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The Contribution of Kansas to the Science of Entomology

GEO. A. DEAN, Kansas State College, Manhattan, Kan.

For more than seventy years entomology, the study of insects and related forms, has received special attention at the Kansas State College and the University of Kansas. During this time Kansas has contributed much to the science of entomology, not only in the training of more than two hundred men and women who have held or are at the present time holding important entomological positions in many countries of the world, but also in publishing hundreds of valuable articles. Many of these published articles have been real contributions to the science of entomology. Some of the nation's most outstanding museum collections of insects were made by these men. From their investigations have developed several of the important methods of insect control and discoveries contributing to the marvelous development of agriculture, the health of man and domestic animals, and the advancement of civilization.

INSTRUCTION IN ENTOMOLOGY

"Insects Injurious to Vegetation," a subject taught by Prof. Benjamin Franklin Mudge at the Kansas State College in the year of 1866-'67, was the first course offered in economic entomology in the United States, and probably in the world. From that time there has been no interruption in the teaching of entomology at the Kansas State College. Professor Mudge gave the course in entomology up to 1873, with the exception of 1872-'73 at which time he invited Dr. C. V. Riley, the famous state entomologist of Missouri, to give the course. The forty or more excellent colored charts which Doctor Riley prepared and used in giving this course in entomology at the Kansas State College were given to the college a few years ago by Mrs. C. V. Riley, and are still in good condition. To Professor Mudge much credit must be given for the founding of the Kansas Academy of Science. In recognition of his valuable services and great scientific achievements, he well deserved the honor of having been elected its first president in 1868.

One of the students who took the course offered by Professor Mudge was Samuel Wendell Williston, who graduated in 1872. Doctor Williston, who later became a world authority in paleontology and on the insect order Diptera, is often referred to as one of Kansas State College's most illustrious sons. No alumnus of the institution was ever more loyal and interested in its welfare than Doctor Williston. He frequently visited his Alma Mater, and on several occasions the writer has heard him tell how he became interested in paleontology and entomology through his inspiring teacher, Professor Mudge, whom he frequently accompanied on collecting trips to the various Kansas fossil beds.

It may also be of interest to know that at the time of writing this article (1938) Professor Mudge has a daughter, Mrs. Irish, living at Manhattan, who was a student at the Kansas State College at the time he was professor of

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natural sciences. Mrs. Irish not only took the course offered by her father in entomology, but also took the course offered by Dr. C. V. Riley.

Early emphasis also was given to entomology at the University of Kansas. Doctor Francis Huntington Snow, one of the three professors comprising the faculty at the opening of the state university in September, 1866, soon began his activities in the study of insects. It is also evident that entomology was given considerable attention by Doctor Snow in his natural science course in the university, for there is in the University museum a student collection of insects made in the course work in 1872 by a Miss Richardson, a member of the first graduating class of the university. Dr. H. B. Hungerford, professor of entomology, University of Kansas, in a recent article states, "While it is apparent that the study of insects was given a prominent place in the teaching of biology from the very beginning, and a considerable place in the research work done by Doctor Snow and by students even in the first decade of the university's existence, it was not until 1886 that special advanced courses in entomology were offered officially."

INSECT COLLECTIONS

A. UNIVERSITY OF KANSAS

Doctor Hungerford, in a recent report concerning the Francis Huntington Snow entomological collection, states: "According to those in the best position to judge, the University of Kansas has the best general collection of North American insects in connection with any university. There are some collections which surpass it in special groups, but considering all orders and the extensive annual additions, none surpass it. It is surprisingly rich in types and has profited greatly by the various workers in the museum itself. S. W. Williston, J. M. Aldrich, C. H. T. Townsend, V. L. Kellogg, Hugo Kahl, C. F. Adams, H. L. Vierrick, F. X. Williams, C. P. Alexander, R. H. Beamer, H. B. Hungerford, and others for shorter periods, contributed immeasurably to the richness of the collections in types and determined species, a work which has been continued by the present departmental staff, four of whom are taxonomists. The Francis Huntington Snow Entomological Museum, as it is officially known, contains more than a million insects, including some 20,000 types."

Persons not familiar with the collecting, mounting, labeling, classifying, and the arranging of insects for a valuable permanent collection can little realize the tremendous amount of laborious, careful, and painstaking work involved in making a large insect collection. In making the Francis Huntington Snow insect collection, biological survey parties have collected insects in every county in Kansas and in most of the states of the Union. The first out-of-the-state survey or expedition was made by Doctor Snow and some of his students in 1874. The first twenty-nine expeditions were led by Doctor Snow. These expeditions were made in Kansas and the southwestern states. In all, the staff members and students in entomology of the University of Kansas have made fifty-one insect-survey trips. These surveys or extension activities in many parts of America have added greatly, not only to the knowledge of insect life in America, but also have made available for study a great collection of insects for students throughout the world. In speaking of the insect collections secured from foreign countries, Doctor Hungerford, curator

of the entomology museum of the University of Kansas, states: "In certain groups of insects where studies in world distribution have been involved in research activities, collections have been secured over a long series of years, with the result that the Francis Huntington Snow insect museum has the finest collection in the world in these groups."

B. KANSAS STATE COLLEGE COLLECTION

Dating from 1879, and containing contributions from many faculty members, students, and alumni of the department, the insect collection of the Kansas State College has become an excellent representative collection of the species of insects which occur in Kansas. At the present time (1938) the collection consists of about 120,000 specimens, of which the first contributions to the collections were made by Prof. E. A. Popenoe. Professor Popenoe began his work in entomology, horticulture, zoölogy, and botany at the Kansas State College in 1879, and in 1894 was made head of the department of entomology and zoölogy. He held this position continuously, except during 1897 and 1898, until July 1, 1907, at which time he retired to live on his farm near Topeka. During the past 35 years the chief contributions have been made by Professors Geo. A. Dean, J. W. McColloch, W. P. Hayes, Roger C. Smith, R. H. Painter, D. A. Wilbur, and H. R. Bryson. Many former students and alumni of the department also have added specimens to the collection. This valuable collection is very useful to the students and faculty in the department in connection with Experiment Station research projects, in the teaching work, and in the preparation of state lists of insects.

C. THE WARREN KNAUS COLLECTION

Warren Knaus entered the Kansas State Agricultural College in the fall of 1879 and graduated in 1882. Later he returned to take graduate work in entomology, and obtained the master of science degree in 1885. It was during 1880-'81, when Mr. Knaus was in the class of entomology taught by Prof. Edwin A. Popenoe, an inspiring teacher and scientist, that he became intensely interested in insects and began insect collecting as his hobby. Through the collection of beetles, and exchange with other collectors, he developed a hobby which asserted itself through his entire life, and made him an outstanding systematic entomologist, as well as an all-round naturalist.

For nearly fifty years Doctor Knaus, editor and publisher of the *Democrat-Opinion*, McPherson, Kan., spent the greater part of his spare time in the field collecting beetles in Kansas, Oklahoma, Colorado, Nebraska, Arizona, Texas, New Mexico, California, Utah and Mexico. During this time he contributed valuable additions to the Kansas lists of Coleoptera and to lists of beetles in the Southwest. Approximately forty distinct species of beetles have been named or christened "knausi." On one of his collecting trips to New Mexico he found a beetle belonging to a new genus, which bears the name "knausea." Doctor Knaus corresponded with the most prominent coleopterists throughout the world, and was recognized by them as an authority on beetles. Many of these men visited him at McPherson, Kan. For instance, Dr. Walther Horn, of Berlin, Germany, whom Doctor Knaus regarded as the greatest living coleopterist, visited and collected with him in 1902.

This excellent private collection of North American Coleoptera, consisting

of nearly 10,000 distinct species and nearly 90,000 specimens, was given by Doctor Knaus to the Kansas State College, in March, 1917. The valuable collection was transferred to the college on July 8, 1937, shortly after his death, and stored in a fireproof vault. His large scientific library also was given to the college at that time, and has been placed in the college library.

In 1927 the Kansas State College conferred on Doctor Knaus the honorary degree of doctor of science. McPherson College, McPherson, Kan., also awarded the honorary degree doctor of science to Doctor Knaus. In the spring of 1881, on the advice of Professor Popenoe, Mr. Knaus joined the Kansas Academy of Science. He was a faithful member of the Academy for 56 years, its president in 1895, and at the time of his death was the oldest living member from the point of view of service. All who knew him found him to be a generous, trustworthy, dependable and loyal friend. His whole life was one of service, and he was most happy when serving others.

D. THE FERDINAND F. CREVECOEUR COLLECTION

Mr. F. F. Crevecoeur, born June 23, 1862, moved with his mother to a farm near Onaga, Kan., in the spring of 1870. Although he had only a third-grade education, he found much in the interesting life all about him to attract his attention, and he became thoroughly versed, entirely through his own efforts, in entomology, zoölogy, botany, surveying, meteorology, and physics. He was one of those old-time naturalists who studied nature because he loved the out-of-doors. By correspondence, Mr. Crevecoeur made the acquaintance of such men as Doctor Knaus, Doctor Snow, Prof. B. B. Smyth, Prof. L. C. Wooster, Prof. H. F. Wickham, H. C. Fall, E. P. Van Duzee, and Dr. J. M. Aldrich. Some of these men he met at the annual meeting of the Kansas Academy of Science in Topeka in 1899, which meeting he attended on the invitation of Doctor Knaus. In 1917 he sold his collection of insects, plants, and several animal groups to Ottawa University. He found that the time required to farm an 80-acre farm and keep house, which he did after his mother died in 1908, did not permit him to take the proper care of the large number of specimens in his collection. However, he could not resist the impulse of collecting, especially insects, and from 1917 to the time of his death, April 11, 1931, he made a second collection of insects.

Prof. L. C. Wooster gave a summary of Mr. Crevecoeur's collection, which went to Ottawa University, in his annual address to the Kansas Academy of Science in 1906. The summary included quite a range of plant and animal groups, comprising a total of 14,126 specimens and 6,502 species.

It was the intention of Mr. Crevecoeur to give his second collection of insects, together with his scientific library, consisting of over 3,000 volumes and bulletins, to the Kansas State College. However, after his sudden death his will was found unfinished and unsigned. While it indicated that his scientific library and insect collections were to be given to the Kansas State College, his encyclopedia and dictionaries to the local schools, and the remainder of his estate, amounting to many thousand dollars, to the building of a community house at Onaga, his intentions, of course, legally could not be carried out. The Kansas State College, however, purchased at public auction sale the insect collection and the greater part of his scientific library. The insects, which filled 186 cigar boxes, have been placed in the steel cabinets in the department of entomology.

FOSSIL INSECT BEDS

While the Permian period has long been recognized as the period of most rapid evolution of the insects, the fossil records of the period remained nearly a blank until within the last thirty years. In 1906, when Handlirsch published his revision of the fossil insects of the world, only 14 specimens, other than cockroaches, had been taken from the rocks of this period. Within recent years, however, the discovery of new and very productive Permian beds, especially the important Lower Permian fossil beds in Kansas, has made possible the addition to the records of such a large number of well preserved fossils that knowledge relative to the Permian insects now probably surpasses that of any other Pretertiary horizon.

Most of these new fossils have been taken in the Lower Permian beds of Kansas, located about three and one half miles southeast of the town of Elmo, Dickinson county. This great fossil bed has already yielded 10,000 or more specimens, one of which was a giant dragon fly with a wing expanse of nearly 30 inches, or the largest insect fossil on record. This specimen was taken about two years ago (1936). The first insects were found in this fossil bed in 1899, among a collection of plant fossils obtained by Dr. E. H. Sellards, in the Wellington shales southeast of Elmo. In examining the collection during the winter of 1899, Doctor Sellards found two fossil wings. He realized the importance of his discovery and returned to the locality during the summers of 1902 and 1903 and collected about 2,000 specimens. Between 1906 and 1909 Doctor Sellards published three papers on his collection. While it was his intention to publish a revision of the fossils, other work prevented him from doing so, and the large collection was stored in his home at Austin, Tex. In the spring of 1927 Dr. F. M. Carpenter, of Harvard University, received a grant from the National Academy of Science to visit Doctor Sellards, who not only kindly permitted him to examine and study his types, but the following year sent his entire unworked collection to the Bussey Institute for study.

In the meanwhile a second collection of insects had been obtained at the Elmo beds. Dr. R. J. Tillyard, an eminent entomologist of the Cawthron Institute, New Zealand, and later entomologist of the Commonwealth of Australia, passed through the country in 1920, and while visiting Yale University, saw a small series of the Kansas specimens which Doctor Sellards had donated to the Peabody Museum, Yale University. Doctor Tillyard aroused interest in these fossil insects, and the following summer Prof. C. O. Dunbar, professor of paleontology of Yale, made an expedition to the Elmo locality. He collected about 2,000 specimens, which were sent to Doctor Tillyard for study. From 1924 to 1932 Doctor Tillyard published fifteen splendid papers on this fauna. Since 1932 five additional papers have been published by Doctor Tillyard. The Yale University specimens remain the property of the Peabody Museum.

In 1928 Doctor Carpenter, with the assistance of two graduate students in entomology, obtained about 2,400 specimens, comprising the third and largest collection from the Elmo formations. All of the specimens probably will be placed in the Museum of Comparative Zoölogy, Harvard University, when Doctor Carpenter's studies of them have been completed. During the past seven or eight years two or three thousand more specimens have been taken by Kansas University, Kansas State College, Harvard University, and others.

Since the fossil insects of the Elmo formations are definitely placed in the Lower Permian stratum they are the oldest of any of the Permian forms which have been discovered. The studies and researches which have been conducted on these Kansas Lower Permian insects by Tillyard and Carpenter already have filled in many gaps in the phylogenetic tree of insects, and with the many thousands yet to be studied some of the uncertainties which have existed should be cleared up and further progress made. Thus, up to the present time, Kansas has contributed the most remarkable deposit of Permian insects which has ever come to light.

RESEARCH CONTRIBUTIONS

The entomologists of the Kansas State College, Kansas University, and the United States entomological laboratories located in Kansas, have contributed much to the classification, biology and life history studies, and to the development of practical methods of control of injurious insects. Many of the methods of control have become widely used not only throughout the United States, but also, in some instances, throughout the world. The University of Kansas has published to date (1938) 509 papers, several of which are extensive and monographic in nature. The Kansas State College has published to date 453 papers, as bulletins and circulars of the Kansas Agricultural Experiment Station and as contributions to scientific journals and reports of scientific organizations. These papers, together with those published by the late Dr. Warren Knaus, the federal entomologist stationed in Kansas, and others, make a list of not less than 1,100.

ENTOMOLOGICAL CLUBS AND THE KANSAS ENTOMOLOGICAL SOCIETY

The Popenoe Entomological Club, of the Kansas State College, was organized on February 21, 1921, and named after the able coleopterist, Edwin A. Popenoe. The Entomological Club of the University of Kansas was organized in 1910. The object of these two clubs has been chiefly to serve as a medium for the discussion of entomological problems and new discoveries, the exchange of experience, to propose investigations, and to create interest, profitable and friendly relationships, and good spirit among the staff members and students in entomology. These two entomological clubs sponsored the foundation, April 9, 1925, of the Kansas Entomological Society, which at the present time consists of 25 regularly employed entomologists in Kansas and many advanced students majoring in entomology at Kansas University and Kansas State College. The entomologists and graduate students of entomology of Nebraska, Oklahoma, Arkansas, and Colorado are also included. The Kansas Entomological Society has created a friendly relationship and good spirit of coöperation among the groups. This society also sponsors the quarterly publication of the *Journal of the Kansas Entomological Society*, now in its eleventh volume.

A LIST OF KANSAS STATE COLLEGE STUDENTS

WHO HAVE HELD ENTOMOLOGICAL POSITIONS OR HAVE CONTRIBUTED TO ENTOMOLOGICAL LITERATURE

- Abbott, Cyril, '28. Instructor in Zoölogy, Chicago University, 1231 Hermosa Ave., Chicago, Ill.
- Adams, C. D., '95. Chief Inspector of Apiaries, Madison, Wis.
- Allen, Merle W., '34. Teacher in Biology, Junior College, Fort Scott, Kan.
- Audant, André, '31. Entomologist, Port-au-Prince, Haiti.
- Bahgat, M. M., '22. Formerly Entomologist and Plant Pathologist, Dept. of Agr., Cairo, Egypt. At present with the Egyptian embassy, Washington, D. C.
- Balzer, A. I., '26. Assist. Ento., Bur. of Ent. and Pl. Quar., Beamount, Tex. (In charge of station.)
- Blachly, John W., '18. Formerly Entomologist and Horticulturist of the Kansas City, Mo., Forestry Dept., Kansas City, Mo. Now at Oklahoma City, Okla.
- Blood, Everett, Major in Ent. '38. Kansas State College, Manhattan, Kan.
- Boyd, Fred W., '21. Formerly Assist. Ent., Bur. of Ent. and Pl. Quar., San Antonio, Tex. At present at Toppenish, Wash., Box 442 (County Agent).
- Bruce, W. G., '28. Assoc. Ent., Bur. of Ent. and Pl. Quar., Dallas, Tex.
- Bryson, Harry R., '17. Assist. Prof. of Ent., Kansas State College, Manhattan, Kan.
- Bushland, R. C., Graduate Student, '35. Junior Ent., Bur. of Ent. and Pl. Quar., Dallas, Tex.
- Caler, H. L., '31. Bur. of Ent. and Pl. Quar., Addison, Me.
- Collins, C. R., '33. Rural Rehabilitation Supervisor, U. S. D. A., Norton, Kan.
- Copenhafer, Lloyd M., '36. Assist. Landscape Architect, Kansas Highway Commission, Topeka, Kan.
- Curtiss, A. C., Graduate Student, '38. Kansas State College, Manhattan, Kan.
- Dahms, Reynold, '35. Assist. Ent., Oklahoma A. & M. College, Stillwater, Okla.
- Davidson, A. P., '19. Professor of Vocational Education, Kansas State College, Manhattan.
- Davis, E. W., '24. Assist. Ent., Bur. of Ent. and Pl. Quar., Modesto, Cal.
- Dean, Geo. A., '95. Prof. of Ent. and Sta. Ent., Kansas State College and Kansas Agr. Exp. Sta., Manhattan, Kan.
- Dean, Marjorie, '33. (Now Mrs. H. L. Nonamaker.) Smith Center, Kan.
- DeMoss, Noblesse, '37. (Now Mrs. Boyd Hill.) Manhattan, Kan.
- Dillon, Geo. Franklin, Graduate Asst. in Ent. '38. Kansas State College, Manhattan, Kan.
- Dirks, C. O., '24. Assist. Prof. of Ent., Univ. of Maine, Orno, Me.
- Douglas, J. R., '23. Assoc. Ent. Bur. of Ent. and Pl. Quar., Box 110, Twin Falls, Idaho. (In charge of Sugar Beet Station.)
- Durham, J. Edgar, '27. Formerly Entomologist for the Flour Export Trade Service, Galveston, Tex. At present Assist. Sec., Manhattan Chamber of Commerce, Manhattan, Kan.
- Falls, Olive, Graduate Student '33 and '34. Research Ent., American Lumber Treating Co., Chicago, Ill.
- Farrar, Clayton L., '26. Assoc. Ent. Bur. of Ent. and Pl. Quar., Laramie, Wyo.
- Filinger, Geo. A., '25. For Several Years Assist. Ent., Ohio Agr. Exp. Sta., Wooster, Ohio. Now Assist. Prof. of Horticulture, Kansas State College, Manhattan, Kan.

- Ford, Anson Lane, '16. Prof. of Ext. Ent., S. D. Agr. College, Brookings, S. D., until 1935. Now in charge of the shelter-belt work in South Dakota.
- Fritz, Roy, Graduate Student, '38. Kansas State College, Manhattan, Kan.
- Gahan, Arthur Burton, '03. Senior Ent., Bur. of Ent. & Pl. Quar., Washington, D. C.
- Garner, J. F., '26. Commercial Beekeeper, Reserve, Kan.
- Gilbert, H. W., '31. For Several Years Assist. Ent., Ind. State Board of Agr., Indianapolis, Ind. Now Extension Landscape Gardener, Kansas State College, Manhattan, Kan.
- Goodrich, A. L. Graduate Student in Entomology, '34. Assist. Prof. of Zoölogy, Kansas State College, Manhattan, Kan.
- Goodwin, Wm. H., '05. For Several Years Assist. Ent., Ohio Agri. Exp. Sta., Wooster, Ohio. Now Supt. of Industrial Education, North Lima, Ohio.
- Gui, H. L., '26. Ent., Ohio Agr. Exp. Sta., Wooster, Ohio.
- Hall, David G., '29. Assoc. Ent., Bur. of Ent. and Pl. Quar., Washington, D. C.
- Hamilton, Clyde Carney, '13. Assoc. Ent., Rutgers College and New Jersey Exp. Sta., New Brunswick, N. J.
- Hartwig, Nelle. Instructor in Ent. and Zoöl., Dept. of Ent. and Zoöl., S. D. State College, Brookings, S. D.
- Hayes, William Patrick, '13. Assoc. Prof. of Ent., Illinois University, Urbana, Ill.
- Hays, J. V., '33. Teacher of Science, Wetmore High School, Wetmore, Kan.
- Hollingsworth, H. S. '33. Koscensko, Miss.
- Horsfall, W. R. '29. Assist. Prof. of Ent., Brookings, S. D.
- Houser, John Samuel, '04. Chief Ent., Ohio Exp. Sta., Wooster, Ohio.
- Hoyle, W. L., '37. Principal Bavaria High School, Bavaria, Kan.
- Kamal, M., '22. Entomologist, Dept. of Agr., Giza, Egypt.
- Keck, C. B., '27. Assist. Ent., Bur. of Ent. and Pl. Quar., Honolulu, Hawaii.
- Kelly, Sam G., '30. Junior Ent., Commonwealth of Australia, Uvalde, Tex.
- Kent, V. F., '29. Junior Ent., Bur. of Ent. and Pl. Quar. until 1935.
- Knaus, Warren, '82. Coleopterist, McPherson, Kan. Deceased.
- Kruger, F. S., '33. U.S.D. A. Soil Survey Work, Burlington, Kan.
- Lamerson, P. G., '31. Assist. Ent., Kansas Agr. Exp. Sta., Wathena, Kan.
- Lewis, F. C., Major in Ent., '23. Kansas State College, Mansfield, Ill.
- Lindquist, A. W., '31. Assoc. Ent., Bur. of Ent. and Pl. Quar., Nico, Cal.
- Litwiller, Earl, '25. Formerly Assoc., Prof. of Ent. and Hort., Home Study, Ext. Div., K. S. C., Manhattan, Kan. At present, 1407 North Winter, Salem, Oregon.
- McColloch, James Walker, '12. Prof. of Ent., K. S. C. and Assoc. Ent., Kan. Agri. Exp. Sta. Deceased.
- McDonald, F. L. Major in Ent., '38. K. S. C., Manhattan, Kan.
- McNally, Crystal E., '35. Teacher of Science, Bucklin High School, Bucklin, Kan.
- McNay, E. J., Graduate Student, '33. Kansas State College, Manhattan, Kan. At present, Dept. of Ent., Univ. of Cal., Davis, Cal.
- Manis, H. C., '36. Graduate Assist., Dept. of Zoöl. and Ent., Iowa State College, Ames, Iowa. June 1, 1938, Research Assist. in the Exp. Sta., Iowa State College.
- Marlatt, Chas. L., '84. Retired Chief, Bur. of Ent., Washington, D. C.
- Marlatt, Frederick A., '87. For Several Years Assist. Ent., Kan. State Agr. College, Manhattan, Kan.

- Marshall, Geo. Edw., '29. Assist. Ent., Indiana Agr. Exp. Sta., Purdue, Univ., Lafayette, Ind.
- Maxwell, A. J., Graduate Student, '33. Chetopa, Kan.
- Milliken, Francis Burzley, '09. For Several Years Assist. Ent., Bur. of Ent. and Pl. Quar. Present address, 3921A Wayne Ave., Kansas City, Mo.
- Munro, J. A., '24. Prof. of Ent. and State Ent., N. D. Agr. College, Fargo, N. D.
- Musser, D. R., '33. Rural Rehabilitation Supervisor, U. S. D. A., Atwood, Kan.
- Nixon, Ivan L., '03. For Several Years Assist. Ent. of New York. At present Manager of the Instrument Div., Bausch and Lomb Opt. Co., 221 Aldine St., Rochester, N. Y.
- Nonamaker, H. L., '33. Rural Rehabilitation Supervisor, U. S. D. A., Smith Center, Kan.
- Norton, Jesse Baker, '97. For Several Years Assist. Ent., Kan. Agr. Exp. Sta.; later, Plant Pathologist, Bur. of Pl. Ind. At present, Pl. Breeder, Harts-ville, S. C.
- Osterberger, B. A., Graduate Student, '37. Asst. Ent., La. Agr. Exp. Sta., Baton Rouge, La.
- Park, O. W., '17. Assoc. Prof. of Ent., Iowa State College, Ames, Iowa.
- Payne, Nellie, '20. Formerly Assist. Ed., Biological Abstracts, Phil. Pa. At present, Research Ent., Am. Cyanamid Co., Stamford, Conn.
- Peairs, Leonard Marion, '05. Prof. of Ent., W. Va. Univ. and Ent. and Vice Director of Agr. Exp. Sta., Morgantown, W. Va.
- Popenoe, Charles Holcomb, '05. Assoc. Ent., Bur. of Ent. and Pl. Quar., Wash-ington, D. C. Deceased.
- Portman, R. W., Graduate Student, '38. Kansas State College, Manhattan, Kan.
- Redding, W. V., '33. Principal of High School, Seagrove, N. C.
- Reppert, Ray Ralph, '16. Ext. Ent. of Tex. A. & M. College, College Station, Tex.
- Robinson, A. L., Major in Ent., 1936. Assist. in Ent., Commonwealth of Aus-tralia, Uvalde, Tex.
- Rogers, C. R., '37. Grad. Student in Ent., Antimite Co., Wichita, Kan.
- Rowell, J. O., Graduate Student, '33. Ext. Ent., North Carolina State College, Raleigh, N. C.
- Rude, Clifford S., '19. Assist. Ent., Bur. of Ent. and Pl. Quar., Tlahualilo, Dgo., Mexico. (In charge of station.)
- Sabrosky, Curtis, '33. Instructor in Ent., Dept. of Ent., Mich. State College, East Lansing, Mich.
- Schell, Stewart, C., Major in Ent., '38. Kansas State College, Manhattan, Kan.
- Schopp, Ralph, '30. Junior Ent., Bur. of Ent. and Pl. Quar., Sumner, Wash.
- Schwardt, H. H., '26. Assist. Prof. of Ent., Cornell Univ., Ithaca, N. Y.
- Shepherd, B. L., '33. Director of Biology, Tulsa Public Schools, Tulsa, Okla.
- Shirck, F. H., '25. Assist. Ent., Bur. of Ent. and Pl. Quar., Parma, Idaho. (In charge of station.)
- Smith, Hobart, '32. Major in Ent. in His Undergraduate Work. At present, Chicago Academy of Science, Chicago, Ill.
- Smith, W. R., Graduate Student, '34. Rural Rehabilitation Supervisor, U. S. D. A., 1006 Third St., Garden City, Kan.
- Snelling, R. O., '33. Agronomist, Univ. of Ill., Urbana, Ill.
- Soliman, F. B., '22. Ent., Dept. of Agr., Cairo, Egypt.
- Stevens, Orin Alva, '07. Assoc. Prof. of Botany, N. D. Agr. College, Fargo, N. D.

- Summerland, S. A., '29. Assist. Ent., Bur. of Ent. and Pl. Quar., Vincennes, Ind.
- Taylor, M. M., '30. County Agent, Colby, Kan.
- Tuck, J. B., Major in Ent., '38. Kansas State College, Manhattan, Kan.
- Turner, A. F., '05. Field Agent, Div. of Extension, Kansas State College, Manhattan, Kan.
- Turner, Chester Francis, '12. Formerly Assist. Ent., Bur. of Ent. and Pl. Quar., Washington, D. C. At present, R. F. D. No. 1, Brunswick, Tenn. Farmer.
- Valbuena, P. T., Graduate Student, '37. Kansas State College, Manhattan, Kan. At present, Los Angeles, Cal.
- Vandenberg, Sidney Randell, '16. Formerly Assoc. Ent., Exp. Sta. of Guam, Island of Guam. At present, 813 South Friends, Whittier, Cal.
- Vaughn, Edgar Allen, '12. Commercial Ent., 107 E. LaFayette, Tampa, Fla.
- Wadley, Francis Marion, '16. Assoc. Ent., Bur. of Ent. and Pl. Quar., Washington, D. C.
- Wagner, Geo. B., '29. Assist. Ent., Bur. of Ent. and Pl. Quar., Manhattan, Kan.
- Walker, F. H., '33. Major in Ent., Kansas State College. At present, Salem, Mass.
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