justed to the intense light necessary for photography so long as they are in familiar surroundings. The most difficult problem to surmount was sound. Rats would scurry for cover at the least whir of a camera or sound of a human voice. By the continuous use of a nonsense sound track at high volume, all extraneous noises were drowned out, and the rats went about their normal activities. Three types of movies were produced: (1) Rats in their native surroundings; (2) sets of houses, etc., were superimposed upon the native surroundings of rats; (3) rats were introduced into prepared sets. In this latter case rats were induced to act by first letting them become familiar with the set and, second, by shooting the scenes when the rats were at the height of their activity cycle.

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Geode Note

IN 1940 the writer presented a new working hypothesis to account for the formation of geodes, which are found so abundantly in the Warsaw and Keokuk formations. It was suggested that these "geodes were syngenetically deposited on the sea bottom as colloidal masses of hydrated silica" (*Trans. Illinois State Acad. Sci.*, 33, 168 [1940]) and that later, when the colloidal masses were in an environment where moisture was removed from the sediment or sedimentary rock, the loss of water from the gel produced the chalcedony shell that forms the outer layer of the geodes in those formations.

Geological evidence presented at that time has multiplied through the ensuing years to favor this hypothesis. Perhaps the most striking is offered by contact geodes. Not infrequently two geodes are found with a flat plane of contact and with a hollow in each geode. It is difficult to see how such pairs could be formed by any processes involving solution of cavities and subsequent filling, but it is understandable that colloidal masses coming in contact could produce a flat common surface and that each eventually dried and left its own cavity.

In 1944, a second paper (*Trans. Illinois State Acad. Sci.*, 37, 93 [1944]) showed that it was possible experimentally to produce silica gel balls under conditions very distantly approximating natural conditions. These, on being dried, gave shells not unlike the chalcedony shells of geodes.

There have been two questions that have never been satisfactorily answered: (1) By what process could colloidal silica, in such form and at such concentrations as is normally carried into the sea by rivers, become coagulated into stiff enough gels to form geodes, as postulated by this working hypothesis? (2) By what process are the quartz crystals, which line the majority of the geodes in the Warsaw and Keokuk formations, developed?

The first of these questions remains unsolved. However, the same question can be raised in considering how primary chert could have been deposited in the ocean, and if that question can be settled, the problem of the balls of stiff silica gel could probably be settled also. At present, studies are in progress of conditions that quite closely approximate those found in nature, and that could produce silica gel in sea water, and they may furnish light on the problem of chert and geode formation.

Regarding the formation of the crystals, it was suggested in our original paper that "loss of electrons produces a condition favoring deposition of crystalline quartz." This idea has been completely abandoned. Work by Richard Naken in Germany (A. C. Swinnerton. *Report of Investigation in European Theater,* Signal Corps Engineering Laboratories, Bradley Beach, N. J. [Jan. 1946]), by Buehler and Walker in this country (*Sci. Monthly,* 69, 148 [1949]), and by others has suggested a new line of procedure, which is now being investigated to determine if it is possible to develop quartz crystals on the inside of chalcedony shells similar to geodes, and under conditions that are similar to those found in nature.

PERCIVAL ROBERTSON

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La Cellule Nerveuse

THE purpose of this note is to draw attention to an excellent, but not well-known, source of information concerning early work in neurocytology. The book referred to is *La Cellule Nerveuse,* by M. G. Marinesco (Vols. 1 and 2, published by O. Doins et Fils, Paris, in 1909). These volumes are Nos. 10 and 11 in a series known as the "Bibliothèque de Physiologie," published under the direction of J. P. Langlois. The edition was probably small, judging from the few copies in medical libraries and the infrequent reference to this classical treatise in current reports of neuroanatomical research.

Volume 1 of *La Cellule Nerveuse* deals exhaustively with the normal neuron. Volume 2 is concerned, in equal detail, with the cytology of experimentally and pathologically altered neurons. The book is not impressive physically, and the illustrations are of only fair quality. However, the text material will be a delight to every student of the nervous system, especially since many of the original sources are now inaccessible because of actual scarcity or language difficulties. A few branches of science are based on such new concepts and techniques that the older literature is of little interest. This is not the case with neuroanatomy. No present-day student in this field can afford to ignore the brilliant and meticulous work done in Europe more than half a century ago. *La Cellule Nerveuse,* together with Cajal's better known *Histologie du Système Nerveux de l'Homme et des Vertébrés,* are major chapters in the neurocytologist's Old Testament.

To learn of the availability of *La Cellule Nerveuse,* a query was directed to 104 member libraries of the

Medical Library Association, with the following results:

Great Britain: Seven replies, one copy at the National Institute for Medical Research.

Canada: Eleven replies, one copy at the University of Ottawa, another at the University of Western Ontario.

United States: Eighty-five replies, copies being located in the following institutions: University of Oregon, Harvard, Army Medical Library, Boston Medical Library, Columbia (two copies, medical and psychology libraries), New York Academy of Medicine, University of Pittsburgh, Johns Hopkins, University of Louisville, Northwestern, University of Pennsylvania, St. Louis University, and the Wistar Institute.

This survey indicates that only about 15% of medical libraries are fortunate enough to possess a copy of Marinesco's valuable book.

The copy in the University of Western Ontario library was a gift from the private library of the late A. B. Macallum, Sr. The gift of any copies now in private hands to a university not listed above would be a contribution to neuroanatomical research.

MURRAY L. BARR

Department of Anatomy
University of Western Ontario

Account Balanced

THE Committee Supporting the Bush Report was organized under the chairmanship of the late Isaiah Bowman, to work for the passage of suitable legislation on a National Science Foundation. During its operations the committee solicited and received voluntary contributions from many hundreds of persons in all fields of science. A small sum remained unexpended, and the Executive Committee voted to contribute it to the National Science Foundation through the director, Dr. Waterman. The Foundation has accepted the contribution and given permission for publication of the covering correspondence.

HOMER W. SMITH

March 26, 1951

Dr. Alan T. Waterman
National Science Foundation
Washington, D. C.

DEAR DR. WATERMAN:

On behalf of the Committee Supporting the Bush Report, of which the late Isaiah Bowman was chairman, we want to extend to you and the newly created National Science Foundation our heartiest congratulations.

A balance of $512.36 remains unexpended from a sum that was raised by subscription from scientists and friends of science throughout the country for the purpose of expediting the passage of satisfactory National Science Foundation legislation.

We would be happy to have the National Science Foundation accept this unexpended balance, to be spent by the Foundation without restrictions.

Yours sincerely,
BORIS A. BAKHMETEFF
CARYL P. HASKINS
HOMER W. SMITH
BETHUEL M. WEBSTER

April 16, 1951

Dr. Homer W. Smith
New York University College of Medicine
New York, N. Y.

DEAR DR. SMITH:

I wish to acknowledge receipt of your letter of March 26, 1951, transmitting the unexpended balance, $512.36, of a sum raised by subscriptions from scientists and friends of science for the purpose of expediting the passage of satisfactory National Science Foundation legislation.

On behalf of the National Science Foundation, I am very pleased to accept this first contribution to the Foundation, to be spent without restrictions. The members of the National Science Board join with me in expressing our sincere appreciation and ask that you convey this message to the members of the Committee Supporting the Bush Report.

May I add my personal thanks for your message of congratulations.

Yours sincerely,
ALAN T. WATERMAN, *Director*

Meteorological Data in Ecology

THE interesting comments of Werner A. Baum (*Science*, **113**, 333 [1951]) concerning the ecological use of meteorological temperatures serve to emphasize the need for a clearer understanding of the significance of meteorological data in ecology. The utility of such data is well established in microclimatic studies, but the relationship of microclimatic to microenvironmental research does not seem to have been sufficiently emphasized. The former is only an integral part of the latter. Thus ecology must deal with edaphic, aquatic, geographic, and physiographic aspects, in addition to the climatic or weather data of meteorology. To get basic material for ecology, the objective should be to follow the incoming radiation, its absorption and dissipation, and the effect it produces in all its ramifications. Thus ecology requires much more information than that provided by meteorology or microclimatology. It involves a much broader field.

The following steps suggest some of the items that should be quantitatively measured in providing ecological data in studying the microenvironment: (1) Incoming solar radiation, its intensity and duration; (2) reflection of sunshine from various surfaces upon which it impinges; (3) absorption of sunshine into soil, water, plants, and animals in the form of heat and light or other radiation; (4) reradiation as loss of heat and light; (5) temperatures at various places in air, water, soil, plants, or burrows of animals—specifically, at the ground surface at successive intervals downward in the soil and upward in the air and at various places in the bodies of plants, in water, in the burrows of animals, and elsewhere; (6) movement of air (wind), velocity, duration, and direction at different points—e.g., next to the ground, among the vegetation, and above the vegetation; (7) precipitation, liquid or solid, and its ramifications; (8) relative humidity at various places—near the ground, among