symposium on "The care of mammal material and records," which will be so conducted as to be of general interest. Opportunity will be offered to visit the National Zoological Park and other places of interest to members. One evening will be devoted to a dinner or banquet, and other social features may be arranged. Headquarters will be at the Hotel Harrington, 11th and E Streets, Northwest, three blocks north and one block west of the New National Museum.

THE third National Colloid Symposium will be held at the University of Minnesota on June 17, 18 and 19. The previous meetings have been very successful, having brought together two or three hundred chemists from all over the United States and Canada. This occasion bids fair to surpass the previous meetings. Dr. Herbert Freundlich, distinguished author of the classic "Kapillarchemie," will be the guest of honor. Only twenty papers will be presented, making possible an allotment of forty minutes as well as ample time for discussion. Titles for the program should be sent to Harry N. Holmes, chairman of the committee on the chemistry of colloids, Oberlin, Ohio.

THE date for the meeting in England of the American Institute of Chemical Engineers has finally been decided upon. Tentative reservations have been made on steamers reaching Liverpool, Sunday, July 12. The program consists of meetings with various British societies and excursions from July 13 to 23, with a three weeks' trip on the continent for those who can spend additional time in Europe. Those contemplating taking the trip are asked to communicate immediately with J. C. Olsen, secretary, 85 Livingston St., Brooklyn, N. Y.

THE next meeting of the International Research Council will be held at Brussels on July 7, 1925, and the days following.

AN exhibit was opened at the State Museum in Albany, N. Y., on February 12, showing the restoration of a forest of the Middle Devonian period, reconstructed from fossil remains of trees uncovered at Gilboa, where once an inland sea covered what is now the major portion of the Mohawk River Valley. The exhibit was dedicated as a memorial to Sir John William Dawson, former principal of McGill University, Montreal, who in 1869 and 1870 worked out the structure of fossil tree trunks uncovered by a spring freshet along the Schoharie River near Gilboa.

THE Edison Lighting Institute, containing exhibits depicting the history and development of the electric light, with laboratories for testing and demonstrating modern illumination devices, was dedicated at Harrison, N. J., on February 11. The institute includes a Bureau of Experts to assist in the development and improvement of home, commercial, industrial and street lighting. The exhibits cover every phase of lighting development since the invention of the first electric lamp by Thomas Edison in 1879.

DR. LEO HENDRIK BAEKELAND, honorary professor of engineering in Columbia University, has contributed $10,000 towards the endowment fund of the American Chemical Society.

A GIFT of £1,000 for research has been made to the alumni association of the University of Edinburgh by Dr. Charles Cooper, of San Francisco, a graduate of the university.

THE University of Manchester, England, has received from the General Electric Company a gift of an X-ray spectra apparatus for use in the department of physics.

PRINCESS MARIE, of Greece, has given the French Geographical Society more than 50,000 books on geography which belonged to her father, the late Prince Roland Buonaparte, who was for nearly fifteen years president of the society.

A GRANT of not less than £65,000 has been made by the Cotton Reconstruction Board, England, to the British Cotton Industry Research Association. The money is part of the funds raised by the Wartime Cotton Control Board, and not expended by that body in relief of the operatives by the time the mills resumed running after the war.

THE electric furnace equipment of the Bureau of Mines was completely destroyed by the recent fire which burned the old Mines building at the University of Washington. The bureau's equipment was housed in the building. It is expected that Congress will provide at this session for the replacement of the transformers, the switchboard and the other electric equipment which is essential to the work assigned to the Seattle Experiment Station.

UNIVERSITY AND EDUCATIONAL NOTES

THE University of Michigan has asked the state legislature for $3,192,100 for additional buildings and grounds, which includes $900,000 for a new museum and $465,000 for a modern observatory.

SIX laboratories and a research room in the Medical School of the University of Pennsylvania were swept by fire on January 24. The loss was estimated at $25,000.

PROFESSOR JOHN MALLET PURSER has made a gift of £10,000 to be administered for the benefit of the

School of Physic and the Schools fo Experimental and Natural Science of the University of Dublin, by a committee consisting of the heads of three of the scientific departments of the college.

THE will of the late D. A. Dunlap includes bequests of £50,000 to Victoria University, one of the colleges of the University of Toronto, and £20,000 to the University of Toronto for medical research.

DR. SUSUMU NUKATA plans to establish a medical college for women in the suburbs of Tokyo. The school will have a capacity of about 700 students and will be opened this spring.

DR. R. A. EMERSON, professor of plant breeding in the College of Agriculture, has been elected dean of the Graduate School of Cornell University, in the place of Dr. R. H. Keniston, who has resigned.

DR. SAM F. TRELEASE, formerly assistant professor of plant physiology in the University of Louisville, has been appointed associate professor of botany in Columbia University.

DR. H. C. TRIMBLE has resigned his position as assistant professor of chemistry at the University of North Dakota to become assistant professor of biochemistry at the Harvard Medical School.

DR. MARK R. EVERETT, a teaching fellow in the department of biological chemistry of the Harvard Medical School, has been appointed professor of physiological chemistry and pharmacology in the Medical College of the University of Oklahoma.

DR. E. M. SPIEKER has been granted leave of absence from the U. S. Geological Survey to give a course of lectures in geology at Ohio State University.

MAJOR R. V. SOUTHWELL is leaving the National Physical Laboratory of England in July to take up a lectureship in mathematics at Trinity College, Cambridge, where he will occupy the post formerly held by Professor G. I. Taylor until he became Yarrow professor to the Royal Society.

AT the University of Paris, M. Blaise has been appointed to the chair of organic chemistry to take the place of Professor Haller, who has retired; M. Tiffeneau to the chair of chemistry to take the place of Professor Joannis, retired, and M. Bougault to the chair of analytical chemistry to take the place of M. Villiers, also retired.

DISCUSSION AND CORRESPONDENCE

THE UNDERTOW MYTH

WHAT is the undertow? Repeated inquiry fails to discover any definite account of it, although among summer visitors to the seashore it is generally reputed to be a treacherous current that creeps or sweeps seaward along the bottom beneath the surf, and drags the unwary bather out beyond his depth where he is in danger of drowning. It is usually not thought to be of constant and universal occurrence, but to be stronger at certain times and places than at others; but when and where it does occur it is popularly believed to be a continuous seaward underflow, or bottom current of menacing strength.

The reputation that the undertow enjoys fails for two reasons to lead to a conviction of its reality. First, because the accounts of a supposed bottom current do not clearly distinguish it from the temporary seaward movement or wave-ebb, which normally takes place in an inter-crest trough, involving the whole depth of water from surface to bottom, but which in a few seconds is reversed into an equally temporary shoreward movement, or wave-flood, in the next inter-trough crest, where it again involves the whole depth of water: both of these temporary currents having greater velocity at the surface than at the bottom. Second, because the occurrence of an active and persistent seaward underflow at the bottom demands the occurrence of a correspondingly active and persistent shoreward flow at the surface; and except under doubly specialized conditions of wind direction and shore configuration, no such shoreward surface flow is to be expected.

The following sequence of events may ordinarily be noted: A surge of water, impelled by the plunge of a surf crest, rushes up the gentle slope of a beach, and is shortly followed by a reflux or seaward return of the same volume of water, R, Fig. 1: this down-slope reflux may be continued a short distance beneath the advancing front of the next surge, S; but it can not continue very far, because each surf-plunge by which the surge is impelled up the beach, is felt to the bottom, as may be known from the manner in which it stirs up a short-lived cloud of sand. An inexpert bather may be nearly swept off his feet by the reflux, as it swirls around his knees; and flustered mentally if not physically by the next inrushing surge, which foams waist-deep around his body. Then after a moment of still-standing water, he will be drawn outward again by the tide-like ebb[1]

[1] Waves and tides are so truly homologous that either of them may be described in terms of the other. Thus, a wave crest is high water, and the shoreward orbital water movement over the crest is flood tide; similarly, a wave trough is low water, and its seaward orbital movement is ebb tide; the front of a wave is rising tide, the back is falling tide; slack water, or the condition of no horizontal movement during the rise or fall of the tide has no corresponding term for waves, although the corresponding behavior in a wave is easily recognized. The