Measurement of geologic time by any method.
Batholiths and related intrusives.
Zonal relations of metalliferous deposits.
Major divisions of the Paleozoic era.
Geomorphogenic processes in arid regions and their resulting forms and products.
Fossil man and contemporary faunas.
Orogenesis.
Geology of petroleum.
Copper resources of the world.

In proposing for discussion such a topic, for instance, as "Major Divisions of the Paleozoic Era" it is hoped that as a result of the formal papers presented and the discussion that accompanies them, a closer approach to agreement in this very controversial field will be reached; but there will be no attempt to formulate certain conclusions as representing the opinion of the congress as a whole.

The international commissions of the congress appointed at any session carry over to the next session, at which they are expected to present their reports. They may be and many of them have been continued from session to session. Those appointed at the fifteenth session are:

1. Spendiaroff prize.
2. Palaeontologia Universalis.
3. Lexicon of Stratigraphy.
4. Glaciers.
5. Fossil Man.
6. Crust of the earth.
7. Geophysics and Geothermics.
8. Map of Europe.
9. Map of the Earth.
10. Distribution of the Karroo (Gondwana) system.
11. International Map of Africa.
12. Sub-Commission of African Surveys.

The success of several of these which are charged with the preparation of definite publications depends largely on funds from outside sources. The Prussian Geological Survey, under the auspices of the committees of the International Geological Congress, has supervised the compilation of the geologic maps of Europe and of the World, which have been published and are sold through regular publishers.

Other commissions have fostered work in the fields with which they were concerned or provided for the publication of results in current journals. There are obvious difficulties in the way of effective action by a commission whose members are scattered over the entire earth, as is the case with most of these commissions. However, even when they can not produce definite results they promote international agreement in the fields with which they deal.

The organization committee of the eleventh session held in Sweden in 1910 decided that it was desirable for the congress to exert a more extensive and systematic influence on the development of applied geology. They, therefore, published a volume on "The Iron Ore Resources of the World." It has been the practise of the organization committee of most congresses since then to prepare a similar volume on the resources in some major mineral deposit. Volumes on coal, phosphate and pyrite, and gold have been published by previous congresses and the organization committee of the sixteenth session is preparing one on copper.

These volumes aim to describe the geology of deposits all over the world and as far as possible to estimate reserves. They have been found very valuable by those concerned with the mineral industries and have probably helped to secure financial support for the congress.

Not the least valuable function of these congresses, as of all gatherings of scientists, is to bring about personal acquaintance and friendship among those who attend and to afford opportunity for informal discussion. During the scientific sessions of the International Geological Congresses some formal entertainments as well as informal gatherings of groups and individuals provide for this, but the best opportunity is afforded by the excursions, on which the participants are constantly together for a number of days, and discuss many of their problems with the evidence before them.

Any one may become a member of the Congress For information address General Secretary, International Geological Congress, U. S. Geological Survey, Washington, D. C.

M. I. G.

SCIENTIFIC NOTES AND NEWS

DR. ROBERT F. GRIGGS, professor of botany at George Washington University, Washington, D. C., has been elected president of the Washington Academy of Sciences.

GEORGE W. FULLER, of Fuller and McClintock, New York, has been elected chairman of the Engineering Foundation. He succeeds H. Hobart Porter, president of the American Water Works and Electric Company.

DR. SYDNEY CHAPMAN, chief professor of mathematics at the Imperial College, South Kensington, has been made president for 1933 of the Royal Meteorological Society.

CONRAD BECK, director of R. and J. Beck, sci-

entific instrument manufacturers, London, has been elected president of the Royal Microscopical Society.

THE degree of doctor of science will be conferred by the University of Dublin on Professor William Lawrence Bragg, professor of physics, Victoria University of Manchester, and on Professor John Scott Haldane, fellow of New College, Oxford, honorary professor and director of the Mining Research Laboratory, Birmingham University.

DR. EMIL ABDERHALDEN, professor of physiology at Halle, has been elected an associate member of the Society of Biology at Paris.

A TESTIMONIAL dinner to Professor Charles W. Ballard, of the faculty of the Columbia College of Pharmacy, was tendered to him by the Pharmacy Alumni Association on March 9. Professor Ballard has been associated with the College of Pharmacy for twenty-five years. Among the speakers were Dean Henry V. Arny, Dean Emeritus H. H. Rusby, Professor Marston T. Bogert, Columbia University, and Edward Bocker, the New York City Department of Health.

JOHN J. KELEHER, a member of the staff of the New York Aquarium, has been awarded the gold medal of the New York Zoological Society in recognition of his thirty years' service. The presentation was made by Dr. Charles H. Townsend, director of the aquarium, who himself completed thirty years with the institution last November.

IN recognition of their outstanding contributions to medicine, thirteen leading physicians and research workers from ten nations have been elected to honorary fellowship in the New York Academy of Medicine. The number of honorary fellows is limited to fifty; at present there are thirty-five. The new fellows are: Charles Achard, professor of the Faculté de Médecine of Paris and permanent general secretary of the Académie de Médecine; Roberto Alessandri, formerly professor of surgical anatomy, now director of the surgical clinic at the University of Rome; Sir Charles Ballance, consulting physician at St. Thomas's Hospital and National Hospital for Paralysis and Epilepsy, London; Frederick Grant Banting, professor of medical research at the University of Toronto; Sir Henry Hallett Dale, secretary of the Royal Society and director of the National Institute for Medical Research, London; Otfried Foerster, professor of psychiatry and neurology, Breslau; Carl Gustaf Forssell, professor of radiology in the Medico-Chirurgical Institute and director of radiumhemmet, Stockholm; James Bryan Herrick, emeritus professor of medicine, Rush Medical College, Chicago; Cornelius Ubbo Ariens Kappers, professor of comparative anatomy of the nervous system at the University of Amsterdam; George Richards Minot, professor of medicine, Harvard University; William Gibson Spiller, professor of neurology at the University of Pennsylvania and consulting neurologist at the Philadelphia General Hospital; Alfred Vogt, professor of ophthalmology at the University of Zurich, and Karel Frederik Wenckebach, professor of medical pathology and therapy at the University of Vienna.

PROFESSOR B. NĚMEC, director of the Institute of Plant Physiology of the Charles University, Prague, Czechoslovakia, will celebrate his sixtieth birthday on March 12. A correspondent writes: "Professor Němec is a prominent plant physiologist, working on experimental cytology, caryology, anatomy, experimental morphology, physiology of fecundation, symbiosis, parasitism, plant pathology and regeneration. His 'statolit' theory is well known, as are his recent discoveries of artificially induced mixoploidy and polyploidy in plants by means of chloral hydrate. These discoveries were discussed by him at the fifth International Botanical Congress held at Ithaca in 1926. Professor Němec is a corresponding member of the American Botanical Society, and of many other learned societies, Czechoslovak and foreign. He is the president of the American Institute in Prague. Professor Němec took an active part in the work which resulted in the liberation of his country. He is now a representative of the National Democratic Party in the Parliament and is, at the same time, one of the most prominent members of Charles University."

ON the recommendation of Dr. Gregory and Dr. Sherwood, of the American Museum of Natural History, the executive committee of that institution has appointed Dr. William Beebe a member of the department of ichthyology, with the title of research associate in oceanography.

DR. SAMUEL E. POND has resigned from the University of Pennsylvania, where he has been assistant professor of physiology in the Schools of Medicine and Dentistry, to accept the position of technical manager at the Marine Biological Laboratory, Woods Hole, Massachusetts. Dr. Pond will be in residence in Woods Hole throughout the year, beginning on April 1. In addition to the direction of laboratory matters of a technical nature he will continue his researches on elementary calcification and the solid phases in ossified tissues.

DR. GEORGE KREEZER has resigned as Merriam research fellow at Cornell University to become research associate at the Training School at Vineland, New Jersey. This appointment was made possible by a gift recently made by friends of the Vineland Laboratory. It is anticipated that Dr. Kreezer will con-

duct a series of investigations of birth-injured children by the methods of physiological psychology.

F. S. BRACKETT has retired from the directorship of the Division of Radiation and Organisms of the Smithsonian Institution and becomes research and consulting physicist. Dr. C. G. Abbot, secretary of the institution, has assumed the directorship of the division and E. S. Johnston has become assistant director.

PROFESSOR JAMES H. BREASTED, of the Oriental Institute, University of Chicago, sailed from New York on February 4 for an inspection of field work in Persia.

DR. MORRIS S. VITELES, assistant professor of psychology at the University of Pennsylvania and director of personnel research in the Philadelphia Electric Company, has been elected a member of the board of directors of the Personnel Research Foundation.

DR. THOMAS STOCKHAM BAKER, president of the Carnegie Institute of Technology, Pittsburgh, who has been lecturing in Germany under the auspices of the Carl Schurz Society, arrived in New York on March 3.

DR. H. H. DONALDSON, of the Wistar Institute of Anatomy, addressed the Sigma Xi Society at the University of Pittsburgh on February 15 on "What We have Learned on the Growth of the Brain during the Past Forty Years."

DR. ANNIE J. CANNON, of the Harvard College Observatory, gave on February 15 an address on "Eclipsing Experiences" before the science seminar of the University of Maine.

DR. BAILEY K. ASHFORD, colonel, U. S. Army Medical Corps, retired, professor of mycology in the School of Tropical Medicine, San Juan, Puerto Rico, discussed acute uncinariasis at the Research Club of the department of medical zoology of the Johns Hopkins University School of Hygiene and Public Health on February 20. His discussion was based on case histories of individuals who came to his attention almost immediately after receiving exceedingly heavy infestations of *Ancylostoma duodenale* while wading in infected water in Puerto Rico.

RECENT visiting lecturers to the department of geology and geography, Northwestern University, and their subjects included: T. A. Hendricks, of the U. S. Geological Survey, "The Classification of Coal"; L. E. Workman, of the Illinois Geological Survey, "Subsurface Methods as Applied to Illinois"; C. W. Washburne, consulting geologist, "Structural Studies in the Oregon Coast Ranges"; Dr. G. R. Mansfield, of the U. S. Geological Survey, "Viewpoints in Geological Research"; Professor E. S. Bastin, of the University of Chicago, "Ores of Copper Lean in Iron and Sulphur."

THE fourth lecture to the faculty and students of the School of Medicine, The George Washington University, on the Smith-Reed-Russell Society series was given on February 23 by Professor Stanhope Bayne-Jones, of the Department of Bacteriology, Yale University Medical School, and chairman of the Medical Division, National Research Council, on "Bacterial Toxins." The next lecture in this series will be given by Dr. Maurice C. Hall, chief of the Zoological Division, Bureau of Animal Industry, U. S. Department of Agriculture, on March 16, on "Drama Anthelmintica." The regular faculty seminar for February was given by Professor George B. Jenkins, of the department of anatomy, who spoke on "Comparative Embryology of the Central Nervous System."

A GIFT of $100,000 for the general purposes of the Gray Herbarium of Harvard University has been received from Earl Willson Bemis, of Worcester, Massachusetts. The original collection was founded by the late Asa Gray and given by him to the university in 1864.

A GIFT has been made by E. R. Squibb and Son, New York, through the National Research Council Committee on Drug Addiction, of a fellowship of $700 for work in pharmacology to be carried on under the direction of Professor C. W. Edmunds, in the Medical School of the University of Michigan.

PLUTARCO ELIAS CALLES, of Mexico, has turned over his Santa Barbara hacienda to the Agricultural Department to be used as an experimental station.

THE Prussian Ministry of Public Instruction has granted permission to the various clinics, institutes and the like, to announce the maximum number of students that, in their opinion, can receive proper training and to reject the applications of students in excess of that number. In the dental institutes, such restrictions were introduced some time ago.

UNDER an amendment of the United States patent statute approved by the President May 23, 1930, which authorizes the issuance of patents to inventors or discoverers of distinct and new varieties of asexually propagated plants other than tuber-propagated plants, 39 plant patents had been issued by the United States Patent Office up to the end of October, 1932. The administration of the law is vested in the commissioner of patents, but, as provided for in the law, the Secretary of Agriculture is charged with the duty of determining for the commissioner of patents, upon his request, whether varieties for which patent applications are made are in fact distinct and new. The special researches necessary to such determinations for

the information of the Commissioner of Patents are assigned to the chief of the Bureau of Plant Industry to carry out. "A plant patent," according to Dr. W. A. Taylor, chief of the Bureau of Plant Industry, "grants to the patentee the exclusive right to use, vend and asexually reproduce the new variety covered by the patent throughout the United States and Territories for seventeen years. Naturally, under the limitations prescribed in the statute, most of the alleged new varieties thus far considered are in the horticultural field, relatively few general field crops other than tubers being capable of asexual propagation on a commercial scale in temperate climates. The granting of a patent on a new variety in no way passes on its adaptability to climatic conditions or for special uses or on its economic value, nor does it determine the validity or otherwise of any varietal name which may be applied to the variety by the originator or disseminator.

THE London correspondent of the *Journal* of the American Medical Association writes: "It is striking that in the present period of industrial depression and unemployment, unprecedented both in intensity and in duration, the general health of the population has been remarkably good and has even improved. The registrar-general's statistical review for 1931, which has just been published, shows a death rate of 12.3 per thousand persons living, 0.9 above that for 1930. That rate, however, was the lowest ever recorded, largely because of the exceptionally mild weather in the early part of the year, when the greatest number of deaths occur. The higher rate for 1931 is a reflection of the more severe weather of the early part of the year. Infant mortality was similarly affected, the deaths of children under 1 year being 66 per thousand live births, against 60 in 1930. That year and 1928, however, are the only years that have shown a lower mortality than 1931. The death rate for cancer was 1,484 per million persons living, against 1,454 in 1930. But if allowance is made for the difference in the age constitution of the population (which is constantly becoming greater) the increase in the cancer rate becomes much smaller. Tuberculosis again furnished a new low record, 896 deaths per million living. Road accidents due to mechanical vehicles caused 5,892 deaths. The figures for the preceding four years were 4,452, 5,196, 5,752 and 6,342. The decrease in 1931 is the first that has occurred since 1921, the figures having steadily increased previously. The birth rate was 15.8 per thousand persons living, the lowest on record and 0.5 below that for 1929 and 1930."

DISCUSSION

UNIVERSITY PATENTS

NOTHING seems at first sight more reasonable and effective to provide funds for research work in colleges, universities and research institutions than the exploitation, under the protection of patent laws, of the results of research work. Apparently in increasing numbers the universities in this country are resorting to patenting—directly or through approved agencies—for the stated purpose of obtaining money to support research work done by members of their staffs.

Arguments in favor of such a policy seem to have been published rather more fully than other types of comment. Experience, however, is proving that this policy of patenting, so attractive when first contemplated, involves more numerous and more serious difficulties than were at first foreseen, even by those who opposed the policy on ethical grounds. It is not with the ethical or moral validity of universities exploiting patents for revenue that the present communication deals. I wish to call attention only to some of the problems entailed by the policy, at present spreading among universities in the United States and Canada, of taking or being party to the taking of patents for the purpose of obtaining revenue for research work to be done by their students or staff. If explicit definition can obviate misunderstanding it may be well to observe that it is patenting for revenue and not patenting to prevent exploitation by others which is under consideration. I bring forward the matter because, now that the advantages of this policy have been published, it seems reasonable to point out some of the disadvantages.

A professor in one of our large state universities visited not long ago a university whose declared policy it is to take out patents where possible for the research work of its personnel. The professor talked with a young staff member about his research work. It became apparent that what the professor had learned from his own research work would lead, if pieced together with what the young man had found out, to a distinct advance in knowledge, an advance very probably capable of being patented. Although the young man would have been delighted to have had an honorable part in an advance of knowledge and might have received a merited recognition for his share therein, and although science might have been advanced, the professor kept his mouth shut because he couldn't see why his work should be an integral part of a patent controlled for the exclusive benefit of another university. Perhaps it would be better if both universities went in for the patent business. Then the professor wouldn't have felt so resentful or