She was a "moral Columbiad," rather than the "Moral Bully" of Dr. Holmes's aversion.

The principal defect of early American care of the insane was that it was mainly a local enterprise, delegated to counties and county officials, men who had "an eye single to the taxpayer," whose chief aim was to establish a reputation for economy as a means of securing reelection to office, with the result that the county asylums were practically poorhouses. This has been notably the case with the so-called Wisconsin system of county care of the chronic insane (1881), which is the subject of an able critique. State care, by which is meant the proper care of all the insane in the state in a suitable state-supported hospital, as distinguished from state support of a limited number, with the rest in county almhouses, is a plant of recent growth. The earliest state hospitals were those at Williamsburg (1773), Columbia, S. C. (1828), Worcester, Mass. (1833), and Utica, N. Y. (1843). The New Hampshire State Care Act did not become operative until 1913. In this field, New York state leads, with the institutions at Willard, Binghamton, Middletown, Poughkeepsie, Buffalo, Ogdensburg, Auburn, Matteawan and Dannemora. Next to Binghamton in size comes the admirable Government Hospital at Washington, D. C., which, under the able administration of Dr. William A. White, is now a community of over 4,000 persons. The psychopathic hospital, a development of Griesinger's idea of a (university) psychiatric clinic, combines the features of voluntary admission, temporary detention, non-restraint and continuous medical observation and treatment. Such institutions or wards now exist at Albany, N. Y., Ann Arbor, Boston, Waverly (Mass.), Providence, White Plains and Washington, D. C. The best example is the recent Henry Phipps Psychiatric Clinic at Baltimore, under the direction of Dr. Adolph Meyer. England and France have left their mark upon the architecture of our earlier insane hospitals. Later institutions have followed the plan evolved by Kirkbride for the Pennsylvania Hospital which consisted essentially of a large central administration building, with extended wings on each side for the separation of the sexes. Details were governed by the "cast iron rules" of the "propositions," a set of hard and fast regulations evolved by the association (1844–1875) for the construction and organization of asylums (Kirkbride) and the legal management of the insane within them (Isaac Ray). The cottage plan and the farm colony are later developments. Of the Buffalo State Hospital, the most extreme example of the old Kirkbride plan, Dr. Hurd says that "the medical officers must walk a distance of half a mile from the administration building to reach the farthest ward on either side," which suggests the flatboatmen on the Potomac River, who, in poling their craft, walk just twice the distance they travel.

Dr. Hurd modestly regards this work as a source-book for the historians of the future, but it is undoubtedly a permanent history, which may be extended but will hardly be duplicated. The chapters are complete in themselves, the book is well-illustrated and the style is charming in its simplicity, sobriety and its traces of delicate humor. A complete index to the whole work, which may be expected at the end of the fourth volume, will make it invaluable for ready reference.

F. H. GARRISON

ARMY MEDICAL MUSEUM

PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES

THE fifth number of Volume 2 of the *Proceedings of the National Academy of Sciences* contains the following articles:

1. *Differential Equations and Implicit Functions in Infinitely many Variables:* WILLIAM L. HART, Department of Mathematics, University of Chicago.

Three problems are handled: First, Certain fundamental theorems concerning a type of real-valued functions of infinitely many real variables. Second, The problem of infinite systems of ordinary differential equations. Third, The fundamental problem of implicit function theory in this field.

2. *The Sex of Parthenogenetic Frogs:* JACQUES LOEB, Rockefeller Institute for Medical Research, New York.

Two frogs obtained by artificial parthenogenesis, one ten months old the other thirteen months old, were found to be males, and the thesis that animals produced by artificial parthenogenesis are males is thus further corroborated.

3. *De Vriesian Mutation in the Garden Bean, Phaseolus Vulgaris:* J. ARTHUR HARRIS.

The origin of the new race of beans seems most logically explained as a case of de Vriesian mutation. In this race the whole morphological organization of the seedling has apparently been changed and the race is characterized by a high degree of variability.

4. *Studies of Ductless Glands by the Electrical Method:* W. B. CANNON, Laboratory of Physiology, Harvard University.

The nerves distributed to the thyroid cells belong to the sympathetic and not to the vagus supply, and their effects are not indirect through alterations of blood flow. They are true secretory nerves.

5. *The Distribution of the Chondriosomes to the Spermatozoa in Scorpions:* EDMUND B. WILSON, Department of Zoology, Columbia University.

The chondriosome-material having the same origin, fate and (presumably) physiological significance may be distributed to the germ-cells by processes widely different even in nearly related animals. In one of the scorpions the distribution is effected by a definite process of division, in the other by an operation that has at least the aspect of a hit-or-miss segregation, and one that gives only an approximate equality of result.

6. *New Data on the Archeology of Venezuela:* HERBERT J. SPINDEN, American Museum of Natural History, New York.

Stone implements, including celts, pestles, etc., vessels and figurines of clay with painted and modeled decorations, personal ornaments of shell, nephrite, jet, and serpentine, as well as the petroglyphs and pictographs, occur in considerable quantity. The plastic art of Venezuela is one and the same with the "archaic art" already known in Central America and Mexico.

7. *Note on the Phosphorescence of Uranyl Salts:* EDWARD L. NICHOLS, Department of Physics, Cornell University.

For the only examples of luminescence which admit of detailed inspection, the spectrum of phosphorescence is identical with that of fluorescence and it is suggested that this also applies to all phosphorescent materials. In spite of its great complexity, the luminescence spectrum of a uranyl salt is to be regarded as a unit, all its components decaying at the same rate after the cessation of excitation.

8. *The Pyranometer: An Instrument for Measuring Sky Radiation:* C. G. ABBOT AND L. B. ALDRICH, Astrophysical Observatory, Smithsonian Institution.

Two satisfactory types of this instrument, both derived in principle from the electrical compensation radiation instruments of the late K. Ångström, have been devised. Numerous observations of the sky-radiation have been made. On fine days the sky-radiation alone received on a horizontal surface ranges from 0.07 to 0.13 calories per square centimeter per minute.

9. *Note on Lucas' Theorem:* M. B. PORTER, Department of Mathematics, University of Texas.

A more general result than that obtained by Borel or Polya has been found.

10. *A Variable System of Sevens on Two Twisted Cubic Curves:* H. S. WHITE, Department of Mathematics, Vassar College.

11. *The Neuromuscular Structure of Sea-Anemones:* G. H. PARKER AND E. G. TITUS, Zological Laboratory, Museum of Comparative Zoology, Harvard College.

There are four types of muscle action; they are of phylogenetic significance, and show that the neuromuscular mechanism of sea-anemones is by no means so simple as originally supposed.

12. *Change of the Ionization of Salts in Alcoholic Solvents with the Concentration:* FREDERICK G. KEYES AND W. J. WINNINGHOFF, Research Laboratory of Physical

Chemistry, Massachusetts Institute of Technology.

The present investigation on the conductance of sodium iodide and ammonium iodide in isoamyl alcohol and of sodium iodide in propyl alcohol was undertaken for two purposes: primarily to determine whether in these solvents, somewhat similar in nature to water, salts conform to the mass-action law at very small concentrations; and secondarily, to test further the applicability of Kraus' empirical equation throughout the fairly wide range of concentration employed in the work.

Edwin Bidwell Wilson
Massachusetts Institute of Technology

SPECIAL ARTICLES

A NEW MITE FROM THE HAWAIIAN ISLANDS

Recently, while visiting the Hawaiian Islands, my attention was called to a Chinese Litchi (*Litchi chinensis* Sonn.), growing on the grounds of the United States Experiment Station at Honolulu, which was very seriously infested by an apparently new species of mite. The injury caused by this mite is of the familiar erinose type, being produced on the lower side of the leaf. In many instances practically the entire lower surface of a leaf was covered with a light brown erineum, but more often distinct patches of variable size were produced. Badly attacked leaves assumed the general characteristics of peach leaves infected by the leaf-curl fungus (*Exoascus deformans*).

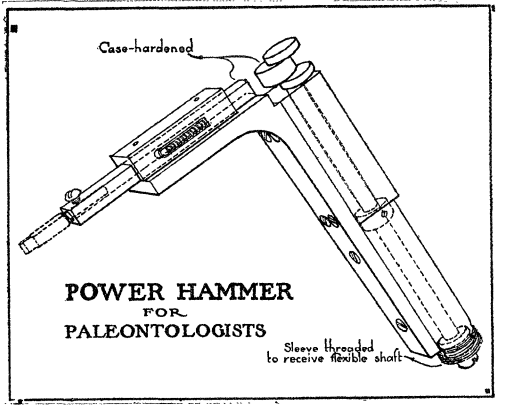
So far as could be learned, the infestation seemed to have been more or less sudden; at least, none was noticed until the injury had become very marked. The tree is considered very valuable and the infestation was so serious as to greatly endanger its life.

It was readily determined that the mite belonged to the genus *Eriophyes*. Specimens of infested leaves were referred to Dr. Nathan Banks through Dr. L. O. Howard, chief of the U. S. Bureau of Entomology. Dr. Banks indicates that the mite is a new species of *Eriophyes*. He also states that, so far as he can find, no mites have ever been recorded from the Litchi, and, further, that very few mites have been recorded from China. There is, therefore, a possibility that the Litchi, although imported from China, later became infested by a mite of Hawaiian origin.

P. J. O'Gara,
Chief in Charge
Department of Agricultural Investigations,
American Smelting and Refining Company,
Salt Lake City, Utah,
March 16, 1916

A POWER CHISEL FOR PALEONTOLOGIC LABORATORIES

The extremely slow, laborious and difficult task of separating fossils from the enclosing matrix, in the old manner, led W. W. Kelley, a senior student of marked mechanical ingenuity, to devise a power chisel, which has been installed in the geologic laboratories of Washington University. Thus far the device has proved so satisfactory to the members of the department that it is thought best to pass the information along to other toilers in the profession.



The chisel proper is extremely simple, consisting of an L-shaped frame in one arm of which is a shaft bearing a balanced eccentric head and, at right angles, in the other, a square plunger holding the chisel point. One blow during each revolution (1,800 a minute) is dealt by the protruding part of the eccentric striking the head of the plunger. A spring holds the plunger away from the eccentric when not in use. The eccentric shaft of the chisel is connected directly to the armature shaft of a one eighth horse-power motor by a