

we will take as the inner cylinder, of about one square centimeter in area. Under these conditions the Faraday dark space should be about 8 mm. in length, and the Crookes dark space should be just visible between the velvety cathode glow and the cathode electrode. Another prerequisite is that the discharge must not cling to the edge of the aluminum electrodes, but should occupy some intermediate position as shown at 1 in *a*, Fig. 1. In this position the characteristics of the discharge are shown with exceeding clearness. If now some additional resistance is cut in, the area of the discharge will become less, the Faraday dark space will shorten, the positive column will move towards the cathode, and the number of striæ in it will increase, the extra striæ being, as it were, drawn out of the anode. The configuration is perfectly steady except that the discharge, as a whole, is liable to wander. This transition may be continued by a still further increase of the resistance in the circuit, the dark space becoming ever shorter, the positive column lengthening and at the same time shrinking in area and the striæ increasing in number, all without loss of outline or brightness. Finally, the discharge will cease. The various stages are suggested at 1, 2, 3 in *b*, Fig. 1.

In the second method the discharge vessel with its commutator is placed in a derived circuit (Fig. 2). This arrangement enables the discharge potential to be continuously varied over a wide range, and hence for a given vacuum the relation between the length of the dark space and the impressed voltage may be exhibited. Again this arrangement enables the minimum potential to be readily determined that will maintain a discharge. As an example, for a given vacuum with the resistance *AC* equal to $\frac{1}{3}$ that of *AB* the discharge was observed to just pass, indicating that the potential necessary was 330 volts.

Additional phases of the experiment will suggest themselves to the operator.

CHAS. T. KNIPP

LABORATORY OF PHYSICS,
UNIVERSITY OF ILLINOIS,
March 4, 1916

UTAH ACADEMY OF SCIENCES

THE ninth annual convention of the Utah Academy of Sciences was held in the chemistry lecture room of the University of Utah. Three sessions were held: one at eight P.M., Friday, April 7, one at ten A.M., Saturday, April 8, and the closing session at two P.M. of the same day. Dr. Harvey Fletcher presided at all of the sessions.

Dr. E. G. Peterson, U. A. C., and Professor Carl F. Eyring, B. Y. U., were elected to fellowships in the academy. The following were elected members: Professor George B. Caine, U. A. C., Dean Milton Bennion, U. U., Professor Newton Miller, U. U., Professor A. L. Matthews, U. U., Dr. George S. Snoddy, U. U., Miss Hazel L. Morse, East High School, Salt Lake City, C. Arthur Smith, East High School, Salt Lake City, C. Oren Wilson, East High School, Salt Lake City, Professor Estes P. Taylor, U. A. C., Dr. A. P. Henderson, B. Y. U., and Edgar M. Ledyard, Salt Lake City.

Captain Francis Marion Bishop, a companion of Major Powell in his famous explorations of the Uinta Mountains, was elected to honorary life membership.

The following officers were elected for the ensuing year:

President—Dr. Frank Harris, U. A. C., Logan.

First Vice-president—Dr. L. L. Daines, U. U., Salt Lake City.

Second Vice-president—Professor Carl F. Eyring, B. Y. U., Provo.

Councillors—Dean J. L. Gibson, U. U., Dr. W. E. Carroll, U. A. C., W. D. Neal, Salt Lake City.

The following lectures and papers were presented:

"Industrial Research in U. S. A.," by Dr. Harvey Fletcher, B. Y. U.

"The Alkali Content of Certain Utah Soils," by Dr. Frank S. Harris, U. A. C.

"The Agricultural College and Scientific Research," by Dr. E. G. Peterson, U. A. C.

"Selecting Holstein-Friesian Bulls by Performance," by Dr. W. E. Carroll, U. A. C.

"Peyote, an Indian Narcotic," by A. O. Garrett, East High School, Salt Lake City.

"An Epidemic of Colds with *Micrococcus catarrhalis* as Causative Agents," by Dr. L. L. Daines, U. U.

"The First Recorded Case of Rabies in Utah," by Dr. L. L. Daines, U. U.

"Botulinus Poisoning from a Vegetable Source," by Dr. L. L. Daines, U. U.

"Comparison of Methods of Treatment for

Grain Smuts," by M. Rich Porter, Salt Lake City.

"The Value of Gaseous Ionization in Hydrogen," by Professor Carl F. Eyring, B. Y. U.

"A New Count Method of Measuring the Elementary Electric Charge," by Dr. Harvey Fletcher, B. Y. U.

"Our National Awakening to the Importance of Science," by Dr. W. C. Ebaugh, Salt Lake City.

A. O. GARRETT,

Permanent Secretary

ANTHROPOLOGY AT THE WASHINGTON MEETING¹

THE annual meeting of the American Anthropological Association was held December 27-31, 1915, at the United States National Museum, Washington, D. C., its scientific sessions being in affiliation with Section I of the Second Pan-American Scientific Congress, the Nineteenth International Congress of Americanists, the American Folk-Lore Society, the American Historical Association, and the Archeological Institute of America. By virtue of this affiliation the attendance was large and the list of papers presented bearing on anthropology was unusually long.

In honor of the occasion, the United States National Museum made provision for special exhibits. These included: (1) Physical Anthropology, by Dr. A. Hrdlicka; (2) Indian Treaties of Historical Importance; (3) Economic Plants and Plant Products, by W. E. Safford; (4) Archeological Exhibits, by W. K. Moorehead, A. V. Kidder, and Julio Tello, and (5) Photographs, by Frederick Monsen and the Rodman Wanamaker Expedition.

Interwoven with the scientific sessions there was an elaborate social program, comprising a reception by the Secretary of State and the United States delegation, and one by the governing board of the Pan-American Union, both held in the Pan-American building; a reception by the regents and secretary of the Smithsonian Institution; a luncheon by the National Geographic Society; a reception by the trustees of the Carnegie Institution of Washington; a dinner and reception by the Cosmos Club; and finally after the close of the meetings, the reception at the White House by the President and Mrs. Woodrow Wilson.

A number of important resolutions were adopted; some of these were in the nature of joint resolutions, others concerned only the American Anthropological Association, as will be seen from the contexts:

¹ Report prepared by George Grant MacCurdy at the request of the General Secretary, A. Hrdlicka.

RESOLUTION RELATING TO THE DESIRABILITY OF UNIFORM LAWS CONCERNING ARCHEOLOGICAL EXPLORATION

Section I

WHEREAS, many parts of the American continent are rich in archeological remains, such as ruins, monuments and burial sites, containing many examples of industry and art of the aborigines.

AND WHEREAS, scientific explorations of these remains with the study of resulting finds are objects of utmost importance, for on their basis only will it be once possible to reconstruct the lost history of the American race.

AND WHEREAS, in order that such remains may be saved to science and not be wantonly exploited or destroyed before they could be studied, it is essential that proper laws and regulations be adopted by the various countries where such remains exist, the object of such laws and regulations being to hinder or prevent as far as possible the digging or other destruction of such remains by unqualified persons; to prevent trade in pottery and other articles recovered from the ruins and graves, and at the same time not only to enable properly qualified scientific men both indigenous and of other countries to undertake and carry on scientific explorations and collections.

AND WHEREAS, the majority of the American republics have now some laws relating to antiquities, although these laws are unlike in the different countries and in some instances are such that they have resulted more in restraining than in advancing properly qualified research.

Therefore it is hereby Resolved by the Second Pan-American Congress, that it is highly desirable that the various American republics arrange by the appointment of suitable delegates, possibly from among their official representatives at Washington, for joint action on this important subject, with the view of formulating generally acceptable and substantially uniform laws relating to the conservation, exploration and study of archeological remains in their several jurisdictions; laws which on one side will effectively safeguard these remains from wanton destruction or exploitation, and on the other will aid and stimulate properly organized and accredited research in these directions.

RESOLUTION RELATING TO THE ADVANCE OF ANTHROPOLOGICAL RESEARCH IN THE VARIOUS AMERICAN REPUBLICS

WHEREAS, in various parts of the American continent there are remnants of the aboriginal popu-