

logical conditions at Greenwich during the year ending April 30, 1916, are: (i) the warm January with a mean temperature 2° higher than any January from 1841 to 1915; (ii) the great pressures of wind in the gales in the winter; and (iii) the heavy rainfall in March, the wettest March since the commencement of the Greenwich records in 1841.

The following details of the chronicle of the weather refer to the year ended April 30, 1916. The mean temperature was 49·6°, or 0·1° above the average of the seventy years 1841-1910. The highest temperature in the shade was 87·2° on June 8, and the temperature exceeded 80° on only six days, as against twenty-one in the previous year. The lowest temperature was 23·0° on November 27, and on forty days fell as low as 32·0°.

The mean daily horizontal movement of the air was 287 miles, which is three miles above the average of the previous forty-eight years. The greatest daily movement, 955 miles, was recorded on February 16, and the least, 63 miles, on October 15. The greatest recorded pressure on the square foot was 35·0 lb. on January 1; the greatest velocity in one hour 51 miles on December 27.

The duration of bright sunshine registered by the Campbell-Stokes instrument was 1476 hours, out of a possible 4473 hours, or 33 per cent. This is below the average, principally owing to a deficiency in August and March.

The rainfall was 32·17 in., or 8·05 in. above the average for the period 1841-1905. The number of rainy days (0·005 in. or over) was 168. June, with 0·56 in., was the driest, and December, with 5·20 in., the wettest month. The rainfall in March was 4·13 in.

The scientific work of the observatory has necessarily been somewhat curtailed, but it has been found possible to keep up all observations of the sun, moon, and planets; sun-spots, latitude; magnetic and meteorological registers; observations which would otherwise be permanently lost. The reductions are in some cases behindhand, and must be brought up to date later. Both the scientific staff and the workmen have made every effort to cope with the additional work caused by the absence of their normal assistance. In the course of the year six Belgian refugees have been employed at the observatory.

THE PLACE OF SCIENCE IN MODERN METALLURGICAL INDUSTRIES.

IT is significant of the position which science now occupies in the iron and steel industry that Sir William Beardmore, the head of a great armament firm in Glasgow, and the president-elect of the Iron and Steel Institute, in discussing the various factors which determine the success of any particular process, said in his recent presidential address:—"Science comes first. It is the dominant factor because it should be the beginning of all things. . . ." He went on to point out that there is, however, a tendency at the moment to neglect the other factors, and especially the attitude of labour towards improved methods of manufacture which are evolved by scientific research. This attitude amounts in many cases to an absolute refusal to utilise such improvements, and when manufacturers are charged with a lack of enterprise in not adopting modifications which are demonstrably advantageous the reason frequently is that the obstructionist attitude of labour organisations renders those improvements impossible of execution. Sir William Beardmore quite rightly insists that the question is one of profound national importance. He says:—

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"The employment of the people and their well-being depend upon plenty of work. This in turn requires the maintenance of a great export trade. Efficiency and economy in manufactures can do much to win and retain foreign as well as British Imperial markets. This necessitates advance towards perfection of design and greater volume of output, through improvement in the mechanical means of production evolved by experiment. It follows that research should be a charge upon the selling price. To counterbalance this charge it is essential that the volume of output should be increased. Thus, when we reach the bedrock of industrial conditions we find that unless restrictions and limitations dictated by workers' organisations are abolished much of the gain possible to the nation due to research and experiment must be lost."

Seldom before has this point been made with such brevity and convincingness. Sir William Beardmore went on to give instances of the restrictive methods of trade unions during the war, which would be almost incredible if they were not, as they unfortunately are, amply proved to be true.

One of the best points made in his address was the clear and proper distinction drawn between the two main divisions of scientific research, which he classified as "in one case purely theoretical, almost classical; in the other as distinctly technical, or practical," each of which has its proper sphere. As regards the former, the results obtained merely indicate potentialities for the future; as regards the latter, they are generally contemporaneous with actual manufacture. No more difficult questions come up for decision than the potentialities, from a commercial point of view, of problems which have been solved in the laboratory. It is very encouraging to scientific workers in metallurgy to find such stress laid on the importance of theoretical research by a practical man of the attainments of Sir William Beardmore.

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RECENT ENTOMOLOGY.

THE Termites, or "white ants," of the United States are described by Thomas E. Snyder from the bionomic and economic point of view in Bulletin 333 of the U.S. Department of Agriculture. Three species of *Leucotermes*—one an introduced immigrant from South Europe—are included in the survey. The principal injury caused by the termites is the destruction of wooden buildings and other structures, but at times they devour living trees and growing crops, as well as books, papers, cloth fabrics, and stored grain and flour.

From the current number (part 3, vol. iv. B) of the *Review of Applied Entomology* it is evident that the destruction of lice infesting troops on the Eastern battle-front is a problem confronting both German and Russian army surgeons and sanitarians. From a summary of Dr. A. Hase's recent paper in the *Centralbl. Bakt. Parasit. u. Infektionskrankh* (lxxvii., 2, 1915), we learn that dirty, greasy underclothing causes a high temperature which is deterrent to lice, and we are struck by a touch of human interest rarely found in the summary of a technical paper. "The troops were all anxious to be freed from the pests with the exception of an East Prussian, who said that the little creatures reminded him of home."

A recent number (vol. iii., 3) of the *Indian Journal of Medical Research* contains some papers of interest to students of the Diptera. Major S. R. Christophers revises the list of Indian Anophelini, and describes the various stages of *Anopheles plumbeus*—a species apparently common to Europe, North America, and India—the larvæ of which were found inhabiting holes