ciplines necessary for solving the problems. As botanical research advances larger generalizations are reached which in turn solve more practical plant problems and throw more light on the nature of life itself.

These philosophical writings give one the impression that the scientific mind shows certain immaturity as against the maturity of the philosophical mind. The botanist writes his story of plants as far as he can on the basis of established facts and laws; he struggles to add to known laws and facts about plants so that the true story may be continued; but he always recognizes that the complete story can be written, if ever, only after an enormous amount of additional research. The philosopher seems to demand the complete story, although most of it is a fairy tale.

One gets the impression from these philosophical writings that the main interest of scientists is improving practice. It is now rather generally conceded not only by scientists but by thinking practical men that the quickest and surest way of solving practical problems is to establish basic principles that underlie practical problems.

Then may I say in closing that the main aim of botany of the future is not the development of better methods for plant production and utilization of plant products, for these will come as an inevitable result if the study is rightly conducted. The main aim is the formulation of a system of knowledge of plants based on experimentally established facts—if you please, a factual philosophy of plant life.

OBITUARY

RAEMER REX RENSHAW

THE death of Dr. Raemer Rex Renshaw on September 23 in New York City saddened his many friends and colleagues. As senior professor of organic chemistry at New York University since 1924, he was well known and respected for his personal and intellectual qualities. His passing came as a sad loss to his university and to American chemistry.

Raemer Rex Renshaw was born in Sierraville, California, on August 31, 1880. In 1902 he was graduated from the University of Oregon with the bachelor of science degree. He received his master of science degree from the same institution the following year, while holding the position of instructor. In 1904 he left Oregon to become university fellow at Columbia University, and later was granted the degree of doctor of philosophy by that university, in 1907.

After completing the work for his doctor's degree he continued his career of service to American chemical education with professorships successively at Wesleyan University, Iowa State College, Harvard University and, since 1920, at the chemistry department of New York University at University Heights in New York City.

During the world war, Dr. Renshaw held the rank of captain in the Chemical Warfare Service. He was active in the work of scientific societies as chairman of the Organic Division of the American Chemical Society in 1924, chairman of the New York Section in 1929, and secretary of the Chemistry Section of the American Association for the Advancement of Science during the period 1929–1931.

His researches were reported in a large number of publications and covered, among others, the following topics: Aminophthalic acids; lecithins; cholin and betaine and their sulfur, arsenic and phosphorus analogues; diglycerids; trimethylarsine selenid; carbohydrates; dyes containing the furane ring; onium compounds; acetylcholin and its physiological functions.

Dr. Renshaw's patient understanding of students, his inspiring encouragement of his younger associates and his general kindliness will long be remembered by those who knew him.

H. G. LINDWALL

NEW YORK UNIVERSITY

JOHN ORR HAMILTON

PROFESSOR JOHN ORR HAMILTON, for twenty-nine years head of the department of physics in the Kansas State College of Agriculture and Applied Science, died on August 9, 1938, from an attack of angina pectoris. Though he had been relieved in part from institutional responsibility, his death came as a sudden shock to a host of friends among the faculty, students and alumni.

Professor Hamilton was born at Princeton, Indiana, on September 4, 1867. Following teaching experience and study elsewhere, he was in 1900 graduated from the University of Chicago, having given special attention to mathematics and physics. He was first connected with the Kansas State College in 1901, going there as assistant in physics. For several years the department included electrical engineering, and Professor Hamilton's interest was always strong in the everyday application of physics to industry, including agriculture and the household. He was the author of a text on "Physics of the Household," a "Laboratory Manual for Engineering Physics" and "Weather Studies."

In 1912 radio station 9YV was licensed, and the physics department began a daily broadcast of the weather reports. This was in Morse code and available to any who could read it, and is believed to have been the first regular radio weather service inaugurated. During the world war, Professor Hamilton directed the training of men in signal service work.

Professor Hamilton was an excellent teacher and upheld the highest educational and ethical standards in respect to teacher effort and student response. His interest in young men was manifested by his fostering attitude toward college athletics. He was the faculty representative in college athletic conferences and chairman of the Athletic Board. He supported the highest standards of intercollegiate athletics and regarded games as sports rather than business enterprises.

Contacts with students in their academic, athletic, financial and organized capacities gave Professor Hamilton keen insight into and sympathy with their various institutional activities, and he was highly esteemed by students as well as the faculty. In a final substantial act he showed his interest in them by leaving a bequest of $6,000 for the student loan fund.

J. T. WILLARD

KANSAS STATE COLLEGE,
MANHATTAN

RECENT DEATHS AND MEMORIALS

J. E. OSTRANDER, from 1897 to 1928 professor of mathematics and civil engineering at the Massachusetts State College at Amherst, died on October 19 at the age of seventy-three years.

DR. JOHN ROBERTS CAULK, professor of clinical genito-urinary surgery since 1914 at the School of Medicine of Washington University, St. Louis, died on October 13 at the age of fifty-six years.

THE first of a series of six paintings of pioneers of American medicine, to be prepared for the American College of Surgeons, shows the surgeon Dr. William Beaumont with Alexis St. Martin, half-breed trapper, who was the subject of his study of the digestive process. Other pictures, all painted by Dean Cornwell, of New York, will show Ephraim McDowell, who performed the first successiful abdominal ovarian operation; Dorothea Lynde Dix, crusader for good treatment of the feeble-minded and insane; Dr. Oliver Wendell Holmes, pioneer in combatting puerperal fever; Crawford W. Long and William Thomas Greene Morton, pioneers of anesthesia, and Major Walter Reed, conqueror of yellow fever. It is planned to exhibit the paintings at medical centers throughout the country.

SCIENTIFIC EVENTS

THE SALMON FISHERIES OF FRASER RIVER

THE International Pacific Salmon Fisheries Commission, established under the treaty of 1937 between the United States and Canada to regulate the sockeye salmon fisheries of the Fraser River, has now under way a program of scientific investigations, with headquarters at New Westminster, B. C.

Its staff has designed and is using a tag to mark migrating sockeye salmon, which will be of interest to the many who use such tags to study the biology of fish. It is similar in form and attachment to that used in striped bass investigations by Merriman and by others. Two celluloid discs are used, held on opposite sides of the back of the fish by a nickel pin run through the firm tissue below the last rays of the dorsal fin. One disc has a number and the address of the commission printed on the side next the fish. The discs differ from previous tags in their color and eye-like pattern, adapted as shown by experiments to be most readily seen under the conditions met by migrating salmon. A white circular tag, 13.5 mm in diameter, has a central round red spot 7 mm in diameter. The white contrasts with the red color of the spawning sockeye, the red in a white field with its silvery condition as it approaches the river. The pattern attracts attention of observers quickly, and can be seen after the fish itself has been lost to sight. It should be plainly visible on the spawning grounds.

The use of both pattern and color seems to be fortunate, judging by its initial success. Returns have been unusually high, over 50 per cent. of the first lot of thirty having been returned within three weeks, prior to the beginning of the heavy fishery. The forthcoming survey of the spawning grounds should recover more.

This tag is designed to do two things. One is to follow the course of the fish through the commercial catch and to connect the particular "run" of fish tagged with its particular spawning grounds. As far as known, no intensive work to this end has been done on Pacific salmon. The second is to determine the percentage of fish which escape the commercial catch and reach the spawning grounds. In other words, to determine the population on the spawning grounds.

This is not a new method of estimating populations, other investigators on other species having proposed it for use in lakes, etc., and its use is common in marine investigations to show the "intensity" of a fishery.

In the present instance it follows an attempt, over many years, by officers of the Canadian Department of Fisheries to estimate the escapement to particular spawning grounds. The use of tags may, if successful, make such estimates more accurate. If, for example, a thousand tagged salmon are released on a spawning ground, and only five hundred are visible, any count of untagged fish must be correspondingly multiplied. The count of all fish must then be multiplied by two