be given at three o'clock on Sunday afternoons, in the auditorium of the Academy's Museum in Golden Gate Park, San Francisco, as follows:

October 1. The Experimental Method in Animal Psychology: Dr. Samuel J. Holmes, professor of zoology, University of California.

October 8. Equilibration of Animals and Aviators: Dr. Samuel S. Maxwell, professor of physiology, University of California.

October 15. The Use of Animals in the Diagnosis and Prevention of Disease: Dr. Carl A. L. Schmidt, associate professor of biochemistry, University of California.

October 22. Animal Experimentation: Dr. T. D. Beckwith, professor of bacteriology, University of California.

October 29. Animal Foes of the Human Body and How to Control Them: Dr. Charles A. Kofoid, professor of zoology, University of California.

November 5. What Animal Experimentation Has Done for Childhood: Dr. E. C. Fleischner, clinical professor of pediatrics, University of California.

These lectures are all masters in their respective subjects. What they have to say will not only be authoritative and up to date, but will be presented in a popular and convincing manner. These lectures, which will be illustrated, are offered by the California Academy of Sciences, free to the public, as one of the several educational activities in which it is engaged.

THE SILLIMAN LECTURES OF YALE UNIVERSITY

THIS year's Silliman Memorial Lectures at Yale University will be delivered by Dr. August Krogh, professor of zoophysiology in Copenhagen University. Professor Krogh has taken for his general topic "The Anatomy and Physiology of Capillaries," and will speak on the following subjects on the dates given:

October 5: "The Distribution and Number of Capillaries in Selected Tissues. The Evidence of Their Independent Contractility.

October 6: "The Histological Structure and Innervation of the Capillary Wall."

October 9: "The Reactions of Capillaries to Stimuli. The Hormonel Control of Capillary Circulation."

October 10: "The Mechanism of Some Capillary Reactions, especially in the Human Skin."

October 11: "The Exchange of Substances through the Capillary Wall."

October 12: "Some Problems of Capillary Physiology and Pathology."

Professor Krogh has a large amount of entirely new material to present which should prove of importance to all those branches of science which concern the circulation of the blood. At the time of the award of the Nobel Prize to Dr. Krogh in 1920 his work on capillaries was regarded as only beginning, and since that time his researches in this field have been pushed ahead with rapidity and success. The results of these researches will be made public for the first time in the Silliman lectures.

In a recent article in *The Scientific Monthly*, Dr. W. R. Miles, of the Nutrition Laboratory of the Carnegie Institution of Washington, gave the following résumé of Dr. Krogh's career to date:

Dr. Krogh is scarcely forty-five years old. He received his educational and scientific training in Denmark and is a son of whom that country can well be proud. For a number of years after receiving his degree and serving as laboratory assistant to Professor Christian Bohr no suitable teaching or research position opened to him in Denmark. However, he refused to accept such a position in any other country. He made two expeditions to Greenland, the first to study the tension of carbon-dioxide in ocean water and the second to investigate the respiratory metabolism of the Eskimos. Thus, without any laboratory facilities, he literally plunged into research. A study on the expiration of free nitrogen from the body was recognized as so important as to receive the Seegen Prize of the Imperial Academy of Sciences in Vienna. He was appointed a lecturer in physiology under the science faculty of the Copenhagen University in 1908 and was provided with a small laboratory in the fall of 1910. It is in this laboratory that most of his scientific work has been done. A visitor will gain the impression that his laboratory facilities are rather meager as regards both room and equipment and that he does not have adequate assistance. Certainly it would be a most worth while investment to provide such a man with all the assistance he can comfortably direct. His researches have covered a wide range and have been singularly concise and complete. He is a master technician, a

scientific explorer by nature, a skilled interpreter and critic of scientific facts, and he has much facility in writing. Most of his recent work is published in English. About his personality there is a quiet humility which strongly attracts advanced students and begets confidence in Dr. Krogh's scientific results. His mental attitude can well be illustrated by a sentence from a recent letter to an American colleague: "The Nobel award came as a perfect surprise to me and when it was first told me by a journalist, I declined to believe it because, in my opinion, my work on the capillaries was so far only a promising beginning."

APPOINTMENTS AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

THE Massachusetts Institute of Technology announces a number of additions to its faculty and instructing staff. Chief among these are the appointments of W. Spencer Hutchinson to the professorship of mining, Dr. G. B. Waterhouse to the professorship of metallurgy and Dr. Frederick G. Keyes to be acting head of the department of chemistry.

Professor Hutchinson graduated from the institute in 1892, after having studied in the civil engineering and mining departments. During his career he has examined and managed a number of mining properties in the United States. He is known as an authority on mine valuation and taxation, and has done much professional work in Mexico, South America and Australia. For several years he has been consulting engineer for the Vanadium Corporation of America, which has extensive mines in Peru. He has been a consultant mining engineer in Boston.

Professor Waterhouse was born in England forty years ago, and educated at Sheffield, where he received the degree of bachelor of metallurgy. He came to the United States in 1900, and later studied at Columbia University, where he obtained the degree of doctor of philosophy in 1906. He is the author of numerous original scientific papers and the translator of a great number of French and German works on metallurgy. His specialty is the metallurgy of iron and steel. From 1908 until the present time he has been technical director of the Lackawanna Steel Company in Buffalo.

Professor Keyes, the acting head of the department of chemistry, is a graduate of Rhode Island State College and of Brown University. During the war he was stationed at Puteaux as director of the Research and Control Laboratory, with the rank of major in the A. E. F. In 1920 he was made director of the Research Laboratory of Physical Chemistry at the institute, following the resignation of Professor A. A. Noyes. A short time ago Professor H. P. Talbot resigned as head of the department of chemistry to become dean of students on the retirement of Professor Burton, and Professor Keyes was appointed as acting head of the department until Professor Talbot's permanent successor is chosen.

SCIENTIFIC NOTES AND NEWS

AT the Hull meeting of the British Association, Mr. F. E. Smith, director of scientific research at the Admiralty, and secretary of the Physical Society, was elected one of the general secretaries, to succeed Professor H. H. Turner, of the University of Oxford. Professor J. C. Shields and Professor J. C. McLennan presented the invitation to meet in Toronto in 1924, which was accepted. It was announced that a grant of about $50,000 would be available for the meeting and for defraying the expenses of visiting members.

PROFESSOR J. H. JEANS, secretary of the Royal Society, who was professor of applied mathematics at Princeton University from 1905 to 1909, received the doctorate of science from Oxford University on the occasion of his delivery of the Halley lecture.

PROFESSOR E. T. WHITTAKER, formerly royal astronomer for Ireland and secretary of the Royal Astronomical Society, has been elected a foreign member of the Reale Accademia dei Lincei.

THE honorary degree of doctor of science has been awarded by the University of Leeds to Professor A. F. Holleman, of the University of Amsterdam.

IN recognition of the notable services rendered by Dr. Bernhard E. Fernow to forestry in America, the trustees of Cornell University have given the name Fernow Hall to the uni-