graph films were given by Drs. A. Scherbeck and W. H. van Seters on the work of Leeuwenhoek and Swammerdam. Lectures were also given on the history of the treatment of nervous and mental diseases, by Dr. C. O. Ariëns Kappers; the doctor in caricature, by Mr. C. Veeth; and the bier of the surgeons and druggists preserved in the church at Wokkum, by Dr. J. B. F. van Gils. An exhibition was arranged in the Municipal Museum at Amsterdam consisting of pictures by Rembrandt, Jan Steen, Teniers and other works from various Dutch galleries, sculpture, books and *incunabula* illustrating the history of medicine. An exhibition of instruments made by famous Dutch physicists in the seventeenth, eighteenth and commencement of the nineteenth centuries was held at the physical laboratory of the University of Leyden. The next congress will be held at Rome in 1930, but the International Society of the History of Medicine will form a section in the Congress of the History of Science to be held next year at Oslo.

THE International Congress of Hygiene will be held in Paris from October 25 to 28, under the chairmanship of Professor Léon Bernard, director of the Institut d'Hygiène of the Faculté de Médecine of Paris. The following topics have been chosen for discussion: (1) The relations of social insurance systems to the public health; speakers, Kuhn, Copenhagen; Holtzmann, Strasbourg, and Briau, Paris; (2) factors influencing the recrudescence of smallpox throughout the world, and the means of combating them; speakers, Professors Ricardo Jorge, Lisbon; Jitta, The Hague, and Camus, Paris; (3) the hygiene of instruction camps, speaker, Médecin-Inspecteur Sacquepée, professor at École d'Application du Val-de-Grâce. Addresses will also be delivered by Professor Madsen, president of the committee on hygiene of the League of Nations, on "The International Organization of Hygiene"; Professor Nuttall, of the University of Cambridge, on "The Relations of Parasitology to Hygiene," and Professor Ottolenghi, professor of hygiene, University of Bologna, on "The Question of Vitamins from the Hygienic Point of View."

A MR. C. SPIERER, of Geneva, Switzerland, has been an experimenter and inventor of ultra-microscopes for colloidal investigation and has devised an ultramicroscope involving a new principle of double illumination. Dr. Ellice McDonald, of the University of Pennsylvania, has been in correspondence with Mr. Spierer for several years in regard to the application of his instruments to colloidal research in cancer and has applied Mr. Spierer's methods. This has finally resulted in a gift by Mr. Spierer for use in research of all his microscopic equipment to Dr. McDonald and Professor Seifritz, of the University of Pennsylvania.

PROTECTING the sea-front along the Scripps Institution of Oceanography, University of California, assembly bill 368 has been passed by both houses of the legislature and signed by Governor Young. This bill creates a biological reserve along the shore-line of the institution, and prevents all fishing and collection of marine life to a mean low tide depth of six feet, which includes outlying rocky ledges. This action was taken because of the threatened extinction of many kinds of marine animals in these waters.

UNIVERSITY AND EDUCATIONAL NOTES

BY the will of the late Eldridge R. Johnson, formerly president of the Victor Talking Machine Company, the University of Pennsylvania receives $800,000 for the establishment of the "Eldridge R. Johnson Foundation for Research in Medical Physics." It is stipulated that a sum not exceeding $200,000 may be expended for a building and equipment for the foundation. Any income from the balance will go to further the "study and development of physical methods in the investigation of disease and in its cure; the study of the important physical agencies or properties, such as heat, light, electricity, sound, etc., in their varied relations to the life of man, and to carry out investigations for the improvement of the instrumental applications of such agencies to medical purposes."

Nature states that the Albert Agricultural College, Glasnevin, Dublin, which has been engaged in agricultural teaching and research since 1851, has recently been reorganized so as to accommodate the enlarged Agricultural Faculty of University College, Dublin (National University of Ireland), and will henceforth be under university control. The following appointments have been made: director and professor of agriculture, Professor J. P. Drew; professor of plant pathology, Dr. P. A. Murphy; lecturer in animal nutrition, Mr. E. J. Sheehy; lecturer in agricultural chemistry, Mr. Geo. Stephenson; lecturer in agricultural botany and bacteriology, Mr. M. J. Gorman; lecturer in plant breeding, Mr. M. Caffrey; lecturer in horticulture, Mr. G. O. Sherrard.

DR. HENRY HARTMAN, professor of pathology, University of Texas School of Medicine, Galveston, has been appointed dean of the medical school, succeeding Dr. William Keiller. Dr. Hartman for many years has been a teacher in the college and since March, 1926, has been the acting dean.

DR. PAUL D. FOOTE, late of the Bureau of Standards at Washington, has been appointed to a senior fellowship in the Mellon Institute and a lectureship in the department of physics of the University of Pitts-

burgh. Dr. Robert T. Hance, of the Rockefeller Institute of Medical Research, has been appointed professor and acting head of the department of zoology. Professor F. L. Bishop retires as dean of the Schools of Engineering and Mines to devote full time to the department of physics. Dr. W. E. Baldwin, instructor in chemistry, goes to the Johnstown Junior College of the university as assistant professor and director of the department of chemistry.

DR. G. L. FOSTER, assistant professor of biochemistry in the University of California Medical School, at Berkeley, has resigned to become associate professor of biochemistry in the Medical School of Northwestern University.

R. B. GREEN, who has held the position of lecturer in anatomy at the College of Medicine, Newcastle-on-Tyne, for the past five years, has been elected professor of anatomy in the University of Durham, in succession to Professor R. Howden.

DR. WILHELM TRENDELENBURG, who was recently called from the professorship of physiology at Tübingen to the University of Berlin, has been succeeded at Tübingen by Dr. Armin Tschermak von Seysenegg, of the German University at Prague.

DISCUSSION AND CORRESPONDENCE

ARSINE FROM FUSED GLASS

RECENTLY while drawing a large tube of borosilicate glass to capillary size a very pronounced garlic-like odor was observed. After a number of failures to duplicate the conditions it was found that the odor could be noticed only during the process of drawing the glass and thus while continuously forming a fresh surface.

The experimental procedure was as follows. The center portion of a short length of tubing was fused to a thick mass in an oxygen-natural gas flame. If the fused mass was held close to the nose no odor could be detected until the glass was stretched when at once the odor of garlic was noticed.

The experiment was repeated with a second lead-free borosilicate glass. This glass had a somewhat higher melting point and the odor could not be detected in this case unless the fused glass, after removing from the flame, was allowed to cool until it could be stretched only with difficulty. Several samples of so-called soft glasses gave negative results.

The odor was so striking that it was compared with that of arsine from an arsine generator. Several observers agreed that the odors from the fused glasses and of the arsine were identical. Since the two glasses giving positive results were found on analysis to contain in one case 0.5 per cent. and in the other 0.8 per cent. of arsenic oxide, one might safely conclude that the odor from the glass is due to arsine were it not for the fact that arsenic vapor is itself supposed to have a garlic-like odor.

When arsine is heated in the air it is largely oxidized to As_2O_3, the equation for the main reaction being as follows:

$$4As + 3O_2 = 2As_2O_3. \quad (1)$$

Water vapor which is always present in the air may aid in the oxidation according to equation (2),

$$2As + 3H_2O = As_2O_3 + 3H_2. \quad (2)$$

Arsenic oxide, As_2O_3, has no odor either in the solid or gaseous phase and since hydrogen is odorless it would appear, unless there are other products of the oxidation, that gaseous arsenic is responsible for the garlic odor which accompanies the heating of arsenic in the air.

There is another possible product not of the oxidation, but of the reduction of arsenic, namely, arsine. The hydrogen formed according to equation (2) might reduce some of the arsenic to arsine as follows:

$$2As + 3H_2 = 2AsH_3, \quad (3)$$

or better still, the effect of water vapor on arsenic vapor might be considered as a single reaction:

$$4As + 3H_2O = As_2O_3 + 2AsH_3. \quad (4)$$

Here part of the arsenic acts as an oxidizing agent and is reduced to arsine while the remainder is oxidized to As_2O_3.

The analogous reaction between water vapor and phosphorus has been shown to take place[1] very readily at high pressures and temperatures thus:

$$4P_2 + 12H_2O = 3H_3PO_4 + 5PH_3. \quad (5)$$

If reaction (4) takes place only to a very slight extent when arsenic is heated in air we can readily explain the similarity of its odor to that of arsine. In dry air reaction (4) may even be delayed until contact of the arsenic vapor with the moist mucous membrane of the nostrils.

It is therefore suggested, first, that the odor of arsenic vapor is due to the presence of arsine; second, that under the proper conditions arsine is formed in the fusion of glass containing arsenic compounds.

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[1] Ipatier and Nikolajev, Ber. 59 (B), 595 (1926).