

**HISTORY OF
THE POULTRY DEPARTMENT OF
PURDUE UNIVERSITY**

June, 1970

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with the assistance of many staff members and alumni

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HISTORY OF PURDUE UNIVERSITY POULTRY DEPARTMENT¹

The first reference to poultry in the publications of Purdue University appeared in the University Catalogue of 1894-95. In the junior year a three credit course in Livestock Husbandry was offered by Professor C. S. Plumb. The description of this course included the following statement: “The art of breeding domestic animals including horses, pigs, sheep and poultry.” Professor Plumb, who taught the course, served as Professor of Animal Industry and Director of the Purdue Agricultural Experiment Station; being its first director. This course was listed under various titles through the 1904-05 academic year when poultry was omitted. The first Purdue publication dealing with poultry was Experiment Station Bulletin 71, published in 1898; the title of which was “Skim Milk as a Food for Young Growing Chickens.” The bulletin was written by w. B. Anderson, Assistant Agriculturist who resigned in March 1899.

Separate Courses

Poultry Husbandry first appeared as a separate course in the 1905-06 Catalogue as follows:

I. Poultry - Second semester.

Three lecture hours per week.

Required of Sophomores in the School of Agriculture. This course treats of the breeds and types of poultry, the principles of breeding and the mating fowls; hatching, feeding for growth and egg production, caponizing, fattening and marketing poultry; winter and summer management, incubation, brooders, coops, houses; diseases and parasites and their treatment.

Professor George Spitzer was listed as a teacher of this course. Professor Spitzer was a graduate in Pharmacy and also taught the bee keeping course. He later achieved fame as a dairy chemist, serving Purdue for many years until his retirement. He donated the land on which his home was located to the University, and it is now known as Spitzer Court, at the north end of Waldron Street, immediately in front of Cary Hall south. It is on this site that he kept his own

¹ Poultry became a separate Department July 1, 1917 and continued apart from Animal Husbandry until December 31, 1961. This History records a few of the highlights and accomplishments of that 44 ½ year period.

chickens, which were used in the laboratory and in demonstrations for the first poultry courses taught at Purdue.

Professor Spitzer's courses were supplemented by special lectures and the 1905-06 Catalogue lists T. E. Orr of Pennsylvania and Eugene Sites of Elyria, Ohio as special lectures. A second poultry course of two lecture hours per week which "must be preceded by Poultry" was also listed in the 1905-06 Catalogue. Among the subjects treated in the advanced course were methods of handling poultry for special markets and the effect of different foods on egg production, growth and fattening of poultry. After teaching these courses for two years Professor Spitzer chose to devote his entire time to research and teaching in dairy chemistry. The 1907-08 Catalogue lists Otis Crane as the teacher of the poultry courses. Mr. Crane, who had been a successful high school teacher at Lebanon, was ranked as a special lecturer in poultry from 1907 through 1910. During the 1907-08 academic year he secured as a special lecturer Professor James E. Rice of Cornell University, who gave a series of lectures on poultry production and counseled and advised on the development of poultry courses. From 1907 through 1915 the poultry course was listed as Animal Husbandry 16, with the same description as Poultry J. The 1908-09 Catalogue lists AH 16 (Poultry) as two lectures and one two-hour laboratory, a course required of all freshmen in Agriculture. To this listing the Catalogue of 1910-11 adds Ah 17 - Poultry Housing and Breeding, AH 18 - Poultry Incubation and Brooding, AH 19 - Poultry Feeding and Marketing, and AH 20, Poultry Management. In that Catalogue Mr. Crane is listed as the teacher of AH 16, and for the first time Professor A.G. Philips was listed as the teacher of the four advanced courses.

On November 30, 1915 the Purdue Trustees approved the separation of a poultry option from that of the Animal Husbandry Department. The poultry courses were first listed separately in the 1915-16 Catalog. It may be assumed that the Poultry Department officially came into being on July 1, 1917, although the Trustees' records are not clear on this point. In the fall of 1917 the Poultry Staff presented a group reorganization program which was approved by the Faculty on January 28, 1918. The 31st annual report of the Agricultural Experiment Station for the 1917-18 fiscal year is the first to list the Poultry Department report separately from that of Animal Husbandry. In the summary of work by departments the separate report on Poultry Husbandry was prepared by A.G. Philips, Chief of Department. The Animal Husbandry report contained the following statement: "At the beginning of the year it was decided to make a

separate department of Poultry Husbandry and that phase of the work has been formally separated from the Animal Husbandry Department.” The phrase "beginning of the year" obviously refers to the fiscal year, thus establishing July 1, 1917 as the date of the creation of the Poultry Department. The Department continued to exist as a separate entity until December 31, 1961, however the name was changed to Department of Poultry Science on July 1, 1954. It merged with the Dairy and Animal Husbandry Departments into the Department of Animal Sciences January 1, 1962 with Dr. F. N. Andrews as head and Dr. J. Holmes Martin as assistant head. In 1963 when Dr. Andrews was promoted to Dean of the Graduate School, and Vice President for Research, Dr. Jake L. Krider became head of the Department. Thus during the 44 ½ years of the Department’s existence there were three department heads, Philips from 1917 to 1926, Carrick from 1926 to 1940 and Martin from 1940 to December 31, 1961. Dr. E. E. Schnetzler served as acting head of the Department in 1944-45, the year Martin was on leave to activate the poultry breeding program of the DeKalb Agricultural Association, while Dr. L. A. Wilhelm served as acting head in the summer of 1954.

Early Days

A. G. (Chick) Philips reported for duty at Purdue in August, 1910 as the first full time staff member in Poultry Husbandry. Philips had graduated from Kansas State College in 1907. He attended Cornell University 1907-08 before becoming a staff member at the Kansas Experiment Station, serving there two years before coming to Purdue. Philips not only immediately increased the course offerings but set about to build research and extension programs. His first move was to employ Professor J. E. Dougherty (Cornell, 1911) as an instructor; who served one academic year, 1911-12, before joining the University of California staff. Professor Dougherty was succeeded by Professor Harry Embleton (also a Cornell graduate) who during the year 1912-13 not only taught the poultry courses but also served as coach of the Purdue wrestling team. Professor Embleton later became head of the Poultry Department at the University of Arizona. Professor Embleton was succeeded by Professor L. H. Schwartz (Cornell, 1911) who served on the Purdue staff from 1914 through 1931. Professor Schwartz was the first member of the teaching staff (other than Professor Philips) to be included on the Experiment Station research staff.

Purdue Poultry Department Staff

(Chronological order of appointments and length of service)

Spitzer, George	1905-07 (T)	Brueckner, R.F.	1937-38 (R)
Crane, Otis	1907-10 (T)	Albright, W.P.	1937-41 (E)
	1910-11 (E)	Newell, G.W.	1939-43 (R S)
Dougherty, J.E.	1911-12 (T)	Anderson, E.W.	1939-41 (S)
Embeton, Harry	1912-13 (T)		1947-50 (E)
Chapin, A.S.	1914-15 (T)		1951-53 (T)
Schwartz, L.H.	1914-31 (T R)	Martin, J.H.	1940-63 (T R)
Jones, L.H.	1914-15 (E)	Shaffner, C.S.	1940-42 (T S)
Smyth, S.P.	1915-16 (T R)	McConnell, E.S.	1941-42 (T)
Easson, R.B.	1915-18 (E)	Wilhelm, L.A.	1941-44 (E)
Brewster, C.S.	1916-17 (T R)		1944-48 (A)
Old, Fred C.	1917-18 (E)		1948-55 (R T)
Kennard, D.C.	1918-20 (R)	Jackson, M.E.	1941-45 (E)
Carrick, C.W.	1918-21 (E)	Searcy, Glenn	1942-43 (E)
	1921-62 (R T)	Sicer, J.W.	1942-68 (E)
Brooks, F.D.	1920-34 (T R)	Bohren, B.B.	1943-70 (R T)
Roberts, Roy E.	1921-23 (T)	Lunn, John	1943-45 (E)
	1926-58 (R)	Flock, M.L.	1944-48 (E)
	1958-61 (E)	Barr, A.T.	1945-52 (S)
Rue, W.F.	1921-22 (E)	Gordeuk, Alex	1948-50 (E)
Riley, P.G.	1921-27 (E)	Warren, D.C.	1948-56 (USDA)
Fitting, H.W.	1922-25 (E)	Bell, A.E.	1948-70 (R T)
Kauffman, H.H.	1922-24 (E)	Wiltshire, J.B.	1948-55 (S)
Murphy, H.R.	1923-24 (T)*		1955-70 (USDA)
Howerton, H.R.	1923-24 (T)*	Hogue, Robert L.	1948-57 (E)
Powers, G.H.	1923-24 (T)*		1957-70 (A)

Koehler, E.D.	1924-25 (T)*		1967-70 (S)
Griffin, E.D.	1925-27 (E)	Wilson, M.L.	1949-65 (S E R)
Seaton, M.H.	1925-28 (E)	Detwiler, R.W.	1950-54 (E T)
Menefee, E.R.	1926-42 (R S)	Wells, Frank R.	1952-62 (R)
	1942-68 (S)	Jackson, D.D.	1954-68 (E)
Kohlmeyer, Wm.	1928-42 (E)	Parsons, R.W.	1954-57 (R)
	1942-44 (R)	Stadelman, W.J.	1955-70 (R T)
Gooding, P.H.	1928-29 (E)	Long, Jack	1955-70 (R T)
Todd, Leon	1929-36 (E)	King, S.C.	1956-59 (USDA)
Wolford, Steve	1929-36 (E)	Rogler, John C.	1958-70 (R T)
Schnetzler, E.E.	1931-45 (T R)	Carson, J.R.	1959-70 (USDA)
Hinnners, Scott	1936-41 (E)	Featherston, W.R.	1962-70 (R T)
	1941-44 (A)		

*Federal Board Inspector

T	Teaching
R	Research
E	Extension
S	Service
A	Association

(Warren, King and Carson served as Coordinator of the National Poultry Breeding Laboratory and held research professorships in the Poultry Department.)

Extension Work Activated

Poultry extension work had its inception at Purdue University in 1914 when Leroy L. Jones, a 1912 graduate of Michigan Agricultural College (now MSU) was employed in full time extension work. Jones remained on the Purdue staff for eleven years, taking a commercial position in 1925. His first assistant in extension work was R. B. Easson, who served on the staff from 1915 to 1918. Easson was succeeded by C. W. Carrick as an extension poultryman from

1918 to 1921, when he was transferred to research work (AES). He was appointed head of the department in 1926 upon Philips resignation. When Professor Carrick shifted from extension work, Paul G. Riley was appointed extension poultryman, having been a successful county agricultural agent. He served from 1921 through 1927, being assisted by H. W. Fitting 1922-25; H. H. Kauffman 1922-21+; E. D. Griffin 1925-27, and M. H. Seaton 1925-28.

In 1921 when Professor Carrick shifted to AES, he became the first full time research worker on the staff. An additional research staff member was appointed in 1926 when E. R. Menefee became a full time researcher in poultry marketing. Menefee's program dealt more particularly with the primary development of graded buying of eggs from farmers. He also supervised the development of the Federal-State Egg Grading program in Indiana. Menefee's egg quality studies led to the development of the State Egg Act of 1939 which was optional during 1939-40. The 1941 Legislature made it mandatory to register with the State Egg Board if engaged in the sale of eggs. The Egg Act passed by the 1939 Legislature set up a State Egg Board and E. W. Anderson served as its first secretary. In 1941 he was followed by O. J. Taylor. In 1942 Menefee was shifted to a full time position as executive-secretary of the State Egg Board and chief egg inspector, serving in that capacity from 1942 until he retired in 1968.

In 1928 Wm. Kohlmeyer was employed in extension work to succeed M. H. Seaton. He served as secretary of the State Poultry Association for many years and supervised the growth and development of the National Poultry Improvement Plan which by legislation fell under the jurisdiction of the Baby Chick Department of the State Poultry Association. The program required considerable inspection work, so in 1938 Sam A. Colliver, a former county agent, was employed as field man by the Association and W. B. Werner of Winamac as ROP inspector. Kohlmeyer served as Association Secretary until 1941 when he was transferred to marketing research (vice Menefee); leaving Purdue in 1944 to become head of the Poultry Department of South Dakota State College. In 1941 Scott Hinnners, who had served as extension poultryman since 1936 resigned to accept full time employment with the State Poultry Association as its executive-secretary. His duties included supervising the National Plan program. Hinnners was the first full time employee of the State Poultry Association and was succeeded in 1944 by L.A. Wilhelm who had served as extension poultryman at Purdue from 1941 to 1944. Wilhelm's appointment as executive secretary of the Association carried with it the privilege of taking course work in the Purdue Graduate School and he was able to complete the work on his Ph.D. in

Agricultural Economics by 1948, when he shifted back to the Department in research and teaching work, assuming the responsibility of developing the marketing program. He served in this capacity along with the added duties of assistant head of the Department (from 1951) until April, 1955 when he left the University to enter commercial work.

Undergraduate Courses

The poultry courses were carried as A.H. 16 - Poultry, A.H. 17 Poultry Housing and Breeding, A.H. 18 Poultry Incubation and Brooding, A.H. 19 Poultry Feeding and Marketing, and A.H. 20 Poultry Management from the 1910-11 Catalogue until the 1917-18 Catalogue when the Poultry Department offerings were listed separately. The Catalogue published in February, 1918 in which the poultry courses were listed under a separate department contained the following listing of courses: P. I (2+3) Poultry Production (required of freshmen in Agriculture); P. 2 (2+4) Poultry Production, a 3-credit elective course; P. 5 (3+4) Selection, Breeding and Housing; P. 6 (3+4) Incubation and Brooding, P. 7-8 (1+2) Marketing, P. 9-10 (3+3) Feeding, Care and Management.

Graduate Courses Added

The first poultry courses offered for graduate work were listed in the 1923-24 Catalogue when the following courses were accepted toward the M.S. degree: P. 105 (2+4) Breeding, Judging and Showing; P. 106 (2+4) Incubation and Brooding; P. 107 (2+2) Marketing; P. 108 (2+2) Feeding; and P. 110 (2+2) Management. In the 1926-27 Catalogue an additional course, P. III (2+0) Breeding was added along with AES 297 Research in Poultry Husbandry. In the following year (1927-28) P. 201 Seminar, and P. 202 Experimental Poultry Nutrition were also added. The first graduate degree of the Department was that of R. W. Prange who secured the M.S. in Poultry Nutrition in 1927. The first Ph.D. degree was earned by Dr. W. E. Poley also in Poultry Nutrition in 1934. During the Department's existence 98 persons secured advanced degrees with a major in the Poultry Department with majors in Nutrition, Genetics, Physiology, Management, and Products Technology. The scientific staff was ably assisted through the years by the graduate assistants, whose research led to 48 Ph.D. degrees and 81 M.S. degrees. A list of the graduate students is given on the next page.

Advanced Degrees conferred by the Department of Poultry Science

Name	Major Field	M.S.	Ph.D.
Adams, Richard L.	Nutrition	1959	1961
Anderson, E.W.	Management	1949	
Arvidson, Robert B.	Poultry Breeding	1950	
Baker, Robert C.	Products Technology		1957
Baldini, J.T.	Nutrition	1949	1951
Barlett, Alan C.	Pop. Genetics		1962
Begin, J.J.	Nutrition	1950	
Berry, E.P.	Nutrition	1950	
Blackwood, Chas. A.	Poultry Genetics	1961	
Bonino, M.F.A.	Management	1961	
Bratton, Marcia J.	Poultry Genetics	1959	
Bray, David F.	Pop. Genetics	1957	1960
Brown, Wm. P.	Pop. Genetics	1956	1961
Buss, Edward G.	Poultry Genetics	1949	1956
Butters, H.E.	Nutrition	1951	
Childs, G.R.	Nutrition	1951	
Chung, Ronald	Products Technology	1961	1963
Cline, M.A.	Nutrition	1945	
Cowan, Norris S.	Poultry Genetics	1961	
Creek, R.D.	Nutrition	1954	1955
Crittenden, Lyman B.	Poultry Genetics	1955	1958
Detwiler, R.W., Jr.	Physiology	1949	
Dodge, John W.	Products Technology	1948	1959
Echterling, C.J.	Marketing & Mgt.	1949	
Eisen, Eugene J.	Poultry Genetics	1962	1965
Eklund, M.W.	Products Technology	1957	1962

Englert, Duwayne C.	Pop. Genetics	1961	
Ferrand, Raymond H., Jr.	Physiology	1948	
Fox, Thomas W.	Poultry Genetics		1952
Friars, Gerald W.	Poultry Genetics	1955	1961
Fry, Jack L.	Products Technology		1959
Fuller, H.L.	Nutrition		1951
Gaffney, L.J.	Poultry Breeding	1957*	
Gardiner, Earl E.	Nutrition	1958	1961
Gerry, R.M.	Nutrition	1946	1948
Gledhill, R.H.	Nutrition		1957
Goodwin, Tommy L.	Products Technology		1962
Hamre, M.L.	Products Technology	1963	1966
Hardin, Robert T.	Pop. Genetics	1960	1962
Hartung, T.E.	Products Technology		1962
Hinners, S.W.	Management	1941	
Homler, B.E.	Products Technology	1962	1965
Jenkins, Woodrow R.	Poultry Genetics	1947	
Johnson, E.L.	Nutrition	1942	1948
Johnson, Ronald L.	Management	1963	
King, Reynold T.	Poultry Breeding	1955*	
Kohlmeyer, W.	Management	1938	
Korslund, Harry J., Jr.	Products Technology	1957	
Krause, Eliot	Pop. Genetics	1963	1968
Krautmann, Bernard A.	Nutrition	1955	1957
Leach, Roland M., Jr.	Nutrition	1956	
Lowe, Phillip C.	Poultry Breeding	1961	
Lutsky, Irving I.	Physiology	1951	
Marion, Wm. W.	Products Technology	1955	1958
Martin, Grady A.	Pop. Genetics		1959
Marvel, J.A.	Nutrition	1943	1949
May, Kenneth N.	Products Technology		1959

Mayo, Robert H.	Nutrition	1956	
McGhee, Archie R.	Management	1951	
McGinnis, Chas H., Jr.	Nutrition	1961	
McNary, Harold W.	Pop. Genetics	1956	1960
Mickelberry, Wm. C.	Products Technology	1960	
Mishler, D.H.	Nutrition	1947	1950
Mitchell, James David	Products Technology	1958	1961
Mitchell, Wm. H.	Management	1958*	
Moore, Claude H.	Pop. Genetics		1952
Murphy, James E.	Management	1957*	
Newell, George W.	Products Technology	1947	
Oliver, Montague M.	Poultry Breeding	1954*	
Orozco, Fernando P.	Pop. Genetics	1959*	1968
Pare, J. Pierre	Pop. Genetics	1959	1964
Perez, Rudolfo B.	Poultry Breeding	1960*	
Peterson, Vagn E.	Nutrition	1960	
Poley, W.E.	Nutrition		1934
Prange, R.W.	Nutrition	1927	
Ramaswamy, A.L.	Management	1961*	
Rapp, Gordon D.	Poultry Breeding	1951	
Rogler, John C.	Nutrition	1953	1958
Schmidt, Franz J.	Products Technology	1957	
Schneider, Albert J.	Poultry Breeding	1954	
Schwall, Donald V.	Products Technology		1962
Searcy, G.L.	Physiology	1942	
Shaffner, Clyne S.	Physiology		1947
Shannon, Wm. G.	Products Technology	1956	
Sipe, G.R.	Management	1938	
Smyth, John Robert., Jr.	Poultry Genetics	1947	1949
Spencer, John V.	Products Technology		1961
Synold, R.E.	Nutrition	1942	

TerBush, Edward L.	Physiology	1952	
Tully, W.C.	Nutrition	1929	
Wagner, Paul R.	Poultry Breeding	1948	
Wan., S.	Nutrition	1928	
Weinland, B.T.	Poultry Breeding	1951	1966
Wells, Frank E.	Bact.-Prod. Tech.	1958	1961
Wesley, Roy L.	Products Technology	1958	1961
West, J.W.	Nutrition		1951
Widaman, C.W.	Nutrition	1940	
Wise, Raymond G.	Products Technology	1957	1960

No. Persons 98 No. Master's 82

No. Degrees 130 No. Ph.D.s 48

*Non-thesis option

Poultry Option

When poultry courses were first added to the undergraduate offerings at Purdue and listed in the 1905-06 Catalogue, the students were asked to choose a major field of work at the close of their sophomore year so that they could take more courses in that area during the junior and senior year for specialization. It was not until A. G. Philips came in 1910 and added advanced poultry courses in the fall of 1911 that it was possible for a student to consider poultry as an option. Philips offered the four advanced courses A.H. 17, Poultry Housing and Breeding and A.H. 18, Poultry Incubation, to be taken in the junior year; A.H. 19, Poultry Feeding and Marketing, and A.H. 20, Poultry Management, taken in the senior year. The graduating class of 1913 had three students who had elected advanced courses in Poultry, while the 1914 class had seven; among them D. J. Taylor and Claude Harper. In 1915 there were nine major students graduating, and in 1916 there were five. During the war years of 1917-19 and from 1920 until the outbreak of World War II the number varied from one to seven. In 1940 there were nine, and in 1941, ten. In 1942 the number dropped to six. There were only one or two each year during World War II until 1949, when there were five, the number varying from two or three to a

maximum of eight throughout the remainder of the life of the Department. Throughout the years the major students had many opportunities to choose a position to their liking.

At the inception of the poultry major in 1911 the student was given the choice of majoring in Animal Husbandry or Horticulture and carrying the advanced poultry courses in lieu of certain advanced courses in each of the respective fields. A separate option was set up in the 1917-18 Catalogue. Those students who did major in Poultry have in many cases made conspicuous successes within the poultry world, both in production and scientific fields; three of them becoming poultry department heads. J. Holmes Martin, '17, heading the poultry programs at the University of Kentucky and Purdue University, J. R. Smyth, '20, heading the Department at the University of Maine and J. H. Bruckner, '30, heading the Cornell University department for many years (1940-65). Among the illustrious alumni are M. C. Small, '28, for many years editor of "Turkey World" and executive secretary of the National Turkey Federation, H. H. Kauffman, '22, extension poultryman at Pennsylvania State College for many years, T. S. Townsley, '16, for many years director of research for Smith Incubator Company, D. G. Jones, '39, geneticist for the DeKalb Ag Research, R. B. Arvidson, '42, geneticist at Hy-Line Poultry Farm, James H. Smith, '53, geneticist for Cobbs Chicks, Harold W. McNary, '54, geneticist, Steggle Ltd. Quite a large number have made a distinct success in their work either in the hatchery or production field. Among these are H. W. Fitting, '16, P. G. Riley, '17, H. H. Steup, '19, W. J. Shierling, '25, P. W. Silvey, '28, R. V. Hadley, '29, Wm. Ullman, '30, S. B. Swann, '38, E. C. Nesius, '40, R. C. Swanson, '40, H. D. Mangus, '41, G. L. Searcy, '41, Charles Reed, '42, Tom Boese, '49, W. L. Hunsucker, '50, Robert P. Waltz, '52, Vernon D. Cummings, '53, Robert W. Amos, '52.

Poultry Majors

There were three students who took all of the available poultry courses and graduated in 1913. They were D. D. Sherin, Sidney P. Smyth and Paul D. Tillet. The graduates in the second year were as follows: 1914: Claude Harper, Rolla L. Holman, Maurice Neptune, Blaine E. Peele, Delbert J. Taylor, James R. Tranter, Fred R. Walker.

Purdue Graduates who Majored in Poultry Option

1915: D. C. Luken, John McCulloch, Homer L. Reed, John W. Reeder, Robert W. Shafer, Ralph L. Skinner, Benjamin G. Sollman, Lloyd L. Stewart. 1916: Francis T. Evans, Harry W. Fitting, Alvin J. Harrer, Vinton H. Matthews, Thomas S. Townsley.

1917: Harry S. Cutler, J. Holmes Martin, Paul G. Riley.

1919: Paul I. Barker, A. L. Becker, Howard H. Steup.

1920: J. Robert Smyth.

1921: C. B. Bouton, R. E. Roberts, F. C. Stevenson.

1922: H. H. Kauffman, J. T. Morrison, Wm. B. Werner.

1923: A. H. Beck, T. F. Burns, A. D. Howerton, G. H. Powers, J. W. Sicer.

1924: R. A. Johnson, E. D. Koehler, F. W. McDonough, D. B. Thomas.

1925: F. C. Atkins, W. H. Cravens, W. C. Crooks, J. B. Kohlmeier, W. W. Low, H. G. Pease, R. W. Prange, J. A. Rosenbaum, W. J. Shierling.

1926: F. E. Christen, C. F. Heller, I. S. Huang, J.E. Walters.

1927: G. M. Barge, M. M. Bassett, H. J. Eastman, M. Hart.

1928: A. K. Noblitt, R. Sherwood, P. W. Silvey, M. C. Small.

1929: J. T. Dickson, R. V. Hadley, G. K. Napier, S. E. Ronk, D. D. Sutherlin.

1930: J. H. Bruckner, w. w. Ullman.

1931: S. H. Early, R. E. Tewkesbury.

1933: R. F. Brueckner, S. A. Burton.

1934: C. F. Beeson.

1935: M. Blades.

1936: R. L. Hogue, J. w. Mathews, J. E. Price.

1937: E. w. Anderson, J. A. Coulter, M. v. Flock.

1938: S. B. Swann, Rex Davis.

1939: A. E. Buckthal, R. C. Garrison, H. D. Gates, D. G. Jones, H. R. Knaus, A. Wagner.

1940: V. M. Hruby, M. C. Huber, W.R. Jenkins, J. O. Michael, E. C. Nesius, F. Y. Reichart, R. E. Swanson, J. A. Walkey, J. W. White. 1941: C. L. Breeden, M. E. Jackson, L. J. Luzar, H. D. Mangus, J. A. Marvel, E. J. Morthland, Vernon Reuter, G. L. Searcy, P. C. Smyth.

1942: R. B. Arvidson, J. L. Ramp, Charles Reed, C. R. Shephard, B. L.

1943:

1944:

1947: Tormohlen, P. R. Wagner, Dean E. Wilbur. Ralph E. Howes. R. Dale Kelley. Edward E. Booker, C. J. Echterling, Eldon J. Kessler, Robert S. Lesley.

1948: James A. Ebert, K. E. Myers, Wm. R. Smith, Bernard T. Weinland.

1949: Tome Boese, J. R. Evans, J. K. Letsinger, P. C. Lowe, R. L. Stucky.

1950: Geo. E. Franz, W. L. Hunsucker, J. J. Maginn, F. H. Masterson, J. R. Morrow, W. M. Pitts, Jr., A. J. Schaefer, C. C. Shenk, E. E. Simpson, G. L. Waltz.

1951: Wm. P. Brown, Jerome Jones, J. D. Lawler, S. J. Liebert, Robert L. Smith, J. H. Stall, J. E. Wachstetter.

1952: Robert W. Amos, George E. Byers, Charles W. Cook, Wallace F. McDuffee, Glen E. Munro, Harry W. Newell, Howard P. Smith, Wayne A. Smith, J. R. VanNice, Robert P. Waltz, Billy J. Woodruff.

1953: Vernon E. Cummings, Paul S. Rabin, Samuel H. Reed, Laddie L. Smisek, James H. Smith, John D. Stansifer.

1954: Harrison F. Bornman, Jr., Wm. E. Creighton, Melvin T. Leach, Harold W. McNary, Paul W. Schaefer, Marvin W. Stuckey.

1955: W.W. Graham, J. L. Phillippe, P. L. Ruzler, P. R. Schuman, W. J. Westfall.

1956: Marcia C. Bratton, Wm. J. Suding, G. L. Wilkins.

1957: J. Phillip Aldred, C. C. Calvert, Robert P. Davis, Edward P. Schermerhorn, John Wesley Smith, Joe C. Sylvester.

1958: Abraham S. David, Thomas H. Edwards, Richard E. Geyer, Donald K. Graf, James K. Hepler, Ronald V. Irwin, Richard H. Smith, Robert D. Stucky, John H. Wolford, Wm. F. Walker.

1959: Robert W. Beerbower, Ronald L. Johnson, Elmer A. Wells, Jr.

1960: Robert D. Juff, Rex A. Lawler, John H. Stevens, Gerald F. Switzer.

1961: Richard Wm. Rudolph.

1962: Keith L. Lineback.

1963: (merged with major students in Animal Sciences).

Extracurricular Activities

Egg Show

The first extracurricular activity developed by the undergraduate students, under the guidance of the Poultry Staff was the Egg Show. The first Egg Show was held under the auspices of the freshman class in the spring of 1909. The students taking the beginning course in Poultry Husbandry elected a committee to develop plans for the holding of the Egg Show, which was the pioneer egg show in America. Harry J. Reed, who later became dean and director of the Purdue School of Agriculture and Agricultural Experiment Station, was a member of that committee, along with several other students including Tom M. Bushnell who later became a world authority in soil survey work; D. D. Sheerin and C. L. Wedekind. During May of each year the students of the School of Agriculture taking Poultry 1 conducted an egg show which grew in size and importance. There were classes for undergraduate students in Agriculture, for other students, farmers, commercial poultrymen and produce dealers. Most of the entries consisted of one dozen eggs, the white eggs being judged separately from the brown eggs. For several years the number of exhibits exceeded 800, the eggs being spread out on tables, first in the lecture hall of the Agriculture Building and after 1925 in the pavilion of the Poultry Building.

In the mid-30's baby chicks were added to the show and greatly increased the interest in the exhibits. The Egg and Chick Show proved popular until it was discontinued in 1942 because of the outbreak of World War II and the reduced number of students in Agriculture. Because of the prevalence of respiratory diseases (particularly Newcastle disease) immediately following World War II the show was not revived.

Purdue Poultry Club

In the school year of 1912-13 students interested in Poultry Husbandry organized an undergraduate Purdue Poultry Club. This club held regular meetings during the school year and frequently had speakers from off the campus, particularly visiting poultrymen. The Club had a faculty advisor and the ups and downs of the Club were generally in proportion to the interest shown by the Club's officers and the staff advisor. In the late 1930's the Club joined in with several other college poultry clubs and cooperated in the formation of a National Collegiate Poultry Club. The National Club held an annual meeting, with a delegate from each club attending the fact finding conference of the Institute of American Poultry Industries. The

National Club published a News Letter three or four times during the academic year, and the February 1953 News Letter was known as the Purdue edition. Its cover carried pictures of the three heads of the Purdue Poultry Department (Philips, Carrick and Martin). The edition carried a picture of the Poultry Club's 22 members for the 1952-53 academic year; along with that of Dr. L. A. Wilhelm, faculty advisor to the club. The 32 page newsletter carried articles by various club members dealing with activities of the Purdue Poultry Department.

Judging Teams

Shortly after Dr. Schnetzler reported for duty in September, 1931 he organized and coached a judging team to represent Purdue at the Midwest Intercollegiate Judging Contest held each winter in conjunction with the Coliseum Poultry Show. Purdue teams usually ranked well, and one year won the contest, a Purdue student holding the record for the individual score made in the contests. The contests were not held during the period of World War II, but Purdue was again represented under the coaching of Dr. Jack Long who was added to the staff in 1955. Under his leadership in 1957 the Judging Team took first place in production judging, bringing to Purdue a beautiful trophy which has embellished the display case in the lobby of the Poultry Building, Purdue added a second trophy when the PENB award came to the Purdue team for first place in production judging in 1966.

Poultry Short Courses

In addition to the poultry courses offered in the undergraduate curriculum and the eight week Winter Course, poultry short courses were held for several years starting in the early 1920's. These courses were usually two weeks in length, with concentrated lectures and laboratory material slanted for the practical poultryman. The number in attendance varied from 20 to 45.

Figures were kept for the number of students enrolled in the undergraduate poultry courses for a ten year period which ran as follows:

1930 - 31 86	1935 - 36 95
1931 - 32 81	1936 - 37 128
1932 - 33 64	1937 - 38 171
1933 - 34 60	1938 - 39 212
1934 - 35 93	1939 - 40 256

Market News Service

With the rapid growth of the broiler industry in Indiana in the 1940s there came a demand for more prompt news regarding market prices of broilers and turkeys. Consequently as of June 16, 1949 Purdue set up a "Farm Poultry Report" which was gotten out each week in mimeographed form. A project was developed in cooperation with the Market News Service of the U. S. Department of Agriculture and a cooperative contract signed whereby a market news reported could be employed, the program being financed 50 percent by USDA funds and 50 percent by Purdue funds. Melvin L. Wilson, who had been serving in inspection work with the State Egg Board, was transferred to the extension staff as of July 1, 1949, serving in that capacity until the program was transferred entirely to USDA January 31, 1958. Mr. Wilson made extensive use of the long distance telephone to gather data to report farm prices paid for live broilers, live fowl, live turkeys and eggs at various points in the state of Indiana. He released this information daily (week days only) to Indiana farmers and the nation by means of radio news service and mimeographed material for the daily and weekly newspapers. Shortly after consummating the agreement and activating the program, a USDA teletype machine was installed in the Poultry Building to bring in the news of other markets and carry the news of the Indiana markets. At the height of the popularity of the program as many as 1200 copies of the Market News Report were mailed out twice weekly, mostly to Indiana poultry men and produce dealers; about 100 copies going out of state.

Poultry Building

The Poultry Building which had been erected in 1923-24 with funds provided by legislative appropriation was located at the south end of the 40-acre poultry farm tract. This land was immediately contiguous to the campus, and with the rapid expansion of the University following World War II the land was needed for erection of dormitories and other buildings connected with the undergraduate program, principally the coeducational and recreational gym. Consequently in 1953 the Poultry Department was requested by the administration to plan for a new poultry building in order that other University programs could expand westward. The location for the new building was chosen immediately west of the Life Science Building and

ground was broken for the erection of this building October 2, 1954. The new building provided the same number of offices and laboratories as the old building but did not contain any large class rooms because of the access to the class rooms in the Life Science Building and Livestock Pavilion close by. The building was completed by September 15, 1955, and the staff moved into the new building as the first semester got under way. The old Poultry Building was remodeled into facilities to provide for headquarters for the student housing program, the dormitory facilities being provided on the second floor; the poultry pavilion being converted into a dining room facility, the kitchen being added to the north of the pavilion. Since this remodeling was done under a grant from the Fowler estate, the building was re-named Fowler House; quite a fitting name for a former fowl house.

Poultry Farm Superintendent

The keynote to successful farm research work is the farm superintendent who is responsible for overseeing the carrying out of the research under way. The Purdue Department has been fortunate in having a series of reliable farm superintendents who were devoted to their work and got along well with their staff. By 1913 the farm had developed sufficiently to merit the appointment of a superintendent, and Albert C. Horton was employed for that position. He served until Walter W. Zurstadt took over the duties after his graduation in June, 1921. After several years (1921-25) as superintendent, his duties were taken over by his assistant, Israel Widmer, who served until Leo Cornell became superintendent in 1929. Cornell served until 1945 when he became superintendent of a local poultry farm, returning to Purdue as superintendent in 1949; serving throughout the remaining life of the Department and on into the 1970 1s.

Poultry Department Secretaries

Throughout the years of its existence the Poultry Department was fortunate in having efficient and effective secretaries, not only in the head office but in the other offices of the Department. The importance of the secretary program was indicated by the rapid growth of correspondence in the Department. Some of the early records indicate the number of letters typed and written by the office secretary for the various staff members.

Fiscal Year	Number of Letters Written
1917-18	2183
1919-20	3940
1920-23	5379
1925-26	6672

While records were not kept beyond 1926, a much more extensive correspondence developed, particularly in the extension phase of the program.

Miss Mary Sauer was the highly efficient secretary to Professor Philips throughout the formative years of the Department. She was succeeded by Helen Panther who served until 1938 when she was succeeded by Miss Sybil Neill. Miss Neill served as senior head secretary from then until her retirement in January, 1962 when the Department merged into the Department of Animal Sciences. During these 34 years Miss Neill rendered yeoman service to the Department, assisting effectively and efficiently with the correspondence, files, budgetary matters, etc.

Poultry Extension Work

At the time the poultry program got under way at Purdue University, in the early part of the 20th century, nearly all of the farm chickens were hatched and brooded by hens and the mature flock was left largely to forage for its own food supply. One of the first publications of the Department was an extension circular on "How to Set a Hen," prepared by Professor Phillips shortly after coming to Purdue. There were few purebred flocks on the farms, most of them being in the hands of the fanciers who were principally located in the small towns and around the edges of the cities. A good poultry house was the exception on the Indiana farm, and in many cases the farmers considered chickens a nuisance since they roosted in the barn or machinery shed and chose a nest in the haymow, near the straw stack or under bushes; hence the eggs were sometimes several days old when gathered and the interior quality had deteriorated greatly.

According to the USDA list of college agricultural workers, Otis Crane was appointed "Extension worker in Poultry" in 1910. He was the first extension poultryman to receive a federal appointment and carry on the extension work in addition to instructional duties. A well-developed extension program did not get under way until 1914 when Leroy L. Jones became the first full time extension poultryman on the Purdue University staff. His first objective was to

demonstrate the possibilities of good management and proper care of the poultry flock; hence the first project was the poultry flock demonstration in which the farm cooperator agreed to carry out the recommendations of the extension specialist, keep careful records and share his experiences and knowledge with his neighbors at poultry meetings. After two or three years of this project the data available clearly demonstrated that the poultry flock could become a highly profitable farm enterprise. In the summer of 1918 an intensive flock culling campaign was conducted and demonstrations were held on many farms. Records kept the week before culling and the week following culling clearly showed that it was possible to cull out the poor producers and non-layers and get just as many eggs the week following the culling work. The demonstration flocks brought a great demand for further information of feeding, brooding, housing and disease control.

In the mid 20's grow-healthy-chick campaigns demonstrated clearly that chick losses could be reduced to a minimum of 5 to 10 percent of chicks placed in the brooder house when sanitation and rotation practices were adopted. Other extension projects which followed included improvement of quality of eggs marketed and improvement of marketing methods. During the first 25 years of the extension program in the poultry industry "arrived" as an important source of farm income in Indiana, and commercial flocks of several thousand birds were soon becoming the rule rather than the exception. With the development of mammoth incubators, especially in the late teens and 1920s the poultry industry grew by leaps and bounds and calls for extension programs multiplied. The Extension Director was sensitive to this demand for additional information from Purdue and responded by adding a second extension poultryman (R. B. Easson) in 1915 to assist Jones. Easson was succeeded in 1918 by C. W. Carrick who served through 1921 (being transferred to Experiment Station) and in 1921 County Agent Paul G. Riley was called in to extension work in the Department. He was later assisted by H. W. Fitting. A third extension poultryman was added in 1922 when H. H. Kauffman was added to the staff. By means of lectures, demonstrations, exhibits and the liberal use of the press and later the message of modern scientific management was carried to the Indiana poultryman by the extension service. All of the extension men who served through the years were men with practical experience who knew how to get the message of scientific care and good business management across to the farmer and hatcheryman and poultryman.

Shortly after the outbreak of World War II the "Food for Freedom" project, of which poultry products were an important part, demanded much time of the extension staff. At that time (1942) a large share of the poultry in Indiana was in farm flocks from 50 to 500 birds. There were relatively few commercial poultrymen to meet the needs of these thousands of farm people who wanted more information about poultry. A radio program known as "Poultry School of the Air" was instituted by extension men Sicer and Wilhelm. There were 10 "lessons" broadcast at regular stated intervals and it was reliably estimated that more than 10,000 persons listened to the School of the Air. Incidentally, among those actually enrolling to receive the lesson guide book were from 16 other states and a Canadian province, but the large majority who signed up were Hoosiers. A similar school was given later on "Care and Management of Layers" with an equally large enrollment. In 1945 the extension staff initiated the third radio school on the subject "What's Behind a Good Chick". Many of the practices advocated in these radio schools were adopted. Among the practices that did receive wide adoption on deep built-up litter, roosting racks, all-mash feeding and sanitation.

State Fair exhibits were another extension tool used effectively. Poultrymen Melvin Flock, Ernest Anderson and Joe Sicer designed a full size cross section of a 30 ft. wide laying house to show good house construction (for those days) and to highlight the slogan, "Over 300, or 30." This marked the start of a real trend to larger and larger flocks.

Other State Fair exhibits stressed use of a central brooder house for efficiency, the improvement of egg quality, ladino clover for poultry pasture and the nutritional value of eggs and poultry in human diets.

Extension played an important educational role in connection with the Indiana Egg Act from the inception of that Act. When the regulation was made requiring that grade and size of egg be clearly shown whenever eggs were packaged or price advertised, extension held numerous meetings for producers, retailers and wholesalers in all sections of the state explaining the regulation and act and answering questions.

Poultry barbecuing was popularized by poultry extension men who gave numerous demonstrations on how to properly barbecue. In one year more than 40 demonstrations were given to over 29,000 people. R. L. Hogue wrote a bulletin explaining how to make a barbecue grill from a 55 gallon steel drum and how to proceed with the barbecue.

As poultry flocks increased in size, problems and needs changed. An increasing amount of extension work was done directly with larger producers and integrators. Mechanical ventilation and installation of clear span houses were recommended. Laying cages versus litter or slat floor systems became problems with which extension coped. Waste disposal, odors and public relations became major concerns of extension men.

Throughout all the years extension cooperated closely with the Indiana State Poultry Association. In the 1940's, pullorum testing and flock selection agent training schools were held annually so that the National Poultry Improvement Plan could be properly implemented in the state.

State Egg Day and the State Turkey Meeting were annual events as was the Poultry Serviceman's Clinic, all aimed at keeping Indiana poultrymen current on new developments in poultry technology, disease control and industry problems. Youth work for years required 10 to 15 percent of poultry extension time. Part of this work was with 4-H poultry production and marketing projects and involved a peak of over 5,000 4-H youth annually. There were county tours of the projects and judging of the exhibits at County Fairs.

Another important part of the work was the poultry judging program. This involved both 4-H and F.F.A. teams. County, district and state judging contests were held with the winning 4-H and F.F.A. teams going on to national contests. This program stimulated interest in the poultry industry and in Purdue University. As a result, many of the youth entered the University, some majoring in poultry.

The Junior Chicken of Tomorrow Contests held from 1953 through 1957, did much to stimulate interest among hatcheries in better bred strains of broiler breeders and to encourage youth to learn the essentials of profitable broiler production. Enrollment averaged around 150 entries per year.

To call attention to the opportunities in poultry as a career, Sicer wrote the script and directed a career movie, "Feather Your Future" which was shown throughout the U. S. and even some foreign countries.

The Junior Poultry Fact Finding Conference was a national program also aimed at educating youth on opportunities in the poultry industry. Indiana participated in this program from its start in 1954, with extension taking a leading role in selection of the 4-H and F.F.A. delegates and chaperoning them to the Conference in Kansas City. The almost universal reaction

of the junior delegates was that the trip gave them an entirely different outlook on the poultry industry. No less than 38 of the 62 juniors from Indiana later either took jobs having to do with poultry, entered Purdue to major in poultry or some other phase of agriculture.

In 1957 the poultry extension work was reorganized from a geographical basis to one of specialties since the industry had progressed so rapidly. At that time Joe Sicer was assigned the areas of health, housing and management, while David D. Jackson was assigned to the area of poultry marketing and products technology. Fortunately at that time the Department had the services of Roy E. Roberts who had been transferred from research to Extension to replace Hogue who became executive secretary of the State Poultry Association (July 1, 1957). Roberts led the extension work in the areas of nutrition and turkey production.

Regulatory Activities

Since Indiana does not have a state department of agriculture, many of the regulatory activities relating to agriculture have been assigned by the Legislature or the state executive officers to Purdue University for their supervision. One of the first of these activities in the poultry field to be supervised by a departmental staff member was the Federal/State egg grading program. Large poultry producers and certain produce dealers in the state became interested in marketing eggs under the USDA grades in the early 30's. Since E. R. Menefee was engaged in egg marketing research, he was asked to supervise these activities and check on the cooperators for the USDA. He carried this supervision in addition to his regular work until 1939 when George W. Newell was added to the staff and assisted in supervision of the application of federal grades in Indiana under the Federal-State egg grading program, until he entered military service in 1942. During 1942-43 C. S. Shaffner was shifted from instructional work to assist with the Federal-State egg grading program. When he left for service in December 1943 he was succeeded by Adam Wagner who served during 1944. His duties were taken over January 15, 1945 by Allan T. Barr who served through 1948. All of these men had carried the title of Assistant Federal-State Supervisor, while the head of the Poultry Department (Martin) was serving as Federal-State-Supervisor in addition to his other departmental duties. In November, 1948 Dr. Martin divested himself of the supervisory duty and Joe B. Wiltshire was appointed Federal-State Supervisor, under a joint agreement with USDA. Mr. Wiltshire has continued to serve in this capacity and has used the services of numerous on-the-spot inspectors to assist. The

program has grown from a small beginning of 32,460 dozen in 1932 to 17,837,580 dozen marketed under the USDA grades in 1954 and 60,571,632 dozen in 1967-68.

The egg quality research program of Mr. Menefee stimulated the interest in egg quality control and Hobart Creighton (who served as President of the State Poultry Association 1935-57) while serving as Speaker of the House of Representatives of the Indiana Legislature, sponsored a bill leading to the creation of the State Egg Board. This Egg Act was placed on a voluntary basis by the 1939 Legislature (supervised by E. W. Anderson 1939-40) and was made compulsory by the 1941 Legislature.

By action of the 1939 Legislature, the Indiana Egg Act was placed under the Director of the Purdue University Agricultural Experiment Station for supervision. He in turn assigned E. R. Menefee to the task of building the program in 1939 to 1941, at which time the newly reorganized State Egg Board under the 1941 Act recommended the appointment of Menefee as its full time executive secretary and supervisor of inspection. This action was approved by the Director of the Station and Menefee was transferred from the Poultry Department research staff to the regulatory staff of the Experiment Station in the fall of 1941. Menefee's first full time assistant was D. J. Taylor of Granger, Indiana who had served as vice president of the State Poultry Association after its reactivation in 1915. Mr. Taylor served the Egg Board as chief inspector until his retirement in 1960. Many different persons have been employed by the State Egg Board and those who served a sufficient length of time to be considered full time employees are listed in the appendix. In essence the Egg Act made it mandatory for those (other than producers) who were engaged in the wholesaling or retailing of eggs in the state to register with the State Egg Board and to handle only edible eggs. The Egg Board, through its inspection services, was authorized to cancel the registration of dealers who were found to sell eggs not up to the grade claimed or eggs which were inedible. Mr. Menefee on being appointed executive secretary treasurer of the Egg Board and supervisor of inspection in 1942 soon build up a staff of inspectors who periodically worked on wholesale and retail outlets in the state. Progressive dealers cooperated wholeheartedly in complying with the rules and regulations of the State Egg Board and the few recalcitrants were soon brought into line. Enforcement of the Act led to rapid improvement of the quality of eggs being marketed in Indiana and through the cooperation of the inspectors the merchants greatly improved their merchandising methods and facilities for handling of eggs. The Egg Board program affords an excellent example of the sequence of

events when research work leads to conclusions that may be interpreted into the trade, extension work leads to spreading this knowledge abroad, legislation making the application incumbent upon all cooperators with the utmost benefits accruing to the producer, the trade and the consumer.

Research Work with Poultry

The research program has been largely financed through the years with funds appropriated by the State of Indiana and the U.S. Congress. Hatch and Adams funds were involved in some of the early experiments, and the marketing research was expanded when Purnell funds became available. The research in other areas than marketing was heavily subsidized by Flannagan-Hope funds. It soon became apparent to commercial interests that the research under way was worthy of subsidy. From time to time financial grants were received from some fifty commercial concerns and organizations. Many times a financial grant or equipment loan or grant afforded the opportunity to carry out broader research. The donors and organizations are listed here.

American Cyanamid Company

American Dry Milk Institute

American Poultry and Hatchery
Federation

Anderson Box Co.

A.R.S. Poultry Breeding Research

Atomic Energy Commission

Bordon Company

Buckeye Incubator Company

Central Soya Company

Commercial Solvents Corp.

Cooperative Wild Life Fund

Co-ordinated Dried Egg Fund

Corn Industries Research Fdn.

Lilly Endowment Research Fund

Lederle Laboratories

Mattox and Moore, Inc.

Merck & Company

National Institutes of Health

National Science Foundation

National Turkey Federation

Oakes Manufacturing Co.

Paul Riley Memorial Fund

Charles Pfizer Co.

Pockman Manufacturing Co.

Poultry and Egg National Board

Purdue Research Foundation

Quartermaster Subsistence

DeKalb Agricultural Assn.	Foundation
E. I. DuPont de Nemours and Co.	Reynolds Metal Co.
Farm Electricity Fund (Public Service Co.)	Rockefeller Foundation
Gerber Products Co.	Seagrams Poultry Nutrition Fund
Heisdorf & Nelson Farms, Inc.	Smith Incubator Co.
Indiana Farm Bureau, Inc.	Soft Phosphate Institute
Indiana Retail Grocers Assn.	A. E. Staley Mfg. Co.
Indiana State Poultry Assn.	U. S. Dept. of Agriculture
Institute of Amer. Poultry Industries	U. S. Regional Poultry Research Lab.
Institute of Food Technologists	U. S. Public Health Service
International Baby Chick Assn. (now APHF)	U. S. Dept. of Defense
Iodine Educational Bureau	

This list may not be complete. Apologies are offered to any donors omitted unintentionally.

The first research work carried on at Purdue University involving poultry was an experiment with the use of milk in the growing diet for chicks, started in 1897 under the direction of W. B. Anderson, Assistant Agriculturist. This work was published in 1898 in Experiment Station Bulletin No. 71 and was entitled "Skim Milk as a Food for Young Growing Chickens." This experiment was repeated the second year and Bulletin 76 was published in March 1899. These were among the first experiments to prove the value of balancing the poultry diet with a high protein food substance. The Purdue AES Newspaper Bulletin No. 61, published June 29, 1898, stated "The general results of the feeding, in every way seemed to show the superior influence of the skim milk on the growth of the birds." There seems to have been quite a gap of several years before other poultry experiments were started, as Mr. Anderson left Purdue soon after completing these experiments. The records do not indicate that either Professor George Spitzer or Otis Crane started any research work with poultry, although they used live birds in their laboratory work and in the classroom.

When Professor Philips arrived in September, 1910 he went to work to get funds to set up facilities for experimental work which was carried along as a side line to the teaching activities.

It was not until July 1, 1921 that a full time Experiment Station worker² was added to the Poultry Department staff, since the experimental work prior to that date was carried on by those teachers who were devoting part time to research work. Early in the development of the research program the Poultry Department staff members developed cooperative projects with research workers in other departments; the earliest contacts being made with those in the departments of Agricultural Chemistry (now Biochemistry) and Agricultural Engineering. Subsequently cooperative work was carried on with staff members in the following departments: Agricultural Economics, Animal Husbandry, Dairy, Entomology, Agronomy, Forestry and Conservation, and Veterinary Science. Cooperation also existed with workers in other schools on the campus, including the workers in Human Nutrition of the School of Home Economics and in the Biology Department of the School of Science, as well as the Statistical Laboratory of that school.

Among the early experiments carried on under the supervision of Professor Philips were studies of incubation temperature and the frequency of turning of eggs during incubation. Some of the earliest bulletins dealing with artificial incubation were published by Purdue University. Other studies dealt with the cost of raising pullets, roasters and capons, as well as the determination of the value of skim milk, fish meal, meat scraps and tankage as supplements for grain and wheat products in the growing and laying rations. These experiments supplied ample evidence of the value of protein supplements.

Value of Soybean Meal Tested

Much of the early nutritional work at Purdue in the late teens and the 1920's was concerned with soybean meal as the main source of protein for the growing and laying rations. Experiments proved that soybean meal was an excellent and economical source of protein for both the growing chick and the layer (as well as turkeys) if properly supplemented with the essential minerals and vitamins. Experiment Station Bulletin 293, published in May, 1925 "Soybean Oil Meal in Rations for Laying Pullets" by Philips and Hauge proved to be a classic. The following statement is contained in that publication: "It has been found that soybeans or their byproduct, soybean oil meal, will give practically the same results as animal products when the ration is properly supplemented." The fact that soybeans were recognized as an excellent and

² C.W. Carrick

economical source of protein led to the major problem of proper supplements of rations composed primarily of corn and soybean meal. This led to research work on the vitamin, mineral and amino acid requirements of chickens as well as research on antibiotics and the so-called "unidentified growth factors" in an attempt to develop rations to maximize the utilization of two of the principal crops of Indiana, corn and soybeans.

Some of the early work was outstanding. For example, Hauge and Carrick (1926) were the first to show the difference between the antineuritic vitamin (thiamine) and the "growth-promoting" vitamin (riboflavin). It was shown that corn could prevent polyneuritis. Until this time, it was believed that the antineuritic and growth promoting factors were one and the same. These same workers were the first to demonstrate that the chick embryo was capable of synthesizing ascorbic acid (vitamin C).

Numerous nutrients were studied from the standpoint of requirements, deficiency symptoms and interrelationships. Some of these included thiamine, niacin, riboflavin, pantothenic acid, vitamin A, vitamin C, vitamin B₁, manganese, magnesium, calcium, phosphorus, copper, iodine and several essential amino acids. The first description of an iodine deficiency in the chick embryo was made by Purdue workers; Carrick, Creek and Hauge.

Further research has involved various heating methods required for utilization of full-fat soybeans. The effects of environmental temperature, particularly heat stress, on growth rate, feed conversion and nutrient requirements have also been investigated.

It is apparent that nearly every aspect of poultry nutrition has received attention at Purdue, but it should be re-emphasized that the main objective under the Phillips-Carrick-Roberts era was maximal use of corn and soybean meal in poultry rations.

AES Research Farm Needed

In order to carry on research work of value to the emerging poultry industry, it was essential that a poultry research farm be available. Such a farm could also house the birds needed for class work. The administration sensing this need purchased a 17-acre tract immediately west of Russell Street and north of State Street in 1909. This tract was purchased with \$5,000 from the funds of the annual appropriations to the Agricultural Experiment Station. The first buildings built on this site were two service buildings, a long brooder house, 16 laying houses and 18

colony brooder houses; most of these buildings being added in 1910-11. From time to time additional land was leased for brooding the chicks. The Legislature of 1923 appropriated sufficient funds for the erection of a poultry building on State Street, about two city blocks west of Russell Street. This building, which was dedicated in the summer of 1924, had three classrooms, eight laboratories, 9 offices and 5 other rooms for library, exhibits and storage purposes. In 1927 a judging pavilion was added on the north side of the building with funds from a special appropriation by the Indiana Legislature.

Breeding Work Gets Underway

Soon after Dr. Schnetzler was added to the staff in 1931, he started a series of far reaching experiments in breeding and physiology of the fowl. Emphasis was placed upon the inbreeding for hybridization, selection for meat qualities, rapid growth and feed efficiency. Dr. E. E. Schnetzler was the first to prove that records procured with part time trap nesting would be practically as valuable as complete records in developing a selection program for improved egg production. The breeding work was greatly expanded with the addition of Dr. B. B. Bohren in 1943 and Dr. A. E. Bell, in 1948 to the research staff. These workers were greatly aided by the graduate assistants, and in their research were the first to utilize correction for non-heritable hatching effects to increase the heritabilities of quantitative traits. Selection programs also proved the value of part-time percent egg production as a selection criterion to improve annual production. One of the objectives of the research program has been to develop biologically interpretable models which would be adaptable to the use of statistical models in analyses to increase the accuracy of extension of genetic limits (parameters) and genetic gains from selection for quantitative traits. Numerous scientific papers have been published in this area. It was early realized that because of limited facilities only small numbers could be available for poultry breeding experiments. Because of this a population genetics program utilizing both the fruit fly (*Drosophila melanogaster*) and the flour beetle (*Tribolium castaneum*) was developed. Much of the inspiration for the development of this program came from the addition of Dr. Don C. Warren, who came to the Department staff as Coordinator of the North Central Breeding Laboratory in 1949. With these laboratory insects poultry breeding programs were given a pre-run or test to determine the mode of inheritance of both egg size and egg numbers. In this way the value of recurrent reciprocal selection could be predetermined before starting a long series of

poultry experiments. The progress of this phase of research was notable, and on October 25, 1957 Director Harry J. Reed approved the establishment of a population genetics institute with Dr. A. E. Bell as its chairman. The purpose of the Institute was to stimulate, coordinate and provide continuity to an expanding research program in population genetics. The staff of the Institute was composed of seven members from the following departments: Dairy, Math and Statistics, Poultry Science and the Regional Poultry Breeding Laboratory. In 1958 USDA recognized the value of this program by assigning the pioneering Research Laboratory for Animal Genetics to Purdue in cooperation with the Institute.

The initial facilities for the lab in 1949 consisted of one room in the basement of the old poultry building. By 1952 additional room became available in the same basement to more than double the space, and it was then that the triboleum work was added. When the move was made to the new Poultry Building in 1955, expanded facilities were available in the basement. Four years later, in March, 1959, the population genetics program was provided with ample space in the basement of the new Life Science Building. The population genetics work has received, through the years, grants principally through the Rockefeller Foundation, National Science Foundation, AEC and the National Institutes of Health; through the years totaling in excess of \$500,000. Among the notable findings of the Laboratory was the first experimental evaluation of reciprocal recurrent selection in a breeding program. Other major findings have dealt with studies related to the consequence of genotype by environment interaction; the effects of artificial irradiation on genetic variation, reproductive fitness and selection response; and the effects of mating systems on genetic variation and selection responses.

Marketing Research

Research work in marketing got under way with the addition of E. R. Menefee to the staff in 1926. His early research dealt with the marketing of eggs on a graded basis with the resultant stimulus to egg production and sales on a high quality basis. Other studies dealt with cooperative shipping of eggs to the eastern markets as well as the practicability of the usage of federal standards for buying and selling eggs.

Only a few dealers in the state had been buying eggs on a quality basis. It was felt that a thorough study of buying practices would give valuable information on possible improvements in distribution methods. The objects of these investigations were to determine the influence of

standardized grades as used by a few Indiana buyers upon the prices offered the farmers for their eggs, to determine the effect of quality buying upon the production and handling of eggs on the farm, and to study other factors influencing the marketing of eggs.

It was found that farmers who sold eggs by grades were able to realize more than those who sold on a flat price. The total gain per farmer was found to be in proportion to the volume and quality of eggs delivered.

The premium offered for eggs by the buying agencies apparently has given farmers an incentive to improve their methods of production, and stimulated an increase in the production of quality eggs. As a result of these investigations egg buyers over the state displayed much interest in grade buying. Such a system has been generally adopted in the state.

During the period 1948-1955 the major contributions from poultry marketing research encompassed two areas in broilers and eggs - both concerned with the importance of marketing channels and pricing policies. During this period marketing of these products was in a transitional stage, being a mixture of several well-defined systems.

The pre-World War II period generally found eggs moving from the farm to first buyers - cream stations, produce stations, general stores and itinerate truckers -- and the direct shipper such as the pool car - or the cooperative member shipping largely to one of the egg auctions. During this period all of these methods still prevailed but an ever-increasing percentage of production began to go to market more nearly direct, thus substituting a haulage charge for the first handler. This resulted in a multiplicity of prices - or variations from the central market base price.

The same general transition in marketing channels was going on in the case of Indiana broilers. During 1943-46 it became standard practice for live poultry trucks from metropolitan areas to go directly to the farm and buy broilers on farm or nearest public scale weights. In addition, Indiana and adjacent states had many small processors who purchased limited quantities for local consumption. As broiler operations became larger, producers had to seek more outlets - or outlets capable of processing more broilers. The most prevalent system was for the broiler producer to sell his birds to a trucker-buyer who, in turn, found a processor or a live market buyer.

As producer margins shrank, the producer became more cognizant of the multiplicity of prices, the spread between farm price and processed price, grade and yield, and the costs of

moving the product to market. Much of this research information aided in crystalizing attention on the shifting market price, as well as physical market to the end of speeding the demise of many of the slower, more expensive methods with resulting savings to both the producer and the consumer.

Poultry Products Research

During the 1943 to 1946 era Bohren worked in close cooperation with Ruth Jordan of Home Economics and Dr. Hauge of Biochemistry on dried egg product quality evaluation. In 1950 a contract was signed with USDA to study the functional, physical and flavor qualities of shell eggs after storage for varying times. The Poultry Department workers were Barr, Wilson and Wilhelm and the Home Economics researchers were Vail and Jordan.

In 1955 Stadelman joined the Poultry staff to head up the work on poultry products technology. During the next seven years products research resulted in a number of M.S. and Ph.D. theses in this area of Poultry Science.

The three major areas of interest were: (a) Shell egg quality preservation and evaluation; (b) Tenderness of poultry meat; and (c) Flavor of poultry meat. These studies were in cooperation with Ruth Jordan, Gladys Vail and Grace Bennett of Home Economics.

During 1961 some interesting studies on modification of fatty acid composition of eggs and broilers were in progress. These led to two Ph.D. theses in 1963. They were: Chung, R. A. 1963. The Effect of Different Dietary Fats and Cholesterol on the Chemical Composition of the Egg and Body Tissues of the Hen. Mickelberry, W. C. 1963. The Influence of Dietary Fat on Some Components of Chicken Tissues.

The research on meat tenderness led to improved consumer products through application of research results in the processing of broilers and turkeys. Two specific areas were in scalding procedures and in aging time for dressed poultry. Egg quality research led to the development of a simple aerosol oiling device for farm use to help reduce rate of shell egg quality deterioration.

Most of the lines of work have been continued since the departments merged January 1, 1962. This is particularly true of flavor and tenderness studies.

In 1961 a microbiologist, George Banwart, was added to the staff. He quickly initiated studies on egg products but results were not forthcoming until after the departments merged.

State Poultry Association

The Indiana Poultry Association, consisting chiefly of poultry fanciers and exhibitors, was organized in Indianapolis in 1875 with members from 13 counties. According to the constitution of this Association it was formed “to encourage interest and promote the improvement in the breeding and management of poultry”. It is assumed that this Association had occasional meetings and carried out the objectives of its formation. Since relatively few farmers had pure bred poultry before 1900, it is probable that most of the members were urban and city people who kept their poultry as a hobby.

This Association remained in existence for many years but its activities are completely obscured. Undoubtedly the Association became the Indiana branch of the American Poultry Association. The records indicate that in January, 1913 W. C. Pierce was elected president of this branch.

When A. G. Philips came to Purdue in the summer of 1910 he did not wait long until he made contact with the officers of the Indiana branch. The records indicate that in 1914 the members of the Indiana branch of APA held a meeting at Purdue University. This meeting led to the formation of the State Poultry Association of Indiana, with W. C. Pierce as its first president. Because the old Association, which had become inactive, was registered with the Indiana Secretary of State as the Indiana Poultry Association, the new Association could not use the same name. It was therefore reorganized on October 3, 1919 and later incorporated on February 7, 1929; under the terms of the Indiana General Assembly “Not-For-Profit-Act,” as the State Poultry Association of Indiana.

The Association did not carry on an active program during the period of World War I. On October 3, 1919 the Association met at Purdue and elected U. R. Fishel of Hope, Indiana as president and Delbert J. Taylor, vice president. They served until 1922, when C. G. Pape was elected president. The rest of the past presidents of the Association are listed herewith.

Officers of the Indiana State Poultry Association

Presidents

1913-14 W.C. Pierce

1957-58 Robert McFarling

1914-15 S.A. Noflzger

1958-59 Floyd E. Strickland

1915-16 A.E. Martz	1959-60 Robert Schram
1917-18 (no record)	1960-61 Vere Cochran
1919-22 U.R. Fishel	1961-62 Robert C. Graham
1922-23 C.G. Pape	1962-63 John Frederick
1924-25 C.L. Manwaring	1963-64 Russell Breeden
1925-27 J.B. Carney	1964-65 Robert Riley
1927-29 R.D. Girard	1965-66 Ed Hult
1929-31 L.J. Demberger	1966-67 Ted Wasden
1931-33 W.E. McCartney	1967-68 James Schwenk
1933-35 Hale Thompson	1968-69 Richard Manwaring
1935-37 Hobart Creighton	1969-70 Cyril Salisbury
1937-39 C.F. Hickey	<u>Secretaries</u>
1939-41 Philip C. Endres	1923-25 Leroy L. Jones
1941-43 Noel Shaver	1926-27 Paul G. Riley
1943-45 Robert P. Martin	1928-29 M.A. Seaton
1945-47 Wm. W. Ullman	1930-36 Leon Todd
1947-48 Vern Steckley	1937-41 Wm. Kohlmeyer
1948-49 Ellis Lerner	1941-44 L.A. Wilhelm
1949-50 Albert Crayden	1944-48 M.V. Flock
1950-51 Charles Manwaring	1948-57 R.L. Hogue
1951-52 Arba Brutus	1957-68 J.W. Sicer
1952-53 Harold Hanlin	<u>Executive Secretary-Treasurers</u>
1953-54 Max Shufelt	1941-44 Scott Hinners
1954-55 Stanley Barker	1944-51 L.A. Wilhelm
1955-56 Merl G. Whitehead	1952-56 Henry Magnus
1956-57 Leicester H. Brown	1957-70 Robert L. Hogue

When the Association accepted the duties of Official State Agency for the National Poultry-Turkey Improvement Plan (by Act of the Indiana Legislature) the duties of the secretary became quite heavy. Consequently in 1941 the Board of Directors of the Association voted to employ a full time executive secretary-treasurer. Scott Hinners, who had served as extension

poultryman from 1936 to 1941, thus became the first full time employee of the State Poultry Association. He served until 1944 and was succeeded by L.A. Wilhelm who had been extension poultryman from 1941 to 1944. In 1948 Wilhelm was succeeded by Henry D. Mangus who served in this capacity until 1957 when he was succeeded by Robert L. Hogue; Hogue having been extension poultryman from 1948 to 1957. Previous to his appointment on the Purdue extension staff Hogue had been a successful hatcheryman at Silver Lake, Indiana and served as the Association's representative on the Indiana Livestock Sanitary Board.

By act of the Legislature in 1935 the Baby Chick Department of the Association became the official state agency for the administration and supervision of the National Poultry-Turkey Improvement Plan. Because of this quasi-judicial activity the Association and its staff have been officed continuously with the Purdue Poultry Department under an official agreement approved by the Purdue Trustees. A member of the Purdue Poultry staff has served throughout the years as the official contact representative in Indiana for the USDA; while the executive secretary of the Association has served as National Plan Administrator for Indiana. Under his supervision the Association has employed many different men through the years to serve as field men in the inspection of hatcheries and supply flocks that have been culled, banded and blood tested under the National Plan. Those who were employed for one or more seasons as inspectors are as follows: Fred c. Atkins, Albert Bade, Earl Breeden, Victor H. Bryan, Sam Colliver, Ed Dickmyer, Willies. Drockelman, Cleo C. Groh, Ronald Alan Hall, Scott Hall, Melvin L. Hamre, John Howell, Walter Hungate, Marion E. Jackson, Ronald L. Johnson, Jeff Kruse, Ronald R. Lawson, Louis J. Luzar, Robert s. Lesley, John w. Lower, J. o. Michael, James Murphy, William Pickett, Leland R. Roll, Raymond Schwamberger, Sheldon B. Swann, Joe Lee Sutton, Richard J. Runyan, Cletis Will lams, Roy L. Wann, Melvin L. Wilson, w. B. Werner, Gordon L. Walts, Lawrence Womack and Leon R. Van Wynsberghe. By the 1953 hatching season the Plan had grown to the extent that there were 10, 149 Hoosier flocks culled and 2,746,737 birds tested, for pullorum and fowl typhoid.

While the official inspection, flock culling and pullorum testing under the National Poultry-Turkey Improvement Plan was carried on by the Association, the Department assisted the program by holding flock selection and culling schools to train the Association inspectors and official testing agents, so that the program could be handled more effectively. Also, at the

request of the USDA, a member of Poultry Department staff served as official contact representative for the USDA.

At the inception of the program in 1936 William Kohlmeyer was the contact representative serving until 1941. When Kohlmeyer shifted to research duties in the Department, the Department head (Martin) became the Official Contact Representative, serving until the Department was merged into the Animal Sciences Department, January 1, 1962.

Association Name Changed

In 1955 the Association took steps to change its corporate name from "State Poultry Association of Indiana" to "Indiana State Poultry Association". The old Indiana branch of APA and its counterpart had ceased to exist through the years and failed to keep up its registration with the Indiana Secretary of State, thus making the current title of the Association available for the incorporation. Thus the former corporation which had been incorporated February 7, 1929 accepted the provisions of Chapter 157 of the Acts of the General Assembly of 1935 and on October 26, 1953 became a "not-for-profit-corporation" under the new Act.

Bluebooks Published

In 1922 the State Poultry Association initiated the Indiana Poultry Blue Book which contained a directory of poultry breeders in Indiana. The 1922 edition contained but 20 pages. The 1923 edition was expanded to 72 pages and contained numerous articles dealing with the care and management of the poultry flock. From that year on each edition has carried numerous informative articles dealing with the management of the poultry flock and hatchery. Throughout the years many thousand copies of the Blue Book have been distributed; the project being financed principally through advertising. The officers and certain committees of the Association have kept in close touch with both state and national legislation affecting the poultry industry, and the Association played an important part in securing appropriations for the Poultry Building as well as other facilities for the Poultry Industry, including the Purdue Animal Disease Diagnostic Lab in southern Indiana.

Programs in which the Association has played a very active part are those of the Poultry and Egg National Board, The National Turkey Federation and the American Poultry and

Hatchery Federation, National Broiler Council and National Egg Council; assisting in membership drives, the raising of funds for promotional work and other activities.

Regional Poultry Breeding Laboratory

In 1945 the Experiment Station directors of the 12 north central states authorized the creation of a north central regional poultry breeding committee. The chief function of the committee was to develop a poultry breeding project which could best be carried on by cooperation between the various Stations and "develop facilities and methods of testing the value of inbred lines for the production of hybrid poultry". Or. J. Holmes Martin represented Purdue at the original meeting of the committee at Chicago on August 14, 1945. The Committee recommended that a regional poultry breeding laboratory be established to test the possible combinations and utilization of the 63 or more inbred lines of chickens then available at the various experiment stations and the USDA laboratories. A regional project was drawn up and approved by the Directors in 1946, receiving the final endorsement of the USDA May 22, 1947 as "Improvement of Quality and Productiveness of Poultry through Breeding.¹¹

Early in the development of the project the Committee members realized the need for a central facility for evaluation of various crosses under a common environment. At a meeting in Chicago on May 1, 1947 the Technical Committee voted to establish a regional testing station at Purdue University; the University donating 40 acres of land for the North Central project. The first building on this land (on west Lindberg Road) was started November 7, 1949 and the first chicks were hatched in the spring of 1950. It was soon apparent that a full time coordinator was essential to supervise the project, and Dr. D. C. Warren of the Kansas State College staff reported for duty as the first coordinator in 1948. He was also appointed a professor on the Purdue University staff so that he could supervise graduate study. He resigned in 1956 to accept work as a commercial poultry geneticist and was succeeded by Dr. S. C. King, then of the Cornell University staff.

In 1959, when Dr. King was promoted to a position in the USDA at Beltsville, Maryland, he was succeeded by Dr. J. R. Carson who came from the University of Connecticut. Dr. Carson served as Coordinator until he was appointed as Professor of Poultry Science at Purdue University, effective September 1, 1962, succeeding J. Holmes Martin. Research at the Regional Poultry Breeding Laboratory and at the cooperating Stations under the guidance of the Technical

Committee members has answered many puzzling questions in poultry breeding and has led to many scientific publications; a complete list of which is given in Purdue University Research Bulletin 754, "Breeding Systems for Improvement of Productivity in Chickens", by J. R. Carson.

Poultry Science Association

Poultry Science Association met at Purdue for the 12th convention on August 16-20, 1920. It was then known as the American Association of Instructors and Investigators in Poultry Husbandry. At that time the Association was small and those in attendance from out of town were all taken care of by the Phi Delta Theta and Acacia fraternity houses, each of which could house about 30 to 35 persons. Professor A. G. Philips served as chairman of the host committee and took the leadership in establishing the Yellow Dog initiation as a part of the Association's annual meetings.

For a second time Poultry Science Association met at Purdue August 21-24, 1928, Professor C. W. Carrick serving as chairman of the host committee. Cary Hall East had just been completed that summer and most of the out-of-town guests were taken care of in Cary Hall; 378 persons registering.

For the third time the Association met at Purdue July 26-29, 1954 when Dr. J. Holmes Martin served as chairman of the host committee. The facilities of X Dorm (now Virginia c. Meredith Hall) and the Purdue Memorial Union were taxed to the fullest, with many of those in attendance (over 700) staying at local motels.

Each year Poultry Science Association at its annual meeting makes awards for outstanding contributions to the various phases of poultry science. The award for the outstanding research article published in 1942 was received by Dr. B. B. Bohren for his research in the chemistry of feather development. The award for the outstanding teacher was received by Dr. E. E. Schnetzler of the Purdue staff in 1943. The award for the outstanding extension service contribution was received by Dr. L. A. Wilhelm in 1944; by Joe w. Sicer in 1950; and by R. L. Hogue in 1957.

APPENDIX

The appendix will contain a list of the men who have served as State Egg Board inspectors and a list of M.S. and Ph.D. thesis titles and authors. Theses in other departments dealing with poultry or eggs will also be included.

JHM