

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 successful 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 to 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 for-

unate, 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

to give an approximation to the numbers of fish actually present. It is hoped to check such approximations by counting all fish over a weir, where such can be built.

If it proves possible to segregate the run of sockeye salmon of a given race in the commercial catch and if the proportion escaping to spawn may by this or similar methods be determined, the total numbers of salmon in the particular run of that race could be known. Naturally, this ideal will be difficult of attainment, first because of the confusion of races in the commercial areas, and second, because the proposed, as well as other, methods of estimating the escapement are still unproved. The goal, a separation of the several distinct strains or races of salmon and a knowledge of the fluctuation in numbers of each, is the same as that which in modern fisheries science is recognized as indispensable to regulation, a statistical history of the relation of yield to reproduction.

The tag and its application have been developed by a staff consisting of W. F. Thompson, R. E. Foerster, W. E. Ricker, J. L. Kask, C. E. Atkinson and L. E. Whitesel.

A NEW OBSERVATORY TO STUDY THE SUN'S RADIATION

ON a mountain top in New Mexico in one of the driest, clearest spots in the United States, the Smithsonian Institution is now setting up a new observatory to observe the daily variations in the radiation of the sun.

At this observatory will be installed the apparatus used by Smithsonian observers at the observatory on the summit of Mt. St. Katharine on the Sinai Peninsula, which was closed last year. In many respects an ideal site for eastern hemisphere observations of solar radiation, the isolation of the spot and the extremely forbidding environment led the institution to close it after a very successful record of four years.

Alfred F. Moore, who had been in charge of the Mt. St. Katherine station, returned to the United States this spring and almost immediately, under the direction of Secretary Charles G. Abbot, started his search for a suitable American station. The ideal spot is one in which there is a minimum of cloudiness and rainfall, together with a very clear atmosphere usually to be attained only at great heights.

Mr. Moore found an excellent combination of these conditions on the 8,000-foot-high peak of Burro Mountain near the village of Tyrone in extreme southwestern New Mexico. Meteorological records show that this site has approximately 10 inches of rainfall a year. This in itself is small, but there is the additional advantage that it is nearly all concentrated in the months of July, August and September. A cloudy day is an extreme rarity at any other season. In contrast to

most of the stations occupied by the Smithsonian Astrophysical Observatory, this is a very pleasant spot, according to Secretary Abbot, who has just returned to Washington after inspecting the progress of the work. There are small trees, shrubbery and flowers on the mountain top. There is an excellent source of water only two miles away, and it is planned to build a large reservoir tank on the summit itself.

The observing instruments, including some of the most delicate and sensitive known to astronomy, will be located in a horizontal tunnel extending back for approximately 30 feet into the mountain. The sunlight will be reflected into this tunnel and upon the measuring instruments by a mirror. The excavation of this tunnel is now completed. Living quarters are being built for the observers and their families.

The work of the observatory, in common with that of the other Smithsonian astrophysical stations, will be to determine daily variations from the solar constant—the average amount to which a black body one cubic centimeter in dimensions would be heated by the rays of the sun falling upon it in a minute, providing it were located at the mean solar distance and at the outer limits of the earth's atmosphere. In actual practice, of course, no such direct measurement can be made, but the same result can be obtained with the use of extraordinarily delicate measuring devices when proper allowance is made for the effect of various thicknesses of atmosphere on sunlight passing through it.

The Smithsonian Institution has gathered a large number of such daily records. They show clearly that the heat and light output of the sun is constantly fluctuating and that these fluctuations follow periodic curves. There is reason to believe that these fluctuations, in turn, are a major element in the fluctuations of temperature and precipitation on earth. The subject, however, is complicated and constant observations, together with a constant effort to make them more and more accurate, are essential.

SCIENTIFIC LECTURES OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA

THE program for evening scientific lectures of the College of Physicians of Philadelphia for 1938-1939 is as follows:

October 12.—James M. Anders Lecture XIII. Homer F. Swift and Alfred E. Cohn, members of the Rockefeller Institute for Medical Research. "Cardiac Diseases: Infectious and Non-Infectious, Course and Consequences."

November 2.—Edward A. Strecker, professor of psychiatry, University of Pennsylvania. "Should Psychoanalysis Be Purged?"

December 7.—Thomas Dent Mütter Lecture LI. William Boyd, professor of pathology and bacteriology, University of Toronto; pathologist, Toronto General Hos-