The James Douglas Gold Medal for achievement in non-ferrous metallurgy was awarded to Professor C. H. Mathewson, of Yale University, for "his scientific contributions to the art of working and annealing non-ferrous metals."

Professor C. T. Eddy, of the Michigan College of Mining and Technology, received the Alfred Nobel Prize of $500 in cash for a "paper of particular merit contributed by a member of any of the four founder engineering societies before the author is thirty years old." Professor Eddy is only twenty-eight years old. His paper was on "Arsenic Elimination in the Refining of Native Copper."

The J. E. Johnson, Jr., award for meritorious researches in iron and steel was given to Mr. Ora E. Clark, of Hamilton, Ohio, who has "developed an exceptional insight into the reactions of an iron blast furnace without the usual aid of a university education, his theoretical training being gained at odd moments through a correspondence course and at night school."

Mr. Howard Scott, of the Westinghouse Company, East Pittsburgh, was the recipient of the Robert Woolston Hunt Prize for his paper on "transformational characteristics of iron-manganese alloys." Mr. Scott has also "developed a number of low-expansion and special-purpose alloys, and has carried on fundamental research in heat-treatment."

Insignia were presented by the retiring president, Mr. Robert E. Talley, to the new members of the Legion of Honor, class of 1882, who had completed fifty years' membership in the institute.

Mr. G. Temple Bridgman, who was the toastmaster, introduced Mr. Scott Turner, president for 1932. The following are the newly elected vice-presidents: Frederick M. Becket, vice-president, Union Carbide and Chemical Company, New York; Paul D. Merica, the International Nickel Company, New York. New directors are: Erle V. Daveler, treasurer, Utah Copper Company; Eugene McAuliffe, president, Union Pacific Coal Company; H. S. Mudd, consulting engineer, Los Angeles; J. B. Umpleby, petroleum engineer, Norman, Oklahoma, and Charles C. Whittier, consulting engineer, Chicago.

THE HAYDEN MEMORIAL GEOLOGICAL AWARD FOR 1932

THE Academy of Natural Sciences of Philadelphia announces that its committee on the Hayden Memorial Geological Award has selected Reginald Aldworth Daly, Sturgis-Hooper professor of geology at Harvard University, as the recipient of the 1932 award.

Professor Daly was selected by the committee in recognition of his outstanding work "in the study of igneous rocks, their genesis and the mechanics of their intrusion into the mountains of the Earth; his glacial-control theory of coral reefs, his work on the eustatic shift of oceanic level and his researches on the constitution of the Earth."

The committee on the Hayden Memorial Geological Award for 1932 consisted of Dr. Charles Schuchert, chairman, Dr. Henry Fairfield Osborn, Dr. Edgar T. Wherry, Dr. Henry A. Pilsbry and Dr. William Berryman Scott.

The Hayden Award was established with the Academy of Natural Sciences of Philadelphia in 1888 by Mrs. Emma W. Hayden, as a memorial to her husband, Dr. Ferdinand V. Hayden, a member of the academy, and director of the U. S. Geological and Geographical Survey in the early days of that organization.

The deed of gift provides that it shall be given "as a reward for the best publication, exploration, discovery or research in the sciences of geology and paleontology, or in such particular branches thereof as may be designated." From 1888 to 1900 the award consisted of a bronze medal and honorarium given annually, but in 1900 a modification of the deed of trust substituted a gold medal to be given every three years, for the previous annual award.

The Hayden Award will be formally presented at the meeting of the Academy of Natural Sciences of Philadelphia on April 19.

SCIENTIFIC NOTES AND NEWS

AT the exercises commemorating the fifty-sixth anniversary of the Johns Hopkins University on February 22, portraits of four past and present faculty members were presented to the university. Dr. Joseph S. Ames, president of the university, presided and Sir Wilmott Lewis, Washington correspondent of the London *Times*, was the principal speaker. Mr. George F. Baker, Jr., New York, presented a portrait of Dr. William H. Wilmer, since 1925 professor of ophthalmology in the school of medicine and head of the Wilmer Ophthalmological Institute of the Johns Hopkins Hospital. The painting is the work of Frank O. Salisbury, London. Dr. William H. Welch, professor emeritus of the history of medicine, presented a portrait of the late Dr. William S. Halsted, first professor of surgery in the school of medicine. Dr. William S. Thayer, professor emeritus of medicine, presented a portrait of Dr. Frederick H. Baetjer, professor of clinical roentgenology. Both of these portraits are the work of Eric Haupt. Dr. William

Seifriz, professor of botany in the University of Pennsylvania, presented a portrait of Dr. Duncan Starr Johnson, professor of botany and director of the Botanical Laboratory and the Botanical Garden.

PROFESSOR R. E. DAVIS and Mr. H. E. Davis, of the University of California, have been awarded the Wason Medal for 1931 of the American Concrete Institute for the most meritorious paper dealing with research in the field of concrete and reinforced concrete. Professor Davis will receive the medal for himself and on behalf of Mr. Davis at a meeting on March 2 of the American Concrete Institute, of which he is a director, in Washington, D. C. At the same meeting he will speak on "The Hoover Dam and its Research Problems."

MR. WILLIS H. CARRIER, retiring president of the American Society of Heating and Ventilating Engineers, has received the first award of the F. Paul Anderson Gold Medal for scientific achievement in his field. Mr. R. A. Harding, of Buffalo, presented the medal at a banquet of the society held recently in Cleveland.

THE 1931 Lamme Medal of the American Institute of Electrical Engineers has been awarded to Mr. Giuseppe Faccioli, Pittsfield, Massachusetts, "for his contributions to the development and standardization of high-voltage oil-filled bushings, capacitors, lightning arresters, and numerous features in high voltage transformers and power transmission." The medal will be presented at the summer convention of the institute, which is to be held in Cleveland, Ohio, from June 20 to 24.

AWARDS of the Geological Society of London have been made as follows: The Wollaston Medal to Professor J. H. L. Vogt, of Trondhjem, Norway, in recognition of his researches on the mineral structure of the earth, and especially his pioneer work in the application of physical chemistry to the origin of igneous rocks and ore-deposits; the Murchison Medal, together with ten guineas from the Murchison Geological Fund, to Professor William George Fearnsides, in recognition of his researches in the Lower Paleozoic rocks of Wales, and other geological investigations; a Lyell Medal, together with £30, from the Lyell Geological Fund, to Mr. Henry Dewey, in recognition of his researches in the geology of the southeastern parts of England, more especially the Quaternary deposits of the London Basin, and a second Lyell Medal, together with £30, from the Lyell Geological Fund, to Dr. Maria Matilda Ogilvie Gordon, in recognition of her researches on the structure of the Western Dolomites.

THE Dawson Williams Memorial Fund, established in 1928 in memory of the former editor of *The British Medical Journal,* which is awarded every two years, or at longer intervals at the discretion of the trustees, in recognition of work done in connection with pediatrics, has been given this year to Sir Robert Jones for his work in connection with the pediatric side of orthopedics. With the consent of the council, the prize will be presented by the president of the British Medical Association on the occasion of his presidential address on July 26.

DR. KARL HERXHEIMER, professor of dermatology at Frankfort, has been awarded the Ehrlich-Weingert Medal by the medical faculty of the university.

THE Mathematical Institute of the University of Moscow has awarded a prize of 750 rubles to L. S. Pontrjagin, member of the institute, for an article entitled "Uber stetige algebraische Körper" which appeared recently in the *Annals of Mathematics.*

DR. C. STUART GAGER, director of the Brooklyn Botanic Garden, has been elected president of the National Institute of Social Sciences, to succeed Mr. William C. Redfield, formerly Secretary of Commerce.

DR. H. H. SHELDON, chairman of the department of physics at the Washington Square College of New York University, was elected president of the American Institute of the City of New York at a meeting held on February 12. Other officers elected were Dr. Otis W. Caldwell, *vice-president;* Dr. William Crocker, *secretary,* and Mr. Alfred Knight, *treasurer.*

MR. H. HOBART PORTER, of New York, president of the American Water Works and Electric Company and chairman of the board of the West Penn Electric Company, has been reelected chairman of the Engineering Foundation. Mr. George W. Fuller, of New York, has been elected first vice-chairman. Dr. C. E. Skinner, president of the American Institute of Electrical Engineers and assistant director of engineering of the Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pennsylvania, was named second vice-chairman. Mr. George D. Barron, mining engineer, of Rye, N. Y., and Mr. D. Robert Yarnall, manufacturer, of Philadelphia, and vice-president of the American Engineering Council, were elected members of the executive committee.

SIR NORMAN WALKER, Edinburgh, has been elected president of the General Medical Council of Great Britain, succeeding Sir Donald MacAlister, who had been president of the council since 1904 and a member since 1889, a total service of forty-two years.

DR. EMIL ABDERHALDEN has been elected president of the Academy of Sciences at Halle.

DR. JAKOB FRÜH, of Zurich; Professor Samuelowitsch, of Leningrad; Sir Francis Younghusband, of

London, and Dr. Robert Gradmann, of Erlangen, have been elected honorary members of the Geographical Society of Vienna.

THE *Journal* of the American Medical Association reports that Dr. Aldo Castellani, London, has accepted the position of professor of tropical medicine and head of the department at the Louisiana State University Medical Center, New Orleans. His appointment is for the year 1932–1933. Dr. Castellani resigned from a similar position at the School of Medicine of Tulane University in 1929 to devote full time to work in connection with a study of tropical diseases at the Ross Institute of Tropical Medicine, London, of which he was director.

MR. ELLWOOD WILSON, forester of the Laurentide Paper Company of Quebec, has been appointed a member of the faculty of the College of Agriculture of Cornell University in place of Professor Samuel N. Spring, who resigned recently to become dean of the College of Forestry at Syracuse University.

DR. HOWARD E. ENDERS, head of the department of biology in Purdue University and a member of the staff since 1906, has been made dean of the School of Science to succeed the late Dr. Richard B. Moore, who died early last year. Dr. Enders has been acting dean for some months.

DR. ALEXANDER PRIMROSE, dean of the faculty of medicine of the University of Toronto since 1920, retired on December 31. Dr. Primrose first came to the University of Toronto in 1889 as demonstrator in applied anatomy. He is president-elect of the Canadian Medical Association. His successor is Dr. John G. FitzGerald, professor of hygiene and preventive medicine, and director of the Connaught Laboratories.

DR. HUGH S. CUMMING has been appointed for another term of four years surgeon-general of the U. S. Public Health Service. The nomination was confirmed by the Senate on January 28. General Cumming was originally appointed to this position in February, 1920. On completion of his present reappointment he will have served continuously in this office for sixteen years.

DR. HARRY W. SCHOENING, who since September, 1931, has served as acting chief of the pathological division of the Bureau of Animal Industry, has been appointed chief of the division.

DR. E. H. SELLARDS has been appointed director of the Bureau of Economic Geology at Texas. Mrs. F. B. Plummer has been appointed consulting geologist and Joseph Hornberger, Jr., assistant geologist.

PROFESSOR A. O. LEUSCHNER, director of the student astronomical observatory of the University of California, has been elected to the executive committee of the national scientific society, Sigma Xi. He will fill the place made vacant by the election of Dr. Louis B. Wilson, of the Mayo Foundation, to the presidency.

DR. R. C. GIBBS, professor of physics at Cornell University, will be on sabbatical leave during the spring semester.

MR. MATTHEW W. STIRLING, chief of the Bureau of American Ethnology of the Smithsonian Institution, has started on foot to the country inhabited by the Jivaro Indians of Ecuador. Mr. Stirling's last communication came from Mendez, Ecuador, on the border of the Jivaro country, where he had been for the past three weeks. He stated that he was leaving the next day for a seven-day hike down the Paute River after which the expedition plans to work slowly down the Santiago and Maranon rivers to the Amazon and to Iquitos. Then they will strike out again along the Ucayali River, expecting to make their way to Lima. It is expected that Mr. Stirling will return to the United States some time in May.

MR. R. E. PETERSEN, manager of the mechanical division, Research Laboratories, Westinghouse Electric and Manufacturing Company, and Mr. T. S. Fuller, metallurgist, Research Laboratories, General Electric Company, have been appointed members of the Research Committee on Fatigue of Metals of the American Society for Testing Materials, and Mr. Stanton Walker, director, engineering and desearch division, National Sand and Gravel Association, has been appointed a representative on the joint committee on Concrete and Reinforced Concrete. He succeeds Mr. Cloyd M. Chapman, who resigned from this committee.

THE National Land Use Planning Committee, appointed by the Secretary of Agriculture, will consist of fifteen members, five to represent the Association of Land Grant Colleges; five the U. S. Department of Agriculture, three the Department of the Interior, and one each from the Federal Farm Board and the Federal Farm Loan Board. The committee held its first meeting at Washington on February 15. Members of the committee representing the Association of Land Grant Colleges are: Provost A. R. Mann, of Cornell University; President H. A. Morgan, of the University of Tennessee; President H. L. Shantz, of the University of Arizona; Dean C. B. Hutchison, of the University of California, and President F. D. Farrell, of Kansas State College.

PROFESSOR P. DEBYE, head of the Institute for Experimental Physics at the University of Leipzig, is giving a series of lectures on "X-Ray Scattering and Molecular Structure" in the department of physics at the Massachusetts Institute of Technology. Professor

Debye will be Scott lecturer at the University of Cambridge for 1932.

SIR ARTHUR NEWSHOLME, of Birmingham, England, formerly principal medical officer of the local government board of England and Wales, will lecture this spring at Harvard University on preventive medicine.

DR. J. C. MEAKINS, professor of medicine and director of the department of medicine at McGill University, physician in chief to the Royal Victoria Hospital, Montreal, has accepted an invitation to lecture at the Medical School of the University of California in San Francisco. These lectures will open on March 11 and close on April 7.

DR. HENRY K. BENSON, chairman of the Division of Chemistry and Chemical Technology of the National Research Council, delivered the 1932 Alpha Chi Sigma Public Lecture in chemistry at the University of Virginia on February 11. His subject was "Cellulose and Allied Industries."

MR. WILFRED TROTTER took as the subject of the Hunterian oration "The Commemoration of Great Men." The lecture was delivered before the Royal College of Surgeons of England on February 15. A banquet was held in the evening at the college.

MR. J. B. S. HALDANE, Fullerian professor of physiology, is giving a course of five lectures on "Heredity in Man" at the Royal Institution, London.

THE annual meeting of the American Medical Association will be held in New Orleans from May 9 to 13.

THE sixteenth annual meeting of the American College of Physicians will be held at the University of California early in April.

THE summer session of the Hopkins Marine Station, the Marine Biological Laboratory of Stanford University, at Pacific Grove, on the shore of the Bay of Monterey, will open on June 23, lasting until August 31. Courses will be given by Dr. Felix Eugen Fritsch, professor of botany in the University of London, and Dr. Gilbert Morgan Smith, of Stanford University, on the morphology and taxonomy of the algae; by Dr. Cornelis Bernadus van Niel, formerly of Delft, Holland, now of Stanford University, on microbiology, and by Dr. Harold Mestre on plant physiology and on physico-chemical biology. Properly qualified students, interested in individual fields, will be admitted to the laboratories for advanced work and research. Application for accommodation should be made early, as the space in the laboratory available for summer work is limited.

THE College of Puget Sound, Tacoma, Washington, has recently received $150,000 from the estate of Leonard Howarth, and $50,000 from a friend in Portland, Oregon. These gifts have enabled the college to pay the debt on the new science building, and on February 19 it will be dedicated as the Leonard Howarth Hall. The building is 57 by 152 feet, of reinforced concrete faced with brick and has three and one half stories. It houses the departments of biology, chemistry, domestic science, geology and physics. These gifts make it possible for the college to receive $135,000 from the General Education Board of the Rockefeller Foundation, completing a gift of $250,000. The college endowment is now about $1,250,000. Its plant, valued at $700,000, is entirely free from debt.

THE Mineralogical Society of America is compiling a list of mineral collections, public and private, in the United States and Canada, the intention being to publish this information in the form of a regional directory in *The American Mineralogist*. Curators of collections and mineral collectors are asked to send their names and addresses, and some data regarding the nature of their collection, their origin, and when they can be seen by visitors. The society would also welcome information regarding other collections known to the correspondents, which they consider should be included in the directory. Since the success of the survey being made will very largely depend upon such cooperation, an earnest appeal is made for full, complete and prompt replies. Correspondence should be addressed to Samuel G. Gordon, Academy of Natural Sciences of Philadelphia, Logan Square, Philadelphia, Pennsylvania.

The Museum Journal reports that the first new unit of the east wing of the California Academy of Sciences has been completed and the departments of entomology and fishes and the administrative offices have moved to their new quarters. The habitat groups in the Simson African Mammal Hall are now being installed under the direction of Frank Tose, chief of exhibits, with the assistance of John Adams and Jenness Richardson, mammal taxidermist; Stuart Rowley, Marietta Edwards and Richard Cayzer, installation and accessories; Cecil Tose and William Hayden, assistant preparators, and J. M. Barclay, general assistant. Hanson Puthuff, of Los Angeles, California, is expected to paint the first backgrounds. The opening of the hall to the public is planned for December, 1932. The main hall contains space for twenty-four groups, all of which will be displayed under artificial light.

SCIENTIFIC work, according to a summary given out by Science Service, in the Bureau of Geological Survey, will be curtailed in 1932–33, as a result of action first by the Budget Bureau and second by the House Committee on Appropriations. For the entire bureau

there is a decrease of almost $1,500,000 in appropriations, compared to 1931–32. For some years the Geological Survey has been engaged in making a topographic map of the United States. It is expected that the Congress will follow recommendations of the committee in cutting this work down by at least $100,000 more than suggested by the budget, which was a $164,000 decrease. Geologic surveys, for which $400,000 was asked (the same as the amount appropriated for 1931 and 1932) will probably be cut $50,000; likewise fundamental research in geologic science, for which $100,000 was asked. Volcanologic surveys will probably be cut down from $35,000 in 1931–32 to $21,000. The main volcanologic observatory of the United States is in the Hawaiian Islands on the great volcano of Kilauea. Investigation of the mineral resources of Alaska, an item for which it was hoped there might be $84,500, the same as in 1932, was reduced by $17,000. Gaging streams and determining water supply of the United States has been cut $119,500. It had been estimated that $719,500 would be required. Other items suffering cuts are the classification of lands, the printing of geologic maps, and investigations of minerals on public lands and naval petroleum reserves.

IN order to achieve a broader representation of sportsmen and conservationists upon the Advisory Board, Migratory Bird Treaty Act, and to obtain a large measure of local cooperation in the problems of conservation and enforcement, a reorganization of the board is being planned by Secretary of Agriculture Hyde. As a means of securing more direct regional representation on this board, the states have been tentatively divided into ten groups. These groups are so arranged as to give consideration to such matters as relative density of population and dissimilarity of conditions affecting migratory birds, as well as the various interests of those who are concerned in their welfare. A majority of the members of the board will be selected from these groups in cooperation with and upon the recommendation of the state conservation officials. The advisory board is organized for the purpose of assisting the federal authorities in a solution of regulatory problems in connection with the federal administration of the migratory bird resource. When constituted, it will be requested to study and recommend definite policies upon all questions affecting the interest of the sportsmen and conservationists of the United States and falling under the jurisdiction of the Biological Survey, U. S. Department of Agriculture. Such subjects as length of seasons, bag limits, shooting restrictions, zoning, measures for increasing the supply of both upland game birds and water fowl and measures for conserving the existing supply will be submitted to it.

DISCUSSION

THE PROCESS OF GIORDANO BRUNO

IN his presidential address to the Astronomical Section of the American Association for the Advancement of Science published in SCIENCE of January 8, 1932, President D. W. Morehouse says: "Suggestions were heard on every side that such views should be forcibly repressed, and some of its advocates, for example, Bruno, were condemned to death and burned at the stake in 1600. As history records, the second martyr of the Jesuits was harassed and persecuted solely for his adherence to the Copernican system." This statement is erroneous.[1] The external data of Bruno's life are the following:

Bruno was born in 1548 in Nola, a small town near Naples, entered the Dominican order at the age of 14 or 15 years, and left the order in 1576, travelled then extensively in Italy, France, Switzerland, England and Germany. He returned to Italy, was accused in Venice, arrested and tried there in 1592 before the Inquisition. In 1593 he was extradited to Rome, where his process lasted until 1600, in which year he was condemned and burned at the stake. The question now arises as to what the reasons for this condemnation were.

The documents of the Venetian process were first published by Berti. A more recent book is by Father Luigi Previti, S.J., "Giordano Bruno," Prato, 1887.[2] The documents of the Venetian process contain first the denunciation by Giovanni Mocenigo on the grounds of heresies concerning the Trinity, the sacraments, the transmigration of souls, the existence of an infinite number of worlds and the eternity of the world, besides teaching conjuration (I am not giving the complete list). After a number of purely formal documents we find then a complete record of the interrogation of Bruno. This record gives the impression of stenographic accuracy; the questions of the court apparently being written down beforehand in grammatically correct style, while the answers of the accused show all the characteristics and repetitions of extemporaneous speech. One can judge the points

[1] Sir James Jeans says also in his book, "The Universe Around Us," that Bruno was condemned because of his advocacy of the Copernican theory.

[2] I am indebted to Father Gerald Walsh, professor of history at Woodstock College, for drawing my attention to this book, and putting it at my disposal.