

errors affords no indication. These are given in the following tables, the numbers in which are, as before, in terms of seconds:

Period. One Minute.					
Sex.	1		2		3
Men.	32		18		25
Women.	68		41		86

Sex.	One quarter Minute.		One half Minute.		One and One half Minute.	
	3	4	1	4	1	3
Men.	8	2	30	8	26	70
Women.	18	12	35	18	73	189

In sum, the excess of general inaccuracy in the estimation of the given periods of time on the part of women, as compared with men, is no less marked than their tendency to over-estimation. The extremes of individual judgment are very great; for instance, estimation of the duration of the $1\frac{1}{2}$ minute period under condition (3) ran as high as ten minutes. In the case of men the highest was three and one half minutes. The average error of judgment among the men, all periods included, was 45 per cent. of the value of the periods estimated; that of the women amounted to 111 per cent., or two and one half times that of the men.

The noting of these sex differences was incidental to the primary purpose of the test, and attention is called to them here in order that observations on the part of others may be brought into comparison with the results presented by this group of persons, all of whom had some acquaintance with psychological experimentation, but few any systematic training in laboratory methods. The writer would be glad to learn whether the judgments of children of the two sexes present a closer approximation in character than those embodied in the preceding tables; and, in case they do, whether any systematic test has been made of their progressive differentiation with advance in age. ROBERT MACDOUGALL.

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THE NATIONAL PHYSICAL LABORATORY.*

THE annual inspection of the National Physical Laboratory by the general board took

place on March 18, when also a large number of gentlemen interested in physical and mechanical science accepted the invitation of Sir William Huggins, president of the Royal Society, and of Lord Rayleigh, president of the general board, to examine the work carried on by the institution at Bushy House. All the departments of the laboratory were thrown open to the visitors, who were free to go where they pleased, and who found Dr. R. T. Glazebrook, the director, and his assistants ready to give every explanation of the apparatus displayed and the purposes to which it was being placed. The report for 1903 contains full details of the work which was carried out during that year, and also an outline of the program for the present year. In the engineering department this includes a continuation of the research on wind-pressure and of that on the mechanical properties of nickel-steels, undertaken jointly with Mr. Hadfield; an inquiry into the specific heat of superheated steam on a large scale; the erection and testing of the new screw-cutting lathe, for which a special house has been built and which is to be used for making standard leading screws on behalf of the Standard Leading Screw Committee of the War Office; and the construction of a machine for determining the friction of bearing surfaces. In the physics department, among other things, the construction of a standard ampere balance, together with various electrical tests, is to be undertaken for the engineering standards committee; various methods of measuring temperatures between 1,400 C. and 1,800 C., and the suitability of different glasses for high temperature thermometry, are to be investigated; the standardization of the steel yard and nickel meter is to be completed, and the urgently required work of comparing an 'end' yard and an 'end' meter with the 'live' standards, and of calibrating the subdivisions of each, is to be undertaken; and an inquiry is to be initiated into the conditions in which the pentane lamp may be treated as a standard, and measurements made of the refractivity and absorption of various glasses used by opticians.

* From the *London Times*.

During last year the number of tests made in the engineering and physics departments was 1,330, and the fees received amounted to £350, a sum of £536 being also received for researches undertaken in the laboratory; in the nine months of 1902 during which those departments were open the tests numbered only 269 and the fees were £69. In addition, many applications were made for tests which the laboratory was unable to undertake, owing to lack of equipment; among these were tests on wire and wire ropes, on rubber, on the tensile strength of metals after special hardening, on cement and stone, on very high-speed anemometers, and on alternate-current instruments of all kinds. In the engineering department the need of a powerful testing machine was greatly felt, and work had constantly to be declined which would have been accepted if such a machine had been available.

But while the work of the laboratory has prospered, its financial position gives rise to grave anxiety. The receipts for 1903 were £10,200 and the expenditures £10,306, the deficiency thus being £106. In the preceding year the receipts were £9,314 and the expenses £9,235, the balance being £79. In addition, £1,036 was spent in 1903 on equipment out of the accumulations transferred from the Kew committee. Thus the laboratory is spending more than its income, and in the opinion of the executive committee a further increase of expenditure will be necessary in the present year. By drawing on the available balance of £2,379 it will be possible to go on for another year, but the committee feels that the time has come when the financial position must be reconsidered. This is the more necessary since the period for which the grant of £4,000 was originally made ends next September, though the Royal Society has arranged with the treasury that it shall continue till April, 1905, and that a scheme for the future shall be considered by the treasury. The committee holds that an increase of funds is necessary even to maintain the work as at present, and a further increase of work for which there is a demand is to be carried out. It also thinks that, for the sake of permanence, the positions of the senior members of the staff should be

made more secure, and that the stipends now paid to the assistants—with one exception £200 a year—are not commensurate with the work and are insufficient to retain for long the services of suitable men, while in addition the staff is now too small. It points out that similar institutions in other countries obtain more assistance from the state; in particular, the Reichsanstalt in Berlin alone gets £16,000, and the annual grants to the various institutions at Charlottenburg, which together cover the ground covered by the National Physical Laboratory, comes to about £40,000.

THE BERMUDA BIOLOGICAL STATION FOR RESEARCH.

HARVARD UNIVERSITY and New York University again unite with the Bermuda Natural History Society in inviting zoologists and botanists to spend six weeks in the temporary biological station located, as last year, at the Flatts, Bermuda.

Venerable George Tucker, Archdeacon, president of the Bermuda Natural History Society.

Hon. W. Maxwell Greene, Consul U. S. A., vice-president of the Bermuda Natural History Society.

F. Goodwin Gosling, honorary secretary of the Bermuda Natural History Society.

E. L. Mark, director of the Zoological Laboratory, Harvard University.

C. L. Bristol, professor of biology, New York University.

The Bermuda Islands are about seven hundred miles southeast of New York. They are nearly due east from Savannah, due south from Halifax, and due north from Porto Rico, being about equidistant from these three points. Since their discovery, in the seventeenth century, they have belonged to Great Britain, which maintains an important naval and military station there.

The climate is mild during the whole year, not being subject to the extremes that are found either in the temperate or tropical regions. The summer temperature is rarely higher than 85° F., and the winter rarely below 50° F. In the summer light breezes are almost constant and help to make the climate quite as comfortable as at many seaside resorts.