

problem of cancer is not one which the general statistician can view with much pleasure, "but a perusal of clinical records and of the last report of the Director of the Imperial Cancer Research Fund gives some grounds for optimism".

#### The Imperial Institute and Vegetable Fibres

WE are indebted to Dr. E. Goulding for an account of forty years of investigation of vegetable fibres at the Imperial Institute, which was the subject of the Mather Lecture delivered by him during the annual Conference of the Textile Institute on June 3-5 in London. A record such as this emphasises the importance and value of the Imperial Institute to the Empire as a whole. Individual technical reports go to all parts of the Empire, but usually each country is concerned only with those which emanate from itself. A comprehensive account of this work is therefore more than welcome, in that it gives an idea of the immense scope of inquiries which have been investigated and of which records and technical reports are available. In recent years, since the creation of the Advisory Councils of the Imperial Institute in 1926, the Scientific and Technical Department has had considerably more scope; for these Councils, of which there is one for vegetable fibres, may propose and consider schemes of work for prosecution by the Institute and may advise on the best means of carrying them out. As a result of this, one of the main lines of investigation in the case of vegetable fibres has been the effect of sea-water on the life of ropes and twines. This work was commenced primarily in the interests of the sisal industry, but has since been enlarged to include New Zealand flax, Mauritius hemp and sannhemp. The results of this work have proved to be of the greatest value both to the producer and to the consumer, and have done much to advertise the extremely useful services which the Imperial Institute performs.

#### The Colorado Potato Beetle

THIS insect is a recent immigrant into Europe from North America, and has now become established over a large area of France. Its further spread into north-eastern France and into Belgium is a matter of importance to potato growers in England. The Ministry of Agriculture and Fisheries directs attention to the probability that examples of this beetle will reach southern England from time to time by direct flight. In such circumstances small outbreaks might readily occur, and the Ministry is accordingly anxious to obtain as early a notification as possible of the discovery of the pest in this country. Potato growers, especially those in Essex, Kent and Sussex, are asked to keep close watch on their crops, and to inform the Ministry immediately the presence of the beetle is suspected or discovered. A full description of the insect is given in the Ministry's Advisory Leaflet, No. 71. Any yellowish beetle with black stripes, or any red or reddish-yellow grub, that is found feeding upon potato leaves should be regarded with suspicion. When such beetles or grubs are discovered, specimens should be placed in a tin box (in which no holes should

be punched) with a piece of potato leaf, and the box should be sent to the Ministry of Agriculture, 10 Whitehall Place, London, S.W.1, with a letter stating the exact place where the insects were caught and the name and address of the finder. No other steps should be taken until instructions are received from the Ministry; it is especially important that the crop should not be sprayed or interfered with, as this is likely to cause the beetles to spread, and an outbreak possibly affecting only a few square yards may be distributed throughout a field. Apart from the specimens sent to the Ministry, no beetles or grubs should be removed. The object of these measures is to keep the insect confined to as small an area as possible, so that it may be eradicated without loss of time.

#### Discovery : an African Number

*Discovery* of June, in an opportune moment, is concerned almost exclusively with Africa. It opens, immediately after editorial notes and comments, with an article by Prof. C. G. Seligman on human types in tropical Africa. Prof. Seligman explains how it has come about that the usual classification of the native peoples of the continent is based on linguistics rather than on physical characters, and then sets out the distribution and characteristics of the major racial divisions in the tropical area. Dr. H. E. Hurst, in a study of the Upper Nile, discusses questions relating to water supply at the source, and indicates where there is necessity for further research. Of the remaining articles, two in particular require mention. Capt. William Hichens's account of demoniac possession is a valuable report by an eye-witness of a recent outbreak of *Kupagawa na pepo* ("ridden by demons"), which amounted almost to an epidemic in Mombasa and other towns of East Africa. He describes the various forms of demon dances by which the spirits were exorcised. In another article, G. A. Gardner, field director of the Archaeological Committee of the University of Pretoria, describes the results of further excavations at Mapungubwe on the south side of the Limpopo River. The partial excavation of a mound, which was found to consist of village refuse, confirms the results of previous excavation on an adjacent area which has been described by Prof. C. van Riet Lowe. He ascribed the earlier of the two occupations then discovered to the Sotho. This is regarded as the earliest trace of Bantu culture known in the Union. The mound excavated by Capt. Gardner was entirely Sotho. It had a depth of 20 ft. and consisted of about 40,000 tons of material. It was found to be centrally situated in a village from which had come the refuse of which it was composed. There was no iron, but copper ornaments, bangles and bracelets were plentiful. The burials were disarticulated with the skull on top of the bones. In several instances cow bones were associated with the human remains.

#### World Power Conference

THE death last May of Mr. D. N. Dunlop, chairman of the International Executive Council of the World Power Conference and of the British National

Committee, left a vacancy which was hard to fill. It has been filled, however, by the unanimous election of Sir Harold Hartley, chairman of the British National Committee. By invitation of the American Government, the third World Power Conference will be held in Washington, U.S.A., on September 7-12. The subject matter will be National Power Economy. This will be the third plenary meeting of the World Power Conference, previous plenary meetings having been held at Wembley (1924) and Berlin (1930). There have also been a number of sectional meetings with more limited programmes. The Chemical Engineering Congress meeting in London next week, to which reference is made on p. 1018, is such a sectional meeting. The International Commission on Large Dams of the World Power Conference will be held at Washington concurrently with the third World Power Conference. Work has been continued during 1935 on investigating special cement for use in the construction of dams, and in connexion with the establishment of the international statistical register of large dams.

#### Seventh International Congress of Refrigeration

UNDER the auspices of the International Institute of Refrigeration, which has its headquarters in Paris, a congress reflecting all sides of the practice and theory of refrigeration, to which the Governments of more than fifty countries are sending official delegates, is being held at The Hague on June 16-27. The British party visiting Holland, numbering about eighty persons, and headed by Dr. Ezer Griffiths, president of the British Association of Refrigeration, is the largest overseas delegation to the Congress. By the co-operation of Lord Rutherford and Prof. F. A. Lindemann, several well-known scientific workers from Cambridge and Oxford are reading papers on very-low temperature research, in which subject the president of the congress, Dr. W. H. Keesom, of Leyden, is a leading authority. The Food Investigation Board has also sent representatives who are contributing reports on food research. Refrigeration is such an important factor in everyday life nowadays, not only in relation to food supply but also as an auxiliary process in many industries, that the two hundred papers presented to the Congress barely exhaust the many phases of this modern branch of engineering development. The International Institute promoting this series of congresses is established under Government convention.

#### War and Populations

In a discussion of war and over-population (*Current History*, March 1936), Prof. Raymond Pearl states that the aggressor in every major war in recent times has given the need for more room for his people as the primary motive. The land surface of the earth is some 52,000,000 square miles, about one fourth of which is arid or semi-arid, while lakes and mountains still further reduce the cultivable land on which more than 2,000 million people have to dwell. An equal distribution would give each individual about sixteen acres, but probably little more than

half would be available for production. The United States census for 1930 showed a population density of 40.6 per square mile—very close to the world average. Europe has 92 per square mile, Asia 76, North America 19-20, South America and Africa about 12, Australia and Oceania only 3. Among countries of the world, China stands seventh and India fifteenth in density of population. The province of Kiangsu alone, having 897 persons per square mile, has a greater population density than Belgium, while Bermuda has 1,462 per square mile. India has 195, about the same as France, but large areas of jungle and desert increase the population density of the rest. Urbanisation, however, leads to greater local densities in the West than the East. Nevertheless, highly industrialised countries can induce few of their people to emigrate to colonies. Up to 1914, Italy had placed only 8,000 Italians in her African colonies, and Germany only 24,000 Germans in her colonial empire. Pearl estimates that the British, Russian, French and American "Empires" control 57 per cent of the earth's land surface; but concludes that the conquest of these lands by other nations would not benefit the human race, while war would impoverish all the nations involved.

#### Industrial Prospecting

THE U.S. National Research Council (Washington, D.C.) has reprinted a lecture entitled "Industrial Prospecting" which was delivered before the Founder Societies of Engineers by Mr. C. F. Kettering, chairman of the Division of Engineering and Industrial Research of the National Research Council. Mr. Kettering argues that scientific advancement has not outpaced social and economic advancement, but that, on the contrary, scientific development is 15-20 years behind social and economic development. More research is needed, since research is a way of finding out what is to be done when it is impossible to keep on doing what is being done now. New industries need to be developed in order to provide more jobs. Research is industrial prospecting, and one reason why it has not been more used is that the wrong kind of book-keeping has been followed. In manufacturing, detailed costs must be determined and each individual part must be charged with the appropriate overheads, material, processing, distribution and advertising costs; but research is not manufacturing since there is nothing to sell but ideas. In industrial prospecting each individual project cannot be expected to show a profit at the end of a set time; but taking a large number of projects over a long period of time, if the results show progress it is worth carrying on; if they do not, it ought to be cut out. Industry has been criticised for having too large a capacity, but there cannot be too large a capacity until everyone has the things he needs and wants. What should really be said is that there are too few products for the factories to make. To-day new things are needed, and we have not exhausted even a small percentage of our ability to make improvements or further developments, or to increase the utility of a product.