reau of Chemistry in 1907, and since 1925 has been assistant chief.

THE Accademia dei Lincei of Rome, founded in 1603, has received an annual donation of $4,275 from the Rockefeller Institute for the purchase of scientific periodicals.

THE 250,000th Leitz Microscope has recently left the works. It has been a traditional policy to give each 50,000th microscope to an institution or individual responsible for the development of science. These microscopes, which represent milestones in progress, have been presented as follows: The microscope bearing serial No. 50,000 to the German Tuberculosis Sanatorium in Davos, Switzerland; the microscope No. 100,000 to Dr. Robert Koch, in Berlin; the microscope No. 150,000 to Dr. Paul Ehrlich, in Frankfurt; the microscope No. 200,000 to Dr. Martin Heidenhain, in Tübingen; the microscope No. 250,000 to the Institute for Tropical Hygiene, in Hamburg.

SURGEON-GENERAL HUGH S. CUMMING, U. S. Public Health Service, has arranged through the deputy minister of health of the Dominion of Canada for a board of officers of the public health service to visit Montreal to make an intensive survey of the typhoid situation in that city, and to secure the facts as to the source and extent of the outbreak. The board will secure such information as might be needed to enable it to submit recommendations to prevent the spread of typhoid from Montreal into the United States. The officers detailed on the board are Surgeons Leslie L. Lumsden, James P. Leake and Clifford E. Waller, and Sanitary Engineer H. R. Crohurst, all men of experience as sanitarians in the public health service.

THE work of the branch laboratory of the Bureau of Entomology, Department of Agriculture, at Tallulah, La., has been seriously hampered by the Mississippi flood, according to a statement issued by the department. The substance of the announcement follows: A report received from this station says, in effect: "We are very busy salvaging things. . . . Evidently our air field will be under water for a long time yet, possibly a month, but the water has fallen enough so that we are able to start moving out our dusting machinery. . . . All electrical equipment is, of course, ruined, but the remainder of the machinery has not rusted much. Delicate parts are ruined. . . . There are two areas near here which were not overflooded, owing to protection from small private levees, and we think we can soon get started in these areas on our important research work, especially the hopper. One stretch of deep water will probably have to be crossed by boat all summer. . . . All experiments south of Tallulah will have to be reached by boat for a long time, as the highway there is under ten feet of water in some places yet." Another laboratory of the bureau, situated at Baton Rouge, La., is on high ground, not affected by the flood, and none of the experiments in progress there have suffered.

UNIVERSITY AND EDUCATIONAL NOTES

THE cornerstone of the new teaching hospital of the University of Pennsylvania's Graduate School of Medicine, to be built at a cost of $2,000,000, was laid on June 14. In conjunction with the remodeled Polyclinic Hospital buildings, the new plant will completely replace the former Medico-Chirurgical, Polyclinic and Diagnostic Hospital plants, which have become merged as parts of the Graduate School of Medicine.

THE Medical College of Virginia, Richmond, as a residuary legatee, will receive from the Martha Allen Wise estate approximately $130,000 for the care and treatment of patients at the St. Philip Hospital, a large modern colored institution owned and operated by the college for teaching purposes.

THE Eli Lilly and Company of Indianapolis have recently given to the University of Kansas School of Medicine a research fellowship for the special study of hypertension, under the supervision of Dr. Ralph H. Major, head of the department of internal medicine. The fellowship amounts to $1,800 a year and was recently given to Mrs. Vera Johnsmeyer Jones.

THE University of Edinburgh has received a gift of £40,000 from Mr. Thomas Cowan, a shipowner of Leith, to assist in furthering the success of the scheme for the establishment of a residential house for male students attending the Edinburgh University. Mr. Cowan's previous gifts to the university, amounting to £30,000, are being applied to provide a hall of residence for students, which is to be called Cowan House.

DR. G. CARL HUBER, dean of the Graduate School of the University of Michigan, has been appointed to succeed the late Dean Alfred H. Lloyd.

DR. ELMER A. HOLBROOK, for the past five years dean of the School of Mines and Metallurgy at the Pennsylvania State College, has resigned. Dean Holbrook is to become dean of the combined engineering and mining school at the University of Pittsburgh.

ROLLAND M. STEWART, professor of rural education, has been appointed director of the Agricultural Summer School of Cornell University, to take office after the close of the school this summer, which will be under the direction of Professor George A. Works, who will next year become dean of the Library School of the University of Chicago.

NEW appointments at the Medical College of Virginia, Richmond, include Dr. William B. Porter, professor of medicine; Dr. Sidney S. Negus, professor of

chemistry; Dr. J. C. Forbes, assistant professor of chemistry; Dr. Lewis C. Punch, associate in pathology, and J. G. Jantz, associate in anatomy.

AT Armstrong College, Newcastle, Mr. Clement Heigham has been appointed professor of agriculture, in succession to the late Professor D. A. Gilchrist, and Dr. J. W. Heslop Harrison to be professor of botany, in succession to Professor J. W. Bews, who has resigned.

DISCUSSION

MEAN SEA-LEVEL AS AFFECTED BY SHORELINE CHANGES

IT seems to have been quite generally assumed that carefully made tidal observations, extending over a period sufficiently long to eliminate the disturbing effects of meteorological and astronomical causes, will give a value for mean sea-level which at any given place will remain essentially constant. As mean sea-level determinations afford the only satisfactory basis for detecting slow elevation or subsidence of the continent, the validity of the assumption noted is a matter of no small importance.

A number of years ago the writer became convinced that the mean sea-level surface bordering an irregular shore is itself an irregularly warped surface, and that its elevation changes appreciably with changes in the form of the shoreline. Special studies of this problem are now in progress, and a full discussion will be published at an early date. It is desired here to indicate briefly some of the facts upon which the theory of a fluctuating mean sea-level surface is based. The facts are not novel, but their consequences seem not fully to have been appreciated, especially by those citing records of mean sea-level observations as proof of slow continental subsidence or elevation.

We may begin with the simple and obvious case of a bay connecting with the open sea by a narrow inlet and receiving the waters of inflowing rivers. It is known that under such conditions the influx of river water will raise the mean level of the bay. A striking example of this phenomenon is presented by Kennebecasis Lake or Bay, which receives the waters of the St. John River and connects with the sea at St. John, New Brunswick, by the very narrow tidal channel famous for producing the "reversible falls" —from the sea into the embayment when the tide outside is high; from the embayment back into the ocean when the tide outside is low. According to the Canadian hydrographic authorities, the mean level in the embayment is at least two feet higher than the mean level outside. There can be no doubt that many such embayments along our coasts have abnormally high mean levels, the excessive elevation generally amounting at most to but a few inches, but in some cases rising as high as a foot or more. What would happen if storm waves, tidal currents, or other agencies widened or deepened the inlets between sea and embayment, or created additional inlets, so that better egress of waters from the embayment to the sea would be insured? Obviously the ponding of the river waters would be less effective, and the mean level of the embayment would fall. Thus would be created, within the embayment, fictitious indications of an uplift of the land. Or suppose that the inlet were gradually narrowed or shallowed through the deposition of débris by wave or tidal currents, so that the escape of the river waters was more and more obstructed. In this case the mean level within the embayment would gradually rise, and one would find there fictitious indications of a gradual subsidence of the coast.

Let us consider next the case of mean sea-level as affected by prevailing wind directions. It is not difficult to understand that if the wind blows constantly in a given direction, the level of a water body over which it blows must be permanently distorted with an abnormally low level toward the windward shore, and an abnormally high level along the lee shore. A land mass separating two water bodies so affected will have distinctly different mean water levels on its two sides. If one of the water bodies be the ocean, and the other a bay or lagoon separated from the ocean by a bar through which a very narrow inlet permits restricted ebb and flow of the waters, the difference in mean levels on the two sides of the bar will persist. If, however, the inlet be widened, or if new inlets be broken through the bar, the water levels will approach equality; and this will result in a fictitious indication of land elevation on one side of the bar, and a fictitious indication of subsidence on the other.

It can be shown that tidal conditions alone, unaffected by either river inflow or wind direction, will produce local inequalities of mean sea-level which are subject to fluctuations with changes in the form of beaches and inlets. To take a single example, imagine a bay or lagoon separated from the sea by a bar through which a narrow inlet admits the rising ocean so slowly that high tide in the lagoon never rises as high as high tide in the ocean. When the ocean waters fall, the waters in the lagoon will flow back into the ocean, but so slowly that before the lagoon is emptied the ocean waters begin again to rise. Thus low tide in the lagoon is always higher than low tide in the ocean, just as high tide in the lagoon is always lower than high tide in the ocean. Now such tidal