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THE NATIONAL ACADEMY OF SCIENCES*

ADDRESS OF THE PRESIDENT[1]

THIS year marks the seventy-fifth anniversary of the founding of the National Academy of Sciences. No special celebration has been set for the completion of three quarters of a century of corporate existence, such as was held at the completion of the first half century in 1913, and will, I presume, be repeated at the century mark twenty-five years from now.

The semi-centennial meeting was a gala occasion spread over three days; it was opened by an address of welcome by the president of the academy, Ira T. Remsen, followed on the morning of the first day by addresses by President Arthur T. Hadley of Yale on "The Relation of Science to Higher Education in America," by Dr. Arthur Schuster, secretary of the Royal Society of London, on "International Cooperation in Research," and in the afternoon by our recently deeply lamented and always highly honored fellow member, George E. Hale, on "The Earth and Sun as Magnets." In the evening the regents and secretary of the Smithsonian Institution entertained the members and guests of the academy at a reception. On the second day, in the morning, Dr. Theodor Boveri, of the University of Wurzburg, spoke "On the Material Basis of Heredity," and Dr. J. C. Kapteyn, director of the Astronomical Laboratory of the University of Groningen, delivered an address on "The Structure of the Universe." In the afternoon a reception was held at the White House, during which the President of the United States presented medals of the academy to Professor Kapteyn, to his Excellency the Ambassador from France for transmission to the recipient, Henri Deslandres of Mendon, to his Excellency the Minister from Norway for transmission to the recipient, Johan Hjort, and finally to our fellow member, Dr. R. A. Millikan, at that time of the University of Chicago.

On the evening of that day the trustees of the Carnegie Institution of Washington tendered a reception to the members of the academy and invited guests. On the evening of the third day there was a dinner at the New Willard Hotel with after-dinner speeches by the Vice-President of the United States, the Honorable Thomas R. Marshall, by the British Ambassador, the

* Meeting at Washington, D. C., April 25, 26 and 27.

through an alcohol-chloroform series as follows: One part chloroform to three parts of 100 per cent. alcohol, one hour; one part chloroform to one part alcohol, one hour; three parts chloroform to one part alcohol, one hour; pure chloroform, one hour. Saturate the chloroform with paraffin and leave twelve hours, add more paraffin and put in an oven at 58° C. for six hours. Pour off the liquid and add melted paraffin and leave in the oven for forty-eight hours, then embed and section at 12 microns.

Delafield's haematoxylin is a very satisfactory stain, since it shows up the tissues well and has the added advantage of being permanent. The sections should be stained from 10 to 30 minutes and then washed in water and destained in 50 per cent. acid alcohol (3 drops of HCl to 100 cc of alcohol) until the sections are a deep pink color, then wash in ammonia alcohol (5 drops of ammonia to 100 cc of 50 per cent. alcohol) until they are a light blue color. Run up and mount in dammar or balsam.

ELTON C. COCKE

UNIVERSITY OF VIRGINIA

GRASS VOLUME TABLES FOR DETERMINING RANGE UTILIZATION

FORESTERS have used tree volume tables for decades, but the authors know of no previous effort to develop volume tables for range grasses. There is an urgent need for a mechanical means of determining the degree of grazing of forage plants on national forests and other ranges in the West. The use of such tables offers a very promising aid in range research and in practical range inspection.

More than seven hundred samples of sixteen important range grasses have been collected, mainly from Montana national forests. The plants were cut and weighed to show the weight per inch of height, and tables have been prepared for each species. There appears to be very satisfactory correlation between weight and volume. A much greater concentration of weight exists in the lower portions than is generally known among range ecologists. In *Festuca idahoensis* approximately three fourths of the weight is in the lowest one fourth of height, and other species show similar distribution. The basic method was devised in 1927 by the senior author. Under his direction further development was made in 1934–35 by Chandler Jensen and Kenneth E. Chriswell, and the present form was completed in 1937–38 by Chandler Jensen and Adolph Hecht.

For determining utilization on grazed ranges a table was devised to convert inches of stubble remaining into percentage of height removed. The latter was then aligned with a percentage of volume utilization scale for the species concerned. Edward C. Crafts, of the Southwestern Forest and Range Experiment Station at Tucson, Ariz., replaced the conversion table with a modified slide rule scale. In this region, we have now developed a partial three-cycle, semi-circular logarithmic scale which converts inches of stubble remaining directly into percentage volume utilization. A full account of this work will be published later.

TOM LOMMASSON
CHANDLER JENSEN

U. S. FOREST SERVICE,
MISSOULA, MONT.

BOOKS RECEIVED

Actualités Scientifiques et Industrielles: 502, Nécessaire Mathématique, MAURICE CURIE and MAURICE PROST. Pp. 112. 44 figures. 20 fr. *516, Analogies Entre les Principes de Carnot, Mayer and Curie,* PAUL RENAUD. Pp. 45. 10 fr. *517, Le Polonium,* M. HAISSINSKY. Pp. 43. 12 fr. *542, Fluctuations en Densité,* J. YVON. Pp. 63. 18 fr. *543, La Propagation et la Diffusion de la Lumière,* J. YVON. Pp. 133. 18 fr. *544, Les Phénomènes D'Auto-Oscillation Dans les Installations Hydrauliques,* Y. ROCARD. Pp. 68. 13 figures. 18 fr. *547, Contribution A L'Étude des Régions Ionisées de la Haute Atmosphère,* R. RIVAULT. Pp. 90. 39 figures. 20 fr. *549, La Structure des Corps Solides dans la Physique Moderne,* LÉON BRILLOUIN. Pp. 53. 27 figures. 18 fr. *550, Spectrographie de Masse, les Isotopes et Leurs Masses,* LOUIS CARTAN. Pp. 90. 37 figures. 20 fr. *551, Sur les Espaces a Structure Uniforme, et sur la Topologie Générale,* ANDRÉ WEIL. Pp. 39. 15 fr. Hermann, Paris.

CASWELL, ALBERT E. *An Outline of Physics.* Revised edition. Pp. ix + 590. 373 figures. Macmillan. $3.75.

ECKSTEIN, OSKAR, ALBERT BRUNO and J. W. TURRENTINE. *Potash Deficiency Symptoms.* Second edition. Pp. xii + 235. 41 figures, 55 plates. Westermann. $2.25.

HOPKINS, ANDREW D. *Bioclimatics; a Science of Life and Climate Relations.* Miscellaneous Publication No. 280 of the U. S. Department of Agriculture. January, 1938. Pp. iv + 188. 55 figures. Government Printing Office, Washington.

Internships and Residencies in New York City, 1934–1937. Report by the New York Committee on the Study of Hospital Internships and Residencies. Pp. xxx + 492. The Commonwealth Fund. $2.50.

JACOBSON, EDMUND. *Progressive Relaxation.* Revised edition. Pp. xvii + 494. 89 figures. University of Chicago Press. $5.00.

LEA, C. H. *Rancidity in Edible Fats; Food Investigation Report No. 46, Department of Scientific and Industrial Research, Great Britain.* Pp. vi + 230. 38 figures. British Library of Information, New York. $1.10.

Report of the Low Temperature Research Laboratory, Department of Agriculture and Forestry, Division of Plant Industry, Capetown, June, 1935 to June, 1936. Pp. 215. 33 figures. Government Printer, Pretoria, South Africa.

SARTON, GEORGE, Editor. *Osiris; Vol. III, Part 2, 1937; Dr. Solomon Gandz: The origin and development of the quadratic equations in Babylonian, Greek, and early Arabic algebra.* Pp. 405–557. 8 figures. Saint Catherine Press, Bruges, Belgium.

WESSEL, PAUL. *Physik für Studierende an Technischen Hochschulen und Universitäten.* Pp. xii + 514. Illustrated. Ernst Reinhardt, Munich. R. M. 4.90.

WOODRUFF, LORANDE L. *Animal Biology.* Second edition. Pp. xiv + 535. 312 figures. Macmillan. $3.75.

WOOSTER, W. A. *A Text-Book on Crystal Physics.* Pp. xvii + 295. 108 figures. Cambridge University Press, Macmillan. $4.00.