

Park; "Epidemiological Studies of Diphtheria Control," by Dr. Edward S. Godfrey; "Diphtheria in Connecticut," by Dr. Osborn; "Results in Bridgeport," by Dr. Wild; "Results in New Haven," by Dr. Rice.

In the afternoon a clinical pathological conference was led by Dr. Francis G. Blake and staff, and a round table discussion by Dr. C.-E. A. Winslow and staff. The dinner meeting at the New Haven Lawn Club was addressed by Dr. Theodore T. Zuck, of Cleveland, on "Maternal Health in Relation to Race Betterment."

Marital maladjustments were discussed on Thursday morning by Dr. William B. Terhune, of the Austen Riggs Foundation, and tuberculosis and pregnancy by Dr. David R. Lyman, director of the Gaylord Farm Sanatorium. An illustrated lecture on sterility studies was given by Dr. William H. Cary, of New York City. Dr. Robert L. Dickinson, secretary of the National Committee on Maternal Health, gave a talk on "Seven Years' Research in Contraceptive Methods." The congress concluded on Thursday afternoon with a group discussion of sexual adjustment in marriage, led by Dr. Josephine H. Kenyon, and a discussion of sterility, led by Dr. Cary.

THE BRITISH INDUSTRIAL HEALTH RESEARCH BOARD

THE eleventh annual report of the British Industrial Health Research Board has been published. According to a summary in the *London Times* it includes an analysis of the work published during the years 1926-30, and covers the whole field of industry.

It is claimed that real progress has been made in ascertaining the nature of some of the principal factors affecting human health and efficiency in industry. For example, the study of industrial fatigue in heavy work has now reached a stage which, in the opinion of the board, shows conclusively the fallacies of long hours and the benefits of suitable environmental conditions and of scientifically imposed rest pauses. The fatigue with which the board is now more concerned is the mental state produced by hours of monotonous work in an industrial world of progressively mechanized production, and in this connection close analysis of the various influences operating on

those engaged in uniformly repetitive work has thrown fresh light on their reactions to it, as reflected by variations in output, speed and accuracy, and as expressed by symptoms of boredom shown by the workers themselves. Conclusions have been reached as to the way in which these conditions can be relieved by varying work and introducing rest pauses.

The report continues:

In a more special sphere the practical value to workers engaged in fine work of using suitable spectacles was demonstrated—the particular new point here being the benefit to be derived from these spectacles by persons possessing normal vision. From the mental side, study of the incidence of nervous symptoms has served to remind those with managerial responsibility of the prevalence of workers who are temperamental misfits in their employment—and not all of them in subordinate positions.

With the exception of the last, the instances mentioned are illustrative of advances in knowledge concerning the effects of the factors studied on workers regarded more as groups than as individuals. Reference, however, must be made to those studies dealing with the individual in relation to his occupation which are generally spoken of as vocational, and on which much of the work of the board bears. On the general aspect of these problems, research for the board is still confined to fundamental investigations of personal qualities in their relation to occupational training and success. The subject is vast and intricate, and though the board is convinced that as a result of these investigations improved methods of selection will eventually be devised, they are still at the stage of defining their terms. In one branch of this subject—the detection of the "accident prone" worker—information seems to have been obtained which should be capable of practical application at no distant date. Apart from this general question of testing for personal qualities, there are particular vocational questions which have been studied but about which also insufficient knowledge has as yet been gained to afford grounds for conclusions capable of practical application. Among these may be instanced the occupational fitness of mental defectives, and the preliminary study, already referred to, of those whose temperaments render them liable to nervous symptoms affecting their vocational fitness. It is in such types that are likely to be found the most noticeable reactions to various disturbing conditions of environment, such as noise, which are now being investigated.

SCIENTIFIC NOTES AND NEWS

DR. DAVID STARR JORDAN, chancellor emeritus of Stanford University and eminent ichthyologist, died on September 19 at the age of eighty years.

THE Grasselli Medal will be presented to Dr. L. V. Redman at a joint meeting of the Society of Chemical Industry with the New York section of the Amer-

ican Chemical Society, American Electrochemical Society and Société de Chimie Industrielle on November 6. The award has been made for his paper entitled "Cost of Research and its Apportionment," which was presented at a meeting of these societies on December 9, 1927.

DR. SHIRLEY W. WYNNE, health commissioner of New York City, was presented with a silver plaque by members of the staff of the department of health to commemorate his twenty-five years of service in the department.

PROFESSOR BRADLEY STOUGHTON, head of the department of metallurgy at Lehigh University, has been elected president of the Electrochemical Society for the year 1931-1932.

DR. WALTER T. DANNREUTHER, professor of gynecology in the New York Post-Graduate Medical School, was elected president of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, at their fifty-fourth annual meeting on September 15. He will succeed Dr. Arthur Holbrook Bill, of Cleveland. Other officers elected were: *First vice-president*, Dr. Herbert M. Little, of McGill University; *second vice-president*, Dr. Andre Crotti, of the Medical School of Ohio State University; *secretary*, Dr. Magnus A. Tate, of Cincinnati; *assistant secretary*, Dr. A. M. Mendenhall, of Indianapolis; *executive council*, Dr. Palmer Findlay, of Omaha, and Dr. Arthur H. Bill, of Cleveland. Dr. Ludwig Adler, of the University of Vienna, professor of gynecology in the Wilhelminenspital, Vienna, was elected an honorary fellow of the association, making the eleventh honorary fellow of foreign countries. As guest speaker, he gave an address on "The Treatment of Carcinoma."

H. MALCOLM READ, of York, was elected president of the Pennsylvania State Homeopathic Medical Society at the sixty-eighth annual meeting of the society, which was held in Pittsburgh on September 17. Dr. John D. Kistler, of Pittsburgh, was retiring president; William M. Hillegas, of Philadelphia, and E. H. Douds, of Beaver Falls, were chosen trustees. Officers elected are as follows: George G. Shoemaker, of Pittsburgh, *first vice-president*; William Doebele, of Huntingdon, *second vice-president*; C. F. Cutteroff, of Philadelphia, *secretary*; Anna Johnston, of Pittsburgh, *treasurer*; George A. Hopp, of Philadelphia, *necrologist*, and I. L. Moyer, of Columbia, *censor*.

DR. MAX C. STARKLOFF, city health commissioner in St. Louis, Missouri, for thirty years, was made president of the International Society of Medical Health Officers during the recent meeting at Montreal.

THOSE who will be new on the faculty at Yale University this year include: Dr. Edward Sapir, of the University of Chicago, Sterling professor of anthropology and linguistics and chairman of the department of social sciences; Dr. Walter R. Miles, of Stanford University, professor of experimental psychology; Howard Edward Boardman, of the Boston and

Maine Railroad, Dudley professor of railroad engineering; Robert Ernest Doherty, of the General Electric Company, professor of electrical engineering.

ADDITIONS to the faculty of Columbia University include: Alan R. Anderson, associate director of the New York Post-Graduate Medical School; Boris A. Bakhmeteff, professor of civil engineering; Erwin Brand, associate professor of biological chemistry, school of medicine; Clarence Orion Chene, professor of clinical psychiatry, school of medicine; William Morris Davis, visiting professor of physiography during the winter session; Frederick L. Fitzpatrick, associate professor of natural sciences in Teachers College; Edward Hicks Hume, director of the New York Post-Graduate Medical School; Alfred L. Kroeber, visiting professor of anthropology during the spring session; Henry Lea Mason, assistant professor of mechanical engineering; Jan Schilt, associate professor of astronomy, and Ramon J. Sifre, associate professor of hygiene and public health in the school of tropical medicine.

THE following appointments have been made at the University of Maryland: Dr. R. C. Yates, assistant professor of mathematics; Dr. Glenn A. Greathouse, assistant professor in plant physiology; Norman E. Phillips, assistant professor in zoology, and Dr. Ronald Bamford, assistant professor in botany.

DEXTER S. KIMBALL, JR., has been appointed assistant professor of industrial engineering at Cornell University. Promotions from instructor to assistant professor include: R. P. Agnew, mathematics, A. B. Burrell, plant pathology, G. A. Knaysi, Jr., bacteriology, and M. G. Northrop, electrical engineering.

DR. A. JOHN SCHWARZ has been promoted to the rank of associate professor of botany and pharmacognosy, in the division of pharmacology of the Memphis branch of the University of Tennessee.

DR. ROBERT BURRI, director of the Swiss Federal Dairy Research Institute, Berne, Liebefeld, Switzerland, and Dr. Otto Baumecker, of the Federation of Westphalian Landowners Organizations, Hamm, Westphalia, recently visited the U. S. Bureau of Dairy Industry in Washington as part of their investigations of dairy conditions in this country. Dr. Burri officially represented the League of Nations for the study of dairy sanitation and milk control. Dr. Baumecker was especially interested in dairy sanitation and cooperative marketing of dairy products.

DR. CHRISTIAN RICHARD THURNWALD, of the University of Berlin, Bishop Museum visiting professor of anthropology, will give instruction and direct research at Yale University in the problems of the

Pacific area under the terms of the agreement by which Yale and the Bishop Museum of Honolulu are affiliated.

DR. ERVIN R. VAN DER JAGT and Harry L. Kutz will succeed Jacob C. Sparrow and Harry J. Clausen in the department of biology at Norwich University.

DR. LEWIS J. MOORMAN, professor of clinical medicine at the University of Oklahoma School of Medicine, has been made dean in succession to Dr. Leroy U. Long.

DR. ALLEN F. VOSHELL has been appointed professor of orthopedic surgery at the University of Maryland, and has also become surgeon-in-chief at the James Lawrence Kernan Hospital for Crippled Children. Dr. Charles Bagley, Jr., has been appointed professor of neuro-surgery at the University of Maryland.

DR. LEON J. MENVILLE, of New Orleans, has been made editor of *Radiology*, the journal of the Radiological Society of North America. He has succeeded Dr. Maximilian J. Hubeny, of Chicago.

MR. J. E. FLANDERS has been appointed chief engineer of the Missouri Public Service Commission to succeed Mr. F. M. Plake.

DR. KOTARO HONDA has been elected president of the Tohoku Imperial University at Sendai, Japan. Dr. Honda was professor of physics at Tohoku Imperial University and director of the research institute for iron, steel and other metals at the university.

The following changes have been made at the University of Cambridge: Dr. A. Harker has resigned his readership in petrology in St. John's College; Dr. F. R. Winton has been appointed university lecturer in physiology in Clare College, and Dr. E. G. Holmes has been appointed university lecturer in pharmacology in Christ's College.

DR. CHARLES SINGER, lecturer in the history of science at University College, London, who made an extensive lecture trip in the United States in 1929, expects to spend the winter of 1931-32 at the University of California at Berkeley. Between April 20 and May 20, 1932, Dr. and Mrs. Singer expect to lecture at a number of American colleges and universities. Inquiries as to their schedule may be made of Dr. George W. Corner, School of Medicine and Dentistry, University of Rochester, Rochester, New York.

PROFESSOR HERBERT GRAHAM CANNON, professor of zoology at Sheffield University since 1926, has retired.

SIR WILLIAM DAMPIER has been appointed secretary of the Agricultural Research Council, England, and Mr. E. H. E. Havelock has been appointed assistant secretary.

THE sixth annual William deMille Campbell me-

morial lecture of the American Society of Steel Treating was presented in Boston on the morning of September 23 in the ballroom of the Hotel Statler by Dr. C. H. Herty, Jr., supervising chemist in charge of the metallurgical section of the U. S. Bureau of Mines Experiment Station in Pittsburgh. The first Campbell lecture was delivered in 1926 by Wilhelm M. Guertler, associated with the Metall-Institut der Technischen Hochschule in Berlin. Succeeding lectures and their topics have been: 1927—"Contribution to the Theory of Hardening and the Constitution of Steel," by Dr. Zay Jeffries, consultant, Aluminum Company of America and General Electric Company; 1928—"Application of Science to the Steel Industry," by Dr. W. H. Hatfield, Brown-Firth Research Laboratories, Sheffield, England; 1929—"Steel at Elevated Temperatures," by Dr. Albert Sauveur, Gordon McKay professor of metallurgy and metallography, Harvard University; 1930—"Oxygen in Steel," by Dr. M. A. Grossmann, director and vice-president, Republic Research Corporation, at Canton, Ohio.

THE fourth annual meeting and conference of the committee on electrical insulation, of the division of engineering and industrial research of the National Research Council, will be held at Harvard University on November 13 and 14. There will be three technical sessions with papers on the physics and chemistry of dielectrics and on recent progress in engineering research in the field of dielectrics, as applied to the insulation of electric circuits. A dinner on the evening of November 13 will be followed by a lecture dealing with recent advances in dielectric theory. Dr. J. B. Whitehead, of Johns Hopkins University, is chairman of the committee.

THE second International Congress on the Rat and Plague will be held in Paris from October 7 to 12. Professor Gabriel Petit is secretary of the congress.

THE *British Medical Journal* reports that the second International Congress of Comparative Pathology will be held in Paris at the Faculty of Medicine from October 14 to 18. Professor Charles Achard will preside. The subjects for discussion include B.C.G. immunization; Brucella infections in man and animals; mineral salt deficiencies in man and animals; the distribution of the ultra-virus agencies, and the diseases attributable to them, and helminthic infections. The congress is open to medical and veterinary practitioners and those interested in the diseases of plants. Further information may be obtained from the general secretary, 7 Rue Gustave Nadaud, Paris, France.

WE learn from the *Journal* of the American Medical Association of the thirty-sixth annual meeting of the American Academy of Ophthalmology and Oto-

laryngology, which was held at French Lick, Indiana, from September 13 to 19, with headquarters at the French Lick Springs Hotel. The scientific program included papers by Dr. Edward Jackson, of Denver, on "Share of Crystalline Lens in Ocular Refraction"; Dr. Cecil S. O'Brien, of Iowa City, on "Astigmatism—Its Accurate Determination and Correction"; Dr. Leo L. Mayer, of Chicago, "An Experimental Study of Detachment of the Retina and Its Surgical Therapy"; Dr. Lyman G. Richards, of Boston, on "Prognostic Significance of Sinusitis in Children"; Dr. Ernest Fulton Risdon, of Toronto, on "Management of the Fractured Nose"; Dr. Albert N. B. Lemoine, of Kansas City, Missouri, on "Progress in Diagnosis and Pathology in Ophthalmology"; Dr. William A. Wagner, of New Orleans, on "Diagnosis and Conservative Treatment of Sphenoid Suppuration," and Dr. John J. Shea, of Memphis, on "Nasal Obstruction and Systemic Consequences." A symposium on aviation medicine was conducted on the evening of September 15, by Dr. Louis H. Bauer, of Hempstead, N. Y.; Dr. Conrad H. Berens, of New York; Dr. Harry T. Smith, of Humeston, Iowa; Dr. Ralph A. Fenton, of Portland, Oregon, and the Honorable David S. Ingalls, assistant secretary of the U. S. Navy in charge of aviation, and a dinner was given in honor of Dr. Luther C. Peter, of Philadelphia, who is retiring from the council after thirteen years of active service as acting secretary, secretary and president.

The annual general meeting of the British Dental Association, which was held at Cardiff, opened on August 26. In addition to the two hundred delegates from Great Britain, several Canadian members of the profession who attended the eighth International Dental Congress at Paris were in attendance. At the opening meeting, the Lord Mayor and the authorities of the University College of South Wales and Monmouthshire, where the conference is being held, extended a welcome to the delegates, and Mr. William Kittow, of Cardiff, was installed as president in succession to Sir Norman Bennett.

DR. C. C. LAURITSEN, of the California Institute of Technology, will shortly start in operation the world's largest and most powerful x-ray tube. The tube is approximately thirty feet long and uses 2,000,000 volts of electricity. All the work of constructing the tube was done in the shops of the institute under the direction of Dr. Lauritsen, assisted by students. Glass cylinders, twenty inches high and tapering from eighteen inches to twelve inches in diameter, form the glass exterior of the long tube. Inside are two electrodes.

DARTMOUTH COLLEGE has received \$70,000 by the will of the late Dr. R. Melville Cramer.

UNDER the will of David A. Kistler, Carthage College will receive a legacy of \$15,000, after the death of Mrs. Kistler.

DURING July and August Dr. Alexander Forbes, of Harvard University, carried out an expedition to Labrador in cooperation with Sir Wilfred Grenfell. The society was named the Grenfell Northern Labrador Expedition. The expedition was sponsored by the American Geographic Society, and Mr. O. M. Miller, of the society's school of surveying, was associated with Dr. Forbes as topographer in charge of surveys. The scientific personnel of the expedition also included Mr. Noel E. Odell, in charge of the geological work, and Mr. Ernst C. Abbe, botanist, representing the Gray Herbarium.

THE Mont Blanc Astronomical Observatory, built thirty years ago by Professor Vallot, has become the property of the Paris Observatory. It stands at an elevation of 14,435 feet, and will enable astronomers in Paris to undertake researches for which they have not hitherto been equipped.

THE experiments and the seed and bulb business of the late Luther Burbank will be continued by the W. Atlee Burpee Company, seed dealers of Philadelphia, it has been announced by David Burpee, president of the company. Through an agreement with Mrs. Burbank, the company has leased the Burbank property at Santa Rosa, California, and has received the famous collection of what Mr. Burbank considered his most valuable seeds for preservation from season to season. While the experiments will be continued on the ground used by Mr. Burbank and with the plants he cultivated there, Mrs. Burbank will continue to live on the property. The late W. Atlee Burpee, father of David Burpee and W. Atlee Burpee, Jr., secretary and treasurer of the firm, were cousins of Mr. Burbank. They were closely associated in experimental work. The work at Santa Rosa will be conducted by the Burpee Company in connection with its experiments at Floradale Farm, Santa Barbara County, California, and at Doylestown, Pennsylvania.

THE Associated Press reports the discovery of six steep-walled, narrow canyons, announced by Dr. Frederick J. Paek, head of the department of geology of the University of Utah. It is believed that Dr. Paek's party was the first ever to descend into them. The newly explored canyons are said to rival the famous Zion Canyon for gorgeous colorings and unusual formations. There are sheer bare-faced cliffs of 2,300 to 3,000 feet in height, varying in length and spreading along a distance of three to five miles. In places some are so narrow that a person with outstretched arms can touch either side.

DR. A. C. MCFARLAN, professor and head of the department of geology at the University of Kentucky, has spent the greater part of the summer studying the ordovician stratigraphy of several counties in the Blue Grass, and identifying the different formations outcropping in various communities, in an attempt to correlate them with known formations elsewhere. Clark, Anderson, Scott, Campbell, Pendleton and Grant Counties have been visited and the study of these counties will be compared with compiled information on the stratigraphy of southern Ohio, Indiana and central Tennessee, in an attempt to work out the early geographic history of the area and the nature of existent life at that time.

THE small auxiliary schooner, *Aleda*, owned by John Lippincott, of the Corinthian Yacht Club, Philadelphia, has sailed with fifteen Princeton students from Halifax for the west coast of Newfoundland, where an extensive study will be made of iron ore and chrome deposits, and the shore line itself. The *Aleda*, which is manned by the students, is commanded by Mr. Lippincott. The expedition is under the direction of Dr. A. K. Snelgrove, instructor in the department of geology, and John Streeter, psychologist, of Princeton University. After a month in the north, the party will return to New York.

ADDITIONS to the collections of the British Museum (Natural History), South Kensington, include the

skin and skull of a young Menelek's bushbuck, shot at Monnegesha in Abyssinia, presented by the Duke of Gloucester. Ninety-five heads and skulls of Asiatic and American ungulates and carnivora have been selected from the collection of the late Mr. C. St. George Littledale. In addition to three record heads, the collection contains a number of exceptionally fine specimens, including the skull of a wild camel from Lob Nor in the Gobi Desert and a collection of over 60 skulls of ungulates and lions from Northern Rhodesia. The collections brought back by Mr. Bertram Thomas from the Ruba el-Khali are now being worked out, and a selection is on exhibition in the Central Hall. The 82 specimens of reptiles and amphibians represent about 25 species, some of which appear new to science. The collections include 500 entomological specimens. All the larger orders of insects are represented in about 120 species, of which some 20 appear to be new to science. A large collection of mammals has been received from the Game Department of Uganda, collected for the most part by Mr. J. Jardine. The museum has also obtained a further abnormal tusk of a Uganda elephant from Mr. W. A. Bowring, of Gibraltar. An unusual type of stony meteorite which fell at Karoonda, South Australia, on November 25 last has been given to the Mineral Department by Professor Kerr Grant, of the University of Adelaide.

DISCUSSION

EXPULSION OF GAS AND LIQUIDS FROM TREE TRUNKS

ABELL and Hursh's recent paper on gas and water pressure in oaks¹ recalls some observations made on three days in July, 1916, but hitherto unpublished. At that time I was engaged in making a study of the growth of standing trees at elevations of about 1,500-2,000 feet in Letcher County, Kentucky, the increment borer being used in this work. Inasmuch as these few observations include species of other genera than oak, they are here offered as a further contribution to the subject.

In one instance, as the increment-borer bit was withdrawn from a tree of black gum (*Nyssa sylvatica*), a pronounced blast of gas expelled some of the wood dust perhaps three inches from the 0.6-inch bark. This tree was 14 inches in diameter at breast height, 16 at the level of boring, and about 135 years

old at this level. The bit had penetrated 4 inches through solid wood to a somewhat decayed heart.

While a boring was being made in a red oak (*Quercus rubra*; 13 inches in diameter at breast height, 15 at the level of boring) an outward blast started which increased suddenly and explosively when the increment-borer bit was withdrawn. The tree was 42 years old at this height; and apparently sound for the outer 3 inches of core.

In the case of a chestnut tree (*Castanea dentata*), 15 inches in diameter at breast height, 18 at the level of boring, a stream of discolored liquid was expelled a maximum distance of 30 inches, the flow lasting 20 seconds. When a boring was made 1 inch above the first hole, liquid flowed out of the lower hole for 90 seconds. The tree was 34 years old at the height of the upper hole and the wood was sound for 4 inches of radius. There had been rain the preceding night.

In the case of a hickory tree (*Hicoria glabra* ?; 21 inches at breast height, 25 at the level of boring), liquid began running out during the boring and be-

¹ C. A. Abell and C. R. Hursh, "Positive Gas and Water Pressure in Oaks," *SCIENCE*, 73: 499, 1931.