metallic ores, as now conducted, involves the use of exhaustible material both as ore and as fuel.

In most industries, however, the two sets of considerations are combined. Portland cement, for example, is made from inexhaustible substances, but is burned with exhaustible fuel. The latter factor in the industry, therefore, is the one to be carefully considered, while the first factor is negligible. Taking industry by industry we shall find that this condition of affairs is general, and that each one must be studied by itself with reference to its inexhaustible, reproducible and exhaustible elements. In doing this a clear notion can be obtained as to the real needs of a given industry, and our attention can then be concentrated upon those features of it which particularly demand economy. We shall be able to locate evils with greater accuracy; to diagnose the industrial diseases, so to speak, and then to look intelligently for remedies. Many of the remedies must be sought for along chemical lines of research, which will develop economical processes of manufacture, utilize materials that are now wasted, or substitute cheap for costly substances. Cheap and costly, however, are words which need qualification. A substance or a process which is cheap to-day may be in reality wasteful with a temporary reduction in price at the cost of some permanent economy. For our purposes the two words imply a deeper discrimination than is carried by their ordinary use. Temporary efficiency and cheapness are to be discountenanced, while permanent economy for the benefit, not only of the nation but of the whole human race, is to be encouraged. This principle is sound, but its practical applications will involve many difficulties, and develop many conflicts with special interests. Like all ideals it can not be realized absolutely, but it represents a standard of action towards which we must move, even though the ultimate goal of perfection may never be attained. Evils can be mitigated, although they may not be entirely removed.

The American Chemical Society now numbers more than four thousand members, scattered through all the states and territories of the union and represented in every one of our great productive industries. These chemists are at the same time progressive and conservative in their work, for they are both discovering new utilities and protecting old ones from loss. We believe that every member of the organization is necessarily in sympathy with the great forward movement for economy, and that in our society the National Conservation Commission will find a most powerful and willing ally.

F. W. Clarke,
H. W. Wiley,
C. H. Herty,
S. W. Parr,
R. B. Dole

SCIENTIFIC NOTES AND NEWS

The Royal Academy of Stockholm has presented Mr. Thomas A. Edison with its Adelskiold gold medal for his inventions in connection with the phonograph and the incandescent light. This medal is conferred once in ten years.

Professor Cleveland Abbe, of the U. S. Weather Bureau, has been elected an honorary member of the Royal Meteorological Society.

The Alumni Association of Columbia College and the School of Mines gave a dinner to Dean J. H. Van Amringe, professor of mathematics in Columbia University, on April 3, to celebrate his birthday and a half century of teaching at Columbia College. A loving cup was presented to him.

It is announced that President Taft has requested Surgeon General Wyman to draw up a tentative plan for the consolidation under one bureau of the agencies exercised by the federal government for the preservation of the public health.

M. Jungfleisch has been elected a member of the Paris Academy of Sciences in the section of chemistry as successor to the late M. Ditte.

Mr. Charles S. Sherrington, professor of physiology in Liverpool University and Mr. William H. Maw, editor of *Engineering*, are

to receive the doctorate of laws from Glasgow University.

THE Chemical Society, London, has conferred its Longstaff medal on Professor S. F. Kipping, of University College, Nottingham.

PROFESSOR HAROLD DIXON has been elected president of the Chemical Society, London, succeeding Sir William Ramsay.

AT the sixty-second annual meeting of the Paleontographical Society, held in the rooms of the Geological Society, London, on March 19, Dr. Henry Woodward was reelected president, Dr. G. J. Hinde, treasurer, and Dr. A. Smith Woodward, secretary. Sir Archibald Geikie, was elected a vice-president in succession to the late Mr. W. H. Hudleston.

PROFESSOR THOMAS PURDIE will retire at the end of the summer session from the chair of chemistry at St. Andrews, owing to ill-health.

THE Isaac Newton studentship at Cambridge University, tenable to April 15, 1812, has been awarded to Mr. W. J. Harrison, of Clare College.

MR. N. W. THOMAS has been appointed government ethnologist to southern Nigeria.

DR. CAROLINE MCGILL, instructor in anatomy at the University of Missouri, has been awarded the Sarah Berliner research fellowship for women of the value of $1,200.

DR. PHILIP P. CALVERT, assistant professor of zoology in the University of Pennsylvania, will be given leave of absence, and his place will be filled next year by Dr. Merkel Henry Jacobs, who is now engaged in post-graduate study at the University of Berlin.

MR. J. R. JOHNSTON, of the Bureau of Plant Industry, returned recently from the vicinity of Baracoa, Cuba, where he has been engaged for some months in researches on the nature and possible control of the cocoanut bud-rot.

DR. VICTOR C. VAUGHAN, of the University of Michigan, will deliver the presidential address at the meeting of the Association of American Physicians to be held in Washington on May 11 and 12.

DR. A. C. LANE, state geologist of Michigan, gave a special lecture on "The Grain of Rocks," in the department of geology and a talk on the "First Evidences of Life on the Globe," to the Science Club, at the University of Wisconsin on March 26.

AT the meeting of the American Philosophical Society on March 19, Professor Marston T. Bogert, of Columbia University, gave an address entitled "On Coal Tar Products and their Application in the Arts and Medicine," which was illustrated by a large number of specimens.

MAJOR M. W. IRELAND, who is chairman of the committee appointed by the legislative council of the American Medical Association, to assist Mrs. Carroll, the widow of Major James Carroll, announces that $2,500 have been subscribed, chiefly by medical officers of the Army, the Navy and the Public Health and Marine Hospital Service. Though Mrs. Carroll was voted a pension of $125 a month, this does not suffice to support and educate her seven minor children; the aged mother of Major Carroll was also dependent on him. Subscriptions for the relief of Major Carroll's family and as a recognition of his heroic and distinguished services for the suppression of yellow fever may be sent to Major M. W. Ireland, Office of the Surgeon General, War Department, Washington, D. C.

DR. WILLIAM JONES was murdered, on March 28, by natives in the Philippine Islands, where he was carrying forward anthropological work on behalf of the Field Museum of Natural History of Chicago. Dr. Jones, who was partly of Shawnee Indian descent, studied at Harvard University and subsequently took the degree of doctor of philosophy at Columbia University. He was an accomplished anthropologist, and his death is a serious loss to the science of anthropology.

WILLIAM CHARLES KERNOT, professor of engineering in Melbourne University, has died at the age of sixty-four years.

FOLLOWING up the plan inaugurated by the section of geology and mineralogy of the New York Academy of Sciences last year, the mineralogical and geological section of the Academy of Natural Sciences of Philadelphia proposes to arrange for a second annual spring

meeting of the geologists of the northeastern United States, to be held in Philadelphia on Friday and Saturday, April 23 and 24, 1909. It is planned to hold two sessions for the reading of papers, and a field trip to typical localities of the Pre-Cambrian and early Paleozoic rocks of the region. It is hoped that every one will be able to contribute, if not an extended paper, at least an informal account of work being carried on. Titles should be sent to Professor E. T. Wherry, Lehigh University, South Bethlehem, Pa.

On Thursday evening, March 18, Dr. Barton W. Evermann, assistant in charge of scientific inquiry, Bureau of Fisheries, Washington, D. C., delivered a lecture to the members of the Massachusetts Fish and Game Protective Association and their invited guests at the Copley Square Hotel in Boston. His subject was "With Packtrain to the Tip-top of the United States in Quest of the Golden Trout," illustrated by numerous stereopticon slides. When it was reported to President Roosevelt that the golden trout, known only from Volcano Creek in the High Sierra of California, was in danger of extermination, he called upon U. S. Fish Commissioner Bowers to have an investigation made and Dr. Evermann was put in charge of the field party. The golden trout of Volcano Creek proved to be an undescribed species which has been named *Salmo roosevelti*. Another undescribed species was found in Soda Creek, a western tributary of the Kern; and it has been named *Salmo whitei*, in honor of Stewart Edward White, who suggested the investigations. The expenses of the lecture were paid from the income of the "Ivers Whitney Adams Fund," a gift of $5,000 presented the association in 1908, by Mr. Ivers Whitney Adams, of Boston, "to secure and provide lectures to be given before the members of said association at regular or special meetings of each year, but not at annual banquets, said lectures to be illustrated, as far as practicable, and connected with the objects of the association."

The *Geographical Journal* states that in 1907 Professor Eberhard Fraas discovered an interesting fossil bed in the Upper Cretaceous formation of Tendagu, in the Linde district of German East Africa. This deposit contained a number of bones of Dinosaurs, the bones of these huge reptiles lying for the most part in their natural position in the marl and sandstone, from which they have weathered out so that they protrude at the surface. The specimens brought back by Professor Fraas are now mounted in the museum at Stuttgart, and have been shown to belong to a herbivorous Dinosaur which must have reached a length of about 48 feet, and has been named Gigantosaurus. The specimens are incomplete, and so much interest has been aroused by them that the German government has decided to send a special expedition to the region, to examine the deposit in detail, and to make additional collections of fossils.

The honorary secretaries of the Zoological Society of Scotland, which has recently been founded, inform *Nature* that the society has been formed for the purpose of establishing a living zoological collection and garden at Edinburgh. The garden will be arranged on the system adopted by Herr Hagenbeck, of Hamburg, and will be conducted on scientific lines. When the society has developed sufficiently, it is within its scope to establish branch gardens in the other large towns in Scotland. In addition to this, lectures of a popular nature by eminent zoologists will be arranged. The headquarters of the society, and the first and principal garden, will be at Edinburgh. To obtain the necessary capital a garden fund has been opened, to which donations are solicited. The annual subscription is £1 1s., but members who join the society during 1909 pay 10s. only for that year. This will entitle members to all the privileges usual in such a society. The aim of the promoters is to build up a strong society with a large membership, so that a considerable part of the annual sum required for the upkeep of the gardens will be insured from subscriptions, and less dependence will require to be placed on the receipts from the public for admission.

At the regular monthly meeting of the Biological Club of the Ohio State University on Monday evening, March 1, a special program in commemoration of the centenary of the birth of Charles Darwin was presented.

President William Oxley Thompson had consented to act as honorary chairman, but later found it impossible to be present, and Miss Freda Detmers, president of the club, presided. The program was intended to cover the various phases of Darwin's life work as the following list of subjects will indicate: "Darwin's Character and Method of Work," Professor F. L. Landacre; "The Influence of Darwin's Work in Geology," Professor G. D. Hubbard; "Darwin's Contributions to Zoological Science," Professor Herbert Osborn; "Darwin in His Relationship to British Stockmen," Professor C. S. Plumb; "Darwin's Contributions to Horticultural Science," Professor V. H. Davis; "The Work of Darwin in Physiological Botany," Professor A. Dachnowski; "Darwin's Contributions to Botany," Professor J. H. Schaffner; "Darwin and Modern Philosophy," Professor A. E. Davies; "Darwin and Modern Psychology," Professor D. R. Major.

UNIVERSITY AND EDUCATIONAL NEWS

THE appropriations committee of the Pennsylvania House of Representatives has reported a bill recommending an appropriation of $700,000 to the University of Pennsylvania.

IT is said that Dalhousie University is likely to be removed from Halifax, N. S., to the city of Dartmouth on the opposite side of the harbor. This city has offered a free site and about $100,000 for buildings.

THE governor of Colorado has signed a bill permitting the state university to conduct the last two years of its medical course in the city of Denver.

THERE has been introduced in the New York assembly a bill which provides that five members of the board of trustees of Cornell University shall be appointed by the governor, his appointments to be subject to the approval of the senate.

A ROYAL commission has been appointed to consider the position and organization of university education in London.

THE inauguration of Dr. Richard C. MacLaurin as president of the Massachusetts Institute of Technology will take place on Monday, June 7, at Symphony Hall. A committee of the corporation, faculty and alumni has been appointed to take charge of the ceremony.

MR. R. H. WHITBECK, of the New Jersey State Normal School, Trenton, N. J., has been appointed assistant professor of geology at the University of Wisconsin. He will give courses especially intended for the preparation of teachers, dealing primarily with applied geography and with materials available for secondary school teaching and methods of presenting physical geography, geography and geology.

DR. EDMUND LANDAU, docent at Berlin, has been appointed professor of mathematics at Göttingen.

DISCUSSION AND CORRESPONDENCE

CITY BOYS VERSUS COUNTRY BOYS

TO THE EDITOR OF SCIENCE: In your issue of February 12 Mr. W. J. Spillman, under the title "Education and the Trades," makes, with regard to the birthplaces of leading Americans, the following surprising statement:

> I believe there are some things which have higher pedagogic value than anything taught in our schools to-day, else why is it that with only 29 per cent. of our population actually living on the farm, with miserably poor school facilities as compared with our city population, this 29 per cent. furnishes about 70 per cent. of the leaders in every phase of activity in this country?

I say surprising, because any one who is familiar with modern investigations in the inheritance of mental qualities in man, must see that such a supposition, if it were indeed a fact, would seriously clash with the conclusions drawn from a number of researches otherwise harmonious and mutually supporting.

This point I will discuss later, but now let us test the facts. Does the farm produce more than its share of leading Americans? Such a question must be answered on a statistical, impartial, and as far as possible, scientific basis. It is first necessary to determine who are the "leaders in every phase of activity in this country." I have turned to "Who's