son, Edward S. Dana (whose name was included among the editors as early as 1875). From 1895 until 1925, the name of the younger Dana alone appeared as editor-in-chief. In 1925–26, Professor Alan M. Bateman rendered essential assistance until, through his efforts, Dr. Ernest Howe became editor in 1926.

The associate editors of *The American Journal* have been of importance in their support in many directions, especially by their contributions of abstracts of original papers published elsewhere. The list of associate editors from 1851 to the present time includes the names of many of the most distinguished scientists of the time, chiefly in this country.

At the time of the hundredth anniversary of the *Journal* in 1918 a number of lectures, certain of which were made the basis of a series of Silliman Lectures at Yale, were gathered together and published under the title, "A Century of Science in America, with special reference to *The American Journal of Science*, 1818–1918."

The ownership of the *Journal* passed to Yale University in 1926 through the gift from the editor and owner, Edward S. Dana. An endowment has been gradually accumulated, a large part of which has been given by the immediate descendants of the founder of the *Journal*.

SCIENTIFIC NOTES AND NEWS

SIR CHARLES SHERRINGTON, Waynflete professor of physiology at the University of Oxford, has been elected an associate member of the French Academy of Medicine.

DR. H. SPENCER JONES, recently appointed Astronomer Royal at the Greenwich Observatory, formerly a fellow of Jesus College, Cambridge, has been elected to an honorary fellowship.

DR. GILBERT THOMAS MORGAN, director of the chemical research laboratory of the Department of Scientific and Industrial Research at Teddington, has been nominated to the presidency of the Chemical Society, London.

DR. NEVIL VINCENT SIDGWICK, university reader in chemistry at the University of Oxford, fellow of Lincoln College, Oxford, and member of the Advisory Council of Scientific and Industrial Research, has been elected a member of the Athenaeum Club, under the provision which empowers the annual election of a certain number of persons of distinguished eminence in science, literature, the arts or public service.

AT the annual dinner on February 22 of the American Institute of Mining and Metallurgical Engineers, the Saunders Medal, for distinguished achievement in mining engineering, was presented to Walter H. Aldridge, president of the Texas Gulf Sulphur Company, and the James Douglas Medal, for distinction in metallurgy, was presented to James O. Elton, manager of the International Smelting Company of Salt Lake City.

DR. FRANK C. MANN, of the Mayo Foundation, Rochester, Minnesota, has been awarded the William Wood Gerhard gold medal of the Pathological Society of Philadelphia for 1932. Dr. Mann also gave the annual conversational lecture on the evening of February 9. His subject was "Observation on Experimental Pathology and Pathologic Physiology of the Liver."

OIL paintings of Dr. Charles N. Gould and Dr. Charles E. Decker, commemorating their many years of active service in connection with the development of geological science in Oklahoma, were unveiled on February 8 at the University of Oklahoma. Thirty-three years ago Dr. Gould organized the department of geology at the university and eight years later organized the Oklahoma Geological Survey. For seventeen years Dr. Decker has taught paleontology at the university. He has also served as secretary-treasurer of the American Association of Petroleum Geologists, and as grand president of Sigma Gamma Epsilon. Dr. Irving Perrine, formerly a member of the faculty of geology, presided. Short addresses were made by a number of former students. President Bizzell, of the university, accepted the paintings, which were presented by Gamma Chapter of Sigma Gamma Epsilon.

DR. WALTER H. EVANS, chief of the Division of Insular Stations of the Office of Experiment Stations, retired on February 1, having reached the compulsory retirement age of seventy years. Dr. Evans was presented by his associates with a signed scroll and a watch, as an appreciation of his long and devoted service and as an expression of their high regard for him in their personal and official relationships.

A DINNER in honor of Dr. Francis M. Pottenger, Monrovia, California, retiring president of the American College of Physicians, was given by Southern California members of the college in Los Angeles, on January 12. Dr. David P. Barr, St. Louis, was the guest speaker.

DR. WILLIAM ALLEN PUSEY, emeritus professor of dermatology, University of Illinois College of Medicine, will deliver the Adolph Gehrmann Memorial Lectures at the Research and Educational Hospital of the college on March 1, 2 and 3, on "The History and Epidemiology of Syphilis." A dinner in honor

of Dr. Pusey has been arranged by the university, to be given on March 2.

PROFESSOR GEO. J. MILLER, State Teachers College, Mankato, Minnesota, was chosen president of the National Council of Geography Teachers at its recent meeting in Washington. The next annual meeting will be held at Northwestern University on December 26 and 27.

AT the January meeting of the Pathological Society of Philadelphia, officers elected for the year 1933 were: Dr. V. H. Moon, *president;* Dr. Morton McCutcheon, *vice-president,* and Dr. Herbert L. Ratcliffe, *secretary-treasurer.*

PROFESSOR WARREN WEAVER, chairman of the department of mathematics of the University of Wisconsin, has resigned his post to accept permanent charge of the Natural Science Division of the Rockefeller Foundation, a post which he assumed temporarily during a year's leave of absence. His resignation has been accepted by the regents, and Professor M. H. Ingraham has been named chairman of the department.

DR. GEOFFREY DOUGLAS HALE CARPENTER has been elected Hope professor of zoology at the University of Oxford, vacant through the retirement of Professor E. B. Poulton, who had held the chair for forty years.

PROFESSOR K. BERINGER, of Heidelberg, has succeeded Professor Bostroem in the chair of psychiatry at Munich.

DR. FRITZ EICHHOLTZ, professor of pharmacology at Königsberg, has been called to Heidelberg.

MR. JOHN L. WIRT retired as bursar of the Carnegie Institution of Washington on February 1. Mr. E. A. Varella succeeds him and Mr. E. B. Biesecker has become assistant bursar.

WALTER G. CAMPBELL, director of regulatory work in the U. S. Department of Agriculture, resigned recently to become chief of the Food and Drug Administration, effective on February 1. The position of director of regulatory work has been abolished, thus completing the reorganization of the department's law-enforcement work started in 1923.

THE Committee on Scientific Research of the American Medical Association has awarded grants in aid to Dr. Philip B. Armstrong, of the Cornell University Medical College, to study the action of drugs in relation to the innervation of the heart; to Professor Wm. C. Rose, of the University of Illinois, for a continuation of his studies on the nutritive importance of the amino acids, with particular reference to the isolation of a hitherto unknown dietary essential present in certain proteins, and to Dr. C. C. Speidel, professor of anatomy in the University of Virginia Medical School, in support of his work on myelinated nerve fibers.

DR. DINSMORE ALTER, professor of astronomy at the University of Kansas, spent the first week of February in Tucson, Arizona, where he conferred with Dr. A. E. Douglass, director of the Seward Observatory, regarding a plan for a joint research into the problem of meteorological cycles.

DR. RALPH H. SMITH, entomologist in the University of California Citrus Experiment Station, visited the lower Rio Grande Valley of Texas during January. He conferred on citrus pest control problems and delivered two lectures on oil sprays. Dr. Smith also visited refineries and petroleum testing establishments in the southern and middle-western states.

DR. P. H. ROLFS, formerly dean of the College of Agriculture at the University of Florida, after twelve years' absence, is returning to take up his residence at Gainesville, Florida. In 1920 he was employed by Minas-Gerais to establish and conduct a state agricultural college. This work was completed in 1928. Since that time he has been serving the state as the technical adviser in agriculture.

DR. GEORG MASING, the German metallurgist, delivered the Institute of Metals Lecture at the annual meeting of the American Institute of Mining and Metallurgical Engineers. Professor George B. Waterhouse, of the Massachusetts Institute of Technology, delivered the annual Howe Lecture.

DR. THORNE M. CARPENTER, of the Nutrition Laboratory of the Carnegie Institution of Washington, gave two lectures in February at Columbus, Ohio, before the Ohio State Chapter of the Society of Sigma Xi. On February 9 he spoke on "The Development of Methods for Determining Basal Metabolism of Mankind" and on February 10 on "Problems and Factors in the Determination of the Basal Metabolism of Man."

PROFESSOR PIET VAN DE KAMP, of the University of Virginia, on February 9 spoke on "The Absorption of Light in the Galactic System," before a combined meeting of the Virginia chapters of Sigma Xi and Phi Beta Kappa.

DR. D. K. TRESSLER, chief chemist of the Birdseye Laboratories, Gloucester, Massachusetts, addressed a joint meeting of the Massachusetts State College Sigma Xi and Graduate Clubs on February 16 on "Recent Researches on the Preservation of Foods."

THE Federation of American Societies for Experimental Biology will meet at Cincinnati, Ohio, on April 10, 11 and 12.

THE American Association of Petroleum Geologists will hold its eighteenth annual meeting at Houston, Texas, on March 23, 24, 25.

THE American Public Health Association announces its sixty-second annual meeting, to be held in Indianapolis, Indiana, from October 9 to 12. It was in Indianapolis in 1900 at the twenty-ninth convention of the American Public Health Association that Dr. Walter Reed read a paper entitled "The Etiology of Yellow Fever—A Preliminary Note" indicating that the mosquito serves as the intermediate host for the parasite of yellow fever. At the coming meeting it is planned to honor the only living participant in the Yellow Fever Experiment, Dr. John R. Kissinger, at a special memorial session. The scientific program will discuss aspects of modern public health practice, from the viewpoint of the health officer, the laboratory worker, the epidemiologist, the child hygienist, the industrial hygienist, the nurse, the vital statistician, the health educator, the food and nutrition expert, the sanitary engineer.

THE Ohio Academy of Science will hold its forty-third annual meeting at Ohio University, Athens, on Friday and Saturday, April 14 and 15, under the presidency of Professor R. A. Budington, of Oberlin College. As in former years, the program will consist of one or two general sessions of the academy and sectional meetings, one or more for each of the seven sections. The general sessions will be devoted partly to business and partly to the discussion of scientific topics of general interest, probably by eminent invited speakers. Friday evening will be given over to the annual dinner at which will be given the presidential address. The section of chemistry will meet for the first time with Professor William Lloyd Evans, of the Ohio State University, Columbus, as the first vice-president. This section begins with an enrolment of sixty-eight members. The Central Ohio Physics Club will meet with the academy again this year, as in the past few years. The Ohio Academy of Science is sponsoring a series of weekly radio talks of fifteen minutes each beginning at 7:15 P. M. each Friday over the Ohio State University broadcasting station, WEAO, covering the four months from January to April.

AFTER annuities and legacies have been paid, the residue of the estate of the late Frederick G. Bonfils, editor of *The Denver Post,* is left to the foundation which he created in December, 1927, as "a corporation, not for profit, organized for charitable, benevolent, scientific, medical and public educational purposes." The value of the estate is said to be estimated at over $10,000,000.

DR. J. MIDDLEMASS HUNT, who held the post of honorary dean of the Liverpool School of Tropical Medicine for many years, has made a bequest of £20,000 to the University of Liverpool to provide for the endowment of the chair of tropical diseases of Africa.

THE Chemistry Club of the Georgia State College for Women, Milledgeville, Georgia, cooperating with the friends of Charles H. Herty, is awarding annually a medal for work done in the field of chemistry in the South. The purpose of the medal is twofold: (1) To give public recognition to worthy research workers in the colleges and laboratories of industry, whose real value is often unappreciated by their institutions. (2) To honor Dr. Herty, who has contributed a great deal to the development of the South, and who was born in a house which stood on what is now the campus of the Georgia State College for Women at Milledgeville. The award will be announced by May 1 of each year, and the medal will be presented at the May meeting of the Georgia Section of The American Chemical Society, which is invited to meet at Milledgeville. A modest allowance will be made to cover expenses of the winner to this meeting, where he will deliver an address.

Museum News reports that the Carnegie Corporation has made a grant of a fellowship to the New York Museum of Science and Industry to allow studies to be made, under the supervision of Professor Edward S. Robinson, of Yale University, of problems peculiar to museums of science and industry. One of the most important problems concerns the comparative mental reactions of young persons of various ages when dealing with exhibits operated by hand and when dealing with automatically operating exhibits which can be studied from a distance slightly beyond arm's reach or behind glass. Others are concerned with the question of what proportion of visitors, particularly young ones, pay attention to the descriptive labels placed on the exhibits and also to the social and economic interpretations on the walls above the machine or apparatus; also, the characteristic reactions of people in this museum as compared to people in art or natural history museums.

ACCORDING to *Museum News* the Museums Association of Great Britain has adopted regulations for gaining its museum curator's diploma. These regulations set forth two aspects of the education of the museum official of which the association takes cognizance. Competent knowledge (a) of at least one subject relating to museum collections and (b) of museum administration, methods and technique. Knowledge of a museum subject must be shown by an earned degree, diploma or certificate from one of a number of specified educational institutions. Knowledge of museum technique is determined by examination, and a

panel of examiners is established by the association for this purpose. Attendance is required for one week each at an elementary, an advanced and a specialized course approved by the association. As a final test a candidate must submit a thesis on museum work and a concrete example of curatorial work. Candidates must have three years experience in a museum or art gallery before the diploma is awarded. Fee for registration is 10s 6d and for taking the diploma one guinea.

DISCUSSION

CORTIN AND TRAUMATIC SHOCK

A NOVEL explanation of the "secret" of traumatic or secondary shock has recently been published in SCIENCE by a group of investigators from the Biological Laboratory of Princeton University.[1] The physiologic phenomena associated with death from adrenal cortex insufficiency have been compared with those found in traumatic shock. The analogy is a close one, as the authors have shown in a list of 32 particulars. Fundamentally, both conditions are characterized by a diminution in the volume of circulating blood, with a failure of the blood-diluting mechanism. The suggestion is made that "the signs and symptoms of adrenal insufficiency, and of traumatic or secondary shock, are possibly due to one and the same thing, namely, failure of the blood volume and blood-diluting regulator mechanism, the adrenal cortex." Because the "adrenalectomized animals, in the absence of the cortical hormone, are apparently unable to draw fluid back into the blood stream through the capillary walls" the writers suggest that "the accepted view that the osmotic power of the blood colloids is the chief factor involved in compensation needs further investigation."

There is only one dissimilarity among the 32 particulars which the writers have listed showing the analogy between adrenal insufficiency and traumatic shock. This discrepancy, as they point out, is the fact that in adrenal insufficiency the blood sugar is low, while in traumatic shock it is normal or elevated. They promise a discussion on this point at some future time. It seems possible, however, that this discrepancy may be of more moment than is realized at first glance. That the secretion of the adrenal cortex exerts a profound influence on the storage and utilization of carbohydrates has been realized for some time. The prepotent function of the cortex of the adrenal is considered by Britton and Silvette[2] to be the regulation of carbohydrate metabolism. They have found that the glycogen in the liver and muscles is lower after adrenalectomy than in extreme inanition, severe exhaustion, after strychnine convulsions or after exposure to cold. They state that "moreover, the muscle glycogen and blood glucose in cases of hepatectomy are not depleted more thoroughly than in animals showing more or less severe symptoms of adrenal insufficiency." It is therefore recognized that the glycogen stores and the blood glucose level are reduced in adrenalectomized animals. If the blood glucose level is reduced by insulin, as shown by Drabkin and Edwards in 1924,[3] certain physiologic reactions occur which are very similar to changes which the investigators have found to occur after adrenalectomy. In insulin hypoglycemia there is an actual loss of blood volume and a considerable concentration of the blood. These animals also show a decline in blood pressure and death from insulin "shock." Is it possible that the death from adrenal insufficiency may result primarily from the alterations in the carbohydrate metabolism which secondarily exert some influence on the blood hydration rather than through some hypothetical control over the mechanism of fluid exchange?

Some interesting experiments are reported by the authors to "test the relation between failure of the cortex and traumatic shock" and the results to them are "highly suggestive." Traumatic shock was produced in adrenalectomized dogs. Administration of cortin promptly resuscitated the dying animals. Control experiments were performed which demonstrated that a similar trauma did not produce shock in normal dogs. Such an experiment is very convincing proof that cortin is a specific therapeutic agent for the shock which is associated with the absence of cortico-adrenal hormone. But quite as specific is the glucose which is injected into animals in insulin shock. No one believes that traumatic shock and insulin shock are due to the same mechanism.

Again, other experiments were performed in which "profound surgical shock was induced in normal dogs by double adrenalectomy at one sitting. Immediately following completion of the operation, the blood pressure was normal." At this point the question may be raised as to their criteria of "profound surgical shock" resulting from operations at the close of which the blood pressure was *normal*. If such animals received cortin they recovered and were normal in 2 to 3 days. Dogs similarly "shocked" and not injected with hormone invariably died within 48 hours. The investigators have clearly demonstrated that the cortico-adrenal hormone is a specific therapeutic agent

[1] W. W. Swingle, J. J. Pfiffner, H. M. Vars, P. A. Bott, W. M. Parkins, SCIENCE, 77: 58, January 13, 1933.

[2] S. W. Britton and H. Silvette, *Am. Jour. Physiol.*, 100: 701, 1932.

[3] D. L. Drabkin and D. J. Edwards, *ibid.*, 70: 273, 1924.