

columns and arches, and embankments. In 1781 he was awarded a prize for his paper on the theory of simple machines, comprehending the effects of friction, and of the stiffness of ropes. He determined the friction between a great variety of substances and applied the results to the study of the launching of ships, ships' capstans and ships' blocks. His "Theoretical and Experimental Researches on the Force of Torsion" was published in 1784, and six years later he dealt with the "Friction of Pivots". Quite early he had turned his attention to magnetism and the compass, and between the years 1785 and 1789 he published seven memoirs on electricity and magnetism. It was in these that he described his well-known torsion balance and enunciated the laws of attraction and repulsion in electricity and magnetism. These memoirs furnished the data on which Poisson later on founded his mathematical theory of electricity. Like many of his contemporaries, Coulomb lost his post in the Revolution, but in the more settled times which followed he became one of the inspectors of public instruction and as such was known for his generosity and kindness. So far as we know, France possesses no monument to this worthy man.

"World Fellowship"

ARRANGEMENTS are now approaching completion for the World Congress of Faiths, which from July 3 until July 18 will meet in London to discuss "World Fellowship". The sessions of the Congress, to which only members will be admitted, will take place at University College, Gower Street, W.C.1; but there will also be a series of public meetings at Queen's Hall, Langham Place, W.1, to which the general public will be admitted by tickets, which may be purchased. The main objective of the Congress is to be neither the appraisal of the various religions of the world, nor any attempt to bring about their fusion, but the discussion of ways and means by which the chief religions of the world, each retaining its individuality, may co-operate in a fellowship of the closest unity to eliminate the passions leading to war, economic injustice and racial and religious antagonisms. Communications dealing with various aspects of the problems which arise will be presented in twenty sessions of the Congress by representatives of the Christian, Jewish, Hindu, Buddhist, Moslem and independent faiths. Among those who have promised their co-operation either from the chair, as readers of papers or by opening debate are H.H. the Aga Khan, Sir E. Denison Ross, the Chief Rabbi, Prof. Nicolas Berdaieff, Prof. S. N. Das Gupta, Dr. Cyril Bailey, H. E. Sheikh Al-Maraghi and Sir Abdul Qadir. A paper by the late Prof. J. S. Haldane on "Science and Religion" will be read. Of the public meetings, the first will be a meeting of welcome and the last a retrospect and summation of results, while the remaining two will be devoted to expositions of "The Supreme Spiritual Ideal" as viewed in Jewish, Hindu, Buddhist, Christian, Muslim and independent thought. The international president of the Congress is H.H. the Maharaja Gaekwar of Baroda, and the chairman of

the British National Council Sir Francis Young-husband. The members of the Congress will be received by the Marquis of Zetland on behalf of His Majesty's Government at Lancaster House, St. James's, on July 8, and a reception will be given by Sir Francis Younghusband in the garden of the Royal Geographical Society on July 4. Particulars of membership, etc., may be obtained from the Organising Secretary, 17 Bedford Square, London, W.C.1.

Exhibition of Historic Scientific Apparatus at Cambridge

THE Cambridge Philosophical Society has been responsible for the arrangement of a large and interesting exhibition of historic instruments and records which was opened by Lord Rutherford on June 8 and will be on view until June 20. Acting on the suggestion and with the unstinted help of Dr. R. T. Gunther, of Oxford, an attempt has been made to collect together old apparatus illustrating the work of well-known Cambridge men, as well as some of the equipment used by students of natural knowledge in former days. The collection gives an idea of the material instruments by the aid of which scientific progress has been made in the University, and it establishes contact with the present day by the inclusion of series showing the progress in the design of certain important pieces of apparatus like electrometers, electroscopes, galvanometers, air pumps, slide rules, microscopes and microtomes. Among the pieces of special interest are the fourteenth century astrolabe believed to have belonged to Dr. Caius, a circular slide-rule designed by William Oughtred and made about 1640, Pepys' Musarithmica, the instruments used by W. H. Miller in making the Standard Pound, and the microscopes of Charles Darwin and of his grandfather Erasmus. The remains of the equipment of the observatories of Trinity and St. John's Colleges, and a number of Maxwell's instruments form important features, while the cabinets of materia medica preserved since the early eighteenth century in the libraries of Queens', St. Catherine's and St. John's Colleges are now shown together for the first time. The microscopes used by Francis Maitland Balfour form another exhibit interesting to biologists.

Population and Production in the U.S.S.R.

PROF. M. POLANYI'S article on "U.S.S.R. Economics", originally printed in "The Manchester School", has now been republished by the Manchester University Press in pamphlet form. This article, which is based on the study of official documents and on observations made by the author during numerous visits to Soviet Russia, gives an interesting account of recent trends besides providing a sketch of the development of the Soviet economy. In dealing with the economic background, Prof. Polanyi points out that the 165 million inhabitants of the U.S.S.R. are sharply divided into a rural and urban population. Of the 40 millions living in the towns, the vast majority are Government employees. They form the basis of its power and are engaged in administration,

banking, trade, industry, the postal, tramway and railway services, teaching, health protection, journalism, science and art. About 125 millions live in villages, and of these about 10 millions are State-paid workers, and their dependants are employed on State-farms or in forestry or fishing.

POPULATION has expanded by 30 per cent since pre-War days, but the production of food has failed to increase in a like proportion. Grain crops during the first five years period fell off owing to internal struggles, but in 1933 and 1934 they increased to about 12 per cent over pre-War production. Grain consumption per head of the population, however, has now reached pre-War level, as export has ceased, whereas in pre-War days about 10 million tons of grain were exported annually. The production of potatoes has increased, but this is offset by a decrease in meat and milk. Housing in both towns and villages is very poor, and as yet little headway has been made. The lack of transport facilities is also very apparent. The European parts of the U.S.S.R. have 1.3 km. of railways per sq. kilometre, whereas in the United States there are 4.3 km. per sq. km., despite the fact that the population density in that part of the U.S.S.R. is 30 per cent greater. The most developed part of the country, namely, the Ukraine, has a density of population nearly equal to that of France, but its railway system is less than one third the length. Moreover, all the railways are in poor condition, and the country is practically roadless.

Rearmament in Germany

THE question of the extent of Germany's rearmament has recently taken a prominent place in Parliamentary debates and in the public mind, and a number of exaggerated views have been put forward. In one case, for example, it was stated in the House of Commons that no less than £1,500,000,000 had been spent upon warlike preparation during Herr Hitler's regime, and that, in the year 1935 alone, 600-800 millions sterling was spent on armaments in Germany. It is undoubted that Germany has been rearming since 1934, but it is essential that Herr Hitler's programme should be viewed in its true setting and perspective, and to this end Prof. W. A. Bone has prepared a critical examination of the position in Germany based on financial and industrial statistics. This survey, which appeared in *The Nineteenth Century and After of May*, sets out the facts of Germany's industrial activity in the years 1929-35, and shows clearly that the output of those materials upon which armament manufacture chiefly depends—iron and steel, nickel, copper, chromium, tungsten and other non-ferrous metals—merely reflects the slump between 1929 and 1932 followed by the regaining of lost ground to an extent slightly less than that which has taken place in Great Britain. From the analysis given, it is clear that Germany's rearmament, while a factor to be reckoned with, does not account for more than a fraction of the very large monetary sums which have been alleged to be involved.

Indian Population of North America

UNTIL recently, it would appear that little attention has been given to certain facts relating to the Indian population of North America, which are disclosed in the census returns. It has generally been accepted that the Indian is a dying race; but it is now indicated that, while certain Indian peoples have undoubtedly become extinct, and the Indians of Mexico to a considerable extent have been fused in the general population, the Indian population north of Mexico as a whole is on the up grade. The problem of the future will be, not the arrest of a decrease, but the provision in the reservations of land adequate to support an increased population. This, at least, it is thought at the moment, is the form which the problem will take in the United States. Data relating to the population statistics were examined by Dr. Clark Wissler recently in a communication on the birth-rate among the Plains Indians, which was presented to the American Association of Physical Anthropologists meeting at New Haven, Conn., on April 30-May 2. Dr. Wissler then stated that the birth-rate of the Plains Indians would appear to be the highest in the world, being 48 per thousand. The white birth-rate, even before the depression, had sunk to 20 per thousand. He went on to point out that when the Indian was first placed on reservations, there was a rapid decline in numbers, but this had been checked. This was not due to the birth-rate, which apparently has not changed much since 1800, but arose from a death-rate which reached its peak about 1890 and had since declined.

AN even more marked increase is shown by the figures relating to the Indian population of Canada, where between 1931, the census year, and 1934 when a rough count was made, the numbers rose from 108,000 to 112,000. This high rate of increase is no doubt to be attributed largely to the vigilance in matters of hygiene, exercised by the Department of Indian Affairs, which, it is announced in a communication from the Ottawa correspondent of *The Times* in the issue of June 6, is to become a subordinate branch of the new Ministry of Natural Resources. It is also stated that the trust fund which was created for the benefit of the Indians with whom treaties were made at the time of the acquisition from the Hudson Bay Company of the western territory beyond the Great Lakes, now amounts to 14,000,000 dollars, while between 4,500,000 dollars and 6,000,000 dollars is spent on them annually out of public funds. These Indians live on reservations, and their affairs are managed by chiefs and councillors, who have certain restricted legislative rights. In Ontario and Quebec, however, most of the Indians live the life of ordinary Canadian citizens, being sometimes completely merged in the general population, with farms on the reserves. West of the Great Lakes where two thirds of the Indians live, and they have been less affected by the impact of white civilisation, they are much more dependent on the Government, owing to the