

was mutually adopted by the unanimous agreement of all the parties.

Attempts were made to lay these new proposals before Lord Balfour's Committee, but a reply was received to the effect that the Committee had by that time ceased to take evidence, and nothing could be done. This is particularly to be regretted, because the improved Bill meets many of the difficulties mentioned in the Committee's report.

The new Bill has just been before the House of Lords, and consideration of it has been postponed on the understanding that the Government will institute an inquiry into the whole question. The Bill received widespread and influential backing, having been introduced by the Association of Chambers of Commerce of the United Kingdom (representing more than 130 Chambers throughout the country), and supported by the Decimal Association and many organisations representative, among others, of:—*Finance*, the Institute of Bankers; *Commerce*, Chambers of Commerce; *Industry*, Federation of British Industries; *Science*, British Science Guild; *Transport*, Municipal Tramways Association; and many professions and trades. This unanimity of organised opinion augurs well for the eventual adoption of a reform which, as hinted at by the Committee, has possibly suffered more hitherto from the diversity of advice tendered by its advocates than from any real opposition either in or out of Parliament.

HARRY ALLCOCK.

#### PROGRESS OF THE EDUCATION BILL.

**D**ESPITE the pressure of other urgent measures and the consequent limitations as to time, and in spite also of the persistent opposition of certain Members, good progress is being made with the Education Bill in the House of Commons. Already clause 10, the crucial clause of the measure, which is to secure the continued education of young persons from fourteen to eighteen years of age who have entered into employment, has been reached. It is to be hoped that the endeavour of Mr. Fisher to preserve the contact of adolescent youth with the humaner side of life during these formative years, whilst giving effect to all reasonable opportunities for enhancing both knowledge and aptitude in the chosen vocation, may receive complete support and be assured of legal enactment.

It is in this connection satisfactory to find that the great evil of half-time, which has mainly characterised the textile industrial areas of the country, has found little support in the House, and clause 8, section 1, abolishing all exemptions up to the completion of the fourteenth year of age (to come into operation on the close of the war), has been passed without a division. We thus secure that the child in the elementary school will now have at least a complete preliminary course of education and training from the beginning of his sixth to the completion of his fourteenth year, and the nation comes into line with the more advanced industrial and commercial nations of the Continent who are its greatest rivals.

Moreover, liberty to raise the school age until the completion of the fifteenth year of age, with or without exemptions, at the option of the local education authority has secured the assent of the Committee by a very large majority, and it is further provided that adequate provision shall be made in order to secure that children and young persons shall not be debarred from receiving the benefits of any form of education by which they are capable of profiting through inability to pay fees. In view of the necessity of encouraging the development of higher education in county areas, it is satisfactory to find that there was unanimous assent to the abolition of the limit of expenditure from the rate by county council committees.

NO. 2536, VOL. 101]

Provision is made for the due inspection of *private* schools with a view to the elimination of unsatisfactory establishments by bringing them under the direct supervision of the local authorities and of the Board of Education. A step has also been taken at the option of the local education authority to raise the compulsory age of entrance to the elementary school from five to six years, provided that adequate provision is made in the area for the establishment of duly equipped nursery schools. It is a pleasant thing to note that in the establishment by scheme of joint committees teachers are expressly named as eligible for co-optation. The efforts of the friends of this important measure should now be firmly concentrated upon the provisions of clause 10, so as to secure that the proposals of Mr. Fisher, who has so far piloted the Bill with such admirable tact, shall be given legislative effect. Whatever be the merits of the Hibbert amendment; and they are by no means absent, they are not comparable with the advantages to be gained by the intimate association of young persons with the beneficial influence of the schools up to the conclusion of their eighteenth year.

#### ORGANISATION OF GLASS INDUSTRIES.

**T**HE Society of Glass Technology held an important meeting at the Institute of Chemistry on May 15, when the president, Mr. Frank Wood, in opening a discussion on "The Glass Industry after the War," advocated the formation of trade councils for the organisation of the various sections. He proposed that a federation should be formed, controlled by a council consisting of sectional representatives, both manufacturers and men, together with representatives of science, the Government, and finance. The matter should be taken in hand immediately, and every effort made to secure workmen and machinery to enable the country to supply all its requirements, instead of about 20 per cent. in pre-war days. To do this, Government assistance is necessary. Without protection in some sections and prohibition in others, there would be a deluge of foreign glass just when their furnaces and shops ought to be undergoing repair and when time would be required for the training of workers. They should be ready for the future, and the Optical Munitions and Glassware Supply Department of the Ministry of Munitions, to which they were so much indebted, should continue in being to help them. Mr. Connolly voiced the need for a dump-proof Empire in order that a fair chance might be given to home production. Sir Frank Heath dealt with the necessity for bringing science to bear on the matter, assuring the meeting of the desire of the Government to assist research through industrial organisations. The conditions under which grants are made are not onerous, and the researches are conducted free from meticulous interference from headquarters. Mr. Douglas Baird referred to the production of chemical ware, which will not be able to stand on its feet for some time without the aid of "foster-parents." Sir Herbert Jackson spoke hopefully of the general outlook. National prestige must supply the stimulus for pulling together after the war. Their representatives should be brought into collaboration with Government representatives to deal with the problems before them. Mr. Biram, of the Ministry of Munitions, acknowledged the great help of the manufacturers in the production of war material; the future would call for all their energy and enterprise. Dr. Rosenhain appealed for the fullest utilisation of scientific results and the interchange of knowledge and experience. Mr. S. N. Jenkinson said that the industry must make itself efficient if it is to be supported by the Government. Many other members joined in the discussion, and it

was agreed that a resolution on the policy of the society should be circularised among the members for consideration before the next meeting, which is to be held in Sheffield on June 19. Before the meeting the members enjoyed a visit to Messrs. Ediswan, Ltd., at Ponders End.

### THE ROYAL OBSERVATORY, GREENWICH.

THE report of the Astronomer Royal to the Board of Visitors of the Royal Observatory, Greenwich, was read at the annual visitation of the Observatory on Saturday, June 1. The subjoined extracts are from the report.

#### Greenwich Catalogue.

Advantage is being taken of the delay in the printing of the Greenwich catalogue of 12,000 stars for 1910 to insert the type of spectrum as well as the magnitude of the star on the Harvard scale. This has been made possible by the kindness of Prof. Pickering, who is supplying, partly in manuscript and partly in early proofs, the results of Miss Cannon's survey at Harvard College. Discussions of some points connected with the proper motions of the stars in this catalogue have been communicated to the Royal Astronomical Society, and others are in progress.

#### Heliographic Observations.

In the year ended May 10, 1918, photographs of the sun were obtained on 209 days. The transmission to England of the solar photographs taken at the Royal Observatory, Cape of Good Hope, has been suspended for the present, the last originals received being those for February, 1917, and the last duplicates those for the month previous. Similarly, no application has been yet made for photographs taken at the Indian observatories of Kodaikanal and Dehra Dûn to fill up gaps in the combined Greenwich-Cape record. The days in 1917 left without representation in the combined record are only nine in number, and for eight of these days photographs taken at Kodaikanal are available; the only date in 1917 still without a photograph being March 12.

H.M. Astronomer at the Cape has reported that the sun was successfully photographed there on 333 days in the year 1917, and on every day in January, 1918. The director of the Kodaikanal Observatory has reported that the regular series of photographs of the sun was recommenced there on April 1, 1917, and that plates were taken on 248 days out of the 275 of the nine remaining months of the year.

During the whole of the period covered by this report the spot-activity has been considerable, but it reached a remarkable development during August, 1917, the mean daily spotted area during the second week of that month being the highest as yet registered in the Greenwich photographic record. No disturbance comparable with this has occurred since, but considerable secondary maxima, with total spotted areas of more than 1000 millionths of the sun's visible hemisphere, were observed in September and December, 1917, and in February and March, 1918.

#### Magnetic Observations.

The mean values of the magnetic elements for 1917 and three previous years are as follows:—

	Dec. W.	Hor. force	Vert. force	Dip
1914 ...	15 6.3	0.18518	0.43317	66° 51.2
1915 ...	14 56.5	0.18508	0.43315	51.8
1916 ...	46.9	0.18494	0.43313	52.7
1917 ...	37.0	0.18477	0.43305	53.6

NO. 2536, VOL. 101]

The annual diminution of declination increased considerably about 1910, its average value from 1900 to 1910 being 4.9'. The horizontal force, which had been increasing since measurements were begun at Greenwich in 1846, reached a maximum about 1910, and is now diminishing. The dip, which has been diminishing since measurements were begun in 1843, reached a minimum about 1913, and is now increasing.

There were no days of great magnetic disturbance in 1917, but four were classified as of lesser disturbance. Traces of the photographic curves for these days will be published in the annual volume.

#### Meteorological Observations.

The following details of the weather refer to the year ended April 30, 1918. The mean temperature was 50.0°, or 0.4° above the average of the seventy-five years, 1841–1915. The highest temperature in the shade was 93.2° on June 17, and the temperature exceeded 80° on fifteen days. The lowest temperature was 17.2° on December 19, and on fifty-three days fell as low as 32.0°.

The mean daily horizontal movement of the air was 298 miles, which is fourteen miles above the average of the previous fifty years. The greatest daily movement, 767 miles, was recorded on November 24, and the least, forty-seven miles, on December 20. The greatest recorded pressure on the square foot was 18.8 lb., on October 25; the greatest velocity in one hour, forty-six miles, was registered on the same day.

The duration of bright sunshine registered by the Campbell-Stokes instrument was 1668 hours out of a possible 4456 hours, or 36.1 per cent. January provided more and April less than any corresponding month since the present instrument was set up in 1897.

The rainfall was 28.06 in., or 3.82 in. above the average for the period 1841–1915. The number of rainy days (0.005 in. or over) was 156. March, with 0.97 in., was the driest, and August, with 4.56 in., the wettest month.

### UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

By the will of Dr. E. A. Letts, professor of chemistry in Queen's University, Belfast, who died in February last, his collection of minerals is bequeathed to Queen's University, and, on the death of his wife, 2100l. for the endowment of a scholarship in the University.

MR. JOHN OWENS, of Chester, has been authorised by certain friends to offer the University of Wales on their behalf 10,000l. war stock towards the establishment of a music directorship on the lines indicated in the report of the Royal Commission on University Education in Wales.

THE Education Bill and eugenics is the subject of an article by Mr. Wm. C. Marshall in the *Eugenics Review* for April (vol. x., No. 1). Mr. Marshall believes that the Bill bids fair, if loyally carried out, to satisfy the requirements of the intelligent artisan, and to assure him that he can in the future count on obtaining for any of his children, inheriting his qualities and reared under his care and supervision, an education which will assure their position in the industrial world. On these grounds the conclusion is that the Bill should be cordially welcomed by eugenicists.

INTERESTING and instructive statistics concerning the growth of secondary education in England and Wales are contained in the Report of the Board of Education for the year 1916–17 (Cd. 9045). The total number of secondary schools in England regarded by the