News and Views

The Race Problem

THE analysis of factors contributing to popular judgment in discriminating between races, which appears in another column of this issue of NATURE (see p. 635), agreeing substantially with the views expressed by Prof. Julian Huxley in his Friday Evening discourse before the Royal Institution on March 27 (see NATURE, April 4, p. 570), also lends support to his contention that a serious effort should be made to put an end to the propagandist exploitation of pseudo-scientific inference, depending upon the use of the term 'race', in political and nationalist activities. It is problematic, however, whether any pronouncement following on an international inquiry, which Prof. Huxley suggests as a possible remedy, would be effective, whatever the course adopted to secure that it should be widely known and generally accepted. Apart from practical difficulties, which are considerable, but of course not insuperable, clearly such a pronouncement, if it is to go beyond the fact, which is patent, that scientific terminology is being abused, must be based upon some agreement as to the meaning of the term, of which it attempts to regulate the use. It is open to question whether such agreement could be attained at present among representative students of man—students of man's structure, descent, heredity, varieties and distribution—even without entering upon the thorny problems of racial psychology and culture. If, however, the major objective of such an inquiry were the purely scientific aim of clarifying current ideas on race among anthropologists, even though it ended indecisively, or, as is not impossible, in a deadlock—*Germania contra mundum*,—it would clear the way, at present blocked, for rapid progress in racial studies. It might even be found desirable that a term of coinage now so debased should be eliminated entirely from scientific use. In the meantime, it is a function of science to expose ruthlessly on every occasion loose thinking and an inexact terminology; and perhaps, in this way, the pitfalls of 'race' can best be brought home to the man in the street.

Fire-Walking

BULLETIN II of the University of London Council for Psychical Investigation consists of a report on two experimental fire-walks in which the preparation and performance were submitted to careful observation. Of the many accounts of fire-walking in different countries, this is the first to give a detailed description of the preparation of the fire, the internal and surface temperatures, and the times of contact of the skin with the embers. For the first time, therefore, an estimate of the magnitude of the performance can be made: it does not consist of wandering amongst flames with a look of exaltation, but of four rapid steps on charcoal at 430° C. with an average time of contact of half a second per step. Nevertheless, amateurs are not able to equal this, and the two who tried to imitate Kuda Bux developed blisters after only two steps. In attempting to account for the greater immunity from burning of Kuda Bux, chemical treatment need not be considered, since very careful tests were made to exclude this possibility.

Two hypotheses require examination, apart from obvious factors such as skill in the manner of walking, knowing the correct stage during the combustion of the fire at which the ash (which might adhere to the feet) must be raked, and, after a suitable interval, the attempt made. First, the increased immunity may be due to practice, for it is well-known that constant handling of hot materials produces an insensibility to heat which is accompanied by an absence of reddening and blistering although the skin may not appear in any way abnormal. Secondly, it is possible that a certain induced mental state is required, for it has been observed that under hypnosis, for example, very unusual bodily reactions may occur. This would account for the elaborate ritualistic preparation adopted in many countries and for Kuda Bux's assertion that 'faith' was necessary. Kuda Bux's own preparation appeared to consist merely in reciting a few lines from the Koran. One thing is certain: if the fire-walk is performed regularly the first hypothesis cannot be excluded. Whether or not the second hypothesis must be made in addition is a question that requires further research. The bulletin contains an extensive bibliography and nineteen plates which illustrate clearly the conditions under which the experiments took place.

Prices for Electric Supply

THE paper read by Prof. Miles Walker to the Institution of Electrical Engineers on April 2, discussing the prices for electric supply in Great Britain, will interest all who try to see the reasons for the great disparities in the prices charged. It would naturally be thought that low prices would only be found where distribution costs per unit are low. But this is not the case, for they are found also in residential areas where higher prices might reasonably be expected. As an example, Prof. Walker quoted the Oxford supply, where a company had been in existence for about forty years; when, in 1931, the supply was taken over by the municipal authorities, drastic reductions were made in the cost of supply. The result has been that the total net income earned is now a greater percentage of the total capital involved than when the prices were high in 1931. In other words, if the company had had the courage to reduce the prices from almost the highest in the country to almost the lowest for that kind of district, it would have been able—provided it managed as well as the corporation—to pay a slightly larger dividend. In Prof. Walker's opinion, the main

difficulty is to evolve some method of charging which will apportion to each consumer his proper share of the standing charges. He made a most ingenious suggestion for constructing meters the rates of which would depend on the times of the day at which the consumer would be taking his loads. We foresee that there would be great difficulties in explaining this system of charging to new consumers and serious difficulties with electric motor-clocks, and humming noises would have to be overcome.

ANOTHER suggestion made by Prof. Walker for improving the load factor of our central stations and thus enabling prices to be reduced is to utilise the potential power load of motor-cars and omnibuses for equalising the load. Much has been said about the advantages of making petrol and oil from British coal; but if the problem is to transfer the energy stored in our coal to the axles of our motor-cars, it is very much more efficient to generate electrical energy by means of big turbo sets, store it in batteries, and empty it in electric motors, than it is to convert only a fraction of the coal into petrol and employ that in internal combustion engines. If the distribution of electricity were on a national scale, we should have to dot about the country hundreds of battery stations at distances not greater than ten miles apart. Electric cars could be built taking batteries of a standard size. The driver of the car would only have to stop at a station every 20 miles or so and change his battery. It could be mounted and wheeled about in such a way that the process of changing it would be as easy as filling up with petrol. If it were necessary to have a tax, it could be imposed upon the charged battery. The gain to the State would be millions of pounds per annum, at present paid to foreign countries for petrol. Our central stations would be kept busy during the early hours of the morning in charging the traction batteries. It would lead to increasing the output of our central stations without increasing their capacity. Another help for reducing the price of electricity would be to educate consumers to reduce their bills by keeping down their maximum demands by using a special indicator.

Electrical Equipment of Automobiles

THE electrical equipment of a motor-car is now an essential portion of the whole vehicle. This is proved in a paper by Mr. E. A. Watson (*J. Inst. Elec. Eng.*, March) describing the progress made during the last three years in the electrical equipment of cars. In the modern car, the driver should never be called upon to resort to hand-starting. The starter handle is carried separately in the tool kit, and in many designs can only be inserted with difficulty, its main function being to turn the engine round for adjusting purposes and not for starting. The ignition now is almost always by electric coil and not by a magneto. To assist the convenience in driving, electric petrol pumps, windscreen wipers and horns are used. Recently the remarkable progress made in the combined textile and rubber driving-belt has led to a reversion to the belt-driven dynamo. These are entirely satisfactory and have a normal life of 20,000 miles or more. This drive possesses the advantage of quietness and simplicity, as compared with the gear or chain drive. The modern head-lamps, designed with a parabolic reflector and a focused filament, produce a beam which is slightly divergent. By means of prisms, some of the light is diverted on to the sides of the road and some in front of the car. The anti-dazzle problem has been partially solved, but the greatest problem of all has been, and it looks as if it always would be, driving in fog. The only alleviation seems to be to use a fog lamp which throws the light directly downwards on the road. This eliminates any rays in an upward direction which might be reflected back to the driver's eyes.

Discoveries at Sakkara

DISCOVERIES of great interest and importance are announced from Sakkara, where excavations are being carried on by the Egyptian Department of Antiquities under the direction of Mr. Walter Emery and Zaki Effendi Saad. These discoveries were made in a tomb of the first dynasty, which was partially excavated in 1931 and then appeared to have been completely rifled. Further excavation in the present season, however, in a series of forty-two store chambers in the superstructure of the tomb which previously had escaped notice, has brought to light the complete grave furniture of Hamaka, the Vizier of Pharaoh Den of the first dynasty (*c.* 3,000 B.C.). At present about half these chambers have been cleared. They have yielded a large number of objects. Among them are numerous jars for containing wine, which bear seals giving the names of Hamaka and his king, implements, such as wooden sickles with flint teeth, the wooden handles of large adzes, and a number of large flint knives of advanced technique, of which some are more than a foot in length. A quiver contains reed arrows with tips of bone or flint, and a spear has a head of ivory, while an inscribed ebony tablet bears the name of the Pharaoh Zer. Remarkable as are some of these objects, such as the flint knives, in coming from a tomb, the discovery is given a unique character by a large number of disks of stone, bronze or ivory, for which the excavators are as yet not prepared even to conjecture the purpose. Some of the disks are inlaid with different varieties of stone, and one showing hounds chasing a gazelle is in a style which is said to remind the observer of the products of Minoan art of some fifteen hundred years later.

Road Testing

THE Department of Scientific and Industrial Research has just completed a road testing machine which is stated to be the largest of its kind in the world. According to *The Times* of April 8, road making and upkeep cost Great Britain about fifty million pounds a year, and thirty thousand pounds is being spent annually by the Department on research work on road engineering. The new testing machine consists of a 12-ton lorry, tethered to a central post by a 5-ton structural arm driven by a 180 horse-