activity that one finds most memorable in him. He could not regard mathematics or physics as self-contained, specialized regions of knowledge. To him each was but one field of application of principles having universal scope, and those principles seemed to him to find an embodiment in the Roman Catholic church. He was received into that church in 1930. His essentially modern scientific outlook, however, made it impossible for him to accept the Neo-Thomist philosophy, and in a little book entitled *Space and Spirit,* published in 1946, he examined the philosophy of Aquinas in the light of modern knowledge.

Whittaker received some of the highest honors that the world of science can bestow. His greatest memorial, however, will be his influence on those who were privileged to know and learn from him.

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Harry J. Deuel, Jr., Student of Nutrition

Harry Deuel was born in St. Paul, Minnesota, 15 October 1897, the son of Harry James Deuel and Myrtle Lillian Deuel. After graduation from Carleton College he served for 3 years as a junior chemist in the office of home economics of the U.S. Department of Agriculture. Here it was that his long-sustained interest in nutrition had its early beginnings. As a candidate for the Ph.D. degree, which he received in 1923, he entered Yale University and came under the inspiring influence of Lafayette B. Mendel and of a laboratory actively engaged in nutrition research. After 5 years in the department of physiology at Cornell University Medical School and 1 year at the University of Maryland, he moved in 1929 to the University of Southern California as professor of biochemistry. Twenty years later, he was made dean of the graduate school. In 1946 he was elected to the board of directors of Annual Reviews, Inc., and assumed the presidency of the board in 1953.

Deuel's contributions in research, although they touched on many problems, were sharply centered in nutrition. A few of his earliest papers, published with Arthur L. Holmes, were on the digestibility of fat, a subject to which he returned in 1946. The digestion, utilization, and metabolism of carbohydrates first engaged his interest in 1919 and received his continuing attention for 30 years. He was equally, if not even more, interested in lipide metabolism and in such borderland problems as ketosis, in which he and his associates published intensively between 1932 and 1945.

While at Cornell University, he came under the influence of Graham Lusk and participated in a number of studies on animal calorimetry, especially in relation to protein metabolism. Although relatively few of his publications pertained to the latter, the particular study in which he found the greatest satisfaction fell in this area: "A study of the nitrogen minimum." For 63 days he maintained himself on a diet which, although adequate in total calories, was virtually free of protein. Nitrogen intake and nitrogen loss were determined. This study gave excellent confirmation to the numerical value assigned to one of the fundamental base lines in protein metabolism, the level of irreducible wear and tear of the body proteins—the unavoidable metabolic waste arising from cell activity.

The B vitamins, vitamin A, and the carotenoids were of consuming interest to Deuel and, in turn, led him into various investigations that were of a practical turn and impinged upon problems of great importance to the food industry. His work on the digestibility of various fats, on the nutritional equivalence of vitamin-fortified margarine and butter, and his testimony before a committee of Congress, contributed greatly to the eventual endorsement by public authorities of β-carotene-enriched margarine as a butter substitute. These studies led also to inquiries into other food additives, especially into some that were under consideration for use by the margarine industry. It was largely his work on isopropyl and stearyl citrates, proposed for prevention of the flavor reversion of refined soybean oil, that caused the U.S. Food and Drug Administration to permit the inclusion of these citrates in margarine.

Deuel's proof that the intermediary metabolism of sorbic acid is identical with that of caproic acid, and that it is of lower toxicity than benzoate, laid a solid foundation for the introduction of sorbic acid as a fungistatic agent by the food industry, especially in the packaging of cheese. As a tribute to the value of his work to the dairy industry, he received the Borden award of the American Institute of Nutrition in 1949. An enduring monument to a lifetime of devoted work may easily prove to be his authoritative and comprehensive two-volume publication, *The Lipides.* He was struggling to finish the third and final volume at the time of his death.

By his many friends, Harry Deuel will be remembered for the warmth of his friendship, his generosity of character, and his boundlessly enthusiastic and optimistic outlook. To his students and associates he had a very strong sense of loyalty. His interest in the many medical students and graduates who came under his influence was quite unusual. For many years he and Mrs. Deuel made it a practice to entertain at dinner the entire first year class of medical students. This was done in small groups throughout the year and was supplemented by similar activities, such as picnics and dinners, for the graduate students. In a large university, such social contacts of students with members of the faculty tend to be few indeed, although it may be pointed out that personal associations of this sort prove to be among the most treasured memories of a student.

In December 1954, with the onset of osteogenic sarcoma, he was obliged to undergo a hemipelvectomy. With characteristic optimism and remarkable fortitude, he endeavored to carry on as usual. Under a Fulbright fellowship he journeyed to England and the continent for a year of lecturing and further study, but, overcome by the advance of the disease, terminated his fellowship several weeks earlier than he had planned and returned to his home. He died on 17 April, a few hours after being elected to the presidency of the American Institute of Nutrition.

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