Cincinnati; Dr. Hugh S. Taylor, professor of chemistry, Princeton University.

Among the Italians elected are: Guglielmo Marconi; Umberto Nobile, aviator, and Aldo Castellani, known for his work in tropical medicine, and Senator Vito Volterra, formerly professor of physics and mechanics at the University of Rome.

The Pope has issued the following statement in regard to the organization of the academy:

Among the many blessings with which the divine goodness has rejoiced the years of our pontificate, we should like to enumerate those afforded by the spectacle of so many men who have dedicated themselves to study of experimental sciences and who have changed their attitude and intellectual cause as regard to religion.

Unfortunately it is true that in times not so long gone some learned men, for reasons other than love of truth, have abandoned as prodigal sons the paternal roof or the religion of their forefathers. Especially during the last century there were those who taught the false, rash argument that the findings of human science were in open contradiction to the teachings of divine revelation.

It is, however, a source of profound joy to our heart that in our day these prejudices are so evidently outmoded that there are few who really have studied the positive sciences and yet continue to sustain this error.

On the contrary, during our pontificate many scientists, among whom were men of the highest worth and standing, have come to Rome from distant lands in order to participate in scientific congresses and have come to our presence to express their devotion to us, or rather to that authority which lives forever in the apostolic see, even though exercised by an unworthy successor of St. Peter.

There were those who acted in their own names and the names of their colleagues who did not hesitate to say that true science leads and prepares the soul to faith—a confession which gave our heart profound happiness.

SCIENTIFIC NOTES AND NEWS

THE Nobel Prize for physiology and medicine has been awarded to Sir Henry Dale, director of the British National Institute of Medical Research, and to Professor Otto Loewi, professor of pharmacology at Graz, for their work on the part played by acetylcholine in innervation.

THE Hoover gold medal, "awarded by engineers to a fellow engineer for distinguished service," will be presented to Dr. Ambrose Swasey, chairman of the Board of Directors of the Warner and Swasey Company, Cleveland, Ohio, at the annual dinner of the American Society of Mechanical Engineers to be given in New York City on December 2.

THE William H. Nichols Medal of the New York Section of the American Chemical Society, founded in 1902 to "stimulate original research in chemistry," has been awarded for 1937 to Dean Frank C. Whitmore, of the School of Chemistry and Physics of the Pennsylvania State College, "for his studies in metallo-organic compounds, especially those of mercury, and in the field of aliphatic chemistry, particularly in molecular rearrangements."

AT the recent Cleveland meeting, the Samuel Wylie Miller Medal of the American Welding Society was presented to Metcalf Hobart, consulting engineer of the General Electric Company, Schenectady, N. Y., in recognition of his work as "a pioneer in the art of welding who has done outstanding service toward the development of welding into the most important and widely used tool of industry."

Nature reports that the Riberi Prize, founded by an Italian surgeon, for the best contribution to the progress of medicine within the last five years, has been awarded to Dr. Francesco Pentimalli, professor of general pathology at Florence, for his work on experimental tumors and cancer.

THE honorary degree of doctor of civil law was conferred on October 27 by the convocation of the University of Oxford on Dr. James Bryant Conant, president of Harvard University.

THE doctorate of laws of McGill University was conferred on October 23 on Nevil Norton Evans, who recently retired from the professorship of chemistry, and on Dr. Maude Abbott, formerly professor in the faculty of medicine.

FRANK MALCOLM FARMER, vice-president and chief engineer of the Electrical Testing Laboratories, New York City, has been elected chairman of the Engineering Foundation. Mr. Farmer succeeds H. P. Charlesworth, assistant chief engineer of the American Telephone and Telegraph Company.

A BANQUET in honor of Dr. Daniel Webster Mead, professor of hydraulics and sanitary engineering at the University of Illinois and president of the American Society of Civil Engineers, was given at New Orleans on October 24 by the Louisiana section of the society on the occasion of the meeting there of the American Public Health Association.

AT the Philadelphia meeting of the American College of Surgeons Dr. Frederic A. Besley, of Waukegan, Ill., was elected president. He will take office next year, succeeding Dr. Donald C. Balfour, of Rochester, Minn. Dr. Frank W. Lynch, San Francisco, was elected first vice-president, and Dr. Austin

B. Schinbein, West Vancouver, B. C., second vice-president.

SIR ALBERT CHARLES SEWARD, professor of botany, having retired from the mastership of Downing College, Cambridge, has been elected into an honorary fellowship.

DR. PAUL S. BURGESS, dean of the College of Agriculture of the University of Arizona, has been elected president of the university to succeed Dr. Homer LeRoy Shantz, who is now chief of the Division of Wildlife Management of the Forest Service. Dr. Burgess has been acting president of the university since the resignation of Dr. Shantz.

DR. ARTHUR W. EWELL, professor of physics at the Worcestor Polytechnic Institute, has been appointed head of the department of physics, succeeding Professor A. W. Duff, who has been appointed professor of physics emeritus.

DR. WILLARD BERRY, of the Ohio State University, has been appointed assistant professor and chairman of the department of geology at Duke University, Durham, N. C.

ALFRED R. MACORMAC, research assistant professor of chemistry at the University of North Carolina, has become associate professor of textile chemistry at the Alabama Polytechnic Institute.

CHARLES G. DUNCOMBE, instructor and assistant professor at the Ohio State University, has become professor and head of the department of chemical engineering at the University of Detroit. He succeeds Henry L. Coles, who was recently appointed head of the department of chemical engineering at the University of Colorado.

RECENT appointments in the department of chemistry of the Ohio State University are: Assistant professor, Laurence L. Quill, associate, University of Illinois; instructors, Dr. Alfred B. Garrett, assistant professor, Kent State University, Ohio; Dr. John P. Howe, fellow-elect, 1936–37 (resigned), of the National Research Council; Dr. Wm. McNevin, formerly instructor at Harvard University; Dr. Melvin S. Newman, Eli Lilly fellow, Harvard University, 1934–36, and Dr. Frank H. Verhoek, Rhodes scholar, Institute for Chemical Physics, Copenhagen.

DR. FERNANDO CALDERON Y ROCA, having reached the age of seventy years, has retired as dean of the College of Medicine of the University of the Philippines, director of the School of Hygiene and Public Health, head of the department of gynecology and director of the Philippine General Hospital.

DR. W. E. CASTLE, professor emeritus of Harvard University, has been appointed research consultant in mammalian genetics at Brown University. Upon Professor Castle's retirement from Harvard his stocks of rabbits, containing the less common and irreplaceable mutants, were transferred to Brown University, where they are being perpetuated and utilized in further research under the direction of Dr. P. B. Sawin, aided by a grant from the Rockefeller Foundation. Dr. Castle is now resident at Berkeley, California, where he is continuing his researches on rodent genetics.

DR. ARTHUR M. BANTA, professor of biology at Brown University, is spending a sabbatical year at the Station for Experimental Evolution, Cold Spring Harbor, as an associate of the Carnegie Institution. He is engaged in bringing up to date the manuscript work on his studies on the genetics and evolution of Cladocera.

DR. G. E. COGHILL announces that, although without official connection with any laboratory, he is continuing his research and hopes that those who have formerly sent him copies of their scientific papers will continue to do so. Until further notice his address will be Beaufort, N. C.

DR. ALICE BORING, a member of the faculty of the University of Peiping, is working in collaboration with Clifford H. Pope at the American Museum of Natural History on the life histories of amphibia.

DR. BENJAMIN FRANKLIN HOWELL, of Princeton University, has been appointed associate curator of geology at the Academy of Natural Sciences of Philadelphia. He will work at the academy during the coming year on a part-time basis, supervising the arrangement of a collection of 200,000 fossil specimens assembled during the past century.

DR. ISAIAH BOWMAN, president of the Johns Hopkins University, has been giving a series of Messenger lectures at Cornell University on "Geography and the Needs of the State."

DR. EUGENE M. LANDIS, of the Robinette Foundation at the University of Pennsylvania, will give the second Harvey Society Lecture at the New York Academy of Medicine on November 19, at 8:30 P. M. The subject of the lecture will be "The Passage of Fluid through the Capillary Wall."

DR. L. H. ADAMS, physical chemist at the Geophysical Laboratory of the Carnegie Institution of Washington, gave a public lecture at the institution on October 27, on "The Earth's Interior; Its Nature and Composition."

THE Lancaster Branch of the American Association for the Advancement of Science for the year 1936–37 opened with a lecture by Professor C. T. Brues, pro-

fessor of economic entomology at Harvard University and associate curator of insects at the Harvard Museum of Comparative Zoology. His subject was "The Animal Life of Hot Springs." Among those who are expected to speak during the year are: Austin H. Clark, U. S. National Museum, zoology; Dr. L. O. Grondahl, Union Switch and Signal Company, physics; Dr. H. B. Humphrey, U. S. Department of Agriculture, botany; Dr. Earl B. McKinley, George Washington University, bacteriology; Dr. C. E. Kenneth Mees, Eastman Kodak Company, photography; Lieut. Albert W. Stevens, U. S. Army, aeronautics, and Dr. James A. G. Rehn, Academy of Natural Sciences of Philadelphia, entomology.

E. R. SQUIBB AND SONS, of New York City, manufacturers of medical and chemical products, have established a fellowship at Harvard University for research in organic chemistry. The first award, of $2,000, has been made to William P. Campbell, of Hagerstown, Md., for research on phenanthrene with Professor Louis F. Fieser.

THE Committee on Scientific Research of the American Medical Association has made the following grants: to Dr. S. W. Ranson, of the Northwestern University Medical School, to aid research into the effect of fever-producing bacterial toxins on the temperature of animals whose heat-regulating mechanism has been destroyed by lesions of the hypothalamus; to Dr. Abraham White, instructor in physiological chemistry in the Yale School of Medicine, for aid in continuing investigations of the sulfur of proteins; to Dr. Roe E. Remington, of the Medical College of the State of South Carolina, for work on quantitative changes in the thyroids of rats fed iodine deficient diets, and to Professor Benjamin Harrow, of the College of the City of New York, for work on hormones in the urine.

THE following lectures were given during October in the twelfth series of free illustrated scientific lectures under the auspices of the California Academy of Sciences, San Francisco, on the general subject, "The Beauties of Nature": "Native and Introduced Trees of the Pacific Coast," by Dr. Howard E. McMinn, professor of botany at Mills College; "Plant Collecting on Palawan Island, Philippines," by Dr. Fred W. Foxworthy, formerly professor of dendrology, University of the Philippines, and later forest research officer of the Federated Malay States; "What State Parks Mean to California," by William E. Colby, chairman of the California State Division of Parks. The lectures were given in the auditorium made available through the cooperation of the Pacific Gas and Electric Company.

THE fall meeting of the Middle Atlantic Section of the Society for the Promotion of Engineering Education will be held at Columbia University in New York on December 5. Emphasis will be placed on the humanities content of engineering curricula. Guided visits will be made to points of interest on Morningside Heights, including Riverside Church, the university museums and collections and various buildings of the university. The afternoon meeting will be followed by special demonstrations in the engineering laboratories, including a demonstration by Professor E. H. Armstrong of his new system for radio broadcasting.

THE usual spring joint meeting of the Institute of Radio Engineers and the American Section of the International Scientific Radio Union will be held in Washington, D. C., the tentative date being April 30, 1937. This meeting is a feature of the week which attracts to Washington every year a large number of scientific men and scientific societies. Papers on the more fundamental and scientific aspects of radio will be presented. Titles and abstracts of papers offered for this program may be submitted to S. S. Kirby, technical secretary, American Section, International Scientific Radio Union, National Bureau of Standards, Washington, D. C., not later than February 15, 1937.

Nature reports that in view of the many requests that have been received from those who attended the conference on mechanization in agriculture held in Oxford last January, it has been decided to hold a second conference at Rhodes House, Oxford, on January 5 to 8, 1937. A detailed program will be sent on application to the Conference Secretary, Institute for Research in Agricultural Engineering, Parks Road, Oxford.

DR. HAROLD S. COLTON, director of the Museum of Northern Arizona at Flagstaff, writes that the museum has received and is now engaged in cataloguing the geological library of the late David White, paleobotanist of the National Museum. This library is composed of books, reprints, proceedings of societies, reports, bulletins and professional papers of the U. S. Geological Survey, Proceedings of the Smithsonian Institution and the National Museum, state geological surveys and other series, which number in all about 1,000 volumes and 2,000 reprints. Dr. Colton writes: "Besides this collection the museum has received 125 reprints on paleontology, a gift from Mrs. Rudolf Schmieder, of Philadelphia. The Museum Library has been strong on anthropology and Western Americana of the Southwest. These new collections give the library a very good start in geology. It is the only working library in these fields close to the Grand Canyon."

OREGON STATE COLLEGE has received the gift of a library on mining and geology, belonging to the late Hiram Dryer McCaskey, an authority on the

gold, silver and quicksilver resources of the United States and the mineral and geological characteristics of the Philippine Islands. Consisting of nearly 3,000 volumes and pamphlets, the library includes many out-of-print bulletins of the U. S. Geological Survey as well as the transactions of the American Institute of Mining Engineers since the beginning of the organization in 1871.

SUCCESSFUL use of radio communication service in fighting recent forest fires at Isle Royale, Mich., Great Smoky Mountains National Park and Glacier National Park is reported by the National Park Service. John D. Coffman, chief forester, advocates experiments in the use of high and ultra-high frequency radios and its adaptation to National Park Service needs. He states that in Isle Royale the National Park Service was completely dependent upon radio for communication. This was the case both between the island and the mainland, and between various base and side camps on the island where 1,600 men from the CCC camps were billeted for a month. Without radio there would have been no communication service. On September 1 there were eleven radio sets in operation on Isle Royale. Also in the fire suppression work carried on in Great Smoky Mountains National Park and in Glacier National Park, Mont., the radio played an important part.

DISCUSSION

A DOZEN MATHEMATICAL ERRORS IN WEBSTER'S DICTIONARY

TWENTY-FIVE years elapsed between the publication of Webster's "New International Dictionary" and the extensively revised second edition (1934), and it may be assumed that this second edition will be used in practically its present form for many years. It may therefore be of interest to mathematical students to note here a sufficient variety of definite errors which appear therein and relate to their subject to inspire the desirable caution which is too often lacking in the use of standard works of reference, especially on the part of the younger students. The suggested corrections may enable some to improve their own copies of this standard book by adding appropriate notes. A few other modifications relating to this dictionary were suggested by the present writer in SCIENCE, 81: 513, 1935.

Under the term "spherical excess" it is stated that "its product by twice the square of the radius of the sphere on which the triangle is drawn is equal to the area of the triangle." As the correct rule for finding the area of a spherical triangle appears in many of our school text-books it is easy to verify that the word "twice" should not appear in this quotation. Under the term "primitive group" there appears the following definition: "A transitive group of substitutions on n letters such that all the substitutions of the group which omit a given letter form a group involving all the other letters." This condition is obviously not satisfied by the regular primitive groups of prime degrees and there are also transitive groups which satisfy this condition but are not primitive. As an example of the latter we cite the group of degree 6 and of order 72. The given condition is therefore neither necessary nor sufficient.

Under the term "dicyclic group" appears the following supposed definition: "A group generated by two elements a and b, in such a manner that every element is of the form a^x or ba^x, the element a satisfying the equation $a^{2m} = 1$, and the element b having its square $= a^m$, where m is an integer." While every dicyclic group satisfies this definition there are many other groups which also satisfy it. A necessary and sufficient condition that a group satisfies it is that it involves a cyclic subgroup of index 2 and at least one element of order 4 which does not appear therein. In particular every abelian group whose independent generators are of orders 2 and $2m$, where m is even, satisfies the given definition, but none of these groups is dicyclic according to the usual definition of this term. Under the term "dihedral group" there appears an illustrative example which implies that the dihedral group of order 8 is known as the axial group instead of the octic group.

Under the term "binomial theorem" there appears the following sentence: "The theorem propounded by Sir Isaac Newton by means of which a binomial may be raised to any power without performing the multiplication." The implication is that it is confined to positive integral values of the exponent, since otherwise the process of performing the multiplication would be impossible. For such exponents it was known to the Arabs in the twelfth century and to the Chinese in the fourteenth century. In the form given in this dictionary and in many of our modern text-books it was known by H. Briggs (1556–1636), who died before Newton was born. Under the term "hexagram" it is called the "Pythagorean symbol." This symbol was the pentagram according to the "Manual of Greek Mathematics" by T. L. Heath, page 108, 1931.

Under the term "metacyclic" there appears the following sentence: "Denoting or pertaining to any permutation of elements in any given cycle of numbers."