1991. Where do we stand - where do we go?, pp. 555-576. In H. Frehse (ed.), Pesticide chemistry. Advances in international research, development and legislation. VCH, Weinheim.
- Firko, M. J. 1991. Insecticide resistance: the myth of single gene inheritance, pp. 651-653. In Proc. Beltwide Cotton Prod. Res. Conf.
- Firko, M. J., and E. G. King. 1990. Genetic improvement of tobacco budworm sterile hybrid: Pyrethroid resistance, pp. 312-314. In Proc. Beltwide Cotton Prod. Res. Conf.
- Firko, M. J., and D. A. Wolfenbarger. 1991. Tolerance to cypermethrin in Texas and Mississippi of tobacco budworm: genetic analysis and relationship between LD₅₀ estimates and observation time, pp. 657-659. In Proc. Beltwide Cotton Prod. Res. Conf.
- Fischhoff, D. A., K. S. Bowdish, F. J. Perlak, P. G. Marrone, S. J. G. Niedermeyer, D. A. Dean, K. Kusano-Kretzmer, E. J. Mayer, D. E. Rochester, S. G. Rogers, and R. T. Fraley. 1987. Insect tolerant transgenic tomato plants. Biotechnology 5: 807-813.
- Fischhoff, D. A. 1992. Management of lepidopteran pests with insect resistant cotton: recommended approaches, pp. 751-753. In Proc. Beltwide Cotton Prod. Res. Conf.
- Fisher, M. H. 1985. The avermectins, pp. 53-72. In N. F. Janes (ed.), Recent advances in the chemistry of insect control. Royal Society of Chemistry, London.

- Fisher, M. H. 1990. Novel avermectin insecticides and miticides, pp. 52-68. In L. Crombie (ed.), Recent advances in the chemistry of insect control II. Royal Society of Chemistry, Cambridge, U.K.
- Fisher, M. H. 1993. Recent progress in avermectin research, pp. 169-182. In S. O. Duke, J. J. Menn, and J. R. Plimmer (eds.), Pest control with enhanced environmental safety. American Chemical Society, Washington, D.C.
- Fisher, R. W., and D. R. Menzies. 1976. Effect of spray droplet density and exposure time on the immobility of newly-hatched oriental fruit moth larvae. *J. Econ. Entomol.* 69: 438-440.
- Fisher, R. W., D. R. Menzies, D. C. Herne, and M. Chida. 1974. Parameters of dicofol spray deposit in relation to mortality of European red mite. *J. Econ. Entomol.* 67: 124-126.
- Fisher, S. W., and D. L. Wrensch. 1986. Quantification of biological effectiveness for pesticides against *Tetranychus urticae* (Acarina: Tetranychidae). *J. Econ. Entomol.* 79: 1472-1476.
- Fisher, W. R., and N. C. Leppla. 1985. Insectary design and operation, pp. 167-183. In P. Singh, and R. F. Moore (eds.), Handbook of Insect Rearing, Vol. 1 Elsevier, New York.
- Fitt, G. P. 1984. Comparisons of the biology of pyrethroid resistant and susceptible *Heliothis armigera*, pp. 103-122. In Proc. Australian Cotton Growers Res. Conf., Toowoomba, Australia.
- Fitt, G. P. 1989. The ecology of *Heliothis* species in relation to agroecosystems. *Annu. Rev. Entomol.* 34: 17-52.
- Flamm, R. O., R. N. Coulson, J. A. Jordan, M. E. Sterle, H. N. Brodale, R. J. Mayer, F. L. Oliveria, D. Drummond, P. J. Barry, and K. M. Swain. 1991. The integrated southern pine beetle expert system: ISPBEX. *Expert Sys. with Applications* 2: 97-105.
- Flanders, S. E. 1962. The parasitic Hymenoptera: specialists in population regulation. *Can. Entomol.* 94: 1133-1147.
- Fleischer, S. J., and M. J. Gaylor. 1987. Seasonal abundance of *Lygus lineolaris* (Hemiptera: Miridae) and selected predators in early season uncultivated hosts: implications for managing movement into cotton. *Environ. Entomol.* 16: 379-389.
- Fleischer, S. J., and M. J. Gaylor. 1988. *Lygus lineolaris* (Heteroptera: Miridae) population dynamics: Nymphal development, life tables, and Leslie matrices on selected weeds and cotton. *Environ. Entomol.* 17: 246-253.
- Fleischer, S. J., M. J. Gaylor, and N. V. Hue. 1988. Dispersal of *Lygus lineolaris* (Heteroptera: Miridae) adults through cotton following nursery host destruction. *Environ. Entomol.* 17: 533-541.
- Fletcher, R. K., and F. L. Thomas. 1943. Natural control of eggs and first instar larvae of *Heliothis armigera*. *J. Econ. Entomol.* 36: 557-560.
- Flint, H. M., W. R. Bibow, and C. K. Lahren. 1966. Radiation studies with the boll weevil: lethal effects on larvae, pupae and adults; male sterility and dose fractionation. *J. Econ. Entomol.* 59: 1249-1255.
- Flint, H. M., N. F. Curtice, and Q. H. Siddiqui. 1987. Early to mid-season distribution of male pink bollworms as determined with pheromone traps in host and non-host crops. *Southwest. Entomol.* 12: 139-145.
- Flint, H. M., and E. L. Kressin. 1967. Gamma irradiation of pupae of the tobacco budworm. *J. Econ. Entomol.* 60: 1655-1659.
- Flint, H. M., and E. L. Kressin. 1968. Gamma irradiation of the tobacco budworm: sterilization, competitiveness, and observations on reproductive biology. *J. Econ. Entomol.* 61: 477-483.
- Flint, H. M., and F. R. Merkle. 1981. Early-season movements of pink bollworm male moths between selected habitats. *J. Econ. Entomol.* 74: 366-371.
- Flint, H. M., S. S. Salter, and S. Walters. 1979. Caryophyllene: an attractant for the green lacewing. *Environ. Entomol.* 8: 1123-1125.
- Flint, H. M., F. D. Wilson, and N. J. Parks. 1989. Causes of square shed on cotton in Central Arizona. *Southwest. Entomol.* 14: 271-278.
- Flint, H. M., B. Wright, H. Sallam, and B. Horn. 1975a. A comparison of irradiated or chemosterilized pink bollworm moths for suppressing native populations in field cages. *Canadian Entomol.* 107: 1069-1072.

- Flint, H. M., B. S. Wright, A. A. Sallam, and B. Horn. 1975b. Dispersal and mating in the field by male pink bollworm, *Pectinophora gossypiella*, labeled with 32P. Entomol. Exp. Appl. 18: 451-456.
- Folsom, J. W. 1928. Calcium arsenate as a cause of aphid infestation. J. Econ. Entomol. 21: 174.
- Folsom, J. W. 1932. Insect enemies of the cotton plant. USDA Farmers' Bull. 1688.
- Folsom, J. W. 1936. Notes on little-known cotton insects. J. Econ. Entomol. 29: 282-285.
- Folsom, J. W. 1936. Observations of *Microbracon mellitor* in relation to the boll weevil. J. Econ. Entomol. 29: 111-116.
- Foote, L. 1988. Pink bollworm program in the San Joaquin Valley, California, pp. 8-9. In Proc. International Cotton Pest Work Committee, Puerto Vallarta, Mexico.
- Forbes, A. R., B. D. Frazer, and C. K. Chan. 1985. Aphids, pp. 353-359. In P. Singh, and R. F. Moore (eds.), Handbook of Insect Rearing. Elsevier, New York.
- Forgash, A. J. 1984. History, evolution and consequences of insecticide resistance. Pestic. Biochem. Physiol. 22: 178-186.
- Fox, J. L. 1992. Insect resistant to Bt delta-endotoxin: What it means for farming practices and the environment. National Audubon Society, Washington, D.C.
- Fox, J. W. 1907. Report of work at the Delta Station for 1906. Mississippi Agr. Exp. Sta. Bull. 106.
- Frank, A. W. 1985. The cotton gazetteer. Arlen W. Frank. Slidell, LA.
- Franklin, E. J., and C. O. Knowles. 1981. Metabolism of diflubenzuron by spider mites and bean plants. Pestic. Sci. 12: 133-141.
- Franklin, E. J., and C. O. Knowles. 1984. Degradation of xylyformamidines by the twospotted spider mite (Acaria: Tetranychidae). J. Econ. Entomol. 77: 1405-1408.
- Franklin, E. J., and C. O. Knowles. 1984. Influence of formamidines on two-spotted spider mite (Acarina: Tetranychidae) dispersal behavior. J. Econ. Entomol. 77: 318-323.
- Frazer, B. D., and N. Gilbert. 1976. Coccinellids and aphids: a quantitative study of the impact of adult ladybirds (Coleoptera: Coccinellidae) preying on field populations of pea aphid (Homoptera: Aphididae). J. Entomol. Soc. Brit. Columb. 73: 33-56.
- Freed, A. N. 1984. Foraging behavior in the jumping spider *Phidippus audax*: bases for selectivity. J. Zool. 203: 49-61.
- French, R. A., and G. W. Hurst. 1969. Moth immigration in the British Isles in July 1968. Entomologist's Gazette 20: 37-44.
- Fried, M. 1971. Determination of sterile insect competitiveness. J. Econ. Entomol. 64: 869-872.
- Frisbie, R. E. 1981. A statewide pest management plan for Texas. Texas Agric. Exp. Stn. 8-81.
- Frisbie, R. E. 1985. Regional implementation of cotton IPM, pp. 638-651. In R. E. Frisbie and P. L. Adkisson (eds.), CIPM: Integrated Pest Management on Major Agricultural Systems. Texas Agric. Exp. Stn. MP-1616.
- Frisbie, R. E. 1987. Should growers be concerned about development of resistance to insecticides?, pp. 28-29. In Proc. Beltwide Cotton Prod. Res. Conf.
- Frisbie, R. E. and P. L. Adkisson. 1985. IPM: Definitions and current status in U.S. agriculture, pp. 41-51. In M. A. Hoy, and D. C. Herzog (eds.), Biological control in agricultural IPM systems. Academic Press, New York.
- Frisbie, R. E., and P. L. Adkisson (eds.). 1985. CIPM: Integrated Pest Management on Major Agricultural Systems. Texas Agric. Exp. Stn. MP-1616.
- Frisbie, R. E., J. L. Crawford, C. M. Bonner, and F. G. Zalom. 1989. Implementing IPM in cotton, pp. 389-412. In R. E. Frisbie, K. M. El-Zik, and L. T. Wilson (eds.), Integrated Pest Management Systems and Cotton Production. John Wiley and Sons, New York.
- Frisbie, R. E., and G. M. McWhorter. 1986. Implementing a statewide pest management program for Texas, U.S.A., pp. 234-262. In J. Palti and R. Ausher (eds.), Advisory Work in Crop Pest and Disease Management. Springer-Verlag, Berlin Heidelberg, Germany.
- Frisbie, R. E., J. R. Phillips, W. A. Lambert, and H. B. Jackson. 1983. Opportunities for improving cotton insect management programs and some constraints on beltwide implementation, pp. 521-557. In R. L. Ridgway, E. P. Lloyd, and W. H. Cross (eds.), Cotton Insect Management with Special Reference to the Boll Weevil. USDA Agr. Handb. No. 589.

- Frisbie, R. E., J. M. Sprott, R. D. Lacewell, R. D. Parker, W. E. Buxkemper, W. E. Baghley, and J. W. Norman. 1976. A practical method of economically evaluating an operational cotton pest management program in Texas. *J. Econ. Entomol.* 69: 211-214.
- Frisbie, R. E., J. K. Walker Jr., K. M. El-Zik, and L. T. Wilson. 1989. Perspective on cotton production and integrated pest management, pp. 1-36. In R. E. Frisbie, K. M. El-Zik, and L. T. Wilson (eds.), *Integrated Pest Management Systems and Cotton Production*. John Wiley and Sons, New York.
- Frisbie, R. E., and J. K. Walker. 1981. Pest management system for cotton insects, pp. 656. In D. Pimentel (ed.), *CRC Handbook of pest management in agriculture*, Vol. III.. CRC Press, Inc., Boca Raton.
- Fristrom, J. W., and M. T. Clegg. 1988. *Principles of genetics* 2nd ed. Chiron Press, New York.
- Fry, K. E., and T. J. Henneberry. 1977. Measuring leaf damage by the cotton leafperforator. *J. Econ. Entomol.* 70: 141-142.
- Fry, K. E., and T. J. Henneberry. 1983. Yield reduction in upland cotton due to pink bollworm infestations and boll rot, pp. 77-80. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Fuchs, T. W., and J. A. Harding. 1976. Seasonal abundance of arthropod predators in various habitats in the Lower Rio Grande Valley of Texas. *Environ. Entomol.* 5: 288-290.
- Fuchs, T. W., J. F. Leser, C. T. Allen, and E. P. Boring III. 1987. Management of cotton insects in the High Plains, Rolling Plains and Trans Pecos areas of Texas. *Tex. Agric. Ext. Serv. B-1209.*
- Fuchs, T. W., J. F. Leser, E. P. Boring III, and C. W. Neeb. 1982. Management of cotton insects in the High Plains, Rolling Plains, and Trans-Pecos areas of Texas. *Tex. Agric. Ext. Serv. B-1209.*
- Fukami, J. I. 1985. Insecticides as inhibitors of respiration, pp. 47-69. In H. C., Jager, A. von Keyserlingk, and C. von Szczepanski (eds.), *Approaches to new leads for insecticides*. Springer-Verlag, New York.
- Fukuto, T. R. 1976. Physiochemical aspects of insecticidal action, pp. 397-428. In C. F. Wilkinson (ed.), *Insecticide biochemistry and physiology*. Plenum Press, New York.
- Fukuto, T. R. 1979. Effect of structure on the interaction of organophosphorus and carbamate esters with acetylcholinesterase, pp. 277-295. In T. Narahashi (ed.), *Neurotoxicology of insecticides and pheromones*. Plenum Press, New York.
- Fukuto, T. R. 1984. Propesticides, pp. 87-101. In P. S. Magee, G. K. Kohn, and J. J. Menn (eds.), *Pesticide synthesis through rational approaches*. American Chemical Society, Washington, D.C.
- Fukuto, T. R., and S. Keadtisuke. 1992. Physical-organic concepts in structure-activity relationships in the development of insecticides, pp. 163-183. In W. Draber, and T. Fujita (eds.), *Rational approaches to structure, activity, and ecotoxicity of agrochemicals*. CRC Press, Boca Raton, FL.
- Fullerton, D. 1982. Effects of plant coverage on whitefly control. *Ariz. Agr. Exp. Sta. P-56.*
- Fullerton, D. G., L. P. Crowder, and T. F. Watson. 1975. Overwinter survival of pink bollworm larvae in buried cotton bolls. *Environ. Entomol.* 4: 514-516.
- Furr, R. E. 1978. Toxicity of methomyl to tobacco budworm as determined by topical application. *Southwest. Entomol.* 3: 34-36.
- Furr, R. E., and T. R. Pfirrmer. 1968. Effects of early-, mid-, and late season infestations of two-spotted spider mites on the yield of cotton. *J. Econ. Entomol.* 61: 1446-1447.
- furth, D. G. 1974. The stink bugs of Ohio. *Bull. Ohio Biol. Survey N.S.* 5: 1-60.
- Fye, R. E. 1968. Spread of the boll weevil by drainage water and air currents. *J. Econ. Entomol.* 61: 1418-1424.
- Fye, R. E. 1969. Longevity and fecundity of the boll weevil complex in Arizona. *J. Econ. Entomol.* 62: 1408-1412.
- Fye, R. E. 1971. Grain sorghum—a source of insect predators for insects on cotton. *Prog. Agr. in Ariz.* 23: 12-13.
- Fye, R. E. 1971. Mortality of mature larvae of the pink bollworm caused by high soil temperatures. *J. Econ. Entomol.* 64: 1568-1569.
- Fye, R. E. 1980. Weed sources of *Lygus* bugs in the Yakima Valley and Columbia River Basin in Washington. *J. Econ. Entomol.* 73: 469-473.

- Fye, R. E. 1982. Weed hosts of the *Lygus* (Heteroptera: Miridae) complex in central Washington. *J. Econ. Entomol.* 75: 724-727.
- Fye, R. E., and C. D. Bonham. 1970. Analysis of populations of the boll weevil in one acre of cotton at Florence, South Carolina, in 1957-59. *J. Econ. Entomol.* 63: 1505-1510.
- Fye, R. E., and C. D. Bonham. 1970. Summer temperatures of the soil surface and their effect on the survival of boll weevils in fallen cotton squares. *J. Econ. Entomol.* 63: 1599-1602.
- Fye, R. E., and C. D. Bonham. 1972. Relationship of temperatures to boll weevil complex populations in Arizona. U.S. Dept. Agric., Agric. Res. Serv., Prod. Res. Rep. No. 136.
- Fye, R. E., and R. L. Carranza. 1972. Movement of insect predators from grain sorghum in cotton. *Environ. Entomol.* 1: 790-791.
- Fye, R. E., W. W. McMillian, A. R. Hopkins, and R. L. Walker. 1959. Longevity of overwintered and first generation boll weevils at Florence, South Carolina. *J. Econ. Entomol.* 52: 453-454.
- Fye, R. E., W. W. McMillian, R. L. Walker, and A. R. Hopkins. 1959. The distance into woods along a cotton field at which the boll weevil hibernates. *J. Econ. Entomol.* 52: 310-313.
- Fye, R. E., and C. R. Parencia Jr. 1972. The boll weevil complex in Arizona. USDA Prod. Res. Rep. No. 139.
- Fye, R. E., R. Patana, and W. C. McAda. 1969. Developmental periods for boll weevils reared at several constant and fluctuating temperatures. *J. Econ. Entomol.* 62: 1402-1405.
- Gaines, J. C. 1942. Effect of boll weevil and cotton aphid on yield as shown in a factorial experiment in 1941. *J. Econ. Entomol.* 35: 493-495.
- Gaines, J. C., and H. G. Johnston. 1949. Destruction of stalks. Acco Press, June, Williamson County.
- Gaines, R. C. 1935. Cotton boll weevil survival and emergence in hibernation cages in Louisiana. *USDA Tech. Bull.* No. 486.
- Gaines, R. C. 1944. Federal research on cotton insects in 1943. *Proc. South. War. Conf. Entomol.*
- Gaines, R. C. 1952. The boll weevil, pp. 501-504. In A. Stefferud (ed.), *Insects: the yearbook of agriculture* 1952. USDA, Washington, DC.
- Gaines, R. C. 1954. Effect on beneficial insects of several insecticides applied for cotton insect control. *J. Econ. Entomol.* 47: 543-544.
- Gaines, R. C. 1955. Effect on beneficial insects of three insecticide mixtures applied for cotton insect control in 1954. *J. Econ. Entomol.* 48: 477-478.
- Gaines, R. C. 1957. Cotton insects and their control in the United States. *Annu. Rev. Entomol.* 2: 319-38.
- Gaines, R. C. 1959. Ecological investigations of the boll weevil, Tallulah, Louisiana, 1915-1958. *USDA Tech. Bull.* No. 1208.
- Gaines, R. C., M. T. Young, and G. L. Smith. 1940. Effect of insecticides used in boll weevil control upon aphids and mirids. *J. Econ. Entomol.* 33: 792-796.
- Gameel, O. I. 1969. Studies on whitefly parasites *Encarsia lutea* Masi and *Eretmocerus mundus* Mercet. (Hymenoptera: Aphelinidae). *Rev. Zool. Bot. Afr.* 79: 65-77.
- Gameel, O. I. 1977. *Bemisia tabaci*, pp. 320-322. In J. Kranz, H. Schmutterer, and W. Koch (eds.), *Diseases, pests and weeds in tropical crops*. Verlag, Berlin.
- Gameel, O. I. 1978. The cotton whitefly, *Bemisia tabaci* (Genn.), in the Sudan Gezira, pp. 111-131. In *Third seminar on the strategy for cotton pest control*, May 8-10, 1978 Basel.
- Gammon, D. W., M. A. Brown, and C. A. Casida. 1981. Two classes of pyrethroid action in the cockroach. *Pestic. Biochem. Physiol.* 15: 181-191.
- Gannaway, J. R. 1994. Breeding for insect resistance, pp. 431-453. In G. A. Matthews, and J. P. Tunstall (eds.), *Insect Pests of Cotton*. University Press, Cambridge.
- Gannaway, J. R., and D. R. Rummel. 1991. Field performance of cotton genetically-modified to express insecticidal protein from *Bacillus thuringiensis*. V. Halfway, TX., pp. 578. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Ganyard, M. C., J. R. Brazzel, J. H. Dillier, and A. E. Miller. 1981. Boll weevil eradication trial, pp. 38-40. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Ganyard, M. C., J. Dillier, and J. R. Brazzel. 1981. Operational report of the boll weevil eradication

- trial. Attachment C of Appendix A, biological evaluation of Beltwide boll weevil/cotton insect management programs. USDA, Science and Education Administration,
- Gardner, S. M., and J. C. van Lenteren. 1986. Characterization of the arrestment responses of *Trichogramma evanescens*. *Oecologia* 68: 265-270.
- Gardner, W. A., and J. R. Fuxa. 1980. Pathogens for the suppression of the fall armyworm. *Fla. Entomol.* 63: 439-447.
- Garman, H., and G. G. Jewett. 1914. The life history and habits of the corn earworm (*Chloridea obsoleta*). *Kentucky Agric. Exp. Stn. Bull.* No. 187.
- Gassner, G. D., D. Childress, G. Pomonis, and J. Eaton. 1974. Boll weevil chemosterilization by hypobarometric distillation. *J. Econ. Entomol.* 67: 278-280.
- Gast, R. T. 1961. Factors involved in differential susceptibility of corn earworm larvae to DDT. *J. Econ. Entomol.* 54: 1203-1206.
- Gast, R. T. 1961. Some shortcuts in laboratory rearing of boll weevils. *J. Econ. Entomol.* 54: 395-396.
- Gast, R. T. 1966. Oviposition and fecundity of boll weevils in mass-rearing laboratory cultures. *J. Econ. Entomol.* 59: 173-176.
- Gast, R. T., and T. B. Davich. 1966. Boll weevils, pp. 405-418. In C. N. Smith (ed.), *Insect colonization and mass production*. Academic Press, New York.
- Gaston, L. D., R. S. Kaae, H. H. Shorey, and D. Sellers. 1977. Controlling the pink bollworm by disrupting sex pheromone communication between adult moths. *Science* 196: 904-905.
- Gayen, A. K., and C. O. Knowles. 1981. Penetration and fate of methomyl and its oxime metabolite in insects and twospotted spider mites. *Arch. Environ. Contam. Toxicol.* 10: 55-67.
- Gaylor, M. J., and F. R. Gilliland Jr. 1976. The relative and seasonal abundance of selected predaceous arthropods in Alabama cotton fields. *Alabama Agric. Exp. Stn. Circ.* 227.
- Gaylor, M. J., and W. L. Sterling. 1975. Effects of temperature on the development, egg production, and survival of the cotton fleahopper, *Pseudatomoscelis seriatus*. *Environ. Entomol.* 4: 487-490.
- Geier, P. W. 1966. Management of insect pests. *Annu. Rev. Entomol.* 11: 471-490.
- Geier, P. W., and L. R. Clark. 1961. An ecological approach to pest control, pp. 10-18. In *Proc. 8th Tech. Mtg. Intern. Union Consrv. of Nature and Natural Res.*, Warsaw.
- Geiser, M. 1986. The impact of molecular biology on the biotechnological development of *B. thuringiensis* delta-endotoxin as bioinsecticide, pp. 599-603. In *Proc. Fourth Intern. Colloq. of Invert. Pathol.*, Koningshof, Veldhoven, Netherlands.
- Gelernter, W. D. 1990. Targeting insecticide-resistant markets: new developments in microbial-based products, pp. 1105-1117. In M. B. Green, H. M. LeBaron, and W. K. Moberg (eds.), *Managing resistance to agrochemicals: from fundamental research to practical strategies*. American Chemical Society, Washington, D.C.
- Gentry, C. R., F. R. Lawson, and J. D. Hoffman. 1964. A sex attractant in the tobacco budworm. *J. Econ. Entomol.* 57: 819-821.
- Georghiou, G. P. 1986. Overview of insecticide resistance, pp. 18-41. In M. B. Green, H. M. LeBaron, and W. K. Moberg (eds.), *Managing Resistance to Agrochemicals: From Fundamental Research to Practical Strategies*. American Chemical Society, Washington, D.C.
- Georghiou, G. P. 1986. The magnitude of the resistance problem, pp. 14-43. In *National Research Council, Pesticide resistance: strategies and tactics for management*. National Academy Press, Washington, D.C.
- Gerling, D. 1967. Biomomics of the whitefly - parasite complex associated with cotton in southern California (Homoptera: Aleyrodidae; Hymenoptera: Aphelinidae). *Ann. Entomol. Soc. Amer.* 60: 1306-1321.
- Gerling, D. 1984. The overwintering mode of *Bemisia tabaci* and its parasitoids in Israel. *Phytoparasitica* 12: 109-118.
- Gerling, D., and A. R. Horowitz. 1984. Yellow traps for evaluating the population levels and dispersal patterns of *Bemisia tabaci* (Gennadius) (Homoptera: Aleyrodidae). *Ann. Entomol. Soc. Amer.* 77: 753-759.

- Gerson, U., and A. Aronowitz. 1981. Spider mite webbing. Part IV: the effect of acaricides on spinning by the carmine spider mite *Tetranychus cinnabarinus* (Boisduval). Pestic. Sci. 12: 211-214.
- Getz, W. M., and A. P. Gutierrez. 1982. A perspective on systems analysis in crop production and insect pest management. Ann. Entomol. Soc. Amer. 75: 447-466.
- Getzin, L. W. 1961. *Spicaria rileyi* (Farlow) Charles, an entomogenous fungus of *Trichoplusia ni* (Hubner). J. Insect Pathol. 3: 2-10.
- Gibbs, A. J. 1957. *Leptomonas serpens* n. sp. parasitic in the digestive tract and salivary glands of *Nezara viridula* (Pentatomidae) and in the sap of *Solanum lycopersicum* (tomato) and other plants. Parasitology 47: 297-303.
- Gill, R. J. undated. Color-photo and host keys to California whiteflies. Scale and Whitefly Key #2. Calif. Dept. Food and Agric.
- Gill, S. J., E. A. Cowles, and P. V. Pietrantonio. 1992. The mode of action of *Bacillus thuringiensis* endotoxins. Annu. Rev. Entomol. 37: 615-636.
- Gilliland Jr., F. R. 1974. Traps and trap crops for boll weevil suppression, pp. 128-130. In Proc. Beltwide Cotton Prod. Res. Conf.
- Gilliland Jr., F. R. 1981. The *Lygus* problem - decreasing or increasing, pp. 147-148. In Proc. Beltwide Cotton Prod. Res. Conf.
- Gilliland Jr., F. R., W. R. Lambert, J. R. Weeks, and R. L. Davis. 1976. Trap crops for boll weevil control, pp. 41-44. In Proc. Conf. on Boll Weevil Suppression, Management and Elimination Technology. USDA, ARS-S-71.
- Gilliland Jr., F. R., and C. E. McCoy. 1969. The behavior of newly emerged boll weevils. Ann. Entomol. Soc. Amer. 62: 602-605.
- Glass, E. H., W. P. Murdock, and J. S. Packer. 1975. Integrated pest management: rationale, needs, and improvements, pp. 75-82. In Entomological Society of America Special Publication.
- Glick, P. A. 1939. The distribution of insects, spiders, and mites in the air. USDA Tech. Bull. 673.
- Glick, P. A. 1957. Collecting insects by airplane in Southern Texas. USDA Tech. Bull. 1158.
- Glick, P. A. 1967. Aerial dispersal of the pink bollworm in the United States and Mexico. USDA, ARS, Prod. Res. Report 96.
- Glick, P. A., and L. W. Noble. 1961. Airborne movement of the pink bollworm and other arthropods. USDA Tech. Bull. 1255.
- Glover, T. 1855. Cited in A.W. Morrill, Plant bugs injurious to cotton bolls. U.S. Bur. Entomol. Bull. No. 86:78.
- Goldblum, A., M. Yoshimoto, and C. Hansch. 1981. Quantitative structure-activity relationship of phenyl N-methylcarbamate inhibition of acetylcholinesterase. J. Agric. Food Chem. 29: 277-288.
- Gonzalez, D., D. A. Ramsey, T. F. Leigh, B. S. Ekbom, and R. van den Bosch. 1977. A comparison of vacuum and whole - plant methods for sampling predaceous arthropods on cotton. Environ. Entomol. 6: 750-760.
- Gonzalez, D., and L. T. Wilson. 1982. A food-web approach to economic thresholds: A sequence of pests/predaceous arthropods on California cotton. Entomophaga 27: 31-43.
- Goodenough, J. L., M. J. Gaylor, V. E. Harris, T. F. Mueller, J. Heiss, J. R. Phillips, G. Burris, K. J. Ratchford, D. F. Clower, A. M. Pavloff, R. L. Rogers, H. N. Pitre, J. W. Smith, A. H. Baumhover, J. J. Lam Jr., J. D. Lopez Jr., G. J. Puterka, J. E. Slosser, and W. L. Sterling. 1986. Efficacy of entomophagous arthropods. #2, pp. 75-91. In S. J. Johnson, E. G. King, and J. R. Bradley Jr. (Eds.), Theory and tactics of *Heliothis* population management: I - cultural and biological control. S. Coop. Ser. Bull. 316.
- Goodenough, J. L., and J. A. Witz. 1985. Modeling augmentative releases of *Trichogramma pretiosum*. Southwest. Entomol. Suppl. 8: 169-189.
- Gordh, G., and H. E. Evans. 1976. A new species of *Goniozus* imported into California from Ethiopia for the biological control of pink bollworm and some notes on the taxonomic status of *Parasierola* and *Goniozus* (Hymenoptera: Bethylidae). Proc. Entomol. Soc. Wash. 78: 479-489.
- Gordh, G., and R. E. Medved. 1986. Biological notes on *Goniozus pakmanus* Gordh (Hymenoptera:

- Bethylidae), a parasite of pink bollworm, *Pectinophora gossypiella* (Saunders) (Lepidoptera: Gelechiidae). J. Kans. Entomol. Soc. 59: 723-734.
- Gould, F. 1984. Role of behavior in the evolution of insect adaptation to insecticides and resistant host plants. Bull. Entomol. Soc. Amer. 30: 34-41.
- Gould, F. 1988. Evolutionary biology and genetically engineered crops. BioSci 38: 26-29.
- Gould, F. 1991. The evolutionary potential of crop pests. American Scientist 79: 496-507.
- Gould, F., and R. E. Stinner. 1984. Insects in heterogeneous habitats, pp. 427-447. In C. B. Huffaker, and R. L. Rabb (eds.), Ecological Entomology. Wiley, New York.
- Gould, T. 1991. Arthropod behavior and the efficacy of plant protection. Annu. Rev. Entomol. 36: 305-330.
- Gourd, T. R., and R. J. Gouger. 1983. Observations in the biology of the European corn borer in North Carolina, pp. 186-187. In Proc. Beltwide Cotton Prod. Res. Conf.
- Grafton-Cardwell, E. E. 1991. Geographical and temporal variation in response to insecticides in various life stages of *Aphis gossypii* (Homoptera: Aphididae) infesting cotton in California. J. Econ. Entomol. 84: 741-749.
- Grafton-Cardwell, E. E., J. Granett, and T. F. Leigh. 1987. Spider mite species (Acarina: Tetranychidae) response to propargite: basis for an acaricide resistance management program. J. Econ. Entomol. 80: 579-580.
- Grafton-Cardwell, E. E., and M. A. Hoy. 1985. Intraspecific variability in response to pesticides in the common green lacewing *Chrysoperla carnea* (Stephens). Hilgardia 53: 1-32.
- Grafton-Cardwell, E. E., and M. A. Hoy. 1986. Genetic improvement of the common green lacewing, *Chrysoperla carnea*: selection for carbaryl resistance. Environ. Entomol. 15: 1130-1136.
- Graham, H. M. 1987. Attraction of *Lygus* spp. males by conspecific and congeneric females. Southwest. Entomol. 12: 147-155.
- Graham, H. M. 1978. Sterile pink bollworm: field releases for population suppression. J. Econ. Entomol. 71: 232-235.
- Graham, H. M. 1980. Pink bollworm control in the Western United States. USDA, ARM-W-16.
- Graham, H. M., L. C. Fife, O. T. Roberston, and P. L. Adkisson. 1962. Pink bollworm population dynamics, pp. 5-10. In D. F. Martin, and R. D. Lewis (eds.), A summary of recent research basic to the cultural control of the pink bollworm. Tex. Agr. Exp. Sta. MP. 579.
- Graham, H. M., N. S. Hernandez Jr., and J. R. Llanes. 1972. The role of host plants in the dynamics of populations of *Heliothis* spp. Environ. Entomol. 1: 424-431.
- Graham, H. M., C. G. Jackson, and J. W. Debolt. 1986. *Lygus* spp. (Hemiptera: Miridae) and their parasites in agricultural areas of southern Arizona. Environ. Entomol. 15: 132-142.
- Graham, H. M., P. D. Lingren, C. Lincoln, and P. L. Adkisson. 1972. The economic threshold of infestations for *Heliothis* spp. on cotton, pp. 7-15. In Distribution abundance and control of *Heliothis* species in cotton and other host plants. S. Coop. Ser. 169.
- Graham, O. H. 1985. Introduction, pp. 1-3. In O. H. Graham (ed.), Symposium on eradication of the screwworm from the United States and Mexico. Misc. Publ. Entomol. Soc. Amer. 62.
- Granados, R. R., and K. A. Williams. 1986. In vivo infection and replication of baculoviruses, pp. 89-108. In R. R. Granados, and B. A. Federici (eds.), The biology of baculoviruses, vol. I biological properties and molecular biology. CRC Press, Inc., Boca Raton.
- Gravena, S., and W. L. Sterling. 1983. Natural predation on the cotton leafworm (Lepidoptera: Noctuidae). J. Econ. Entomol. 76: 799-784.
- Graves, J. B. 1987. An illustrated look at insecticide resistance and how it develops, pp. 29-31. In Proc. Beltwide Cotton Prod. Res. Conf.
- Graves, J. B. 1994. Insecticide resistance management strategies, pp. 43-45. In Proc. Beltwide Cotton Prod. Res. Conf.
- Graves, J. B., and D. F. Clower. 1971. Is insecticide resistance increasing? La. Agric. 15: 12-13.
- Graves, J. B., D. F. Clower, J. L. Baggett, and J. R. Bradley. 1964. Bollworms increasing in resistance to insecticides. La. Agric. 7: 3-16.

- Graves, J. B., D. F. Clower, D. R. Melville, and L. W. Sloane. 1973. Tobacco budworm in Louisiana now resistant to methyl parathion. *La. Agric.* 16: 10-11.
- Graves, J. B., B. Leonard, S. Micinski, S. Martin, D. Long, E. Burris, and J. Baldwin. 1992. Situation on tobacco budworm resistance to pyrethroids in Louisiana during 1991, pp. 743-747. In Proc. Beltwide Cotton Prod. Res. Conf.
- Graves, J. B., B. R. Leonard, G. Burris, and S. Micinski. 1991a. Insecticide resistance management: An integral part of IPM, pp. 23-25. In Proc. Beltwide Cotton Prod. Res. Conf.
- Graves, J. B., B. R. Leonard, S. Micinski, and G. Burris. 1991b. A three year study of pyrethroid resistance in tobacco budworm in Louisiana: Resistance management implications. *Southwest. Entomol. Suppl.* 15: 33-41.
- Graves, J. B., B. R. Leonard, S. Micinski, E. Burris, S. H. Martin, C. A. White, and J. L. Baldwin. 1993. Monitoring insecticide resistance in tobacco budworm and bollworm in Louisiana, pp. 788-790. In Proc. Beltwide Cotton Prod. Res. Conf.
- Graves, J. B., B. R. Leonard, and J. A. Ottea. 1995. Chemical approaches to managing arthropods, pp. (In press). In J. R. Ruberson (ed.), *Handbook of Pest Management*. Marcel Dekker, New York.
- Graves, J. B., B. R. Leonard, A. M. Pavloff, S. Micinski, G. Burris, and K. Ratchford. 1988a. Status of pyrethroid resistance in tobacco budworm in Louisiana, pp. 353-356. In Proc. Beltwide Cotton Prod. Res. Conf.
- Graves, J. B., B. R. Leonard, A. M. Pavloff, G. Burris, K. Ratchford, and S. Micinski. 1988b. Monitoring pyrethroid resistance in tobacco budworm in Louisiana during 1987: resistance management implications. *J. Agric. Entomol.* 5: 109-15.
- Graves, J. B., and J. S. Roussel. 1962. Status of boll weevil resistance to insecticides during 1961. *J. Econ. Entomol.* 55:
- Graves, J. B., J. S. Roussel, and J. R. Phillips. 1963. Resistance to some chlorinated hydrocarbon insecticides in the bollworm, *Heliothis zea*. *J. Econ. Entomol.* 56: 442-444.
- Graves, J. B., D. F. Clower, and J. R. Bradley. 1967. Resistance to the tobacco budworm to several insecticides in Louisiana. *J. Econ. Entomol.* 60: 887-888.
- Grayson, J. M. 1944. Two important parasites of the tobacco budworm. *J. Econ. Entomol.* 37: 712-713.
- Greany, P. D., S. M. Ferkovich, and W. R. Clark. 1989. Progress towards development of an artificial diet and an *in vitro* rearing system for *Microplitis croceipes*, pp. 89-94. In J. E. Powell, D. L. Bull, and E. G. King (Eds.), *Biological control of Heliothis spp. by Microplitis croceipes*. Southwest. Entomol. Suppl. 12.
- Griffin, J. G. 1984. Equipment for field-releasing nonchilled or anesthetized sterile boll weevils. *J. Agric. Entomol.* 1: 120-125.
- Griffin, J. G. 1984. Facility and production equipment, pp. 11-52. In P. P. Sikorowski, J. G. Griffin, J. Roberson, and O. H. Lindig (eds.), *Boll weevil mass rearing technology*. Univ. Press of Mississippi, Jackson.
- Grimes, D. W. 1985. Cultural techniques for management of pests in cotton, pp. 365-382. In R. E. Frisbie and P. L. Adkisson (eds.), *CIPM: Integrated Pest Management on Major Agricultural Systems*. Texas Agric. Exp. Stn. MP-1616.
- Grissom Jr., R. E., T. Konno, N. Motoyama, and W. C. Dauterman. 1989. Comparisons between *in vivo* and *in vitro* cutaneous penetration of fenvalerate in tobacco budworm (Lepidoptera: Noctuidae). *J. Econ. Entomol.* 82: 41-44.
- Grondin, B. 1985. Working through the confusion of adjuvants. *Agrichemical Age*, April 1985.
- Gross Jr., H. R., and R. Johnson. 1985. *Archytas marmoratus* (Diptera: Tachinidae): Advances in large-scale rearing and associated biological studies. *J. Econ. Entomol.* 78: 1350-1353.
- Gross Jr., H. R., W. J. Lewis, R. L. Jones, and D. A. Nordlund. 1975. Kairomones and their use for management of entomophagous insects: III. Stimulation of *Trichogramma achaeae*, *T. pretiosum*, and *Microplitis croceipes* with host-seeking stimuli at time of release to improve their efficiency. *J. Chem. Ecol.* 1: 431-438.

- Gross Jr., H. R., S. D. Pair, and R. D. Jackson. 1985. Behavioral responses of primary entomophagous predators to larval homogenates of *Heliothis zea* and *Spodoptera frugiperda* (Lepidoptera: Noctuidae) in whorl-stage corn. Environ. Entomol. 14: 360-364.
- Gross Jr., H. R., B. R. Wiseman, and W. W. McMillian. 1976. Comparative suitability of whorl stages of sweet corn for establishment by larvae of the corn earworm. Environ. Entomol. 5: 955-958.
- Grosscurt, A. C., and B. Jongsma. 1987. Mode of action and insecticidal properties of diflubenzuron, pp. 75-99. In J. E. Wright, and A. Retnakaran (eds.), Chitin and benzoylphenyl ureas. Dr. W. Junl. Publ., Dordrecht, Netherlands.
- Guerra, A. A. 1986. Boll weevil movement: dispersal during and after the cotton season in the Lower Rio Grande Valley of Texas. Southwest. Entomol. 11: 10-16.
- Guerra, A. A., K. M. Robacker, and S. Martinez. 1993. *In vitro* rearing of *Bracon mellitor* and *Catolaccus grandis* with artificial diets devoid of insect components. Entomol. Exp. Appl. 68: 303-307.
- Guerra, A. A., D. A. Wolfenbarger, and R. D. Garcia. 1973. Activity of juvenile hormone analogues against the tobacco budworm. J. Econ. Entomol. 66: 833-835.
- Guillot, F. S., R. L. Joiner, and S. B. Vinson. 1974. Host discrimination and isolation of hydrocarbons from Dufour's gland of a braconid parasitoid. Ann. Entomol. Soc. Amer. 67: 720-721.
- Guillot, F. S., and S. B. Vinson. 1972. Sources of substances which elicit a behavioural response from the insect parasitoid, *Campoletis perdistinctus*. Nature 235: 169-172.
- Guillot, F. S., and S. B. Vinson. 1972. The role of the calyx and poison gland of *Cardiochiles nigriceps* in the host-parasitoid relationship. J. Insect Physiol. 18: 1315-1321.
- Gunning, R. V., C. S. Easton, L. R. Greenup, and V. E. Edge. 1984. Pyrethroid resistance in *Heliothis armigera* (Hubner) (Lepidoptera: Noctuidae) in Australia. J. Econ. Entomol. 77: 1283-1287.
- Gupta, R. K., G. Tamaki, and C. A. Johansen. 1980. *Lygus* bug damage, predator-prey interaction, and pest management implications on alfalfa grown for seed. Wash. State Univ. Tech. Bul. 92.
- Guthrie, D. S. 1988. Using plant growth regulators for earliness, pp. 27-28. In Proc. Beltwide Cotton Prod. Res. Conf.
- Gutierrez, A. P., and J. U. Baumgaertner. 1984. Multitrophic level models of predator-prey energetics. I. Age specific energetics models - pea aphid *Acyrthosiphon pisum* (Harris) (Homoptera: Aphididae) as an example. Can. Entomol. 116: 924-932.
- Gutierrez, A. P., G. D. Butler Jr., and C. K. Ellis. 1981. Pink bollworm: diapause induction and termination in relation to fluctuating temperatures and decreasing photoperiod. Environ. Entomol. 10: 936-942.
- Gutierrez, A. P., G. D. Butler Jr., Y. Wang, and D. Westphal. 1977a. The interaction of pink bollworm (Lepidoptera: Gelechiidae), cotton, and weather: a detailed model. Can. Entomol. 109: 1457-1468.
- Gutierrez, A. P., T. F. Leigh, Y. Wang, and R. D. Cave. 1977b. An analysis of cotton production in California: *Lygus hesperus* (Heteroptera: Miridae) injury — an evaluation. Can. Entomol. 109: 1375-1386.
- Gutierrez, A. P., G. L. Curry, and L. Brown. 1985. Conceptual framework for studying crop-pest system, pp. 131-156. In R. E. Frisbie and P. L. Adkisson (eds.), CIPM: Integrated Pest Management on Major Agricultural Systems. Texas Agric. Exp. Stn. MP-1616.
- Gutierrez, A. P., D. W. DeMichele, Y. Wang, G. L. Curry, R. Skeith, and L. G. Brown. 1980. The systems approach to research and decision making for cotton pest control, pp. 155-186. In C. B. Huffaker (ed.), New technology of pest control. John Wiley & Sons, New York.
- Gutierrez, A. P., W. J. Dos Santos, M. A. Pizzamiglio, A. M. Villacorta, C. K. Ellis, C. A. P. Fernandes, and I. Tutida. 1991a. Modelling the interaction of cotton and the cotton boll weevil. II. Boll weevil (*Anthonomus grandis* Boh.) in Brazil. J. Applied Ecol. 28: 398-418.
- Gutierrez, A. P., W. J. Dos Santos, A. M. Villacorta, M. A. Pizzamiglio, C. K. Ellis, L. H. Carvalho, and N. D. Stone. 1991b. Modelling the interaction of cotton and the cotton boll weevil. I. A comparison of growth and development of cotton varieties. J. Applied Ecol. 28: 371-397.

- Gutierrez, A. P., L. A. Falcon, W. Loew, P. A. Leipzig, and R. van den Bosch. 1975. An analysis of cotton production in California: a model for acala cotton and the effect of defoliators on its yields. *Environ. Entomol.* 4: 125-136.
- Gutierrez, A. P., M. A. Pizzamiglio, W. J. Dos Santos, R. Tennyson, and A. M. Villacorta. 1984. A distributed delay time varying life table plant population model: cotton (*Gossypium hirsutum* L.) as an example. *Ecol. Modelling* 26: 231-249.
- Gutierrez, A. P., Y. Wang, and R. Daxl. 1979a. The interaction of cotton and the pink bollworm (Lepidoptera: Gelechiidae) - a study of co-adaptation. *Can. Entomol.* 111: 357-366.
- Gutierrez, A. P., Y. Wang, and U. Regev. 1979b. An optimization model for *Lygus hesperus* (Heteroptera: Miridae) damage in cotton: the economic threshold revisited. *Can. Entomol.* 111: 41-54.
- Gutierrez, A. P., and Y. H. Wang. 1984. Models for managing the economic impact of pest populations in agricultural crops, pp. 729-761. In C. B. Huffaker, and R. L. Rabb (eds.), *Ecological Entomology*. John Wiley and Sons, New York.
- Gutierrez, A. P., and L. T. Wilson. 1989. Development and use of pest models, pp. 65-83. In R. E.R. E. Frisbie, K. M. El-Zik, and L. T. Wilson (eds.), *Integrated Pest Management Systems and Cotton Production*. John Wiley and Sons, New York.
- Hackett, D. S., and A. G. Gatehouse. 1982. Studies on the biology of *Heliothis* spp. in Sudan, pp. 29-38. In W. Reed and V. Kumble (eds.), *Proc. Internl. Workshop on Heliothis Management*. ICRISAT, Patancheru, A.P., India.
- Hagen, D. S., P. Greany, E. F. Sawall Jr., and R. L. Tassan. 1976. Tryptophan in artificial honeydews as a source of an attractant for adult *Chrysopa carnea*. *Environ. Entomol.* 5: 458-468.
- Hagen, K. S., and R. Hale. 1974. Increasing natural enemies through use of supplementary feeding and non-target prey, pp. 170-181. In F. G. Maxwell and F. A. Harris (eds.), *Proc. Summer Instit. Biol. Contrl. Plant Insects and Diseases*. Univ. Press Miss., Jackson, Mississippi.
- Hagen, K. S., E. F. Sawall Jr., and R. L. Tassan. 1971. The use of food sprays to increase effectiveness of entomophagous insects. *Proc. Tall Timbers Conf. Ecol. Anim. Contr. Habitat Mgmt.* 2: 59-81.
- Hagen, K. S., and R. L. Tassan. 1970. The influence of the food Wheast and related *Saccharomyces fragilis* yeast products on the fecundity of *Chrysopa carnea* (Neuroptera: Chrysopidae). *Can. Entomol.* 102: 806-811.
- Hagen, K. S., R. van den Bosch, and D. L. Dahlsten. 1971. The importance of naturally-occurring biological control in the Western United States, pp. 253-293. In C. B. Huffaker (ed.), *Biological Control*. Plenum Press, New York.
- Haggis, M. J. 1982. Distribution of *Heliothis armigera* eggs on cotton in the Sudan Gezira: spatial and temporal changes and their possible relation to weather, pp. 87-89. In W. Reed and V. Kumble (eds.), *Proc. Internl. Workshop on Heliothis Management*. ICRISAT, Patancheru, A.P., India.
- Haile, D. G., J. W. Snow, and J. R. Young. 1975. Movement of adult *Heliothis* released on St. Croix to other islands. *Environ. Entomol.* 4: 225-226.
- Haine, E. 1955. Aphid take-off in controlled wind speeds. *Nature* 175: 474.
- Hajjar, N. P. 1985. Chitin synthesis inhibitors as insecticides, pp. 275-310. In D. H. Hutson, and T. R. Roberts (eds.), *Insecticides*. John Wiley and Sons, New York.
- Haldane, J. B. S. 1922. Sex ratio and unisexual sterility in hybrid animals. *J. Genet.* 12: 101-109.
- Hall, D. C., and G. M. Duncan. 1984. Econometric evaluation of new technology with an application to integrated pest management. *Ager. J. Agr. Econ.* 66: 626-633.
- Hall, D. C., and R. B. Norgaard. 1973. On the timing of application of pesticides. *Amer. J. Agr. Econ.* 55:
- Hall, D. W. 1985. Pathobiology of invertebrate icosahedral cytoplasmic deoxyriboviruses (Iridoviridae), pp. 163-196. In K. Maramorosch, and K. E. Sherman (eds.), *Viral insecticides for biological control*. Academic Press, New York.

- Hall, F. R. 1991. Pesticide targeting: Improving the dose transfer process, pp. 305-315. In E. Hogdson, Roe R.M., and N. Motoyama (eds.), *Pesticides and the Future: Toxicological Studies of Risks and Benefits*. North Carolina State University, Raleigh.
- Hall, I. M. 1963. Microbial control, pp. 477-517. In E. A. Steinhaus (ed.), *Insect pathology, an advanced treatise*, Vol. II. Academic Press, New York.
- Hall, P. K., W. L. Parrott, J. N. Jenkins, and J. C. McCarty Jr. 1980. Use of tobacco budworm eggs and larvae for establishing field infestations on cotton. *J. Econ. Entomol.* 73: 393-395.
- Hamer, J. L., G. L. Andrews, R. W. Seward, D. F. Young Jr., and R. B. Head. 1983. Optimum pest management trial in Mississippi, pp. 385-407. In R. L. Ridgway, E. P. Lloyd, and W. H. Cross (eds.), *Cotton Insect Management with Special Reference to the Boll Weevil*. USDA Agr. Handb. No. 589.
- Hamm, J. J. 1980. Epizootics of *Entomophthora aulicae* in lepidopterous pests of sorghum. *J. Invertebr. Pathol.* 36: 60-63.
- Hamm, J. J., D. A. Nordlund, and O. G. Marti. 1985. Effects of a nonoccluded virus of *Spodoptera frugiperda* (Lepidoptera: Noctuidae) on the development of a parasitoid, *Cotesia marginiventris* (Hymenoptera: Braconidae). *Environ. Entomol.* 14: 258-261.
- Hamm, J. J., S. D. Pair, and O. D. Marti Jr. 1986. Incidence and host range of a new ascovirus isolated from fall armyworm, *Spodoptera frugiperda* (Lepidoptera: Noctuidae). *Fla. Entomol.* 69: 524-531.
- Hamm, J. J., and J. P. Young. 1974. Mode of transmission of nuclear polyhedrosis virus to progeny of adult *Heliothis zea*. *J. Invertebr. Pathol.* 24: 70-80.
- Hammock, B. D. 1985. Regulation of juvenile hormone titer: degradation, pp. 431-472. In G. A. Kerhut and L. I. Gilbert (eds.), *Comprehensive insect physiology, biochemistry and pharmacology*. Vol. 7., Insect control. Pergamon Press, New York.
- Hammock, B. D., B. F. McCutchen, J. Beetham, P. V. Choudary, E. Fowler, R. Ichinose, V. K. Ward, J. M. Vickers, B. C. Bonning, L. G. Harshman, D. Grant, T. Uematsu, and S. Maeda. 1993. Development of recombinant viral insecticides by expression of an insect-specific toxin and insect-specific enzyme in nuclear polyhedrosis viruses. *Arch. Insect. Biochem. Physiol.* 22: 315-344.
- Hammock, B. D., S. M. Mumby, and P. W. Lee. 1977. Mechanisms of resistance to the juvenoid methoprene in the house fly *Musca domestica* L. *Pestic. Biochem. Physiol.* 7: 261-272.
- Hammock, B. D., and G. B. Quistad. 1981. Metabolism and mode of action of juvenile hormone, juvenoids and other insect growth regulators, pp. 1-83. In D. G. Hutson, and T. R. Roberts (eds.), *Progress in pesticide biochemistry*. John Wiley and Sons, New York.
- Hammock, B. D., and D. M. Soderlund. 1986. Chemical strategies for resistance management, pp. 111-129. In National Research Council, *Pesticide resistance: strategies and tactics for management*. National Academy Press, Washington, D.C.
- Hanny, B. W., J. C. Bailey, and W. R. Meredith Jr. 1979. Yellow cotton pollen suppresses growth of tobacco budworm larvae, pp. 84. In Proc. Beltwide Cotton Prod. Res. Conf.
- Hanny, B. W., T. C. Cleveland, and W. R. Meredith Jr. 1977. Effects of tarnished plant bug (*Lygus lineolaris* Palisot de Beauvois) infestation on presquaring cotton (*Gossypium hirsutum*). *Environ. Entomol.* 6: 460-462.
- Hardee, D. D. 1975. Boll weevil population management, detection, or elimination with in-field traps, pp. 132. In Proc. Beltwide Cotton Prod. Res. Conf.
- Hardee, D. D., and F. J. Boyd. 1976. Trapping during the pilot boll weevil eradication experiment, 1971-1973, pp. 82-89. In Proc. Conf. on Boll Weevil Suppression, Management and Elimination Technology. USDA, ARS-S-71.
- Hardee, D. D., W. H. Cross, and E. B. Mitchell. 1969. Male boll weevils are more attractive than cotton plants to boll weevils. *J. Econ. Entomol.* 62: 165-169.
- Hardee, D. D., W. H. Cross, E. B. Mitchell, P. M. Huddleston, H. C. Mitchell, M. E. Merkle, and T. B. Davich. 1969. Biological factors influencing responses of the female boll weevil to the male sex pheromone in field and large-cage tests. *J. Econ. Entomol.* 62: 161-165.

- Hardee, D. D., and G. A. Herzog. 1994. 47th annual conference report on cotton insect research and control, pp. 717-740. In Proc. Beltwide Cotton Prod. Res. Conf.
- Hardee, D. D., O. H. Lindig, and T. B. Davich. 1971. Suppression of population of boll weevil over a large area in West Texas with pheromone traps in 1969. J. Econ. Entomol. 64: 928-933.
- Hardee, D. D., G. H. McKibben, D. R. Rummel, P. M. Huddleston, and J. R. Coppedge. 1974. Response of boll weevils to component ratios and doses of the pheromone, grandlure. Environ. Entomol. 3: 135-138.
- Hardee, D. D., E. B. Mitchell, and P. M. Huddleston. 1967. Procedure for bioassaying the sex attractant of the boll weevil. J. Econ. Entomol. 60: 1221-1224.
- Harding, J. A. 1976. *Heliothis* spp.: seasonal occurrence, hosts, and host importance in the Lower Rio Grande Valley. Environ. Entomol. 5: 66-68.
- Harding, J. A., and C. B. Cowan Jr. 1971. Infestations of seven cotton insects on pilose, glanded, frego bract, and colored cottons in 1969. Texas Agric. Exp. Stn. Progr. Rpt. 2862.
- Harding, J. A., F. R. Huffman, D. A. Wolfenbarger, and J. W. Davis. 1977. Insecticidal activity of *alpha*-cyano-3-phenoxybenzyl pyrethroids against the boll weevil and tobacco budworm. Southwest. Entomol. 2: 42-45.
- Hardwick, D. F. 1965. The corn earworm complex. Mem. Entomol. Soc. Canada, No. 40.
- Hargett, J. 1988. Insect control for earliness - a producer's viewpoint, pp. 30-31. In Proc. Beltwide Cotton Prod. Res. Conf.
- Harper, J. D., and G. R. Carner. 1973. Incidence of *Entomophthora* sp. and other natural control agents in populations of *Pseudoplusia includens* and *Trichoplusia ni*. J. Invertebr. Pathol. 22: 80-85.
- Harris, F. A. 1970. Monitoring of insecticide resistance. Miss. Farm. Res. 33: 3.
- Harris, F. A. 1972. Resistance to methyl parathion and toxaphene-DDT in bollworm and tobacco budworm from cotton in Mississippi. J. Econ. Entomol. 65: 1193-1194.
- Harris, F. A. 1988. A practical alternative to IPM. Progressive Farmer. February Issue.
- Harris, F. A., L. G. Brown, J. W. Jones, G. L. Andrews, and M. W. Parker. 1976. Use of cotton plant-insect interaction in insecticide, plant resistance and economic thresholds studies, pp. 144-149. In Proc. Beltwide Cotton Prod. Res. Conf.
- Harris, F. A., J. B. Graves, S. J. Nemeć, S. B. Vinson, and D. A. Wolfenbarger. 1972. Insecticide resistance, pp. 17-27. In Distribution, abundance, and control of *Heliothis* species in cotton and other host plants. Southern Coop. Ser. Bull. No. 169.
- Harris, F. A., K. K. Shaumak, C. A. Wilson, C. A. Hurst, and C. L. Simmons. 1976. Effects of the pilot boll weevil eradication experiment on non-target species, pp. 113-118. In Proc. Conf. on Boll Weevil Suppression, Management and Elimination Technology. USDA, ARS-S-71.
- Harris, V. E., and J. R. Phillips. 1986. Mowing spring host plants as a population management technique for *Heliothis* spp. J. Agric. Entomol. 3: 125-134.
- Harris, V. E., and J. W. Todd. 1980. Male-mediated aggregation of male, female and 5th-instar southern green stink bugs and concomitant attraction of a tachinid parasite, *Trichopoda pennipes*. Entomol. Exp. Appl. 27: 117-126.
- Hartley, G. G. 1990. Multicellular rearing methods for the beet armyworm, soybean looper, and velvetbean caterpillar (Lepidoptera: Noctuidae). J. Entomol. Sci. 25: 326-340.
- Hartley, G. G., E. G. King, F. D. Brewer, and C. W. Gantt. 1982. Rearing of the *Heliothis* sterile hybrid with a multicellular larval rearing container and pupal harvesting. J. Econ. Entomol. 75: 7-10.
- Hartstack, A. W., D. E. Hendricks, J. D. Lopez, E. A. Stadelbacher, J. R. Phillips, and J. A. Witz. 1979. Adult sampling. Southern Coop. Series Bull. 231: 105-131.
- Hartstack, A. W., J. L. Henson, J. A. Witz, J. A. Jackman, J. P. Hollingsworth, and R. E. Frisbie. 1977. The Texas program for forecasting *Heliothis* spp. infestations on cotton, pp. 151-154. In Proc. Beltwide Cotton Prod. Res. Conf.
- Hartstack, A. W., and J. P. Hollingsworth. 1974. A computer model for predicting *Heliothis* populations. Trans. ASAЕ 17: 112-115.

- Hartstack, A. W., J. P. Hollingsworth, J. A. Witz, D. R. Buck, J. D. Lopez, and D. E. Hendricks. 1978. Relation of tobacco budworm catches in pheromone baited traps to field populations. Southwest. Entomol. 3: 43-51.
- Hartstack, A. W., E. G. King, and J. R. Phillips. 1983. Monitoring and predicting *Heliothis* populations in southeast Arkansas, pp. 187-190. In Proc. Beltwide Cotton Prod. Res. Conf.
- Hartstack, A. W., J. D. Lopez, R. A. Muller, W. L. Sterling, E. G. King, J. A. Witz, and A. C. Eversull. 1982. Evidence of long range migration of *Heliothis zea* (Boddie) into Texas and Arkansas. Southwest. Entomol. 7: 188-201.
- Hartstack, A. W., and W. L. Sterling. 1986. Texas cotton fleahopper model users guide, version 2: Basic. Tex. Agr. Exp. Sta. Misc. Publ. 1595.
- Hartstack, A. W., and W. L. Sterling. 1988a. Estimating fruit value with TEXCIM, pp. 370-374. In Proc. Beltwide Cotton Prod. Res. Conf.
- Hartstack, A. W., and W. L. Sterling. 1988b. TEXCIM23: the Texas cotton-insect model. Texas Agric. Exp. Stn. Misc. Publ. 1646.
- Hartstack, A. W., and W. L. Sterling. 1989. TEXCIM30: the Texas cotton-insect model. Texas Agric. Exp. Stn. Misc. Publ. 1646 (Rev.).
- Hartstack, A. W., W. L. Sterling, and D. A. Dean. 1990. TEXCIM40: the Texas cotton-insect model. Texas Agric. Exp. Stn. Misc. Publ. MP-1646 (Rev.).
- Hartstack, A. W., W. L. Sterling, and D. A. Dean. 1991. TEXCIM41: The Texas cotton insect model. Tex. Agric. Exp. Stn. Misc. Publ. MP-1646.
- Hartstack, A. W., and J. A. Witz. 1981a. Insect modeling. Agric. Engin. 62: 19-20.
- Hartstack, A. W., and J. A. Witz. 1981b. Estimating field populations of tobacco budworm moths from pheromone trap catches. Environ. Entomol. 10: 908-914.
- Hartstack, A. W., and J. A. Witz. 1981. Simplified method of modeling cotton insect damage. ASAE Tech. Paper 81-4091.
- Hartstack, A. W., and J. A. Witz. 1983. Models for cotton insect pest management, pp. 359-381. In R. L. Ridgway, E. P. Lloyd, and W. H. Cross (eds.), Cotton Insect Management with Special Reference to the Boll Weevil. USDA Agr. Handb. No. 589.
- Hartstack, A. W., J. A. Witz, and D. R. Buck. 1979. Moth traps for the tobacco budworm. J. Econ. Entomol. 72: 519-522.
- Hartstack, A. W., J. A. Witz, J. P. Hollingsworth, R. L. Ridgway, and J. D. Lopez. 1976a. MOTHZV-2: a computer simulation of *Heliothis zea* and *Heliothis virescens* population dynamics users manual. USDA, ARS, Publ. ARS-S-127.
- Hartstack, A. W., J. A. Witz, J. P. Hollingsworth, and D. L. Bull. 1976b. SPERM — A sex pheromone emission and response model. Trans. ASAE 19: 1170-1180.
- Hassan, S. A. 1982. Mass-production and utilization of *Trichogramma*: 3. Results of some research projects related to the practical use in the Federal Republic of Germany. Les Trichogrammes, Colloq. INRA (France) 9.
- Hatfield, L. D., and S. G. McDaniel. 1984. Impact of emulsified oil on delivery, droplet spectra and efficacy in cotton insect control, pp. 207-209. In Proc. Beltwide Cotton Prod. Res. Conf.
- Hatfield, L. D., S. A. Ryerson, and S. G. McDaniel. 1984. Aerial application of Ammo 2.5 EC vegetable oils for cotton and corn insect control, In Proc. Ag-Chem. Uses of Soybean Oil, Am. Soybean Assoc., St. Louis.
- Hauter, L. H. 1928. Economics of crop production on the Elephant Butte Irrigation Project. NM Col. of Agric. and Mechan. Arts, Agric. Ext. Ser. Circ. 97.
- Hayden, M. R. 1981. Huntington's chorea. Springer-Verlag, New York.
- Hayes, J. L., and R. J. Coleman. 1989. Relating *Heliothis* spp. pheromone trap captures to egg counts in cotton: II. Second year data from the Mississippi Delta, pp. 313-316. In Proc. Beltwide Cotton Prod. Res. Conf.
- Haynes, J. W. 1963. Chemical sterility agents as they affect the boll weevil, *Anthonomus grandis* Boheman. M.S. Thesis, Mississippi State University, Mississippi State.

- Haynes, J. W. 1981. Effects of soil temperatures and chillingon flight and mortality of sterile boll weevils. *J. Ga. Entomol. Soc.* 16: 254-257.
- Haynes, J. W. 1990. Recovery from genetic damage in progeny of irradiated male boll weevils. *Miss. Agric. Forest. Exp. Stn. Res. Rept.* No. 15.
- Haynes, J. W., W. L. McGovern, and J. E. Wright. 1981. Diflubenzuron (solvent-water suspension) dip for boll weevils: effects measured by flight, sterility and sperm transfer. *Environ. Entomol.* 10: 492-495.
- Haynes, J. W., N. Mitlin, T. B. Davich, J. R. Dawson, W. L. McGovern, and G. H. McKibben. 1977. Sterilization of boll weevil pupae with fractionated doses of gamma irradiation. *Entomol. Exp. Appl.* 21: 57-62.
- Haynes, J. W., N. Mitlin, T. B. Davich, B. J. Nail, and J. R. Dawson. 1975. Mating and sterility of male boll weevils treated with busulfan plus hempa. *Environ. Entomol.* 4: 315-318.
- Haynes, J. W., and J. W. Smith. 1989. Cumulative genetic sterility in progeny of boll weevils (Coleoptera: Curculionidae) treated with apholate. *J. Agric. Entomol.* 6: 147-152.
- Haynes, K. W., T. A. Miller, R. T. Staten, W. G. Li, and T. C. Baker. 1986. Monitoring insecticide resistance with insect pheromones. *Experientia* 42: 1293-1295.
- Haynes, K. W., T. A. Miller, R. T. Staten, W. G. Li, and T. C. Baker. 1987. Pheromone trap for monitoring insecticide resistance in the pink bollworm moth (Lepidoptera: Gelechiidae); New tool for resistance management. *Environ. Entomol.* 16: 84-89.
- Head, R. B. 1981. An areawide *Heliothis* suppression program in Leflore and Monroe counties of Mississippi.
- Head, R. B. 1982. Report of the Cotton Insect Loss Committee of the Thirty-Fifth Annual Conference on Cotton Insect Research and Control, pp. 182. *In Proc. Beltwide Cotton Prod. Res. Conf.*
- Head, R. B. 1983. Cooperative areawide cotton insect management program: Carroll-Leflore, Tallahatchie-Quitman counties, Mississippi. Annual Report.
- Head, R. B. 1983. The impact of cotton insect pest management programs on the private sector, pp. 234-236. *In Proc. Beltwide Cotton Prod. Res. Conf.*
- Head, R. B. 1984. Report of the Cotton Insect Loss Committee of the Thirty-Seventh Annual Conference on Cotton Insect Research and Control, pp. 180. *In Proc. Beltwide Cotton Prod. Res. Conf.*
- Head, R. B. 1985. Report of the Cotton Insect Loss Committee of the Thirty-Eighth Annual Conference on Cotton Insect Research and Control, pp. 120. *In Proc. Beltwide Cotton Prod. Res. Conf.*
- Head, R. B. 1989. Cotton insect losses-1988, pp. 193-197. *In Proc. Beltwide Cotton Prod. Res. Conf.*
- Head, R. B. 1990. Cotton insect losses 1989, pp. 603-608. *In Proc. Beltwide Cotton Prod. Res. Conf.*
- Head, R. B. 1991. Cotton insect losses 1990, pp. 602-607. *In Proc. Beltwide Cotton Prod. Res. Conf.*
- Head, R. B. 1992. Cotton insect losses 1991, pp. 621-625. *In Proc. Beltwide Cotton Prod. Res. Conf.*
- Head, R. B. 1993. Cotton insect control guide. Mississippi St. Univ. Coop. Ext. Serv. Pub. 343.
- Head, R. B. 1993. Cotton insect losses 1992, pp. 655-660. *In Proc. Beltwide Cotton Prod. Res. Conf.*
- Headley, J. C. 1971. Defining the economic threshold. Presented at Symp. Pest Control Strategies for the Future. Nat. Acad. Sci.-Nat. Res. Counc. Washington, DC.
- Headley, J. C. 1972. Economics of agricultural pest control. *Annu. Rev. Entomol.* 17: 273-286.
- Hedin, P. A., J. N. Jenkins, and F. G. Maxwell. 1977. Behavioral and developmental factors affecting host plant resistance to insects, pp. 231-275. *In Host plant resistance to pests. American Chem. Soc. Symposium Series 62.*
- Hedin, P. A., F. G. Maxwell, and J. N. Jenkins. 1974. Insect plant attractants, feeding stimulants, repellents, deterrents, and other related factors affecting insect behavior, pp. 494-527. *In F. G. Maxwell and F. A. Harris (eds.), Proc. Summer Instit. Biol. Contrl. Plant Insects and Diseases. Univ. Press Miss., Jackson, Mississippi.*
- Heilman, M. D., M. J. Lukefahr, L. N. Namken, and J. W. Norman. 1977. Field evaluation of a short-season production system in the Lower Rio Grande Valley of Texas, pp. 80-83. *In Proc. Beltwide Cotton Prod. Res. Conf.*

- Heilman, M. D., and L. N. Namken. 1978. Short-season cotton production system for increased efficiency., pp. 95-99. In Proc. 37th Planning Meeting of the International Cotton Advisory Committee, San Salvador.
- Heitz, J. R. 1987. Development of photo activated pesticides, pp. 1-21. In J. R. Heitz, and K. R. Downing (eds.), Proc. American Chem. Soc. Symp. 339.
- Heller, J. J., H. Mattioli, E. Klein, and A. Sagenmuller. 1992. Field evaluation of RH 5992 on lepidopterous pests in Europe, pp. 59-65. In Brighton Crop Protection Conference-Pests and Diseases.
- Helms, D. 1980. Revision and reversion: changing cultural control practices for the cotton boll weevil. Agric. His. 54: 108-125.
- Helms, J. D. 1977. Just lookin' for a home: the cotton boll weevil and the South. Ph.D. dissertation, Florida State University.
- Hemingway, J. R., and K. E. Bobrowsicz. 1986. The use of ELISA demonstrates the absence of *Culex* organophosphorus-resistance-associated esterase in *Anopheles* species. Pestic. Biochem. Physiol. 25: 327-337.
- Hendricks, D. E., H. M. Graham, and J. R. Raulston. 1973. Dispersal of sterile tobacco budworms from release points in northeastern Mexico and southern Texas. Environ. Entomol. 2: 1085-1088.
- Hendricks, D. E., B. A. Leonhardt, and T. N. Shaver. 1989. Development of optimized blends of two sex pheromone components impregnated in PVC dispensers for tobacco budworm bait. Southwest. Entomol. 14: 17-25.
- Hendrix III, W. W., T. J. Mueller, F. R. Phillips, and O. K. Davis. 1987. Pollen as an indicator of long-distance movement of *Heliothis zea* (Lepidoptera: Noctuidae). Environ. Entomol. 16: 1148-1151.
- Henneberry, T. J. 1980. Potential of sterile moth releases for pink bollworm management, pp. 52-66. In H. M. Graham (ed.), Pink bollworm control in the United States. U.S. Dept. Agric. Sci. and Educ. Admin. ARW-W-16.
- Henneberry, T. J. 1987. The effects of short season cotton systems on pest insect populations, pp. 87-90. In Proc. Beltwide Cotton Prod. Res. Conf.
- Henneberry, T. J. 1993. Sweetpotato whitefly - current status and national research and action plan, pp. 663-667. In Proc. Beltwide Cotton Prod. Res. Conf.
- Henneberry, T. J., L. A. Bariola, and D. L. Kittock. 1977. Nectarless cotton: effect on cotton leaf perforator and other cotton insects in Arizona. J. Econ. Entomol. 70: 797-799.
- Henneberry, T. J., and G. D. Butler. 1986. Effects of high temperature on tobacco budworm (Lepidoptera: Noctuidae) reproduction, diapause, and spermatocyst development. J. Econ. Entomol. 79: 410-413.
- Henneberry, T. J., and T. E. Clayton. 1982. Pink bollworm: seasonal oviposition, egg predation, and square and boll infestations in relation to cotton plant development. Environ. Entomol. 11: 663-666.
- Henneberry, T. J., and T. E. Clayton. 1985. Consumption of pink bollworm (Lepidoptera: Gelechiidae) and tobacco budworm (Lepidoptera: Noctuidae) eggs by some predators commonly found in cotton fields. Environ. Entomol. 14: 416-419.
- Henneberry, T. J., E. H. Glass, R. G. Gilbert, E. G. King Jr., and R. W. Miller. 1991. Integrated pest management, a sustainable technology. In Agriculture and the Environment: The 1991 Yearbook of Agriculture. U.S. Government Printing Office, Washington, D.C.
- Henneberry, T. J., and D. F. Keaveny. 1985. Suppression of pink bollworm by sterile moth releases. USDA, Agric. Res. Serv. ARS-32.
- Henneberry, T. J., D. L. Kittock, and L. A. Bariola. 1982. Pink bollworm: effect of cotton types and planting date on early season infestations. Southwest. Entomol. 7: 65-69.
- Henneberry, T. J., N. C. Toscano, R. M. Faust, and J. R. Coppedge. 1993. Proc. First Annual Rev. Sweetpotato Whitefly National Res. and Action Plan. USDA-ARS, ARS-112.
- Henrik, C. A. 1982. Juvenile hormone analogs: structure activities relationships, pp. 315-402. In J. R. Coats (ed.), Insecticide mode of action. Academic Press, New York.

- Henrick, C. A., B. A. Garcia, G. B. Staal, D. C. Cerf, R. J. Anderson, K. Gill, H. R. Chinn, J. N. Labovitz, M. M. Leippe, S. L. Woo, R. L. Carney, D. C. Gordon, and G. K. Kohn. 1980. 2-Anilino-3-methylbutyrates and 2-(isoindolin-2-yl)-3-methylbutyrates, two novel groups of synthetic pyrethroid esters not containing a cyclopropane ring. *Pestic. Sci.* 1: 224-241.
- Herard, F., M. A. Keller, W. J. Lewis, and J. H. Tumlinson. 1987. Beneficial arthropod behavior mediated by airborne semiochemicals III. Influence of age and experience on flight chamber responses of *Microplitis demolitor* Wilkinson. *J. Chem. Ecol.* 14: 1583-1596.
- Herard, F., M. A. Keller, W. J. Lewis, and J. H. Tumlinson. 1987. Beneficial arthropod behavior mediated by airborne semiochemicals. IV. Influence of host diet on host-oriented flight chamber responses to *Microplitis demolitor* Wilkinson. *J. Chem. Ecol.* 14: 1597-1606.
- Hererra, J. M., and F. Alvarez. 1979. El control biológico de *Bucculatrix thurberiella* Busck (Lepidoptera: Lyonettidae) en Piura y Chira. *Rev. Peru Entomol.* 22: 37-41.
- Herman, H. R., and G. Morrison. 1980. Ovipositor and associated glands of *Microplitis croceipes* (Braconidae). *J. Ga. Entomol. Soc.* 15: 479-485.
- Herrera, J. M., and F. Alvarez. 1979. El control biológico de *Bucculatrix thurberiella* Busck (Lepidoptera: Lyonettidae) en Piura y Chira. *Rev. Peru Entomol.* 22: 37-41.
- Herring, J. L. 1966. The genus *Orius* of the Western hemisphere (Hemiptera: Anthocoridae). *Ann. Entomol. Soc. Amer.* 59: 1093-1109.
- Herzog, G. A. 1980. The potential for short-season cotton in the southeast, pp. 157-158. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Herzog, G. A. 1988. Performance of pyrethroids in the Southeast, pp. 231-232. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Herzog, G. A., J. A. Joyce, and R. J. Ottens. 1987. Insecticide resistance monitoring in *Heliothis* spp. and *Spodoptera* spp. Univ. of Georgia, Coop. Ext. Serv. Misc. Publ. No. 181.
- Herzog, G. A., W. R. Lambert III, S. E. Law, W. E. Seigler, and D. K. Giles. 1983. Evaluation of an electrostatic spray application system for control of insect pests in cotton. *J. Econ. Entomol.* 76: 637-640.
- Higgins, A. H. 1970. A machine for free aerial release of sterile pink bollworm moths. *USDA/ARS* 81-40.
- Higley, L. G., and W. K. Wintersteen. 1992. A novel approach to environmental risk assessment of pesticides as a basis for incorporating environmental costs into economic injury levels. *Am. Entomol.* 38: 34-39.
- Hill, J. R. 1985. Effects on non-target organisms, pp. 151-262. In J. P. Leahy (ed.), *The pyrethroid insecticides*. Taylor and Francis, London.
- Himel, C. M. 1969. The optimum size for insecticide spray droplets. *J. Econ. Entomol.* 62: 912-916.
- Hinds, W. E. 1906. Proliferation as a factor in the natural control of the Mexican cotton boll weevil. *USDA Bur. Entomol. Bull.* 59.
- Hinds, W. E. 1907. An ant enemy of the cotton boll weevil. *USDA Bur. Entomol. Bull.* 63.
- Hinds, W. E. 1925. Airplane dusting of cotton for boll weevil control. *J. Econ. Entomol.* 19: 607.
- Hinds, W. E., and W. W. Yothers. 1909. Hibernation of the Mexican cotton boll weevil. *USDA Bur. Entomol. Bull.* 77.
- Hodgson, E., and P. E. Levi. 1987. *A textbook of modern toxicology*. Elsevier, New York.
- Hogg, D. B., and M. Calderon. 1981. Field developmental times of *Heliothis zea* and *H. virescens* (Lepidoptera: Noctuidae) larvae and pupae in cotton. *Environ. Entomol.* 10: 177-179.
- Hogg, D. B., and A. P. Gutierrez. 1980. A model of the flight phenology of the beet armyworm (Lepidoptera: Noctuidae) in Central California. *Hilgardia* 48: 1-36.
- Hogg, D. B., and E. V. Nordheim. 1983. Age-specific survivorship analysis of *Heliothis* spp. populations on cotton. *Res. Popul. Ecol.* 25: 280-297.
- Holan, G., W. M. P. Johnson, D. F. O'Keefe, G. L. Quint, K. Rihs, T. H. Spurling, R. Walser, C. T. Virgona, C. Frelin, M. Lazdunski, G. A. R. Johnston, and S. Chen Chow. 1985. Multidisciplinary studies in the design of new insecticides, pp. 114-132. In N. F. Janes (ed.), *Recent advances in the chemistry of insect control*. Royal Society of Chemistry, London.

- Hollingworth, R. M. 1976. The biochemical and physiological basis of selective toxicity, pp. 431-506. In C. F. Wilkinson (ed.), *Insecticide biochemistry and physiology*. Plenum Press, New York.
- Hollingworth, R. M., K. I. Ahammad-Sahib, G. G. Gadelhak, and J. L. McLaughlin. 1994. New inhibitors of Complex I of the mitochondrial electron transport chain with activity as pesticides. *Biochem. Soc. trans.* 22: 230-233.
- Hollingworth, R. M., and A. E. Lund. 1982. Biological and neurotoxic effects of amidine pesticides, pp. 189-227. In J. R. Coats (ed.), *Insecticide mode of action*. Academic Press, New York.
- Hope, J. H. 1993. IRAC-Cotton-U.S. overview and its role in insecticide resistance management, pp. 4. In Proc. Beltwide Cotton Prod. Res. Conf.
- Hopkins, A. R., and R. F. Moore. 1980. Thidiazuron: effects of applications on boll weevil and bollworm population densities, leaf abscission, and regrowth of the cotton plant. *J. Econ. Entomol.* 73: 768-770.
- Hopkins, A. R., R. F. Moore, and W. James. 1982. Economic injury level for *Heliothis* spp. larvae on cotton plants in the four-true-leaf to pinhead-square stage. *J. Econ. Entomol.* 75: 328-332.
- Hopkins, A. R., and H. M. Taft. 1965. Control of certain cotton pests with a new insecticide UC-21149. *J. Econ. Entomol.* 58: 746-749.
- Hopkins, A. R., H. M. Taft, and A. R. Agee. 1971. Movement of the boll weevil into and out of a cotton field as determined by flight screens. *Ann. Entomol. Soc. Amer.* 64: 254-257.
- Hopkins, A. R., H. M. Taft, and W. James. 1969. Life history of the boll weevil in field cages. *J. Econ. Entomol.* 62: 964-965.
- Hopkins, A. R., H. M. Taft, and W. James. 1975. Reference LD₅₀ values for some insecticides against the boll weevil. *J. Econ. Entomol.* 68: 189-192.
- Hopkins, A. R., H. M. Taft, and W. James. 1979. Comparison of spray nozzles for ground applications for control of cotton insects and spider mites. *J. Econ. Entomol.* 72: 180-183.
- Hopkins, A. R., H. M. Taft, S. H. Roach, and W. James. 1972. Movement and survival of boll weevils in several hibernation environments. *J. Econ. Entomol.* 65: 82-85.
- Hopper, K. R. 1989. Conservation and augmentation of *Microplitis croceipes* for controlling *Heliothis* spp., pp. 95-115. In J. E. Powell, D. L. Bull, and E. G. King (Eds.), *Biological control of Heliothis spp. by Microplitis croceipes*. Southwest. Entomol. Suppl. 12.
- Hopper, K. R., and E. G. King. 1984a. Preference of *Microplitis croceipes* (Hymenoptera: Braconidae) for instars and species of *Heliothis* (Lepidoptera: Noctuidae). *Environ. Entomol.* 13: 1145-1150.
- Hopper, K. R., and E. G. King. 1984b. Feeding and movement on cotton of *Heliothis* species (Lepidoptera: Noctuidae) parasitized by *Microplitis croceipes* (Hymenoptera: Braconidae). *Environ. Entomol.* 13: 1654-1660.
- Hopper, K. R., and E. G. King. 1986. Linear functional response of *Microplitis croceipes* (Hymenoptera: Braconidae) to variation in *Heliothis* spp. (Lepidoptera: Noctuidae) density in the field. *Environ. Entomol.* 15: 476-480.
- Hopper, K. R., J. E. Powell, and E. G. King. 1991. Spatial density dependence in parasitism *Heliothis virescens* (Lepidoptera: Noctuidae) by *Microplitis croceipes* (Hymenoptera: Braconidae) in the field. *Environ. Entomol.* 20: 292-302.
- Hopper, K. R., and S. B. Stark. 1987. A simulation model for making decisions about *Heliothis* control, pp. 286-290. In Proc. Beltwide Cotton Prod. Res. Conf.
- Hormchan, P. 1977. Biology of three exotic species, and role of native species of the genus *Peristenus*-parasites of tarnished plant bug, *Lygus lineolaris*, in Mississippi. Ph.D. dissertation, Miss. State Univ.
- Horner, N. V. 1972. *Metaphidippus galathea* as a possible biological control agent. *J. Kans. Entomol.* 45: 324-327.
- Horowitz, A. R. 1986. Population dynamics of *Bemisia tabaci* (Gennadius): with special emphasis on cotton fields. *Agric. Ecos. Environ.* 17: 37-47.
- Horowitz, J. K., and E. Lichtenberg. 1993. Insurance, moral hazard, and chemical use in agriculture. *Am. J. Agric. Econ.* 75: 926-935.

- Horowitz, R., H. Podoler, and D. Gerling. 1982. Population dynamics (life tables) of *Bemisia tabaci* under field conditions. *Phytoparasitica* 10: 4.
- Hoskinson, P. E., C. R. Graves, and T. McCutchen. 1974. Effects of four harvest dates on agronomic and fiber properties of cotton. *Tennessee Farm and Home Sci.* 89: 17-19.
- Howard, L. O. 1895. The Mexican cotton-boll weevil. USDA Div. Entomol. Circ. 6. (2nd Ser.).
- Howard, L. O. 1896. Insects affecting the cotton plant. USDA Office of Exp. Sta. Bull. 33.
- Howard, L. O. 1896. The Mexican cotton boll weevil. USDA Bur. Entomol. Circ. 14 (2nd Ser.).
- Howe, R. W. 1916. Studies of the Mexican cotton boll weevil in the Mississippi Valley. USDA Bull 358.
- Hoy, M. A. 1982. Aerial dispersal and field efficacy of a genetically improved strain of the spider mite predator *Metaseiulus occidentalis*. *Entomol. Exp. Appl.* 32: 205-212.
- Hoy, M. A., and J. Conley. 1987. Selection for abamectin resistance in *Teranychus urticae* and *T. pacificus* (Acar: Teranychidae). *J. Econ. Entomol.* 80: 221-225.
- Hoy, M. A., J. J. R. Groot, and H. E. van de Baan. 1985. Influence of aerial dispersal on persistence and spread of pesticide-resistant *Metaseiulus occidentalis* in California almond orchards. *Entomol. Exp. Appl.* 37: 17-31.
- Hoy, M. A., and J. J. McKelvey Jr. (eds). 1979. Genetics in relation to insect management, March 31-April 5, 1978, Bellagio, Italy. The Rockefeller Foundation, New York.
- Hoyt, A. S. 1953. The pink bollworm situation-a beltwide menace, pp. 57-59. In Proc. Beltwide Cotton Prod. Res. Conf.
- Hsieh, C., J. N. Jenkins, J. C. McCarty Jr., R. L. Shepherd, and W. L. Parrott. 1987. Breeding potential of cotton germplasm tolerant to tobacco budworm *Heliothis virescens* (Fab.). Miss. Agric. For. Exp. Stn. Tech. Bull. 144.
- Hsu, A. C. T. 1991. 1,2-Diacyl-1-alkylhydrazines: a new class of insect growth regulator, pp. 478-490. In D. R. Baker, J. G. Fenyes, and W. K. Moberg (eds.), Synthesis and chemistry of agrochemicals II. American Chemical Society, Washington, D.C.
- Huddleston, P. M., E. B. Mitchell, and N. M. Wilson. 1977. Disruption of boll weevil communication. *J. Econ. Entomol.* 70: 83-85.
- Huffaker, C. B., C. A. Shoemaker, and A. P. Gutierrez. 1978. Current status, urgent needs and future prospects of integrated pest management, pp. 237-259. In E. H. Smith, and D. Pimentel (eds.), Pest Control Strategies. Academic Press, New York.
- Hughes, H. A. 1982. Fundamentals of machine operations- crop chemicals. John Deere Technical Services, Moline.
- Hughes, P. S. 1975. The biology of *Archytas marmoratus* (Townsend). *Ann. Entomol. Soc. Amer.* 68: 759-767.
- Humber, R. A. 1989. Synopsis of a revised classification for the Entomophthorales (Zygomycotina). *Mycotaxon* 34: 441-460.
- Hummel, H. E., L. K. Gaston, H. H. Shorey, R. S. Kaae, K. J. Byrne, and R. M. Silverstein. 1973. Clarification of the chemical status of the pink bollworm sex pheromone. *Science* 181: 873-875.
- Hung, A. C. F., M. R. Barlin, and S. B. Vinson. 1977. Identification, distribution, and biology of fire ants in Texas. *Texas Agric. Exp. Bull.* B-1185.
- Hung, A. C. F., D. L. Vincent, J. D. Lopez, and E. G. King. 1985. *Trichogramma* (Hymenoptera: Trichogrammatidae) fauna in certain areas of Arkansas and North Carolina. *Southwest. Entomol. Suppl.* 8: 11-20.
- Hunter, R. C., T. F. Leigh, C. Lincoln, B. A. Waddle, and L. A. Bariola. 1965. Evaluation of a selected cross-selection of cottons for resistance to the boll weevil. *Ark. Agric. Exp. Stn. Bull.* 700.
- Hunter, W. D. 1904a. The most important step in the cultural system of controlling the boll weevil. *USDA Bur. Entomol. Circ.* 56.
- Hunter, W. D. 1904b. Information concerning the Mexican cotton boll weevil. *USDA Farmers' Bull.* 189.
- Hunter, W. D. 1905. The control of the boll weevil, including results of recent investigations. *USDA Farmers Bull.* 216.

- Hunter, W. D. 1907. The most important step in the control of the boll weevil. USDA Bur. Entomol. Circ. 95.
- Hunter, W. D. 1909a. What can be done in destroying the cotton boll weevil during the winter. USDA Bur. Entomol. Circ. 107.
- Hunter, W. D. 1909b. The boll weevil problem with special reference to means of reducing damage. USDA Farmers' Bull. 344.
- Hunter, W. D. 1910. The status of the boll weevil in 1909. USDA Bur. Entomol. Circ. 122.
- Hunter, W. D. 1912. The boll weevil problem. USDA Farmers' Bull. No. 512.
- Hunter, W. D. 1912. The control of the boll weevil. USDA Farmers' Bull. 500.
- Hunter, W. D. 1926. The pink bollworm with special reference to steps by the Department of Agriculture to prevent establishment in the United States. USDA Bull. 1397.
- Hunter, W. D., and B. R. Coad. 1923. The boll weevil problem. USDA Farmers Bull. 1329.
- Hunter, W. D., and W. E. Hinds. 1905. The Mexican cotton boll weevil: a revision and amplification of Bull. 45, to include the most important observations made in 1904. USDA Bureau of Entomol. Bull. 51.
- Hunter, W. D., and W. D. Pierce. 1912. The Mexican cotton boll weevil: a summary of the investigation of this insect up to Dec. 31, 1911. USDA Bur. Entomol. Bull. 51.
- Husain, M. A., and K. N. Trehan. 1933. Observations on the life history, bionomics and control of the cotton whitefly *Bemisia gossypiperda*, (M. & L.). Indian J. Agric. Sci. 3: 701-753.
- Husain, M. A., K. N. Trehan, and P. A. Verma. 1936. Studies on *Bemisia gossypiperda*, M. & L. (the whitefly of cotton) in the Punjab. Indian J. of Agric. Sci. 6: 893-903.
- Hussey, N. W., and W. J. Parr. 1963. Dispersal of the glasshouse red spider mite *Tetranychus urticae* Koch (Acarina: Tetranychidae). Entomol. Exp. Appl. 6: 207-214.
- Hutchins, S. H. 1993. Techniques for sampling arthropods in integrated pest management, pp. 73-97. In L. P. Pedigo, and G. D. Buntin (eds.), Handbook of Sampling Methods for Arthropods in Agriculture. CRC Press, Ann Arbor.
- Hutchins, S. H., and P. J. Gehring. 1993. Perspective on the value, regulation, and objective utilization of pest control technology. Am. Entomol. 39: 12-15.
- Hutchinson, J. 1962. The history and relationships of the world's cottons. Endeavor 11: 5-15.
- Hutchison, W. D., C. A. Beasley, and T. J. Henneberry. 1988. Efficacy of selected insecticides on pink bollworm oviposition in cotton, pp. 309-311. In Proc. Beltwide Cotton Prod. Res. Conf.
- Hutchison, W. D., C. A. Beasley, T. J. Henneberry, and J. M. Martin. 1987. An assessment of pink bollworm egg sampling as a new management tool: a 640 acre pilot test, pp. 247-276. In Proc. Beltwide Cotton Prod. Res. Conf.
- Hutchison, W. D., C. A. Beasley, T. J. Henneberry, and J. M. Martin. 1991. Timing insecticide applications for pink bollworm (Lepidoptera: Gelechiidae) management: Comparison of egg and larva treatment thresholds. J. Econ. Entomol. 84: 470-475.
- Hutchison, W. D., G. D. Butler Jr., and J. M. Martin. 1986. Age-specific developmental times for pink bollworm (Lepidoptera: Gelechiidae): three age classes of eggs, five larval instars, and pupae. Ann. Entomol. Soc. Amer. 79: 482-487.
- Hutchison, W. D., M. Moratorio, and J. M. Martin. 1990. Morphology and biology of *Trichogrammatoides bactrae* (Hymenoptera: Trichogrammatidae), imported from Australia as a parasitoid of pink bollworm (Lepidoptera: Gelechiidae) eggs. Ann. Entomol. Soc. Am. 83: 46-54.
- Hutson, D. H., and T. R. Roberts. 1985. Insecticides, pp. 1-34. In D. H. Hutson, and T. R. Roberts (eds.), Insecticides. John Wiley and Sons, New York.
- Hydorn, S. B. 1971. Food preference of *Chrysopa rufilabris* Burmeister in North Central Florida. M.S. Thesis, University of Florida.
- Hyer, A. H., E. C. Jorgenson, R. H. Garber, and S. Smith. 1979. Resistance to root-knot nematode and control of root-knot nematode-fusarium wilt disease complex in cotton. Crop Sci. 19: 898-901.
- Iftner, D. C., and F. R. Hall. 1983. Effects of fenvalerate and permethrin on *Tetranychus urticae* Koch (Acarina: Tetranychidae) dispersal behavior. Environ. Entomol. 12: 1782-1786.

- Iglinsky, W., and C. F. Rainwater. 1950. Observations and life history notes on *Orius insidiosus* (Say), an enemy of a spider mite on cotton in Texas. J. Econ. Entomol. 43: 567-568.
- Ignoffo, C. M. 1966. Insect viruses, pp. 618. In C. N. Smith (ed.), Insect colonization and mass production. Academic Press, New York.
- Ignoffo, C. M. 1981. The fungus *Nomuraea rileyi* as a microbial insecticide, pp. 513-538. In H. D. Burges (ed.), Microbial control of pests and plant diseases 1970-1980. Academic Press, New York.
- Ignoffo, C. M., and J. R. Adams. 1966. A cytoplasmic-polyhedrosis virus of the pink bollworm. J. Invertebr. Pathol. 8: 59-66.
- Ignoffo, C. M., and O. F. Batzer. 1971. Microencapsulation and ultraviolet protectants to increase stability of an insect virus. J. Econ. Entomol. 64: 850-853.
- Ignoffo, C. M., and O. P. Boening. 1970. Compartmental disposable plastic trays for rearing insects. J. Econ. Entomol. 63: 1696-1697.
- Ignoffo, C. M., J. R. Bradley, F. R. Gilliland, F. A. Harris, L. A. Falcon, L. V. Larson, R. L. McGarr, P. P. Sikorowski, T. F. Watson, and W. C. Yearian. 1972. Field studies on stability of the *Heliothis* nucleopolyhedrosis virus at various sites throughout the cotton belt. Environ. Entomol. 1: 388-390.
- Ignoffo, C. M., A. J. Chapman, and D. F. Martin. 1965. The nuclear polyhedrosis virus of *Heliothis zea* and *Heliothis virescens*. III. The effectiveness of the virus against field populations of *Heliothis* on cotton, corn and grain sorghum. J. Invertebr. Pathol. 7: 227-235.
- Ignoffo, C. M., and C. Garcia. 1965. Infection of the cabbage looper, bollworm, tobacco budworm, and pink bollworm with spores of *Mattesia grandis* McLaughlin collected from boll weevils. J. Invertebr. Pathol. 7: 260-262.
- Ignoffo, C. M., D. L. Hostetter, and D. B. Smith. 1976. Gustatory stimulant, sunlight protectant, evaporation retardant: three characteristics of a microbial insecticide adjuvant. J. Econ. Entomol. 69: 207-210.
- Immaraju, J. A., J. G. Morse, and R. F. Hobza. 1990. Field evaluation of insecticide rotation and mixtures as strategies for citrus thrips (Thysanoptera: Thripidae) resistance management in California. J. Econ. Entomol. 83: 306-314.
- Ingram, W. R. 1994. *Pectiniphora* (Lepidoptera: Gelechiidae), pp. 107-149. In G. A. Matthews, and J. P. Tunstall (eds.), Insect Pests of Cotton. University Press, Cambridge.
- Irwin, M. E., R. E. Gill, and D. Gonzales. 1974. Field-cage studies of native egg predation of the pink bollworm in southern California cotton. J. Econ. Entomol. 67: 193-196.
- Isely, D. 1926. Early summer dispersion of boll weevil with special reference to dusting. Ark. Agr. Exp. Sta. Bull. 204.
- Isely, D. 1926. Early summer dispersion of the boll weevil. J. Econ. Entomol. 19: 108-112.
- Isely, D. 1928. Oviposition of the boll weevil in relation to food. J. Econ. Entomol. 21: 152-155.
- Isely, D. 1928. The relation of leaf color and leaf size to boll weevil oviposition. J. Econ. Entomol. 21: 553-559.
- Isely, D. 1929. 41st Arrival Report, B-245. Ark. Agr. Exp. Sta.
- Isely, D. 1930. 42nd Annual Report, B-257. Ark. Agr. Exp. Sta.
- Isely, D. 1932. Abundance of the boll weevil in relation to summer weather and to food. Ark. Agric. Exp. Stn. Bull. 271.
- Isely, D. 1933. Control of the boll weevil in Arkansas. Univ. of Arkansas Coop. Ext. Serv. Circ. 162.
- Isely, D. 1934. Relationship between early varieties of cotton and boll weevil injury. J. Econ. Entomol. 27: 762-766.
- Isely, D. 1935. Relation of hosts to abundance of cotton bollworm. Ark. Agric. Exp. Stn. Bull. 320.
- Isely, D. 1946. The cotton aphid. Ark. Agr. Exp. Sta. Bull. 462.
- Isely, D. 1950. Control of the boll weevil and the cotton aphid in Arkansas. Ark. Agr. Exp. Sta. Bull. 496.
- Isely, D., and W. J. Baerg. 1924. The boll weevil problem in Arkansas. Ark. Agr. Exp. Sta. Bull. 190.

- Isenhour, D. J., and K. V. Yeargan. 1981. Effect of temperature on the development of *Orius insidiosus*, with notes on laboratory rearing. Ann. Entomol. Soc. Amer. 74: 114-116.
- Ishaaya, I., and J. E. Casida. 1981. Pyrethroid esterases may contribute to natural pyrethroid tolerance of larvae of the common green lacewing. Environ. Entomol. 10: 681-684.
- Isler, D. A., and F. A. Fenton. 1931. Preliminary report on controlling the pink bollworm in winter. J. Econ. Entomol. 24: 795-807.
- Ivy, E. E., and A. L. Scales. 1954. Are cotton insects becoming resistant to insecticides? J. Econ. Entomol. 47: 981-984.
- Jackson, B. S., and G. F. Arkin. 1982. Fruit growth in a cotton simulation model, pp. 61-64. In Proc. Beltwide Cotton Prod. Res. Conf.
- Jackson, C. G. 1980. Entomophagous insects attacking the pink bollworm, pp. 71-75. In H. M. Graham (ed.), Pink bollworm control in the Western United States USDA, Science and Education Administration, ARM-W-16.
- Jackson, C. G., D. E. Bryan, E. G. Neeman, and A. L. Wardecker. 1970. Biological control: results of field cage test with parasites of *Heliothis* spp. Third Qtr. Rpt., Cotton Insects Biological Control Investigations. U.S. Department of Agriculture, Tucson, AZ.
- Jackson, C. G., D. E. Bryan, and R. Patana. 1969. Laboratory studies of *Eucelatoria armigera*, a tachinid parasite of *Heliothis* spp. J. Econ. Entomol. 62: 607-610.
- Jacobs, R. G., C. A. Kouskolekas, and H. R. Gross. 1984. Effects of permethrin and endosulfan residues on *Triogamma pretiosum*, an egg parasitoid of *Heliothis zea*. Environ. Entomol. 13: 355-358.
- Jacobson, M. 1969. Sex pheromone of the pink bollworm moth: biological masking by its geometrical isomer. Science 163: 190-191.
- Jacques, R. P. 1977. Stability of entomopathogenic viruses, pp. 99-116. In Environmental stability of microbial insecticides. Entomology Society of America, Misc. Pub. 10. Entomology Society of America, College Park.
- James, H. C. 1953. Biological control. Investigations and application of results. Jamaica Dept. Agr. Bull., N. Ser. 53: 26-27.
- Jenkins, J. N. 1982a. Plant pest interaction with environmental stress and breeding for pest resistance: insects, pp. 365-373. In D. Christiansen (ed.), Breeding plants for less favorable environments. John Wiley & Sons, New York.
- Jenkins, J. N. 1982b. Present state of the art and science of cotton breeding for insect resistance in the southeast, pp. 117-125. In Proc. Beltwide Cotton Prod. Res. Conf.
- Jenkins, J. N. 1990. Managing modern cultivars, In Proc. Beltwide Cotton Prod. Res. Conf.
- Jenkins, J. N., P. A. Hedin, W. L. Parrott, J. C. McCarty Jr., and W. H. White. 1983. Cotton allelochemicals and the growth of tobacco budworm larvae. Crop Sci. 23: 1195-1198.
- Jenkins, J. N., F. G. Maxwell, J. C. Keller, and W. L. Parrott. 1963. Investigations of the water extracts of *Gossypium*, *Abelmoschus*, *Cucumis*, and *Phaseolus* for an arrestant and feeding stimulant for *Anthonomus grandis* Boh. Crop Sci. 3: 215-219.
- Jenkins, J. N., F. G. Maxwell, and H. N. Lafever. 1966. The comparative preference of insects for glanded and glandless cottons. J. Econ. Entomol. 59: 352-356.
- Jenkins, J. N., F. G. Maxwell, and W. L. Parrott. 1964. A technique for measuring certain aspects of antibiosis in cotton to the boll weevil. J. Econ. Entomol. 57: 679-681.
- Jenkins, J. N., F. G. Maxwell, W. L. Parrott, and W. T. Buford. 1969. Resistance to boll weevil (*Anthonomus grandis* Boh.). Crop Sci. 9: 369-372.
- Jenkins, J. N., J. C. McCarty Jr., and W. L. Parrott. 1990a. Effectiveness of fruiting sites in cotton: yield. Crop. Sci. 30: 365-369.
- Jenkins, J. N., J. C. McCarty Jr., and W. L. Parrott. 1990b. Fruiting efficiency in cotton: Boll size and boll set percentage. Crop. Sci. 30: 857-860.
- Jenkins, J. N., and W. L. Parrott. 1971. Effectiveness of frego bract as a boll weevil resistance character in cotton. Crop Sci. 11: 739-743.

- Jenkins, J. N., and W. L. Parrott. 1976. Plant bug resistance in upland cotton, pp. 87. In Proc. Beltwide Cotton Prod. Res. Conf.
- Jenkins, J. N., W. L. Parrott, and J. W. Jones. 1975. Boll weevil oviposition behavior: multiple punctured squares. Environ. Entomol. 4: 861-867.
- Jenkins, J. N., W. L. Parrott, A. J. Kappelman Jr., and R. L. Shepherd. 1979a. Registration of JPM-781-78-3 cotton germplasm. Crop Sci. 19: 932.
- Jenkins, J. N., J. C. McCarty, W. L. Parrott, and A. J. Kappelman Jr. 1979b. Registration of 11 cotton germplasms. Crop Sci. 19: 912-922.
- Jenkins, J. N., W. L. Parrott, J. C. McCarty Jr., F. E. Callahan, S. A. Berberich, and R. W. Deaton. 1993. Growth and survival of *Heliothis virescens* (Lepidoptera: Noctuidae) on transgenic cotton containing a translated form of the Delta endotoxin from *Bacillus thuringiensis*. J. Econ. Entomol. 86: 181-185.
- Jenkins, J. N., W. L. Parrott, J. C. McCarty Jr., and A. T. Earnheart. 1978. Evaluation of primitive races of *Gossypium hirsutum* L. for resistance to boll weevil. Miss. Agric. & For. Exp. Stn. Tech. Bull. 91.
- Jenkins, J. N., W. L. Parrott, J. C. McCarty Jr., and R. L. Shepherd. 1988a. Registration of two non-commercial germplasm lines of upland cotton tolerant to tobacco budworm. Crop Sci. 28: 870.
- Jenkins, J. N., W. L. Parrott, J. C. McCarty Jr., and R. L. Shepherd. 1988b. Registration of three non-commercial germplasm lines of upland cotton tolerant to tobacco budworm. Crop Sci. 28: 869.
- Jenkins, J. N., W. L. Parrott, J. C. McCarty Jr., and R. L. Shepherd. 1988c. Registration of three non-commercial germplasm lines of upland cotton tolerant to tobacco budworm and the tarnished plant bug. Crop Sci. 28: 869-70.
- Jenkins, J. N., W. L. Parrott, J. C. McCarty Jr., and W. H. White. 1982. Breeding cotton for resistance to the tobacco budworm: techniques to achieve uniform field infestations. Crop Sci. 22: 400-404.
- Jenkins, J. N., W. L. Parrott, J. C. McCarty Jr., and W. H. White. 1984. Registration of MHR-1 tobacco budworm resistant cotton germplasm. Crop Sci. 24: 625-626.
- Jenkins, J. N., W. L. Parrott, and J. C. McCarty Jr. 1991. Field performance of transgenic cotton containing the B.t. gene, pp. 576. In Proc. Beltwide Cotton Prod. Res. Conf.
- Jenkins, J. N., W. L. Parrott, J. C. McCarty Jr., and L. Dearing. 1986. Performance of cottons when infested with tobacco budworm. Crop Sci. 26: 93-95.
- Jenkins, J. N., W. L. Parrott, J. C. McCarty Jr., and L. N. Latson. 1977. Evaluation of cotton, *Gossypium hirsutum* L., lines for resistance to the tarnished plant bug, *Lygus lineolaris*. Miss. Agr. For. Exp. Stn. Bull. 89.
- Jenkins, J. N., R. L. Shepherd, and J. C. McCarty Jr. 1987. Breeding potential of non cultivated cotton germplasm tolerant to *Heliothis virescens*: genetic analysis of fiber components, pp. 105. In Proc. Beltwide Cotton Prod. Res. Conf.
- Jensen, M. P., L. A. Crowder, and T. F. Watson. 1984. Selection for permethrin resistance in the tobacco budworm (Lepidoptera: Noctuidae). J. Econ. Entomol. 77: 1409-1411.
- Jepson, L. R., H. K. Hartford, and E. W. Baker. 1975. Mites injurious to economic plants. University of California Press, Berkeley.
- Jimenez, E., L. O. Roth, and J. H. Young. 1976. Droplet size and spray volume influence on control of the bollworm. J. Econ. Entomol. 69: 327-329.
- Johnson, A. W., and D. G. Manley. 1983. Parasitism of tobacco budworm on tobacco in South Carolina. J. Ga. Entomol. Soc. 18: 1-6.
- Johnson, A. W., J. R. Young, E. D. Threadgill, C. C. Dowler, and D. R. Sumner. 1986. Chemigation for crop production management. Plant Disease 70: 998-1004.
- Johnson, C. G. 1966. A functional system of adaptive dispersal by flight. Annu. Rev. Entomol. 11: 233-260.
- Johnson, C. G. 1969. Migration and dispersal of insects by flight. Methuen & Co. LTD, London.
- Johnson, C. G., A. J. Haine, C. Taylor, and L. R. Taylor. 1957. Molting rhythm in alienicolae of *Aphis fabae* Scop., in the field. Ann. Appl. Bio. 45: 702-708.

- Johnson, D. R. 1983. Relationship between tobacco budworm (Lepidoptera: Noctuidae) catches when using pheromone traps and egg counts in cotton. *J. Econ. Entomol.* 76: 182-183.
- Johnson, D. R. 1990. Cotton insect pest management scouting manual. University of Arkansas Cooperative Extension Service. EC561.
- Johnson, D. R., and M. E. Gilreath. 1982. Boll weevil, *Anthonomus grandis* grandis Boheman, pheromone trapping as an index of population trends. *J. Ga. Entomol. Soc.* 17: 429-433.
- Johnson, D. R., and B. F. Jones. 1988. Cotton insect control, pp. 46-49. In *Insecticide recommendations for Arkansas*. Univ. Arkansas Coop. Ext. Serv. Pub. MP 144.
- Johnson, D. R., J. J. Kimbrough, and J. S. McConnell. 1988. The effect of thrips on cotton as influenced by insecticides, irrigation and variety, pp. 144-145. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Johnson, D. R., J. J. Kimbrough, and M. L. Wall. 1993. Cotton insect management. Univ. of Arkansas Coop. Ext. Serv. Leaf. 52.
- Johnson, D. R., J. R. Phillips, N. P. Tugwell, and L. H. Williams. 1985. Key to healthy, plant bug damaged and physiological shed squares. Univ. of Ark. Coop. Ext. Serv. Fact Sheet 7003.
- Johnson, D. R., and G. E. Studebaker. 1991. Cotton aphid control and management in Arkansas, pp. 689-690. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Johnson, D. R., and N. P. Tugwell. 1988. Monitoring plant bug populations using small square set and square slicing, pp. 325-26. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Johnson, M. W., R. E. Stinner, and R. L. Rabb. 1975. Ovipositional response of *Heliothis zea* (Boddie) to its major hosts in North Carolina. *Environ. Entomol.* 4: 291-297.
- Johnson, M. W., N. C. Toscano, H. T. Reynolds, E. S. Sylvester, K. Kilo, and E. T. Natwick. 1982. Whiteflies cause problems for southern California growers. *Calif. Agri.* 35: 24-26.
- Johnson, S. J., E. G. King, and J. R. Bradley Jr.(eds.). 1986. Theory and tactics of *Heliothis* population management: I-cultural and biological control. *South. Coop. Ser. Bull.* 316.
- Johnson, W. L., W. H. Cross, and W. L. McGovern. 1976. Long-range dispersal of marked boll weevils in Mississippi during 1974. *Ann. Entomol. Soc. Amer.* 69: 421-422.
- Johnson, W. L., W. H. Cross, W. L. McGovern, and H. C. Mitchell. 1973. Biology of *Heterolaccus grandis* in a laboratory culture and its potential as an introduced parasite of the boll weevil in the United States. *Environ. Entomol.* 2: 112-118.
- Johnston, J. H. 1975. Public policy of cattle tick control in New South Wales. *Rev. Marketing and Agricultural Economics* 43: 3-39.
- Johnstone, D. R. 1977. A technique of estimating the total insecticide spray collection by individual cotton plants and a comparison of recovery of sprays of dyed water and two ulv formulations of traizophos. *Cot. Fib. Trop.* 32: 67-70.
- Johnstone, D. R., C. H. Rendell, and J. A. Sutherland. 1977. The short-term fate of droplets of coarse aerosol size in ulv insecticide application on to a tropical field crop. *J. Aerosol Sci.* 8: 395-407.
- Jones Jr., W. A., J. E. Powell, and E. G. King Jr. 1985. Stoneville Research Quarantine Facility: a regional and national center for support of research on biological control of arthropod and weed pests. *Bull. Entomol. Soc. Amer.* 31: 20-26.
- Jones Jr., W. A., and M. J. Sullivan. 1982. Role of host plants in population dynamics of stink bug pests of soybean in South Carolina. *Environ. Entomol.* 11: 867-875.
- Jones, D., and W. L. Sterling. 1978. Locomotory activity and distribution of overwintering boll weevils in east Texas leaf litter. *Southwest. Entomol.* 3: 315-321.
- Jones, D., and W. L. Sterling. 1979. Manipulation of red imported fire ants in a trap crop for boll weevil suppression. *Environ. Entomol.* 8: 1073-1077.
- Jones, D., and W. L. Sterling. 1979. Temperature thresholds for spring emergence and flight of the boll weevil. *Environ. Entomol.* 8: 1118-1122.
- Jones, F. G., and R. A. Nabors. 1988. Cotton insect control. Univ. of Missouri Coop. Ext. Serv. Ag Guide 4252.
- Jones, J. E. 1982. The present state of the art and science of cotton breeding for leaf-morphological types, pp. 93-99. In *Proc. Beltwide Cotton Prod. Res. Conf.*

- Jones, J. E., J. P. Beasley, J. I. Dickson, and W. D. Caldwell. 1988. Registration of four cotton germplasm lines with resistance to reniform and root-knot nematodes. *Crop Sci.* 28: 199-200.
- Jones, J. E., and J. W. Brand. 1981. Influence of red plant color genes on boll weevil nonpreference and agronomic performance, pp. 76-77. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Jones, J. E., D. F. Clower, E. Burris, J. G. Marshall, and S. J. Stringer. 1983. Progress in breeding frego-nectariless cottons for reduced plant bug sensitivity, pp. 81-83. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Jones, J. E., D. F. Clower, M. R. Milam, W. D. Caldwell, and D. R. Melville. 1975. Resistance in upland cotton to the banded-wing white fly, *Trialeurodes abutilonea* (Haldeman), pp. 98-99. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Jones, J. E., J. I. Dickson, and J. P. Beasley. 1987a. Preference and nonpreference of boll weevils to selected cotton, pp. 98-102. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Jones, J. E., E. Burris, W. D. Caldwell, J. G. Marshall, J. I. Dickson, and D. F. Clower. 1987b. Field performance of some new cotton strains with resistance to *Heliothis* spp., pp. 94-95. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Jones, J. E., J. I. Dickson, E. Burris, D. F. Clower, W. D. Caldwell, J. G. Marshall, and S. J. Stringer. 1988. Registration of three insect resistant cotton germplasm lines. *Crop Sci.* 28: 200.
- Jones, J. W., H. D. Bowen, J. R. Bradley, R. E. Stinner, and R. S. Sowell. 1975a. The boll weevil (Coleoptera: Curculionidae) feeding process: a simulation model. *Ecol. Modelling* 1: 289-302.
- Jones, J. W., H. D. Bowen, R. E. Stinner, J. R. Bradley Jr., R. S. Sowell, and J. S. Bacheler. 1975b. Female boll weevil oviposition and feeding processes: a simulation model. *Environ. Entomol.* 4: 815-821.
- Jones, J. W., H. D. Bowen, R. E. Stinner, J. R. Bradley Jr., and J. S. Bacheler. 1977. Simulation of boll weevil population as influenced by weather, crop status and management practices. *Trans. ASAE* 20: 121-125, 131.
- Jones, J. W., L. G. Brown, and J. D. Hesketh. 1980. COTCROP: a computer model for cotton growth and yield, pp. 209-241. In J. D. Hesketh, and J. W. Jones (eds.), *Predicting photosynthesis for ecosystems models*, Vol. 3. CRC Press, Inc., Boca Raton.
- Jones, J. W., R. F. Colwick, G. L. Barker, and R. W. McClendon. 1979. Optimum time for harvesting cotton: a new concept. *Trans. ASAE* 22: 291-296.
- Jones, J. W., J. D. Hesketh, E. J. Kamprath, and H. D. Bowen. 1974. Development of a nitrogen balance cotton growth model: a first approximation. *Crop. Sci.* 14: 541-546.
- Jones, P. 1989. Agricultural applications of expert systems concepts. *Agric. Systems* 31: 3-18.
- Jones, R. L. 1989. Semiochemicals mediating *Microplitis croceipes* habitat, host, and mate finding behavior, pp. 53-57. In J. E. Powell, D. L. Bull, and E. G. King (Eds.), *Biological control of Heliothis spp. by Microplitis croceipes*. Southwest. Entomol. Suppl. 12.
- Jones, R. L., W. J. Lewis, M. Beroza, B. A. Bierl, and A. N. Sparks. 1973. Host seeking stimulants (kairomones) for the egg parasite *Trichogramma evanescens*. *Environ. Entomol.* 2: 593-596.
- Jones, R. L., W. J. Lewis, M. C. Bowman, M. Beroza, and B. Bierl. 1971. Host-seeking stimulant for parasite of corn earworm: Isolation, identification, and synthesis. *Science* 173: 842-843.
- Jones, R. L., W. J. Lewis, H. R. Gross Jr., and D. A. Nordlund. 1976. Use of kairomones to promote action by beneficial insect parasites, pp. 119-134. In M. Beroza (ed.), *Pest management with insect sex attractants*. ACS Symp. Ser. 23. American Chemical Society, Washington, DC.
- Jones, S. L., P. D. Lingren, and M. J. Bee. 1977. Diel preiodicity of feeding, mating, and oviposition of adult *Chrysopa carnea*. *Ann. Entomol. Soc. Amer.* 70: 43-47.
- Jones, S. L., R. K. Morrison, J. R. Ables, and D. L. Bull. 1979. A new and improved technique for the field release of *Trichogramma pretiosum*. Southwest. Entomol. 4: 14-19.
- Jones, T. H. 1918. The southern green plant bug. *USDA Bur. Entomol. Bull.* 689.
- Joyce, R. J. V. 1982. A critical review of the role of chemical pesticides, pp. 173-188. In W. Reed and V. Kumble (eds.), *Proc. Internl. Workshop on Heliothis Management*. ICRISAT, Patancheru, A.P., India.

- Kaae, R. S., and H. H. Shorey. 1973. Sex pheromones of Lepidoptera: influence of environmental conditions on the location of pheromone communication and mating on *Pectinophora gossypiella*. Environ. Entomol. 2: 1081-1084.
- Kaae, R. S., H. H. Shorey, L. K. Gaston, and D. Sellers. 1977. Sex pheromones of Lepidoptera: seasonal distribution of male *Pectinophora gossypiella* in a cotton growing area. Environ. Entomol. 6: 284-286.
- Kadir H.A., and C. O. Knowles. 1991. Toxicological studies of the thiourea diafenthiuron in diamond-back moths (Lepidoptera: Yponomeutidae), twospotted spider mites (Acari: Tetranychidae), and bulb mite (Acari: Acaridae). J. Econ. Entomol. 84: 780-784.
- Kahn, A., W. M. Brooks, and H. Hirschman. 1976. *Chromonema heliothidis* n. ge., n. sp. (Steinernematidae, Nematoda), a parasite of *Heliothis zea* (Noctuidae, Lepidoptera), and other insects. J. Nematol. 8: 159-168.
- Kamal, M. 1935. Recent advances in the control of the pink bollworm (*Platyhedra gossypiella*) by natural enemies. 6th Intl. Congr. Entomol. Proc. 2: 567-581.
- Kamal, M. 1951. Biological control projects in Egypt, with a list of introduced parasites and predators. Bull. Soc. Fouad I Entomol. 35: 205-220.
- Kamrin, M. A. 1987. Health implications of ground water contaminants, pp. 225-233. In F. M. D'Itri, and L. G. Wolfson (eds.), Rural ground water contamination.
- Kanga, L. B., and F. W. Plapp. 1992. Development of a glass vial technique for monitoring resistance to organophosphate and carbamate insecticides in the tobacco budworm and the boll weevil, pp. 731-734. In Proc. Beltwide Cotton Prod. Res. Conf.
- Kanga, L. H. B., F. W. Plapp Jr., M. L. Wall, and G. W. Elzen. 1993. Monitoring for resistance to non-pyrethroid insecticides in the tobacco budworm, pp. 802-807. In Proc. Beltwide Cotton Prod. Res. Conf.
- Kappelman Jr., A. L. 1982. Registration of three okra-leaf frego-bract disease resistant cotton germplasms. Crop Sci. 22: 693-694.
- Karban, R., R. Adamchak, and W. C. Schnathorst. 1987. Induced resistance and interspecific competition between spider mites and a vascular wilt fungus. Sci. 235: 678-680.
- Karlson, P., and A. Butenandt. 1959. Pheromones (ectohormones) in insects. Annu. Rev. Entomol. 4: 39-58.
- Karlson, P., and M. Luscher. 1959. "Pheromones": a new term for a class of biologically active substances. Nature 183: 1835.
- Karunaratne, K. M., and F. W. Plapp. 1993. Use of *Bacillus thuringiensis* for tobacco budworm control: effect of low dose rates, pp. 835-837. In Proc. Beltwide Cotton Prod. Res. Conf.
- Kaya, H. K. 1987. Diseases caused by nematodes, pp. 453-470. In J. R. Fuxa, and Y. Tanada (eds.), Epizootiology of insect diseases. John Wiley & Sons, New York.
- Keller, J. C., F. G. Maxwell, and J. N. Jenkins. 1962. Cotton extracts as arrestants and feeding stimulants for the boll weevil. J. Econ. Entomol. 55: 800-801.
- Keller, J. C., F. G. Maxwell, J. N. Jenkins, and T. B. Davich. 1963. A boll weevil attractant from cotton. J. Econ. Entomol. 56: 110-111.
- Keller, J. C., E. B. Mitchell, G. H. McKibben, and T. B. Davich. 1964. A sex attractant for female boll weevils from males. J. Econ. Entomol. 57: 609-610.
- Keller, J. C., L. W. Sheets, N. Green, and M. Jacobson. 1969. *cis*-7-Hexadecen-1-ol acetate (hexalure), a synthetic sex attractant for pink bollworm males. J. Econ. Entomol. 62: 1520-1521.
- Keller, M. A. 1986. Overwintering of *Trichogramma exiguum* in North Carolina. Environ. Entomol. 15: 659-661.
- Keller, M. A., and W. J. Lewis. 1985. Movements by *Trichogramma pretiosum* (Hymenoptera: Trichogrammatidae) released into cotton. Southwest. Entomol. Suppl. 8: 99-109.
- Kelly, S. E., and T. F. Watson. 1987. Tobacco budworm and pyrethroid resistance, pp. 30-32. In Proc. Holtville Cotton Insect and Production Meeting, Colorado River Cotton Growers Association, Holtville.

- Kelton, L. A. 1963. Synopsis of the genus *Orius* Wolff in America North of Mexico (Heteroptera: Anthocoridae). Can. Entomol. 95: 631-636.
- Kelton, L. A. 1975. The lygus bugs (genus *Lygus* Hahn) of North America (Heteroptera: Miridae). Entomol. Soc. Canada Mem. 95: 1-101.
- Kemp, W. P., J. A. Onsager, and H. E. Lemmon. 1988. Rangeland grasshopper treatment selection: an expert system for decision support in resource management. AI Applications 2: 1-8.
- Kennedy, G. G., and D. C. Margolies. 1985. Mobile arthropod pests: management in diversified agroecosystems. Bull. Entomol. Soc. Amer. 31: 21-27.
- Kennedy, G. G., and D. R. Smitley. 1985. Dispersal, pp. 233-242. In W. Helle, and M. W. Sabelis (eds.), Spider mites and their control. Elsevier Press, Amsterdam.
- Kenneth, R., and I. Olmert. 1973. Some intrinsic and external factors influencing infectibility of *Spodoptera littoralis* (Noctuidae) by *Beauveria bassiana*, pp. 73. In Proc. 5th Intl. Colloq. on Insect Pathology and Microbiology, Sept. 1973, Oxford.
- Kerby, T. 1988. Five ways to shorten the season. Cotton Grower. Memphis, Tennessee.
- Kerby, T. A., K. G. Cassman, and M. Keeley. 1990. Genotype and plant densities for narrow-row cotton. I. Height, nodes, earliness and location of yield. Crop. Sci. 30: 644-649.
- Kerby, T. A., K. G. Cassman, L. Urié, and M. Keeley. 1988. Phenotypes and a production system for high yielding 30-inch cotton, pp. 119-120. In Proc. Beltwide Cotton Prod. Res. Conf.
- Kerby, T. A., S. Johnson, and H. Yamada. 1984. Fruiting pattern modification by irrigation regime, nitrogen levels, and Pix, pp. 65. In Proc. Beltwide Cotton Prod. Res. Conf.
- Kerkut, G. A., and L. J. Gilbert. 1985. Comprehensive insect physiology, biochemistry and pharmacology. Vol. 12. insect control. Pergamon Press, New York.
- Kerns, D. L., and M. J. Gaylor. 1991. Induction of cotton aphid outbreaks by the insecticide sulprofos, pp. 699-701. In Proc. Beltwide Cotton Prod. Res. Conf.
- Kerns, D. L., and M. J. Gaylor. 1991. Insecticide resistance in field populations of cotton aphids and relative susceptibility of its parasitoid *Lysiphlebus testaceipes*, pp. 682-685. In Proc. Beltwide Cotton Prod. Res. Conf.
- Khalifa, H., and O. I. Gameel. 1982. Control of cotton stickiness through breeding cultivars resistant to whitefly (*Bemisia tabaci* (Genn.)) infestation, pp. 181-186. In Improvement of oilseed and other industrial crops. FAO/IAFA, Vienna, Austria.
- Khasawinah, A. M. A., R. B. March, and T. R. Fukuto. 1978. Insecticidal properties, anti-cholinesterase activities, and metabolism of methamidophos. Pestic. Biochem. Physiol. 9: 211-221.
- Kiman, Z. B., and K. V. Yeargan. 1985. Development and reproduction of the predato *Orius insidiosus* (Hemiptera: Anthocoridae) reared on diets of selected plant material and arthropod prey. Ann. Entomol. Soc. Amer. 78: 464-467.
- King, A. B. S. 1994. *Heliothis/Helicoverpa* (Lepidoptera: Noctuidae), pp. 39-106. In G. A. Matthews, and J. P. Tunstall (eds.), Insect Pests of Cotton. University Press, Cambridge.
- King, D. S., and R. A. Humber. 1981. Identification of the entomophthorales, pp. 107-127. In H. D. Burges (ed.), Microbial control of pests and plant diseases 1970-1980. Academic Press, New York.
- King, E. E., and H. C. Lane. 1969. Abscission of cotton flower buds and petioles caused by protein from boll weevil larvae. Plant Physiol. 44: 903-906.
- King, E. G. 1986. Insecticide use in cotton and the value of predators and parasites for managing *Heliothis*, pp. 155-162. In Proc. Beltwide Cotton Prod. Res. Conf.
- King, E. G. 1993. Augmentation of parasites and predators for suppression of arthropod pests, pp. 90-100. In R. D. Lumsden, and J.L. Vaughn (eds.), Pest management: Biologically Based Technologies: Proceedings of the Beltsville Symposium XVIII, Agricultural Research Service, U.S. Department of Agriculture, Beltsville, Maryland, May 2-6, 1993. American Chemical Society, Washington, D.C.
- King, E. G., D. L. Bull, L. F. Bouse, and J. R. Phillips (eds.). 1985a. Biological control of bollworm and tobacco budworm in cotton by augmentative releases of *Trichogramma*. Southwest. Entomol. Suppl. 8.

- King, E. G., R. J. Coleman, J. R. Phillips, and W. A. Dickerson. 1985b. *Heliothis* spp. and selected natural enemy populations in cotton: a comparison of three insect control programs in Arkansas (1981-82) and North Carolina (1983). Southwest. Entomol. Suppl. 8: 71-98.
- King, E. G., J. E. Powell, and R. J. Coleman. 1985c. A high incidence of parasitism of *Heliothis* spp. larvae in cotton in southeastern Arkansas. Entomophaga 30: 419-426.
- King, E. G., and R. J. Coleman. 1989. Potential for biological control of *Heliothis* species. Ann. Rev. Entomol. 34: 53-76.
- King, E. G., J. R. Coulson, and R. J. Coleman. 1988a. ARS National Biological Control Program, Proc. Workshop on Research Priorities, July 14-15, 1987. Beltsville, Maryland.
- King, E. G., and G. G. Hartley. 1985. *Heliothis virescens*, pp. 323-328. In P. Singh, and R. F. Moore (eds.), Handbook of Insect Rearing, Vol. 2 Elsevier, New York.
- King, E. G., G. G. Hartley, D. F. Martin, and M. L. Lester. 1985. Large-scale rearing of a sterile back-cross of the tobacco budworm (Lepidoptera: Noctuidae). J. Econ. Entomol. 78: 1166-1172.
- King, E. G., and R. D. Jackson (eds.). 1989. Proc. Workshop on Biological Control of *Heliothis*: Increasing the Effectiveness of Natural Enemies, 11-15 Nov. 1985, New Delhi, India. FERRO, USDA.
- King, E. G., and N. C. Leppla. 1984. Advances and challenges in insect rearing. USDA, Agric. Res. Serv., New Orleans.
- King, E. G., J. R. Phillips, and R. B. Head. 1986. 39th annual conference report on cotton insect research and control, pp. 127-135. In Proc. Beltwide Cotton Prod. Res. Conf.
- King, E. G., J. R. Phillips, and R. B. Head. 1987. 40th annual conference report on cotton insect research and control, pp. 170-193. In Proc. Beltwide Cotton Prod. Res. Conf.
- King, E. G., J. R. Phillips, and R. B. Head. 1988. 41st annual conference report on cotton insect research and control, pp. 188-203. In Proc. Beltwide Cotton Prod. Res. Conf.
- King, E. G., and J. E. Powell. 1989. Biological control of *Heliothis* spp. emphasizing the present and potential role of *Microplitis croceipes*, pp. 1-9. In J. E. Powell, D. L. Bull, and E. G. King (Eds.), Biological control of *Heliothis* spp. by *Microplitis croceipes*. Southwest. Entomol. Suppl. 12.
- King, E. G., and J. E. Powell. 1992. Propagation and release of natural enemies for control of cotton insect and mite pests in the United States, including status and prospects for using *Microplitis croceipes*, pp. 47-60. In R. S. Soper, N. A. Fillippov, and S. N. Alimukhamedov (eds.), Cotton-integrated Pest Management: Proc. Symp. USDA, ARS-106.
- King, E. G., J. E. Powell, and J. W. Smith. 1982. Prospects for utilization of parasites and predators for management of *Heliothis* spp., pp. 103-122. In W. Reed and V. Kumble (eds.), Proc. Internl. Workshop on *Heliothis* Management. ICRISAT, Patancheru, A.P., India.
- Kinsley, P. C., and B. J. Harrington. 1982. Factors influencing termination of reproductive diapause in *Orius insidiosus* (Hemiptera: Anthocoridae). Environ. Entomol. 11: 461-462.
- Kinzer, R. E. 1976. Development and evaluation of techniques for using *Chrysopa carnea* Stephens to control *Heliothis* spp. in cotton. Ph.D. dissertation, Texas A&M University, College Station.
- Kiritani, K., and N. Kakiya. 1975. An analysis of the predator-prey system in the paddy field. Res. Popul. Ecol. Kyoto Univ. 17: 29-38.
- Kiritani, K., S. Kawahara, T. Sasaba, and F. Nakasui. 1972. Quantitative evaluation of predation by spiders on the green rice leafhopper, *Nephrotettix cincticeps* Uhler, by a sight-count method. Res. Popul. Ecol. Kyoto Univ. 13: 187-200.
- Kittock, D. L., T. J. Henneberry, and L. A. Bariola. 1979. Chemical termination for insect control in cotton: past, present and future, pp. 62-64. In Proc. Beltwide Cotton Prod. Res. Conf.
- Kittock, D. L., J. R. Mauney, H. F. Arle, and L. A. Bariola. 1973. Termination of late season cotton fruiting with growth regulators as an insect-control technique. J. Environ. Quality 2: 405-408.
- Klun, J. A., J. R. Plimmer, B. A. Bierl-Leonhardt, A. N. Sparks, and O. L. Chapman. 1979. Trace chemicals: the essence of sexual communication systems in *Heliothis* species. Science 209: 1328-1330.
- Knapp, S. A. 1911. Demonstrations work on southern farms. USDA Farmers' Bull. 422.
- Knight, B., J. N. Jenkins, and J. C. McCarty Jr. 1988. Effects of fruiting position on yield and fiber quality in commercial cotton, pp. 121. In Proc. Beltwide Cotton Prod. Res. Conf.

- Knight, H. H. 1941. The plant bugs, or Miridae, of Illinois. Bull. Ill. St. Nat. Hist. Surv. 22.
- Knippling, E. F. 1955. Possibilities of insect control or eradication through use of sexually sterile males. J. Econ. Entomol. 48: 457-462.
- Knippling, E. F. 1960. Requirements and possibilities of boll weevil control and eradication in relation to the population dynamics of the insect, pp. 11. Annual Cotton Insect Control Conference, Memphis, TN (Mimeo).
- Knippling, E. F. 1968. Technically feasible approaches to boll weevil eradication, pp. 14-18. In Summary Proceedings, 1968 Beltwide Cotton Production-Mechanization Conference.
- Knippling, E. F. 1970. Suppression of pest Lepidoptera by using partially sterile males: a theoretical appraisal. Bio. Sci. 20: 465-474.
- Knippling, E. F. 1971. Use of population models to appraise the role of larval parasites in suppressing *Heliothis* populations. USDA Tech. Bull. 1434.
- Knippling, E. F. 1978. Eradication of plant pests - Pro. Advances in technology for insect population eradication and suppression. Bull. Entomol. Soc. Amer. 24: 44-52.
- Knippling, E. F. 1979. The basic principles of insect population suppression and management. USDA Agric. Handb. 512.
- Knippling, E. F. 1983. Analysis of technology available for eradication of the boll weevil, pp. 409-435. In R. L. Ridgway, E. P. Lloyd, and W. H. Cross (eds.), Cotton Insect Management with Special Reference to the Boll Weevil. USDA Agr. Handb. No. 589.
- Knippling, E. F. 1992. Principles of insect parasitism analyzed from new perspectives. Practical implications for regulating insect populations by biological means. USDA, ARS, Washington, DC.
- Knippling, E. F., and W. Klassen. 1976. Relative efficiency of various genetic mechanisms for suppression of insect populations. USDA, ARS, Tech. Bull. 1553.
- Knippling, E. F., and J. U. McGuire Jr. 1968. Population models to appraise the limitations and potentialities of *Trichogramma* in managing host insect populations. USDA Tech. Bull. 1386.
- Knippling, E. F., and E. A. Stadelbacher. 1983. The rational for areawide management of *Heliothis* (Lepidoptera: Noctuidae) populations. Bull. Entomol. Soc. Amer. 29: 29-27.
- Knowles, C. O. 1982. Structure-activity relationships among amidine acaricides and insecticides, pp. 243-277. In J. R. Coats (ed.), Insecticide mode of action. Academic Press, New York.
- Knowles, C. O. 1987. Effects of formamidines on acarine dispersal and reproduction, pp. 174-190. In R. M. Hollingworth, and M. B. Green (eds.), Sites of action for neurotoxic pesticides. American Chemical Society, Washinton, D.C.
- Knowles, C. O., and G. N. El-Sayed. 1985. Formamidine enhancement of acaricide toxicity to *Tetranychus urticae* Koch (Acari: Tetranychidae). J. Econ. Entomol. 78: 308-310.
- Knutson, A., R. D. Parker, R. L. Huffman, C. G. Sansone, and J. Swart. 1993. Management of cotton insects in the Southern, Eastern and Blackland areas of Texas 1993-1994. Texas Agric. Ext. Serv. B-1204.
- Kogan, M., C. G. Helm, J. Kogan, and E. Brewer. 1989. Distribution and economic importance of *Heliothis virescens* and *Heliothis zea* in North, Central, and South America and of their natural enemies and host plants, pp. 241-298. In E. G. King and R. D. Jackson (eds.), Proc. Workshop on Biological Control of *Heliothis*: Increasing the Effectiveness of Natural Enemies. FERRO, USDA.
- Konno, Y., and J. G. Scott. 1991. Biochemistry and genetics of abamectin resistance in the house fly. Pestic. Biochem. Physiol. 41: 21-28.
- Konolige, K., and N. Nilsson. 1980. Multiple agent planning systems, pp. 138-142. In Proc. First Ann. Natl. Conf. on Art. Intell., AAAI, Menlo Park.
- Korman, A., J. Mallet, J. Goodenough, J. Graves, J. Hayes, D. Hendricks, R. Luttrell, S. Pair, and M. Wall. 1993. Population structure in *Heliothis virescens* (Lepidoptera: Noctuidae): An estimate of gene flow. Ann. Entomol. Soc. Amer. 86: 182-188.
- Kosmidou-Dimitropoulou, K., J. D. Berlin, and F. R. Morey. 1980. Capitate hairs on cotton leaves and bracts. Crop Sci. 20: 534-537.

- Kostroun, D. A., and F. W. Plapp. 1992. Resistance management of the tobacco budworm, *Heliothis virescens* (F.) using insecticide combinations, pp. 749-750. In Proc. Beltwide Cotton Prod. Res. Conf.
- Krenz, R., C. Michael, G. Garst, D. Fawcett, and S. Rogers. 1976. Cost of producing food grains, feed grains, oil seeds, and cotton, selected years. USDA, Econ. Res. Serv., AER-338.
- Krombein, K. V., P. D. Hurd Jr., and D. R. Smith. 1979. Catalog of *Hymenoptera* in America north of Mexico. Smithsonian Institution Press, Washington, DC.
- Kuhn, D. G., R. W. Addor, R. E. Diehl, J. A. Furch, V. M. Kamhi, K. E. Henegar, K. A. Kremer, G. T. Lowen, B. C. Black, T. P. Miller, and M. F. Treacy. 1993. Insecticidal pyrroles, pp. 219-232. In W. Draber, and T. Fujita (eds.), Rational approaches to structure, activity, and ecotoxicity of agrochemicals. CRC Press, Boca Raton, FL.
- Kuhr, R. J. 1973. The metabolic fate of methomyl in the cabbage looper. Pestic. Biochem. Physiol. 3: 113-119.
- Kuhr, R. J., and H. W. Dorrough. 1976. Carbamate insecticides: chemistry, biochemistry and toxicology. CRC Press, Ohio.
- Kuno, E. 1991. Sampling and analysis of insect populations. Annu. Rev. Entomol. 36: 285-302.
- Kurstak, E., and P. Tijssen. 1982. Microbial and viral pesticides: modes of action, safety, and future prospects, pp. 3-32. In E. Kurstak (ed.), Microbial and viral pesticides. Marcel Dekker, New York.
- Lacewell, R. D., D. G. Bottrell, R. V. Billingsley, D. R. Rummel, and J. L. Larson. 1974. Texas High Plains reproductive/diapause boll weevil control program: preliminary estimate of the impact. Texas Agric. Exp. Sta. MP-1165,
- Lacewell, R. D., and S. M. Masud. 1985. Economic and environmental implications of IPM, pp. 79-92. In R. E. Frisbie and P. L. Adkisson (eds.), CIPM: Integrated Pest Management on Major Agricultural Systems. Texas Agric. Exp. Stn. MP-1616.
- Lacewell, R. D., and S. M. Masud. 1988. Economic analysis of cotton IPM programs. Texas A&M University, Department of Agricultural Economics Mimeograph.
- Lacewell, R. D., and C. R. Taylor. 1980. Economic analysis of cotton pest management programs. Texas Agric. Exp. Sta. TA 15972.
- LaChance, L. E. 1979. Genetic strategies affecting the success and economy of the sterile insect release methods, pp. 8-19. In M. A. Hoy, and J. J. McKelvey (eds.), Genetics in relation to insect management. The Rockefeller Foundation, New York.
- LaChance, L. E. 1985. Genetic methods for the control of Lepidoptera species. USDA-ARS Ser. 28.
- LaChance, L. E., R. A. Bell, and R. D. Richard. 1973. Effect of low doses of gamma irradiation on reproduction of male pink bollworms and their F1 progeny. Environ. Entomol. 2: 653-658.
- LaChance, L. E., and E. F. Knipling. 1962. Control of insect populations through genetic manipulations. Ann. Entomol. Soc. Amer. 55: 515-520.
- LaChance, L. E., and R. L. Ruud. 1979. Interstrain and interspecific crosses between *Pectinophora gossypiella* and *P. scutigera*. J. Econ. Entomol. 72: 618-620.
- LaFarge, A. D. 1985. How do you break the resistance cycle? Agrichemical Age, August/September: 12D and 44D.
- Lagadic, L., and L. Bernard. 1993. Topical and oral activities of imidacloprid and cyfluthrin against laboratory strains of *Heliothis virescens* and *Spodoptera littoralis*. Pestic. Sci. 38: 323-328.
- Laing, J. 1937. Host-finding by insect parasites. I. Observations on the finding of hosts by *Alysia manducator*, *Mormoniella vitripennis* and *Trichogramma evanescens*. J. Anim. Ecol. 6: 289-317.
- Lambert, L., J. N. Jenkins, W. L. Parrott, and J. C. McCarty. 1982. Greenhouse technique for evaluating resistance to the bandedwinged whitefly (Homoptera: Aleyrodidae) used to evaluate thirty-five foreign cotton cultivars. J. Econ. Entomol. 75: 1166-1168.
- Lambert, L., J. N. Jenkins, W. L. Parrott, and J. C. McCarty Jr. 1980. Evaluation of foreign and domestic cotton cultivars and strains for boll weevil resistance. Crop Sci. 20: 804-806.
- Lambert, L., J. N. Jenkins, W. L. Parrott, and J. C. McCarty. 1982. Effect of 43 foreign and domestic cotton cultivars and strains on growth of tobacco budworm larvae. Crop Sci. 22: 543-545.

- Lambert, W. R. 1983. Impact of IPM on acreage scouted and insecticide use, pp. 229-230. In Proc. Beltwide Cotton Prod. Res. Conf.
- Lambert, W. R. 1984. Thrips and whitefly in the southeast, pp. 180-181. In Proc. Beltwide Cotton Prod. Res. Conf.
- Lambert, W. R. 1985. The thrips problem, pp. 130-131. In Proc. Beltwide Cotton Prod. Res. Conf.
- Landivar, J. A., D. N. Baker, and J. N. Jenkins. 1983a. Application of GOSSYM to genetic feasibility studies. I. Analyses of fruit abscission and yield in okra-leaf cottons. Crop Sci. 23: 497-504.
- Landivar, J. A., D. N. Baker, and J. N. Jenkins. 1983b. Application of GOSSYM to genetic feasibility studies. II. Analyses of increasing photosynthesis, specific leaf weight and longevity of leaves in cotton. Crop Sci. 23: 504-510.
- Landivar, J. A., B. R. Eddleman, J. H. Benedict, D. J. Lawler, D. Ring, and D. T. Gardiner. 1991. ICEMM, an integrated crop ecosystem management model: agronomic component, pp. 453-457. In Proc. Beltwide Cotton Prod. Res. Conf.
- Lankas, G. R., and L. R. Gordon. 1989. Toxicology, pp. 89-112. In W. C. Campbell (ed.), Ivermectin and avermectin. Springer-Verlag, New York.
- Larson, D. L., and R. T. Huber. 1975. A simulation of the pink bollworm-cotton plant interaction. Ariz. Agric. Exp. Stn. Tech. Pap. 142.
- Larson, J. L., R. D. Lacewell, J. D. Casey, L. N. Namken, M. D. Heilman, and R. D. Parker. 1975. Impact of short season cotton production in Texas Lower Rio Grande Valley on producer returns, insecticide use and energy consumption. Texas Agr. Exp. Sta. MP. 1204.
- Larson, L. L., E. E. Kenaga, and R. W. Morgan. 1985. Commercial and experimental organic insecticides. Entomological Society of America, College Park.
- Lasota, J. A., and R. A. Dybas. 1991. Avermectins, a novel class of compounds: implications for use in arthropod pest control. Annu. Rev. Entomol. 36: 91-117.
- Laster, M. L. 1972. Interspecific hybridization of *Heliothis virescens* and *H. subflexa*. Environ. Entomol. 1: 682-687.
- Laster, M. L., J. E. Carpenter, M. D. Huettel, S. G. Miller, F. I. Proshold, R. T. Roush, J. C. Schneider, and A. N. Sparks. 1988a. Autocidal systems for *Heliothis* control, pp. 74-103. In G. A. Herzog, S. Ramaswamy, G. Lentz, J. L. Goodenough, and J. J. Hamm (eds.), Theory and tactics of *Heliothis* population management. III- Emerging control tactics and techniques. S. Coop. Ser. Bull. No. 337.
- Laster, M. L., E. G. King, and R. E. Furr. 1988b. Interspecific hybridization of *Heliothis subflexa* and *H. virescens* (Lepidoptera: Noctuidae) from Argentina. Environ. Entomol. 17: 1016-1018.
- Laster, M. L., and R. E. Furr. 1972. *Heliothis* populations in cotton-sesame interplantings. J. Econ. Entomol. 65: 1524-1525.
- Laster, M. L., C. E. Goodpasture, E. G. King, and P. Twine. 1985. Results from crossing the bollworm *Helicoverpa armigera* x *H. zea* in search of backcross sterility, pp. 146-147. In Proc. Beltwide Cotton Prod. Res. Conf.
- Laster, M. L., D. F. Martin, S. D. Pair, and R. E. Furr. 1978. Infusion of hybrid *Heliothis* male sterility into *H. virescens* populations in field cages. Environ. Entomol. 7: 364-366.
- Laster, M. L., D. F. Martin, and D. W. Parvin Jr. 1976. Potential for suppressing tobacco budworm (Lepidoptera: Noctuidae) by genetic sterilization. Miss. Agr. Forestry Expt. Sta. Tech. Bull. 82.
- Laster, M. L., S. D. Pair, and D. F. Martin. 1982. Acceptance and development of *Heliothis subflexa* and *H. virescens* (Lepidoptera: Nocutidae) and their hybrid and backcross progeny on several plant species. Environ. Entomol. 11: 979-980.
- Laster, M. L., and J. L. Roberson. 1990. *Heliothis* pupal handling and placement methods for improved moth emergence in wide-area release programs, pp. 311-312. In Proc. Beltwide Cotton Prod. Res. Conf.
- Latson, L. N., J. N. Jenkins, W. L. Parrott, and F. G. Maxwell. 1977. Behavior of the tarnished plant bug, *Lygus lineolaris*, on cotton, *Gossypium hirsutum* L., and horseweed, *Erigeron canadensis*. Miss. Agri. and For. Exp. Stn., Tech. Bull. 85.

- Latta, R., L. Anderson, E. Rogers, V. LaMer, S. Hochberg, H. Lauterbach, and I. Johnson. 1947. The effect of particle size and velocity on movement of DDT aerosols in a wind tunnel on the mortality of mosquitoes. *J. Wash. Acad. Sci.* 37: 397-407.
- Laughlin, J. M., and R. E. Gold. 1987. The vaporization of methyl parathion from contaminated cotton fabrics. *Textile Chemists and Colorists* 19: 39-42.
- Lavy, T. L., J. D. Mattice, R. R. Fynn, and M. Davis. 1982. Limiting applicator exposure to pesticides. *World of Ag. Aviation* 9: 33-37.
- Law, J. H., and F. E. Regnier. 1971. Pheromones. *Annu. Rev. Biochem.* 40: 533-548.
- Law, S. E., and H. D. Bowen. 1966. Charging liquid spray by electrostatic induction. *Trans. ASAE* 9: 501-506.
- Lawrance, N. A. 1972. An economic evaluation of cotton pest management in Pinal County, Arizona. Master's thesis. Agric. Expt. Sta., Dept. of Agric. Econ., University of Arizona, Tucson, AZ.
- Lawrence, R. K., and T. F. Watson. 1979. Predator-prey relationship of *Geocoris punctipes* and *Heliothis virescens*. *Environ. Entomol.* 8: 245-248.
- Lazurus, W. F., and B. L. Dixon. 1984. Agricultural pests as common property: control of the corn rootworm. *Am. J. Agri. Econ.* 66: 456-465.
- Lee, J. A. 1977. Registration of North Carolina 1 and 2 smoothleaf cotton germplasm. *Crop Sci.* 17: 826.
- Lee, J. G. 1889. Report of the North Louisiana Experiment Station, Calhoun, La. *Louisiana Agr. Exp. Sta. Bull.* 27 (1st Ser.).
- Lee, J. G. 1890. Results of 1890 obtained on the North Louisiana Agricultural Experiment Station. *Louisiana Agric. Exp. Stn. Bull.* 8 (2nd Ser.).
- Lee, J. G. 1892. Report of results for 1892 at Calhoun, La. *Louisiana Agr. Exp. Sta. Bull.* 21 (2nd Ser.).
- Lee, J. G. 1892. Results of 1891 obtained on the North Louisiana Experiment Station, Calhoun, La. *Louisiana Agric. Exp. Sta. Bull.* 16 (second series).
- Lee, J. G. 1894. Report of results for 1893 at Calhoun, La. *Louisiana Agric. Exp. Stn. Bull.* 29 (2nd Ser.).
- Leeper, J. R., R. T. Roush, and H. T. Reynolds. 1986. Pesticide resistance: strategies and tactics for management. *National Academy of Sciences* 335-346.
- Leftwich, R., and R. Eckert. 1982. The price system and resources allocation. Dryden Press, Chicago.
- Legaspi Jr., B. A. C., W. L. Sterling, A. W. Hartstack Jr., and D. A. Dean. 1989. Testing the interactions of pest-predator-plant components of the TEXCIM model. *Environ. Entomol.* 18: 157-163.
- Leggett, J. E., W. A. Dickerson, K. P. Burnham, S. H. Roach, A. R. Hopkins, and F. R. Planer. 1988. Boll weevil (Coleoptera: Curculionidae): emergence profile of overwintered weevils measured by grandlure-baited traps and predicting total emergence. *Environ. Entomol.* 17: 903-910.
- Legner, E. F. 1979. Emergence patterns and dispersal in *Chelonus* spp. near *curvimaculatus* and *Pristomerus hawaiiensis* parasitic on *Pectinophora gossypiella*. *Ann. Entomol. Soc. Amer.* 72: 681-686.
- Legner, E. F., and R. A. Medved. 1979. Influence of parasitic hymenoptera on the regulation of pink bollworm, *Pectinophora gossypiella*, on cotton in the Lower Colorado desert. *Environ. Entomol.* 922-930.
- Leicht, W. 1993. Imidacloprid - a chloronicotinyl insecticide. *Pestic. Outlook* 4: 17-21.
- Leigh, T. F. 1963. Considerations of distribution, abundance and control of acarine pests of cotton. *Adv. Acarology* 1: 14-20.
- Leigh, T. F. 1963. Life history of *Lygus hesperus* (Hemiptera: Miridae) in the laboratory. *Ann. Entomol. Soc. Amer.* 56: 865-867.
- Leigh, T. F. 1966. A reproductive diapause in *Lygus hesperus* Knight. *J. Econ. Entomol.* 59: 1280-1281.
- Leigh, T. F. 1969. Chemical and microbial insecticide studies for cotton insect control, pp. 53-81. In *Proc. Cotton Symposium*. Univ. of Calif., Berkeley.

- Leigh, T. F. 1984. Spider mite (Acarina: Tetranychidae) infestation development on cotton, pp. 756-760. In D. A. Griffiths, and C. E. Bowman (eds.), Acarology VI, Vol. 2.
- Leigh, T. F. 1984. Thrips and whitefly in the far west, pp. 181-182. In Proc. Beltwide Cotton Prod. Res. Conf.
- Leigh, T. F. 1985. Cotton, pp. 349-358. In W. Helle, and M. W. Sabelis (eds.), Spider mites: their biology, natural enemies and control. Elsevier, Amsterdam.
- Leigh, T. F. 1988. Spider mites on Australian cotton. Australian Cotton Grower. Aug.-Oct.
- Leigh, T. F., and V. E. Burton. 1976. Spider mite pests of cotton. Univ. of Calif., Division of Agric. Sci., Leaflet 2888.
- Leigh, T. F., and D. Gonzalez. 1976. Field cage evaluation of predators for control of *Lygus hesperus* Knight on cotton. Environ. Entomol. 5: 948-952.
- Leigh, T. F., D. W. Grimes, W. L. Dickens, and C. E. Jackson. 1974. Planting pattern, plant population, irrigation, and insect interactions in cotton. Environ. Entomol. 3: 492-496.
- Leigh, T. F., and R. E. Hunter. 1969. Predaceous spiders in California cotton. Calif. Agric. 23: 4-5.
- Leigh, T. F., A. H. Hyer, J. H. Benedict, and P. F. Wynholds. 1985. Observed population increase, nymphal weight gain, and oviposition nonpreference as indicators of *Lygus hesperus* (Heteroptera: Miridae) resistance in glandless cotton. J. Econ. Entomol. 78: 1109-1113.
- Leigh, T. F., and C. E. Jackson. 1968. Topical toxicity of several chlorinated hydrocarbon, organophosphorous, and carbamate insecticides to *Lygus hesperus*. J. Econ. Entomol. 61: 328-330.
- Leigh, T. F., C. E. Jackson, P. F. Wynholds, and J. A. Cota. 1977. Toxicity of selected insecticides applied topically to *Lygus hesperus*. J. Econ. Entomol. 70: 42-44.
- Leigh, T. F., T. A. Kerby, and P. F. Wynholds. 1988. Cotton square damage by the plant bug *Lygus hesperus* (Hemiptera: Miridae) and abscission rates. J. Econ. Entomol. 81: 1328-1337.
- Lemmon, H. E. 1986. COMAX: an expert system for cotton crop management. Science 233: 29-33.
- Lenteren, J. C. v. 1981. Host discrimination by parasitoids, pp. 306. In D. A. Nordlund, R. L. Jones, and W. J. Lewis (eds.), Semiochemicals: their role in pest control. Wiley, New York.
- Lentz, G. L., T. F. Watson, and R. V. Carr. 1974. Dosage-mortality studies on laboratory-reared larvae of the tobacco budworm and the bollworm. J. Econ. Entomol. 67: 719-720.
- Leonard, B. R., J. B. Graves, P. Clay, C. A. White, and E. Burris. 1993. Management of bollworm and tobacco budworm with insecticides in northeast Louisiana in 1992, pp. 1029-1034. In Proc. Beltwide Cotton Prod. Res. Conf.
- Leonard, B. R., J. B. Graves, T. C. Sparks, and A. M. Pavloff. 1987. Susceptibility of bollworm and tobacco budworm larvae to pyrethroid and organophosphate insecticides, pp. 320-324. In Proc. Beltwide Cotton Prod. Res. Conf.
- Leonard, B. R., J. B. Graves, T. C. Sparks, and A. M. Pavloff. 1988a. Evaluation of field populations of tobacco budworm and bollworm (Lepidoptera: Noctuidae) for resistance to selected insecticides. J. Econ. Entomol. 81: 1521-1528.
- Leonard, B. R., T. C. Sparks, and J. B. Graves. 1988b. Insecticide cross-resistance in pyrethroid-resistant strains of tobacco budworm, *Heliothis virescens* (F.) (Lepidoptera: Noctuidae). J. Econ. Entomol. 81: 1529-1535.
- Leonard, B. R., M. B. Layton, J. L. Baldwin, and D. R. Johnson. 1994. 1993 Mid-South experiences and insecticide resistance management guidelines for 1994, pp. 116-121. In Proc. Beltwide Cotton Prod. Res. Conf.
- Leonhardt, B. A. 1990. Controlled-release systems for the delivery of insect pheromones, pp. 169-179. In R. M. Wilkins (ed.), Controlled release and pest management. Taylor and Francis, London.
- Leonhardt, B. A., R. T. Cunningham, W. A. Dickerson, V. C. Mastro, R. L. Ridgway, and C. P. Schwalbe. 1990. Dispenser design and performance criteria for insect attractants, pp. 113-129. In R. L. Ridgway, R. M. Silverstein, and M. N. Inscoe (eds.), Behavior-modifying Chemicals for Insect Management: Applications of Pheromones and Other Attractants. Marcel Dekker, Inc., New York.

- Leonhardt, B. A., R. T. Cunningham, R. E. Rice, and E. M. Harte. 1987. Performance of controlled-release formulations of trimedlure to attract the Mediterranean fruit fly (*Ceratitis capitata*). *Entomol. Exp. Appl.* 44: 45-51.
- Leonhardt, B. A., R. T. Cunningham, R. E. Rice, E. M. Harte, and T. P. McGovern. 1985. Performance of controlled-release formulations of trimedlure, the attractant for the Mediterranean fruit fly. *Proc. 12th Internat. Symp. Controlled Release Bioactive Materials*. Geneva, Switzerland.
- Leonhardt, B. A., W. A. Dickerson, R. L. Ridgway, and E. D. DeVilbiss. 1988. Laboratory and field evaluation of controlled release dispensers containing grandlure, the pheromone of the boll weevil (Coleoptera: Curculionidae). *J. Econ. Entomol.* 81: 937-943.
- Leonhardt, B. A., R. T. Cunningham, R. E. Rice, E. M. Harte, and J. Hendrichs. 1989. Design, effectiveness, and performance criteria of dispenser formulations of trimedlure, an attractant of the Mediterranean fruit fly (Diptera: Tephritidae). *J. Econ. Entomol.* 82: 860-867.
- Leppla, N. C., and T. R. Ashley. 1978. Facilities for insect research and production. *USDA Tech. Bull.* No. 1576.
- Leppla, N. C., and T. R. Ashley. 1989. Quality control in insect mass production: a review and model. *Bull. Entomol. Soc. Amer.* 35: 33-44.
- Leser, J. F. 1986a. Thrips management: problems and progress, pp. 175-178. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Leser, J. F. 1986b. Managing pests in High Plains cotton, pp. 47-52. In *Summary Proceedings Western Cotton Production Conference*, Lubbock, Texas.
- Leser, J. F. 1989. Focus on entomology. *Tex. Agric. Ext. Serv.* 28(9).
- Leser, J. F., C. T. Allen, E. P. Boring III, and T. W. Fuchs. 1986. Management of cotton insects in the High Plains. Rolling Plains and Trans-Pecos areas of Texas. *Tex. Agric. Ext. Serv.* B-1209.
- Leser, J. F., E. P. Boring III, T. W. Fuchs, and C. W. Neeb. 1981. Management of cotton insects in the High Plains, Rolling Plains and Trans-Pecos areas of Texas. *Tex. Agric. Ext. Serv.* B-1209.
- Leser, J. F., T. W. Fuchs, C. T. Allen, and E. P. Boring III. 1988. Management of cotton insects in the High Plains, Rolling Plains and Trans Pecos areas of Texas. *Tex. Agric. Ext. Serv.* B-1209.
- Leslie, P. H. 1945. On the use of matrices in certain population mathematics. *Biometrika* 35: 213-245.
- Levin, M. D. 1970. The effects of pesticides on beekeeping in the United States. *Am. Bee J.* 110: 8-9.
- Levins, R. A., and M. W. Parker. 1983. Short run aspects of a genetics control program for *Heliothis virescens* (Lepidoptera: Noctuidae). *Ecol. Modelling* 19: 213-220.
- Levins, R. A., M. W. Parker, and D. W. Parvin. 1981. User's manual for a simulation model of genetic control of the tobacco budworm. *Dept. Agric. Econ.*, Mississippi State Univ., AEC Tech. Publ. No. 31.
- Lewis, C. F., and T. R. Richmond. 1968. Cotton as a crop, pp. 1-22. In F. C. Elliot, M. Hoover, and W. K. Porter Jr. (eds.), *Advances in production and utilization of quality cotton: principles and practices*. The Iowa State Press, Ames.
- Lewis, W. J. 1970a. Life history and anatomy of *Microplitis croceipes* (Hymenoptera: Braconidae) a parasite of *Heliothis* spp. (Lepidoptera: Noctuidae). *Ann. Entomol. Soc. Amer.* 63: 67-70.
- Lewis, W. J. 1970b. Study of species and instars of larval *Heliothis* parasitized by *Microplitis croceipes*. *J. Econ. Entomol.* 63: 363-365.
- Lewis, W. J., M. Beevers, D. A. Nordlund, H. R. Gross Jr., and K. S. Hagen. 1979. Kairomones and their use for management of entomophagous insects. IX. Investigation of various kairomone treatment patterns for *Trichogramma* spp. *J. Chem. Ecol.* 5: 673-680.
- Lewis, W. J., and J. R. Brazzel. 1966. Biological relationships between *Cardiochiles nigriceps* and the *Heliothis* complex. *J. Econ. Entomol.* 59: 820-823.
- Lewis, W. J., and J. R. Brazzel. 1968. A three-year study of parasites of the bollworm and the tobacco budworm in Mississippi. *J. Econ. Entomol.* 61: 673-676.
- Lewis, W. J., J. R. Brazzel, and S. B. Vinson. 1967. *Heliothis subflexa* a host of *Cardiochiles nigriceps*. *J. Econ. Entomol.* 60: 615-616.
- Lewis, W. J., H. R. Gross Jr., and D. A. Nordlund. 1985. Behavioral manipulation of *Trichogramma* (Hymenoptera: Trichogrammatidae). *Southwest. Entomol. Suppl.* 8: 49-55.

- Lewis, W. J., and R. L. Jones. 1971. Substance that stimulates host-seeking by *Microplitis croceipes* (Hymenoptera: Braconidae), a parasite of *Heliothis* species. Ann. Entomol. Soc. Amer. 64: 471-473.
- Lewis, W. J., R. L. Jones, D. A. Nordlund, and H. R. Gross Jr. 1975. Kairomones and their use for management of entomophagous insects. II. Mechanisms causing increase in rate of parasitization by *Trichogramma* spp. J. Chem. Ecol. 1: 349-360.
- Lewis, W. J., and D. A. Nordlund. 1980. Employment of parasitoids and predators for fall armyworm control. Fla. Entomol. 63: 433-438.
- Lewis, W. J., D. A. Nordlund, H. R. Gross Jr., R. L. Jones, and S. L. Jones. 1977. Kairomones and their use for management of entomophagous insects. V. moth scales as a stimulus for predation of *Heliothis zea* (Boddie) eggs by *Chrysopa carnea* Stephens larvae. J. Chem. Ecol. 3: 483-487.
- Lewis, W. J., D. A. Nordlund, R. C. Gueldner, P. E. A. Teal, and J. H. Tumlinson. 1982. Kairomones and their use for management of entomophagous insects. XIII. Kairomonal activity for *Trichogramma* spp. of abdominal tips, excretion, and a synthetic sex pheromone blend of *Heliothis zea* (Boddie) moths. J. Chem. Ecol. 8: 1323-1331.
- Lewis, W. J., and J. W. Snow. 1971. Fecundity, sex ratios, and egg distribution by *Microplitis croceipes*, a parasite of *Heliothis*. J. Econ. Entomol. 64: 6-8.
- Lewis, W. J., and S. B. Vinson. 1968. Egg and larval development of *Cardiochiles nigriceps*. Ann. Entomol. Soc. Amer. 61: 561-565.
- Lewis, W. J., and S. B. Vinson. 1968. Immunological relationships between the parasite *Cardiochiles nigriceps* Vierick and certain *Heliothis* species. J. Insect Physiol. 14: 631-626.
- Lewis, W. J., and S. B. Vinson. 1971. Suitability of certain *Heliothis* (Lepidoptera: Noctuidae) as hosts of the parasite *Cardiochiles nigriceps*. Ann. Entomol. Soc. Amer. 64: 970-972.
- Li, L. Y. 1982. *Trichogramma* sp. and their utilization in People's Republic of China. Les Trichogrammes, Colloq. INRA (France) 9.
- Libby, L. W., and T. J. Kovac. 1987. Rural ground water contamination: Impacts of and potential benefits from land use planning and zoning, pp. 351-375. In F. M. D'Itri, and L. G. Wolfson (eds.), Rural Groundwater Contamination. Lewis Publishers, Inc., Chelsea, Michigan.
- Lidell, M. C., G. A. Niles, and J. K. Walker. 1986. Response of nectarless cotton genotypes to cotton fleahopper (Heteroptera: Miridae) infestation. J. Econ. Entomol. 79: 1372-1376.
- Lim, K. P., and R. K. Stewart. 1976. Parasitism of the tarnished plant bug, *Lygus lineolaris* (Hemiptera: Miridae), by *Peristenus pallipes* and *P. pseudopallipes* (Hymenoptera: Braconidae). Can. Entomol. 108: 601-608.
- Lincoln, C. 1951. Boll weevil infestations and control in eastern Arkansas in 1950. J. Econ. Entomol. 44: 766-769.
- Lincoln, C. 1972. Seasonal abundance, pp. 2-7. In Distribution, abundance, and control of *Heliothis* species in cotton and other host plants. S. Coop. Ser. Bull. 169.
- Lincoln, C. 1978. Procedures for scouting and monitoring for cotton insects. Ark. Agr. Exp. Stn. Bull. 829.
- Lincoln, C., W. P. Boyer, C. Dowell, Barnes, and G. Dean. 1970. Six years experience with point sample cotton insect scouting in Arkansas. Ark. Agr. Exp. Station Bull. 754.
- Lincoln, C., W. P. Boyer, and F. D. Miner. 1975. The evolution of insect pest management in cotton and soybeans: past experiences, present status, and future outlook in Arkansas. Environ. Entomol. 4: 1-7.
- Lincoln, C., G. C. Dowell, W. P. Boyer, and R. C. Hunter. 1963. The point sample method of scouting boll weevil. Ark. Agric. Exp. Stn. Bull. 66.
- Lincoln, C., and J. B. Graves. 1978. Insecticides: resistance and new insecticides, formulation and application technology, pp. 74-83. In The boll weevil: management strategies. S. Coop. Ser. Bull. 228.
- Lincoln, C., and C. R. Parencia Jr. 1977. Insect pest management in perspective. Bull. Entomol. Soc. Amer. 23: 9-14.

- Lincoln, C., J. R. Phillips, W. H. Whitcomb, G. C. Dowell, W. P. Boyer, K. O. Bell Jr., G. L. Dean, E. J. Matthews, J. B. Graves, L. D. Newsom, D. F. Clower, J. R. Bradley Jr., and J. L. Bagent. 1967. The bollworm-tobacco budworm problem in Arkansas and Louisiana. Ark. Agr. Exp. Stn. Bull. 720.
- Lindgren, J. E., T. J. Henneberry, J. R. Raulston, L. J. F. Jech, and K. A. Valero. 1994. Current status of pink bollworm control with entomopathogenic nematodes, pp. 1242-1243. In Proc. Beltwide Cotton Prod. Res. Conf.
- Linden, T. 1954. Cotton. (Reprinted in) Viewpoints 250:(1) 1.
- Lindig, O. H. 1976. Mass rearing of boll weevils, pp. 50-52. In Proc. Conf. on Boll Weevil Suppression, Management and Elimination Technology. USDA, ARS-S-71.
- Lindig, O. H. 1984. Development of boll weevil diets, pp. 53-83. In P. P. Sikorowski, J. G. Griffin, J. Roberson, and O. H. Lindig (eds.), Boll weevil mass rearing technology. Univ. Press of Miss., Jackson.
- Lindig, O. H., J. Roberson, and J. E. Wright. 1979. Evaluation of three larval and adult boll weevil diets. J. Econ. Entomol. 72: 450-452.
- Lindquist, A. W. 1955. The use of gamma irradiations for control or eradication of the screw-worm. J. Econ. Entomol. 48: 467-469.
- Lindquist, D. A., L. J. Gorzycki, M. S. Mayer, A. L. Scales, and T. B. Davich. 1964. Laboratory studies on sterilization of the boll weevil with apholate. J. Econ. Entomol. 57: 745-750.
- Lingren, P. D. 1969. Approaches to the management of *Heliothis* spp in cotton with *Trichogramma* spp, pp. 207-217. In Proceedings, Tall Timbers Conference on Ecol. Anim. Contr. Habitat Mng. 1.
- Lingren, P. D. 1977. *Campoletis sonorensis*: maintenance of a population on tobacco budworm in a field cage. Environ. Entomol. 6: 72-76.
- Lingren, P. D. 1983. Behavior of pink bollworm (Lepidoptera: Gelichiidae) adults during eclosion to departure from site of emergence. Ann. Entomol. Soc. Amer. 76: 657-660.
- Lingren, P. D., and D. E. Bryan. 1965. Dosage-mortality data on the bollworm, *Heliothis zea*, and the tobacco budworm, *Heliothis virescens*, in Oklahoma. J. Econ. Entomol. 58: 14-18.
- Lingren, P. D., G. L. Greene, D. R. Davis, A. H. Baumhover, and T. J. Henneberry. 1977. Nocturnal behavior of four lepidopteran pests that attack tobacco and other crops. Ann. Entomol. Soc. Amer. 70: 161-167.
- Lingren, P. D., and M. J. Lukefahr. 1977. Effects of nectariless cotton on caged populations of *Campoletis sonorensis*. Environ. Entomol. 6: 586-588.
- Lingren, P. D., J. R. Raulston, T. N. Shaver, and E. V. Wann. 1990. Mortality of newly emerged adult corn earworms following treatment with a feeding stimulant bait, pp. 128-132. In Proceedings, 9th Annual Oklahoma Horticultural Industries Show, January 5-6, 1990, Tulsa, OK.
- Lingren, P. D., J. R. Raulston, and A. N. Sparks. 1977. Interception of male tobacco budworm by barriers of released, laboratory-reared sterile females. Environ. Entomol. 6: 217-221.
- Lingren, P. D., J. R. Raulston, A. N. Sparks, and F. I. Proshold. 1979. Tobacco budworm: nocturnal behavior of laboratory-reared irradiated and native adults in the field. SEA-ARS-W-5 Series: 17.
- Lingren, P. D., and R. L. Ridgway. 1967. Toxicity of five insecticides to several insect predators. J. Econ. Entomol. 60: 1639-1641.
- Lingren, P. D., R. L. Ridgway, C. B. Cowan, J. W. Davis, and W. C. Watkins. 1968. Biological control of the bollworm and the tobacco budworm by arthropod predators affected by insecticides. J. Econ. Entomol. 61: 1521-1525.
- Lingren, P. D., R. L. Ridgway, and S. L. Jones. 1968. Consumption by several common arthropod predators of eggs and larvae of two *Heliothis* species that attack cotton. Ann. Entomol. Soc. Amer. 61: 613-618.
- Lingren, P. D., A. N. Sparks, J. R. Raulston, and W. W. Wolf. 1978. Applications for nocturnal studies of insects. Bull. Entomol. Soc. Amer. 24: 206-212.
- Lingren, P. D., W. B. Warner, J. R. Raulston, M. Kehat, T. J. Henneberry, S. D. Pair, A. Zvirgzdins, and J. M. Gillespie. 1988. Observations on the emergence of adults from natural populations of corn earworm, *Heliothis zea* (Boddie) (Lepidoptera: Noctuidae). Environ. Entomol. 17: 254-258.

- Lingren, P. D., and W. W. Wolf. 1982. Nocturnal activity of the tobacco budworm and other insects, pp. 491. In J. L. Hatfield, and I. J. Thomason (eds.), *Biometeorology in integrated pest management*. Academic Press, New York.
- Lipa, J. J. 1963. Infections caused by Protozoa other than Sporozoa, pp. 335-361. In E. A. Steinhaus (ed.), *Insect pathology, an advanced treatise*, Vol. II. Academic Press, New York.
- Lipsey, Richard L. 1970. The hosts of *Neurocolpus nubilus* (Say), the clouded plant bug (Hemiptera: Miridae). *Entomol. News* 81: 213-219.
- Litchfield, M. H. 1985. Toxicity to mammals, pp. 99-162. In J. P. Leahey (ed.), *The pyrethroid insecticides*. Taylor and Francis Ltd., London.
- Little, E. J., A. R. McCaffery, C. H. Walker, and T. Perker. 1989. Evidence for an enhanced metabolism of cypermethrin by a monooxygenase in a pyrethroid-resistance strain of the tobacco budworm (*Heliothis virescens* F.). *Pestic. Biochem. Physiol.* 34: 58-68.
- Little, V. A. 1960. A brief history of entomology at the Agricultural and Mechanical College of Texas. *College Arch.* College Station, Texas.
- Little, V. A., and D. F. Martin. 1942. Cotton insects of the United States. Burgess Publishing Company, Minneapolis.
- Liu, M. Y., and F. W. Plapp Jr. 1992. Mechanism of formamidine synergism of pyrethroids. *Pestic. Biochem. Physiol.* 43: 134-140.
- Lloyd, E. P. 1972. Progress report on the pilot boll weevil eradication experiment, pp. 46-49. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Lloyd, E. P., W. A. Dickerson, and G. H. McKibben. 1981. Boll weevil eradication trial: research team report 1977-1980. Attachment E of Appendix A, biological evaluation of beltwide boll weevil/cotton insect management programs. USDA, Science and Education Administration,
- Lloyd, E. P., M. L. Laster, and M. E. Merkl. 1964. A field study of diapause, diapause control, and population dynamics of the boll weevil. *J. Econ. Entomol.* 57: 433-436.
- Lloyd, E. P., J. L. McMeans, and M. E. Merkl. 1961. Preferred feeding and egg laying sites of the boll weevil and the effect of weevil damage on the cotton plant. *J. Econ. Entomol.* 54: 979-984.
- Lloyd, E. P., and M. E. Merkl. 1966. A field cage study of population dynamics of the boll weevil. *J. Econ. Entomol.* 59: 85-86.
- Lloyd, E. P., F. C. Tingle, and R. T. Gast. 1967. Environmental stimuli inducing diapause in the boll weevil. *J. Econ. Entomol.* 60: 99-102.
- Lloyd, E. P., F. C. Tingle, J. R. McCoy, and T. B. Davich. 1966. The reproduction-diapause approach to population control of the boll weevil. *J. Econ. Entomol.* 59: 813-816.
- Lloyd, E. P., F. C. Tingle, M. E. Merkel, E. C. Burt, D. B. Smith, and T. B. Davich. 1967. Comparison of three rates of application of ultra-low-volume azinphosmethyl in a reproduction-diapause control program against the boll weevil. *J. Econ. Entomol.* 60: 1691-1699.
- Loan, C. C. 1965. Life cycle and development of *Leiophron pallipes* Curtis (Hymenoptera: Braconidae, Euphorinae) in five mirid hosts in the Belleville district. *Proc. Entomol. Soc. Ontario* 95: 115-121.
- Loan, C. C. 1970. Two new parasites of the tarnished plant bug in Ontario: *Leiophron pseudopalipes* and *Euphoriana lygivora*. *Proc. Entomol. Soc. Ontario* 100: 188-195.
- Loan, C. C. 1980. Plant bug hosts (Heteroptera: Miridae) of some parasites (Hymenoptera: Braconidae) near Belleville, Ontario, Canada. *Naturaliste Can.* 107: 87-93.
- Loan, C. C., and C. H. Craig. 1976. Euphorine parasitism of *Lygus* spp. in alfalfa in western Canada. *Naturaliste Can.* 103: 497-500.
- Loan, C. C., and S. R. Shaw. 1987. Euphorine parasites of *Lygus* and *Adelphocoris* (Hymenoptera: Braconidae and Heteroptera: Miridae), pp. 69-75. In R. C. Hedlund, and H. M. Graham (eds.), *Economic importance and biological control of *Lygus* and *Adelphocoris* in North America*, ARS-64.
- Lockley, T. C., and O. P. Young. 1987. Prey of the striped lynx spider, *Oxyopes salticus* (Araneae: Oxyopidae), on cotton in the delta area of Mississippi. *J. Arachnol.* 14: 395-397.

- Lockwood, J. A., T. C. Sparks, and R. N. Story. 1984. Evolution of insect resistance to insecticides: a reevaluation of the roles of physiology and behavior. Bull. Entomol. Soc. Am. 30: 41-51.
- Lockwood, J. A., R. N. Story, R. L. Byford, T. C. Sparks, and S. S. Quisenberry. 1985. Behavioral resistance to the pyrethroids in the horn fly *Haematobia irritans* (L.) (Diptera: Muscidae). Environ. Entomol. 14: 873-880.
- Lofgren, C. S. 1986. The economic importance and control of imported fire ants in the United States, pp. 227-256. In S. B. Vinson (ed.), Economic impact and control of social insects. Praeger Publishers, New York.
- Lofgren, C. S., W. A. Banks, and B. M. Glancey. 1975. Biology and control of imported fire ants. Annu. Rev. Entomol. 20: 1-30.
- Logan, J. A. 1988. Toward an expert system for development of pest simulation models. Environ. Entomol. 17: 359-376.
- Logan, J. A., R. E. Stinner, R. L. Rabb, and J. S. Bacheler. 1979. A descriptive model for predicting spring emergence of *Heliothis zea* populations in North Carolina. Environ. Entomol. 8: 141-146.
- Loh, D. K., M. D. Connor, and P. Janiga. 1991. Jack pine budworm decision support system: A prototype. AI Applications 5: 29-45.
- Long, D. W., J. A. Ottea, J. B. Graves, B. R. Leonard, G. E. Church, E. Burris, L. M. Bagwell, R.D. Southwick, and N. P. Tugwell. 1992. Physical incompatibility of insecticides coapplied with foliar urea fertilizer, pp. 850-855. In Proc. Beltwide Cotton Prod. Res. Conf.
- Lopez Jr., J. D. 1982. Emergence pattern of an overwintering population of *Cardiochiles nigriceps* in central Texas. Environ. Entomol. 11: 838-842.
- Lopez Jr., J. D., S. L. Jones, and V. S. House. 1982. Species of *Trichogramma* parasitizing eggs of *Heliothis* spp. and some associated Lepidopterous insects in central Texas. Southwest. Entomol. 7: 87-93.
- Lopez Jr., J. D., and R. K. Morrison. 1980. Overwintering of *Trichogramma pretiosum* in Central Texas. Environ. Entomol. 9: 75-78.
- Lopez Jr., J. D., and R. K. Morrison. 1985. Parasitization of *Heliothis* spp. eggs after augmentative releases of *Trichogramma pretiosum* Riley. Southwest. Entomol. Suppl. 8: 110-137.
- Lopez Jr., J. D., R. L. Ridgway, and R. E. Pinnell. 1976. Comparative efficacy of four insect predators of the bollworm and tobacco budworm. Environ. Entomol. 5: 1160-1164.
- Lopez Jr., J. D., T. N. Shaver, and W. A. Dickerson. 1990. Population monitoring of *Heliothis* spp. using pheromones, pp. 473-496. In R. L. Ridgway, R. M. Silverstein, and M. N. Inscoe (eds.), Behavior-modifying Chemicals for Insect Management: Applications of Pheromones and Other Attractants. Marcel Dekker, Inc., New York.
- Lopez, E. G., and G. L. Teetes. 1976. Selected predators of aphids in grain sorghum and their relation to cotton. J. Econ. Entomol. 69: 198-204.
- Lotka, A. J. 1925. Elements of physiological biology. Williams & Wilkins, Baltimore.
- Lowry, W. L., and R. S. Berger. 1965. Investigations of pink bollworm resistance to DDT in Mexico and the United States. J. Econ. Entomol. 58: 590-591.
- Luckmann, W. H., and R. L. Metcalf. 1982. The pest-management concept, pp. 1-31. In R. L. Metcalf, and W. H. Luckmann (eds.), Introduction to Insect Pest Management. Wiley, New York.
- Lukefahr, M. J. 1961. Factors related to the induction of diapause in the pink bollworm. Ph.D., Texas A&M, College Station.
- Lukefahr, M. J. 1962. Pink bollworm development in relation to age of squares and bolls with notes on biology. J. Econ. Entomol. 55: 158-159.
- Lukefahr, M. J. 1970. The tobacco budworm situation in the Lower Rio Grande Valley and northern Mexico, pp. 140-145. In Proc. Annu. Texas Conf. on Insects, Plant Diseases, Weed and Brush Control, Texas A&M Univ.
- Lukefahr, M. J. 1975. Fleahoppers vs. leafhoppers as pests of glabrous cottons, pp. 93. In Proc. Beltwide Cotton Prod. Res. Conf.

- Lukefahr, M. J., C. B. Cowan, and J. E. Houghtaling. 1970. Field evaluations of improved cotton strains resistant to the cotton fleahopper. *J. Econ. Entomol.* 63: 1101-1103.
- Lukefahr, M. J., and J. E. Houghtaling. 1969. Resistance of cotton strains with high gossypol content to *Heliothis* spp. *J. Econ. Entomol.* 62: 588-591.
- Lukefahr, M. J., J. E. Houghtaling, and D. G. Crumm. 1975. Suppression of *Heliothis* spp. with cottons containing combinations of resistance characters. *J. Econ. Entomol.* 68: 743-746.
- Lukefahr, M. J., J. E. Houghtaling, and H. M. Graham. 1971. Suppression of *Heliothis* populations with glabrous cotton strains. *J. Econ. Entomol.* 58: 486-488.
- Lukefahr, M. J., J. E. Jones, and J. E. Houghtaling. 1976. Fleahopper and leafhopper populations and agronomic evaluations, pp. 84. In Proc. Beltwide Cotton Prod. Res. Conf.
- Lukefahr, M. J., and D. F. Martin. 1966. Cotton-plant pigments as a source of resistance to the bollworm and tobacco budworm. *J. Econ. Entomol.* 59: 176-179.
- Lummis, S. C. R., R. D. Pinnock, and D. B. Sattelle. 1987. GABA receptors of the insect central nervous system, pp. 14-24. In R. M. Hollingworth, and M. B. Green (eds.), *Sites of action for neurotoxic pesticides*. American Chemical Society, Washington, D.C.
- Lund, A. E. 1985. Insecticide: effects on the nervous system, pp. 9-56. In G. A. Kerkut, and L. I. Gilbert (eds.), *Comprehensive insect physiology, biochemistry, and pharmacology*. Vol. 12. Insect control. Pergamon Press, New York.
- Lusby, W. R., J. E. Oliver, G. H. McKibben, and M. J. Thompson. 1987. Free and esterified sterols of cotton buds and anthers. *Lipids* 22: 80-83.
- Luthy, P., J. L. Cprider, and H. M. Fischer. 1982. *Bacillus thuringiensis* as a bacterial insecticide: basic considerations and applications, pp. 35-74. In E. Kurstak (ed.), *Microbial and viral pesticides*. Marcel Dekker, Inc., New York.
- Luttrell, R. G. 1985. Efficacy of insecticides applied ultra low volume in vegetable oils in pesticide formulations and application systems. ASTM Spec. Tech. Publ. 875, American Society for testing and materials.
- Luttrell, R. G. 1985. Plant bugs: an update, pp. 131-133. In Proc. Beltwide Cotton Prod. Res. Conf.
- Luttrell, R. G., M. Bell, and R. T. Roush. 1991. Management of pyrethroid resistance in the tobacco budworm: role of insecticide persistence and insecticide mixtures. *Southwest. Entomol. Suppl.* 15: 93-110.
- Luttrell, R. G., M. Crawford, W. C. Yearian, S. Y. Young, and A. J. Mueller. 1980. Aerial release of *Trichogramma pretiosum* for control of *Heliothis* on cotton. *Ark. Farm Res.* 29: 13.
- Luttrell, R. G., J. R. Phillips, and T. R. Pfriemer. 1986. Cultural control in mid-south U.S. cropping systems, pp. 28-37. In *Theory and tactics of Heliothis population management. I - Cultural and biological control*, S. Coop. Ser. Bull. 316.
- Luttrell, R. G., and J. Reed. 1986. Insecticide selection and use rates: effects on secondary pests, pp. 144-147. In Proc. Beltwide Cotton Prod. Res. Conf.
- Luttrell, R. G., R. T. Roush, A. Ali, J. S. Mink, M. R. Reid, and G. L. Snodgrass. 1987. Pyrethroid resistance in field populations of *Heliothis virescens* (Lepidoptera: Noctuidae) in Mississippi in 1986. *J. Econ. Entomol.* 80: 985-989.
- Luttrell, R. G., and D. B. Smith. 1990. Effect of spray deposition characteristics on insecticide efficacy, pp. 56-70. In *Tenth ASTM Symposium on pesticide formulations and application systems* Denver, CO.
- Luttrell, R. G., and J. T. Wofford. 1984. Mortality of *Heliothis virescens* larvae treated with permethrin in soybean oil. *Proc. Ag. Chem. Uses Soybean Oil* 51-52.
- Luttrell, R. G., W. C. Yearian, and S. Y. Young. 1983. Effect of spray adjuvants on *Heliothis zea* (Lepidoptera: Noctuidae) nuclear polyhedrosis virus efficacy. *J. Econ. Entomol.* 76: 162-167.
- Luttrell, R. G., W. C. Yearian, and S. Y. Young. 1982a. Mortality of *Heliothis* spp. larvae treated with *Heliothis zea* nuclear polyhedrosis virus spray adjuvant combinations on cotton and soybean. *J. Georgia Entomol. Soc.* 17: 447-453.
- Luttrell, R. G., S. Y. Young, W. C. Yearian, and D. L. Horton. 1982b. Evaluation of *Bacillus thuringiensis* - spray adjuvant - viral insecticide combinations against *Heliothis* spp. (Lepidoptera: Noctuidae). *Environ. Entomol.* 11: 783-787.

- MacDonald, R. S., G. S. Surgoner, K. R. Solomon, and C. R. Harris. 1983. Development of resistance to permethrin and dichlorvos by the house fly (Diptera: Muscidae) following continuous and alternating insecticide use on four farms. *Can. Entomol.* 115: 1555-1561.
- MacQuillan, M. J., V. Sucksoong, and G. H. S. Hopper. 1976. Surfactant quantity and deposit particle size influence direct spray and residual deposit toxicity of chlorpyrifos to *Heliothis punctigera*. *J. Econ. Entomol.* 69: 492-493.
- Maddy, K. T., D. Gibbons, L. O'Connell, C. Cooper, N. Saini, T. Lambert, and V. Quean. 1984. Potential exposure of workers to selected pesticides and defoliants while harvesting cotton. California Dept. of Food and Agric. HS-1203.
- Maddy, K. T., D. Richter, and J. Lowe. 1983. The role of pink bollworm infestation in aflatoxin production in cotton plants and the potential exposure to aflatoxin via inhalation by workers harvesting and ginning cotton or handling cotton by-products. California Dept. of Food and Agric. HS-1054.
- Maeda, S., T. Kawai, M. Obinata, H. Fugiwari, T. Horiuchi, Y. Saeki, Y. Sato, and M. Furusawa. 1985. Production of human interferon in silkworm using a baculovirus vector. *Nature* 315: 592-596.
- Magee, P. S. 1982. Structure-activity relationships in phosphoramidates, pp. 101-161. In J. R. Coats (ed.), *Insecticide mode of action*. Academic Press, New York.
- Magee, T. A. 1982. Oxime carbamate insecticides, pp. 71-100. In J. R. Coats (ed.), *Insecticide mode of action*. Academic Press, New York.
- Mahill, J. F., J. N. Jenkins, W. L. Parrott, and J. C. McCarty Jr. 1984. Registration of four doubled haploid cotton germplasms. *Crop Sci.* 24: 625.
- Makela, M. E., and M. D. Huettel. 1979. Model for genetic control of *Heliothis virescens*. *Theor. Appl. Genet.* 54: 225-233.
- Mallet, J. 1989. The evolution of insecticide resistance: Have the insects won? *Trends Ecol. Evol.* 4: 336-340.
- Mallet, J., A. Korman, D. Heckel, and P. King. 1993. Biochemical genetics of *Heliothis* and *Helicoverpa* (Lepidoptera: Noctuidae) and evidence for a founder event in *Helicoverpa zea*. *Ann. Entomol. Soc. Amer.* 86: 189-197.
- Mallet, J., and R. Luttrell. 1991. A model of insecticidal control failure: the example of *Heliothis virescens* on cotton. *Southwest. Entomol. Suppl.* 15: 201-212.
- Mallis, A. 1971. American entomologists. Rutgers University Press, New Brunswick.
- Mally, F. W. 1901. The Mexican cotton boll weevil. *USDA Farmers' Bull.* 130.
- Mally, F. W. 1902. Report on the boll weevil. Von Boeckmann, Schultze and Co., Austin.
- Mangel, M., S. E. Stefanou, and J. E. Wilen. 1985. Modeling *Lygus hesperus* injury to cotton yields. *J. Econ. Entomol.* 78: 1009-1014.
- Mangle, M., J. R. Carey, and R. E. Plant. 1986. Pest control: operations and systems analysis in fruit fly management. Springer-Verlag, New York.
- Mani, S. S. 1985. Evolution of resistance in the presence of two insecticides. *Genetics* 109: 761-783.
- Mani, S. S. 1990. Evolution of resistance with sequential application of insecticides in time and space, pp. 245-276. In *Proceedings, R. Soc. London. Ser. B.*
- Mani, S. S., and R. J. Wood. 1984. Persistence and frequency of application of an insecticide in relation to the rate of evolution of resistance. *Pestic. Sci.* 15: 325-336.
- Manley, D. G. 1986. Effects of cropping history on early and late season pink bollworm flight in Arizona. *J. Agric. Entomol.* 3: 227-232.
- Mansour, F. 1987. Spiders in sprayed and unsprayed cotton fields in Israel, their interactions with cotton pests and their importance as predators of the Egyptian cotton leaf worm, *Spodoptera littoralis*. *Phytoparasitica* 15: 31-41.
- Mansour, F., D. Rosen, A. Shulov, and H. N. Plaut. 1980. Evaluation of spiders as biological control agents of *Spodoptera littoralis* larvae on apple in Israel. *Acta Oecol. Appl.* 1: 225-232.
- Maples, R. L., and J. L. Keogh. 1971. Cotton fertilization studies on loessial plains soils of Eastern Arkansas. *Ark. Agr. Exp. Sta. Rep. Ser.* 194.
- Marcano, R. Factors affecting the distribution and abundance of 3 species of *Tetranychus* spider mites on cotton and the effect of their damage on transpiration and photosynthesis. Ph.D. Thesis, Univ. of California, Riverside.

- Margolies, D. C., and G. G. Kennedy. 1985. Movement of the two-spotted spider mite *Tetranychus urticae* Koch (Acarina: Tetranychidae), among hosts in a corn-peanut agroecosystem. Entomol. Exp. Appl. 37: 55-61.
- Marlatt, C. L. 1933. Report of the chief of the Bureau of Entomology. USDA, Washington, D.C.
- Marrone, P. G., and S. C. MacIntosh. 1992. Insect resistance to biotechnology products: An overview of research and possible management strategies, pp. 272-282. In I. Denholm, A. L. Devonshire, and D. W. Hollomon (eds.), Resistance 91: Achievements and developments in combating pesticide resistance. Elsevier, London.
- Marsh, P. M. 1978. The braconid parasites (Hymenoptera) of *Heliothis* species (Lepidoptera: Noctuidae). Proc. Entomol. Soc. Wash. 80: 15-36.
- Marsh, P. M. 1982. Two new species of *Heterospilus* (Hymenoptera: Braconidae) from Mexico being introduced against the cotton boll weevil, *Anthonomus grandis* (Coleoptera: Curculionidae). Proc. Entomol. Soc. Wash. 84: 849-854.
- Martignoni, M. E., and P. J. Iwai. 1986. A catalog of viral diseases of insects, mites, and ticks. USDA Forest Serv. General Tech. Report PNW-195.
- Martignoni, M. E., and P. J. Iwai. 1981. A catalogue of viral diseases of insects, mites and ticks, pp. 896-911. In H. D. Burges (ed.), Microbial control of pests and plant diseases 1970-1980. Academic Press, New York.
- Martin Jr., W. R., D. A. Nordlund, and W. C. Nettles Jr. 1989. Influence of host developmental state on host suitability and reproductive biology of the parasitoid *Eucelatoria bryani*. Entomol. Exp. Appl. 50: 141-147.
- Martin Jr., W. R., D. A. Nordlund, and W. C. Nettles Jr. 1990. Response of the parasitoid *Eucelatoria bryani* to selected plant material in an olfactometer. J. Chem. Ecol. 16: 499-508.
- Martin, D. F., M. L. Laster, F. I. Proshold, P. D. Lingren, S. D. Pair, J. R. Raulston, J. W. Smith, A. N. Sparks, and E. A. Stadelbacher. 1984. Tobacco budworm: behavioral studies of the sterile hybrid backcross in field releases in Puerto Rico. Environ. Entomol. 13: 701-707.
- Martin, P. A. W., and D. H. Dean. 1981. Genetics and genetic manipulation of *Bacillus thuringiensis*, pp. 299-311. In H. Burges (ed.), Microbial control of pests and plant diseases 1970-1980. Academic Press, New York.
- Martin, R. D., W. W. Ballard, and D. M. Simpson. 1923. Growth of fruiting parts in cotton plants. J. Agr. Res. 25: 195-208.
- Martin, S. H., G. W. Elzen, J. B. Graves, S. Micinski, B. R. Leonard, and E. Burris. 1992. Toxicological responses of tobacco budworms from Louisiana, Mississippi and Texas to selected insecticides, pp. 735-738. In Proc. Beltwide Cotton Prod. Res. Conf.
- Martinez-Carrillo, J. L., L. P. Schouest, and T. A. Miller. 1991. Responses of populations of the tobacco budworm (Lepidoptera: Noctuidae) from northwest Mexico to pyrethroids. J. Econ. Entomol. 84: 363-366.
- Martinez-Carrillo, J. T., and H. T. Reynolds. 1983. Dosage-mortality studies with pyrethroids and other insecticides on the tobacco budworm (Lepidoptera: Noctuidae) from the Imperial Valley, California. J. Econ. Entomol. 76: 983-986.
- Marvel, J. T. 1985. Biotechnology in crop improvement, pp. 477-493. In P. A. Hedin (ed.), Bioregulators for pest control. American Chemical Society, Washington, D.C.
- Masler, E. P., T. J. Kelley, and J. J. Menn. 1993. Insect neuropeptides: discvery and application in insect management. Arch. Insect Biochem. Physiol. 22: 87-111.
- Masner, P. M. Angst, and S. Dorn. 1987. Fenoxycarb, an insect growth regulator with juvenile hormone activity: a candidate for *Heliothis virescens* (F) control on cotton. Pestic. Sci. 18: 89-94.
- Mastradone, P. J., and E. A. Wooldsen. 1983. Levels of arsenical species in cotton after field application of a cacodylic acid defoliant. Bull. Environ. Toxicol. 31: 216-221.
- Masud, S. M., R. D. Lacewell, E. P. Boring III, and T. W. Fuchs. 1985a. Economic implications of a regional uniform planting date cotton production system: Texas Rolling Plains. J. Econ. Entomol. 78: 535-541.
- Masud, S., R. Lacewell, J. Stoll, J. Walker, J. Leser, and C. Sellar. 1985b. Impact of a more intensive

- insect pest infestation level on cotton production: Texas High Plains. So. J. Agr. Eco. 17: 117-125.
- Masud, S. M., R. D. Lacewell, E. P. Boring, and T. W. Fuchs. 1984. Economic implications of a delayed uniform planting date for cotton production in the Texas Rolling Plains. Texas Agr. Exp. Sta. Bull. 1489.
- Masud, S. M., R. D. Lacewell, C. R. Taylor, J. H. Benedict, and L. A. Lippke. 1980. An economic analysis of integrated pest management strategies for cotton production in the Coastal Bend Region of Texas. Texas Agr. Exp. Sta. MP. 1467.
- Matsumura, F. 1985. Toxicology of insecticides. Plenum, New York.
- Matsumura, F., K. Tanaka, and Y. Ozoe. 1987. GABA-related systems as targets for insecticides, pp. 44-70. In R. M. Hollingworth, and M. B. Green (eds.), *Sites of action for neurotoxic pesticides*. American Chemical Society, Washington, D.C.
- Matthews, G. A. 1994. Chemical control, pp. 535-557. In G. A. Matthews, and J. P. Tunstall (eds.), *Insect Pests of Cotton*. University Press, Cambridge.
- Matthews, G. A. 1994. The effects of insect attack on the yield of cotton, pp. 427-430. In G. A. Matthews, and J. P. Tunstall (eds.), *Insect Pests of Cotton*. University Press, Cambridge.
- Matthews, G. A. (ed.). 1989. *Cotton Insect Pests and Their Management*. Longman Singapore Publishers, Singapore.
- Matthews, M. 1987. The classification of the Heliothinae. Ph.D. Thesis, University of London, Dept. of Entomol. British Museum (Natl. Hist), King's College London, Campden Hill Rd., London W8.
- Matthews, R. E. F. 1982. Classification and nomenclature of viruses. Intervirology 17: 1-199.
- Mauney, J. 1988. The power of early insect control. Cotton Grower. May
- Mauney, J., and J. M. Stewart (eds.). 1986. *Cotton Physiology*. Cotton Foundation, Memphis, Tennessee.
- Mauney, J. R., and T. J. Henneberry. 1984. Causes of square abscission in cotton. Crop Sci. 24: 1027-1030.
- Mauney, J. R., T. J. Henneberry, and T. R. Russell. 1980. Soft rot of cotton squares—another cause of shed, pp. 80. In Proc. Beltwide Cotton Prod. Res. Conf.
- Maxwell, F. G., J. N. Jenkins, J. C. Keller, and W. L. Parrott. 1963a. An arrestant and feeding stimulant for the boll weevil in water extracts of cotton plant parts. J. Econ. Entomol. 56: 449-454.
- Maxwell, F. G., J. N. Jenkins, and J. C. Keller. 1963b. A boll weevil repellent from the volatile substance of cotton. J. Econ. Entomol. 56: 894-895.
- Maxwell, F. G., J. N. Jenkins, and W. L. Parrott. 1972. Resistance of plants to insects, pp. 187-265. In *Advances in agronomy*. American Society of Agronomy, Madison, Wisconsin.
- Maxwell, F. G., W. L. Parrott, J. N. Jenkins, and H. N. Lafever. 1965. A boll weevil feeding deterrent from the calyx of an alternate host, *Hibiscus syriacus*. J. Econ. Entomol. 58: 985-988.
- McBryde, J. B. 1891. A chemical study of the cotton plant. Tennessee Agr. Exp. Sta. Bull. 4: 120-145.
- McBryde, J. B. 1891. Cotton experiments with varieties and with fertilizers. South Carolina Agr. Exp. Sta. Bull. 2 (new series).
- McCann, I. R., J. D. Lopez, and J. A. Witz. 1989. Emergence model for field populations of overwintering *Heliothis zea* and *H. virescens* (Lepidoptera: Noctuidae). Environ. Entomol. 18: 618-624.
- McCartney, H. A., and T. Woodhead. 1983. Electric charge, image-charge forces, and the deposition of pesticide drops. Pestic. Sci. 14: 49-56.
- McCarty Jr., J. C. 1974. Evaluation of species and primitive races of cotton for boll weevil resistance and agronomic qualities. Ph.D. Dissertation, Mississippi State University, Mississippi State, Mississippi.
- McCarty Jr., J. C., J. N. Jenkins, and W. L. Parrott. 1977. Boll weevil resistance, agronomic characteristics, and fiber quality in progenies of a cotton cultivar crossed with 20 primitive stocks. Crop Sci. 17: 5-7.
- McCarty Jr., J. C., J. N. Jenkins, and W. L. Parrott. 1982a. Partial suppression of boll weevil oviposition by a primitive cotton. Crop Sci. 22: 490-492.

- McCarty Jr., J. C., J. N. Jenkins, and W. L. Parrott. 1982b. The effect of artificially infesting cotton with tobacco budworm larvae for various times during the fruiting period, pp. 135. In Proc. Beltwide Cotton Prod. Res. Conf.
- McCarty Jr., J. C., J. N. Jenkins, and W. L. Parrott. 1986a. Yield response of two cotton cultivars to tobacco budworm infestation. Crop Sci. 26: 136-139.
- McCarty Jr., J. C., J. N. Jenkins, and W. L. Parrott. 1986b. Registration of two cotton germplasm lines with resistance to boll weevil. Crop Sci. 26: 1088.
- McCarty Jr., J. C., J. N. Jenkins, W. L. Parrott, and R. G. Creech. 1979. The conversion of photoperiodic primitive race stocks of cotton to day neutral status. Miss. Agric. For. Exp. Stn. Res. Report.
- McCarty Jr., J. C., and J. E. Jones. 1989. Boll weevil (Coleoptera: Curculionidae) nonpreference for primitive cotton. J. Econ. Entomol. 82: 298-300.
- McCarty Jr., J. C., and W. L. McGovern. 1987. Oviposition preference in two laboratory colonies of boll weevils (Coleoptera: Curculionidae). J. Econ. Entomol. 80: 366-368.
- McCarty Jr., J. C., W. R. Meredith, J. N. Jenkins, W. L. Parrott, and J. C. Bailey. 1983. Genotype X environment interaction of cottons varying in insect resistance. Crop Sci. 23: 970-973.
- McClendon, R. W., G. L. Barker, J. W. Jones, and R. F. Colwick. 1981. Simulations of cotton harvesting to maximize returns. Trans. ASAE 24: 1431-1440.
- McClendon, R. W., and L. G. Brown. 1983. Using the CIM model to evaluate and improve cotton insect-control strategies in Mississippi, task force-79 and -81. Miss. Agric. For. Exp. Stn. Tech. Bull. 117.
- McCutchon, B. F., F. W. Plapp, H. J. Williams, and D. A. Kostroun. 1989. Reproductive deficiencies associated with pyrethroid resistance in the tobacco budworm, pp. 364-366. In Proc. Beltwide Cotton Prod. Res. Conf.
- McDaniel, S. G. 1982. Field evaluation of aircraft spray systems for delivery of reduced volume oil sprays on cotton, pp. 200-202. In Proc. Beltwide Cotton Prod. Res. Conf.
- McDaniel, S. G., and D. M. Dunbar. 1982. Pounce 3.2 EC plus oil for cotton insect control, pp. 77-79. In Proc. Beltwide Cotton Prod. Res. Conf.
- McDaniel, S. G., B. M. McKay, R. K. Houston, and L. D. Hatfield. 1983. Aerial drift profile of oil and water sprays. Agri. Avia. 10: 25-29.
- McDaniel, S. G., and W. L. Sterling. 1979. Predator determination and efficiency on *Heliothis virescens* eggs in cotton using 32P. Environ. Entomol. 8: 1083-1087.
- McDaniel, S. G., and W. L. Sterling. 1982. Predation of *Heliothis virescens* (F) eggs on cotton in east Texas. Environ. Entomol. 11: 60-66.
- McDaniel, S. G., W. L. Sterling, and D. A. Dean. 1981. Predators of tobacco budworm larvae in Texas cotton. Southwest. Entomol. 6: 102-108.
- McDonald, R. E., and U. C. Lotfin. 1935. Dispersal of the pink bollworm by flight or wind carriage of the moths. J. Econ. Entomol. 18: 745-755.
- McDonough, L. M., D. A. George, and B. J. Landis. 1970. Partial structure of two sex pheromones of the corn earworm, *Heliothis zea*. J. Econ. Entomol. 63: 408-412.
- McEnroe, W. D., and K. Dronka. 1971. Photobehavioral classes of the spider mite *Tetranychus urticae* (Acarina: Tetranychidae). Entomol. Exp. Appl. 14: 420-424.
- McGarr, R. L. 1968. Field tests with a nuclear polyhedral virus against the bollworm and tobacco budworm, 1964-1966. J. Econ. Entomol. 61: 342.
- McGarr, R. L., H. T. Dulmage, and D. A. Wolfenbarger. 1970. The d-endotoxin of *Bacillus thuringiensis*, HD-1, and chemical insecticides for control of the tobacco budworm and the bollworm. J. Econ. Entomol. 63: 1357-1358.
- McGough, J. M., and L. W. Noble. 1955. Colonization of imported pink bollworm parasites. J. Econ. Entomol. 48: 626-627.
- McGough, J. M., and L. W. Noble. 1957. Summary of work at Brownsville, Texas, with imported pink bollworm parasites and an aphid predator. J. Econ. Entomol. 50: 514.
- McGovern, W. L., and W. H. Cross. 1976. Effects of two cotton varieties on levels of boll weevil parasitism (Col.: Curculionidae). Entomophaga. 21: 123-125.

- McGovern, W. L., W. H. Cross, J. E. Leggett, D. D. Hardee, G. H. McKibben, and W. L. Johnson. 1974. Mutants of the boll weevil as genetic markers: abnormal field behavior of an ebony pearl strain. *J. Econ. Entomol.* 67: 701.
- McGovern, W. L., E. J. Villavaso, E. B. Mitchell, and T. L. Wagner. 1987. Boll weevil (Coleoptera: Curculionidae) ovipositional behavior: discrimination against damaged squares. *Environ. Entomol.* 16: 951-955.
- McGregor, E. A. 1961. Early cotton insects of the Imperial Valley. *Bull. So. Calif. Acad. Sci.*, Vol. 60, part 1.
- McGregor, S. E. 1976. Insect pollination of cultivated crop plants. USDA, Agric. Res. Serv., Agric. Handb. 496.
- McHaffey, D. G., and A. B. Borkovec. 1976. Vacuum dipping: a new method of administering chemosterilants to the boll weevil. *J. Econ. Entomol.* 69: 139-143.
- McKee, M. J., Y. B. Ibrahim, and C. O. Knowles. 1987. Relationship between dispersal and fecundity of *Tetranychus urticae* Koch (Acarina: Tetranychidae) exposed to flucythrinate. *Exp. Appl. Acar.* 3: 1-10.
- McKibben, G. H., and W. H. Cross. 1984. Use of pheromone traps to estimate probability of zero populations of boll weevils. *Southwest. Entomol.* 9: 371-374.
- McKibben, G. H., W. L. McGovern, and W. A. Dickerson. 1982. Boll weevil (Coleoptera: Curculionidae) ovipositional behavior: a simulation analysis. *J. Econ. Entomol.* 75: 928-931.
- McKibben, G. H., E. B. Mitchell, W. P. Scott, and P. A. Hedin. 1977. Boll weevils are attracted to volatile oils from cotton plants. *Environ. Entomol.* 6: 804-806.
- McKibben, G. H., J. W. Smith, and W. L. McGovern. 1990. Development of an attract-and-kill device for the boll weevil (Coleoptera: Curculionidae). *J. Econ. Entomol.* 25: 581-586.
- McKibben, G. H., J. W. Smith, and E. J. Villavaso. 1991. Field research results on the boll weevil bait stick, pp. 622-623. *In Proc. Beltwide Cotton Prod. Res. Conf.*
- McKibben, G. H., M. J. Thompson, W. L. Parrott, A. C. Thompson, and W. R. Lusby. 1985. Identification of feeding stimulants for boll weevils from cotton buds and anthers. *J. Chem. Ecol.* 11: 1229-1238.
- McKibben, G. H., J. L. Willers, J. W. Smith, and T. L. Wagner. 1991. Stochastic model for studying boll weevil dispersal. *Environ. Entomol.* 20: 1327-1332.
- McKinion, J. M., D. N. Baker, F. D. Whisler, and J. R. Lambert. 1989. Application of the GOSSYM/COMAX system to cotton crop management. *Agric. Systems* 31: 55-65.
- McKinion, J. M., J. W. Jones, and J. D. Hesketh. 1974. Analysis of SIMCOT: photosynthesis and growth, pp. 118-124. *In Proc. Beltwide Cotton Prod. Res. Conf.*
- McKinion, J. M., and R. L. Olson. 1991. Interfacing issues for GOSSYM/COMAX/WHIMS. Am. Soc. Agric. Engin., Paper No. 923555.
- McLaughlin, J. R. 1974. Bionomics of the pink bollworm, *Pectinophora gossypiella* (Saunders) in the southern desert region of California. Ph.D. Thesis, Univ. of California, Riverside.
- McLaughlin, R. E. 1962. Infectivity tests with *Beauveria bassiana* (Balsamo) Vuillemin on *Anthonomus grandis* Boheman. *J. Insect Pathol.* 4: 386-388.
- McLaughlin, R. E. 1965a. *Mattesia grandis* n. sp., a sporozoan pathogen of the boll weevil, *Anthonomus grandis* Boheman. *J. Protozool.* 12: 405-413.
- McLaughlin, R. E. 1965b. Some relationships between the boll weevil, *Anthonomus grandis* Boheman, and *Mattesia grandis* McLaughlin (Protozoa: Neogregarinida). *J. Invertebr. Pathol.* 7: (464-473)
- McLaughlin, R. E. 1967. Development of the bait principle for boll weevil control. II. Field-cage tests with a feeding stimulant and the protozoan, *Mattesia grandis*. *J. Invertebr. Pathol.* 9: 70-77.
- McLaughlin, R. E. 1969. *Glugea gasti* sp. n., a microsporidian pathogen of the boll weevil *Anthonomus grandis*. *J. Protozool.* 16: 84-92.
- McLaughlin, R. E. 1971. Use of protozoans for microbial control of insects, pp. 151-171. *In H. D. Burges, and N. W. Hussey (eds.), Microbial control of insects and mites.* Academic Press Inc., London.

- McLaughlin, R. E., M. R. Bell, and S. D. Veal. 1966. Bacteria and fungi associated with dead boll weevils (*Anthonomus grandis*) in a natural population. *J. Invertebr. Pathol.* 8: 401-408.
- McLaughlin, R. E., R. J. Dahm, and M. R. Bell. 1968. Field-cage tests with a feeding stimulant and the protozoans *Mattesia grandis* and a microsporidian. *J. Invertebr. Pathol.* 12: 168-174.
- McLaughlin, R. E., and J. C. Keller. 1964. Antibiotic control of an epizootic caused by *Serratia marcescens* Bizio in the boll weevil, *Anthonomus grandis* Boheman. *J. Insect Pathol.* 6: 481-485.
- McLaughlin, R. E., H. A. Scott, and M. R. Bell. 1972. Infection of the boll weevil by *Chilo* iridescent virus. *J. Invertebr. Pathol.* 19: 285-290.
- McLaughlin, R. E., T. C. Cleveland, R. J. Dahm, and M. R. Bell. 1969. Development of the bait principle for boll weevil control. IV. Field tests with a bait containing a feeding stimulant and the sporozoans *Glugea gasti* and *Mattesia grandis*. *J. Invertebr. Pathol.* 13: 429-441.
- McNamara, H. C., D. R. Hooten, and D. D. Porter. 1940. Differential growth rates in cotton varieties and their response to seasonal conditions at Greenville, TX. *USDA Tech. Bull.* 710.
- McNamara, H. D. 1927. Cotton spacing experiments at Greenville, TX. *USDA Bull.* 1473.
- McPherson, J. C. 1982. The Pentatomidae (Hemiptera) of northeastern North America with emphasis on the fauna of Illinois. *So. Ill. Univ. Press.*
- Medler, J. T. 1961. A new record of parasitism of *Lygus lineolaris* (P. Deb.) (Hemiptera) by Tachinidae (Diptera). *Proc. Entomol. Soc. Washington* 63: 101-102.
- Meinders, D. 1985. Survey of illnesses and injuries due to occupational exposure to pesticides of ground applicators reported to physicians in California in 1984. California Department of Agriculture, Worker Health and Safety Branch. HS-1319.
- Meinke, L. J., and J. E. Slosser. 1982. Fall mortality of the boll weevil in fallen cotton squares, with emphasis on parasite-induced mortality. *Environ. Entomol.* 11: 318-323.
- Meister, R. T. (ed.). 1992. Farm chemical handbook. Meister Publishing Co., Willoughby, OH.
- Meredith Jr., W. R. 1976. Nectariless cottons, pp. 34-37. *In Proc. Beltwide Cotton Prod. Res. Conf.*
- Meredith Jr., W. R. 1991. Varieties for fiber quality and yield, pp. 63-65. *In Proc. Beltwide Cotton Prod. Res. Conf.*
- Meredith Jr., W. R., and R. R. Bridge. 1977. Registration of nine germplasm lines of nectariless cotton. *Crop Sci.* 17: 189.
- Meredith Jr., W. R., B. W. Hanny, and J. C. Bailey. 1979a. Genetic variability among glandless cottons for resistance to two insects. *Crop Sci.* 19: 651-653.
- Meredith Jr., W. R., V. Meyer, B. W. Hanny, and J. C. Bailey. 1979b. Influence of five *Gossypium* species cytoplasms on yield components, fiber properties, and insect resistance in upland cotton. *Crop Sci.* 19: 647-650.
- Meredith Jr., W. R., and M. F. Schuster. 1979. Tolerance of glabrous and pubescent cotton to tarnished plant bug. *Crop Sci.* 19: 484-488.
- Meredith Jr., W. R., and R. Wells. 1987. Sub okra leaf influence on cotton yield. *Crop Sci.* 27: 47-48.
- Merkl, M. E., and J. R. McCoy. 1978. Boll weevils: seasonal response over five years to pheromone baited traps. *J. Econ. Entomol.* 71: 730-731.
- Messing, R. H., B. A. Croft, and K. Currans. 1989. Assessing pesticide risk to arthropod natural enemies using expert system technology. *AI Appl. Nat. Res. Manage.* 3: 1-12.
- Metcalf, C. L., and W. P. Flint. 1939. *Destructive and useful insects*. McGraw-Hill Book Company, Inc., New York.
- Metcalf, C. L., W. P. Flint, and R. L. Metcalf. 1962. *Destructive and useful insects*. McGraw-Hill Book Company, New York.
- Metcalf, R. L. 1980. Changing role of insecticides in crop protection. *Annu. Rev. Entomol.* 25: 219-256.
- Metcalf, R. L., and W. H. Luckmann. 1975. *Introduction to insect pest management*. John Wiley and Sons, New York.
- Meyerdirk, D. C., D. L. Coudriet, and N. Prabhaker. 1986. Population dynamics and control strategy for *Bemisia tabaci* in the Imperial Valley, California. *Agric. Ecosystems Environ.* 17: 61-67.

- Micinski, S., and D. Caldwell. 1991. Field performance of cotton genetically-modified to express insecticidal protein from *Bacillus thuringiensis*. IV. Bossier City, LA, pp. 578. In Proc. Beltwide Cotton Prod. Res. Conf.
- Micinski, S., W. D. Caldwell, B. J. Fitzpatrick, and R. C. Griffin. 1992. First Louisiana field trial of insect-resistant transgenic cotton. Louisiana Agriculture 35: 8-10.
- Milam, M. R., J. N. Jenkins, W. L. Parrott, and J. C. McCarty Jr. 1982. Influence of earliness and nectariless traits on reducing the sensitivity to the tarnished plant bug in frego bract cotton, pp. 132-133. In Proc. Beltwide Cotton Prod. Res. Conf.
- Miles, G. E., E. D. Threadgill, J. F. Thompson, and R. E. Williamson. 1975. Simulation of droplet deposition on bodies with rectangular boundaries. Trans. ASAE 18: 74-78.
- Miller, E., R. T. Staten, E. Jones, and J. Pozzi. 1984. Effect of 20 Krad of gamma irradiation on reproduction of pink bollworm (Lepidoptera: Gelechiidae) and their F1 progeny: potential impact of the identification of trap catch. J. Econ. Entomol. 77: 304-307.
- Miller, H., and F. Crisfield. 1930. The presence in Georgia of *Bracon mellitor* a parasite of cotton boll weevil. J. Econ. Entomol. 23: 607-608.
- Miller, M. C. 1971. Parasitism of the corn earworm, *Heliothis zea*, and the European corn borer, *Ostrinia nubilalis*, on corn in north Georgia. J. Ga. Entomol. Soc. 6: 246-249.
- Miller, R. W., B. A. Croft, and R. D. Nelson. 1985. Effects of early season immigration of cyhexatin and formetanate resistance of *Tetranychus urticae* (Acarina: Tetranychidae) on strawberry in Central California. J. Econ. Entomol. 78: 1379-1388.
- Miller, T. A. 1976. Distinguishing between carbamate and organophosphate insecticide poisoning in house flies by symptomatology. Pestic. Biochem. Physiol. 6: 307-319.
- Miller, T. A. 1985. International status of pyrethroid resistance, pp. 123-125. In Proc. Beltwide Cotton Prod. Res. Conf.
- Miller, T. A. 1987. Resistance monitoring of pink bollworm, pp. 218-219. In Proc. Beltwide Cotton Prod. Res. Conf.
- Miller, T. A., and M. E. Adams. 1982. Mode of action of pyrethroids, pp. 3-27. In J. R. Coats (ed.), Insecticide mode of action. Academic Press, New York.
- Miller, T. A., and A. E. Chambers. 1987. Actions of GABA agonists and antagonists on invertebrate nerves and muscles, pp. 2-13. In R. M. Hollingworth, and M. B. Green (eds.), Sites of action for neurotoxic pesticides. American Chemical Society, Washington, D.C.
- Miller, T. A., J. M. Kennedy, and C. Collins. 1979. CNS insensitivity to pyrethroids in the resistant kdr strain of house flies. Pestic. Biochem. Physiol. 12: 224-230.
- Minsky, M. 1975. A framework for representing knowledge, pp. 211-277. In P. H. Winston (ed.), The psychology of computer vision. McGraw-Hill, New York.
- Misch, A. 1993. Chemical reaction. World Watch 6: 10-17.
- Mistic, W. J. 1968. Effects of nitrogen fertilization on cotton under boll weevil attack in North Carolina. J. Econ. Entomol. 61: 282-283.
- Mitchell, E. B., and D. D. Hardee. 1974. In-field traps: a new concept in survey and suppression of low populations of boll weevils. J. Econ. Entomol. 67: 506-508.
- Mitchell, E. B., D. D. Hardee, W. H. Cross, P. M. Huddleston, and H. C. Mitchell. 1972. Influence of rainfall, sex ratio, and physiological condition of boll weevils on their response to pheromone traps. Environ. Entomol. 1: 438-440.
- Mitchell, E. B., P. M. Huddleston, N. M. Wilson, and D. D. Hardee. 1973. Boll weevils: relationship between time of entry into diapause and time of emergence from overwintering. J. Econ. Entomol. 66: 1230-1231.
- Mitchell, E. B., E. P. Lloyd, D. D. Hardee, W. H. Cross, and T. B. Davich. 1976. In-field traps and insecticides for suppression and elimination of populations of boll weevils. J. Econ. Entomol. 69: 83-88.
- Mitchell, E. B., M. E. Merkl, T. B. Davich, and M. A. Brown. 1983. Field performance of boll weevils (Coleoptera: Curculionidae) sterilized with diflubenzuron and gamma irradiation. J. Econ. Entomol. 76: 294-297.
- Mitchell, E. R. 1981. Management of insect pests with semiochemicals. Plenum Press, New York.

- Mitchell, E. R., and W. J. Mistic. 1965. Concepts of population dynamics and estimation of boll weevil populations. *J. Econ. Entomol.* 58: 757-763.
- Mitchell, H. C. 1967. Natural boll weevil behavior: inter-relationships of field movements, matings, and oviposition. M.S. Thesis, Mississippi State Univ., Mississippi State.
- Mitchell, H. C., and W. H. Cross. 1969. Oviposition by the boll weevil in the field. *J. Econ. Entomol.* 62: 604-605.
- Mitchell, H. C., W. H. Cross, W. L. McGovern, and E. M. Dawson. 1973. Behavior of the boll weevil on frego bract cotton. *J. Econ. Entomol.* 66: 677-680.
- Mitchell, R. 1973. Growth and population dynamics of a spider mite (*Tetranychus urticae* K., Acarina: Tetranychidae). *Ecol.* 54: 1349-1355.
- Mitchell, W. C., and R. F. L. Mau. 1971. Response of the female southern green stink bug and its parasite, *Trichopoda pennipes* to male stink bug pheromones. *J. Econ. Entomol.* 64: 856-859.
- Miyamoto, J., M. Hirano, Y. Takimoto, and M. Hatakoshi. 1993. Insect growth regulators for pest control, with emphasis on juvenile hormone analogs: present status and future prospects, pp. 144-168. In S. O. Duke, J. J. Menn, and J. R. Plimmer (eds.), Pest control with enhanced environmental safety. American Chemical Society, Washington, D.C.
- Moffat, A. S. 1993. New chemicals seek to outwit insect pests. *Science* 261: 550-551.
- Molnar, D. R. 1975. Comparison of three methods of treatment on fruiting characteristic, physiological shet, and insect damage yield and quality of cotton. Ph.D. Thesis, Oklahoma State University, Stillwater, OK.
- Moore, J. H. 1956. Cotton breeding in the old South. *Agric. His.* 50: 95-101.
- Moore, L. 1972. The pest management system in cotton, implementing practical pest management strategies. Proc. of a Natl. Ext. Insect-Pest Mgmt. Workshop, Purdue Univ.
- Moore, L. 1985. Status of boll weevil in western U.S., pp. 129-130. In Proc. Beltwide Cotton Prod. Res. Conf.
- Moore, L., and T. F. Watson. 1990. Trap crop effectiveness in community boll weevil (Coleoptera: Curculionidae) control programs. *J. Entomol. Sci.* 25: 519-525.
- Moore, L., T. F. Watson, M. Lame, M. Rethwisch, and G. Dick. 1988. Insect pest management for cotton. Ariz. Coop. Ext. Pub. 8820.
- Moore, L. H. 1950. Surveys wil speed control of most cotton pests. N.M. Ext. News 30: 6.
- Moore, R. F. 1980. Boll weevils: effect of insect growth regulators and juvenile hormone analogues on adult development. *J. Ga. Entomol. Soc.* 15: 227-231.
- Moore, R. F. 1987. Adaptation of the boll weevil to laboratory rearing on a soybean-pharmamedia based diet. *J. Agric. Entomol.* 4: 29-32.
- Moore, R. F., R. A. Leopold, and H. M. Taft. 1978. Boll weevils: mechanism of transfer of diflubenzuron from male to female. *J. Econ. Entomol.* 71: 587-590.
- Moore, R. F., T. M. Odell, and C. O. Calkins. 1985. Quality assessment in laboratory-reared insects, pp. 107-135. In P. Singh, and R. F. Moore (eds.), Handbook of Insect Rearing, Vol. 1 Elsevier, New York.
- Moore, R. F., and H. M. Taft. 1975. Boll weevil: chemosterilization of both sexes with busulfan plus Thompson-Hayward TH-6040. *J. Econ. Entomol.* 68: 96-98.
- Moore, R. F., and F. F. Whisnant. 1985. *Anthonomus grandis*, pp. 217-225. In P. Singh, and R. F. Moore (eds.), Handbook of Insect Rearing, Vol. 1 Elsevier, New York.
- Moore, W. J. 1972. Physical chemistry. Prentice-Hall, Inc., Englewood Cliffs.
- Moosberg, C. A., and B. A. Waddle. 1958. Rex Cotton...a progress report. *Ark. Farm. Res.* 7: 9.
- Morales-Ramos, J. A., and J. R. Cate. 1992. Laboratory determination of age-dependent fecundity, development, and rate of increase of *Catolaccus grandis* (Burks) (Hymenoptera: Pteromalidae). *Ann. Entomol. Soc. Am.* 85: 469-476.
- Morales-Ramos, J. A., and J. R. Cate. 1993. Temperature-dependent developmental rates of *Catolaccus grandis* (Burks) (Hymenoptera: Pteromalidae). *Environ. Entomol.* 22: 226-233.
- Morales-Ramos, J. A., E. G. King, and K. R. Summy. 1993. Magnitude and timing of *Catolaccus*

- grandis* releases against the cotton boll weevil aided by a simulation model, pp. 915-921. In Proc. Beltwide Cotton Prod. Res. Conf.
- Morales-Ramos, J. A., M. G. Rojas, J. L. Roberson, R. G. Jones, E. G. King, K. R. Summy, and J. R. Brazzel. 1994. Suppression of the boll weevil first generation by augmentative releases of *Catolaccus grandis* in Aliceville, Alabama, pp. 958-964. In Proc. Beltwide Cotton Prod. Res. Conf.
- Morales-Ramos, J. A., K. R. Summy, J. L. Roberson, J. R. Cate, and E. G. King. 1992. Feasibility of mass rearing *Catolaccus grandis*, a parasitoid of the boll weevil, pp. 723-726. In Proc. Beltwide Cotton Prod. Res. Conf.
- Moritz, R. J. 1979. West Texas diapause boll weevil control program, pp. 35-36. In Proc. Summary Western Cotton Prod. Conf., El Paso, Texas.
- Morrill, A. W. 1910. Plant bugs injurious to cotton bolls. USDA Bur. of Entomol. Bull. 86: 110.
- Morrill, A. W. 1918. Insect pests of interest to Arizona cotton growers. Ariz. Agric. Exp. Sta. Bull. No. 87.
- Morris, R. F. 1965. Contemporaneous mortality factors in population dynamics. Can. Entomol. 97: 1173-1184.
- Morrison, R. K. 1985a. Effective mass production of eggs of the Angoumois grain moth, *Sitroga cereella* (Olivier). Southwest. Entomol. Suppl. 8: 28-35.
- Morrison, R. K. 1985b. Mass production of *Trichogramma pretiosum* Riley. Southwest. Entomol. Suppl. 8: 21-27.
- Morrison, R. K., S. L. Jones, and J. D. Lopez. 1978. A unified system for the production and preparation of *Trichogramma pretiosum* for field release. Southwest. Entomol. 3: 62-68.
- Motoba, K., T. Suzuki, and M. Uchida. 1992. Effect of a new acaricide, fenpyroximate, on energy metabolism and mitochondrial morphology in adult female *Tetranychus urticae* (Two-spotted spider mite). Pestic. Biochem. Physiol. 43: 37-44.
- Mound, L. A. 1962. Studies on the olfaction and color sensitivity of *Bemisia tabaci* Genn. (Homoptera: Aleyrodidae). Entomol. Exp. Appl. 5: 99-104.
- Mound, L. A., and S. H. Halsey. 1978. Whitefly of the world. British Museum (Natural History). John Wiley & Son, New York.
- Mueller, A. J., and V. M. Stern. 1974. Timing pesticide treatments on safflower to prevent *Lygus* from dispersing to cotton. J. Econ. Entomol. 67: 77-80.
- Mueller, T. F. 1983. The effect of plants on the host relations of a specialist parasitoid of *Heliothis* larvae. Entomol. Exp. Appl. 34: 78-84.
- Mueller, T. F., and J. R. Phillips. 1983. Population dynamics of *Heliothis* spp. in spring weed hosts in southeastern Arkansas: survivorship and stage-specific parasitism. Environ. Entomol. 12: 1846-1850.
- Muesebeck, C. F., K. V. Krombein, and H. Townes. 1951. Hymenoptera of America north of Mexico, Synoptic catalog. USDA Monog. 2.
- Muggleton, J. 1984. The evolution of insecticide resistance and its relevance to control strategy, pp. 585-592. In Brit. Crop Protection Conference.
- Mullins, J. W. 1992. Imidacloprid: A new nitroguanidine insecticide, pp. 183-198. In S. O. Duke, J. J. Menn, and J. R. Plummer (eds.), Pest control with enhanced environmental safety. American Chemical Society, Washington, D.C.
- Mullins, J. W., S. L. Riley, C. S. Staetz, R. J. Marrese, R. Robers, and B. J. Monke. 1991. Status of *Heliothis* resistance to pyrethroids in U.S. cotton: a report from PEG-US, pp. 634-637. In Proc. Beltwide Cotton Prod. Res. Conf.
- Mullins, W., and E. P. Pieters. 1981. Dosage-mortality studies of permethrin on the cotton bollworm and the tobacco budworm in Mississippi, 1977-1979. J. Ga. Entomol. Soc. 16: 197-202.
- Muma, M. H. 1955. Factors contributing to the natural control of citrus insects and mites in Florida. J. Econ. Entomol. 48: 432-438.
- Mumford, J. D./Norton, G.A. 1994. Pest management systems, pp. 559-576. In G. A. Matthews, and J. P. Tunstall (eds.), Insect Pests of Cotton. University Press, Cambridge.

- Muniappan, R., and H. L. Chada. 1970a. Biological control of the greenbug by the spider *Phidippus audax*. *J. Econ. Entomol.* 63: 1712.
- Muniappan, R., and H. L. Chada. 1970b. Biology of the crab spider, *Misumenops celer*. *Ann. Entomol. Soc. Amer.* 63: 1718-1722.
- Murdoch, W. W. 1969. Switching in general predators: experiments on predator specificity and stability of prey populations. *Ecol. Monogr.* 39: 335-354.
- Murphy, S. M. 1980. Use of simulation to evaluate alternative cotton insect pest control strategies. M.S. Thesis, Mississippi State Univ., Mississippi State.
- Murphy, H. F., and C. E. Sanburn. 1929. Growing cotton under boll weevil conditions. Okla. State Coop. Ext. Circ. 256.
- Mussett, K. S., J. H. Young, R. G. Price, and R. D. Morrison. 1979. Predatory arthropods and their relationship to fleahoppers on *Heliothis* resistant cotton varieties in Southwestern Oklahoma. *Southwest. Entomol.* 4: 35-39.
- Naegele, J. A., R. N. Coulson, N. D. Stone, and R. E. Frisbie. 1985. The use of expert systems to integrate and deliver IPM technology, pp. 692-711. In R. E. Frisbie and P. L. Adkisson (eds.), CIPM: Integrated Pest Management on Major Agricultural Systems. Texas Agric. Exp. Stn. MP-1616.
- Nagarkatti, S., and H. Nagaraja. 1971. Redescriptions of some known species of *Trichogramma* (Hym.: Trichogrammatidae) showing the importance of the male genitalia as a diagnostic character. *Bull. Entomol. Res.* 61: 13-31.
- Nagarkatti, S., and H. Nagaraja. 1977. Biosystematics of *Trichogramma* and *Trichogrammatoidae* species. *Annu. Rev. Entomol.* 22: 157-176.
- Nakatsugawa, T., and M. A. Morelli. 1976. Microsomal oxidation and insecticide metabolism, pp. 61-114. In C. F. Wilkinson (ed.), Insecticide biochemistry and physiology. Plenum Press, New York.
- Namken, L. N., and M. D. Heilman. 1973. Determinate cotton cultivars for more efficient cotton production in the Lower Rio Grande Valley. *Agron. J.* 65: 953.
- Namken, L. N., M. D. Heilman, J. N. Jenkins, and P. A. Miller. 1983. Plant resistance and modified cotton culture, pp. 73-101. In R. L. Ridgway, E. P. Lloyd, and W. H. Cross (eds.), Cotton Insect Management with Special Reference to the Boll Weevil. USDA Agr. Handb. No. 589.
- Narahashi, T. 1987. Neuronal target sites of insecticides pesticides, pp. 226-250. In R. M. Hollingsworth, and M. B. Green (eds.), Sites of action for neurotoxic. American Chemical Society, Washington, D.C.
- Nathans, J., J. P. Piantanida, B. L. Eddy, T. B. Shows, and D. S. Hogness. 1986. Molecular genetics of inherited variation in human color vision. *Science* 232: 203-210.
- National Academy of Sciences. 1969. Principles of plant and animal pest control. Vol. 3. Insect-pest management and control. Publ. 1695.
- National Academy of Sciences. 1975. Cotton pest control, In Pest control: an assessment of present and alternative technologies, vol. III Washington, DC.
- National Academy of Sciences. 1981. Cotton boll weevil: An evaluation of USDA programs. NAS Press, Washington, DC.
- National Cotton Council of America. 1989. Boll weevil eradication: a cooperative federal, state, and producer program. National Cotton Council of America, Memphis, TN.
- National Research Council. 1981. Cotton boll weevil: an evaluation of USDA programs. National Academy Press, Washington, DC.
- National Research Council. 1986. Pesticide resistance: strategies and tactics for management. National Academy Press, Washington, D.C.
- Natwick, E. T. 1987. Pink bollworm control using a high rate gossyplure formulation, pp. 262-267. In Proc. Beltwide Cotton Prod. Res. Conf.
- Natwick, E. T., and R. T. Staten. 1986. PBW Rope - does it work? Imperial Agricultural Briefs, Sept.-Oct. Cooperative Extension, Court House, El Centro, California.
- Natwick, E. T., and F. G. Zalom. 1984. Surveying sweetpotato whitefly in the Imperial Valley. Calif. Agr. 38: 11.

- Navon, A. 1985. *Spodoptera littoralis*, pp. 469-475. In P. Singh, and R. F. Moore (eds.), *Handbook of Insect Rearing*, Vol. 2 Elsevier, New York.
- Neeb, C. W., J. F. Leser, E. P. Boring III, and T. W. Fuchs. 1983. Management of cotton insects in the High Plains, Rolling Plains and Trans-Pecos areas of Texas. *Tex. Agric. Ext. Serv. B-209*.
- Nelson, G. S., and C. Lincoln. 1968. Performance of airplane sprayers for insecticide application. *Univ. of Ark. Agric. Exp. Sta. Bull.* 730.
- Nelson, M., and J. O. Ware. 1932. The relation of nitrogen, phosphorus and potassium to the fruiting of cotton. *Ark. Agr. Exp. Sta. Bull.* 273.
- Nemec, S. J., and P. L. Adkisson. 1969. Laboratory tests of insecticides for bollworm, tobacco budworm, and boll weevil control. *Texas Agr. Exp. Stn. PR.* 2676.
- Nentwig, W. 1986. Non-web building spiders: prey specialists or generalists? *Oecologia* 69: 571-576.
- Nettles Jr., W. C. 1980. Adult *Eucelatoria* sp.: response to volatiles from cotton and okra plants and from larvae of *Heliothis virescens*, *Spodoptera eridania*, and *Estigmene acrea*. *Environ. Entomol.* 9: 759-763.
- Nettles Jr., W. C. 1982. Contact stimulants from *Heliothis virescens* that influence the behavior of females of the tachinid, *Eucelatoria bryani*. *J. Chem. Ecol.* 8: 1183-1191.
- Nettles Jr., W. C., and M. L. Burks. 1975. A substance from *Heliothis virescens* larvae stimulating larviposition by females of the tachinid, *Archytas marmoratus*. *J. Insect Physiol.* 21: 965-978.
- Neumann, R., and H. H. Peter. 1987. Insecticidal organophosphates: Nature made them first. *Experientia* 43: 1235-1237.
- Neunzig, H. H. 1963. Wild host plants of the corn earworm and the tobacco budworm in eastern North Carolina. *J. Econ. Entomol.* 56: 135-139.
- Neunzig, H. H. 1964. The eggs and early instar larvae of *Heliothis zea* and *Heliothis virescens* (Lepidoptera: Noctuidae). *Ann. Entomol. Soc. Amer.* 57: 98-102.
- Neunzig, H. H. 1969. The biology of the tobacco budworm and the corn earworm in North Carolina, with particular reference to tobacco as a host. *N. C. Agric. Exp. Sta. Tech. Bull.* 196.
- New Mexico A&M. 1951. Cotton insect control guide for New Mexico-1951. NM A&M Col. Agric. Ext. Ser. Circ. 227.
- New Mexico A&M. 1954. Cotton insect control guide for New Mexico-1954. NM A&M Col. Agric. Ext. Ser. Circ. 227.
- New Mexico A&M. 1957. Sixty-eight years of progress and research. NM A&M Col. Agric. Exp. Sta.
- New Mexico A&M. 1958. Sixty-ninth annual report-research serves New Mexico agriculture. NM A&M Col. Agric. Exp. Sta.
- New Mexico A&M. 1959. Seventieth annual report-New Mexico agriculture advances with research. NM A&M Col. Agric. Exp. Sta.
- New Mexico Department of Agriculture. 1962. New Mexico agricultural statistics. New Mexico Department of Agriculture.
- New Mexico Department of Agriculture. 1968. Regulatory order No. 2 (Amended) plant protection act effective February 29, 1968. New Mexico Department of Agriculture.
- New Mexico Department of Agriculture. 1989. New Mexico agricultural statistics. New Mexico Department of Agriculture.
- New, T. R. 1975. The biology of Chrysopidae and Hemerobiidae (Neuroptera), with reference to their usage as biocontrol agents: a review. *Trans. R. Entomol. Soc. Lond.* 127: 115-145.
- Newby, L. C., and C. G. Rock. 1986. Industry perspective on legislation, pp. 478-487. In W. Y. Garner, R. C. Honeycutt, and H. N. Nigg (eds.), *Evaluation of pesticides in ground water. Symposium Series 315*. American Chemical Society, Washington, D.C.
- Newell, W. 1908. The early cotton and the boll weevil: how to reduce the number of weevils during June and July. State Crop Pest Commission of Louisiana C. 22.
- Newell, W. 1909a. Destroying the boll weevils before they enter hibernation, pp. 41-48. In Third biennial report of the secretary, 1908-1909.

- Newell, W. 1909b. Special boll weevil bulletin No. 1 of the Louisiana State Board of Agriculture and Immigration. State Crop Pest Commission of Louisiana. C. 25.
- Newell, W., and M. S. Dougherty. 1909. The "V" cotton stalk cutter. How to make it and how to use it, pp. 151-158. In Third Biennial report of the secretary, 1908-1909. State Crop Pest Commission of Louisiana. C. 30.
- Newell, W., and Rosenfeld. 1909. Report upon variety and fertilizer experiments with cotton in the boll weevil infested sections of Louisiana. State Crop Pest Commission of Louisiana. C. 26.
- Newman, J. S. 1890. Field experiments in 1889. Alabama Agr. Exp. Sta. Bull. 16 (new series).
- Newman, J. S., and J. Clayton. 1891. Cotton. Alabama Agr. Exp. Sta. Bull. 33 (new series).
- Newman, J. S., and J. Clayton. 1891. Experiments with cotton. Alabama Agr. Exp. Sta. Bull. 22. (new series).
- Newsom, L. D. 1970. The end of an era and future prospects for insect control, pp. 117-136. In Proceedings, Tall Timbers Conf. Ecol. Anim. Contr. Habitat Manage., February 26-28, Tallahassee, Florida.
- Newsom, L. D. 1974. Pest management: history, current status and future progress, pp. 1-18. In F. G. Maxwell and F. A. Harris (eds.), Proc. Summer Instit. Biol. Contrl. Plant Insects and Diseases. Univ. Press Miss., Jackson, Mississippi.
- Newsom, L. D. 1975. Pest management: Concept to practice, pp. 257-277. In D. Pimentel (ed.), Insects, Scency, and Society. Academic Press, New York.
- Newsom, L. D. 1978. Eradication of plant pests. Conn. Bull. Entomol. Soc. Amer. 24: 35-40.
- Newsom, L. D. 1980. The next rung up the integrated pest management ladder. Bull. Entomol. Soc. Amer. 26: 369-374.
- Newsom, L. D., and D. J. Boethel. 1985. Interpreting multiple pest interactions in soybean, pp. 232-255. In R. E. Frisbie and P. L. Adkisson (eds.), Integrated Pest Management on Major Agricultural Systems. Texas Agric. Expt. Sta. MP-1616.
- Newsom, L. D., and J. R. Brazzel. 1968. Pests and their control, pp. 367-405. In F. C. Elliot, M. Hoover, and W. K. Porter Jr. (eds.), Advances in production and utilization of quality cotton: principles and practices. Iowa State University Press, Ames.
- Newsom, L. D., J. S. Roussel, and C. E. Smith. 1953. The tobacco thrips: its seasonal history and status as a cotton pest. Louisiana Ag. Exp. Sta. Tech. Bull. 474.
- Newsom, L. D., and C. E. Smith. 1949. Destruction of certain insect predators by applications of insecticides to control cotton pests. J. Econ. Entomol. 42: 904-908.
- Nicholson Jr., W. F. 1975. Feeding of *Heliothis virescens* (F.) and *H. zea* (Boddie) on cotton with emphasis and development of a simulation model of larval feeding. Ph.D. Thesis, Mississippi State Univ., Mississippi State.
- Nicholson Jr., W. F., J. R. Phillips, and D. R. Johnson. 1984. Bollworm management communities in Arkansas. University of Arkansas, Cooperative Extension Service. Pub. EL 663.
- Nicholson, A. J., and V. A. Bailey. 1935. The balance of animal populations. Proc. Zool. Soc. Lond. 1: 551-598.
- Nicholson, R. A., and T. A. Miller. 1985. Multifactorial resistance to *trans*-permethrin in field collected strains of the tobacco budworm *Heliothis virescens* (F.). Pestic. Sci. 16: 561-570.
- Nickel, J. L. 1960. Temperature and humidity relationships of *Tetranychus desertorum* Banks with special reference to distribution. Hilgardia 30: 41-100.
- Nickle, W. R. 1974. Nematode infections, pp. 327-376. In G. E. Cantwell (ed.), Insect diseases Vol. II. Marcel Dekker, Inc., New York.
- Nickle, W. R. 1978. On the biology and life history of some terrestrial mermithids parasitic on agricultural pest insects. J. Nematol. 10: 295.
- Nielsson, R. J., A. P. Bhatkar, and H. A. Denmark. 1971. A preliminary list of ants associated with aphids in Florida. Fla. Entomol. 54: 245-248.
- Niles, G. A. 1970. Development of plant types with special adaptation to narrow row culture, pp. 63-64. In Proc. Beltwide Cotton Prod. Res. Conf.

- Niles, G. A. 1980. Breeding cotton for resistance to insect pests, pp. 337-369. In F. G. Maxwell, and P. R. Jennings (eds.), *Breeding plants resistant to insects*. John Wiley and Sons, New York.
- Niles, G. A., L. H. Harvey, and J. K. Walker. 1978. Cultural control of the boll weevil, pp. 23-38. In *The boll weevil: management and strategies*. S. Coop. Series. Bull. 228.
- Noble, L. W. 1936. The biological possibility of infestation by flight of the pink bollworm moth. *J. Econ. Entomol.* 29: 78-79.
- Noble, L. W. 1969. Fifty years of research on the pink bollworm in the United States. USDA Agric. Res. Serv. Agric. Hdbk. 357.
- Noble, L. W., A. J. Chapman, L. C. Fife, and O. T. Robertson. 1962. Winter survival of the pink bollworm, *In A summary of recent research basic to the cultural control of the pink bollworm*. Tex. Agr. Exp. Sta. MP. 579.
- Noble, L. W., and W. T. Hunt. 1937. Imported parasites of pink bollworm at Presidio, Texas, 1932-36. *J. Econ. Entomol.* 30: 842-844.
- Noldus, L. P. J. 1988. Response of the egg parasitoid *Trichogramma pretiosum* to the sex pheromone of its host *Heliothis zea*. *Entomol. Exp. Appl.* 48: 293-300.
- Nordh, M. B., L. R. Zavaleta, and W. G. Ruesink. 1988. Estimating multidimensional economic injury levels with simulation models. *Agric. Systems* 26: 19-33.
- Nordlund, D. A., R. B. Chalfant, and W. J. Lewis. 1984. Arthropod populations, yield and damage in monocultures and polycultures of corn, beans and tomatoes. *Agric. Ecosystems Environ.* 11: 353-367.
- Nordlund, D. A., R. B. Chalfant, and W. J. Lewis. 1985a. Response of *Trichogramma pretiosum* females to extracts of two plants attacked by *Heliothis zea*. *Agric. Ecosystems Environ.* 12: 127-133.
- Nordlund, D. A., R. B. Chalfant, and W. J. Lewis. 1985b. Response of *Trichogramma pretiosum* females to volatile synomones from tomato plants. *J. Entomol. Sci.* 20: 372-376.
- Nordlund, D. A., and W. J. Lewis. 1976. Terminology of chemical releasing stimuli in intraspecific and interspecific interactions. *J. Chem. Ecol.* 2: 211-220.
- Nordlund, D. A., and W. J. Lewis. 1985. Response of the braconid parasitoid *Microplitis demolitor* to frass of larvae of the noctuids, *Heliothis zea* and *Trichoplusia ni* and to 13-methylhentriacontane. *Entomol. Exp. Appl.* 38: 109-112.
- Nordlund, D. A., W. J. Lewis, and M. A. Altieri. 1987. Influences of plant produced allelochemicals on the host and prey selection behavior of entomophagous insects, pp. 65-90. In P. Barbosa, and D. K. Letourneau (eds.), *Novel aspects of insect-plant interactions*. Wiley, New York.
- Nordlund, D. A., W. J. Lewis, R. L. Jones, and H. R. Gross Jr. 1976. Kairomones and their use for management of entomophagous insects. IV. Effect of kairomones on productivity and longevity of *Trichogramma pretiosum* Riley (Hymenoptera: Trichogrammatidae). *J. Chem. Ecol.* 2: 67-72.
- Nordlund, D. A., W. J. Lewis, R. L. Jones, H. R. Gross Jr., and K. S. Hagen. 1977. Kairomones and their use for management of entomophagous insects. VI. an examination of the kairomones for the predator *Chrysopa carnea* Stephens at the oviposition sites of *Heliothis zea* (Boddie). *J. Chem. Ecol.* 3: 507-511.
- Nordlund, D. A., W. J. Lewis, and J. H. Tumlinson. 1989. Habitat and host location behavior of *Microplitis croceipes*, pp. 39-48. In J. E. Powell, D. L. Bull, and E. G. King (Eds.), *Biological control of Heliothis spp. by Microplitis croceipes*. Southwest. Entomol. Suppl. 12.
- Nordlund, D. A., W. J. Lewis, S. B. Vinson, and H. R. Gross Jr. 1986. Behavioral manipulation of entomophagous insects, pp. 104-115. In S. J. Johnson, E. G. King, and J. R. Bradley Jr. (Eds.), *Theory and tactics of Heliothis population management: I. Cultural and biological control*. S. Coop. Ser. Bull. No. 316.
- Nordlund, D. A., and C. E. Sauls. 1981. Kairomones and their use for management of entomophagous insects. XI. Effect of host plants on kairomonal activity of frass from *Heliothis zea* larvae for the parasitoid *Microplitis croceipes*. *J. Chem. Ecol.* 7: 1057-1061.

- Nordlund, D. A., M. R. Strand, W. J. Lewis, and S. B. Vinson. 1987. Role of kairomones from host accessory gland secretion in host recognition by *Telenomus remus* and *Trichogramma pretiosum*, with partial characterization. Entomol. Exp. Appl. 44: 37-43.
- Norgaard, R. B. 1976. The economics of improving pesticide use. Annu. Rev. Entomol. 21: 45-60.
- Norman Jr., J. W., D. G. Riley, A. N. Sparks Jr., and J. F. Lesser. 1993. Texas suggestions for managing sweetpotato whitefly and aphids in cotton, 1993, pp. 36-37. In Proc. Beltwide Cotton Prod. Res. Conf.
- Norman Jr., J. W., A. N. Sparks Jr., and D. Riley. 1992. Sweetpotato whitflies in Lower Rio Grande Valley cotton, pp. 687-690. In Proc. Beltwide Cotton Prod. Res. Conf.
- Norman, J. W. 1988. Management of cotton insects in the Lower Rio Grande Valley. Tex. Agric. Ext. Serv. B-1210.
- Norman, J. W. 1989. Suggested insecticides for management of cotton insects in the Lower Rio Grande Valley. Tex. Agric. Ext. Serv. B-1210.
- Norman, J. W., and T. J. Henneberry. 1987. Insect management requirements and benefits with short season production systems, pp. 85-87. In Proc. Beltwide Cotton Prod. Res. Conf.
- Norman, J. W., K. R. Summy, and J. R. Cate. 1984. Boll weevil management through cotton stalk destruction, pp. 216-218. In Proc. Beltwide Cotton Prod. Res. Conf.
- North, D. T. 1975. Inherited sterility in Lepidoptera. Annu. Rev. Entomol. 20: 167-182.
- North, D. T., and G. G. Holt. 1968. Inherited sterility in progeny of irradiated male cabbage loopers. J. Econ. Entomol. 61: 928-931.
- North, D. T., and G. G. Holt. 1970. Population control of Lepidoptera: the genetic and physiological basis. Manitoba Entomol. 4: 53-69.
- North, D. T., and G. G. Holt. 1971. Inherited sterility and its use in population suppression of Lepidoptera, pp. 99-111. In Application of Induced Sterility for Control of Lepidopterous Populations. Int. Atomic Energy Agency Proc. Ser. 210 Vienna, Austria.
- North, D. T., J. W. Snow, D. Haile, and F. I. Proshold. 1975. Corn earworms: quality of sperm in sterile males released for population suppression on St. Croix Island. J. Econ. Entomol. 68: 595-598.
- Nosky, J. B., J. A. Harding, and D. A. Wolfenbarger. 1980. Activity of certain O-ethyl S-propyl phosphorothioates, phosphorodithioates and oxime carbamates against organophosphorus resistant and susceptible strains of the tobacco budworm. Southwest. Entomol. 5: 245-249.
- Nye, D. E. 1986. Aerial applicator and mixer-loader exposure to cypermethrin during ULV application to cotton, pp. 198-200. In Proc. Beltwide Cotton Prod. Res. Conf.
- Nyffeler, M. 1982. Field studies of the ecological role of the spiders as predators of insects in agroecosystems. Ph.D. Thesis, Swiss Fed. Inst. Technology, Zurich, Switzerland.
- Nyffeler, M., and G. Benz. 1987. Spiders in natural pest control: a review. Zeit. Ang. Entomol. 103: 321-339.
- Nyffeler, M., D. A. Dean, and W. L. Sterling. 1986. Feeding habits of the spiders *Cyclosa turbinata* (Walckenaer) and *Lycosa rabida* Walckenaer. Southwest. Entomol. 11: 195-201.
- Nyffeler, M., D. A. Dean, and W. L. Sterling. 1987a. Predation by green lynx spider, *Peucetia viridans* (Araneae: Oxyopidae), inhabiting cotton and woolly cotton plants in east Texas. Environ. Entomol. 16: 355-359.
- Nyffeler, M., D. A. Dean, and W. L. Sterling. 1987b. Evaluation of the importance of the striped lynx spider, *Oxyopes salticus* (Araneae: Oxyopidae), as a predator in Texas cotton. Environ. Entomol. 16: 1114-1123.
- Nyffeler, M., D. A. Dean, and W. L. Sterling. 1987c. Feeding ecology of the orb-weaving spider *Argiope aurantia* (Araneae: Araneidae) in a cotton agroecosystem. Entomophaga 32: 367-375.
- Nyffeler, M., D. A. Dean, and W. L. Sterling. 1988. The southern black widow spider, *Latrodectus mactans* (Araneae, Theridiidae), as a predator of the red imported fire ant, *Solenopsis invicta* (Hymenoptera, Formicidae), in Texas cotton fields. J. Appl. Entomol. 106: 52-57.
- Nyffeler, M., D. A. Dean, and W. L. Sterling. 1989. Prey selection and predatory importance of orb-weaving spiders (Araneae: Araneidae and Uloboridae) in Texas cotton. Environ. Entomol. 18: 373-380.

- O'Brian, P. J., B. R. Leonard, and J. B. Graves. 1991. Population dynamics of *Aphis gossypii* Glover, pp. 689-690. In Proc. Beltwide Cotton Prod. Res. Conf.
- O'Brien, R. D. 1967. Insecticides: action and metabolism. Academic Press, New York.
- O'Brien, R. D. 1976. Acetylcholinesterase and its inhibition, pp. 271-296. In C. F. Wilkinson (ed.), Insecticide biochemistry and physiology. Plenum Press, New York.
- O'Neal, H., and R. W. Brazelton. 1984. Aerial application of pesticides. Shell Chemical Co., No. ADP84-016, Houston, TX.
- O'Shea, M. 1985. Neuropeptides in insects: possible leads to new control methods, pp. 134-151. In H. C. von Keyserlingk, A. Jager, and C. von Szczepanski (eds.), Approaches to new leads for insecticides. Springer-Verlag, New York.
- Oakman, J. H. 1981. The *Lygus* problem - decreasing or increasing, pp. 148. In Proc. Beltwide Cotton Prod. Res. Conf.
- Oatman, E. R. 1966. Parasitization of corn earworm eggs on sweet corn silk in southern California, with notes on larval infestations and predators. Environ. Entomol. 59: 830-835.
- Oatman, E. R., and G. R. Platner. 1971. Biological control of the tomato fruitworm, cabbage looper, and hornworms on processing tomatoes in southern California, using mass releases of *Trichogramma pretiosum*. J. Econ. Entomol. 64: 501-506.
- Ohlendorf, W. 1926. Studies of the pink bollworm in Mexico. USDA Bull. 2374.
- Oklahoma Cooperative Extension Service. 1935. Weekly cotton insect newsletter.
- Oklahoma Cooperative Extension Service. 1960. OSU Extension Agents' Handbook of Insect Control. E-832.
- Oklahoma Cooperative Extension Service. 1965. OSU Extension Agents' Handbook of Insect Control. E-832.
- Oklahoma Cooperative Extension Service. 1975. OSU Extension Agents' Handbook of Insect, Plant Disease and Weed Control. E-832.
- Oklahoma Cooperative Extension Service. 1975. OSU Cotton Insect Recommendations. Fact Sheet 7162.
- Oklahoma Cooperative Extension Service. 1988. OSU Cotton Insect Recommendations. Fact Sheet 7162.
- Okuda, M. S., and K. V. Yeargen. 1988. Intra- and interspecific host discrimination in *Telenomus podisi* and *Trissolcus euschisi* (Hymenoptera: Scelionidae). Ann. Entomol. Soc. Amer. 81: 1017-1020.
- Okumura, G. T. 1961. Identification of lepidopterous larvae attacking cotton. Calif. Dept. of Food and Agric. Special Public 282.
- Oliver, B. F., F. G. Maxwell, and J. N. Jenkins. 1967. Measuring aspects of antibiosis in cotton lines to the bollworm. J. Econ. Entomol. 60: 1459-1460.
- Olkowski, W., and A. Zhang. 1990. *Trichogramma* - a modern day frontier in biological control. IPM Practitioner 12: 5/6 1-15.
- Olmstead, S. D. 1976. An evaluation of cotton pest management practices in Pinal County, Arizona, 1974. Master's thesis. Agric. Exp. Sta., Dept. Agric. Econ., University of Arizona, Tucson, AZ.
- Olson, R. L., and T. L. Wagner. 1992. WHIMS, a knowledge-based system for cotton pest management. AI Applications 6: 41-58.
- Olson, R. L., T. L. Wagner, M. R. Williams, and J. L. Willers. 1990a. The development of WHIMS, a knowledge-based insect management system, pp. 322-325. In Proc. Beltwide Cotton Prod. Res. Conf.
- Olson, R. L., T. L. Wagner, and J. L. Willers. 1990b. A framework for modeling uncertain reasoning in ecosystem management. I. Background and theoretical considerations. AI Appl. Nat. Res. Man. 4: 1-10.
- Olson, R. L., J. L. Willers, and T. L. Wagner. 1990c. A framework for modeling uncertain reasoning in ecosystem management. II. Bayesian belief networks. AI Appl. Nat. Res. Man. 4: 11-24.
- Onstad, D. W. 1987. Calculation of economic-injury levels and economic thresholds for pest management. J. Econ. Entomol. 80: 297-303.
- Oppenorth, C. G. 1985. Biochemistry and genetics of insecticide resistance, pp. 731-773. In G. A. Kerkut, and L. I. Gilbert (eds.), Comprehensive insect physiology biochemistry and pharmacology. Pergamon Press, Oxford.

- Optner, S. L. 1965. Systems analysis for business and industrial problem solutions. Prentiss Hall, Englewood Cliff, N.J.
- Orchard, I., and A. B. Lange. 1987. Octopamine in insects: control of hemolymph lipid and visceral muscle in locusts, pp. 136-153. In R. M. Hollingworth, and M. B. Green (eds.), *Sites of action for neurotoxic pesticides*. American Chemical Society, Washington, D.C.
- Orphanides, G. M., and D. Gonzalez. 1971. Fertility and life table studies with *Trichogramma pretiosum* and *T. retorridum* (Hymenoptera: Trichogrammatidae). Ann. Entomol. Soc. Amer. 64: 824-834.
- Orphanides, G. M., D. Gonzalez, and B. R. Bartlett. 1971. Identification and evaluation of pink bollworm predators in southern California. J. Econ. Entomol. 64: 421-424.
- Orr Jr., C. 1966. Particulate technology. The Macmillan Co., New York.
- Osborne, M. P. 1985. DDT, HCH the cyclodienes, pp. 131-182. In G. A. Kerkut, and L. I. Gilbert (eds.), *Comprehensive insect physiology, biochemistry and pharmacology*. Vol. 12. Insect control. Pergamon Press, New York.
- Osman, A. A., T. F. Watson, and S. Sivasupramaniam. 1991. Reversion of permethrin resistance in field strains and selection for azinphosmethyl and permethrin resistance in pink bollworm (Lepidoptera: Gelechiidae). J. Econ. Entomol. 84: 353-357.
- Osman, A. A., T. F. Watson, and S. Sivasupramaniam. 1991. Susceptibility of field populations of pink bollworm (Lepidoptera: Gelechiidae) to azinphosmethyl and permethrin and synergism of permethrin. J. Econ. Entomol. 84: 358-362.
- Osman, A. A., T. F. Watson, and S. Sivasupramaniam. 1992. Inheritance of permethrin resistance in the pink bollworm (Lepidoptera: Gelechiidae). J. Econ. Entomol. 85: 335-339.
- Ota, K., and B. D. Hammock. 1980. Differential properties of cytosolic and microsomal epoxide hydrolases in mammalian liver. Science 207: 1479-1481.
- Ouye, M. T., R. S. Garcia, and D. F. Martin. 1964. Determination of the optimum sterilizing dosage for pink bollworms treated as pupae with gamma radiation. J. Econ. Entomol. 57: 387-390.
- Ouye, M. T., H. M. Graham, R. D. Garcia, and D. F. Martin. 1964. Comparative mating competitiveness of metapa-sterilized and normal pink bollworm males in laboratory and field cages. J. Econ. Entomol. 58: 927-929.
- Owen, W. L., and S. L. Calhoun. 1932. Biology of the pink bollworm at Presidio, Texas. J. Econ. Entomol. 25: 741-751.
- Pack, T. M., and N. P. Tugwell. 1976. Clouded and tarnished plant bugs on cotton: a comparison of injury symptoms and damage on fruit parts. Univ. of Arkansas Ag. Exp. Stn. Report Series 226.
- Paddock, F. B. 1919. The cotton or melon louse. Texas Ag. Exp. Sta. Bull. 257.
- Painter, R. H. 1930. The tarnished plant bug, *Lygus pratensis* L.: progress report. Annu. Rep. Entomol. Soc. Ont. (1929) 60: 102-107.
- Painter, R. H. 1951. Insect resistance in crop plants. MacMillan Co., New York.
- Pair, S. D., M. L. Laster, and D. F. Martin. 1982. Parasitoids of *Heliothis* spp. (Lepidoptera: Noctuidae) larvae in Mississippi associated with sesame interplantings in cotton, 1971-1974: implications of host habitat interaction. Environ. Entomol. 11: 509-512.
- Pair, S. D., J. R. Raulston, A. N. Sparks, and P. B. Martin. 1986. Fall armyworm (Lepidoptera: Noctuidae) parasitoids: differential spring distribution and incidence on corn and sorghum in the southern United States and northeastern Mexico. Environ. Entomol. 15: 342-348.
- Pair, S. D., M. L. Laster, and D. F. Martin. 1977. Hybrid sterility of the tobacco budworm: effects of alternate sterile and normal matings on fecundity and fertility. Ann. Entomol. Soc. Amer. 70: 952-954.
- Palm, C. E., W. W. Dykstra, G. R. Ferguson, R. Hansberry, W. J. Hayes Jr., L. W. Hazleton, J. G. Horsfall, E. F. Knippling, L. D. Leach, R. L. Lovvorn, and G. A. Swanson. 1969. Insect-pest management and control. National Academy of Sciences, Publ. No. 1965, Washington, D.C.
- Palumbo, J. C. 1985. The effects of *Sphaeralcea* spp. on overwinter survival and reproductivity of boll weevils, *Anthonomus grandis* Boheman. M.S. Thesis, Univ. of AR.

- Parencia Jr., C. R. 1976. Events leading to the pilot boll weevil eradication experiment, pp. 59-61. In Proc. Conf. on Boll Weevil Suppression, Management and Elimination Technology. USDA, ARS-S-71.
- Parencia Jr., C. R. 1978. One hundred twenty years of research on cotton insects in the United States. USDA Agr. Handb. No. 515.
- Parencia Jr., C. R., W. P. Scott, and J. W. Smith. 1980. Comparative populations of beneficial arthropods and *Heliothis* spp. larvae in selected fields in Panola and Pontotoc counties, Mississippi in 1977 and 1978. Southwest. Entomol. 5: 22-31.
- Parencia Jr., C. R., W. P. Scott, J. W. Smith, and T. C. Lockley. 1981. A report of biological data developed in 1977-1980 for the optimum pest management trial, Panola and Pontotoc Counties, Mississippi. Attachment D of Appendix A, biological evaluation of beltwide boll weevil/cotton insect management programs. USDA, Science and Education Administration,
- Park, E. C., and H. R. Horvitz. 1986. Mutations with dominant effects on the behavior and morphology of the nematode *Caenorhabditis elegans*. Genetics 113: 821-852.
- Parker, R. D., and J. H. Benedict. 1982. Management of cotton insects in South & East Texas counties. Tex. Agric. Ext. Serv. B-1204.
- Parker, R. D., and J. A. Swart. 1989. Suggested insecticides for management of cotton insects in the Blacklands, South & East Texas, counties. Tex. Agric. Ext. Serv. B-1204.
- Parker, R. D., J. K. Walker, G. A. Niles, and J. R. Mulkey. 1980. The short-season effect in cotton and escape from the boll weevil. Texas Agr. Exp. Sta. Bull. 1315.
- Parker, R. D., and R. L. Zrubek. 1989. Management of cotton insects in the Southern, Eastern and Blackland areas of Texas. Texas Agric. Ext. Serv. B-1204.
- Parnell, F. R. 1925. The breeding of jassid resistant cottons: report for season. Empire Cotton Grow. Rev. 2: 330-336.
- Parrott, W. L., J. N. Jenkins, and W. T. Buford. 1970. Instars and duration of stadia of boll weevil larvae. Ann. Entomol. Soc. Amer. 63: 1265-1267.
- Parrott, W. L., J. N. Jenkins, and J. C. McCarty Jr. 1983. Feeding behavior of first-stage tobacco budworm (Lepidoptera: Noctuidae) on three cotton cultivars. Ann. Entomol. Soc. Amer. 76: 167-170.
- Parrott, W. L., J. N. Jenkins, J. C. McCarty Jr., and L. Lambert. 1978. A procedure to evaluate for antibiosis in cotton to the tobacco budworm. J. Econ. Entomol. 71: 310-312.
- Parrott, W. L., W. R. Meredith Jr., J. N. Jenkins, and J. C. McCarty Jr. 1982. Effects of cotton genotype and early or no insecticide treatment on abundance of selected insects in the Mississippi Delta. USDA-ARS Agricultural Research Results; Southern Series No. 2 (ARS-S-12).
- Parrott, W. L., J. E. Mulrooney, J. N. Jenkins, and J. C. McCarty Jr. 1986. Improved techniques for production of tobacco budworm (Lepidoptera: Noctuidae) eggs. J. Econ. Entomol. 79: 277-280.
- Parvin, D. W. 1990a. The weight loss associated with defoliated cotton and its implications, pp. 469-471. In Proc. Beltwide Cotton Prod. Res. Conf.
- Parvin, D. W. 1990b. The importance of harvest initiation date, pp. 471-474. In Proc. Beltwide Cotton Prod. Res. Conf.
- Parvin, D. W. 1990c. The cost of delay dominates the value of earliness in Australia. Australian Cotton Grower. Aug.-Oct.
- Parvin, D. W. 1990d. The weight loss associated with defoliated cotton under Mississippi conditions. Staff Paper No. 92, Dept. Agric. Econ., Mississippi State University
- Parvin, D. W. 1990e. The economic value of earliness in Australia. Rhone-Poulenc Rural Australia. PTY LTD. Moree, NSW.
- Parvin, D. W. 1991. The economics of earliness: Stoneville, MS, and Moree, New South Wales, pp. 392-394. In Proc. Beltwide Cotton Prod. Res. Conf.
- Parvin, D. W., M. Cochran, W. F. Nicholson, and J. R. Phillips. 1984. An economic evaluation of community pest management programs on cotton in Arkansas. Staff Paper SP2484. Department of Agricultural Economics and Rural Sociology, University of Arkansas.
- Parvin, D. W., and F. T. Cooke Jr. 1990. The mathematics of cotton harvest, pp. 119-121. In Proc. Beltwide Cotton Prod. Res. Conf.

- Parvin, D. W., and F. A. Harris. 1986. Preventive and corrective strategies within an integrated pest management system in Mississippi. Delta Farm Press 44:(24) 7.
- Parvin, D. W., and T. Miller. 1986. The role of the consulting entomologist within a preventive cotton insect management system in Mississippi. Delta Farm Press 44:(23) 27.
- Parvin, D. W., and J. W. Smith. 1985. The economics of cotton harvesting in the Mid South with emphasis on early season insect control. Staff Paper No. 74, Dept. Agric. Econ., Mississippi State University.
- Parvin, D. W., and F. H. Tyner. 1974. The systems approach - research or research management. S. J. Agric. Econ.
- Patana, R. 1982. Disposable diet packet for feeding and oviposition of *Lygus hesperus* (Hemiptera: Miridae). J. Econ. Entomol. 75: 668-669.
- Patana, R. 1985. *Heliothis zea/Heliothis virescens*, pp. 329-334. In P. Singh, and R. F. Moore (eds.), Handbook of Insect Rearing Vol. II Elsevier, New York.
- Patana, R. 1985. *Spodoptera exigua*, pp. 465-468. In P. Singh, and R. F. Moore (eds.), Handbook of Insect Rearing Vol. II Elsevier, New York.
- Pate, T. L., and J. R. Brazzel. 1964. Cotton pests exhibit resistance to DDT. Agri. Chem. 19: 34-36.
- Pate, T. L., and J. R. Brazzel. 1964. Resistance of bollworms to poison tested. Miss. Farm Res. 27: 1-3.
- Patti, J. H., and G. R. Carner. 1974. *Bacillus thuringiensis* investigations for control of *Heliothis* spp. on cotton. J. Econ. Entomol. 67: 415-418.
- Patton, C. N. 1958. A catalogue of larvaevoridae in Florida. Fla. Entomol. 41: 29-39, 77-89.
- Payne, G. T. 1987. Inheritance and mechanisms of permethrin resistance in the tobacco budworm, *Heliothis virescens* (Lepidoptera: Noctuidae). Ph.D., Clemson Universty.
- Pearl, J. 1988. Probabalistic reasoning in intelligent systems: networks of plausible inference. Morgan Kaufmann, San Mateo.
- Pearson, E. O. 1958. The insect pests of cotton in tropical Africa. Commonwealth Inst. Entomol., London.
- Peck, W. B., and W. H. Whitcomb. 1970. Studies on the biology of a spider, *Chiracanthium inclusum* (Hentz). Ark. Agr. Exp. Stn. Bull. 753.
- Pedigo, L. P. 1993. Introduction to sampling arthropod populations, pp. 1-11. In L. P. Pedigo, and G. D. Buntin (eds.), Handbook of Sampling Methods for Arthropods in Agriculture. CRC Press, Ann Arbor.
- Pedigo, L. P., S. H. Hutchins, and L. G. Higley. 1986. Economic injury levels in theory and practice. Annu. Rev. Entomol. 31: 341-368.
- Pencoe, N. L., and J. R. Phillips. 1987. The cotton boll weevil: legend, myth, and reality. J. Entomol. Sci. Suppl. 1: 30-51.
- Penman, D. R., and R. B. Chapman. 1983. Fenvalerate-induced distributional imbalances of two-spotted spider mite on bean plants. Entomol. Exp. Appl. 33: 71-78.
- Penman, D. R., R. B. Chapman, and M. H. Bowie. 1986. Direct toxicity and repellent activity of pyrethroids against *Tetranychus urticae* (Acrida: Tetranychidae). J. Econ. Entomol. 79: 1183-1187.
- Penman, D. R., and W. W. Cone. 1972. Behavior of two-spotted spider mites in response to quiescent female deutonymph and to web. Ann. Entomol. Soc. Amer. 65: 1289-1293.
- Penman, D. R., and W. W. Cone. 1974. Role of web, tactile stimuli, and female sex pheromone in attraction of male twospotted spider mites to quiescent female deutonymphs. Ann. Entomol. Soc. Amer. 67: 179-182.
- Pepper, B. H. 1943. The relationship between cropping practices and injury by *Heliothis armigera* with special reference to lima beans and tomatoes. J. Econ. Entomol. 36: 329-330.
- Periak, F. J., and D. A. Fischhoff. 1993. Insect-resistant cotton: from the laboratory to the marketplace, pp. 199-221. In L. Kim (eds.), Advanced engineered pesticides. Macel Dekker, New York.
- Perkins, J. H. 1982. Insects, experts, and the insecticide crisis. The quest for new pest management strategies. Plenum Press, New York.

- Perlak, F. J., R. W. Deaton, T. A. Armstrong, R. L. Fuchs, S. R. Sims, J. T. Greenplate, and D. A. Fischhoff. 1990. Insect resistant cotton plants. *Biotechnology* 8: 939-943.
- Perring, T. M., A. D. Cooper, R. J. Rodriguez, C. A. Farrar, and T. S. Bellows Jr. 1993. Identification of a whitefly species by genomic and behavioral studies. *Science* 259: 74-77.
- Peterson, J. J. 1982. Current status of nematodes for biological control of insects. *Parasitology* 84: 177-184.
- Pfadt, R. E. 1971. Insect pests of cotton, pp. 343-373. In R. E. Pfadt (ed.), *Fundamentals of applied entomology*. 2nd ed.. Macmillan Publishing Co., Inc., New York.
- Pfrimmer, T. R. 1964. Populations of certain insects and spiders on cotton plants following insecticide applications. *J. Econ. Entomol.* 57: 640-643.
- Pfrimmer, T. R. 1979. *Heliothis* spp. control on cotton with pyrethroids, carbamates, organophosphates, and biological insecticides. *J. Econ. Entomol.* 72: 593-598.
- Pfrimmer, T. R. 1986. *Heliothis* spp.: seasonal species changes on cotton from 1980 to 1985 at Stoneville, MS, pp. 226-227. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Pfrimmer, T. R., R. E. Furr, and E. A. Stadelbacher. 1971. Material for control of boll weevils, boll-worms, and tobacco budworms on cotton at Stoneville, Mississippi. *J. Econ. Entomol.* 64: 475-478.
- Phillips, J. R. 1971. Bollworm control with chlorphenamidine. *Ark. Farm Res.* 4: 9.
- Phillips, J. R. 1978. Integrated insect management systems: an area-wide insect management program, pp. 114. In *Symposium on development of optimum crop production systems for the Mid-South*. Ark. Agric. Exp. Stn. Spec. Rep. 67.
- Phillips, J. R. 1990. 10-Point program for managing *Heliothis* resistance. *Cotton Grower*. June.
- Phillips, J. R., J. B. Graves, and R. G. Luttrell. 1989. Insecticide resistance management: Relationship to integrated pest management. *Pestic. Sci.* 27: 459-464.
- Phillips, J. R., A. P. Gutierrez, and P. L. Adkisson. 1980. General accomplishments toward better insect control in cotton, pp. 123-153. In C. B. Huffaker (ed.), *New technology of pest control*. John Wiley & Sons, New York.
- Phillips, J. R., and W. F. Nicholson. 1979. Coping with the tobacco budworm/bollworm problem: community-wide management, pp. 39-41. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Phillips, J. R., W. F. Nicholson, T. Teague, J. Bernhardt, and T. F. Mueller. 1981. Community wide bollworm management, pp. 48-50. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Pierce, W. D. 1908. Studies of parasites of the cotton boll weevil. *USDA Bur. Entomol. Bull.* 73.
- Pierce, W. D. 1913. The occurrence of a cotton boll weevil in Arizona. *J. Agric. Res.* 1: 89-99.
- Pierce, W. D. 1922. How insects affect the cotton plant and means of combating them. *USDA Farmers' Bull.* No. 890.
- Pierce, W. D., R. A. Cushman, C. E. Hood, and W. D. Hunter. 1912. The insect enemies of the cotton boll weevil. *USDA Bur. Entomol. Bull.* 100.
- Pieters, E. P., K. S. Akbay, L. G. Brown, and R. W. McClendon. 1981. Use of computer game COTGAME in teaching entomology. *Environ. Entomol.* 10: 256-261.
- Pieters, E. P., and W. L. Sterling. 1974. Aggregation indices of cotton arthropods in Texas. *Environ. Entomol.* 3: 598-600.
- Pieters, E. P., and T. C. Urban. 1977. Dispersal of the boll weevil in the coastal bend area of Texas. Southwest. Entomol. 2: 4-7.
- Pimentel, D. Insecticide resistance management in agriculture, pp. 10. In R. Whalon, and R. Wollingworth (Eds.), *Resistance Pest Management Newsletter*. Spring, 5(1). Pesticide Research Center, Michigan State University, East Lansing, Michigan.
- Pimentel, D., D. Chant, A. Kelman, R. L. Metcalf, L. D. Newsom, and J. C. Smith. 1965. Improved pest control practices in restoring the quality of our environment, pp. 227-291. In *Rpt. of Environ. Pollution Panel. President's Science Advisory Committee*.
- Pimentel, D., J. Krummel, D. Gallahan, J. Hough, A. Merrill, I. Schreiner, P. Vittum, F. Koziol, E. Back, D. Yen, and S. Fiance. 1981. A cost-benefit analysis of pesticide use in U.S. food production, pp. 27-54. In D. Pimentel (ed.), *Handbook of pest management in agriculture*. Vol. II. CRC Press, Boca Raton.

- Pimentel, D. C., C. Shoemaker, E. LaDue, R. Rovinsky, and N. Russell. 1976. Alternatives for reducing insecticides on cotton and corn: economic and environmental impact. Environmental Protection Agency Report.
- Pimm, S. C., and D. P. Bartell. 1980. Statistical model for predicting range expansion of the red imported fire ant, *Solenopsis invicta*, in Texas. Environ. Entomol. 9: 653-658.
- Pinkas, L. H. 1972. Modification of flowering in Pima cotton with ethephon. Crop Sci. 12: 465-466.
- Pinto, J. D., and E. R. Oatman. 1985. Additions to nearctic *Trichogramma* (Hymenoptera: Trichogrammatidae). Proc. Entomol. Soc. Wash. 87: 176-186.
- Pinto, J. D., G. R. Platner, and E. R. Oatman. 1978. Clarification of the identity of several common species of North American *Trichogramma* (Hymenoptera: Trichogramma). Ann. Entomol. Soc. Am. 72: 170-180.
- Pintureau, B., and J. Voegele. 1980. Une nouvelle espece proche de *Trichogramma evanescens*: *T. maidis* (Hym.: Trichogrammatidae). Entomophaga 25: 431-440.
- Pitre, H. N., T. L. Hillhouse, M. C. Donahue, and H. C. Kinard. 1978. Beneficial arthropods on soybeans and cotton in different ecosystems in Mississippi. Miss. Agric. For. Exp. Sta. Tech. Bull. 90.
- Pitre, H. N., J. E. Mulrooney, and D. B. Hogg. 1983. Fall armyworm (Lepidoptera: Noctuidae) oviposition: crop preferences and egg distribution on plants. J. Econ. Entomol. 76: 463-466.
- Pitts, D. L., and E. P. Pieters. 1980. Ovicidal activity of insecticides against tobacco budworm eggs on cotton. J. Econ. Entomol. 73: 570-572.
- Pittuck, B. C. 1897. Cotton and corn experiments. Tex. Agr. Exp. Sta. Bull. 45.
- Pittuck, B. C., and S. A. McHenry. 1899. Cotton experiments. Tex. Agr. Exp. Sta. Bull. 50.
- Planer, F. R. 1988. Southeast boll weevil eradication program, pp. 239-240. In Proc. Beltwide Cotton Prod. Res. Conf.
- Plant, R. E. 1989a. An integrated decision support system for agricultural management. Agric. Systems 29: 49-66.
- Plant, R. E. 1989b. An artificial intelligence based method for scheduling crop management actions. Agric. Systems 31: 127-155.
- Plant, R. E., and L. T. Wilson. 1986. A computer based pest management system for San Joaquin Valley cotton, pp. 69-172. In Proc. Beltwide Cotton Prod. Res. Conf.
- Plant, R. E., L. T. Wilson, L. Zelinski, P. B. Goodell, and T. A. Kerby. 1987. CALEX/Cotton: an expert system-based management aid for California cotton growers, pp. 203-206. In Proc. Beltwide Cotton Prod. Res. Conf.
- Plant, R. E., F. G. Zalom, J. A. Young, and R. N. Rice. 1989. An expert system for the diagnosis of peach and nectarine disorders. Hort. Sci. 24: 700.
- Plapp Jr., F. W. 1972. Laboratory tests of alternate insecticides for control of methyl parathion resistant tobacco budworms. J. Econ. Entomol. 65: 903-904.
- Plapp Jr., F. W. 1973. Comparison of insecticide absorption and detoxification in larvae of the bollworm, *Heliothis zea*, and the tobacco budworm, *H. virescens*. Pestic. Biochem. Physiol. 2: 447-455.
- Plapp Jr., F. W. 1976. Biochemical genetics of insecticide resistance. Annu. Rev. Entomol. 21: 179-197.
- Plapp Jr., F. W. 1976. Chlordimeform as a synergist for insecticides against the tobacco budworm. J. Econ. Entomol. 69: 91-92.
- Plapp Jr., F. W. 1979. Synergism of pyrethroid insecticides by formamidines against *Heliothis* pests of cotton. J. Econ. Entomol. 72: 667-670.
- Plapp Jr., F. W. 1987. Managing resistance to synthetic pyrethroids in the tobacco budworm, pp. 224-226. In Proc. Beltwide Cotton Prod. Res. Conf.
- Plapp Jr., F. W. 1991. Pyrethroid resistance in the tobacco budworm: five years later. Southwest. Entomol. Suppl. 15: 69-74.
- Plapp Jr., F. W. 1993. Alternate strategies for insect control and resistance management: possibilities and future prospects, pp. 698-701. In Proc. Beltwide Cotton Prod. Res. Conf.

- Plapp Jr., F. W., and D. L. Bull. 1978. Toxicity and selectivity of some insecticides to *Chrysopa carnea*, a predator of the tobacco budworm. J. Econ. Entomol. 71: 431-434.
- Plapp Jr., F. W., and D. L. Bull. 1980. Effects of pyrethroid insecticides on the common green lacewing. J. Econ. Entomol. 73: 306-309.
- Plapp Jr., F. W., and C. Campanhola. 1986. Synergism of pyrethrins by chlordimeform against susceptible and resistant *Heliothis*, pp. 167-169. In Proc. Beltwide Cotton Prod. Res. Conf.
- Plapp Jr., F. W., C. Campanhola, R. D. Bagwell, and B. F. McCutchen. 1990. Management of pyrethroid-resistant tobacco budworms on cotton in the United States, pp. 237-260. In R. T. Roush, and B. E. Tabashnik (eds.), Pesticide resistance and arthropods. Chapman & Hall, New York.
- Plapp Jr., F. W., R. E. Frisbie, and J. A. Jackman. 1988. Monitoring for pyrethroid resistance in the tobacco budworm - 1987, pp. 237-239. In Proc. Beltwide Cotton Prod. Res. Conf.
- Plapp Jr., F. W., J. A. Jackman, C. Campanhola, R. E. Frisbie, J. B. Graves, R. G. Luttrell, W. F. Kitten, and M. Wall. 1990. Monitoring and management of pyrethroid resistance in tobacco budworm (Lepidoptera: Noctuidae) in Texas, Mississippi, Louisiana, Arkansas, and Oklahoma. J. Econ. Entomol. 83: 335-341.
- Plapp Jr., F. W., G. N. McWhorter, and W. H. Vance. 1987. Monitoring for pyrethroid resistance in the tobacco budworm in Texas — 1986, pp. 324-326. In Proc. Beltwide Cotton Prod. Res. Conf.
- Plapp Jr., F. W., and S. B. Vinson. 1977. Comparative toxicities of some insecticides to the tobacco budworm and its ichneumonid parasite, *Campoletis sonorensis*. Environ. Entomol. 6: 381-384.
- Plummer, E. L. 1984. Biphenylmethyl pyrethrins. A structure-activity relationship approach to pesticide design, pp. 297-320. In P. S. Magee, G. K. Kohn, and J. J. Menn (eds.), Pesticide synthesis through rational approaches. American Chemical Society, Washington, D.C.
- Poinar Jr., G. O. 1975. Description and biology of a new insect parasitic rhabditoid, *Heterorhabditis bacteriophora* n. gen., n. sp. (Rhabditida; Heterorhabditidae n. fam.). Nematologica 21: 463-470.
- Poinar Jr., G. O. 1990. Taxonomy and biology of Steinernematidae and Heterorhabditidae, pp. 23-61. In R. Gaugler, and H. K. Kaya (eds.), Entomopathogenic nematodes in biological control. CRC Press, Inc., Boca Raton.
- Poinar, J. J. 1983. The natural history of nematodes. Prentice-Hall, Inc., Englewood Cliffs.
- Polazzo, R. J. 1978. Comparison of the responses of adults and larvae of five lepidopteran species to seven insecticides. M.S. Thesis, Louisiana State University.
- Polles, S. G. 1968. The effect of various droplet sizes on U/V insecticide concentrate on residual action and toxicity. M.S. Thesis, Mississippi State Univ., Miss. State.
- Polles, S. G., and S. B. Vinson. 1972. Penetration, distribution and metabolism of ^{14}C -endrin in resistant and susceptible tobacco budworm larvae. J. Agric. Food Chem. 20: 38-41.
- Poole, R. W. 1989a. A general synopsis of the systematics of *Heliothis*, pp. 161-171. In E. G. King and R. D. Jackson (eds.), Proc. Workshop on Biological Control of *Heliothis*: Increasing the Effectiveness of Natural Enemies. FERRO, USDA.
- Poole, R. W. 1989b. Fascicle 118, Noctuidae, part I, Lepidopterorum catalogue. E. J. Brill, Flora & Fauna Publications, Leiden, New York.
- Poston, F. L., L. P. Pedigo, and S. M. Welch. 1983. Economic injury levels: reality and practicality. Bull. Entomol. Soc. Amer. 29: 49-53.
- Potter, H. S. 1983. Results of plant canopy spray penetration studies with fixed-wing aircraft. ASAE and NAAA Paper No. AA 83-004.
- Potter, M. F., and T. F. Watson. 1980. Induction of diapause in the tobacco budworm in Arizona. J. Econ. Entomol. 73: 820-823.
- Powell, J. E. 1989. Importation and establishment of predators and parasitoids of *Heliothis* into the USA, pp. 387-395. In E. G. King and R. D. Jackson (eds.), Proc. Workshop on Biological Control of *Heliothis*: Increasing the Effectiveness of Natural Enemies. FERRO, USDA.
- Powell, J. E., D. L. Bull, and E. G. King (eds.). 1989. Biological control of *Heliothis* spp. by *Microplitis croceipes*. Southwest. Entomol. Suppl. 12.

- Powell, J. E., and G. W. Elzen. 1989. Biological and host relationships of *Microplitis croceipes*. Southwest. Entomol. Suppl. 12: 11-16.
- Powell, J. E., E. G. King Jr., and C. S. Jany. 1986. Toxicity of insecticides to adult *Microplitis croceipes* (Hymenoptera: Braconidae). J. Econ. Entomol. 79: 1343-1346.
- Powell, J. E., and E. G. King. 1984. Behavior of adult *Microplitis croceipes* (Hymenoptera: Braconidae) and parasitism of *Heliothis* spp. (Lepidoptera: Noctuidae) host larvae in cotton. Environ. Entomol. 13: 272-277.
- Powell, J. E., and J. L. Roberson. 1989. Technology transfer: boll weevil production for sterile release, pp. 242-248. In Proc. Beltwide Cotton Prod. Res. Conf.
- Powell, J. E., J. L. Roberson, and E. G. King Jr. 1988. Advances in boll weevil production technology: Alabama sterile release program, 1987, pp. 274-275. In Proc. Beltwide Cotton Prod. Res. Conf.
- Powell, J. E., and W. P. Scott. 1991. Survival of *Microplitis croceipes* (Hymenoptera: Braconidae) in contact with residues of insecticides on cotton. Environ. Entomol. 20: 346-348.
- Powers, D. A., T. Lauerman, D. Crawford, and L. DiMichele. 1991. Genetic mechanisms for adapting to a changing environment. Ann. Rev. Genetics 25: 629-659.
- Powles, R. J., and P. L. Rogers. 1989. *Bacillus* toxins for insect control - a review. Australian J. Biotechnol. 3: 223-228.
- Prabhaker, N., D. L. Coudriet, and N. C. Toscano. 1988. Effect of synergists on organophosphate and permethrin resistance in sweetpotato whitefly (Homoptera: Aleyrodidae). J. Econ. Entomol. 81: 34-39.
- Pree, D. J., D. E. Archibald, and R. K. Morrison. 1989. Resistance to insecticides in the common green lacewing, *Chrysoperla carnea* (Neuroptera: Chrysopidae) in southern Ontario. J. Econ. Entomol. 82: 29-34.
- Price, P. W. 1981. Relevance of ecological concepts to practical biological control, pp. 3-19. In G. C. Papavizas (ed.), Biochemical control in Crop Production. Allenheld, Osmum and Company.
- Proshold, F. I., and J. A. Bartell. 1970. Inherited sterility in progeny of irradiated male tobacco budworms: effects on reproductions, development time, and sex ratio. J. Econ. Entomol. 63: 280-285.
- Proshold, F. I., and J. A. Bartell. 1972. Inherited sterility and post embryonic survival of two generations of tobacco budworms, *Heliothis virescens* (Lepidoptera: Noctuidae), from partially sterile males. Can. Entomol. 104: 221-230.
- Proshold, F. I., M. L. Lester, D. F. Martin, and E. G. King. 1982. The potential for hybrid sterility in *Heliothis* management, pp. 329-339. In W. Reed and V. Kumble (eds.), Proc. Internl. Workshop on *Heliothis* Management. ICRISAT, Patancheru, A.P., India.
- Proshold, F. I., and J. W. Smith. 1982. The potential for hybrid sterility in *Heliothis virescens* management, pp. 182-184. In Proc. Beltwide Cotton Prod. Res. Conf.
- Proverbs, M. D., and J. R. Newton. 1962a. Some effects of gamma radiation on the reproductive potential of the codling moth, *Carpocapsa pomonella* (L.) (Lepidoptera: Olethreutidae). Can. Entomol. 94: 1162-1170.
- Proverbs, M. D., and J. R. Newton. 1962b. Suppression of the reproductive potential of the codling moth by gamma irradiated males in caged orchard trees. J. Econ. Entomol. 55: 934-936.
- Proverbs, M. D., J. R. Newton, and D. M. Logan. 1969. Codling moth control by release of radiation-sterilized moths in a commercial apple orchard. J. Econ. Entomol. 62: 1331-1334.
- Putman, W. L. 1937. Biological notes on the Chrysopidae. Can. J. Res. 15: 29-37.
- Puttler, B., R. E. Sechrist, and D. M. Daughtery Jr. 1973. *Hexameris arvalis* parasitising *Agrotis ipsilon* in corn and the origin of the pest infestation. Environ. Entomol. 2: 963-964.
- Quaintance, A. L. 1905. Some present-day features of applied entomology in America. USDA Bur. Entomol. Bull. No. 52.
- Quaintance, A. L., and C. T. Brues. 1905. The cotton bollworm. USDA Bur. Entomol. Bull. No. 50.
- Quesenberry, G. R. 1936. Summary of extension work in New Mexico. Ext. Circ. 145.
- Quistad, G. B., D. C. Cerf, S. J. Kramer, B. J. Bergot, and D. A. Schooley. 1985. Design of novel insect anti juvenile hormones: allylic alcohol derivatives. J. Agric. Food Chem. 33: 47-50.

- Rabb, R. L. 1972. Principles and concepts of pest management, *In* Implementing practical pest management strategies. Proc. Nat. Ext. Insect-Pest Management Workshop, March 14-16, 1972. Purdue Univ., Lafayette, IN.
- Rabb, R. L. 1978. A sharp focus on insect populations and pest management from a wide-area view. Bull. Entomol. Soc. Amer. 24: 55-61.
- Rabb, R. L. 1978. Eradication of plant pests. Conn. Bull. Entomol. Soc. Amer. 24: 40-44.
- Rabb, R. L. 1985. Conceptual bases to develop and use information on the movement and dispersal of biotic agents in agriculture, pp. 5-34. *In* D. R. MacKenzie, C. S. Barfield, G. G. Kennedy, and R. D. Berger (eds.), The Movement and Dispersal of Agriculturally Important Biotic Agents. Claitor's Publishing, Baton Rouge.
- Rabb, R. L., G. K. DeFoliart, and G. G. Kennedy. 1984. An ecological approach to managing insect populations, pp. 697-728. *In* C. B. Huffaker, and R. L. Rabb (eds.), Ecological Entomology. Wiley, New York.
- Rabb, R. L., and F. E. Guthrie. 1970. Concepts of pest management. Proc. Conf. N.C. State Univ., Raleigh, NC., March 25-27.
- Rabb, R. L., R. E. Stinner, and G. A. Carlson. 1974. Ecological principles as a basis for pest management in the agroecosystem, pp. 19-45. *In* F. G. Maxwell and F. A. Harris (eds.), Proc. Summer Instit. Biol. Contrl. Plant Insects and Diseases. Univ. Press Miss., Jackson, Mississippi.
- Rabb, R. L., R. E. Stinner, and R. van den Bosch. 1976. Conservation and augmentation of natural enemies, pp. 233-254. *In* C. B. Huffaker, and P. S. Messenger (eds.), Theory and Practice of Biological Control. Academic, New York.
- Race, S. R. 1960. A comparison of two sampling techniques for lygus bugs and stink bugs on cotton. J. Econ. Entomol. 53: 689-690.
- Race, S. R. 1965. Importance and control of Western flower thrips *Frankliniella occidentalis*, on seedling cotton. New Mexico Ag. Exp. Sta. Bull. 497.
- Raina, A. K. 1988. Selected factors influencing neurohormonal regulation of sex pheromone production in *Heliothis* species. J. Agric. Food Chem. 14: 2063-2069.
- Raina, A. K., R. A. Bell, and W. Klassen. 1981. Diapause in the pink bollworm: preliminary genetic analysis. Insect Sci. Appl. 1: 231-235.
- Raina, A. K., H. Jafe, T. G. Kempe, P. Keim, R. W. Blacher, H. M. Fales, C. T. Riley, J. A. Klun, R. L. Ridgway, and D. K. Hayes. 1989a. Identification of a neuropeptide hormone that regulates sex pheromone production in female moths. Science 244: 796-798.
- Raina, A. K., E. A. Stadelbacher, and R. L. Ridgway. 1989b. Comparison of sex pheromone composition and pheromone-mediated male behavior of laboratory-reared and wild *Heliothis zea* (Lepidoptera: Noctuidae). J. Agric. Food Chem. 15: 1259-1265.
- Ramalho, F. S., J. C. McCarty Jr., J. N. Jenkins, and W. L. Parrott. 1984. Distribution of tobacco budworm (Lepidoptera: Noctuidae) larvae within cotton plants. J. Econ. Entomol. 77: 591-594.
- Ramaswamy, S. B., S. A. Randle, and W. K. Ma. 1985. Field evaluation of the sex pheromone components of *Heliothis virescens* (Lepidoptera: Noctuidae) in cone traps. Environ. Entomol. 14: 293-296.
- Ramaswamy, S. B., and R. T. Roush. 1986. Sex pheromone titers in females of *Heliothis virescens* from three geographical locations (Lepidoptera: Noctuidae). Entomol. Gen. 12: 19-23.
- Ratchford, K. J., A. M. Pavloff, J. B. Graves, and E. Burns. 1987. Evaluation of insecticides for control of early season cotton pests in the loessial hill section of Northeast Louisiana, pp. 231-233. *In* Proc. Beltwide Cotton Prod. Res. Conf.
- Rathman, R. J. 1981. The role of host plants and parasitoids on the abundance of spring populations of *Heliothis* spp. in Arizona. M.S. Thesis. University of Arizona.
- Rathman, R. J., and T. F. Watson. 1985. A survey of early-season host plants and parasites of *Heliothis* spp. in Arizona. J. Ag. Entomol. 2: 388-394.
- Raulston, J. R. 1979. *Heliothis virescens* migration, pp. 412-419. *In* R. L. Rabb, and G. G. Kennedy (eds.), Movement of highly mobile insects: concepts and methodology in research. University Graphics, North Carolina State University, Raleigh.

- Raulston, J. R., H. M. Graham, P. D. Lingren, and J. W. Snow. 1976. Mating interaction of native and laboratory-reared tobacco budworms released in the field. *Environ. Entomol.* 5: 195-198.
- Raulston, J. R., and P. D. Lingren. 1969. A technique for rearing larvae of the bollworm and tobacco budworm in large numbers. *J. Econ. Entomol.* 62: 959-961.
- Raulston, J. R., and P. D. Lingren. 1972. Methods for large scale rearing of the tobacco budworm. U.S. Dept. of Agric. Prod. Res. Rep.
- Raulston, J. R., S. D. Pair, J. Loera, and H. E. Cabanillas. 1992. Prepupal and pupal parasitism of *Helicoverpa zea* and *Spodoptera frugiperda* (Lepidoptera: Noctuidae) by *Steinernema* sp. in cornfields in the Lower Rio Grande Valley. *J. Econ. Entomol.* 85: 1666-1670.
- Raulston, J. R., S. D. Pair, F. A. Pedraza-Martinez, J. K. Westbrook, A. N. Sparks, and V. M. Sanchez Valdez. 1986a. Ecological studies indicating the migration of *Heliothis zea*, *Spodoptera frugiperda*, and *Heliothis virescens* from northeastern Mexico and Texas, pp. 204-220. In W. Danthanarayana (ed.), *Insect flight dispersal and migration*. Springer-Verlag, Berlin.
- Raulston, J. R., S. D. Pair, A. N. Sparks, J. K. Westbrook, J. Loera, K. R. Summy, and D. R. Rummel. 1986b. Production of *Heliothis zea* on corn in northeastern Mexico and the Lower Rio Grande Valley of Texas: a potential source for corn and cotton infestation on the High Plains, pp. 222-225. In Proc. Beltwide Cotton Prod. Res. Conf.
- Raulston, J. R., J. W. Snow, H. M. Graham, and P. D. Lingren. 1975. Tobacco budworm: effect of prior mating and sperm content on the mating behavior of females. *Ann. Entomol. Soc. Amer.* 68: 701-704.
- Raulston, J. R., W. W. Wolf, P. D. Lingren, and A. N. Sparks. 1982. Migration as a factor in *Heliothis* management, pp. 61-74. In W. Reed and V. Kumble (eds.), *Proc. Internl. Workshop on Heliothis Management*. ICRISAT, Patancheru, A.P., India.
- Raulston, J. R., D. A. Wolfenbarger, and A. C. Bartlett. 1985. Tobacco budworm: response to gossypol and selection in a field-collected strain under laboratory conditions. *J. Econ. Entomol.* 78: 158-162.
- Ray, L. L. 1970. Breeding cotton varieties for narrow-row production, pp. 57. In Proc. Beltwide Cotton Prod. Res. Conf.
- Ray, L. L., and T. R. Richmond. 1966. Morphological measures of earliness of crop maturity in cotton. *Crop Sci.* 6: 527-531.
- Raymond, M. 1985. Presentation d'un programme basic d'analyse log-probit pour micro-ordinateur. ORSTOM, Ser. Ent. Med. et Parasitol 22: 117-121.
- Reado, J., and M. H. Sweet. 1982. A review of the Geocorinae of the United States East of the 100th Meridian (Hemiptera: Lygaeidae). *Entomol. Soc. Amer. Misc. Publ.* 12: 1-91.
- Reagan, T. E. 1981. A pest management system for sugarcane insects. *La. Agr.* 24: 12-14.
- Rebeiz, C. A. 1988. Porphyric insecticides. *Pest. Biochem.* 30: 11-27.
- Redding, R. J., and J. M. Kimbrough. 1906. Cotton culture. *Georgia Agr. Exp. Sta. Bull.* 75.
- Reed, W., and V. Kumble (eds.) 1982. *Proceedings International Workshop on Heliothis Management*, Nov. 15-20, 1981, ICRISAT, Patancheru, A.P., India.
- Regev, S., and W. W. Cone. 1975. Evidence of farnesol as a male sex attractant of the twospotted spider mite, *Tetranychus urticae* Koch (Acarina: Tetranychidae). *Environ. Entomol.* 4: 307-311.
- Regev, S., and W. W. Cone. 1976. Analyses of pharate female twospotted spider mites for nerolidol and geraniol: evaluation for sex attraction of males. *Environ. Entomol.* 5: 133-138.
- Regev, S., and W. W. Cone. 1980. The monoterpenes citronellol as a male sex attractant of the two-spotted spider mite *Tetranychus urticae* (Acarina: Tetranychidae). *Environ. Entomol.* 9: 50-52.
- Reichelderfer, K. 1982. Data needs and analytical approaches for large-scale regional and national IPM evaluation. Paper presented at the 1982 annual meeting of the Entomological Society of America
- Reid, P. E., N. S. Thompson, P. K. Lawrence, D. J. Luckett, G. T. McIntyre, and E. R. William. 1989. Regional evaluation of cotton cultivars in eastern Australia, 1974-1985. *Australian Journal of Experimental Agriculture* 29: 679-689.
- Reinecke, J. P., J. L. Roberson, E. J. Villavaso, and E. P. Lloyd. 1986. Rearing, sterilizing, containerizing and quality assessing of sterile boll weevils released in a large-scale field experiment in South Carolina, 1985, pp. 238-241. In Proc. Beltwide Cotton Prod. Res. Conf.

- Reinhard, H. J. 1928. Hibernation of the cotton fleahopper. Tex. Ag. Exp. Sta. Bull. 377.
- Rejesus, R. S. 1968. Bio-ecological studies on the cotton leafperforator, *Bucculatrix thurberiella* Busck (Lepidoptera: Lyonetiidae). MS thesis, Univ. Calif., Riverside.
- Remaudiere, G., and S. Keller. 1980. Revision systematique des genres d'Entomophthoraceae a potentiellement entomopathogene. Mycotaxon 11: 323-338.
- Rester, D. G. 1982. Calibrate your agricultural spray plane. La. Coop. Ext. Ser., Baton Rouge.
- Retnakaran, A., J. Granett, and T. Ennis. 1985. Insect growth regulators, pp. 529-601. In G. A. Kerkut, and L. I. Gilbert (eds.), Comprehensive insect physiology, biochemistry and pharmacology. Vol. 12. Insect control. Pergamon Press, New York.
- Reynolds, E. B. 1926. The effect of spacing on the yield of cotton. Tex. Agr. Exp. Sta. Bull. 340.
- Reynolds, H. T. 1971. A world review of the problem of insect population upsets and resurgences caused by pesticide chemicals, pp. 108-112. In J. E. Swift (ed.), Agricultural chemicals - harmony or discord for food, people, environment. Proc. Symp. Univ. Calif. Div. Agric. Sci., Sacramento, Calif.
- Reynolds, H. T. 1972. Practical application of suppression in pest management. In Implementing practical pest management strategies. Proc. National Pest Management Workshop. Purdue University, Lafayette, IN.
- Reynolds, H. T. 1980. Insecticides for control of pink bollworm populations, pp. 35-39. In H. Graham (ed.), Pink bollworm control in the Western United States. USDA, Science and Education Administration ARM-W-16.
- Reynolds, H. T., P. L. Adkisson, and R. F. Smith. 1975. Cotton insect pest management, pp. 379-343. In R. L. Metcalf, and W. H. Luckmann (eds.), Introduction to pest management. John Wiley & Sons, Inc., New York.
- Reynolds, H. T., P. L. Adkisson, R. F. Smith, and R. E. Frisbie. 1982. Cotton insect pest management, pp. 375-441. In R. L. Metcalf, and W. H. Luckmann (eds.), Introduction to insect pest management. John Wiley and Sons, New York.
- Rice, R. E., and H. T. Reynolds. 1971. Seasonal emergence and population development of the pink bollworm in California. J. Econ. Entomol. 64: 1429-1432.
- Richmond, C. A., and C. Ignoffo. 1964. Mass rearing pink bollworms. J. Econ. Entomol. 57: 503-505.
- Ridgway, R. L. 1986. Cultural and biological control of *Heliothis*: status and opportunities, pp. 155-161. In Theory and tactics of *Heliothis* management: I-Cultural and biological control. S. Coop. Ser. Bull. 316.
- Ridgway, R. L., J. R. Ables, C. Goodpasture, and Hartstack. 1981. *Trichogramma* and its utilization for crop protection in the U.S.A., pp. 41-48. In J. R. Coulson (ed.), Proc. Joint American-Soviet Conf. on the Use of Beneficial Organisms in the Control of Crop Pests. Entomol. Soc. Am., College Park, MD.
- Ridgway, R. L., L. A. Bariola, and D. D. Hardee. 1971. Seasonal movement of boll weevils near the High Plains of Texas. J. Econ. Entomol. 64: 14-019.
- Ridgway, R. L., W. A. Dickerson, J. R. Brazzel, J. F. Leggett, E. P. Lloyd, and F. R. Planer. 1985. Boll weevil pheromone trap captures for treatment thresholds and population assessments, pp. 138-141. In Proc. Beltwide Cotton Prod. Res. Conf.
- Ridgway, R. L., R. M. Silverstein, and M. N. Inscoe (eds.). 1990a. Behavior-modifying Chemicals for Insect Management: Applications of Pheromones and Other Attractants. Marcel Dekker, Inc., New York.
- Ridgway, R. L., M. N. Inscoe, and W. A. Dickerson. 1990b. Role of the boll weevil pheromone in pest management, pp. 437-471. In R. L. Ridgway, R. M. Silverstein, and M. N. Inscoe (eds.), Behavior-modifying Chemicals for Insect Management: Applications of Pheromones and Other Attractants. Marcel Dekker, Inc., New York.
- Ridgway, R. L., M. N. Inscoe, K. W. Thorpe, A. K. Raina, and J. C. Davis. 1990c. Potential for disrupting biological processes in *Helioverpa* and *Heliothis* spp. neuropeptides and recombinant baculoviruses, pp. 314-318. In Proc. Beltwide Cotton Prod. Res. Conf.
- Ridgway, R. L., and S. L. Jones. 1968. Plant feeding by *Geocoris pallens* and *Nabis americoferus*. Ann. Entomol. Soc. Amer. 61: 232-233.

- Ridgway, R. L., and S. L. Jones. 1969. Innundative releases of *Chrysopa carnea* for control of *Heliothis* on cotton. J. Econ. Entomol. 62: 117-118.
- Ridgway, R. L., E. G. King, and J. L. Carillo. 1977. Augmentation of natural enemies for control of plant pests in the western hemisphere, pp. 379-428. In R. L. Ridgway, and S. B. Vinson (eds.), Biological control by augmentation of natural enemies. Plenum Press, New York.
- Ridgway, R. L., and R. E. Kinzer. 1974. Chrysopids as predators of crop pests. Entomophaga Mem. H. S., 7: 45-51.
- Ridgway, R. L., and P. D. Lingren. 1972. Predaceous and parasitic arthropods as regulators of *Heliothis* populations, pp. 48-56. In Distribution, abundance and control of *Heliothis* species in cotton and other host plants, South. Coop. Ser. Bull. 169.
- Ridgway, R. L., P. D. Lingren, C. B. Cowan, and J. W. Davis. 1967. Populations of arthropod predators and *Heliothis* spp. after applications of systemic insecticides to cotton. J. Econ. Entomol. 60: 1012-1016.
- Ridgway, R. L., and E. P. Lloyd. 1983. Evaluation of cotton insect management in the United States, pp. 3-28. In R. L. Ridgway, E. P. Lloyd, and W. H. Cross (eds.), Cotton Insect Management with Special Reference to the Boll Weevil. USDA Agr. Handb. No. 589.
- Ridgway, R. L., E. P. Lloyd, and W. H. Cross (eds.). 1983. Cotton insect management with special reference to the boll weevil. USDA Agr. Handb. No. 589. Washington, D.C.
- Ridgway, R. L., and R. K. Morrison. 1985. Worldwide perspective on practical utilization of *Trichogramma* with special reference to control of *Heliothis* on cotton. Southwest. Entomol. Suppl. 8: 190-198.
- Ridgway, R. L., and S. B. Vinson (eds.). 1977. Biological control by augmentation of natural enemies. Plenum Press, New York.
- Riechert, S. E., and T. Lockley. 1984. Spiders as biological control agents. Annu. Rev. Entomol. 29: 299-320.
- Riley, D. G., and D. Wolfenbarger. 1993. Cultivated hosts and population dynamics of sweetpotato whitefly in the Lower Rio Grande Valley of Texas, pp. 667-670. In Proc. Beltwide Cotton Prod. Res. Conf.
- Riley, S. L. 1989. Pyrethroid resistance in *Heliothis virescens*: current U.S. management programs. Pestic. Sci. 41:411-421.
- Ring, D. R., J. H. Benedict, J. A. Landivar, and B. R. Eddleman. 1993. Economic injury levels and development and application of response surfaces relating insect injury, normalized yield, and plant physiological age. Environ. Entomol. 22: 273-282.
- Ring, D. R., J. H. Benedict, S. M. Masud, R. D. Lacewell, G. R. Zummo, and M. F. Treacy. 1989. Economic decision-aid for management of bollworm and fleahopper on cotton in the lower gulf coast of Texas, pp. 222-226. In Proc. Beltwide Cotton Prod. Res. Conf.
- Roach, S. H. 1973. Developmental changes in the boll weevil, *Anthonomus grandis* studied with time-lapse photography. Ann. Entomol. Soc. Amer. 66: 24-27.
- Roach, S. H. 1975. *Heliothis* spp.: Larvae and associated parasites and diseases on wild host plants in the Pee Dee area of South Carolina. Environ. Entomol. 4: 725-28.
- Roach, S. H. 1975. *Heliothis zea* and *H. virescens*: Moth activity as measured by blacklight and pheromone traps. J. Econ. Entomol. 68: 17-21.
- Roach, S. H. 1979. Boll weevil: reproductive potential, feeding, and longevity of overwintering adults with some effects of photoperiod on fecundity. J. Ga. Entomol. Soc. 14: 346-350.
- Roach, S. H. 1980. Arthropod predators on cotton, corn, tobacco, and soybeans in South Carolina. J. Ga. Entomol. Soc. 15: 131-138.
- Roach, S. H., and A. R. Hopkins. 1981. Reduction in arthropod predator populations in cotton fields treated with insecticides for *Heliothis* spp. control. J. Econ. Entomol. 74: 454-457.
- Roach, S. H., and L. Ray. 1972. Boll weevils captured at Socastee, South Carolina, in 1970, in wing traps placed around fields with and without growing cotton. J. Econ. Entomol. 65: 559-560.

- Roach, S. H., L. Ray, H. M. Taft, and A. R. Hopkins. 1971. Wing traps baited with male boll weevils for determining spring emergence of overwintered weevils and subsequent infestations in cotton. *J. Econ. Entomol.* 64: 107-110.
- Roach, S. H., H. M. Taft, L. Ray, and A. R. Hopkins. 1971. Population dynamics of the boll weevil in an isolated cotton field in South Carolina. *Ann. Entomol. Soc. Amer.* 64: 394-399.
- Roberson, J. 1984. Laboratory rearing, pp. 85-113. In P. P. Sikorowski, J. G. Griffin, J. Roberson, and O. H. Lindig (eds.), *Boll weevil mass rearing technology*. Univ. Press of Mississippi, Jackson.
- Roberson, J. L., and D. K. Harsh. 1993. Mechanized production processes to encapsulate boll weevil larvae (*Anthonomus grandis*) for mass production of *Catolaccus grandis* (Burks), pp. 922-923. In Proc. Beltwide Cotton Prod. Res. Conf.
- Roberson, J. L., S. Malone, D. K. Harsh, and O. L. Malone. 1989. Automated *Heliothis* spp. production system, In Proc. Mississippi Insect Control Conference.
- Roberson, J. L., and L. W. Noble. 1968. Rearing of tobacco budworm in honeycomb-like cells. *J. Econ. Entomol.* 61: 331-331.
- Roberson, J. L., and E. J. Villavasso. 1986. Improvements in boll weevil rearing, release, and field competition, 1983-1985, pp. 19-20. In Proceedings Mississippi Insect Control Conference, November, 1985.
- Roberson, J. L., and J. E. Wright. 1984. Production of boll weevils, *Anthonomus grandis grandis*, pp. 188-192. In E. G. King, and N. C. Leppla (eds.), *Advances and Challenges in Insect Rearing*. USDA, ARS, New Orleans, La.
- Roberts, P., and G. L. Lentz. 1993. Cotton insect and mite control. University of Tennessee Cooperative Extension Service. Publication 387.
- Robinson, J. R. C., J. E. Slosser, J. K. Walker, and J. R. Price. 1986. CDA/ULV-OIL technology versus conventional spray technology for ground application of sprays for bollworm control in the Texas Rolling Plains. Southwest. *Entomol.* 11: 25-37.
- Robinson, J. V., and J. W. Stewart. 1987. Management of cotton insects in Blacklands, South & East Texas, counties. Tex. Agric. Ext. Serv. B-1204.
- Robinson, R. 1971. Lepidoptera genetics. Pergamon Press, New York.
- Robinson, R. R., J. R. Young, and R. D. Morrison. 1972a. Strip-cropping effects on abundance of *Heliothis* damaged cotton squares, boll placement, total bolls, and yield in Oklahoma. *Environ. Entomol.* 1: 140-145.
- Robinson, R. R., J. H. Young, and R. D. Morrison. 1972b. Strip-cropping effects on the abundance of predatory and harmful cotton insects in Oklahoma. *Environ. Entomol.* 1: 145-149.
- Roe, R. M., P. Y. K. Cheung, B. D. Hammock, D. Buster, and A. R. Alford. 1985. Endotoxin of *Bacillus thuringiensis* var. *israelensis*. Broad-spectrum toxicity and neural response elicited in mice and insects, pp. 279-292. In P. A. Hedin (ed.), *Bioregulators for pest control*. American Chemical Society, Washington, D.C.
- Roelofs, W. L., A. S. Hill, R. T. Carde, and T. C. Baker. 1974. Two sex pheromone components of the tobacco budworm moth, *Heliothis virescens*. *Life Sciences* 14: 1555-1562.
- Rogers, B., L. Boykin, R. Blenk, and D. Clower. 1991. *Heliothis* resistance monitoring in the cotton belt: the next steps, pp. 660-662. In Proc. Beltwide Cotton Prod. Res. Conf.
- Rolston, L. H., and R. L. Kendirck. 1961. Biology of the brown stink bug, *Euschistus servus* Say. *J. Kan. Entomol.* 34: 151-157.
- Romney, V. E., and T. P. Cassidy. 1945. *Anaphes ovijentatus* and egg-parasite of *Lygus hesperus*. *J. Econ. Entomol.* 38: 497-498.
- Ronis, M. J. J., and E. Hodgson. 1989. Cytochrome P-450 monooxygenases in insects. *Xenobiotica* 19: 1077-1092.
- Roof, M. 1988. Insect control for earliness: strategy and basis, pp. 28-30. In Proc. Beltwide Cotton Prod. Res. Conf.
- Roof, M. E. 1988. Cotton insect management, information card 97. Clemson University Cooperative Extension Service.

- Rook, S. P., and G. A. Carlson. 1985. Participation in pest management groups. Am. J. Agri. Econ. 67: 563-566.
- Room, P. M. 1979. A prototype 'on-line' system for management of cotton pests in the Namoi Valley, New South Wales. Prot. Ecol. 1: 245-264.
- Roome, R. E. 1975. Field trial, with a nuclear polyhedrosis virus and *Bacillus thuringiensis* against *Heliothis armigera* larvae on sorghum and cotton. Botswana Bull. Int. Res. 65.
- Rose, R. L., and T. C. Sparks. 1984. Acephate toxicity, metabolism, and anticholinesterase activity in *Heliothis virescens* (F.) and *Anthonomus grandis* grandis (Boheman). Pestic. Biochem. Physiol. 22: 69-77.
- Ross, D. C., J. W. Crim, M. R. Brown, G. A. Herzog, and A. O. Lea. 1986a. Toxic and antifeeding actions of melittin in the corn earworm, *Heliothis zea* (Boddie): comparisons to bee venom and the insecticides chlorpyrifos and cyromazine. Toxicol 25: 307-313.
- Ross, D. C., G. A. Herzog, and J. W. Crim. 1986b. Peptide toxins from arthropod venoms disrupt feeding and utilization of diet in the cotton bollworm. Insect Neurochem. Neurophys. 86: 401-404.
- Ross, D. C., G. A. Herzog, and J. W. Crim. 1987. Toxicity of the venoms of two scorpions (*Androctonus australis* and *Centruroides sculpturatus*) and a sea anemone (*Condylactis gigantea*): acute and antifeeding actions in the cotton bollworm (*Heliothis zea*). Comp. Biochem. Physiol. 89: 229-232.
- Roth, V. D. 1993. Spider genera of North America. American Arachnological Society, Gainesville, FL, 3rd ed.
- Rothschild, G. H. L., B. F. Nesbitt, P. S. Beevor, A. Cork, D. R. Hall, and R. A. Vickers. 1982. Studies of the female sex pheromone of the native budworm, *Heliothis pumictiger*. Entomol. Exp. Appl. 31: 395-401.
- Roush, R. T. 1986. Inbreeding depression and laboratory adaptation in *Heliothis virescens* (Lepidoptera: Noctuidae). Ann. Entomol. Soc. Amer. 79: 583-587.
- Roush, R. T., and J. C. Daly. 1990. The role of population genetics in resistance research and management, pp. 97-152. In R. T. Roush, and B. E. Tabashnik (eds.), Pesticide resistance in arthropods. Chapman & Hall, New York.
- Roush, R. T., and R. G. Luttrell. 1987. The phenotypic expression of pyrethroid resistance in *Heliothis* and implications for resistance management, pp. 220-224. In Proc. Beltwide Cotton Prod. Res. Conf.
- Roush, R. T., and R. G. Luttrell. 1989. Expression of resistance to pyrethroid insecticide in adults and larvae of tobacco budworm (Lepidoptera: Noctuidae): implications for resistance monitoring. J. Econ. Entomol. 82: 1305-1310.
- Roush, R. T., and J. A. McKenzie. 1987. Ecological genetics of insecticide and acaricide resistance. Annu. Rev. Entomol. 32: 361-380.
- Roush, R. T., and G. L. Miller. 1986. Considerations for design of resistance monitoring programs. J. Econ. Entomol. 79: 293-298.
- Roush, R. T., and J. C. Schneider. 1985. An analytical model for genetic control of *Heliothis virescens* incorporating the effects of sterile males. Theor. Appl. Genet. 71: 472-477.
- Roush, R. T., and J. E. Wright. 1986. Abamectin: toxicity to house flies (Diptera: Muscidae) resistant to synthetic organic insecticides. J. Econ. Entomol. 79: 562-564.
- Roussel, J. S., and D. F. Clower. 1955. Resistance to the chlorinated hydrocarbon insecticides in the boll weevil (*Anthonomus grandis* Boh.). Louisiana Agr. Exp. Sta. Circ. 41.
- Roussel, J. S., and D. F. Clower. 1957. Resistance to the chlorinated hydrocarbon insecticides in the boll weevil. J. Econ. Entomol. 50: 462-468.
- Royama, T. 1981. Evaluation of mortality factors in insect life table analysis. Ecol. Monographs 51: 495-505.
- Ru, N., W. H. Whitcomb, and M. Murphey. 1976. Culturing of *Chrysopa rufilabris* (Neuroptera: Chrysopidae). Fla. Entomol. 59: 21-26.
- Ruitg, G. S. F. 1985. Pyrethroids, pp. 183-262. In G. A. Kerkut, and L. I. Gilbert (eds.), Comprehensive insect physiology, biochemistry and pharmacology. Vol. 12., Insect control. Pergamon Press, New York.

- Rummel, D. R. 1965. Boll weevil control—Rolling Plains of Texas, pp. 3. In Focus on Entomology. Tex. Agric. Ext. Serv.,
- Rummel, D. R. 1975. Focus on entomology. Tex. Agric. Ext. Serv. 14:(16) 7.
- Rummel, D. R., and P. L. Adkisson. 1970. Distribution of boll weevil-infested cotton fields in relation to overwintering habitats in the High and Rolling Plains of Texas. J. Econ. Entomol. 63: 1906-1909.
- Rummel, D. R., and D. G. Bottrell. 1976. Seasonally related decline in response of boll weevils to pheromone traps during mid-season. Environ. Entomol. 5: 783-787.
- Rummel, D. R., D. G. Bottrell, P. L. Adkisson, and R. C. McIntyre. 1975. An appraisal of a 10-year effort to prevent the westward spread of the boll weevil. Bull. Entomol. Soc. Amer. 21: 6-11.
- Rummel, D. R., and S. C. Carroll. 1985. Longevity of overwintered boll weevils (Coleoptera: Curculionidae) following emergence in spring and early summer. Environ. Entomol. 14: 127-130.
- Rummel, D. R., and S. C. Carroll. 1983. Winter survival and effective emergence of boll weevil cohorts entering winter habitat at different times. Southwest. Entomol. 8: 101-106.
- Rummel, D. R., and R. E. Frisbie. 1978. Suppression of potentially overwintering boll weevils as a pest management practice, pp. 39-49. In The boll weevil: management strategies. S. Coop. Ser. Bull. No. 228.
- Rummel, D. R., L. B. Jordan, J. R. White, and L. J. Wade. 1977. Seasonal variation in the height of boll weevil flight. Environ. Entomol. 6: 674-678.
- Rummel, D. R., J. F. Leser, J. E. Slosser, G. J. Puterka, C. W. Neeb, J. K. Walker, J. H. Benedict, M. D. Heilman, L. N. Namken, J. W. Norman, and J. H. Young. 1986. Cultural control of *Heliothis* spp. in southwestern U.S. cropping systems, pp. 38-53. In Theory and tactics of *Heliothis* population management. I - cultural and biological control. S. Coop. Ser. Bull. 316.
- Rummel, D. R., and J. E. Quisenberry. 1979. Influence of thrips injury on leaf development and yield of various cotton genotypes. J. Econ. Entomol. 72: 706-709.
- Rummel, D. R., and R. E. Reeves. 1971. Response of bollworm and predacious arthropod populations to aldicarb treatments in cotton. J. Econ. Entomol. 64: 907-911.
- Rummel, D. R., J. R. White, S. C. Carroll, and G. R. Pruitt. 1980. Pheromone trap index system for predicting need for overwintered boll weevil control. J. Econ. Entomol. 73: 806-810.
- Russell, L. M. 1975. Collection records of *Bemisia tabaci* (Gennadius) in the United States. USDA Coop. Econ. Insect Rep. 25: 229-230.
- Russell, T. E., T. F. Watson, and G. F. Ryan. 1976. Field accumulation of aflatoxin in cottonseed as influenced by irrigation, termination dates and pink bollworm infestation. Appl. Environ. Microbial. 31: 711-713.
- Rykiel, E. J., M. C. Saunders, T. L. Wagner, D. K. Loh, R. H. Turnbow, L. C. Hu, P. E. Pulley, and R. N. Coulson. 1984. Computer-aided decision making and information accessing in pest management system, with emphasis on the southern pine beetle. J. Econ. Entomol. 77: 1073-1082.
- Saba, F. 1971. *Tetranychus yusti*, a spider mite of potential economic importance. J. Econ. Entomol. 64: 141-144.
- Sabelis, M. W., and M. Dicke. 1985. Long-range dispersal and searching behaviour, pp. 141-160. In W. Helle, and M. W. Sabelis (eds.), Spider mites: their biology, natural enemies and control. Elsevier, Amsterdam.
- Sabrosky, C. W. 1955. The taxonomic status of the armyworm parasite known as *Archytas piliventris* (van der Wulp) (Diptera: Larvaevoridae). Fla. Entomol. 38: 77-83.
- Sabrosky, C. W. 1981. A partial revision of the genus *Eucelatoria* (Diptera, Tachinidae), including important parasites of *Heliothis*. U.S. Dept. of Agric., Tech. Bull. No. 1635, Washington, D.C.
- Sabrosky, C. W., and P. H. Arnaud. 1965. Family Tachinidae, In A. Stone, C. W. Sabrosky, W. W. Wirth, R. H. Foote, and J. R. Coulson (eds.), A catalogue of the diptera of America North of Mexico. U.S. Dept. of Agric. Handbook No. 276, 1696 pp. Washington, D.C.
- Salama, M. S., L. P. Schouest, and T. Miller. 1992. Effect of diet on the esterase patterns in the hemolymph of the corn earworm and the tobacco budworm (Lepidoptera: Noctuidae). J. Econ. Entomol. 85: 1079-1087.
- Salas-Aguilar, J., and L. E. Ehler. 1977. Feeding habits of *Orius tristiscolor*. Ann. Entomol. Soc. Am. 70: 60-62.

- Salgado, V. L. 1992. The neurotoxic insecticidal mechanism of the non-steroidal ecdysone agonist RH-5849: K₊ channel block in nerve and muscle. *Pestic. Biochem. Physiol.* 43: 1-13.
- Salgado, V. L., S. N. Irving, and T. Miller. 1983a. Depolarization of motor nerve terminals by pyrethroids in susceptible and kdr-resistant house flies. *Pestic. Biochem. Physiol.* 20: 100-114.
- Salgado, V. L., S. N. Irving, and T. Miller. 1983b. The importance of nerve terminal depolarization in pyrethroid poisoning of insects. *Pestic. Biochem. Physiol.* 20: 169-182.
- Salt, G. 1937. Experimental studies in insect parasitism. V. The sense used by *Trichogramma* to distinguish between parasitized and unparasitized hosts. *Proc. Roy. Soc. London, Ser. B* 122: 57-75.
- Samson, R. A. 1974. *Paecilomyces* and some allied hyphomycetes. *Stud. Mycol.* No. 6.
- Samson, R. A. 1981. Identification: entomopathogenic deuteromycetes, pp. 93-106. In H. D. Burges (ed.), *Microbial control of pests and plant diseases 1970-1980*. Academic Press, New York.
- Samuelson, P. A. 1961. *Economics - An Introductory Analysis*. McGraw-Hill, New York.
- Sanborne, C. E., H. C. Young, E. Hixson, H. C. Young, E. E. Scholl, and C. F. Stiles. 1935. History and control of the boll weevil in Oklahoma. *Bull. No. 318 General Series 93. Oklahoma Agric. Exp. Sta.*
- Sanderson, E. D. 1905. The boll weevil and cotton crop of Texas. *Texas Dept. of Agric.*
- Sanderson, R., E. W. Huddleston, J. B. Ross, J. A. Henderson, and E. W. Ferguson. 1986. Deposition and drift of Pydrin in cottonseed oil and water under arid conditions applied with a dual spray system aircraft. *Trans. ASAE* 29: 378-381.
- Sappenfield, W. P. 1981. Registration of HYC76-59 cotton germplasm. *Crop Sci.* 21: 991-992.
- Sappenfield, W. P. 1985. Registration of 'Delcot 390' cotton. *Crop Sci.* 25: 198.
- Sapturo, S., D. B. Smith, and D. R. Shaw. 1991. Expert system for agricultural aerial spray drift. *Trans. ASAE* 34: 764-772.
- Sattelle, D. B., S. Buckingham, K. Wafford, S. Sherby, N. Bakry, A. Eldefrawi, M. Eldefrawi, and T. May. 1989. Action of the insecticide 2-(nitromethylene) tetrahydro-1,3-thiazine in insect and vertebrate nicotinic acetylcholine receptors, pp. 501-514. In *Proceedings, R. Soc. London.*
- Sauls, C. E., D. A. Nordlund, and W. J. Lewis. 1979. Kairomones and their use for management of entomophagous insects. VIII. Effects of diet on the kairomonal activity of frass from *Heliothis zea* (Boddie) larvae for *Microplois croceipes* (Cresson). *J. Chem. Ecol.* 5: 363-369.
- Saunders, M. C., C. W. Haeseler, J. W. Travis, B. J. Miller, K. D. Loh Coulson, and N. D. Stone. 1987. GRAPES: an expert system for viticulture in Pennsylvania. *AI Appl. Nat. Res. Manage.* 1: 13-20.
- Savinelli, C. E. 1984. Ovipositional responses, larval feeding behavior and injury assessment of the European corn borer, *Ostrinia nubilalis* (Hubner), and cotton in North Carolina. Ph.D. dissertation, North Carolina State Univ. Raleigh.
- Savinelli, C. E., J. C. Bacheler, and J. R. Bradley Jr. 1986. Nature and distribution of European corn borer (Lepidoptera: Pyralidae) larval feeding change to cotton in North Carolina. *Environ. Entomol.* 15: 399-402.
- Savinelli, C. E., J. S. Bacheler, and J. R. Bradley Jr. 1988. Ovipositional preferences of the European corn borer (Lepidoptera: Pyralidae) for field corn and cotton under field cage conditions in North Carolina. *Environ. Entomol.* 17: 688-690.
- Sawicki, R. M. 1985. Insecticide resistance in *Heliothis armigera*. Report on a visit to Australia, January-February 1985, to investigate insecticide resistance in *Heliothis armigera*. Rothamsted Experimental Station, Harpenden, United Kingdom.
- Sawicki, R. M. 1985. Resistance to pyrethroid insecticides in arthropods, pp. 143-192. In D. H. Hutson, and T. R. Roberts (eds.), *Progress in pesticide biochemistry and toxicology Vol. 5*. John Wiley & Sons, New York.
- Sawicki, R. M. 1987. Definition, detection and documentation of insecticide resistance, pp. 105-117. In M. G. Ford, D. M. Holloman, B. P. S. Khambay, and R. M. Sawicki (eds.), *Combating resistance to xenobiotics*. Horwood, Chichester.

- Sawicki, R. M. 1989. Current insecticide management practices in cotton around the world—short term successes as a template for the future. *Pestic. Sci.* 26: 411-421.
- Sawicki, R. M., and I. Denholm. 1987. Management of resistance to pesticides in cotton pests. *Tropical Pest Management* 33: 262-272.
- Sawicki, R. M., and D. Lord. 1970. Some properties of a mechanism delaying penetration of insecticides into house flies. *Pestic. Sci.* 1: 213-225.
- Scales, A. L. 1968. Female tarnished plant bugs attract males. *J. Econ. Entomol.* 61: 1466-1467.
- Scales, A. L. 1973. Parasites of the tarnished plant bug in the Mississippi Delta. *Environ. Entomol.* 2: 304-305.
- Scaramuzza, L. C. 1946. Capitulo XII. Los insectos y otros animales que atacan a la caña de azúcar en Cuba, pp. 529-563. In F. Agete y Pinero (ed.), *La caña asúcar en Cuba*, Vol. 2 Havana.
- Schaunak, R. K., R. D. Lacewell, and J. Norman. 1982. Economic implication of alternative cotton production strategies in the Lower Rio Grande Valley of Texas, 1973-78. *Tex. Agr. Exp. Sta. Bull.* 1420.
- Schmidt, C. D., and J. L. Robertson. 1986. Effects of treatment technique on response of horn flies (Diptera: Muscidae) to permethrin at different temperatures. *J. Chem. Ecol.* 79: 684-687.
- Schmoldt, D. L. 1991. Simulation of plant physiological processes using fuzzy variables. *AI Applications* 5: 3-16.
- Schmutterer, H. 1977. Other injurious Lepidoptera, pp. 666. In J. Kranz, H. Schmutterer, and W. Koch (eds.), *Diseases, pests and weeds in Tropical Crops* Verlag Paul Parey, Berlin.
- Schneider, F. 1962. Dispersal and migration. *Annu. Rev. Entomol.* 7: 223-242.
- Schneider, J. C., J. H. Benedict, F. Gould, W. R. Meredith Jr., M. F. Schuster, and G. R. Zummo. 1986. Interaction of *Heliothis* with its host plants, pp. 3-21. In *Theory and tactics of Heliothis population management I - cultural and biological control*. S. Coop. Ser. Bull. 316.
- Schoene, W. T., and G. W. Underhill. 1933. Economic status of the green stink bug with reference to the succession of its wild hosts. *J. Agric. Res.* 46: 863-866.
- Schoolfield, R. M. 1983. A PDE formulation and numerical solution for a boll weevil cotton crop model with soil and light penetration. Ph.D. Dissertation, Texas A&M University, College Station.
- Schouest, L. P., and T. A. Miller. 1988. Factors influencing pyrethroid toxicity in pink bollworm (Lepidoptera: Gelechiidae): implications for resistance management. *J. Econ. Entomol.* 81: 431-436.
- Schouest, L. P., and T. A. Miller. 1991. Field incubation of insects for insecticide toxicity assays in resistance monitoring programs. *Environ. Entomol.* 20: 1526-1530.
- Schouest, L. P., N. Umetsu, and T. Miller. 1983. Solvent-modified deposition of insecticides on house fly (Diptera: Muscidae) cuticle. *J. Econ. Entomol.* 76: 973-982.
- Schowalter, T. D., and J. D. Stein. 1987. Influence of Douglas fir seedling provenance and proximity to insect population sources on susceptibility to *Lygus hesperus* (Heteroptera: Miridae) in a forest nursery in western Oregon. *Environ. Entomol.* 16: 984-988.
- Schreiber, A., and C. O. Knowles. 1991. Comparison of topical and vial bioassays on bollworm: implications for resistance monitoring, pp. 654-656. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Schuster, M. F. 1977. Plant bugs - key pests on cotton, pp. 156-157. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Schuster, M. F. 1980. Cotton ecosystem diversification and plant bug trapping with interplanted alfalfa in the delta of Mississippi. *Miss. Agric. For. Exp. Stn. Tech. Bull.* 98.
- Schuster, M. F., and J. C. Boling. 1974. Phenology of early and mid season predatory and phytophagous insects in cotton in the Lower Rio Grande Valley of Texas. *Tex. Agric. Exp. Stn. MP-1133.*
- Schuster, M. F., and E. T. Cherry. 1975. Cross resistance in twospotted spider mite-resistant cotton to the desert spider mite. *J. Econ. Entomol.* 68: 131-132.
- Schuster, M. F., and J. L. Frazier. 1977. Mechanisms of resistance to *Lygus* spp. in *Gossypium hirsutum*. *Bull. Symp. Inter. Organ. Biol. Control Nox. Anim. Plants West Palearctic Rep. Sec.* 3: 129-135.

- Schuster, M. F., M. J. Lukefahr, and F. G. Maxwell. 1976. Impact of nectariless cotton on plant bugs and natural enemies. *J. Econ. Entomol.* 69: 400-403.
- Schuster, M. F., and F. G. Maxwell. 1976. Resistance to two-spotted spider mites in cotton. *Miss. Agric. For. Exp. Stn. Bull.* 821.
- Schuster, M. F., F. G. Maxwell, J. N. Jenkins, E. T. Cherry, W. L. Parrott, and D. G. Holder. 1973. Resistance to twospotted spider mite in cotton. *Miss. Agric. For. Exp. Stn. Bull.* 802.
- Schuster, M. F., F. G. Maxwell, J. N. Jenkins, and W. L. Parrott. 1972a. Mass screening seedlings of *Gossypium* sp. for resistance to the twospotted spider mite. *J. Econ. Entomol.* 65: 1105-1107.
- Schuster, M. F., F. G. Maxwell, and J. N. Jenkins. 1972b. Resistance to the twospotted spider mite in certain *Gossypium hirsutum* races, *Gossypium* species, and glandled-glandless counterpart cottons. *J. Econ. Entomol.* 65: 1108-1110.
- Schwartz, P. H. 1983. Losses in yield of cotton due to insects, pp. 329-358. In R. L. Ridgway, E. P. Lloyd, and W. H. Cross (eds.), *Cotton Insect Management with Special Reference to the Boll Weevil*. USDA Agr. Handb. No. 589.
- Schwartz, P. H., and W. Klassen. 1981. Estimates of losses caused by insects and mites to agricultural crops, pp. 15-77. In D. Pimentel (ed.), *CRC handbook of pest management in agriculture*, Vol. 1. CRC Press, Inc., Boca Raton.
- Scott, D. R. 1977. Annotated listing of host plants of *Lygus hesperus* Knight. *Bull. Entomol. Soc. Amer.* 23: 19-22.
- Scott, J. G. 1989. Cross-resistance to the biological insecticide abamectin in pyrethroid-resistant house flies. *Pestic. Biochem. Physiol.* 34: 27-31.
- Scott, R. D., M. Cochran, and W. F. Nicholson Jr. 1983. Evaluation of farm level benefits of bollworm management communities. *Ark. Farm Res.* November-December.
- Scott, W. P., D. B. Smith, and E. P. Lloyd. 1974. Direct and residual kill of the boll weevil with ULV sprays and azinphosmethyl. *J. Econ. Entomol.* 67: 408-410.
- Scott, W. P., J. W. Smith, and G. L. Snodgrass. 1985. Response of cotton arthropod populations in cotton to various dosages of aldicarb in-furrow at planting. *J. Econ. Entomol.* 78: 249-257.
- Scott, W. P., J. W. Smith, and G. L. Snodgrass. 1985. The tarnished plant bug (Hemiptera: Miridae): a key pest of cotton in the Mississippi Delta, pp. 164-167. In Proc. Beltwide Cotton Prod. Res. Conf.
- Seiber, J. N., J. E. Woodrow, B. W. Herman, and P. L. Sanders. 1983. Determination of airborne residues from four harvest aid chemicals (DEF, Folex, cacodylates and paraquat) at treated San Joaquin Valley cotton field sites, as a measure of potential human exposure. California Dept. of Food and Agric. HS-1326.
- Sequeira, R. A., P. J. H. Sharpe, N. D. Stone, K. M. El-Zik, and M. E. Makela. 1991. Object-oriented simulation: plant growth and discrete organ to organ interactions. *Ecol. Modelling* 58: 55-89.
- Sequeira, R. L., and R. L. Olson. 1993. Theoretical background and validation of CPM, a new cotton simulation model, pp. 544-549. In Proc. Beltwide Cotton Prod. Res. Conf.
- Serebrovsky, A. S. 1940. On the possibility of a new method for the control of insect pests. *Zoologicheskii Zhurnal* 19: 618-630.
- Sevacherian, V., and V. M. Stern. 1975. Movements of lygus bugs between alfalfa and cotton. *Environ. Entomol.* 4: 163-165.
- Shahjahan, M. 1970. Food plants as factors influencing host selection by *Leiophron pallipes* (Hymenoptera: Braconidae), a parasitoid of *Lygus lineolaris* (Hemiptera: Miridae). PhD dissertation, Univ. of Conn.
- Shahjahan, M., and F. A. Streams. 1973. Plant effects on host-finding by *Leiophron pseudopallipes* (Hymenoptera: Braconidae), a parasitoid of the tarnished plant bug. *Environ. Entomol.* 2: 921-925.
- Shankland, D. L., and J. L. Frazier. 1985. Nervous system: electrical events, pp. 253-286. In M. S. Blum (eds.), *Fundamentals of insect physiology*. John Wiley and Sons, New York.
- Shanklin, D. L., and J. Tucker. 1980. Aerial application of pesticide sprays. *Miss. Agric. For. Exp. Sta., Tech. Bull.* 103.
- Shapiro, M. 1982. In vivo mass production of insect viruses for use as pesticides, pp. 463-492. In E. Kurstak (ed.), *Microbial and viral pesticides*. Marcel Dekker, Inc., New York.

- Sharma, R. K., R. E. Rice, H. R. Reynolds, and H. H. Shorey. 1971. Seasonal influence and effect of trap location on catches of pink bollworm males in sticky traps baited with hexalure. Ann. Entomol. Soc. Amer. 64: 102-105.
- Sharpe, P. J. H., G. L. Curry, D. W. DeMichele, and C. L. Cole. 1977. Distribution model of organism development times. J. Theor. Biol. 66: 21-38.
- Sharpe, P. J. H., and D. W. DeMichele. 1977. Reaction kinetics of poikilotherm development. J. Theor. Biol. 64: 649-670.
- Sharpe, P. J. H., and L. Hu. 1980. Reaction kinetics of nutrient dependent poikilotherm development. J. Theor. Biol. 82: 317-333.
- Sharpe, P. J. H., R. M. Schoolfield, and G. D. Butler Jr. 1981. Distribution model of *Heliothis zea* (Lepidoptera: Noctuidae) development times. Can. Entomol. 113: 845-856.
- Shaunak, R. K., R. D. Lacewell, and J. Norman. 1982. Economic implications of alternative cotton production strategies in the Lower Rio Grande Valley of Texas, 1973-1978. Tex. Agri. Exp. Stn. Bull. B-1420.
- Shaver, T. N., D. E. Hendricks, and J. D. Lopez. 1987. Enhancement of field performance of *Heliothis virescens* pheromone components by (Z)-11-hexadecen-1-ol in PVC dispenser, pp. 307-309. In Proc. Beltwide Cotton Prod. Res. Conf.
- Sheih, T. R., and G. T. Bohmfalk. 1980. Production and efficacy of baculoviruses. Biotech. and Bioeng. 22: 1357-1375.
- Shen, S. K., and P. F. Dowd. 1991. 1-naphthyl acetate esterase activity from cultures of the symbiont yeast of the cigarette beetle (Coleoptera: Anobiidae). J. Econ. Entomol. 84: 402-407.
- Shepard, M., and W. L. Sterling. 1972a. Incidence of parasitism of *Heliothis* spp. (Lepidoptera: Noctuidae) in some cotton fields of Texas. Ann. Entomol. Soc. Amer. 65: 759-760.
- Shepard, M., and W. L. Sterling. 1972b. Effects of early season applications of insecticides on beneficial insects and spiders in cotton. Tex. Agric. Exp. Stn. Misc. Publ. 1045.
- Shepard, M., W. L. Sterling, and J. K. Walker Jr. 1972. Abundance of beneficial arthropods on cotton genotypes. Environ. Entomol. 1: 117-121.
- Shepherd, R. L. 1982a. Registration of three germplasm lines of cotton. Crop Sci. 22: 692.
- Shepherd, R. L. 1982b. Registration of eight germplasm lines of frego-bract cotton. Crop Sci. 22: 696-693.
- Shepherd, R. L. 1982c. Registration of eight germplasm lines of nectarless cotton. Crop Sci. 22: 693.
- Shepherd, R. L. 1982d. Registration of eight germplasm lines of smooth-leaf cotton. Crop Sci. 22: 899.
- Shepherd, R. L., W. L. Parrott, J. C. McCarty, and J. N. Jenkins. 1986a. Registration of eight okra leaf-frego bract cotton germplasm lines. Crop Sci. 26: 1259-1260.
- Shepherd, R. L., J. N. Jenkins, W. L. Parrott, and J. C. McCarty Jr. 1986b. Registration of eight nectarless-frego bract cotton germplasm lines. Crop Sci. 26: 1260.
- Shepherd, R. L., and A. J. Kappelman Jr. 1982. Registration of eight germplasm lines of okra-leaf cotton. Crop Sci. 22: 900.
- Sherman, F. 1930. Results of airplane dusting in the control of the cotton bollworm (*Heliothis obsoleta* Fabr.). J. Econ. Entomol. 23: 810-813.
- Shimke, R. T. 1986. Methotrexate resistance and gene amplification. Cancer 57: 1912-1917.
- Shorey, H. H., L. K. Gaston, and R. S. Kaae. 1976. Air-permeation with gossypol for control of the pink bollworm, pp. 67-74. In M. Beroza (ed.), Pest management with insect sex attractants. ACS Symposium Series 23. American Chemical Society, Washington, DC.
- Shorey, H. H., and R. L. Hale. 1965. Mass rearing of the larvae of nine noctuid species on a single artificial medium. J. Econ. Entomol. 58: 522-524.
- Shour, M. H., and L. A. Crowder. 1980. Effects of pyrethroid insecticides on the common green lacewing. J. Econ. Entomol. 73: 306-309.
- Shull, H., and A. S. Dylla. 1976. Wind effects on water application patterns from a large, single nozzle sprinkler. Trans. ASAE 19: 501-523.
- Siddall, C., and J. C. Gaines. 1942. Guide for controlling cotton insects. Tex. Agric. Ext. Serv. C-182.
- Sieburth, S. McN, S. Y. Lin, J. F. Engle, J. A. Greenblat, S. E. Burkart, and D. W. Gammon. 1990.

- Silane analogs of MIT-800: biology and chemistry, pp. 142-150. In L. Crombie (ed.), Recent advances in the chemistry of insect control II. Royal Society of Chemistry, Cambridge, U.K.
- Sikorowski, P. P. 1984. Pathogens and microbial contaminants: their occurrence and control, pp. 115-169. In P. P. Sikorowski, J. G. Griffin, J. L. Roberson, and O. H. Lindig (eds.), Boll weevil mass rearing technology. University Press of Mississippi, Jackson.
- Sikorowski, P. P., G. L. Andrews, and J. R. Broome. 1973. Transovum transmission of a cytoplasmic polyhedrosis virus of *Heliothis virescens* (Lepidoptera: Noctuidae). J. Invertebr. Pathol. 21: 41-45.
- Sikorowski, P. P., J. M. Wyatt, and O. H. Lindig. 1977. Method of surface sterilization of boll weevil eggs. Southwest. Entomol. 2: 32-36.
- Sillings, J. O., and D. B. Broersma. 1974. The parasites of the tarnished plant bug *Lygus lineolaris* in Indiana. Proc. North Cent. Branch Entomol. Soc. Amer. 29: 120-125.
- Simmonds, M. S. J., H. C. Evans, and W. M. Blaney. 1992. Pesticides for the year 2000: mycochemicals and botanicals, pp. 127-143. In A. A. Kadir, and H. S. Barlow (eds.), Pest management and the environment in 2000. CAB International.,
- Simmons, C. L., and P. P. Sikorowski. 1973. A laboratory study of the effects of cytoplasmic polyhedrosis virus on *Heliothis virescens* (Lepidoptera: Noctuidae). J. Invertebr. Pathol. 22: 369-371.
- Singh, J., and A. S. Sidhu. 1984. Comparative study of resistance in two American cotton varieties against pink bollworm. J. Res. Punjab Agric. Univ. 21: 211-219.
- Singh, P., and R. F. Moore. 1985a. Handbook of insect rearing, Vol. 1. Elsevier, New York.
- Singh, P., and R. F. Moore. 1985b. Handbook of insect rearing, Vol. 2. Elsevier, New York.
- Skinner, R. B. 1974. The relative and seasonal abundance of spiders from the herb-shrub stratum of cotton fields and the influence of peripheral habitat on spider populations. M.S. Thesis, Auburn Univ.
- Slama, K., M. Romanuk, and F. Sorm. 1974. Insect hormones and bioanalogues. Springer-Verlag, New York.
- Slater, J. A., and R. M. Baranowski. 1978. How to know the true bugs. William C. Brown Co.,
- Slaymaker, P. H., and N. P. Tugwell. 1982. Low-labor method for rearing the tarnished plant bug (Hemiptera: Miridae). J. Econ. Entomol. 75: 487-488.
- Slaymaker, P. H., and N. P. Tugwell. 1984. Inexpensive female-baited trap for the tarnished plant bug (Hemiptera: Miridae). J. Econ. Entomol. 77: 1062-1063.
- Slosser, J. E. 1978. The influence of planting date on boll weevil management. Southwest. Entomol. 3: 241-349.
- Slosser, J. E. 1980. Irrigation timing for bollworm management in cotton. J. Econ. Entomol. 73: 346-349.
- Slosser, J. E., and E. P. Boring III. 1980. Shelter belts and boll weevils: a control strategy based on management of overwintering habitat. Environ. Entomol. 9: 1-6.
- Slosser, J. E., J. R. Price, and G. L. Puterka. 1989. Evaluation of furrow-diking and early-season insecticide applications on boll weevils (Coleoptera: Curculionidae), bollworms (Lepidoptera: Noctuidae) and cotton yield in the Texas Rolling Plains. J. Econ. Entomol. 82: 599-607.
- Slosser, J. E., and T. F. Watson. 1972a. Population growth of the pink bollworm. Ariz. Ag. Exp. Sta. Tech. Bull. 195.
- Slosser, J. E., and T. F. Watson. 1972b. Influence of irrigation on overwinter survival of the pink bollworm. Environ. Entomol. 1: 572-576.
- Sluss, T. P., and H. M. Graham. 1979. Allozyme variation in natural populations of *Heliothis virescens*. Ann. Entomol. Soc. Amer. 72: 317-322.
- Smart, J. R. 1993. Reduced herbicide rates with narrow row cotton, pp. 1514-1516. In Proc. Beltwide Cotton Prod. Res. Conf.
- Smith, C. W. 1983. Registration of UARK-1 and UARK-2 early maturing cotton germplasms. Crop Sci. 23: 1226-1227.
- Smith, C. W. 1984. Combining ability for earliness traits among five diverse cotton genotypes, pp. 98. In Proc. Beltwide Cotton Prod. Res. Conf.
- Smith, C. W. 1988. Registration of 'Arkot 518' upland cotton. Crop Sci. 28: 190.

- Smith, D. B. 1983. Evaluation of broadcast spray deposits. ASAE, St. Joseph, MI, Paper No. 83-1512.
- Smith, D. B. 1978. What's new in pesticide application research, *In* Proceedings, Oklahoma Pesticide Applicator's Conference, January 24-25, Oklahoma.
- Smith, D. B. 1989. Drift and swath evaluations for three roadside sprayers. Trans. ASAE 32: 1512-1518.
- Smith, D. B. 1992. Uniformity and recovery of broadcast sprays using fan nozzles. Trans. ASAE 35: 39-44.
- Smith, D. B., and L. F. Bouse. 1981. Machinery and factors that affect the application of pathogens, pp. 635-53. *In* H. D. Burges (ed.), Microbial control of pests and plant diseases 1970-1980. Academic Press, New York.
- Smith, D. B., E. C. Burt, and E. P. Lloyd. 1975. Selection of optimum spray-droplet sizes for boll weevil and drift control. J. Econ. Entomol. 68: 415-417.
- Smith, D. B., F. D. Harris, and C. E. Goering. 1982a. Variables affecting drift from ground boom sprayers. Trans. ASAE 25: 1499-1503.
- Smith, D. B., D. L. Hostetter, R. E. Pinnell, and C. M. Ignoffo. 1982b. Laboratory studies of viral adjuvants: formulation development. J. Econ. Entomol. 75: 16-20.
- Smith, D. B., and D. L. Hostetter. 1982. Laboratory and field evaluations of pathogen-adjuvant treatments. J. Econ. Entomol. 75: 472-476.
- Smith, D. B., D. L. Hostetter, and C. M. Ignoffo. 1977a. Laboratory performance specifications for a bacterial (*Bacillus thuringiensis*) and a viral (*Baculovirus heliothis*) insecticide. J. Econ. Entomol. 70: 437-441.
- Smith, D. B., D. L. Hostetter, and C. M. Ignoffo. 1977b. Ground spray equipment for applying *Bacillus thuringiensis* suspension on soybeans. J. Econ. Entomol. 70: 633-637.
- Smith, D. B., D. L. Hostetter, and C. M. Ignoffo. 1978. Formulation and equipment effects on application of a viral (*Baculovirus heliothis*) insecticide. J. Econ. Entomol. 71: 814-817.
- Smith, D. B., D. L. Hostetter, and C. M. Ignoffo. 1981. Development of a soybean adjuvant for microbial insecticides. ASAE 81-1008.
- Smith, D. B., and R. G. Luttrell. 1987. Performance specifications for tobacco budworm (Lepidoptera: Noctuidae) larvae treated with vegetable oil and water sprays containing flutolanilate. J. Econ. Entomol. 80: 1314-1318.
- Smith, D. B., W. P. Scott, and E. P. Lloyd. 1973. Selected spray droplet sizes and cotton varieties for bollworm control. J. Econ. Entomol. 66: 260-261.
- Smith, D. B., M. H. Willcutt, and T. T. Spencer. 1992. Spreadsheet for aerial atomization and calibration decisions. NAAA-ASAE AA92-003.
- Smith, D. B., M. H. Willcutt, D. L. Valcore, J. W. Barry, and M. E. Teske. 1993. Guidelines for aerial atomization and spray drift reduction for Mississippi applicators. MAFES Information Bulletin 251.
- Smith, E. H. 1978. Integrated pest management needs-teaching, research and extension, pp. 309-328. *In* E. H. Smith, and D. Pimentel (eds.), Pest Control Strategies. Academic Press, New York.
- Smith, G. D. 1921. Studies on the biology of the Mexican cotton boll weevil in short staple upland, long staple upland, and sea island cotton. USDA Bull. 926.
- Smith, G. D. 1922. Preliminary report upon an improved method of controlling the boll weevil. Florida State Plant Board. Q. Bull. 7: 1-64.
- Smith, G. D. 1924. Further experiments with the Florida method of boll weevil control. Florida State Plant Board. Q. Bull. 8: 27-72.
- Smith, G. L. 1936. Percentage and causes of mortality of boll weevil stages within the squares. J. Econ. Entomol. 29: 99-105.
- Smith, G. L. 1942. California cotton insects. University of Calif. Agric. Exp. Stn. Bull. 660.
- Smith, G. L., and D. E. Bryan. 1949. Recommendations for the control of California cotton insects. University of California, Div. of Entomol. and Parasitology Mimeo.
- Smith, G. L., and J. A. Fontenot. 1942. Notes on the effect of arsenicals upon the cotton aphid, predators, and other insects. J. Econ. Entomol. 34: 587.

- Smith, H. P. 1964. Transmission of power, pp. 35. In Farm machinery and equipment. McGraw-Hill Book Co., New York.
- Smith, H. P., and D. L. Jones. 1948. Mechanized production of cotton in Texas. Tex. Agr. Exp. Sta. Bull. 304.
- Smith, J. M. 1986. Reproductive and developmental toxicity risk assessment, pp. 414-422. In W. Y. Garner, R. C. Honeycutt, and H. N. Nigg (eds.), Evaluation of pesticides in ground water. Symposium Series 315. American Chemical Society, Washington, D.C.
- Smith, J. W., and F. A. Harris. 1994. *Anthonomus* (Coleoptera: Curculionidae), pp. 223-258. In G. A. Matthews, and J. P. Tunstall (eds.), Insect Pests of Cotton. University Press, Cambridge.
- Smith, J. W., and E. A. Stadelbacher. 1978. Predatory arthropods: Seasonal rise and decline of populations in cotton fields in the Mississippi Delta. Environ. Entomol. 7: 367-371.
- Smith, J. W., E. A. Stadelbacher, and G. W. Gantt. 1976a. A comparison of techniques for sampling beneficial arthropod populations associated with cotton. Environ. Entomol. 5: 435-444.
- Smith, J. W., E. G. King, and J. V. Bell. 1976b. Parasites and pathogens among *Heliothis* species in the central Mississippi delta. Environ. Entomol. 5: 224-226.
- Smith, J. W., E. J. Villavaso, and W. L. McGovern. 1989. A large area sterile boll weevil release experiment in western Alabama, pp. 256-258. In Proc. Beltwide Cotton Prod. Res. Conf.
- Smith, J. W., E. J. Villavaso, W. L. McGovern, and J. R. Brazzel. 1988. Sterile boll weevil releases as part of a boll weevil eradication program, pp. 286-288. In Proc. Beltwide Cotton Prod. Res. Conf.
- Smith, J. W., G. Wiygul, G. D. Carpenter, and J. R. McCarty. 1993. Mississippi boll weevil management program 1992 - Update, pp. 930-931. In Proc. Beltwide Cotton Prod. Res. Conf.
- Smith, K. M. 1976. Virus insect relationships. Longman, New York.
- Smith, R. C. 1922. The biology of the Chrysopidae. Cornell Univ. Agric. Exp. Stn. Mem. 58: 1287-1372.
- Smith, R. F. 1971. Economic aspect of pest control, pp. 21-23. In Proc. Tall Timbers Conference on Ecological Animal Control by Habitat Management, No. 3. Tallahassee, Florida.
- Smith, R. F. 1978. History and complexity of integrated pest management, pp. 41-53. In E. H. Smith, and D. Pimentel (eds.), Pest control strategies. Academic, New York.
- Smith, R. F., and H. T. Reynolds. 1965. Principles, definitions and scope of integrated pest control. Proc. of the FAO Symp. on Integrated Pest Control 1: 11-17.
- Smith, R. F., and R. van den Bosch. 1967. Integrated control, pp. 295-340. In W. W. Kilgore, and R. L. Doutt (eds.), Pest control - biological, physical, and selected chemical methods. Academic Press, New York.
- Smith, R. H. 1980. Potential for short-season cotton in the Mid-South, pp. 155-157. In Proc. Beltwide Cotton Prod. Res. Conf.
- Smith, R. H. 1983. Economic impact of IPM, pp. 231-234. In Proc. Beltwide Cotton Prod. Res. Conf.
- Smith, R. H. 1990. Fall armyworm control considered - prevention preferred method. Southern Farm Press, Sept.
- Smith, R. H., J. D. Harper, and M. J. Gaylor. 1989. Diseases, parasites help control beet armyworms in cotton. Highlights of Agricultural Research 36:(2) 12.
- Smith, R. L., and H. M. Flint. 1977. A bibliography of the cotton leaf-perforator and a related species, *Bucculatrix thurberiella* that also feeds on cotton. Entomol. Soc. Amer. Bull. 23: 195-198.
- Smith, W. C., and G. A. Niles. 1988. Registration of fourteen cotton germplasms. Crop Sci. 28: 578-579.
- Smitley, D. R., and G. G. Kennedy. 1985. Photo-oriented aerial-dispersal behavior of *Tetranychus urticae* (Acarina: Tetranychidae) enhances escape from the leaf surface. Ann. Entomol. Soc. Amer. 78: 609-614.
- Smyth Jr., T. 1985. Muscle systems, pp. 227-252. In M. S. Blum (ed.), Fundamentals of insect physiology. John Wiley and Sons, New York.
- Snipes, L. E., and M. Hammer. 1984. Field crops: acreages, yield, production and value, Georgia, 1978-1983. Georgia Agricultural Facts - 1984 edition. Ga. Crop Reporting Serv., Athens.

- Snodgrass, G. L., and J. M. McWilliams. 1992. Rearing the tarnished plant bug (Heteroptera: Miridae) using a tissue paper oviposition site. *J. Econ. Entomol.* 85: 1162-1166.
- Snodgrass, G. L., W. P. Scott, and J. W. Smith. 1984. An annotated list of the host plants of *Lygus lineolaris* (Hemiptera: Miridae) in the Arkansas, Louisiana, and Mississippi Delta. *J. Ga. Entomol. Soc.* 19: 93-101.
- Snodgrass, G. L., W. P. Scott, and J. W. Smith. 1984. Host plants and seasonal distribution of the tarnished plant bug (Hemiptera: Miridae) in the Delta of Arkansas, Louisiana, and Mississippi. *Environ. Entomol.* 13: 110-116.
- Snow, J. W. 1964. Seasonal occurrence of *Heliothis virescens* (F.) on cotton in Georgia. *J. Econ. Entomol.* 57: 787-788.
- Snow, J. W. 1965. Bollworm and budworm resistance to DDT. *Ga. Agr. Res.* 6: 12-13.
- Snow, J. W., and J. R. Brazzel. 1965. Investigations of possibility of host specific strains of the bollworm and tobacco budworm in Mississippi. *J. Econ. Entomol.* 58: 525-526.
- Snow, J. W., and J. R. Brazzel. 1965. Seasonal host activity of the bollworm and tobacco budworm during 1963 in northeast Mississippi. *Miss. Agric. Exp. Stn. Bull.* 712.
- Snow, J. W., R. L. Burton, A. N. Sparks, and W. W. Cantelo. 1971. Attempted eradication of the corn earworm from St. Croix, U.S. Virgin Islands. *USDA Prod. Res. Rep.* 125.
- Snow, J. W., W. W. Cantelo, and M. C. Bowman. 1969. Distribution of the corn earworm on St. Croix, U.S. Virgin Islands and its relation to suppression programs. *J. Econ. Entomol.* 62: 606-611.
- Snow, J. W., and W. W. Copeland. 1971. Distribution and abundance of the corn earworm in the United States. *USDA Cooperative Economic Insect Report* 21: 71-76.
- Snow, J. W., J. J. Hamm, and J. R. Brazzel. 1966. *Geranium carolinianum* as an early host for *Heliothis zea* and *H. virescens* (Lepidoptera: Noctuidae) in the southeastern United States, with notes on associated parasites. *Ann. Entomol. Soc. Amer.* 59: 506-509.
- Snow, J. W., R. L. Jones, D. T. North, and G. G. Holt. 1972. Effects of irradiation on ability of adult male corn earworms to transfer sperm, and field attractiveness of females mated to irradiated males. *J. Econ. Entomol.* 65: 906-908.
- Soderlund, D. A., and J. R. Bloomquist. 1988. Neurotoxic actions of pyrethroid insecticides. *Annu. Rev. Entomol.* 34: 77-96.
- Soderlund, D. A., C. W. Hessney, and M. Jiang. 1987. Metabolism of fenvalerate by resistant Colorado potato beetles. *J. Agric. Food Chem.* 35: 100-105.
- Soderlund, D. A., J. R. Sanborn, and P. W. Lee. 1983. Metabolism of pyrethrins and pyrethroids in insects, pp. 401-435. *In* D. H. Hutson, and T. R. Roberts (eds.), *Progress in pesticide biochemistry and toxicology*, vol. 3. John Wiley and Sons, New York.
- Solomon, M. E. 1949. The natural control of animal populations. *J. Anim. Ecol.* 18: 1-35.
- Solway, S. B., A. C. Henry, W. D. Kollmeyer, W. M. Padgett, J. E. Powell, S. A. Roman, C. H. Tieman, R. A. Corey, and C. A. Horne. 1979. Nitromethylene insecticides, pp. 206-217. *In* H. Geissbuhler (ed.), *Advances in pesticide science*. Part 2, Fourth International Congress of Pesticide Chemistry, Zurich, 1978. Pergamon, New York.
- Southwick, L. M., D. J. Boethel, G. H. Willis, D. C. Rester, J. Yanes Jr., N. N. Troxclair Jr., and A. N. Sparks Jr. 1986. Deposits and persistence of permethrin ulv and ec applications on soybean leaves. *J. Econ. Entomol.* 79: 202-207.
- Southwood, T. R. E. 1962. Migration of terrestrial arthropods in relation to habitat. *Biol. Rev.* 37: 171-214.
- Southwood, T. R. E. 1978. Ecological methods: with particular reference to the study of insect populations. John Wiley, New York.
- Southwood, T. R. E., and G. A. Norton. 1973. Economic aspects of pest management strategies and decisions, pp. 168-184. *In* P. W. Geier, L. R. Clark, D. J. Anderson, and H. A. Nix (eds.), *Insects: studies in population management*. Ecol. Soc. Australia, Mem., Canberra.
- Sparks, A. N. 1972. *Heliothis* migration, pp. 15-17. *In* *Distribution abundance and control of Heliothis species in cotton and other host plants*. S. Coop. Ser. Bull. 169.

- Sparks, A. N. 1979. A review of the biology of the fall armyworm. Fla. Entomol. 62: 82-87.
- Sparks, A. N., J. E. Carpenter, J. A. Klun, and B. G. Mullinix. 1979a. Field responses of male *Heliothis zea* (Boddie) to pheromonal stimuli and trap design. J. Ga. Entomol. Soc. 14: 318-325.
- Sparks, A. N., J. R. Raulston, P. D. Lingren, J. E. Carpenter, J. A. Klun, and B. G. Mullinix. 1979b. Field response of male *Heliothis virescens* to pheromonal stimuli and traps. Bull. Entomol. Soc. Amer. 25: 268-274.
- Sparks, A. N., and E. A. Harrell. 1976. Corn earworm mechanization. USDA, Tech. Bulletin 1554.
- Sparks, A. N., R. D. Jackson, and C. L. Allen. 1975. Corn earworms: capture of adults in light traps on unmanned oil platforms in the Gulf of Mexico. J. Econ. Entomol. 68: 431-432.
- Sparks, A. N., J. A. Klun, J. R. Raulston, P. E. A. Teal, and J. E. Carpenter. 1988. *Heliothis* pheromones: chemistry and potential for use as mating disruptors/attracticides, pp. 50-65. In G. A. Herzog, S. Ramaswamy, G. Lentz, J. L. Goodenough, and J. J. Hamm (eds.), Theory and tactics of *Heliothis* population management. III - emerging control tactics and techniques. Southern Coop. Ser. Bull. 337.
- Sparks, T. C. 1981. Development of insecticide resistance in *Heliothis zea* and *Heliothis virescens* in North America. Bull. Entomol. Soc. Amer. 27: 186-192.
- Sparks, T. C. 1990. Endocrine based insecticides, pp. 103-154. In E. Hodgson, and R. J. Kuhr (eds.), Safer insecticides: Development and use. Marcel Dekker, Inc., New York.
- Sparks, T. C., J. B. Graves, and B. R. Leonard. 1993a. Insecticide resistance and the tobacco budworm: Past present and future, pp. 149-183. In R. M. Roe, and R. J. Kuhr (eds.), Reviews in pesticide toxicology, vol. 2.. Toxicology Communications, Inc., Raleigh, NC.
- Sparks, T. C., B. R. Leonard, F. Schneider, and J. B. Graves. 1993b. Ovicultural activity and alteration of octopamine titers: the effects of selected insecticides on eggs of the tobacco budworm (Lepidoptera: Noctuidae). J. Econ. Entomol. 86: 294-300.
- Sparks, T. C., and B. B. Hammock. 1983. Insect growth regulators: resistance and the future, pp. 615-668. In G. P. Georgiou, and T. Saito (eds.), Pest resistance to pesticides. Plenum Press, New York.
- Sparks, T. C., B. R. Leonard, and J. B. Graves. 1988. Pyrethroid resistance and the tobacco budworm: interactions with chlordimeform and mechanisms of resistance, pp. 366-370. In Proc. Beltwide Cotton Prod. Res. Conf.
- Sparks, T. C., B. R. Leonard, and J. B. Graves. 1991. Pyrethroid-formamidine interactions and behavioral effects in pyrethroid susceptible and resistant tobacco budworms. Southwest. Entomol. Suppl. No. 15 111-119.
- Sparks, T. C., J. A. Lockwood, R. L. Byford, J. B. Graves, and B. R. Leonard. 1989. The role of behavior in insecticide resistance. Pestic. Sci. 26: 383-399.
- Sparks, T. C., A. M. Pavloff, R. L. Rose, and D. F. Clower. 1983. Temperature-toxicity relationships of pyrethroids on *Heliothis virescens* (F.) and *Anthonomus grandis* grandis Boheman. J. Econ. Entomol. 76: 243-246.
- Sparks, T. C., S. S. Quisenberry, J. A. Lockwood, R. L. Byford, and R. T. Roush. 1985. Insecticide resistance in the horn fly, *Haematobia irritans*. J. Agric. Entomol. 2: 217-233.
- Sparks, T. C., M. H. Shour, and E. G. Wellemeyer. 1982. Temperature-toxicity relationships of pyrethroids on three Lepidopterans. J. Econ. Entomol. 75: 643-646.
- Spears, T. F. 1968. The westward movement of the pink bollworm. Bull. Entomol. Soc. Amer. 14: 118-119.
- Spencer, C. B. 1953. Cooperative program for pink bollworm control in Texas 1952, pp. 54-56. In Proc. Seventh Beltwide Cotton Prod. and Cotton Insect Control Conf.
- Splinter, W. E. 1968. Electrostatic charging of agricultural sprays. Trans. ASAE 11: 491-495.
- Sprengel, R. K., and W. M. Brooks. 1977. Winter survival of the entomogenous fungus *Nomuraea rileyi* in North Carolina. J. Invertebr. Pathol. 29: 262-266.
- Sprott, J. M., R. D. Lacewell, G. A. Niles, J. K. Walker, and J. R. Gannaway. 1976. Agronomic, economic and environmental implications of short season narrow row cotton production. Texas Agric. Exp. Stn. MP-1250.

- Spurlock, S. R., and D. W. Parvin. 1988. A simulation model for cotton harvesting decisions. Staff Paper No. 84, Dept. Agric. Econ., Mississippi State University.
- Staal, G. B. 1975. Insect growth regulators with juvenile hormone activity. Annu. Rev. Entomol. 20: 417-460.
- Staal, G. B. 1986. Anti-juvenile hormone agents. Annu. Rev. Entomol. 31: 391-429.
- Stadelbacher, E. A. 1979. *Geranium dissectum*: an unreported host of the tobacco budworm and bollworm and its role in their seasonal and long term population dynamics in the Delta of Mississippi. Environ. Entomol. 8: 1153-1156.
- Stadelbacher, E. A. 1985. Management of first generation bollworm and tobacco budworm populations on wild host plants, pp. 150-153. In Proc. Beltwide Cotton Prod. Res. Conf.
- Stadelbacher, E. A., J. R. Adams, R. M. Faust, and G. J. Tomkins. 1978. An iridescent virus of the bollworm, *Heliothis zea* (Lepidoptera: Noctuidae). J. Invertebr. Pathol. 32: 71-76.
- Stadelbacher, E. A., and T. R. Pfriemer. 1972. Winter survival of the bollworm at Stoneville, Mississippi. J. Econ. Entomol. 65: 1030-1034.
- Stadelbacher, E. A., J. E. Powell, and E. G. King. 1984. Parasitism of *Heliothis zea* and *H. virescens* (Lepidoptera: Noctuidae) larvae in wild and cultivated host plants in the delta of Mississippi. Environ. Entomol. 13: 1167-1172.
- Staetz, C. A. 1985. Susceptibility of *Heliothis virescens* (F.) (Lepidoptera: Noctuidae) to permethrin from across the cotton belt: a five year study. J. Econ. Entomol. 78: 505-510.
- Staetz, C. A. 1985. Susceptibility of *Heliothis virescens* (F.) (Lepidoptera: Noctuidae) to permethrin from across the cotton belt: a five year study. J. Econ. Entomol. 78: 505-510.
- Staetz, C. A. 1992. IRAC-Cotton-U.S. update of current projects and future plans, pp. 754-756. In Proc. Beltwide Cotton Prod. Res. Conf.
- Staetz, C. A., K. A. Boyler, E. E. Gage, D. G. Riley, and D. A. Wolfenbarger. 1992. Vial bioassay for contact insecticides for adult whiteflies, *Bemisia tabaci*, pp. 704-707. In Proc. Beltwide Cotton Prod. Res. Conf.
- Stamps, M. R. 1981. Coax insect feeding stimulant: a new approach to budworm/bollworm control, pp. 86. In Proc. Beltwide Cotton Prod. Res. Conf.
- Star, J., and J. Estes. 1990. Geographic information systems. Prentice Hall, Englewood Cliffs, NJ.
- Starbird, I. R. 1974. Costs of producing upland cotton (selected years). U.S. Dept. Agr., CS-265.
- Starbird, I. R., E. H. Glade Jr., W. C. McArthur, F. T. Cooke Jr., and T. Townsend. 1987. The U.S. cotton industry. USDA, Econ. Res. Serv., AER-567.
- Stark, S. B., and K. R. Hopper. 1988. *Chrysoperla carnea* predation on *Heliothis virescens* larvae parasitized by *Microplitis croceipes*. Entomol. Exp. Appl. 48: 69-72.
- Stark, S. B., and F. Whitford. 1987. Functional response of *Chrysopa carnea* (Neuroptera: Chrysopidae) larvae feeding on *Heliothis virescens* (Lepidoptera: Noctuidae) eggs on cotton in field cages. Entomophaga 32: 521-527.
- Staten, R. T. 1987. Progress report: Coachella Valley management trial, pp. 18-21. In Report of the international cotton pest work committee San Diego.
- Staten, R. T. 1987. The 1986 Coachella pink bollworm pheromone management project, pp. 17-20. In Cotton insect and production meeting, 1987, El Centro, California.
- Staten, R. T., H. M. Flint, R. C. Weddle, E. Quintero, R. E. Zarate, C. M. Finnell, M. Hernandes, and A. Yamamoto. 1987. Pink bollworm (Lepidoptera: Gelechiidae): large-scale field trials with a high-rate gossyplure formulation. J. Econ. Entomol. 80: 1267-1271.
- Staten, R. T., E. Miller, M. Grunnet, F. Gardner, and E. Andress. 1988. The use of pheromones for pink bollworm management in western cotton, pp. 206-209. In Proc. Beltwide Cotton Prod. Res. Conf.
- Steiner, W. W. M., and D. A. Teig. 1989. *Microplitis croceipes* (Cresson): genetic characterization and developing insecticide resistant biotypes, pp. 71-87. In J. E. Powell, D. L. Bull, and E. G. King (Eds.), Biological control of *Heliothis* spp. by *Microplitis croceipes*. Southwest. Entomol. Suppl. 12.

- Steinkraus, D. C., T. J. Kring, and N. P. Tugwell. 1991. *Neozygites fresenii* in *Aphis gossypii* on cotton. Southwest. Entomol. 16: 118-122.
- Sterling, W. L. 1971. Winter survival of the boll weevil in the High and Rolling Plains of Texas. J. Econ. Entomol. 64: 39-41.
- Sterling, W. L. 1978. Fortuitous biological suppression of the boll weevil by the red imported fire ant. Environ. Entomol. 7: 564-568.
- Sterling, W. L. (ed.). 1979. Economic thresholds and sampling of *Heliothis* species on cotton, corn, soybeans, and other host plants. S. Coop. Ser. Bull. 231.
- Sterling, W. L. 1984. Action and inaction levels in pest management. Texas Agric. Exp. Stn. Bull. B-1480.
- Sterling, W. L., and P. L. Adkisson. 1970. Seasonal rates of increase for a population of the boll weevil, *Anthonomus grandis*, in the High and Rolling Plains of Texas. Ann. Entomol. Soc. Amer. 63: 1696-1700.
- Sterling, W. L., and P. L. Adkisson. 1971. Seasonal biology of the boll weevil in the High and Rolling Plains of Texas as compared with previous biological studies of this insect. Texas Ag. Exp. Stn., MP-993.
- Sterling, W. L., and P. L. Adkisson. 1978. Population dynamics of the boll weevil inhabiting the High and Rolling Plains of Texas. Environ. Entomol. 7: 439-444.
- Sterling, W. L., and D. A. Dean. 1990. Evidence of the need for improving the mortality component of boll weevil models. Texas Agric. Exp. Stn., Tech. Rept., DTR 89-02.
- Sterling, W. L., D. A. Dean, and N. M. A. El-Salam. 1992. Economic benefits of spider (Araneae) and insect (Hemiptera: Miridae) predators of cotton fleahopper. J. Econ. Entomol. 85: 52-57.
- Sterling, W. L., D. A. Dean, D. A. Fillman, and D. Jones. 1984. Naturally occurring biological control of the boll weevil (Col.: Curculionidae). Entomophaga 29: 1-9.
- Sterling, W. L., D. A. Dean, and A. W. Hartstack. 1990a. Partitioning boll weevil mortality associated with high temperature: desiccation or thermal death? Environ. Entomol. 19: 1457-1462.
- Sterling, W. L., A. W. Hartstack, and D. A. Dean. 1990b. TEXCIM40: testing and use on the farm, pp. 241-244. In Proc. Beltwide Cotton Prod. Res. Conf.
- Sterling, W. L., D. A. Dean, A. W. Hartstack, S. Shahed, and R. Burudgunte. 1993. The Texas cotton-insect-model-TEXCIM for Windows. Tex. Agric. Exp. Stn. Misc. Publ. MP-1646, Revised.
- Sterling, W. L., K. M. El-Zik, and L. T. Wilson. 1989. Biological control of pest populations, pp. 155-189. In R. E. Frisbie, K. M. El-Zik, and L. T. Wilson (eds.), Integrated Pest Management Systems and Cotton Production. John Wiley and Sons, New York.
- Sterling, W. L., G. C. Gaumer, J. Haffernik, and D. A. Dean. 1978. A checklist of insects found on cotton in East Texas. Tex. Agric. Exp. Stn. Misc. Pub. MP-1366.
- Sterling, W. L., and R. L. Haney. 1973. Cotton yields climb, costs drop through pest management systems. Texas Agr. Prog. 19: 4-7.
- Sterling, W. L., and A. W. Hartstack. 1979. Emergence threshold with validations for forecasting the spring emergence of cotton fleahoppers. Environ. Entomol. 8: 649-654.
- Sterling, W. L., and A. W. Hartstack. 1987. TEXCIM - a fleahopper-*Heliothis*-plant model for on farm use, pp. 258-259. In Proc. Beltwide Cotton Prod. Res. Conf.
- Sterling, W. L., A. W. Hartstack, and D. A. Dean. 1989a. TEXCIM: synthesis and hypothesis. Texas Agric. Exp. Stn., Dept. Entomol. Tech. Rept. DTR 89-01.
- Sterling, W. L., A. W. Hartstack, and D. A. Dean. 1989b. Conventions and protocol for testing and using the TEXCIM management model. Texas Agric. Exp. Stn., Tech. Rept. DTR 89-03.
- Sterling, W. L., D. Jones, and D. A. Dean. 1979. Failure of the red imported fire ant to reduce entomophagous insect and spider abundance in a cotton agroecosystem. Environ. Entomol. 8: 976-981.
- Sterling, W. L., A. W. Hartstack, and D. A. Dean. 1992. The Texas cotton-insect model-TEXCIM version 5.0. Texas Agric. Exp. Stn. Misc. Publ. MP-1646, (Revised).
- Stern, V., and V. Sevacherian. 1978. Long-range dispersal of pink bollworm into the San Joaquin Valley. California Agriculture 32: 4-5.

- Stern, V. M. 1966. Significance of the economic threshold in integrated pest control. Proc. FAO Symp. Integrated Pest Control 2: 41-56.
- Stern, V. M. 1969. Interplanting alfalfa in cotton to control *Lygus* bugs and other insect pests. Proc. Tall Timbers Conf. on Ecol. Animal Control by Habitat Mgmt. Number I.
- Stern, V. M. 1973. Economic thresholds. Annu. Rev. Entomol. 18: 259-280.
- Stern, V. M. 1976. Ecological studies of lygus bugs in developing a pest management program for cotton pests in the San Joaquin Valley, California, pp. 38. In D. R. Scott, and L. E. O'Keefe (eds.), *Lygus bug: host plant interactions*. Univ. Idaho Press., Moscow.
- Stern, V. M. 1979. Long and short range dispersal of the pink bollworm, *Pectinophora gossypiella*, in southern California. Environ. Entomol. 8: 524-527.
- Stern, V. M., A. Mueller, V. Sevacherian, and M. Way. 1969. Lygus bug control in cotton through alfalfa interplanting. Calif. Agric. 23: 8-10.
- Stern, V. M., R. F. Smith, R. van den Bosch, and K. S. Hagen. 1959. The integrated control concept. Hilgardia 29: 81-101.
- Stern, V. M., R. van den Bosch, and T. F. Leigh. 1964. Strip cutting alfalfa for lygus bug control. Calif. Agric. 18: 4-6.
- Stern, V. M., R. van den Bosch, T. F. Leigh, O. D. McCutcheon, W. R. Sallee, E. E. Houston, and M. J. Garber. 1967. *Lygus* control by strip cutting alfalfa. Univ. Calif. Agric. Ext. Serv. AXT-241.
- Stevenson, A. B., and M. D. Roberts. 1973. Tarnished plant bug rearing on lettuce. J. Econ. Entomol. 66: 1354-1355.
- Stewart, F. D. 1984. Mass rearing the pink bollworm, *Pectinophora gossypiella*, pp. 176-187. In E. G. King, and N. C. Leppla (eds.), *Advances and challenges in insect rearing*. USDA, Agric. Res. Serv., Washington D.C.
- Stewart, S. D. 1987. Impact of insects and physical stress on cotton fruit abscission, retention, compensation and economic value. MS Thesis, Texas A&M University, College Station, Texas.
- Stewart, S. D., and W. L. Sterling. 1987. Economic value of fruit based on size and time of season, pp. 256-258. In Proc. Beltwide Cotton Prod. Res. Conf.
- Still, G. G., and R. A. Leopold. 1978. The elimination of $(N-[[(4\text{-chlorophenyl})\text{amino}]\text{carbonyl}])2,6\text{-difluorobenamide}0$ by the boll weevil. Pestic. Biochem. Physiol. 9: 304-312.
- Stillings, N. A., M. A. Feinstein, J. L. Garfield, E. L. Rissland, D. A. Rosenbaum, S. E. Weisler, and L. Baker-Ward. 1987. Cognitive science: an introduction. MIT Press, Cambridge.
- Stimmann, M. 1986. Handbook of pesticide use, recommendation, and experimentation, 1986-1987. A supplement to policy. Communication 18. Univ. of Calif. Div. of Agric. & Nat. Resources.
- Stinner, R. E. 1977. Efficacy of inundative releases. Annu. Rev. Entomol. 22: 515-531.
- Stinner, R. E., G. D. Butler Jr., J. S. Bacheler, and C. Tuttle. 1975. Simulation of temperature-dependent development in population dynamics models. Can. Entomol 107: 1167-1174.
- Stinner, R. E., R. L. Rabb, and J. R. Bradley. 1974a. Population dynamics of *Heliothis zea* (Boddie) and *H. virescens* (F.) in North Carolina: a simulation model. Environ. Entomol. 3: 163-168.
- Stinner, R. E., A. P. Gutierrez, and G. D. Butler Jr. 1974b. An algorithm for temperature-dependent growth rate simulation. Can. Entomol. 106: 519-524.
- Stinner, R. E., R. L. Rabb, and J. R. Bradley. 1977a. Population mortality and cyclicity as affected by intraspecific competition. Can. Entomol. 109: 879-890.
- Stinner, R. E., R. L. Rabb, and J. R. Bradley. 1977b. Natural factors operating in the population dynamics of *Heliothis zea* in North Carolina, pp. 622-642. In Proc. XV Internl. Congr. Entomol., Washington, DC.
- Stinner, R. E., R. L. Ridgway, J. R. Coppedge, R. K. Morrison, and W. A. Dickerson Jr. 1974. Parasitism of *Heliothis* eggs after field releases of *Trichogramma pretiosum* in cotton. Environ. Entomol. 3: 497-500.
- Stinner, R. E., K. Wilson, C. Barfield, F. Regniere, A. Riordan, and J. Davis. 1982. Insect movement in the atmosphere, pp. 491. In J. L. Hatfield, and I. J. Thomason (eds.), *Biometeorology in integrated pest management*. Academic Press, New York.

- Stitt, L. L. 1949. Host plant sources of *Lygus* species infesting the alfalfa seed crop in southern Arizona and southwestern California. *J. Econ. Entomol.* 42: 93-99.
- Stokes, L. G., and W. P. Sappenfield. 1981. Registration of BW76-31 cotton germplasm. *Crop Sci.* 21: 991.
- Stoll, J. 1987. Southwest Oklahoma pest management program. Annual Report. Okla. Coop. Ext. Ser. Circular E-844.
- Stoltz, D. B., P. Knell, M. D. Summers, and S. B. Vinson. 1984. Polydnnaviridae - a proposed family of insect viruses with segmented, double-stranded, circular DNA genomes. *Intervirology* 21: 1-4.
- Stoltz, D. B., and S. B. Vinson. 1979. Viruses and parasitism in insects. *Adv. Virus Res.* 24: 125-171.
- Stoltz, R. L., and V. M. Stern. 1978. Cotton arthropod food chain disruption by pesticides in the San Joaquin Valley, California. *Environ. Entomol.* 7: 703-707.
- Stone, N. D. 1989. Knowledge-based systems as a unifying perspective for IPM, pp. 13-23. In *Proc. Nat. IPM Symposium/Workshop*, April 25-28, Las Vegas, Nevada.
- Stone, N. D., R. E. Frisbie, J. W. Richardson, and C. Sansone. 1987. COTFLEX, a modular expert system that synthesizes biological and economic analysis: the pest management advisor as an example, pp. 194-197. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Stone, N. D., and A. P. Gutierrez. 1986a. Pink bollworm control in Southwestern desert cotton. I. A field-oriented simulation model. *Hilgardia* 54: 1-24.
- Stone, N. D., and A. P. Gutierrez. 1986b. Pink bollworm control in Southwestern desert cotton. II. A strategic management model. *Hilgardia* 54: 25-41.
- Stone, N. D., A. P. Gutierrez, W. M. Getz, and R. Norgaard. 1986. Pink bollworm control in Southwestern desert cotton. III. Strategies for control: an economic simulation study. *Hilgardia* 54: 42-56.
- Stone, N. D., D. R. Rummel, S. Carroll, M. E. Makela, and R. E. Frisbie. 1990. Simulation of boll weevil (Coleoptera: Curculionidae) spring emergence and overwintering survival in the Texas rolling plains. *Environ. Entomol.* 19: 91-98.
- Stone, N. D., and T. W. Toman. 1989. COTFLEX: an integrated expert and database system for decision support in Texas cotton production, In *Proc. AAAI/ASAE Workshop: Integration of Expert Systems with Conventional Problem Solving Techniques in Agriculture*, August 10-12, San Antonio, TX.
- Stoner, A. 1970. Plant feeding by a predaceous insect, *Geocoris punctipes*. *J. Econ. Entomol.* 63: 286-298.
- Strand, M. R., and S. B. Vinson. 1982. Behavioral response of the parasitoid *Cardiochiles nigriceps* to a kairomone. *Entomol. Exp. Appl.* 31: 308-315.
- Strand, M. R., and S. B. Vinson. 1982. Stimulation of oviposition and successful rearing of *Telenomus heliothidis* (Hymenoptera: Scelionidae) on nonhosts by use of a host recognition kairomone. *Entomophaga* 27: 365-370.
- Strand, M. R., and S. B. Vinson. 1983. Analyses of an egg recognition kairomone of *Telenomus heliothidis* (Hymenoptera: Scelionidae). Isolation and host function. *J. Chem. Ecol.* 9: 423-432.
- Streams, F. A., M. Shahjahan, and H. G. LeMasurier. 1968. Influence of plants on the parasitization of the tarnished plant bug by *Leiophron pallipes*. *J. Econ. Entomol.* 61: 996-999.
- Strickberger, M. W. 1968. Genetics. MacMillan, New York.
- Stride, G. O. 1968. On the biology and ecology of *Lygus vasseleri* (Heteroptera: Miridae) with special reference to its host plant relationships. *J. Entomol. Soc. South Africa* 31: 17-59.
- Stringer, S. J., and J. E. Jones. 1987. Genetic analysis of *Heliothis* spp. resistance and flower bud gossypol in advanced La. cottons, pp. 97. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Stringer, S. J., J. E. Jones, D. F. Clower, E. Burris, and S. Micinski. 1983. An evaluation of cotton germplasm for field resistance to *Heliothis* species, pp. 70. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Strong, F. E. 1968. The selective advantage accruing to lygus bugs that cause blasting of floral parts. *J. Econ. Entomol.* 61: 315-316.

- Strong, F. E. 1971. A computer-generated model to simulate mating behavior of lygus bugs. *J. Econ. Entomol.* 64: 46-50.
- Strunnikov, V. A. 1979. On the prospects of using balanced sex-linked lethals for insect pest control. *Theor. Appl. Genet.* 55: 17-21.
- Sturm, M. M. 1989. Natural mortality of the boll weevil (Coleoptera: Curculionidae) within cotton squares. M.S. Thesis, Texas A&M University, College Station.
- Sturm, M. M., and W. L. Sterling. 1986. Boll weevil (Coleoptera: Curculionidae) mortality factors within flower buds of cotton: assessment using durable evidence. *Bull. Entomol. Soc. Amer.* 32: 239-247.
- Sturm, M. M., and W. L. Sterling. 1990. Geographical patterns of boll weevil mortality: observations and hypothesis. *Environ. Entomol.* 19: 59-65.
- Sturm, M. M., W. L. Sterling, and D. A. Dean. 1989. Life tables and key mortality factors of boll weevils in Texas. *Texas Agric. Exp. Stn. MP-1675.*
- Sturm, M. M., W. L. Sterling, and A. W. Hartstack. 1990. Role of natural mortality and boll weevil (Coleoptera: Curculionidae) management programs. *J. Econ. Entomol.* 83: 1-7.
- Suguiyama, L., and C. Osteen. 1988. The economic importance of cotton insect pests on U.S. agriculture. USDA, Econ. Res. Serv. (unpublished manuscript).
- Suguiyama, L. F., and G. A. Carlson. 1985. Field crop pests: farmers report the severity and intensity. USDA, Econ. Res. Serv., AIB-487.
- Summer, D. D., and J. T. Stevens. 1986. Safety evaluation of pesticides in ground water, pp. 436-444. In W. Y. Garner, R. C. Honeycutt, and H. N. Nigg (eds.), *Evaluation of pesticides in ground water*, Symposium Series 315. American Chemical Society, Washington, D.C.
- Summy, K. R. 1991. Late season parasitism of boll weevil in the Lower Rio Grande Valley of Texas, pp. 720-722. In Proc. Beltwide Cotton Prod. Res. Conf.
- Summy, K. R., J. R. Cate, and W. G. Hart. 1988. Overwintering strategies of boll weevil in southern Texas: reproduction on cultivated cotton. *Southwest. Entomol.* 13: 159-164.
- Summy, K. R., W. G. Hart, and J. R. Cate. 1984. Aerial surveillance for regrowth cotton in the Lower Rio Grande Valley of Texas, pp. 191. In Proc. Beltwide Cotton Prod. Res. Conf.
- Summy, K. R., W. G. Hart, J. R. Cate, and D. Bar. 1985. Research on areawide cotton stalk destruction for cultural control of boll weevil in the Lower Rio Grande Valley, pp. 145. In Proc. Beltwide Cotton Prod. Res. Conf.
- Summy, K. R., M. D. Heilman, L. N. Namken, and W. G. Hart. 1986a. Control of boll weevils (Coleoptera: Curculionidae) through crop residue disposal: destruction of subtropical cotton under inclement conditions. *J. Econ. Entomol.* 79: 1662-1665.
- Summy, K. R., W. G. Hart, M. D. Heilman, and J. R. Cate. 1986b. Late-season boll weevil control: combined impact of stalk shredding and lethal soil temperatures, pp. 233-235. In Proc. Beltwide Cotton Prod. Res. Conf.
- Summy, K. R., J. A. Morales-Ramos, E. G. King, D. A. Wolfenbarger, R. J. Coleman, S. Greenberg, A. W. Scott Jr., and J. V. French. 1994. Integration of boll weevil parasite augmentation into the short-season production system of the Lower Rio Grande Valley, pp. 953-957. In Proc. Beltwide Cotton Prod. Res. Conf.
- Summy, K. R., J. A. Morales-Ramos, E. G. King, and A. W. Scott. 1993. Suppression of boll weevil infestations by augmentative releases of *Catolaccus grandis*, pp. 908-909. In Proc. Beltwide Cotton Prod. Res. Conf.
- Sun, Y. P., and E. R. Johnson. 1972. Quasi-synergism and penetration of insecticides. *J. Econ. Entomol.* 65: 349-353.
- Suski, Z. W., and J. A. Naegele. 1966. Light response in the two-spotted spider mites. II. Behavior of the sedentary and dispersal phases. *Recent Adv. Acarol.* Cornell Press, Ithaca, New York.
- Sweet, M. H. 1960. The seed bugs: a contribution to the feeding habits of the Lygaeidae (Hemiptera: Heteroptera). *Ann. Entomol. Soc. Amer.* 53: 317-321.
- Swift, J. E. 1958. Factors influencing the distribution and seasonal abundance of *Aphis gossypii* in California. Ph.D. Dissertation, University of California, Berkeley.

- Swift, J. E. 1969. Unexpected effects from substitute pest control methods. Symp. biological impact of pesticides in the environment, Aug. 18-20. Oregon State Univ., Corvallis, Oregon.
- Swoboda, M. 1953. Cotton insect control guide for New Mexico-1953. NM A&M Col. Agric. Ext. Ser. Circ. 227.
- Szczepanski, C. V. 1990. Today's research for tomorrow's markets or: How to hit a moving target, pp. 1-16. In L. Crombie (ed.), Recent Advances in the Chemistry of Insect Control II. Royal Society of Chemistry, London.
- Szeicz, F. M., F. W. Plapp Jr., and S. B. Vinson. 1973. Tobacco budworm: penetration of several insecticides into larvae. J. Econ. Entomol. 66: 9-15.
- Szmedra, P. I., R. W. McClendon, and M. E. Wetzstein. 1991. Economic risk efficiency of boll weevil eradication. S. J. Agric. Econ. 23: 237-245.
- Tabashnik, B. E. 1986. Computer simulation as a tool for pesticide resistance management, pp. 194-206. In Pesticide resistance: strategies and tactics for management. National Academy of Sciences, Washington, D.C.
- Tabashnik, B. E. 1991. Determining the mode of inheritance of pesticide resistance with backcross experiments. J. Econ. Entomol. 84: 703-712.
- Tabashnik, B. E. 1992. Resistance risk assessment: realized heritability of resistance to *Bacillus thuringiensis* in diamondback moth (Lepidoptera: Plutellidae), tobacco budworm (Lepidoptera: Noctuidae) and Colorado potato beetle (Coleoptera: Chrysomelidae). J. Econ. Entomol. 85: 1551-1559.
- Tabashnik, B. E., N. L. Cushing, N. Finson, and M. W. Johnson. 1990. Field development of resistance to *Bacillus thuringiensis* in diamondback moth (Lepidoptera: plutellidae). J. Econ. Entomol. 83: 1671-1676.
- Tabashnik, B. E., N. Finson, and M. W. Johnson. 1991. Managing resistance to *Bacillus thuringiensis*: Lessons from diamondback moth (Lepidoptera: plutellidae). J. Econ. Entomol. 84: 49-55.
- Tabashnik, B. E., and F. Slansky Jr. 1987. Nutritional ecology of forb foliage-chewing insects, pp. 71-103. In F. Slansky Jr., and J. G. Rodriguez (eds.), Nutritional ecology of insects, mites, spiders, and related invertebrates. John Wiley & Sons, New York.
- Taft, H. M., and A. R. Hopkins. 1963. A community effort in boll weevil control. USDA-ARS-33-82.
- Taft, H. M., and A. R. Hopkins. 1967. Control of cotton pests with low-volume insecticides applied with a low-volume mist sprayer. J. Econ. Entomol. 60: 608-610.
- Taft, H. M., A. R. Hopkins, and W. James. 1963. Differences in reproductive potential, feeding rate, and longevity of boll weevils mated in the fall and in the spring. J. Econ. Entomol. 56: 180-181.
- Taft, H. M., A. R. Hopkins, W. James, and R. F. Moore Jr. 1973. Boll weevils: time of entry into hibernation sites and variations in survival and emergence. J. Econ. Entomol. 66: 254-256.
- Taft, H. M., A. R. Hopkins, C. E. Jernigan, and J. C. Webb. 1969. A new 8-row ground sprayer with auxiliary air for ULV application of pesticides to cotton. J. Econ. Entomol. 62: 570-574.
- Taft, H. M., and C. E. Jernigan. 1964. Elevated screens for collecting boll weevils flying between hibernation sites and cottonfields. J. Econ. Entomol. 57: 773-774.
- Taksdal, F. 1961. Ecology of plant resistance to the tarnished plant bug, *Lygus lineolaris* (P. de B.). M.S. Thesis, Cornell Univ., Ithaca.
- Talpaz, H., G. L. Curry, P. J. H. Sharpe, D. W. DeMichele, and R. E. Frisbie. 1978. Optimal pesticide application for controlling the boll weevil on cotton. Am. J. Agric. Econ. 60: 469-475.
- Tamaki, G., D. P. Olsen, and R. K. Gupta. 1978. Laboratory evaluation of *Geocoris bullatus* and *Nabis alternatus* as predators of *Lygus*. J. Entomol. Soc. Brit. Columbia 75: 35-37.
- Tamaki, G., and R. E. Weeks. 1972. Biology and ecology of two predators, *Geocoris punctipes* (Say) and *G. bullatus* (Stal.). U.S. Dept. Agric. Bull. 1446.
- Tanabe, A. M., and M. Tamashiro. 1967. The biology and pathogenicity of a microsporidian (*Nosema trichoplusiae* sp. n.) of the cabbage looper, *Trichoplusia ni* (Hubner) (Lepidoptera: Noctuidae). J. Invertebr. Pathol. 9: 188-195.
- Tauber, C. A. 1974. Systematics of North American chrysopid larvae: *Chrysopa carnea* group (Neuroptera). Can. Entomol. 106: 1133-1153.

- Tauber, M. J., and C. A. Tauber. 1983. Life history traits of *Chrysopa carnea* and *Chrysopa rufilabris* (Neuroptera: Chrysopidae): influence of humidity. Ann. Entomol. Soc. Amer. 76: 282-285.
- Taylor, B. B. 1971. Suggestions on how to grow narrow-row, high-population cotton in 1971. Ariz. Agri-file Coop. Ext. Serv. Field Crops 300.0.
- Taylor, C. R. 1980. The nature of benefits and costs of use of pest control methods. Amer. J. Agric. Econ. 62: 1007-1011.
- Taylor, C. R., G. A. Carlson, F. T. Cooke, K. H. Reichelderfer, and I. R. Starbird. 1983. Aggregate economic effects of alternative boll weevil management strategies. Agricultural Economics Research 35: 19-28.
- Taylor, C. R., and R. D. Lacewell. 1977. Boll weevil control strategies: regional benefits and costs. J. Agric. Econ. 9: 129-135.
- Taylor, R. A. J. 1985. Migration behavior in the Auchenorrhyncha, pp. 259-288. In L. R. Nault, and J. G. Rodrigues (eds.), The leafhoppers and planthoppers. John Wiley and Son, New York.
- Taylor, R. N. 1982. Insecticide resistance in house flies from the Middle East and North Africa with notes on the use of various bioassay techniques. Pestic. Sci. 13: 415-425.
- Teague, T. G., J. R. Cate, and F. W. Plapp. 1983. Toxicity of azinphosmethyl and methyl parathion to three populations of boll weevil. Southwest. Entomol. 8: 107-112.
- Teakle, R. E., and J. M. Jensen. 1985. *Heliothis punctiger*, pp. 313-322. In P. Singh, and R. F. Moore (eds.), Handbook of Insect Rearing, Vol. 2 Elsevier, New York.
- Teal, P. E. A., J. R. McLaughlin, and J. H. Tumlinson. 1981. Analysis of the reproductive behavior of *Heliothis virescens* (F) under laboratory conditions. Ann. Entomol. Soc. Amer. 74: 324-330.
- Teal, P. E. A., J. H. Tumlinson, J. R. McLaughlin, R. Heath, and R. A. Rush. 1984. (Z)-11-Hexadecen-1-ol: a behavior modifying chemical present in the pheromone gland of female *Heliothis zea* (Lepidoptera: Noctuidae). Can. Entomol. 116: 777-779.
- Tejada, L. O. 1971. Evaluation of the effectiveness of some general predators at different predator-prey densities, with special reference to their attack on *Heliothis zea* (Boddie). Ph.D. Thesis. University of California. Riverside.
- Teske, M. E. 1984. Computer program for prediction of the deposition of material released from fixed and rotary wing aircraft. NASA Contractor Report 3780: 92.
- TAEX. 1947. Guide for controlling cotton insects in Texas. Tex. Agric. Ext. Serv. C-182.
- TAEX. 1948. Guide for controlling cotton insects in Texas. Tex. Agric. Ext. Serv. C-182.
- TAEX. 1949. Guide for controlling cotton insects in Texas. Tex. Agric. Ext. Serv. C-182.
- TAEX. 1951. Guide for controlling cotton insects in Texas. Tex. Agric. Ext. Serv. C-182.
- TAEX. 1952a. Cotton insect control guide Lower Rio Grande Valley of Texas. Tex. Agric. Ext. Serv.
- TAEX. 1952b. Guide for controlling cotton insects in Texas. Tex. Agric. Ext. Serv. C-182.
- TAEX. 1953a. Cotton insect control guide Lower Rio Grande Valley of Texas.
- TAEX. 1953b. Guide for controlling cotton insects in Texas. Tex. Agric. Ext. Serv. C-182.
- TAEX. 1954a. Cotton insect control guide Lower Rio Grande Valley of Texas.
- TAEX. 1954b. Guide for controlling cotton insects in Texas. Tex. Agric. Ext. Serv. C-182.
- TAEX. 1956a. Texas guide for controlling cotton insects. Tex. Agric. Ext. Serv. L-218.
- TAEX. 1956b. Cotton insect control guide Lower Rio Grande Valley of Texas.
- TAEX. 1957a. Texas guide for controlling cotton insects. Tex. Agric. Ext. Serv. L-218.
- TAEX. 1957b. Cotton insect control guide Lower Rio Grande Valley of Texas.
- TAEX. 1959a. Cotton insect control guide Lower Rio Grande Valley of Texas.
- TAEX. 1959b. Texas guide for controlling cotton insects. Tex. Agric. Ext. Serv. L-218.
- TAEX. 1960. Cotton insect control guide Lower Rio Grande Valley of Texas.
- TAEX. 1961a. Texas guide for controlling cotton insects. Tex. Agric. Ext. Serv. L-218.
- TAEX. 1961b. Guide for controlling cotton insects in South Texas. Tex. Agric. Ext. Serv. L-561.
- TAEX. 1961c. Guide for controlling cotton insects in the High Plains and Trans-Pecos area of Texas. Tex. Agric. Ext. Ser. L-508.
- TAEX. 1962. Guide for controlling cotton insects in South Texas. Tex. Agric. Ext. Serv. L-561.
- TAEX. 1963a. Texas guide for controlling cotton insects. Tex. Agric. Ext. Serv. L-218.

- TAEX. 1963b. Guide for controlling cotton insects in South Texas. Tex. Agric. Ext. Serv. L-561.
- TAEX. 1963c. Guide for controlling cotton insects in the High Plains and Trans-Pecos area of Texas. Tex. Agric. Ext. Ser. L-508.
- TAEX. 1964a. Texas guide for controlling cotton insects. Tex. Agric. Ext. Serv. L-218.
- TAEX. 1964b. Guide for controlling cotton insects in South Texas. Tex. Agric. Ext. Serv. L-561.
- TAEX. 1964c. Guide for controlling cotton insects in the High Plains and Trans-Pecos area of Texas. Tex. Agric. Ext. Ser. L-508.
- TAEX. 1966a. Texas guide for controlling cotton insects. Tex. Agric. Ext. Serv. L-218.
- TAEX. 1966b. Guide for controlling cotton insects in South Texas. Tex. Agric. Ext. Serv. L-561.
- TAEX. 1966c. Guide for controlling cotton insects in the High Plains, Rolling Plains and Trans-Pecos area of Texas. Tex. Agric. Ext. Ser. L-508.
- TAEX. 1967a. Texas guide for controlling cotton insects. Tex. Agric. Ext. Serv. L-218.
- TAEX. 1967b. Guide for controlling cotton insects in South Texas. Tex. Agric. Ext. Serv. L-561.
- TAEX. 1967c. Guide for controlling cotton insects in the High Plains, Rolling Plains and Trans-Pecos area of Texas. Tex. Agric. Ext. Ser. L-508.
- TAEX. 1968. Texas guide for controlling cotton insects. Tex. Agric. Ext. Serv. L-218.
- TAEX. 1969a. Texas guide for controlling cotton insects. Tex. Agric. Ext. Serv. L-218.
- TAEX. 1969b. Guide for controlling cotton insects in South Texas. Tex. Agric. Ext. Serv. L-561.
- TAEX. 1969c. Guide for controlling cotton insects in the High Plains, Rolling Plains and Trans-Pecos area of Texas. Tex. Agric. Ext. Ser. L-508.
- TAEX. 1970. Guide for controlling cotton insects in the High Plains, Rolling Plains and Trans-Pecos area of Texas. Tex. Agric. Ext. Ser. L-508.
- TAEX. 1971a. Guide for controlling cotton insects in the High Plains, Rolling Plains and Trans-Pecos area of Texas. Tex. Agric. Ext. Ser. L-508.
- TAEX. 1971b. Texas guide for controlling cotton insects. Tex. Agric. Ext. Serv. L-218.
- TAEX. 1971c. Guide for controlling cotton insects in South Texas. Tex. Agric. Ext. Serv. L-561.
- TAEX. 1972a. Guide for controlling cotton insects in North Texas, Blacklands and Gulf Coast counties of Texas. Texas Agric. Ext. Ser. L-218.
- TAEX. 1972b. Guide for controlling cotton insects in South Texas. Tex. Agric. Ext. Serv. L-561.
- TAEX. 1972c. Guide for controlling cotton insects in the High Plains, Rolling Plains and Trans-Pecos area of Texas. Tex. Agric. Ext. Ser. L-508.
- TAEX. 1974a. Suggestions for controlling cotton insects in East & South Texas, counties of Texas. Texas Agric. Ext. Ser. L-218.
- TAEX. 1974b. Suggestions for controlling cotton insects in the Texas Blacklands. Tex. Agric. Ext. Serv. L-1219.
- TAEX. 1974c. Suggestions for controlling cotton insects in the Lower Rio Grande Valley of Texas. Texas Agric. Ext. Serv. L-561.
- TAEX. 1974d. Guide for controlling cotton insects in the High Plains, Rollins Plains and Trans-Pecos area of Texas. Tex. Agric. Ext. Ser. L-508.
- TAEX. 1975a. Suggestions for controlling cotton insects in the Lower Rio Grande Valley of Texas. Texas Agric. Ext. Serv. L-561.
- TAEX. 1975b. Suggestions for controlling cotton insects in the High Plains, Rolling Plains and Trans-Pecos areas of Texas. Tex. Agric. Ext. Serv. L-508.
- TAEX. 1975c. Suggestions for controlling cotton insects in the Texas Blacklands. Tex. Agric. Ext. Serv. L-1219.
- TAEX. 1976a. Suggestions for controlling cotton insects in the Lower Rio Grande Valley of Texas. Texas Agric. Ext. Serv. L-561.
- TAEX. 1976b. Suggestions for controlling cotton insects in the High Plains, Rolling Plains and Trans-Pecos areas of Texas. Tex. Agric. Ext. Serv. L-508.
- TAEX. 1977a. Suggestions for controlling cotton insects in East & South Texas, counties of Texas. Texas Agric. Ext. Ser. L-218.
- TAEX. 1977b. Suggestions for controlling cotton insects in the Texas Blacklands. Tex. Agric. Ext. Serv. L-1219.

- TAEX. 1977c. Suggestions for controlling cotton insects in the Lower Rio Grande Valley of Texas. Texas Agric. Ext. Serv. L-561.
- TAEX. 1978a. Suggestions for controlling cotton insects in East & South Texas, counties of Texas. Texas Agric. Ext. Ser. L-218.
- TAEX. 1978b. Suggestions for controlling cotton insects in the Texas Blacklands. Tex. Agric. Ext. Serv. L-1219.
- TAEX. 1978c. Suggestions for controlling cotton insects in the Lower Rio Grande Valley of Texas. Texas Agric. Ext. Serv. L-561.
- TAEX. 1978d. Suggestions for controlling cotton insects in the High Plains, Rolling Plains and Trans-Pecos areas of Texas. Tex. Agric. Ext. Serv. L-508.
- TAEX. 1979a. Management of cotton insects in the High Plains, Rolling Plains and Trans-Pecos areas of Texas. Tex. Agric. Ext. Serv. B-1209.
- TAEX. 1979b. Management of cotton insects in South & East Texas counties. Tex. Agric. Ext. Serv. B-1204.
- TAEX. 1979c. Management of cotton insects in the Texas Blacklands. Tex. Agric. Ext. Serv. L-1219.
- TAEX. 1979d. Management of cotton insects in the Lower Rio Grande Valley of Texas. Tex. Agric. Ext. Serv. B-1210.
- TAEX. 1980. Management of cotton insects in the High Plains, Rolling Plains and Trans-Pecos areas of Texas. Tex. Agric. Ext. Serv. B-1209.
- Texas Department of Water Resources. 1984. The state of Texas water quality inventory, 7th edition, December, Texas.
- Thead, L. G., H. N. Pitre, and T. F. Kellong. 1985. Feeding behavior of adult *Geocoris punctipes* (Say) (Hemiptera: Lygaeidae) on nectaried and nectariless cotton. Environ. Entomol. 14: 134-137.
- Thomas, D. 1989. What's in an object? Byte 14: 231-240.
- Thomas, W. M. 1989a. Modeling within-plant distribution of *Heliothis* spp. (Lepidoptera: Noctuidae) damage in cotton. Agric. Sys. 30: 71-80.
- Thomas, W. M. 1989b. Validation of the *Heliothis* spp. damage submodel, HELDMG, pp. 220-222. In Proc. Beltwide Cotton Prod. Res. Conf.
- Thomas, W. M., M. E. Roof, and R. G. Jones. 1988. Predicting *Heliothis* spp. oviposition peaks using TEXCIM. J. Agric. Entomol. 5: 253-256.
- Thompson, C. G., and E. A. Steinhaus. 1950. Further tests using a polyhedrosis virus to control the alfalfa caterpillar. Hilgardia 19: 411-445.
- Thompson, C. M., and T. R. Fukuto. 1982. Mechanism of cholinesterase inhibition by methamidophos. J. Agric. Food Chem. 30: 282-284.
- Thompson, M. O. 1951. More \$\$\$\$\$ for your cotton. NM A&M College Ext. Circ. 233.
- Thompson, W. H. 1951. Hosts of the Coleoptera and Diptera. Pt. 1, In W. H. Thompson (ed.), A catalogue of the parasites and predators of insect pests [q.v.]. Sect. 2 Ottawa, Ontario.
- Thompson, W. H. 1985. Agricultural chemicals, book 1. Thompson Publications, Fresno.
- Thorpe, K. 1984. Seasonal distribution of *Trichogramma* (Hymenoptera: Trichogrammatidae) species associated with a Maryland soybean field. Environ. Entomol. 13: 127-132.
- Threadgill, E. D. 1985. Chemigation via sprinkler irrigation: current status and future development. Appl. Engr. Agric. 1: 16-23.
- Threadgill, E. D., and D. B. Smith. 1975. Effects of physical and meteorological parameters on the drift of controlled-size droplets. Trans ASAE 18: 51-56.
- Thresh, J. M. 1981. Pests pathogens and vegetation: the role of weeds and wild plants in the ecology of crops pests and diseases. Pitman Pub. Co. 517 pp., London.
- Tietz, H. M. 1972. An index to the described life histories, early stages, and hosts of the *Macrolepidoptera* of the continental United States and Canada. Vol. I and II. A. C. Allyn, Allyn Museum of Entomology, Sarasota.
- Tillman, P. G. 1993. Preference of *Catolaccus grandis* for boll weevils on cotton plants versus on the ground. Southwest. Entomol. 18: 169-172.
- Tingey, W. M., T. F. Leigh, and A. H. Hyer. 1975a. *Lygus hesperus*: Growth, survival, and egg laying resistance of cotton genotypes. J. Econ. Entomol. 68: 28-31.

- Tingey, W. M., T. F. Leigh, and A. H. Hyer. 1975b. Glandless cotton: susceptibility to *Lygus hesperus* Knight. Crop Sci. 15: 251-253.
- Tingle, F. C., and E. P. Lloyd. 1969. Influence of temperature and diet on attainment of firm diapause in the boll weevil. J. Econ. Entomol. 7: 295-309.
- Tinsley, T. W., and D. C. Kelley. 1985. Taxonomy and nomenclature of insect pathogenic viruses, pp. 3-25. In K. Maramarosch, and K. E. Sherman (eds.), *Viral insecticides for biological control*. Academic Press, New York.
- Tinsworth, E. F. 1990. Regulation of pheromones and other semiochemicals in the United States, pp. 569-603. In R. L. Ridgway, R. M. Silverstein, and M. N. Inscoe (eds.), *Behavior-modifying Chemicals for Insect Management: Applications of Pheromones and Other Attractants*. Marcel Dekker, Inc., New York.
- Tippins, H. H., and C. M. Beckham. 1962. Boll weevil resistance to several chlorinated hydrocarbon insecticides in Georgia. J. Econ. Entomol. 55: 944-947.
- Todd, E. L., and R. W. Poole. 1980. Keys and illustrations for the armyworm moths of the Noctuid genus *Spodoptera* Guenée from the western hemisphere. Ann. Entomol. Soc. Amer. 73: 722-738.
- Todd, J. W. 1989. Ecology and behavior of *Nezara viridula*. Annu. Rev. Entomol. 34: 273-292.
- Todd, J. W., and W. J. Lewis. 1976. Incidence and oviposition patterns of *Trichopoda pennipes* (F), a parasite of the southern green stink bug, *Nezara viridula* (L.). J. Ga. Entomol. Soc. 11: 50-54.
- Tollefson, M. S., and T. F. Watson. 1981. Seasonal effects on the biology of and damage by tobacco budworm in cotton. J. Econ. Entomol. 74: 714-717.
- Toscano, N. C., M. Blua, G. Ballmer, and M. Madore. 1992. The impact of sweetpotato whitefly, *Bemisia tabaci*, upon cotton quantity and quality in California, pp. 684-687. In Proc. Beltwide Cotton Prod. Res. Conf.
- Toscano, N. C., and V. Sevacherian. 1980. Pink bollworm monitoring methods, pp. 40-45. In H. Graham (ed.), *Pink bollworm control in the western United States*. USDA, Science and Education Administration, ARM-W-16.
- Toscano, N. C., V. Sevacherian, and R. A. van Steenwyk. 1979. Pest management guide for insects and nematodes of cotton in California. Agricultural Sciences Publications, University of California, Berkeley.
- Toschi, C. A. 1965. The taxonomy, life history, and mating behavior of the green lacewings of Strawberry Canyon (Neuroptera: Chrysopidae). Hilgardia 36: 391-431.
- Toth Jr., S. J., and T. C. Sparks. 1988. Influence of treatment technique on the temperature-toxicity relationships of *cis*- and *trans*-permethrin in the cabbage looper, *Trichoplusia ni* (Hubner) (Lepidoptera: Noctuidae). J. Econ. Entomol. 81: 115-118.
- Townsend Jr., J. R. 1973. Economic threshold studies of *Heliothis* spp. on cotton. M.S. Thesis, Mississippi State Univ., Mississippi State.
- Townsend, C. H. T. 1895. Report on the Mexican cotton boll weevil in Texas. (*Anthonomus grandis* Boh.). Insect Life 7: 295-309.
- Treacy, M. F., J. H. Benedict, and K. M. Schmidt. 1986. Toxicity of insecticide residues to the boll weevil: comparison of ulv-oil vs. conventional/water and water-oil sprays in evaluation of petroleum and crop oils as carriers and adjuvants for insecticides. Southwest. Entomol. 11: 19-24.
- Treacy, M. F., J. H. Benedict, K. M. Schmidt, R. M. Anderson, and T. L. Wagner. 1987. Behavior of tobacco budworm larvae on cotton treated with chlordimeform, pp. 318-20. In Proc. Beltwide Cotton Prod. Res. Conf.
- Treacy, M. F., J. H. Benedict, J. D. Lopez, and R. K. Morrison. 1987a. Functional response of a predator (Neuroptera: Chrysopidae) to bollworm (Lepidoptera: Noctuidae) eggs on smoothleaf, hirsute, and pilose cottons. J. Econ. Entomol. 80: 376-379.
- Treacy, M. F., J. H. Benedict, M. H. Walmsley, J. D. Lopez, and R. K. Morrison. 1987b. Parasitism of bollworm (Lepidoptera: Noctuidae) eggs on nectariferous and nectariless cotton. Environ. Entomol. 16: 420-423.

- Treacy, M. F., G. R. Zummo, and J. H. Benedict. 1985. Interactions of host plant resistance in cotton with predators and parasites. *Agric. Ecosy. Environ.* 13: 151-157.
- Trumble, J. T., and M. P. Parella. 1987. California law and the development of pesticide resistance. California policy seminar research report.
- Tschinkel, W. R. 1982. History and biology of fire ants, pp. 16-35. In Proc. Symposium on the Imported Fire Ant. Environmental Protection Agency: USDA; Animal, Plant Health Inspection Service, Atlanta, Georgia.
- Tucker, T. C., and B. B. Tucker. 1968. Nitrogen nutrition, pp. 184-211. In F. C. Elliot, M. Hoover, and W. K. Porter Jr. (eds.), Advances in production and utilization of quality cotton: principles and practices. The Iowa State Univ. Press, Ames.
- Tugwell, P., S. C. Young Jr., B. A. Dumsas, and J. R. Phillips. 1976. Plant bugs in cotton: importance of infestation time, types of cotton injury, and significance of wild hosts near cotton. Arkansas Agr. Exp. Sta. Rep. Ser. 227.
- Tumlinson, J. H., R. C. Gueldner, D. D. Hardee, A. C. Thompson, P. R. Hedin, and J. P. Minyard. 1971. Identification and synthesis of the four compounds comprising the boll weevil sex attractant. *J. Org. Chem.* 36: 2616-2621.
- Tumlinson, J. H., D. D. Hardee, R. C. Gueldner, A. C. Thompson, P. A. Hedin, and J. P. Minyard. 1969. Sex pheromones produced by male boll weevil: isolation, identification, and synthesis. *Science* 166: 1010-1012.
- Tumlinson, J. H., D. E. Hendricks, E. R. Mitchell, R. E. Doolittle, and M. M. Brennan. 1975. Isolation, identification, and synthesis of the sex pheromone of the tobacco budworm. *J. Chem. Ecol.* 1: 203-214.
- Turnbull, A. L. 1973. Ecology of the true spiders (Araneomorphae). *Annu. Rev. Entomol.* 18: 305-348.
- Turner, J. 1981. White gold comes to California. Book Publishers Inc., Fresno.
- Turney, H. A., W. E. Buxkemper, and J. Cocke Jr. 1982. Management of cotton insects in the Texas Blacklands. *Tex. Agric. Ext. Ser.* B-1205.
- Tweeten, L. 1983. Economic instability in agriculture: the contributions of prices, government programs and exports. *Amer. J. Agri. Econ.* 65: 922-930.
- Twine, P. H., and H. T. Reynolds. 1980. Relative susceptibility and resistance of the tobacco budworm to methyl parathion and synthetic pyrethroids in Southern California. *J. Econ. Entomol.* 73: 239-242.
- Tyler, F. J. 1910. Varieties of American upland cotton. *USDA Bur. Plant Health Ind. Bull.* 163.
- USDA. 1961. The pink bollworm in Arizona, July 1958 through September 1960. *Agric. Res. Serv. Plant Pest Cont. Div.*, Oakland, California.
- USDA. 1981a. Executive overview of alternative boll weevil/cotton insect management programs.
- USDA. 1981b. Biological evaluation of alternative Beltwide boll weevil/cotton insect management programs. Overall evaluation. Appendix A. SEA-AR Staff Report.
- USDA. 1985. Agricultural statistics. U.S. Govt. Printing Office, Washington, DC.
- USDA. 1993. Conference report and 5-year national research and action plan for development of management and control methodology for the sweetpotato whitefly, In R. M. Faust and J. R. Coppedge (eds.), *USDA-ARS, ARS-107*, U.S. Govt. Printing Office Washington, D.C.
- USDA, APHIS. 1977. Task force review report of the pink bollworm program. Washington, DC.
- USDA, APHIS. 1978-87. Annual budgets.
- USDA, ARS. 1965. Losses in agriculture. AH-291.
- USDA, CSRS. 1978-1986. Annual inventories of agricultural research.
- USDA, ERS. 1984-87. Objective yield survey.
- USDA, ERS. 1986. Agricultural resources: inputs outlook situation report, AR-1.
- USDA, ERS. 1986. Agricultural resources-input situation and outlook report. AR-3.
- USDA, ERS. 1992. Cotton and wool, situation and outlook report. CWS-69. Washington, D.C.
- USDA, ERS. 1993. Cotton and wool, situation and outlook report. CWS-69. Washington, D.C.

- U.S. Senate. 1979. Costs of producing selected crops in the United States—selected years. Prepared for the Committee on Agriculture, Nutrition and Forestry.
- Udagawa, T., S. Numata, K. Oda, S. Shiraishi, K. Kodaka, and K. Nakatani. 1985. A new type of synthetic pyrethroid insecticide, pp. 192-204. In N. F. Janes (ed.), Recent advances in the chemistry of insect control. Royal Society of Chemistry, London, U.K.
- Uk, S., and R. J. Courshee. 1982. Distribution and likely effectiveness of spray deposits within a cotton canopy from fine ulv spray applied by aircraft. *Pestl. Sci.* 13: 529-536.
- Underhill, G. W. 1934. The green stink bug. *Va. Ag. Exp. Stn. Bull.* 294.
- Uvarov, B. P. 1931. Insects and climate. *Trans. Entomol. Soc. London* 79: 1-274.
- Vaeck, M., A. Reynaerts, H. Hofte, S. Jansens, M. de Beuckeleer, C. Dean, M. Zabeau, M. van Montagu, and J. Leemans. 1987. Transgenic plants protected from insect attack. *Nature* 328: 33-37.
- Vail, P. V., T. J. Henneberry, and M. R. Bell. 1977. Cotton leafperforator: effect of a nuclear polyhedrosis virus on field populations. *J. Econ. Entomol.* 70: 727-728.
- Vail, P. V., and D. L. Jay. 1973. Pathology of a nuclear polyhedrosis virus of the alfalfa looper in alternate hosts. *J. Invertebr. Pathol.* 21: 198-204.
- Vail, P. V., D. L. Jay, and D. K. Hunter. 1970. Cross infectivity of a nuclear polyhedrosis virus from the alfalfa looper, *Autographa californica*, pp. 297-304. In Proc. Fourth Intern. Colloq. Insect Pathology.
- Vail, P. V., D. L. Jay, D. K. Hunter, and R. T. Staten. 1972. A nuclear polyhedrosis virus infective to the pink bollworm. *J. Invertebr. Pathol.* 20: 124-128.
- van den Bosch, R., and K. S. Hagen. 1966. Predaceous and parasitic arthropods in California cotton fields. *Calif. Ag. Exp. Stn. Bull.* 820.
- van den Bosch, R., T. F. Leigh, L. A. Falcon, V. M. Stern, D. Gonzalez, and K. Hagen. 1971. The developing program of integrated control of cotton pests in California, pp. 377-394. In C. B. Huffaker (ed.), Biological control. Plenum Press, New York.
- van den Bosch, R., T. F. Leigh, D. Gonzalez, and R. E. Stinner. 1969. Cage studies on predators of the bollworm in cotton. *J. Econ. Entomol.* 62: 1486-1489.
- van den Bosch, R., H. T. Reynolds, and E. J. Dietrick. 1956. Toxicity of widely used insecticides to beneficial insects in California cotton and alfalfa fields. *J. Econ. Entomol.* 49: 359-363.
- van Emden, H. F., and K. S. Hagen. 1976. Olfactory reactions of the green lacewing, *Chrysopa carnea*, to tryptophan and certain breakdown products. *Environ. Entomol.* 5: 469-473.
- van Lenteren, J. C. 1981. Host discrimination by parasitoids, pp. 153-179. In D. A. Nordlund, R. L. Jones, and W. J. Lewis (eds.), Semiochemicals: their role in pest control. Wiley, New York.
- Van Steenwyk, R. A., N. C. Toscano, G. R. Balmer, and H. T. Reynolds. 1975. Increase of *Heliothis* spp. in cotton under various insecticide treatment regimes. *Environ. Entomol.* 4: 993-996.
- Van Steenwyk, R. A., and V. M. Stern. 1976. The biology of *Peristenus stygicus* (Hymenoptera: Braconidae), a newly imported parasite of lygus bugs. *Environ. Entomol.* 5: 931-934.
- Van Steenwyk, R. A., and V. M. Stern. 1977. Propagation, release, and evaluation of *Peristenus stygicus*, a newly imported parasite of lygus bugs. *J. Econ. Entomol.* 70: 66-69.
- Van Steenwyk, R. A., N. C. Toscano, and A. L. Pager. 1978. Dispersal of rubidium-marked pink bollworm. *Environ. Entomol.* 7: 608-613.
- Vanderzant, E. S. 1967. Rearing *Lygus* bugs on artificial diets. *J. Econ. Entomol.* 60: 813-816.
- Vanderzant, E. S., and T. B. Davich. 1958. Laboratory rearing of the boll weevil: a satisfactory larval diet and oviposition studies. *J. Econ. Entomol.* 51: 288-291.
- Vanderzant, E. S., and R. Reiser. 1956. Aseptic rearing of the pink bollworm on synthetic media. *J. Econ. Entomol.* 49: 7-10.
- Vanderzant, E. S., C. D. Richardson, and S. W. Fort Jr. 1962. Rearing of the bollworm on artificial diet. *J. Econ. Entomol.* 55: 140.
- Verloop, A., and C. D. Ferrell. 1977. Benzolphenyl ureas - a new group of larvicides interfering with chitin deposition, pp. 237-270. In J. A. Plimmer (ed.), Pesticide chemistry in the 20th century. American Chemical Society, Washington, D.C.

- Vickery, R. A. 1915. Notes on three species of *Heliphila* which injure cereal and forage crops at Brownsville, TX. J. Econ. Entomol. 8: 389-392.
- Vickery, R. A. 1926. Observations of *Cirphis latiuscula* H. Sch. in the gulf coast region of Texas. J. Agric. Res. 32: 1099-1119.
- Vickery, R. A. 1929. Studies on the fall armyworm in the gulf coast district of Texas. U.S. Dept. Agric. Tech. Bull. 138.
- Villavaso, E. J. 1981. Field competitiveness of sterile male boll weevils released in the boll weevil irradiation trial - 1979. J. Econ. Entomol. 74: 373-375.
- Villavaso, E. J. 1982. Boll weevil: field competitiveness of diflubenzuron-fed irradiated males - 1980-1981. J. Econ. Entomol. 75: 662-664.
- Villavaso, E. J., J. C. Dickens, W. L. McGovern, and F. D. Brewer. 1988. Field competitiveness of sterile boll weevils (Coleoptera: Curculionidae) reared on standard diets versus diets supplemented with carotenoids. J. Econ. Entomol. 81: 1102-1106.
- Villavaso, E. J., and N. W. Earle. 1976. Competitiveness of busulfan-fed sterile vs. native male boll weevils. Environ. Entomol. 5: 279-280.
- Villavaso, E. J., E. P. Lloyd, P. S. Lue, and J. E. Wright. 1980. Boll weevils: competitiveness of sterile males in isolated field plots. J. Econ. Entomol. 73: 213-217.
- Villavaso, E. J., S. S. Nilakhe, and W. L. McGovern. 1979. Field competitiveness of sterile male boll weevils. J. Ga. Entomol. Soc. 14: 113-120.
- Villavaso, E. J., J. L. Roberson, and R. W. Seward. 1989a. Effectiveness of sterile boll weevils (Coleoptera: Curculionidae) against a low density population in commercially grown cotton in north-central Mississippi. J. Econ. Entomol. 82: 472-476.
- Villavaso, E. J., W. L. McGovern, and J. E. Leggett. 1989b. Competitiveness and longevity of sterile boll weevils in isolated plots of cotton in Arizona. Southwest. Entomol. 14: 111-115.
- Villavaso, E. J., J. L. Roberson, P. P. Sikorowski, and M. J. Thompson. 1986a. Competitiveness of sterile boll weevils (Coleoptera: Curculionidae) relative to a native population in small field plots. J. Econ. Entomol. 79: 76-78.
- Villavaso, E. J., J. L. Roberson, R. W. Seward, and M. J. Thompson. 1986b. Effectiveness of sterile boll weevils (Coleoptera: Curculionidae) against naturally occurring populations in commercially grown cotton. J. Econ. Entomol. 79: 79-83.
- Villavaso, E. J., and M. J. Thompson. 1984. Field competitiveness of boll weevils (Coleoptera: Curculionidae) sterilized by the feeding of chemosterilants followed by irradiation or fumigation. J. Econ. Entomol. 77: 583-587.
- Villavaso, E. J., G. Wiygul, and M. J. Thompson. 1983. Pheromone production in boll weevils (Coleoptera: Curculionidae) sterilized by three methods. J. Econ. Entomol. 76: 1030-1040.
- Vinson, S. B. 1968a. Immunological relationships between the parasite *Cardiochiles nigriceps* Vierick and certain *Heliothis* species. J. Insect Physiol. 14: 613-626.
- Vinson, S. B. 1968b. Source of a substance in *Heliothis virescens* that elicits a searching response in its habitual parasite, *Cardiochiles nigriceps*. Ann. Entomol. Soc. Amer. 61: 8-10.
- Vinson, S. B. 1972. Factors involved in successful attack on *Heliothis virescens* by the parasitoid *Cardiochiles nigriceps*. J. Invertebr. Pathol. 20: 118-123.
- Vinson, S. B. 1975. Biochemical coevolution between parasitoids and their hosts, pp. 14-48. In P. Price (ed.), Evolutionary strategies of parasitic insects and mites. Plenum, New York.
- Vinson, S. B. 1976. Host selection by insect parasitoids. Annu. Rev. Entomol. 21: 109-133.
- Vinson, S. B. 1977. Behavioral chemicals in the augmentation of natural enemies, pp. 237-299. In R. L. Ridgway, and S. B. Vinson (eds.), Biological control by augmentation of natural enemies. Plenum Press, New York.
- Vinson, S. B. 1978. Courtship behavior and source of a sexual pheromone from *Cardiochiles nigriceps*. Ann. Entomol. Soc. Amer. 71: 832-837.
- Vinson, S. B. 1981. Habitat location, pp. 51-77. In D. A. Nordlund, R. L. Jones, and W. J. Lewis (eds.), Semiochemicals: their role in pest control. Wiley, New York.

- Vinson, S. B. 1988. The potential use of synamones, kairomones, and pheromones in the management of enemies of cotton pests, pp. 217-223. In Proc. Beltwide Cotton Prod. Res. Conf.
- Vinson, S. B., and J. R. Brazzel. 1966. The penetration and metabolism of C¹⁴-labeled DDT in resistant and susceptible tobacco budworm larvae, *Heliothis virescens* (F.). J. Econ. Entomol. 59: 600-604.
- Vinson, S. B., and D. L. Dahlman. 1989. Physiological relationship between braconid endoparasites and their hosts: the *Microplitis croceipes* - *Heliothis* spp. system, pp. 17-37. In J. E. Powell, D. L. Bull, and E. G. King (Eds.), Biological control of *Heliothis* spp. by *Microplitis croceipes*. Southwest. Entomol. Suppl. 12.
- Vinson, S. B., and L. Greenberg. 1986. The biology, physiology, and ecology of imported fire ants, pp. 193-226. In S. B. Vinson (ed.), Economic impact and control of social insects. Praeger Publishers, New York.
- Vinson, S. B., and F. S. Guillot. 1972. Host marking: source of a substance that results in host discrimination in insect parasitoids. Entomophaga 17: 241-245.
- Vinson, S. B., F. S. Guillot, and D. B. Hays. 1973. Rearing of *Cardiochiles nigriceps* in the laboratory, with *Heliothis virescens* as hosts. Ann. Entomol. Soc. Amer. 66: 1170-1172.
- Vinson, S. B., R. D. Henson, and C. S. Barfield. 1976. Ovipositional behavior of *Bracon mellitor* Say (Hymenoptera: Braconidae), a parasitoid of boll weevil (*Anthonomus grandis* Boh). I. Isolation and identification of a synthetic releaser of ovipositor probing. J. Chem. Ecol. 2: 431-440.
- Vinson, S. B., R. L. Jones, P. E. Sonnet, B. A. Bierl, and M. Beroza. 1975. Isolation, identification and synthesis of host-seeking stimulants for *Cardiochiles nigriceps*, a parasitoid of tobacco budworm. Entomol. Exp. Appl. 18: 443-450.
- Vinson, S. B., and W. J. Lewis. 1965. A method of host selection by *Cardiochiles nigriceps*. J. Econ. Entomol. 58: 869-871.
- Vinson, S. B., and A. A. Sorensen. 1986. Imported fire ants: life history and impact. Texas Dept. Agric. Publ., Austin, TX.
- Voegele, J. 1981. Lutte biologique contre *Ostrinia nubilalis* à l'aide des trichogrammes. Bull. OEPP 11: 91-95.
- Volterra, V. 1926. Variations and fluctuations of the number of individuals in animal species living together, pp. 409-448. In R. N. Champan (ed.), Animal ecology. McGraw-Hill, New York.
- von Arx, R., J. Baumgartner, and V. Delucchi. 1983. A model to simulate the population dynamics of *Bemisia tabaci* Genn. (Stern., Aleyrodidae) on cotton in the Sudan Gezira. Z. Ang. Entomol. 96: 341-363.
- von Foerster, H. 1959. Some remarks on changing populations, pp. 382-407. In F. Stohlman Jr. (ed.), The kinetics of cellular proliferation. Grune and Stratton, New York.
- Voronin, K. E., and A. M. Grinberg. 1981. The current status and prospects of *Trichogramma* utilization in the USSR, pp. 49-51. In J. R. Coulson (ed.), Proc. Joint American-Soviet Conference on the Use of Beneficial Organisms in the Control of Crop Pests.. Entomol. Soc. Amer., College Park, MD.
- Voss, G. 1980. Cholinesterase autoanalysis; a rapid method for biochemical studies on susceptible and resistant insects. J. Econ. Entomol. 73: 189-192.
- Voss, G., and R. Neumann. 1992. Invertebrate neuroscience and its potential contribution in insect control, pp. 18-20. In I. Duce (ed.), Neurotox '91. Molecular basis of drug and pesticide action. Society of chemical industry, London.
- Waddle, B. A. 1957. Rex, a new Arkansas cotton. Ark. Farm Res. 6.
- Wade, L. J., and D. R. Rummel. 1978. Boll weevil immigration into winter habitat and subsequent spring and summer emergence. J. Econ. Entomol. 71: 173-178.
- Wagner, F. 1980. The boll weevil comes to Texas. Occasional papers. Friends of the Corpus Christi Museum, Corpus Christi, Texas.
- Waiss Jr., A. C., B. G. Chan, C. A. Elliger, and R. G. Binder. 1981. Biologically active cotton constituents and their significance in HPR, pp. 61. In Proc. Beltwide Cotton Prod. Res. Conf.

- Walhood, V. T., T. J. Henneberry, L. A. Bariola, D. L. Ballard, and C. Brown. 1983. Insect pest management potential of cotton produced in narrow row, short season cultures in the irrigated Far West. USDA, Agric. Res. Ser., ARR-W-30.
- Walhood, V. T., T. J. Henneberry, L. A. Bariola, D. L. Kittock, and C. Brown. 1981. Effect of short-season cotton on overwintering pink bollworm larvae and spring moth emergence. *J. Econ. Entomol.* 74: 297-302.
- Walhood, V. T., and H. Yamada. 1972. Varietal characteristics and irrigation practices as harvest aids in narrow row cotton, pp. 43-44. *In Proc. Beltwide Cotton Prod. Res. Conf.*
- Walker Jr., J. K. 1967. Studies in the fall and winter of oviposition prior to diapause in the boll weevil with observation on reversion from diapause to reproduction. *J. Econ. Entomol.* 60: 798-802.
- Walker Jr., J. K. 1980a. Earliness in cotton and escape from boll weevil, pp. 113-123. *In Biology and breeding for resistance to arthropods and pathogens in agricultural plants. Texas Agric. Exp. Stn., MP-1451.*
- Walker Jr., J. K. 1980b. The development of short-season cotton production in Texas, pp. 153-155. *In Proc. Beltwide Cotton Prod. Res. Conf.*
- Walker Jr., J. K. 1984. The boll weevil in Texas and the cultural strategy. *Southwest. Entomol.* 9: 444-463.
- Walker Jr., J. K., and D. G. Bottrell. 1970. Infestations of boll weevils in isolated plots of cotton in Texas. *J. Econ. Entomol.* 63: 1646-1650.
- Walker Jr., J. K., R. E. Frisbie, and G. A. Niles. 1978. A changing perspective: *Heliothis* in short season cottons in Texas. *Entomol. Soc. Amer. Bull.* 24: 385-391.
- Walker Jr., J. K., J. R. Gannaway, and G. A. Niles. 1977. Age distribution of cotton bolls and damage from the boll weevil. *J. Econ. Entomol.* 70: 5-8.
- Walker Jr., J. K., and R. L. Hanna. 1963. Development of populations of the boll weevil in fields treated with various insecticides during 1959, 1960, and 1961. *J. Econ. Entomol.* 56: 350-356.
- Walker Jr., J. K., and G. A. Niles. 1971. Population dynamics of the boll weevil and modified cotton types: implications for pest management. *Texas Agric. Exp. Stn. Bull.* 1109.
- Walker Jr., J. K., and G. A. Niles. 1980. Primordial square formation in cotton and the cotton fleahopper. *Southwest. Entomol.* 9: 104-108.
- Walker Jr., J. K., G. A. Niles, J. R. Gannaway, J. V. Robinson, C. B. Cowan, and M. J. Lukefahr. 1974. Cotton fleahopper damage to cotton genotypes. *J. Econ. Entomol.* 67: 537-542.
- Walker Jr., J. K., R. D. Parker, A. A. Armstrong, G. A. Niles, and J. R. Mulkey. 1984. Management of the boll weevil in cotton of the Winter Garden of Texas based on early-season control. *Southwest. Entomol.* 9: 427-442.
- Walker Jr., J. K., and L. G. Pickens. 1962. Egg deposition by boll weevils isolated from males during hibernation period and after spring emergence. *J. Econ. Entomol.* 55: 268-269.
- Walker, C. H., K. S. Lee, A. R. McCaffery, and E. J. Little. 1990. Resistance to cypermethrin in the PEG87 strain of *Heliothis virescens*-The enzymatic factor, pp. 177-180. *In Proc. Beltwide Cotton Prod. Res. Conf.*
- Walters, M. L., O. C. Jenkins, and J. K. Walker. 1990. Texas threshold recommendations in cotton: sample size and accuracy for *Heliothis* spp. *Southwest. Entomol.* 15: 346-357.
- Wang, Y., A. P. Gutierrez, G. Oster, and R. Daxl. 1977. A population model for plant growth and development: coupling cotton-herbivore interaction. *Can. Entomol.* 109: 1359-1374.
- Wannamaker, W. K. 1957. The effect of plant hairiness of cotton strains on boll weevil attack. *J. Econ. Entomol.* 50: 418-423.
- Ward, C. R. 1982. Cotton insect management suggestions for 1982. NM State Univ. Coop Ext. Ser. Guide 400 J-7.
- Ward, C. R. 1985. Early season cotton pests-An IPM perspective from the New Mexico Pecos Valley, pp. 30-35. *In Proc. Western Cotton Prod. Conf.*
- Ward, C. R. 1991a. Cotton insect management suggestions for 1991-1992. NM State Univ. Coop Ext. Ser. Guide 400 J-7A.

- Ward, C. R. 1991b. Insecticides for use with cotton insect management suggestions for 1991. NM State Univ. Coop Ext. Ser. Guide 400 J-7B.
- Ware, G. W. 1974. Ecological history of DDT in Arizona. J. Ariz. Acad. Sci. 9: 61-65.
- Ware, G. W., N. B. Akesson, R. P. Cromwell, J. E. Dewey, R. King, W. Helms, C. G. McWhorter, J. V. Osmun, L. O. Roth, D. B. Smith, and W. J. Walla. 1983. Reducing pesticide application drift-losses. Univ. of Ariz. Coop. Ext. Ser.
- Ware, G. W., N. A. Buck, and B. J. Estesen. 1983. Dislodgeable insecticidal residues on cotton foliage: comparison of ulv/cottonseed oil vs. aqueous solutions of 12 insecticides. Bull. Environ. Contam. Toxicol. 31: 551-558.
- Ware, G. W., N. A. Buck, and B. J. Estesen. 1984. Deposit and drift losses from aerial ulv and emulsion sprays in Arizona. J. Econ. Entomol. 7: 298-303.
- Ware, G. W., W. P. Cahill, B. J. Estesen, W. C. Kronland, and N. A. Buck. 1975. Pesticide drift: deposit efficiency from ground sprays on cotton. J. Econ. Entomol. 68: 549-550.
- Ware, J. O. 1930. Cotton spacing. II. Effect of blooming on earliness, fruit set, and yield. Arkansas Agr. Exp. Sta. Bull. 253.
- Ware, J. O. 1951. Origin, rise, and development of American upland cotton varieties and their status at present. Arkansas Agr. Exp. Sta. Agron. Dept. Misc. Publ. unnumbered.
- Warren, G. W., N. B. Carozzi, N. Desai, and M. G. Koziel. 1992. Field evaluation of transgenic tobacco containing a *Bacillus thuringiensis* insecticidal protein. J. Econ. Entomol. 85: 1651-1659.
- Wartenberg, D. 1988. Ground water contamination by Temik aldicarb pesticide: the first 8 months. Water Resources Research 24: 185-194.
- Watanabe, H. 1971. Pathophysiology of cytoplasmic polyhedrosis in the silkworm, pp. 151-167. In H. Aruga, and Y. Tanada (eds.), The cytoplasmic-polyhedrosis virus of the silkworm. University of Tokyo Press, Tokyo.
- Waterman, D. A. 1986. A guide to expert systems. Addison-Wesley, Reading.
- Watson, F. L. 1973. An optimal control of *Lygus hesperus* on cotton. Ph.D. Thesis, Univ. of Arizona, Tucson.
- Watson, T. F. 1965. Influence of thrips on cotton yields in Alabama. J. Econ. Entomol. 1118-1122.
- Watson, T. F. 1974. Tobacco budworm and bollworm control in western cotton, pp. 38. In Proc. West Coast Prod. Conf.
- Watson, T. F. 1977. Pink bollworm, *Pectinophora gossypiella* (Saunders), pp. 426-429. In J. Kranz, H. Schmutterer, and W. Koch (eds.), Diseases, pests and weeds in tropical crops. Verlag, Berlin.
- Watson, T. F. 1980. Methods for reducing winter survival of the pink bollworm, pp. 24-34. In H. Graham (ed.), Pink bollworm control in the Western United States.. USDA, Science and Education Administration, ARM-W-16.
- Watson, T. F. 1993. Insecticide resistance management: principles of resistance, pp. 13-14. In Proc. Beltwide Cotton Prod. Res. Conf.
- Watson, T. F., D. Bergman, and J. Palumbo. 1986a. Effect of temperature and food on developmental time of the boll weevil in Arizona. Southwest. Entomol. 11: 281-286.
- Watson, T. F., L. A. Crowder, and S. Kelly. 1986b. Pyrethroid and methyl parathion susceptibility of the tobacco budworm in Arizona. Southwest. Entomol. 11: 281-286.
- Watson, T. F., F. M. Carasso, D. T. Langston, E. B. Jackson, and D. G. Fullerton. 1978. Pink bollworm suppression through crop termination. J. Econ. Entomol. 71: 638-641.
- Watson, T. F., and D. G. Fullerton. 1969. Timing of insecticidal applications for control of pink bollworm. J. Econ. Entomol. 62: 682-685.
- Watson, T. F., and P. H. Johnson. 1972. Life cycle of the cotton leafperforator. Univ. of AZ., Prog. Agric. XXIV.
- Watson, T. F., and S. E. Kelly. 1991a. Inheritance of resistance to permethrin by the tobacco budworm, *Heliothis virescens* (F): Implications for resistance management. Southwest. Entomol. Suppl. 15: 135-141.
- Watson, T. F., and S. E. Kelly. 1991b. Response of the tobacco budworm to permethrin and methyl parathion in Arizona, 1977-1989. Southwest. Entomol. Suppl. 15: 53-57.

- Watson, T. F., S. E. Kelly, and B. J. Estesen. 1991. Residual activity of permethrin, chlordimeform and permethrin + chlordimeform against susceptible and resistant tobacco budworm. Southwest. Entomol. Suppl. 15: 129-134.
- Watson, T. F., and W. E. Larsen. 1968. Effects of winter cultural practices on the pink bollworm in Arizona. J. Econ. Entomol. 61: 1041-1044.
- Watson, T. F., M. L. Lindsey, and J. E. Slosser. 1973. Effect of temperature, moisture and photoperiod on diapause termination in the pink bollworm. J. Econ. Entomol. 66: 967-970.
- Watson, T. F., L. Moore, and G. W. Ware. 1976. Practical insect pest management: a self-instruction manual. W. H. Freeman & Co., San Francisco.
- Watson, T. F., J. C. Silvertooth, A. Tellez, and L. Lastra. 1992. Seasonal dynamics of sweetpotato whitefly in Arizona. Southwest. Entomol. 17: 149-167.
- Watson, T. F., K. K. Barnes, J. E. Slosser, and D. G. Fullerton. 1974. Influence of plowdown dates and cultural practices on spring emergence of pink bollworm. J. Econ. Entomol. 67: 207-210.
- Watt, K. E. F. 1961. Mathematical models for use in insect pest control. Can. Entomol. 93: 1-62.
- Watt, K. E. F. 1966. Systems analysis in ecology. Academic Press, Inc., New York.
- Watt, K. E. F. 1970. The systems point of view in pest management, pp. 71-83. In R. L. Rabb, and F. E. Guthrie (eds.), Concept of Pest Management. N.C. State Univ., Raleigh.
- Watts, J. G. 1938. Reduction of cotton yield by thrips. J. Econ. Entomol. 30: 860-863.
- Watts, J. G. 1980. Publications of entomologists at New Mexico State University 1890 to 1978. NMSU Agricultural Experiment Sta. Memoir Series No. 7.
- Watve, C. M., and D. F. Clower. 1976. Natural enemies of the banded wing whitefly in Louisiana. Environ. Entomol. 5: 1075-1078.
- Watve, C. M., D. F. Clower, and J. B. Graves. 1977. Resistance to methyl parathion and monocrotophos in the bandwinged whitefly in Louisiana. J. Econ. Entomol. 70: 263-266.
- Weaver, J. B., and M. S. Reddy. 1977. Boll weevil nonpreference, antibiosis, and hatchability studies utilizing cotton lines with multiple nonpreferred characters. J. Econ. Entomol. 70: 283-285.
- Webster's New Twentieth Century Dictionary. 1971. Webster's New Twentieth Century Dictionary. The World Publishing Company, New York.
- Webster, J. P. G. The analysis of risky farm management decisions: Advising farmers about the use of pesticide. J. Agric. Econ. Vol. 28
- Weiler, J. 1976. Mexican viceroy played role in establishing king cotton's reign in south. The Commercial Appeal, (April 25, 1976)
- Weiser, J. 1982. Persistence of fungal insecticides: influence of environmental factors and present and future application, pp. 387-423. In E. Kurstak (ed.), Microbial and viral pesticides. Marcel Dekker, Inc., New York.
- Weiser, J. 1987. Patterns over place and time, pp. 215-243. In J. R. Fuxa, and Y. Tanada (eds.), Epizootiology of insect diseases. John Wiley & Sons, New York.
- Weld, D. S., and J. de Kleer. 1990. Readings in qualitative reasoning about physical systems. Morgan Kaufmann, San Mateo, CA.
- Wene, G. P., and L. W. Sheets. 1962. Relationship of predatory and injurious insects in cotton fields in the Salt River Valley Area of Arizona. J. Econ. Entomol. 55: 395-398.
- Wene, G. P., and L. W. Sheets. 1964a. Notes on and control of stink bugs affecting cotton in Arizona. J. Econ. Entomol. 57: 60-62.
- Wene, G. P., and L. W. Sheets. 1964b. Lygus bug injury to presquaring cotton. Ariz. Ag. Exp. Stn. Tech. Bull. 166.
- Werner, F. G., and G. D. Butler Jr. 1979. Tachinid flies collected in a Phoenix, Arizona cotton field. Southwest. Entomol. 4: 282-284.
- Werner, F. G., L. Moore, and T. F. Watson. 1979. Arizona cotton insects. Univ. of Ariz. Coop. Ext. Serv. Bull. A23R.
- Weseloh, R. M. 1981. Host location by parasitoids, pp. 79-95. In D. A. Nordlund, R. L. Jones, and W. J. Lewis (eds.), Semiochemicals: their role in pest control. Wiley, New York.

- Wetzstein, M. E. 1988. Comments on integrated pest management: risk implications for natural resources, *In* Incorporation of risk in analysis of farm management decisions affecting natural resource use. Agric. Exp. Sta. Special Rept. 821. Oregon State University, Corvallis.
- Whalon, M. E., and W. H. McGaughey. 1993. Insect resistance to *Bacillus thuringiensis*, pp. 215-232. *In* L. Kim (ed.), Advanced engineered pesticides. Marcel Dekker, New York.
- Whitcomb, W. H. 1967a. Bollworm predators in northeast Arkansas. Ark. Farm Res 16: 2.
- Whitcomb, W. H. 1967b. Field studies on predators of the second-instar bollworm, *Heliothis zea* (Boddie) (Lepidoptera: Noctuidae). J. Ga. Entomol. Soc. 2: 113-118.
- Whitcomb, W. H. 1971. History of integrated control as practiced in the cotton fields of the south central United States, pp. 147-155. *In* Proc. Tall Timbers Conference on Ecol. Anim. Contr. Habitat Manage.
- Whitcomb, W. H. 1974. Natural populations of entomophagous arthropods and their effect on the agroecosystem, pp. 50-164. *In* F. G. Maxwell and F. A. Harris (eds.), Proc. Summer Instit. Biol. Contrl. Plant Insects and Diseases. Univ. Press Miss., Jackson, Mississippi.
- Whitcomb, W. H., and K. Bell. 1964. Predaceous insects, spiders, and mites of Arkansas cotton fields. Ark. Agr. Exp. Stn. Bull. 690.
- Whitcomb, W. H., and R. Eason. 1967. Life history and predatory importance of the striped lynx spider (Araneida: Oxyopidae). Ark. Acad. Sci. Proc. 21: 54-58.
- Whitcomb, W. H., H. Exline, and R. C. Hunter. 1963. Spiders of the Arkansas cotton field. Ann. Entomol. Soc. Amer. 56: 653-660.
- Whitcomb, W. H., M. Hite, and R. Eason. 1966. Life history of the green lynx spider, *Peucetia viridans* (Araneida: Oxyopidae). J. Kansas Entomol. Soc. 39: 259-267.
- White, H. C. 1896. The cotton plant. USDA Bull. 33.
- White, J. R., and D. R. Rummel. 1978. Emergence profile of overwintered boll weevil and entry into cotton. Environ. Entomol. 7: 7-14.
- White, R. W. 1953. The quarantine and control program for pink bollworm, pp. 60-61. *In* Proc. Beltwide Cotton Prod. Res. Conf.
- White, R. W. 1960. History of pink bollworm infestation in the United States 1917-1959. USDA, Agric. Res. Serv. Plant Pest Control Div., unpublished report.
- White, W. H. 1981. Evaluation of chemical and genetic analysis as predictors of resistance to the tobacco budworm. Ph.D., Mississippi State University, Mississippi State.
- White, W. H., J. N. Jenkins, W. L. Parrott, J. C. McCarty Jr., D. H. Collum, and P. A. Hedin. 1982a. Generation mean analyses of various allelochemicals in cottons. Crop Sci. 22: 1046-1049.
- White, W. H., J. N. Jenkins, W. L. Parrott, J. C. McCarty Jr., D. H. Collum, and P. A. Hedin. 1982b. Strain and within-season variability of various allelochemicals within a diverse group of cottons. Crop Sci. 22: 1235-1238.
- Whittaker, R. H., and P. P. Feeny. 1971. Allelochemicals: chemical interactions between species. Science 171: 757-770.
- Whitten, C. J., and D. L. Bull. 1970. Resistance to organophosphorus insecticides in tobacco budworm. J. Econ. Entomol. 63: 1492-1495.
- Whitten, C. J., and D. L. Bull. 1974. Comparative toxicity, absorption and metabolism of chlorpyrifos and its dimethyl homolog in methyl parathion-resistant and -susceptible tobacco budworms. Pestic. Biochem. Physiol. 4: 266-274.
- Whitten, C. J., and D. L. Bull. 1978. Absorption and metabolism of methyl parathion by tobacco budworms resistant or susceptible to organophosphorus insecticides. Pestic. Biochem. Physiol. 9: 196-202.
- Whitten, M. J. 1985. Conceptual basis for genetic control, pp. 465-528. *In* G. A. Kerkut, and L. I. Gilbert (eds.), Comprehensive insect physiology, biochemistry and pharmacology. Pergamon Press, Oxford.
- Widstrom, N. W. 1979. The role of insects and other plant pests in aflatoxin contamination of corn, cotton, and peanuts—a review. J. Environ. Quality 8: 5-11.
- Wilborn, W., and J. Ellington. 1984. The effect of temperature and photoperiod on the coloration of *Lygus hesperus*, *desertinus*, and *lineolaris*. Southwest. Entomol. 9: 187-197.

- Wilding, N., G. Lateur, and C. A. Dedryver. 1986. Evaluation of entomophthorales for aphid control: laboratory and field data, pp. 159-162. In R. A. Samson, J. M. Vlak, and D. Peters (eds.), *Fundamental and applied aspects of invertebrate pathology*. Foundation of the Fourth International Colloquium of Invertebr. Pathol., Wageningen.
- Wilkes, L. H. 1961. Effects of nozzle types and spray application methods on cotton insect control. *Trans. ASAE* 4: 166-169.
- Wilkes, L. H., B. J. Cochran, O. T. Robertson, and A. J. Chapman. 1962. Crop residue disposal for the control of the pink bollworm. In *A summary of recent research basic to cultural control of the pink bollworm*. Tex. Agr. Exp. Sta. MP. 579.
- Wilkinson, C. F. 1976a. *Insecticide biochemistry and physiology*. Plenum Press, New York.
- Wilkinson, C. F. 1976b. Insecticide synergism, pp. 195-218. In R. L. Metcalf, and J. J. McKelvey Jr. (eds.), *The future for insecticides*. John Wiley and Sons, New York.
- Wilkinson, C. F. 1983. Role of mixed-function oxidases in insecticide resistance, pp. 175-205. In G. P. Georgiou, and T. Saito (eds.), *Pest resistance to pesticides*. Plenum Press, New York.
- Wilkinson, C. F. 1985. Role of mixed-function oxidases in insect growth and development, pp. 161-176. In P. A. Hedin (ed.), *Bioregulators for pest control*. American Chemical Society, Washington, D.C.
- Wille, J. E. 1951. Biological control of certain cotton insects and the application of new organic insecticides in Peru. *J. Econ. Entomol.* 44: 13-18.
- Willers, J. L., D. L. Boykin, J. M. Hardin, T. L. Wagner, R. L. Olson, and M. R. Williams. 1990. A simulation study on the relationship between the abundance and spatial distribution of insects and selected sampling schemes, *In Proc. Applied Stat. Agric.*, Kansas State University.
- Williams III, L., J. R. Phillips, and N. P. Tugwell. 1987. Field technique for identifying causes of pin-head square loss in cotton. *J. Econ. Entomol.* 80: 527-531.
- Williams, C. B. 1957. Insect migration. *Annu. Rev. Entomol.* 2: 163-180.
- Williams, C. M. 1967. Third-generation pesticides. *Scientific Amer.* 27: 13-17.
- Williams, H. J., G. W. Elzen, and S. B. Vinson. 1988. Parasitoid-host-plant interactions, emphasizing cotton (*Gossypium*), pp. 171-200. In P. Barbosa, and D. K. Letourneau (eds.), *Novel aspects of insect-plant interactions*. John Wiley & Sons, New York.
- Williams, M. R., T. L. Wagner, J. L. Willers, and R. L. Olson. 1991. Scouting protocol for arthropod pests of cotton in the midsouth. *Miss. Agric. For. Exp. Stn. Bull.* 977 39 pp.
- Williams, M. R., J. L. Willers, T. L. Wagner, and R. L. Olson. 1990. Using knowledge-based insect management systems at the farm level, pp. 325-328. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Williamson, D. R., and W. R. Deaton. 1991. Field performance of cotton genetically modified to express insecticidal protein from *Bacillus thuringiensis*. VII. Loxley, AL, pp. 577. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Willis, G. H., and L. L. McDowell. 1987. Pesticide persistence on foliage. *Rev. Environ. Contam. Toxicol.* 100: 24-73.
- Wilson, A. G., R. D. Hughes, and N. Gilbert. 1972. The response of cotton to pest attack. *Bull. Entomol. Soc. Amer.* 61: 405-414.
- Wilson, F. D. 1982. Present state of the art and science of cotton breeding for insect resistance in the West, pp. 111-116. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Wilson, F. D. 1986. Registration of seven cotton germplasm lines. *Crop. Sci.* 26: 206-207.
- Wilson, F. D. 1987. Registration of three cotton germplasm lines. *Crop Sci.* 27: 820-821.
- Wilson, F. D. 1988. Yield, earliness, and fiber properties of cottons carrying combined traits for pink bollworm resistance. *Crop Sci.* 29: 7-12.
- Wilson, F. D. 1991. Twenty years of HPR—Progress, problems, prognostications, pp. 542-544. In *Proc. Beltwide Cotton Prod. Res. Conf.*
- Wilson, F. D. 1992. Registration of eight cotton germplasm lines with pink bollworm resistance traits. *Crop Sci.* 32: 288-289.
- Wilson, F. D., J. Brown, and G. D. Butler Jr. 1989. Reaction of cotton cultivars and lines to cotton leaf crumple virus. *J. Ariz. Nev. Acad. Sci.* 23: 7-10.

- Wilson, F. D., and H. M. Flint. 1991. Field performance of cotton genetically modified to express insecticidal protein from *Bacillus thuringiensis*. VI. Maricopa, AZ, pp. 579. In Proc. Beltwide Cotton Prod. Res. Conf.
- Wilson, F. D., and B. W. George. 1984. Pink bollworm (Lepidoptera: Gelechiidae): selecting for antibiosis in artificially and naturally infested cotton plants. J. Econ. Entomol. 77: 720-724.
- Wilson, F. D., and B. W. George. 1985. Innovations in the X-ray technique of evaluating cotton germplasm for resistance to pink bollworm. USDA—Agric. Res. Serv. ARS-40.
- Wilson, F. D., B. W. George, and R. L. Wilson. 1981. Screening cotton for resistance to pink bollworm. USDA-Sci. and Educ.—Agric. Res. ARM-W-22.
- Wilson, F. D., and B. R. Stapp. 1979. Flowers with abnormal numbers of involucral bracts in cotton. Crop Sci. 19: 204-208.
- Wilson, L. 1989. Selective miticidal material give control in Australian cotton. Australian Cotton Grower. Aug.-Oct.
- Wilson, L. T. 1985. Developing economic thresholds in cotton, pp. 308-344. In R. E. Frisbie and P. L. Adkisson (eds.), CIPM: Integrated Pest Management on Major Agricultural Systems. Texas Agric. Exp. Stn. MP-1616.
- Wilson, L. T. 1993. Estimating abundance, impact and interactions among arthropods in cotton agroecosystems, pp. 475-514. In L. P. Pedigo, and G. D. Buntin (eds.), Handbook of Sampling Methods for Arthropods in Agriculture. CRC Press, Ann Arbor.
- Wilson, L. T., D. Gonzalez, and T. F. Leigh. 1982. Bollworm damage and yield of cotton infested at different time periods. J. Econ. Entomol. 75: 520-523.
- Wilson, L. T., D. Gonzalez, and R. E. Plant. 1985. Predicting sampling frequency and economic status of spider mites on cotton, pp. 168-170. In Proc. Beltwide Cotton Prod. Res. Conf.
- Wilson, L. T., and A. P. Gutierrez. 1980. Fruit predation submodel: *Heliothis* larvae feeding upon cotton fruiting structures. Hilgardia 48: 24-36.
- Wilson, L. T., and A. P. Gutierrez. 1980. Within-plant distribution of predators on cotton: comments on sampling and predator efficiencies. Hilgardia 48: 3-11.
- Wilson, L. T., T. F. Leigh, D. Gonzalez, and C. Foristiere. 1984. Distribution of *Lygus hesperus* (Knight) (Miridae: Hemiptera) on cotton. J. Econ. Entomol. 77: 1313-1319.
- Wilson, L. T., R. E. Plant, T. A. Kerby, L. Zelinski, and P. B. Goodell. 1987. Transition from a strategic to a tactical crop and pest management model: use as an economic decision aid, pp. 207-213. In Proc. Beltwide Cotton Prod. Res. Conf.
- Wilson, L. T., P. M. Room, and A. S. Bourne. 1983. Dispersion of arthropods, flower buds and fruit in cotton fields: effects of population density and season on the fit of probability distributions. J. Aust. Ent. Soc. 22: 129-134.
- Wilson, N. L., and A. D. Oliver. 1969. Food habits of the imported fire ants in pasture and pine forest areas in southern Louisiana. J. Econ. Entomol. 62: 1268-1271.
- Wilson, R. L., and F. D. Wilson. 1976. Nectariless and glabrous cottons: effect on pink bollworm in Arizona. J. Econ. Entomol. 69: 623-624.
- Wilson, R. L., and F. D. Wilson. 1977. Effects of pilose, pubescent and smooth cottons on the cotton leaf perforator. Crop Sci. 15: 807-809.
- Wilson, R. L., F. D. Wilson, and G. H. Abel Jr. 1977. Mutants of *Gossypium barbadense*: effect of pink bollworm and cotton leaf-perforator in Arizona. J. Econ. Entomol. 70: 672-674.
- Wilson, R. L., F. D. Wilson, and B. W. George. 1979. Mutants of *Gossypium hirsutum*: effect on pink bollworm in Arizona. J. Econ. Entomol. 72: 216-219.
- Wilson, T. G., and J. Fabian. 1986. A *Drosophila melanogaster* mutant resistant to a chemical analog of juvenile hormone. Dev. Biol. 118: 190-201.
- Wing, K. D. 1988. RH-5849, a nonsteroidal ecdysone agonist: effects on a *Drosophila* cell line. Science 241: 467-469.
- Wing, K. D., and H. E. Aller. 1990. Ecdysteroid agonists as novel insect growth regulators, pp. 251-257. In J. E. Casida (ed.), Pesticides and alternatives: innovative chemical approaches to pest control. Elsevier, New York.

- Wing, K. D., A. H. Glickman, and J. E. Casida. 1982. Oxidative bioactivation of S-alkyl phosphorothiolate pesticides: stereospecificity of profenofos insecticide activation. *Science* 219: 63-65.
- Wing, K. D., R. A. Slawecski, and G. R. Carlson. 1988. RH-5849, a nonsteroidal ecdysone agonist: effects on larval Lepidoptera. *Science* 241: 470-472.
- Witz, J. A., D. C. Akins, J. M. McKinion, and W. M. Thomas. 1990. Programming the combination of the cotton insect model, TEXCIM, with the cotton physiology model, GOSSYM, using the *Heliothis* damage model, HELDMG: a status report, pp. 343-345. In Proc. Beltwide Cotton Prod. Res. Conf.
- Witz, J. A., A. W. Hartstack, E. G. King, W. A. Dickerson, and J. R. Phillips. 1985. Monitoring and prediction of *Heliothis* spp. Southwest. Entomol. Suppl. 8: 56-70.
- Witz, J. A., A. W. Hartstack, E. P. Lloyd, and E. B. Mitchell. 1981. Effect of infiel trap spacing on potential catch of adult boll weevils entering cotton: a computer simulation. Environ. Entomol. 10: 454-457.
- Wofford, J. T. 1985. The effects of spray characteristics of vegetable oil and water sprays of permethrin on mortality of *Heliothis* spp. larvae. M.S. Thesis, Mississippi State University, Mississippi State.
- Wofford, J. T., R. G. Luttrell, and D. B. Smith. 1987. Relative effect of dosage, droplet size, deposit density, and droplet concentration on mortality of *Heliothis virescens* (Lepidoptera: Noctuidae) larvae treated with vegetable-oil and water sprays containing permethrin. J. Econ. Entomol. 80: 460-464.
- Wojcik, D. P. 1983. Comparison of the ecology of red imported fire ants in North and South America. Fla. Entomol. 66: 101-111.
- Wolf, W. W., J. K. Westbrook, and A. N. Sparks. 1986. Relationship between radar entomological measurements and atmospheric structure in south Texas during March and April 1982, pp. 84-97. In A. N. Sparks (ed.), Long-range migration of moths of agronomic importance to the United States and Canada: specific examples of occurrence and synoptic weather patterns to migration. USDA ARS-43.
- Wolfe, H. R., W. F. Durham, and J. F. Armstrong. 1967. Exposure of workers to pesticides. Arch. Environ. Health 14: 622-633.
- Wolfenbarger, D. A., P. R. Bodegas, and R. Flores. 1981. Development of resistance in *Heliothis* spp. in the Americas, Australia, Africa, and Asia. Bull. Entomol. Soc. Amer. 27: 181-185.
- Wolfenbarger, D. A., and A. A. Guerra. 1972. Toxicity of endosulfan and its isomers to the bollworm and tobacco budworm. J. Econ. Entomol. 65: 1122-1123.
- Wolfenbarger, D. A., and A. A. Guerra. 1986. Toxicity and hypoxia of three petroleum oil hydrocarbons and cottonseed oil to adult boll weevils and larvae of tobacco budworm. Southwest. Entomol. 11: 69-75.
- Wolfenbarger, D. A., and J. A. Harding. 1980. Activity of certain alkyl and aryl phosphoramides against *Heliothis* spp. Southwest. Entomol. 5: 125-127.
- Wolfenbarger, D. A., A. W. Johnson, G. A. Herzog, and W. B. Tappan. 1985. Activity of avermectin in the laboratory and the field against the boll weevil and *Heliothis* spp. on cotton and flue-cured tobacco. Southwest. Entomol. 7: 17-26.
- Wolfenbarger, D. A., and R. L. McGarr. 1971. Low-volume and ulv sprays of malathion and methyl parathion for control of three lepidopterans. USDA Prod. Res. Rep. 126.
- Womack, C. L., and M. F. Schuster. 1987. Host plants of the tarnished plant bug (Heteroptera: Miridae) in the northern blackland prairies of Texas. Environ. Entomol. 16: 1266-1272.
- Wood, H. A., and R. Granados. 1991. Genetically engineered baculoviruses as agents for pest control. Annu. Rev. Entomol. 45: 69-87.
- Wood, R. J. 1981. Strategies for conserving susceptibility to insecticides. Parasitology 82: 69-80.
- Wood, R. J., and G. S. Mani. 1981. The effective dominance of resistance genes in relation to the evolution of resistance. Pestic. Sci. 12: 573-581.
- Woodring, W. L., and H. K. Kaya. 1988. Steinernematid and Heterorhabditid nematodes: a handbook of techniques. South Coop. Ser. Bull. 331.

- Woodside, A. M. 1946. Life history studies of *Euschistus servus* and *E. tristigmus*. J. Econ. Entomol. 39: 161-163.
- Woodside, A. M. 1947. Weed hosts of bugs which cause cat-facing of peaches in Virginia. J. Econ. Entomol. 40: 231-233.
- Wright Jr, D. P. 1985. *Spodoptera eridania*, pp. 459-464. In P. Singh, and R. F. Moore (eds.), Handbook of Insect Rearing, Vol. 2 Elsevier, New York.
- Wright, J. E. 1992. Whiteflies: development of Naturalis, a biorational mycoinsecticide for control, pp. 887-888. In Proc. Beltwide Cotton Prod. Res. Conf.
- Wright, J. E. 1993. Control of the boll weevil (Coleoptera: Curculionidae) with Naturalis-L: A mycoinsecticide. J. Econ. Entomol. 86: 1355-1358.
- Wright, J. E., L. F. Bouse, I. W. Kirk, J. B. Carlton, E. Franz, M. A. Latheef, and R. Rektorik. 1993. Full season control of cotton insects in the Rio Grande Valley of Texas with Naturalis-L: an insect specific fungus, pp. 849-856. In Proc. Beltwide Cotton Prod. Res. Conf.
- Wright, J. E., and L. D. Chandler. 1991. Field evaluation of Naturalis against the boll weevil: a bio-rational mycoinsecticide, pp. 677-679. In Proc. Beltwide Cotton Prod. Res. Conf.
- Wright, J. E., and A. Retnakaran (eds.). 1987. Chitin and benzolphenyl ureas. Dr. W. Junk Publishers, Boston.
- Wright, J. E., J. L. Roberson, and J. R. Dawson. 1980. Boll weevil: effects of diflubenzuron on sperm transfer, mortality and sterility. J. Econ. Entomol. 73: 803-805.
- Wright, J. E., and E. J. Villavaso. 1983. Boll weevil sterility, pp. 153-177. In R. L. Ridgway, E. P. Lloyd, and W. H. Cross (eds.), Cotton Insect Management with Special Reference to the Boll Weevil. USDA Agr. Handb. No. 589.
- Xie, X., and W. L. Sterling. 1987. Computer simulation of cotton aphid population dynamics. ACTA Phytotaxac Sinica 14: 151-156.
- Yamamoto, T., and G. K. Powell. 1993. *Bacillus thuringiensis* crystal proteins: recent advances in understanding its insecticidal activity, pp. 3-42. In L. Kim (ed.), Advanced engineered pesticides. Marcel Dekker, New York.
- Yang, R. S. H. 1976. Enzymatic conjugation and insecticide metabolism, pp. 177-225. In C. F. Wilkinson (ed.), Insecticide biochemistry and physiology. Plenum Press, New York.
- Yates, W. E. 1962. Spray pattern analysis and evaluation of deposits from agricultural aircraft. Trans. ASAE 5: 49-53.
- Yates, W. E., R. E. Cowden, and N. B. Akesson. 1982. Effect of airspeed, nozzle orientation and spray concentration on drop size spectrums. ASAE and NAAA Paper No. AA-82-003.
- Yates, W. E., R. E. Cowden, and N. B. Akesson. 1985. Drop size spectra from nozzles in high-speed airstreams. Trans. ASAE 28: 405-410, 414.
- Yearian, W. C., and S. Y. Young. 1974. Persistence of *Heliothis* nuclear polyhedrosis virus on cotton parts. Environ. Entomol. 3: 1035-1036.
- Yearian, W. C., and S. Y. Young. 1982. Control of insect pests of agricultural importance by viral insecticides, pp. 720. In E. Kurstak (ed.), Microbial and viral pesticides. Marcel Dekker, Inc., New York.
- Yokoyama, V. Y. 1978. Relation of seasonal changes in extrafloral nectar and foliar protein and arthropod populations in cotton. Environ. Entomol. 7: 799-802.
- Yoshioka, H. 1992. Structural evolution of synthetic pyrethroid insecticides in correlational views guided by template procedure as applied to natural models with high structural multiplicity, pp. 185-217. In W. Draber, and T. Fujita (eds.), Rational approaches to structure, activity, and eco-toxicity of agrochemicals. CRC Press, Boca Raton, FL.
- Young Jr, D. F. 1969a. Operation of areawide diapause programs and results in Mississippi, pp. 7-9. In Proc. Beltwide Cotton Prod. Res. Conf.
- Young Jr, D. F. 1969b. Cotton insect control. Oxmoor House, Birmingham.
- Young, D. F. 1983. Symposium: a decade of extension cotton integrated pest management, 1972-1982, pp. 227. In Proc. Beltwide Cotton Prod. Res. Conf.
- Young, J. H., and R. G. Price. 1975. Incidence, parasitism, and distribution patterns of *Heliothis zea* on sorghum, cotton, and alfalfa for southwestern Oklahoma. Environ. Entomol. 4: 777-779.

- Young, J. H., and L. J. Wilson. 1984. A model to predict damage reduction to flower buds or fruit by *Heliothis* spp. in the absence or presence of two Coleoptera predators. Southwest. Entomol. 6: 33-38.
- Young, J. H., L. J. Wilson, and R. G. Price. 1986. Cotton fleahopper preference of cotton cultivars as oviposition sites, pp. 488-489. In Proc. Beltwide Cotton Prod. Res. Conf.
- Young, J. R., J. J. Hamm, R. L. Jones, W. D. Perkins, and R. L. Burton. 1976. Development and maintenance of an improved laboratory colony of corn earworms. USDA ARS-S-110.
- Young, O. P. 1986. Host plants of the tarnished plant bug, *Lygus lineolaris* (Heteroptera: Miridae). Ann. Entomol. Soc. Amer. 79: 747-762.
- Young, O. P., and G. B. Edwards. 1990. Spiders in United States field crops and their potential effect on crop pests. J. Arachnol. 18: 1-27.
- Young, O. P., and T. C. Lockley. 1985. The striped lynx spider, *Oxyopes salticus* (Araneae: Oxyopidae), in acroecosystems. Entomophaga 30: 329-346.
- Young, O. P., and T. C. Lockley. 1986. Predation of striped lynx spider, *Oxyopes salticus* (Araneae: Oxyopidae), on tarnished plant bug, *Lygus lineolaris* (Heteroptera: Miridae): a laboratory evaluation. Ann. Entomol. Soc. Amer. 79: 879-883.
- Young, S. Y., and W. C. Yearian. 1974. Persistence of *Heliothis* NPV on foliage of cotton. Environ. Entomol. 3: 253-255.
- Youngman, R. R., N. C. Toscano, V. P. Jones, K. Kido, and E. T. Natwick. 1986. Correlations of seasonal trap counts of *Bemisia tabaci* (Homoptera: Aleyrodidae) in southeastern California. J. Econ. Entomol. 79: 67-70.
- Yu, S. J., and E. L. Hsu. 1985. Induction of hydrolases by allelochemicals and host plant in fall armyworm (Lepidoptera: Noctuidae). larvae. Environ. Entomol. 14: 512-515.
- Zadeh, L. A. 1965. Fuzzy sets. Information and Control 8: 338-353.
- Zaki, F. N. 1985. Reactions of the egg parasitoid *Trichogramma evanescens* to certain insect sex pheromones. Z. Angew. Entomol. 99: 448-453.
- Zeoli, L. T., A. F. Kydonieus, and A. R. Quisumbing. 1982. Controlled release technologies, pp. 131-144. In A. F. Kydonieus, and M. Beroza (eds.), Insect suppression with controlled release pheromone systems. Vol. I. CRC Press, Boca Raton, FL.
- Ziser, S. W., and W. C. Nettles Jr. 1978. The larval development of *Eucelatoria* sp. in the host *Heliothis virescens*. Ann. Entomol. Soc. Amer. 71: 383-388.
- Zvirgzdins, A., and T. J. Henneberry. 1983. *Heliothis* spp. sex pheromone trap studies, pp. 176-180. In Proc. Beltwide Cotton Prod. Res. Conf.