

of *Covillea*, *Prosopis*, *Acacia*, *Opuntia*, *Echinocactus*, *Cereus*, *Parkinsonia*, etc. The presence of the Santa Catalina range, which rises to 6,000 feet, adds a mountain element to the vegetation. A further advantage of great importance lies in the central location of the laboratory with reference to the deserts of Texas, Mexico and California.

The general physical features of deserts are discussed in a caption filled with valuable meteorological and soil data. In connection with the latter, it is pointed out that lack of water is the fundamental cause of deserts, and that areas in which the water content is largely non-available are deserts as well as those in which the water content is low. The current conceptions of deserts are shown to be wholly inaccurate, particularly with respect to vegetation. Two great desert regions, called the Sonora-Nevada and the Chihuahua desert, are recognized by the authors. The former corresponds to the Great Basin region and the dry coast lands of northwestern Mexico; the latter extends northward from Chihuahua through parts of Arizona, New Mexico and Texas to the Bad Lands of South Dakota and the Red Desert of Wyoming. The annual rainfall in the most intense areas is less than 3 inches; in the least intense, 14-16 inches. Maximum temperatures of 110°-120° F. are frequent during the summer. The relative humidity is very low, the minimum frequently falling below 15°. The critical investigation of the physical factors, especially the water content, of these deserts is an alluring field for future workers at the Desert Laboratory.

Dr. MacDougal contributes a series of instructive experiments upon the transpiration of certain xerophytes of the region with relation to temperature, and makes an illuminating comparison of the results with those obtained from mesophytes. The xerophyte, in spite of its great insolation and the low humidity, loses water less rapidly than the mesophyte. The report closes with a valuable bibliography of desert vegetation, and of the climate, soil and water of deserts, which has been prepared by Dr. Cannon. It can not be too highly praised for the beauty of the plates, which have a much greater value for the un-

derstanding of the text than is at present the fashion in ecology.

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*International Catalogue of Scientific Literature.* First Annual Issue—Q—Physiology. Including Experimental Psychology, Pharmacology and Experimental Pathology. Part I., pp. xiv + 404, 1902. Part II., pp. xii + 664, 1903. London, Harrison & Sons. Physiologists will heartily welcome this long-expected catalogue. The first volume, which has recently appeared after some delay, is devoted to the literature of 1901 (a fact which should be, but is not, mentioned on the title page), and includes 1,094 pages of text and the surprisingly large number of 6,010 titles. Owing to the difficulties of organizing the work of the regional bureaus in the time at hand, it is issued in two separate parts; but it is intended that in the future only a single unbroken volume in each year shall be published. Each part of the present volume opens with a preface and instructions to the reader, both in the English language only. It would enhance their value if the instructions were printed also in French, German and Italian. There follow in order a schedule of classification and an index of the subject-matter of the science, which are repeated in each of the above four languages; then an authors' catalogue and a subject catalogue; and, lastly, a list of journals.

The scheme of classification of subject-matter is practically that which was submitted for criticism five years ago, though a considerable number of new subjects are introduced, and the order in some cases is changed for the better. It is to be regretted that one defect, earlier pointed out, was not remedied, namely, the introduction of a group to include general physiological phenomena, such as physiological division of labor, irritability, summation of stimuli, rhythm, specific energy, automaticity, fatigue, etc. If a reader wishes to learn what has been written on these subjects during the year, he finds it possible only by going through practically the whole scheme of classification. Rhythm and fatigue are found entered in the

index, it is true, but in a misleading way, for when one turns from them in the index to the corresponding numbers in the scheme of classification one finds 'rhythm' entered under 'hearing' and 'fatigue' under 'sense of movement.' Certain other subjects within the sphere of modern general physiology are not sufficiently elaborated. For example, all the tactic irritabilities, the literature of which is already large and constantly increasing, are grouped under one entry—'0150 Influence of Environment (Chemotaxis, Galvanotaxis, etc., High Altitudes, etc.)'—and are not mentioned specifically in the index. 'Secretion' as a general physiological phenomenon occurs nowhere, and there is no entry for 'internal secretion.' Some of the defects here mentioned are due to the fact that the basis of the scheme of classification is essentially morphological. The physiological literature of a particular organ can readily be found: not so readily the literature of a particular physiological principle. Though excellent in its details, the scheme of classification is too shortsighted. It is not yet too late to remedy this great defect. Let the numbering of the general groups, 'Physiology of the Organism as a Whole, 01,' and 'Physiology of the Cell and of Unicellular Organisms, 02,' be changed to '02' and '03' respectively; then let there be inserted a new group numbered '01' and entitled 'General Physiological Phenomena.' This group, properly elaborated, would contain at least many of the general subjects referred to and would facilitate the introduction of very valuable cross references. In future volumes this change, or an equally appropriate one, ought to be made, if the catalogue is to fulfill its high purpose.

The actual work of cataloguing seems to be well done. The cross references are numerous, both within the present volume and to volumes of the catalogue devoted to other sciences. There is a surprisingly small number of typographical errors. The typography is clear and of sufficient variety to facilitate the search for data. There is a natural curiosity on the part of the reader to know how near the list of titles approximates to completeness. A search within its pages for the

articles published during 1901 in five representative journals of different countries, shows the following percentages of omissions: *Journal de Physiologie et de Pathologie générale*, 1 per cent.; [English] *Journal of Physiology*, 2 per cent.; *Archives Italiennes de Biologie*, 3 per cent.; *Pflüger's Archiv für die gesammte Physiologie*, 24 per cent.; *American Journal of Physiology*, 48 per cent. Our own country thus compares most unfavorably with those of Europe. Not only, however, are the contents of the American journals incompletely catalogued, but the list of our journals is incomplete, comprising in the present volume only nineteen in number, and omitting such well-known periodicals as the *Journal of Comparative Neurology and Psychology*, the *Journal of Medical Research* and the *Psychological Review*. Since each regional bureau is responsible for the literature of its own country, a critic is at first tempted to lay these faults at the door of the Smithsonian Institution. Their real cause, however, must be sought further back. Although duly and repeatedly petitioned for assistance, our government, unlike those of many of the European countries, has given no support to the work of our regional bureau; the expense has been assumed gratuitously by the Smithsonian Institution, which, however, has been greatly embarrassed by lack of funds. It is gratifying to know that this institution has recently been enabled to make more extended provision for the work. This will allow the deficiencies of the present volume to be made up subsequently, and will insure greater thoroughness in the future. Professor Langley invites any suggestions which will lead to the improvement of the catalogue. It is to be hoped especially that American physiologists will call his attention to such additional journals as publish either frequently, or even rarely, articles on physiological topics. In doing this it should be borne in mind that the physiology of the catalogue includes physiological chemistry, pharmacology, experimental psychology and experimental pathology. The literature of bacteriology is catalogued in a separate volume.

Americans can helpfully cooperate in still another manner, namely, by subscribing for

the catalogue. The cost of the annual volume on physiology is \$9.20. Many physiologists will probably wish also the volume on general biology, the annual price of which is \$2.45. The Smithsonian Institution acts as the representative of the central bureau in the United States, and receives subscriptions.

The International Catalogue is the one catalogue of scientific literature whose permanence can be relied upon. Its first issue is full of promise. Its ultimate completeness will be hastened by the cordial cooperation of those whose labors it is intended to lighten.

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#### SOCIETIES AND ACADEMIES.

##### THE WASHINGTON MEETING OF THE AMERICAN PHYSICAL SOCIETY.

THE spring meeting of the American Physical Society was held at Washington, D. C., April 22 and 23, at the invitation of the Washington Philosophical Society. Two sessions for the reading of papers and an evening lecture by Dr. Alexander Graham Bell on his famous tetrahedron kites were all held at the rooms of the Cosmos Club. These and other courtesies of the Cosmos Club were much appreciated by the society.

On Friday evening a considerable number of members of the society dined together at the Hotel Barton, and on Saturday, at the close of the morning session, the Philosophical Society entertained all members of the Physical Society who had been attending the session at luncheon at the same hotel. In the afternoon a visit was made to the new buildings of the Bureau of Standards, which are located near Connecticut Avenue in the north-western suburbs of the city, about four miles from the White House.

There was a good attendance at the meeting and an unusually full list of papers was presented. All the papers in the following list were presented by the author or authors, excepting those by S. J. Barnett and A. A. Bacon, the authors being absent, and E. B. Rosa and M. G. Lloyd, because the hour for luncheon had arrived.

K. E. GUTHE: 'A Study of the Silver Voltameter.'

P. G. NUTTING: 'Some new Rectifying Effects in Conducting Gases.'

E. L. NICHOLS and ERNEST MERRITT: 'The Effect of Light on the Absorption and Electrical Conductivity of Fluorescent Liquids.'

F. A. SAUNDERS: 'Some Additions to the Arc Spectra of the Alkali Metals.'

W. F. MAGIE: 'The Volumes of Solutions.'

G. W. PATTERSON: 'Absolute Electrodynamometers.'

E. P. ADAMS: 'Induced Radioactivity due to Radium.'

S. J. BARNETT: 'The Energy Density, the Tension, and the Pressure in a Magnetic Field.' (Read by title.)

L. A. FISCHER: 'A Recomparison of the U. S. Prototype Meter at the International Bureau of Weights and Measures.'

C. W. WAIDNER and G. K. BURGESS: (a) 'High Temperature Measurement by means of Optical Pyrometers.' (b) 'Note on Special Problems in Optical Pyrometry.'

C. W. WAIDNER and H. C. DICKINSON: 'Apparatus for Platinum Resistance Thermometry.'

C. W. WAIDNER and H. C. DICKINSON: 'Intercomparison of Primary Standard Mercurial Thermometers.'

F. A. WOLFF: 'The Standard Cell.'

F. A. WOLFF: 'The Peculiar Behavior of Some Resistance Standards and Its Explanation.'

F. A. WOLFF: 'A Direct Reading Apparatus for the Calibration of Resistance Boxes.'

E. B. ROSA and F. W. GROVER: 'Absolute Measurement of Capacity.'

E. B. ROSA and F. W. GROVER: 'Absolute Measurement of Inductance.'

E. B. ROSA and F. W. GROVER: 'The Testing of Mica Condensers.'

E. B. ROSA and M. G. LLOYD: 'Testing of Alternating-Current Instruments.' (Read by title.)

A. A. BACON: 'Equilibrium of Vapor Pressure over Curved Surfaces.' (Read by title.)

E. B. ROSA,

*Secretary pro tempore.*

##### THE BOTANICAL SOCIETY OF AMERICA.

THE annual report of the secretary embodied in Publication 24 is a statement of conditions and record of progress during the first decade of the existence of the society that must be highly satisfactory to its mem-