move fatty substances which might have interfered with the microbiological assays. A separate series of analyses, in which the ether extraction was omitted, yielded a similar set of results. Pyridoxine was assayed with a yeast growth method.[8] Riboflavin, biotin, niacin and pantothenic acid were tested in accordance with methods published by R. J. Williams *et al.*[9] Thiamine was determined by the yeast fermentation method.[10] Ascorbic acid was measured by the technique of Evelyn *et al.*[11]

TABLE 2

COMPARISON OF VITAMINS IN MEAT,[12] WHEAT AND MATURE SOYBEANS. DATA ARE EXPRESSED AS μGM PER GRAM OF DRY MATTER

Food	Thiamine	Riboflavin	Pyridoxine	Biotin	Niacin	Pantothen
Beef round	2.1	7.5	2.6	.08	160	17.0
Pork ham	19.0	4.8	0.4	.12	63	6.5
Tenmarq wheat	7.0	1.3	2.6	.17	62	7.6
Soybean (average) ..	9.0	2.3	6.4	.61	20	12.0

[12] Data on meat taken from V. H. Cheldelin and R. J. Williams, Univ. Texas Publ. No. 4237, 105, 1942.

A summary of the averaged data obtained in two separate sets of determinations is shown in Table 1. It is apparent that both immature and mature beans of all the varieties tested contain appreciable stores of B vitamins. Comparison of the averaged data for green and mature beans of the six varieties shows with maturation an increase in thiamine and pyridoxine and a decrease in nicotinic acid. Data are presented in Table 2 for the purpose of indicating the comparative vitamin values of meat, whole wheat and mature soybeans. The vitamin values of soybeans compare favorably with wheat and with meats except that riboflavin and nicotinic acid in the beans are lower than in meat. It should be noted, however, that the niacin in immature *Soja* occurs in double the concentration found in the mature beans.

Although it is beyond the scope of this brief account to deal adequately with the evaluation of various plant materials as substitutes for foods of animal origin, it is hoped that the data offered herewith may be of aid in solving some new food problems.[13]

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OBITUARY

HAMILTON PERKINS CADY

1874–1943

PROFESSOR HAMILTON PERKINS CADY, a member of the chemistry faculty at the University of Kansas for forty-four years and chairman of the department for more than twenty years, died at his home in Lawrence, Kans., on May 26. His many years of research and teaching brought great credit to the university and much satisfaction to himself.

Dr. Cady was born on May 2, 1874, near Council Grove, Kans., but his family moved further east and his secondary education was secured at the Oberlin, Ohio, high school and the Carleton College Academy at Northfield, Minn. Early in his youth Dr. Cady became greatly interested in the subject of chemistry and made many inorganic and organic preparations in his home laboratory. Since he was unable to buy an analytical balance, he made one which was accurate to less than a milligram and made numerous quantitative analyses by its use.

Upon entering the University of Kansas as a freshman in 1894 young Cady soon became impressed with the similarity of water and ammonia. He read everything available upon this subject, and, during his senior year, laid his collection of information before E. C. Franklin—then associate professor of chemistry at the University of Kansas—with the suggestion that liquid ammonia might reasonably be expected to be an ionizing solvent. Franklin was highly enthusiastic over the idea and persuaded Professor Bailey, chairman of the department, to order a cylinder of liquid ammonia. In preparation for this investigation, Franklin and Cady constructed some vacuum-jacketed test-tubes, for such vessels were not on the market in those days. Franklin had previously agreed to go to Central America for a gold-mining company and departed before the ammonia arrived; so Cady was left to do the experiments alone. His joy was almost unbounded when he found that, although ammonia itself had a high resistance, the addition of a few crystals of potassium iodide produced a highly conducting solution. Thus, this young man who had been fearful that all chemical knowledge would be gained before he could have a part in its discovery had, as an undergraduate student, found something which the world did not know and had given chemists a second ionizing solvent.

After obtaining the bachelor's degree at Kansas in

[8] P. R. Burkholder, *Am. Jour. Bot.*, 30: 206, 1943.
[9] R. J. Williams, Univ. Texas Publ. No. 4237, 7, 1942.
[10] A. S. Schultz *et al.*, *Ind. Eng. Chem. Anal. Ed.*, 14: 35, 1942.
[11] K. A. Evelyn *et al.*, *Jour. Biol. Chem.*, 126: 645, 1938.
[13] Grateful acknowledgment is made to the Nutrition Foundation for financial assistance.

1897, Cady received a fellowship at Cornell and spent the next two years studying under the direction of Professor W. D. Bancroft. The ammonia work was laid aside, as Bancroft was interested in the phase rule and Dr. Cady later included the latter as one of his "weaknesses." Returning to Kansas as assistant professor in 1899, Cady resumed the work in ammonia and continued to do some research in this field for many years. However, he gradually took up other lines of experimentation, and the ammonia system of compounds was developed by his colleagues, E. C. Franklin and C. A. Kraus.

In 1907, a gas well was drilled near Dexter, Kans., and a local celebration was held in honor of the discovery. However, when an attempt was made to ignite the gas it would not burn. Cady and McFarland analyzed this gas and found that it was mostly nitrogen, but that it also contained 1.84 per cent. helium. Later in analyzing samples of natural gas from the mid-continent field, Dr. Cady showed that many of them contained helium and his work demonstrating the presence of helium in natural gas was of great importance in developing this natural resource.

In the later years of Professor Cady's life, his research was chiefly upon the measurement of the molecular weights of gases, or vaporizable liquids, by means of a special type of Westphal balance. This rapid and highly accurate method is of particular value in determining the purity of organic liquids.

Although Dr. Cady greatly enjoyed research, teaching constituted his real life work. The chief mark of his instruction was his thoroughness. The clear distinction between fact and theory, and the precise statement and understanding of laws and definitions were characteristic of his work in the classroom. Some of his students found such exacting scholarship a great burden, while many thrived upon it, and Dr. Cady considered himself amply repaid for his efforts by the large proportion of his students who have attained eminence in scientific fields.

In personal life, Dr. Cady was a kindly man with an abundance of wit. His amazing store of humorous stories and nonsense verse could be drawn upon to enliven a public address or, more especially, they were used to add sparkle to light conversation with his friends. His death at the age of sixty-nine seems quite untimely. It is to be regretted that another decade was not given to him.

RAY Q. BREWSTER

HAROLD NORRIS ETS

HAROLD NORRIS ETS was born at Rochester, N. Y., on June 10, 1898. His primary education was obtained in the city schools of Rochester, and in 1922, after specializing in chemistry, he received the degree of B.S. from the University of Rochester. From 1920 to 1921 he was chemist with Morris and Company, Chicago. In 1921 he became a member of the department of pharmacology, University of Illinois. He gained the Ph.D. in pharmacology in 1928.

In 1930 he went to Loyola University School of Medicine as assistant professor. From 1940 until his death he held the rank of professor of pharmacology at that institution.

Ets was a productive scholar, well known in the literature. He was highly successful as a teacher and beloved by his students and colleagues. His interest in ethics, in civic and social betterment brought him in contact with the eminent Graham Taylor and other respected social workers in the city of Chicago. His charming personality and active interest in academic and social problems had already gained him a host of friends. A distinguished career was predicted, when he was afflicted with a brain tumor which terminated his work. He died on June 25, 1943. He is survived by his wife, Marie.

H. A. MCGUIGAN

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RECENT DEATHS

GEORGE W. LITTLEHALES died on August 12 at the age of eighty-two years. He was well known during half a century of Federal service for his contributions to the improvement of the means for the navigation of American shipping.

GUSTAVUS A. ANDEREGG, cable development engineer for the Bell Telephone Laboratories, retired, died on August 15. He was seventy years old.

WILLIAM CLIFT, vice-president and secretary of Phipps and Bird, Inc., Richmond, Va., died on July 28. Mr. Clift was a leader in the activities of the Virginia Section of the American Chemical Society and of the Virginia Academy of Science.

DR. CECIL C. JONES, president and chancellor of the University of New Brunswick, professor of mathematics from 1906 to 1931, died on August 19 at the age of seventy-one years.

DR. E. P. STIBBE, professor of anatomy at the University of London, died on July 23 at the age of fifty-nine years.