from April 25 to 27, with headquarters at the Bellevue Stratford Hotel.

The tentative program is as follows: On April 25, the afternoon session will be devoted to the reading of papers and the first business session, including reports of officers and standing committees and the introduction of new business; in the evening there will be a public address on a topic of general interest; on April 26, the morning session will be given over to the reading of papers, and in the afternoon the report of the committee on the international standardization of anthropometric methods, of which Dr. Aleš Hrdlička is chairman, will be presented and discussed. There will also be a discussion by Dr. Raymond Pearl on biometric methods in anthropology; in the evening, the annual dinner will be held, with Dr. Milton J. Greenman, director of the Wistar Institute, as toastmaster; on April 27, there will be reading of papers at both sessions and the final business session will occur. Members of the association will be guests of the Wistar Institute at lunch on April 26 and 27.

Members who wish to present papers at this meeting should notify Dr. Raymond Pearl, 1901 East Madison St., Baltimore, Md., as soon as possible, giving name and institution, title of paper, time required for presentation, whether or not it is to be given with lantern slides, charts or other illustrations, and a non-technical summary of not more than 500 words. Those offering more than one paper should indicate which they prefer to present in case the program is crowded and which may be read by title. The complete program will be announced early in April.

SCIENTIFIC NOTES AND NEWS

DR. CHARLES SIDNEY BURWELL, professor of medicine at the Vanderbilt University School of Medicine, has been appointed dean of the faculty of medicine and research professor of clinical medicine at the Harvard Medical School to succeed Dr. David L. Edsall, who announced his retirement two months ago. The appointment becomes effective in September. Dr. Cecil Kent Drinker, professor of physiology and acting dean, has been appointed dean of the School of Public Health in succession to Dean Edsall.

THE medal founded by the Wilhelm Roux Steftung für Entwicklungsmechanik, in commemoration of Wilhelm Roux, who died in 1924, has been awarded to Dr. Jan Boeke, professor of histology in the University of Utrecht, for his research work on the development of the nervous system.

THE council of the Institution of Naval Architects has awarded the Gold Medal for the year 1934 to Vice-Admiral Y. Hiraga, professor of naval architecture and applied mechanics in the University of Tokyo, for his paper on "Experimental Investigations on the Resistance of Long Planks and Ships," and the premium to Professor B. P. Haigh, of the Royal Naval College, Greenwich, for his paper on "Further Tests and Result of Experiments on Electrically Welded Joints in Ship Construction." According to *Nature*, the medal and premium will be presented at the opening of the annual general meetings on Wednesday, April 10, at the Royal Society of Arts in London.

THE Chadwick Gold Medal and Prize of £100 was presented on February 18 to Colonel W. P. MacArthur, deputy director-general of the army medical services at the British War Office and formerly consulting physician to the British army. This award may be made once in five years to the medical officer of the British navy, army or air force who has most distinguished himself during that period in promoting the health of the men of the service to which he belongs.

PROFESSOR STEPHEN TIMOSHENKO, of the engineering mechanics department at the University of Michigan, has been appointed Hitchcock professor at the University of California.

DR. C. LADD PROSSER, research associate in physiology at Clark University, has been appointed assistant professor of physiology.

LESLIE WHEELER, a member of the board of trustees of the Field Museum of Natural History, has joined the scientific staff of the museum as associate in ornithology. He has been assigned facilities for active research work in connection with the collections of birds of prey.

DR. MATARO NAGAYO, professor of pathology and dean of the medical faculty, has been made president of Tokyo Imperial University.

DR. FERNANDO OCARANZA, director of the faculty of medicine at the University of Mexico, has been appointed president of the university.

THE board of management of the London School of Hygiene and Tropical Medicine of the University of London has appointed Sir Cooper Perry to be its chairman for the current year.

DR. L. RUZICKA, professor of chemistry at the Technische Hochschule, Zurich, Switzerland, will be a visiting professor in the department of chemistry

at the University of Chicago during the summer quarter of 1935. Professor Ruzicka will give two series of lectures, one on "Special Topics in the Chemistry of Alicyclic Compounds and the Terpenes," the other on "Selected Topics of Biochemistry."

DR. SIMON FLEXNER, director of the Rockefeller Institute for Medical Research, returned on February 25 from a visit to Egypt.

DR. HARRY L. SHAPIRO, associate curator of physical anthropology at the American Museum of Natural History, returned on February 26 after spending four months with the Templeton Crocker expedition to the South Seas, during which he made a population study in the Marquesas and racial studies on Pitcairn and Easter Islands.

DR. EMIL F. GUBA, assistant research professor of botany at the Massachusetts State College, has been granted a six months' leave of absence, to become effective on April 1. Dr. Guba, who is stationed at the Waltham field station, plans to spend most of his leave studying and writing a monograph at Harvard University.

DR. STEPHEN JAROSZ, of the geographical institute of the Jagiello University in Krakow, Poland, will begin early in March a study of the geography, botany and forestry of four islands near the coast of Alaska.

DR. GEORGE C. BRANNER, state geologist for Arkansas, has been elected president and Dr. Arthur Bevan, state geologist for Virginia, secretary of the Association of American State Geologists for 1935. Dr. Raymond C. Moore, state geologist for Kansas and professor of geology and paleontology at the University of Kansas, has been made a member of the executive committee.

THE Eastern States Archaeological Association held its annual meeting on February 23 at the Rochester Museum of Arts and Sciences, with the president, Colonel L. M. Pearsall, presiding. Arthur C. Parker, William C. Ritchie and others of the Rochester Museum staff read a series of papers on the field work of the museum's recent excavations at Alima and Canandaigua.

A JOINT meeting of the Society of Chemical Industry, the American Chemical Society, the Electrochemical Society and the Société de Chimie Industrielle was held on March 8 at the Chemists' Club, New York. A paper on "The Combustion of Coal as a Problem in Chemical Engineering" was given by Stephen P. Burke, director of the industrial science division of West Virginia University.

THE results of research in dentistry during the past year were described before the Baltimore section of the International Association for Dental Research on February 27. Dr. E. V. McCollum, of the School of Hygiene and Public Health of the Johns Hopkins University, presided.

AT the annual general meeting of the Royal Astronomical Society, held on February 8, the following officers were elected: *President,* J. H. Reynolds; *Vice-Presidents,* Professor S. Chapman, Dr. H. Spencer Jones, Dr. H. Knox-Shaw, Professor F. J. M. Stratton; *Treasurer,* Sir Frank W. Dyson; *Secretaries,* W. M. H. Greaves and Dr. W. M. Smart; *Foreign Secretary,* Professor Alfred Fowler.

DR. JAMES R. ANGELL, president of Yale University, recently gave the Elihu Root lecture of the Carnegie Institution of Washington. His subject was "Popular and Unpopular Science."

DR. JOEL H. HILDEBRAND, professor of chemistry at the University of California, spoke on "Solubility" at the dinner meeting of the southern section of the American Chemical Society in Los Angeles on March 1.

THE twelfth Sedgwick Memorial Lecture was given on January 25 at the Massachusetts Institute of Technology by Dr. J. B. S. Haldane, professor of genetics at the University of London and head of genetical research at the John Innes Horticultural Institution, who spoke on "Some Problems of Mathematical Biology."

LECTURES under the auspices of the American Entomological Society and the Philadelphia Microscopical Society were given at the Academy of Natural Sciences of Philadelphia on February 28 by Dr. W. Dwight Pierce, a member of the academy staff, and Dr. David H. Wenrich, professor of zoology at the University of Pennsylvania, on the transmission of human diseases by insects.

THE University of Rochester held its fourth annual Sigma Xi day on February 22, with Dr. George Boas, professor of philosophy at the Johns Hopkins University, as the principal speaker. His subject was "Science and Metaphor." A morning science lecture for young people on "Corals and Cannibals" was given by Dr. J. Edward Hoffmeister, professor of geology at the University of Rochester. During the afternoon a series of lecture-demonstrations was given by Dr. Joseph L. Boon, of the Eastman Kodak Company, Dr. Bradford Noyes, of the Taylor Instrument Companies, and Drs. G. P. Berry, I. A. DuBridge, H. C. Hodge and E. O. Wiig, of the University of Rochester.

DR. ALEXANDER SILVERMAN, head of the department of chemistry at the University of Pittsburgh, will lecture before the southern sections of the Ameri-

can Chemical Society on "Glass: An Indispensable Factor in Modern Civilization." The schedule follows: March 19, Lexington section, Lexington, Kentucky; March 20, East Tennessee section, Knoxville; March 22, Georgia section, and Georgia Academy of Sciences, Atlanta; March 23, Alabama section, Birmingham; March 25, Louisiana section, New Orleans; March 27, Florida section, De Land; March 30, Virginia section and Hampton Roads Chemists Club at the College of William and Mary, Williamsburg.

ON January 19 Dr. W. F. G. Swann, director of the Bartol Research Foundation, delivered an address before the Ohio State chapter of the Society of the Sigma Xi on the subject "Nuclear Phenomena and Cosmic Rays." This was the first of a series of lectures being sponsored by Sigma Xi at Ohio State University on the general subject, "The Nucleus of the Atom and Its Structure"; Professor M. L. Pool, Ohio State University, on February 28 spoke on "Methods, Energies and Products Involved in Nuclear Disintegration and Synthesis." The remaining lectures in the series with their dates are as follows: March 28, Professor H. L. Johnston, of the Ohio State University, "Deuterium as a Tool for Research in the Physical and Biological Sciences"; April 30, Professor E. O. Lawrence, of the University of California, "Artificial Radioactivity"; May 10, Professor G. Gamow, visiting professor at the George Washington University, "Nuclear Transformations and the Origin of the Chemical Elements."

DR. R. COURANT, visiting professor from Germany, who is now at New York University, was the speaker at the meeting of the mathematics section of the New York Society for the Experimental Study of Education at Columbia University on March 2. His topic was "The Teaching of Mathematics and Physics."

THE committee on scientific research of the American Medical Association on February 17 awarded grants to Dr. Phillips Thygeson, assistant professor of ophthalmology at the State University of Iowa, for the study of trachoma and inclusion virus disease of the genito-urinary tract; to Dr. W. J. Nungester, assistant professor of bacteriology at Northwestern University Medical School, for a continuation of studies on experimental lobar pneumonia; to Dr. Willard O. Thompson, assistant clinical professor of medicine, Rush Medical College, University of Chicago, for research on the effect of enzymatic digestion on desiccated thyroid; and to Dr. Royall M. Calder for research on the mechanism of inflammation in pneumococcus infections.

A METAL industries exhibition will be held in the Commercial Museum, Osaka, Japan, from May 10 to 31 under the joint auspices of the *Journal of Metals* and the *Daily Industrial News*.

A DAVID ANDERSON-BERRY Gold Medal, together with a sum of money amounting to about £100, will be awarded in July, 1935, by the Royal Society of Edinburgh to the person who, in the opinion of the council, has recently produced the best work on the nature of x-rays in their therapeutic effect on human diseases. A similar award will be made every three years.

THE twenty-third annual meeting of the Eugenics Research Association will be held at the American Museum of Natural History, New York, N. Y., on Saturday, June 1. All persons who have papers to present should indicate their intentions by letter as soon as possible, and the paper itself, with a 250 word abstract, should be forwarded to the secretary of the Eugenics Research Association, Cold Spring Harbor, Long Island, New York, not later than May 10. Papers will be limited to twenty minutes and must be presented in person. Lantern, blackboard, chart-wall and exhibit-space will be provided at the meeting.

THE United States Civil Service Commission has announced open competitive examinations for the positions of junior physicist, chemist, senior, associate and assistant chemists. The entrance salary for junior physicist is $2,000 per year, subject to the usual deductions; for chemists, $2,600 to $4,600. Optional subjects for the examination in physics are electricity, heat, mechanics and optics. Vacancies for chemists exist in the Food and Drug Administration, Department of Agriculture, Dental Alloy Laboratory, National Bureau of Standards and Department of Commerce. All applications must be on file with the commission at Washington not later than April 8.

THE American Association of Anatomists has been requested by the Anatomical Society of Great Britain and Ireland to consider at this time, with a view to international agreement, a revision of the standard terminology of human gross anatomy (the BNA), which has been in use in American text-books since its original adoption in 1895. For this purpose a committee has been appointed, under the chairmanship of Dr. C. M. Jackson, professor and director of the department of anatomy at the University of Minnesota. The committee has undertaken a general consideration of the problem and is studying both the British proposal and another suggested revision prepared by a committee of the German Anatomische Gesellschaft. For the benefit of those interested in solution of the problems involved in revising anatomical nomenclature, a triple list of the BNA and the British and German revisions, in parallel, has been

prepared. A limited number of copies are available for general distribution, and may be obtained without charge from the Secretary of the American Association of Anatomists, Professor George W. Corner, The University of Rochester School of Medicine and Dentistry, Rochester, N. Y.

DISCUSSION

COAL AND NATURAL OIL IN THE PITTSBURGH REGION

ATTENTION should perhaps be called to a statement in an article by Dr. Berl, entitled "The Origin of Natural Oil,"[1] in which the author says: "The presence of bituminous coal and oil in the same localities, but in different strata, for instance near Pittsburgh, forces one to the point of view that both substances were formed from the same material."

The horizons in which coal and oil, respectively, are found in the Pittsburgh region are so far removed from each other geologically that their geographical agreement must be viewed as irrelevant in any discussion of their origin.

The various coal seams lie in the Lower and Upper Coal Measures (Pennsylvanian), and the Upper Barren Series (Permian), whereas the oil-bearing sands are in the Subcarboniferous (Mississippian), and the Upper Devonian. The conditions under which the material of the coal beds accumulated, the origin of which is obvious, were very different from those which prevailed throughout the Upper Devonian and Mississippian, in the Pittsburgh region. There is total absence of evidence of swamps, such as contributed material for the coal seams, in the deeper-lying strata where natural oil is stored.

Whatever may have been the origin of natural oil, the fact that oil and coal happen to occur in the latitude and longitude of the Pittsburgh region has no bearing on the question.

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DISTRIBUTION OF PAPERS IN BIOLOGICAL SCIENCES FOR THE PAST EIGHT YEARS

THE summaries of researches in biology that appear in *Biological Abstracts* make it possible to determine fairly well the degree of research activity in various divisions of biology. While the editors of *Biological Abstracts* warn that it is not yet possible to cover all biological research papers published the world over and that a group of journals known to contain biological research can not yet, for one reason or another, be covered, this probably does not substantially affect the numerical relations between the various subjects discussed below.

My class in theoretic biology was assigned the job of determining the number of papers reviewed in *Biological Abstracts* during the entire period of its publication since 1927, *i.e.*, about eight years. The total number enumerated by us was 169,744. Of all the categories of papers classified in the table of contents we chose twenty-two groups. We did omit a few sorts of papers. We listed in one group all papers concerning animal physiology which is made up of twenty sub-groups. We similarly combined sub-groups of papers having to do with economic entomology and treated others likewise. We combined plant and animal paleontology into one group. This last named grouping might be criticized because the reviews in paleozoology in the *Abstracts* are general papers only, since systematic and morphological papers appear elsewhere.

We determined the number of papers in each of the twenty-two groups; found the total for each year, and then the percentage of each group of the total for that year. We then charted the variation in numbers of papers in each group for the entire eight years, but the results of this charting are not presented at this time. We also averaged the percentages of each group for the entire eight years. The results of this computation are graphically represented in Fig. 1, which also includes the percentage averages just referred to.

It should be remembered that, due to at present unavoidable difficulties, abstracts of papers are published a number of months after original publication. Systematic zoology holds first place in numbers of papers abstracted and indicates greatest activity, the total being about 38,000. Thus one of the oldest and most fundamental of biological sciences is still very much alive. Next in degree of activity is animal physiology. Nearly half of all papers reviewed are more or less directly related to the well-being of man. These groups are animal physiology, animal pathology, bacteriology, economic entomology, immunology and pharmacology. May this be interpreted as indicative of the practical tendency of pure science?

We did not attempt to weight the scientific value or importance of the papers, since we did not consider ourselves wise enough to do so. After all, would it be possible to appoint a board of judges who would give a worth-while verdict as to the relative value of this or that investigation? Would an endocrinologist regard work in systematic botany as important as his own? Some might view investigations in physiology that would reduce the mortality of babies as of great value. Others, thinking of difficulties that await the same babies when grown to adult life, might

[1] SCIENCE, 81: 2088, 18, January 4, 1935.