King, Harold, chemist, National Institute for Medical Research, Hampstead.

Lennard-Jones, John Edward, Plummer professor of inorganic chemistry, Cambridge University.

McLeod, James Walter, professor of bacteriology, Leeds University.

Parkes, Alan Sterling, physiologist, Foulerton Student of the Royal Society.

Salisbury, Edward James, Quain professor of botany, London University.

Smith, Bernard, district geologist of H. M. Geological Survey.

Thompson, William Robin, superintendent of Farnham House Laboratory of the Imperial Institute of Entomology, London and Farnham Royal.

Tyndall, Arthur Mannering, Henry Overton Wills professor of physics, Bristol University.

Wedderburn, Joseph Henry, Maclagan professor of mathematics, Princeton University.

SCIENTIFIC NOTES AND NEWS

A TESTIMONIAL dinner to observe the eightieth birthday of Professor Elihu Thomson, of the Thomson-Houston and General Electric Companies at Lynn, Massachusetts, will be held in the Walker Memorial of the Massachusetts Institute of Technology on Wednesday evening, March 29. In the afternoon there will be a conference relating to the theoretical and experimental aspects of modern electricity, as well as to certain of its historical aspects, with particular reference to Professor Thomson's achievements.

THE honorary doctorate of the University of Paris will be conferred on Dr. Harvey Cushing, who retired last year from the professorship of surgery at Harvard University and as surgeon-in-chief of the Peter Bent Brigham Hospital.

DR. ALFRED NEWTON RICHARDS, since 1910 professor of pharmacology in the University of Pennsylvania, will be awarded the Kober Medal by the Association of American Physicians during its annual meeting in Washington, D. C., on May 9, in recognition of his work on diseases of the kidney. Dr. Rolla E. Dyer, of the U. S. Public Health Service, Washington, is the Kober lecturer for 1933. He will deliver the lecture on March 25, at Georgetown University.

AT the annual meeting of the American Society of Parasitologists, honorary foreign membership was voted to: Professor H. A. Baylis, Natural History Museum, London; Professor Dr. E. Martini, Institut für Schiffs- und Tropen-Hygiene, Hamburg; Professor Edmund Sergent, director of the Institut Pasteur d'Algérie; Professor Etienne Sergent, chef du service antipaludique à l'Institut Pasteur d'Algérie, and Professor K. I. Skrjabin, Institut d'helminthologie de l'Ecole Veterinaire, University of Moscow.

DR. WITMER STONE, of the Academy of Natural Sciences of Philadelphia, has been elected an honorary member of the British Ornithologists Union.

DR. EMIL WITSCHI, professor of zoology at the State University of Iowa, has been elected to membership in the Academy of Sciences at Halle.

DR. EDWARD H. CARY, Dallas, Texas, president of the American Medical Association, was the guest of honor at the annual dinner of the *Rhode Island Medical Journal* in Providence on February 20, which was attended by nearly two hundred physicians. Dr. Frederick N. Brown, editor of the journal, was toastmaster. A briefcase and a Texas flag were presented to Dr. Cary, who was introduced by Dr. Norman Darrell Harvey, president of the Rhode Island Medical Society.

ARTHUR W. DEAN, Winchester, chief engineer of the Massachusetts Department of Public Works, was elected president of the Boston Society of Civil Engineers at its eighty-fifth annual meeting on March 11.

WILLIAM O. MOSELEY, JR., TRAVELING FELLOWSHIPS of the Harvard Medical School, to enable students who have attended the school to continue the study of medicine in Europe, have been awarded to Dr. Stanley J. G. Nowak, instructor in surgery; to Dr. Charles V. Seastone, Jr., research fellow in bacteriology and immunology, and to Dr. Neil L. Crone, interne at the Massachusetts General Hospital.

THE Committee on Scientific Research of the American Medical Association has made a grant to Professor F. H. Pike, Columbia University, for the continuation of his work on the effects of combined experimental lesions of the central nervous system.

DR. HIRAM W. KOSTMAYER, professor and head of the department of gynecology, Tulane University Graduate School of Medicine, New Orleans, has been appointed acting dean of the school, succeeding the late Dr. Henry Daspit.

CLARENCE E. LIBBY, for several years associate professor of forestry chemistry at the New York State College of Forestry in Syracuse, has been appointed professor and head of the department of pulp and paper manufacture.

C. K. MORSE, superintendent at the Nebraska School of Agriculture in Curtis, will take up univer-

sity agricultural extension work in Lincoln in September.

DR. LORIN A. THOMPSON, head of the department of psychology at the Ohio Wesleyan University, has been appointed director of the summer session, which after a lapse of twenty-five years is to be opened again. Professor Allen C. Conger, of the department of zoology, will continue as director of the summer school at Lakeside, a summer resort, under the auspices of the Methodist Episcopal Church.

DR. J. NEEDHAM, of Gonville and Caius College, Cambridge, university demonstrator in biochemistry since 1928, has been appointed Sir William Dunn reader in biochemistry in place of Professor J. B. S. Haldane, who has accepted the chair of genetics at the University of London. Dr. Needham was visiting professor of biochemistry at Stanford University in 1929.

W. W. KAY, assistant lecturer at the University of Manchester, has been appointed lecturer in chemical pathology, and C. A. McGaughey, assistant lecturer in bacteriology, lecturer in veterinary bacteriology and hygiene.

DR. ERNEST G. PRINGSHEIM, professor of botany at the German University at Prague, has been called to the University of Frankfurt.

KENNETH HEADLAM-MORLEY has been appointed secretary of the British Iron and Steel Institute in succession to Mr. G. C. Lloyd.

DR. J. F. MCCLENDON, professor of physiological chemistry at the University of Minnesota, who has for the past twelve months been studying the relation of iodine to goiter in Japan, China, Italy and Switzerland, will arrive on the *Aquitania,* which leaves Southampton on March 29.

DR. THOMAS H. JOHNSON, of the Bartol Research Foundation of the Franklin Institute, sailed on March 15 for Mexico, Panama and Peru, where he will make measurements of the directional distribution of the cosmic radiation. The work is jointly supported by the Carnegie Corporation through the Department of Terrestrial Magnetism of the Carnegie Institution of Washington and by the foundation.

HARLAN H. ZODTNER and Frederick A. Greeley, of the Astrophysical Observatory of the Smithsonian Institution, sailed on March 4 for Suez, taking with them about six tons of equipment for installing a solar radiation station on Mount Saint Katherine, Sinai, Egypt. The authorities of the Saint Katherine Monastery on Mount Sinai have agreed to construct the observatory and trails. The expedition, financed by John A. Roebling, is expected to continue three years, cooperating with the solar radiation observatories Montezuma, Chile, and Table Mountain, Californi Mount Saint Katherine was selected after abou twenty months of exploration by Mr. and Mrs. A. F. Moore. It is about 8,500 feet in altitude.

DR. HENRY C. SHERMAN, Mitchill professor of chemistry at Columbia University, will be the principal out-of-state speaker at the annual meeting of the West Virginia Academy of Science, to be held at Fairmont State Teachers College, Fairmont, West Virginia, on May 5.

AT its meeting on March 9, the Geological Society of Chicago was addressed by Professor Nevin M. Fenneman, of the University of Cincinnati, on the subject "Cyclic and Non-cyclic Erosion."

DR. ALLEN O. WHIPPLE, professor and head of the department of surgery of the College of Physicians and Surgeons of Columbia University, recently gave a series of lectures at the School of Tropical Medicine at the University of Puerto Rico.

THE twenty-fourth course of Lane Medical Lectures will be delivered by Dr. J. C. Drummond, professor of biochemistry, University College, London, on the evenings of April 3, 4, 5, 6 and 7, at Stanford University School of Medicine, San Francisco. The general title of Professor Drummond's lectures is "Recent Advances in the Biochemical Study of Nutritional Disorders." Professor Drummond will also give a lecture at Stanford University on April 11, entitled "General Survey Lines of Future Progress."

THE third International Congress for Experimental Cytology will take place in Cambridge (England) from August 21 to 26, 1933. There will be general discussions concerning the following problems: Cell respiration and cell metabolism; Cell form and function as demonstrated by recent advances in tissue culture; The electro-physiology of the cell; Entwicklungsmechanik and Explantation, and The cultivation of animal and plant viruses.

THE third expedition from the University of Michigan in a biological survey of the Maya region in Central America in cooperation with the Carnegie Institution of Washington sailed from New Orleans on March first. The party consisted of Dr. L. C. Stuart, of the Museum of Zoology, herpetologist, and Mr. C. L. Lundell, of the University Herbarium, botanist. The objective is the great savannah area lying beyond Lake Peten in the Province of the Peten, Guatemala, where detailed studies and collections of the fauna and flora will be made. It is anticipated that headquarters will be established at La Libertad in the heart of the savannah and the work carried on from that base for about four months. The first expedition in what

is planned as a twenty-year project to ascertain not only the present biological conditions but the environment under which the great Maya civilization rose and declined took place in 1931 to the region of Uaxactun far to the north in the Peten district where the Carnegie Institution has been excavating for some years. The second in 1932 was an elaborate series of explorations and studies of the cenotes and aguadas of the Yucatan peninsula, with Chichen Itza as the headquarters. The work is supported by the Carnegie Institution of Washington and the University of Michigan.

THE Laboratory of Anthropology at Santa Fe offers for the summer of 1933 twelve fellowships in field training. Four appointments will be made in archeology, working under the direction of Dr. F. H. H. Roberts, of the Bureau of American Ethnology, on Pueblo sites in Arizona. Four scholarships in ethnology are available for work under the direction of Professor Ralph Linton, of the University of Wisconsin, on the Wichita of Oklahoma. Four scholarships in linguistics are offered under the direction of Dr. Harry Hoijer, of the University of Chicago, conducting research on the Apache language in Arizona. The Fellowship Committee consists of Alfred M. Tozzer, *chairman,* Edward Sapir and Neil M. Judd.

ACCORDING to *Industrial and Engineering Chemistry, The Chemical News,* founded in 1859 by the late Sir William Crookes and for many years a publication of some importance, has apparently ceased publication. The issue for September 23 was the last weekly number and it bore a notice of change of frequency to a monthly issue, but only the October number appeared and that was late. In that number, however, the editor indicated some hope for a reorganization which would enable weekly publication to be resumed in November. However, according to *Chemistry and Industry,* the company formed under the name "The Chemical News, Limited" has now gone into liquidation and consequently the world's oldest English weekly chemical journal has come to an end. For years British and American investigators, especially in inorganic and analytical chemistry, published their results in this journal which, being a weekly, afforded means for prompt publication. Many of the discoveries of new elements were announced in its pages and for seventy-three years *The Chemical News* recorded in some form continuous progress in chemistry and allied sciences.

THE London correspondent of the *Journal* of the American Medical Association writes that at the invitation of the University of London, the Universities of Oxford and Cambridge and the Royal Colleges of Physicians and Surgeons have appointed representatives to consider, with those of the University of London, the present defects of the medical curriculum and to make suggestions for reform. The University of London was led to take action by a recommendation of the board of the faculty of medicine, which has been giving consideration to various criticisms of the medical curriculum. Representatives of the conference include Sir Farquhar Buzzard, regius professor of medicine, University of Oxford; Dr. W. Langdon Brown, regius professor of medicine, University of Cambridge; Dr. A. M. H. Gray, dean of the Faculty of Medicine, University of London; Lord Dawson of Penn, president of the Royal College of Physicians; Sir Holburt Waring, president of the Royal College of Surgeons. At the first meeting, Lord Dawson was elected chairman. The conference intends to call evidence and to review the whole course of medical education.

THE Grand Canyon National Monument, established by proclamation on January 6, is about fifty miles down the river from the point on the south rim from which tourists usually view the canyon, providing a number of new views. The proclamation covers 392 square miles and includes land already withdrawn by the Federal Government for study as to the best use to be made of it. The area is about 500 miles by motor from Los Angeles, and about 50 miles as the bird flies from Grand Canyon Village on the South Rim. Toroweap Point has an elevation of 4,750 feet, although the outer rim just above the point has an elevation of 6,500 feet. Looking downward from Toroweap Point it is 3,000 feet to the Colorado River, which appears to be a slender and seemingly insignificant ribbon of silver from this height. A huge cinder cone of volcanic origin with the mythological title of "Vulcans Throne" is also included in the monument.

THE National Park Service at Yellowstone National Park is again making preparations to distribute bison, grizzly bears and black bears to preserves, zoos, zoological gardens and parks. While the buffalo shipments will not be made until November and December, when weather conditions are more favorable, requests for bears will be handled as soon as received and the animals can be captured. It is announced that these animals will not be disposed of as pets. They are distributed primarily for purposes of exhibition and to maintain a balance in the Yellowstone Park animal world. Whereas the Park Service makes no direct charge for any of these animals, advance payment of from $55 to $70 for a buffalo, and $75 for a bear is necessary to cover the cost of crates, transportation from the point of capture to Gardiner, Montana, cost of feed, and expenses incidental to the shipment. Buffalo will be sent only as yearlings or older. In

the case of a yearling the cost f.o.b. Gardiner, Montana, is approximately $55, the animal weighing 1,000 pounds crated; while for a full grown buffalo, which weighs about 2,000 pounds crated, the cost is approximately $70. All animals are shipped express collect. Should the charges in connection with shipment amount to less than the sum remitted, a refund of the balance will be made. Requests should include information as to the number, sex and approximate age of the animals desired.

THE *Journal* of the American Medical Association reports that at a meeting of a class at the Prussian Academy of Sciences in Berlin, a preliminary report was presented by Dr. Richard Walzer, of Berlin, on a recently discovered manuscript by Galen. The manuscript, which is entitled "On Medical Empiricism," furnishes a complete Arabian translation by Hubais of the work that is known in the Occident only through a few scanty fragments. "On Medical Empiricism" is by no means a polemic against empirical medicine but rather a manual in which the eminent Greco-Roman physician for didactic reasons permits the advocates of unsupported theories to present their views, the mode of presentation being that first the dogmatizing physician attacks the empiricist and then the empiricist is given ample opportunity to defend his position. This manuscript, along with the "Subfiguratio Empirica," will be an important source of information with regard to the empirical medicine of antiquity, which, in the main, has been known only through the polemical attacks of its opponents. The manuscript contains, furthermore, some new material on the history of philosophy, especially on skepticism, and a new fragment of the writings of Democritus and of the Cynic philosopher Diogenes. Likewise the antecedents of Hellenistic empirical medicine will be clarified by Walzer's discovery.

DISCUSSION

THE LAW OF MAXIMUM NORMAL NUTRITIVE VALUE

EVIDENCE has been accumulating for many years, but especially during the past quarter century, which is in harmony with the conclusions of the writer and his associates (1) that, in a critical sense, foodstuffs can not be evaluated individually; (2) that net energy values of individual foodstuffs are fundamentally variable, and hence are not practicable standard measures of reference, and (3) that the most nearly logical, single, conventional measure of whole nutritive value is the net energy of the nutritively complete ration.

The time, therefore, seems propitious for the formulation of a principle underlying these ideas—which may be called "The Law of Maximum Normal Nutritive Value" and which may be stated as follows:

> An individual foodstuff expresses its normal and most characteristic nutritive value, for a given kind of animal, under specified conditions governing nutritive requirement, only as it is a part of a ration which is qualitatively complete and quantitatively sufficient, for the conditions existing—except as it may express the same value by virtue of the capacity of the animal temporarily to protect itself from food nutrient deficiency by drafts upon the nutritive reserves of its own body, or as it may express even higher apparent value, under certain pathological conditions, or during undernutrition, by virtue of the protective or body-sparing capacities of nutrients.

It is true that a foodstuff may seem to have a greater value when added to a markedly deficient ration than when added to a more nearly perfect one, if the entire supplementing effect of the combination is, illogically, credited to the supplementary food; but this is only because the supplement is thus credited with more than its own value, since, logically, each component of the more nearly perfect ration should be credited with greater value than it has in the less nearly perfect ration. Manifestly, there is no scientific method of apportioning the nutritive value of a diet among its components.

From the critical point of view of the principle stated foodstuffs can not be compared with each other, as to nutritive value, except with reference to a constituent, or a quality, or a capacity which they have in common—which, obviously, constitutes an incomplete and therefore imperfect basis of comparison.

This position may seem extreme, but is finally inescapable. The experimenter has only to choose between a voluntary adoption of this logically correct point of view, and a forced acceptance of the same attitude, after having been driven from one fundamentally untenable position to another until no choice remains.

A reason for the frequent failure of investigators adequately to observe this principle, in nutritional studies, is apparently the fact that, under many conditions, especially in short-time periods of experimental observation, nutritive deficiencies are, for the time being, completely masked by drafts upon the reserves of the animal body. Experimenters, therefore, often overlook the fact that under some other conditions the same deficiencies would unquestionably affect apparent nutritive values.