

population brought about by the War, and the extent to which this redistribution was likely to persist in the post-war period; into the effects of war conditions on the working of public social services (other than the hospital service); into the changes in conditions of living due to evacuation and similar measures taken to meet the war situation, and into the bearing of all these factors on the general problem of national re-organization after the War. The bulk of the expenses of the survey during the current financial year will be borne by the independent resources of Nuffield College, but the Government has undertaken to make a grant not exceeding £5,000 towards the expenses of the Survey in that year.

Provision of Fine Chemicals

REFERENCE has already been made to the scheme inaugurated by the Advisory Research Council of the Chemical Society to facilitate the supply of fine chemicals needed for work of national importance, but which are not available commercially. The sub-committee organizing this work particularly desires to direct the attention of all users of fine chemicals to the existence of this scheme, in order that the greatest possible use may be made of the generous offers of help which have been received from numerous chemists in universities, technical colleges and schools, who have suitable laboratory facilities at their disposal. The scheme, which works in close collaboration with the Association of British Chemical Manufacturers, is an attempt to use to the best possible advantage both the laboratory facilities and the skilled man-power in teaching institutions and other laboratories which may not at present be fully harnessed to the war effort.

Before a substance can be accepted for preparation under this scheme, the Committee must be satisfied that the chemical is unobtainable from any British manufacturing firm and that it is required for urgent work of national importance within the British Empire. The scheme provides for the manufacture of approved items at basic charges which represent only the cost of raw material and such overheads as gas, electricity, etc. There is no charge for the chemist's services. Inquiries from both individuals and firms for chemicals which might be produced under the scheme should be made to the Secretary, Mr. S. E. Carr, Chemical Society, Burlington House, Piccadilly, London, W.1.

War and Industry in India

COMMENTS on the relation of industry in India to the country's war effort are made in an article by J. C. Ghosh in the February issue of *Current Science*. Mr. Ghosh believes that Indian nationalists have a genuine grievance against the Government for lack of vision in dealing with industrial development. During the War of 1914-18, much encouragement was given to many new industries, and, in the post-war years, it was withdrawn on the grounds that only those industries likely to become independent of State support should be supported. Thus the industries commanding an abundant supply of raw

material and a ready market for finished products, such as cotton, paper and cement, have gone ahead; unfortunately, this gain has been offset by decreasing prices and shrinking foreign markets for agricultural products. Mr. Ghosh's remedy for this state of affairs—and he thinks it is also a means of assisting defence measures—is to establish as key industries those which are included under the broad heading of metallurgical, engineering and machine tools, chemical and transportation industries.

Mr. Ghosh then discusses what has already been done in these fields. The Tata concern has been responsible for large developments in the iron and steel industry, and it is claimed that India could supply all the steel requirements of the countries represented at the Eastern Group Conference. Non-ferrous industries are not so advanced, but a plant for the production of aluminium with a capacity of 5,000 tons a year is being erected. Engineering is also backward. The heavy chemical industries are developing and may soon satisfy a large part of the country's requirements, but the dye-stuff and fine chemical industry is not satisfactory. The production in India is also urged of locomotives, ocean-going vessels and aeroplanes. It is stated that Indian industrialists fear that the manufacture of motor-vehicles is too difficult to be undertaken by Indian workmen in the near future, forgetting that "the thought and skill required in manufacture have been transferred from workmen to automatic machines". Non-official opinion in India is said, however, to be strongly in favour of starting such industries, and maintaining them as a part of the defence programme of the country.

Health of the Army in India

ACCORDING to the annual report for 1939 on the health of the Army in India, there were no serious epidemics during the year among British or Indian troops, although civilian areas in which troops were placed suffered from cholera, plague, small-pox, dysentery, malaria and enteric fever. The hospital admission-rate among British troops was as large as 666 per 1,000 of strength during the year, and was an increase on the rate for the previous year, but the death-rate of 2.75 per 1,000 and the invaliding-rate of 9.14 per 1,000 were lower. Among the Indian troops the death-rate was also down, but the hospital admission- and invaliding-rates were up. This increase, however, was undoubtedly due to the conditions of war service and the return or influx of large numbers of men potentially infected with malaria and other prevalent diseases. Malaria and dysentery held the first place in the list of principal causes of sickness among British officers, and were followed by cellulitis and catarrhal jaundice. Malaria also held the chief place among soldiers, and next came cellulitis, and a good way down tonsillitis; but dysentery came sixth and was only half as frequent as a cause of admission as malaria. The prevalence of dysenteric infections was found to be due to lack of sanitation surrounding the troops' area. Respiratory diseases

were little in evidence, and there were no epidemics beyond minor outbreaks of mild influenza and pharyngitis. Nor was there any sign among the military population of the steady increase in tuberculosis which appeared to be occurring in the civilian population.

George Green Centenary

GEORGE GREEN, author of the famous "Essay on the Application of Mathematical Analysis to the Theories of Electricity and Magnetism", in which appeared for the first time what is now known as Green's theorem, died at Nottingham on May 31, 1841. The circumstances in which a miller was able to engage in mathematical research of fundamental importance have always puzzled the scientific world. New light has been thrown on the problem by Mr. H. G. Green, who has been investigating the matter for several years. In a lecture delivered at University College, Nottingham, to commemorate the centenary, he showed that at least one resident in the locality was well acquainted with the works of the great French mathematicians Laplace and Lagrange, and that the library of the Bromley House Society, of which Green was a member, had no difficulty, even in time of war, in obtaining copies of their researches. Among the members of this Society were several men of high learning and culture, who subscribed for the publication of Green's Essay in 1828. A full account of the investigations will be published in *Osirius*, the journal of the history of science, in due course.

Two French Botanical Pioneers

THE Botanical Garden at Montpellier has grown under the ægis of many distinguished botanists, some of whom made vast contributions to the science without the *éclat* of fame. Dora Maw provides, in a recent article (*J. Roy. Hort. Soc.*, 66, Pts. 4 and 5, April and May 1941), a chapter of history which shows in vivid fashion the work of two earlier directors of the Montpellier Garden. Pierre Richer de Balleval (1564-1632) was the actual founder, and was a vigorous exponent of the rising science of pharmacognosy. He gathered together a consociety of 1,332 species, lost them during the military manoeuvres of inter-religious strife, and started again with characteristic determination. Modern pharmacy owes to him the discovery of galenicals such as *Aristolochia longa*, *Artemisia campestris* and *Scrophularia aquatica*. Pierre Marie Auguste Broussonet (1761-1807) was a native of Montpellier, and became director of the gardens after a life of epic adventure. He travelled restlessly in south-western Europe and North Africa, after a thrilling succession of political reverses from posts of honour to expedient incarceration. Botanical awareness marked all his journeys, for he brought back knowledge of many useful plants—*Tetractinix articulata* (citrus wood), *Argania spinosa* (iron-wood), *Acacia gummifera* (the source of gum arabic), and many species of medicinal value. His tenure of the directorship was relatively short, but the background of his extensive travels made it illustrious.

Statistics in Public Policy

MR. H. W. MACROSTY'S inaugural presidential address to the Royal Statistical Society, which has now appeared in the *Journal* of the Society, in reviewing the evolution of official statistics in the last fifty years or so, emphasizes their importance for post-war reconstruction. Policy can only be sound if it is founded on a reliable ascertainment of all the facts. Society is never static; our theories must explain and conform to changes which appear to be spontaneously generated and our records must keep step with the changes. No trade policy has any chance of success which is not founded on the most careful study and understanding of the facts, and although the Economic Section of the League of Nations has already provided us with useful comparative studies of the course of international trade in the last twenty years, these do not appear to have penetrated far beyond the study and the lecture room.

Mr. Macrosty also doubts whether we have exhausted the methods of statistical analysis of trade data and whether something more of importance might be learned by the application of some of the methods of modern mathematical research. It is certain that, in the future, nutrition must form the basis of policy, even of international trade, and the repercussion of different lines of policy on each other must be carefully watched. Despite the researches of the last few years, we have still much to learn, and in the collection and study of what is yet unknown, as well as of what is at present known, statisticians are needed for the service of the future. Referring to gaps in our knowledge, Mr. Macrosty pointed out that we have still no quinquennial census; we know little about the distribution of incomes assessed for income tax except in the topmost range; we have no reliable figures of working class earnings and expenditure; calculations of the national income and of savings require much estimation; we have no census of distribution and the monetary and other suggestions of the Macmillan report have not all been adopted although nine years have passed. These statistics are of the most intimate importance for the determination of public policy.

Neanderthal Remains from Hither Asia

THE current number of *Antiquity* as usual contains several important papers. These include among others an article on "The Viking Taste in Pre-Conquest England" with excellent illustrations, and an account of "A Datable Ritual Barrow in Glamorganshire" by Sir Cyril Fox. But perhaps the most important information appears under the "Notes and News" and concerns a prehistoric find in Uzbekistan of flake tool industries associated with the remains of a Neanderthal child. Those who would like more details than this excellent précis can give should consult *Asia* (July and August, 1940) where A. P. Okladnikov has published two interim reports. The discovery itself was made in an immense rock-shelter called Teshik-Tash high up in the side of the Zautolosh Darya gorge not far from Tashkent and the Soviet-Afghan frontier. The rock-shelter is