

use different renderings of the same name, and one at least of them has no consistent system. Thus, one island appears as Meshdoshapsk in the map and text, and as Meshdusharsky in the appendix; the name of a well-known Russian geologist appears as Chernysheff and Tschernyschew (p. 288); the letters, which are transliterated (p. 266) as "aya" in the case of Novaya, are abridged to "a" in the name Dolgaya, which therefore appears as Dolga. Belootchia and Belushja are no doubt renderings of the same word. But nomenclature is after all a matter of detail, and Mr. Pearson and Colonel Feilden are to be congratulated on a valuable contribution to the natural history of one of the least known regions of Europe.

J. W. G.

INTERNATIONAL COMMITTEE OF WEIGHTS AND MEASURES.¹

THE International Committee of Weights and Measures at Paris issue from time to time "Travaux et Mémoires" with reference to the investigations and comparisons undertaken at their Bureau during certain periods. Ten such volumes have been published since 1881—Tome i. to Tome xi.—and during last year a further volume, Tome ix., was distributed. This latter volume contains the final account by Dr. J. René Benoit and Dr. Max Thiesen of the comparisons made at the Bureau of forty standard kilograms, "Prototypes nationaux" with the "Prototype International K," which is kept at the Bureau. These national standard kilograms have long since been forwarded by the Committee to the several High Contracting States who (including Great Britain) have joined the Metric Convention of 1875; and the introductory account of the comparisons of these standards was given in Tome viii. (1893), the final account having only now been issued, although it deals with comparisons made so far back as 1884.

The unit of mass of the kilogram is determined by a solid piece of metal, iridio-platinum, in the form of a cylinder (of the height and diameter of 30 millimetres), and the comparisons of the forty cylinders included weighings in air and in water; the numerous observations made by Dr. Thiesen being stated in detail in Tome ix., the observations and reductions of the hydrostatic weighings alone occupying 229 pages of this large volume. The balances used were made by M. Bunge, of Hamburg (1879), and more recently by Messrs. A. Ruprecht and H. Schoss, of Vienna. Of the Bunge Balance an illustrated description is given in Tome ix., and of the original Ruprecht Balance in Tome i. of "Le Travaux et Mémoires." The balances were so designed that any two kilograms under comparison could be automatically interchanged from one side of the balance to the other without disturbing the balance-case, and any minute weights could be added to either pan by the observer without approaching the case. The results appear to have been highly satisfactory, the probable error of a final comparison of two kilograms not exceeding 0.002 mg. Such comparisons are inexhaustible, and therefore it is not surprising to find that no two of the kilograms were found to be absolutely alike.

The final density of the standard kilogram, No. 18, forwarded to Great Britain, appears to have been 21.5454, corresponding to a volume 0° C of 46.414 millilitres. The actual difference of No. 18 from the true kilogram was found to be:—No. 18 = K + 0.070 mg.

By the Weights and Measures (Metric System) Act, 1897, it is provided that "No. 18" is to be the legal standard of this country, from which all other metric weights and all measures having reference to weight are ascertained; and its precise equivalent in terms of the pound

avoirdupois has been found to be 2.20462234 lb., or the pound equals 0.45359243 kg.

The investigations of this Bureau as to modes of weighing and methods of reduction, have attracted the attention of all engaged in exact metrological inquiry, the results of the investigations being referred to in modern text-books on physical science; and in the present volume the several corrections and reductions found to be necessary in the precise weighings made by Dr. Thiesen during the years 1884-8 are fully stated in his excellent account.

NOTES.

THE poll for the election of a Parliamentary representative of the University of London, in succession to Sir John Lubbock, opened on Tuesday morning, and will close on Saturday. The result will be declared at the University on Monday next, at noon. On Tuesday evening the number of votes recorded for each of the candidates was officially declared to be: Sir Michael Foster 255, Dr. Collins 156, and Mr. Busk 119, and we trust that when the poll is declared next Monday the numbers will be of the same relative order of magnitude. Graduates of a University which promises to become in the near future an even more powerful means of promoting scientific interests and encouraging intellectual activities than it has been in the past, should see for themselves that the return of any other candidate than Sir Michael Foster would be disastrous. It is unfortunate that sharp electioneering practice induced a number of the graduates to give their names as supporters of Mr. Busk and Dr. Collins before Sir Michael Foster entered the lists; but if they have the courage of their convictions they will seriously consider whether a promise made without a knowledge of the candidates who would contest the seat should not be withdrawn. Petty differences of opinion and individual grievances ought to be put on one side upon an occasion like the present, and the electors should vote for the candidate who would have the greatest influence upon the advancement of the University as a whole.

SOME weeks ago we expressed surprise that the Highland Agricultural Society of Scotland had not contributed towards the cost of Prof. Ewart's experiments on telegony and other subjects of special interest to breeders. From a contemporary we learn that the Society last week voted 200*l.* in aid of the very costly investigations, and that the former chairman (Sir John Gilmour), in a letter urging the secretary to make a grant, stated that he intended sending a donation of 50*l.*, and expressed the hope that others would follow his example. As there was some danger of the work collapsing for want of funds, this is altogether satisfactory. Though science in the past, to the great loss of the nation, has too often been systematically ignored, better times may be coming, for the new century may bring with it a higher appreciation of scientific methods, and thus keep us abreast with the spirit of the age.

IN his lecture at the Royal Institution on Friday last, Mr. Marconi made a statement as to the use of his system of wireless telegraphy in connection with the war. He is reported by the *Times* to have said that six of his assistants have been sent out to South Africa. The War Office intended that the wireless telegraph should only be used at the base and on the railways; but the officers on the spot, realising it could only be of practical use at the front, asked if the assistants were willing to go to the front, and accordingly on December 11 they moved up to De Aar. The results at first were not altogether satisfactory, owing to the want of poles, kites, or balloons, which are needed to elevate the vertical wires; but the difficulty was overcome by the manufacture of kites, in which work Major Baden-Powell and Captain Kennedy, R.E., took part. It has been

¹ "Travaux et Mémoires du Bureau International des poids et mesures." (Paris, 1898.)