

enforce an academically high degree of purity involving artificially high cost of preparation without corresponding advantages in safety and therapeutic activity.

### A Pioneer of the Oil Engine

As long as there are oil engines, there will be discussions as to the relative merits of the work of Herbert Akroyd Stuart in Great Britain and of Rudolph Diesel in Germany. Designers of engines to-day utilize the ideas of both, but whereas the name of Diesel has become a household word, that of Stuart is known only among engineers. It was said at the time Stuart died that he "belonged to that rather tragic fraternity of inventors whose achievements have not secured from the world at large the recognition they merited". That his work is fully appreciated in engineering circles was shown by the Diesel Engine Users' Association, which on January 11 held a luncheon at the Connaught Rooms, London, to commemorate the fiftieth anniversary of his most important patents.

After the luncheon, a sketch of Stuart's life and work was given in a paper by Mr. T. Hornbuckle and Mr. A. K. Bruce. Stuart was born in Yorkshire in 1864 and died in West Australia in 1927. He was among the earliest students of the Finsbury Technical College. While engaged at his father's engineering works at Fenny Stratford, Buckinghamshire, he began experimenting with internal combustion engines, and in the years 1886-92 took out nine British patents for improvements. His leading patents were No. 7146 of May 8, 1890, and No. 15994 of October 8, 1890. These were taken out in collaboration with C. R. Binney. In that of May 8, 1890, he claimed the novelty of compression ignition. Diesel's patent was not taken out until February 28, 1892. The manufacture of oil engines according to Stuart's patents was taken up by Messrs. Hornsby and Sons, Ltd., of Grantham, in 1891, and Stuart had little more to do with them. Unfortunately, the engines became known as "Hornsby-Akroyd" engines, and in America even as "Hornsby-Diesels". At his death, Stuart left instructions for his papers to be destroyed, but he bequeathed sums of £500 and £700 respectively to the Institution of Mechanical Engineers and the Institute of Marine Engineers for prizes for papers on oil engines.

### British and American Civil Engineers

IN September last it had been arranged that representatives of the Institution of Civil Engineers should visit the United States in response to an invitation from the American Society of Civil Engineers, but international unrest in Europe resulted in the cancellation of that visit. Had the visit taken place, it was intended that Mr. W. J. E. Binney, who was then president of the Institution, should present to the American Society of Civil Engineers a replica of the Myddelton Cup, as a token of the friendly relations which have existed between the two societies. Lord Lothian has now, however, on behalf of the Institution, handed the replica to

Colonel D. H. Sawyer, president of the American Society, at a gathering of the members of that Society held in Washington on January 9.

The original Cup was presented to Sir Hugh Myddelton in 1613 by the Worshipful Company of Goldsmiths of London for his services in providing London with a supply of potable water. It remained in the possession of the Myddelton family until 1922, when it was acquired by the Goldsmiths' Company. Lord Lothian has, by completing the ceremony of presentation, cemented the cordial feeling between the two societies and strengthened that part of the bond of international friendship which is based upon the creative genius of the civil engineer in all parts of the world.

### Non-Political Work of the League of Nations

A REPORT by the Secretary-General on the work of the League of Nations (July-mid-November, 1939), which has just been issued, is an immediate sequel to the regular report on the work of the League, 1938-39; but is the first of a series which will be published periodically to keep the States Members informed of the progress of the League's work (League of Nations. Report on the Work of the League (Continuation), July-mid-November, 1939. (Official No. A.6(a), 1939.) Pp. 62. (Geneva: League of Nations; London: George Allen and Unwin, Ltd., 1939.) 1s. 6d.). The report shows that with certain exceptions—the European Conference on Rural Life, which was to have met at Geneva in October, for example, had to be postponed *sine die*—the League has been able to carry on, in spite of the War, its essential activities in the non-political fields in which it has been responsible for so much successful and constructive work in recent years. For the development of international co-operation in economic and social affairs, the creation of a Central Committee to direct and supervise the work of the League's Committees dealing with those questions has been recommended and a draft constitution submitted for the approval of the Assembly.

A section in the report on economic and financial questions refers to the meeting of representatives of National Nutrition Committees held at Buenos Aires in October and to measures taken to adapt the publications of the Economic Intelligence Service to the new conditions. Other sections deal with communications and transit, health questions, and traffic in opium and other dangerous drugs. It is interesting to note that maintenance of supervision of this traffic in war-time has been strongly urged by the United States of America, although not a member of the League.

### Vital Statistics of a Primitive People

A STUDY of the vital statistics of the lowland Sənoi (Sakai) of Perak, Malay Peninsula, by H. D. Noone (*J. Fed. Malay States Mus.*, 15, 4; 1939) is of interest in its bearing on the effect of the inter-racial and cultural contacts of a primitive people on their chances of survival. A generation ago it was regarded as a matter of time only before the then

dwindling pagan tribes of the Malay Peninsula would disappear. The observations which Mr. Noone now records, however, suggest that in the group under notice recuperative forces are at work, which enable them at least to hold their own against the effects of Malayan contacts and the adoption by some of their number of the tenets of the Mahommedan faith. In the course of an economic and demographic survey in 1936, Mr. Noone found that in fourteen groups with a population estimated at 1,600 the number of children born to the average lowland Sēnoi married woman is 4.15, the model family also being four, but with a tendency to increase. The size of the family which occurs so many times as to contribute potentially more to a future generation than any other is five. With this figure as a characteristic, there is ground for hope for the future.

Fertility, reckoned on the basis of the number of children who grow to maturity and become effective in adding offspring to the group, is assessed on the average survival figure of 3.003, the largest number of deaths before maturity taking place under the age of six years. The sex ratio is 100 females to 107.38 males born; and this is practically unchanged at maturity at 100 and 107.54 respectively. These figures, taken in conjunction with other data recorded by Mr. Noone, point to the conclusion that while groups in which contacts have been recent appear to enter upon a stage during which the population suffers a disturbance of its reproduction rate, other groups have passed through this stage and have adjusted themselves well enough to be at least as viable as their more primitive and remoter hill cousins.

#### Disease and Race

A CASE which is of considerable interest in its bearing upon the racial incidence and distribution of disease is reported from Egypt by S. Azmy Pasha and A. F. Zanaty of Cairo (*Lancet*, 237, December 30, 1939). The patient in question, a man, thirty-five years of age, who had lived in Cairo for twelve years, but previously to that in the country, was admitted to hospital with anæmia in August 1938 and after discharge was re-admitted in a relapse in 1939. After a fortnight's treatment without improvement, a bone marrow puncture not only excluded an aleukæmic leucosis as well as a plastic anæmia, but also showed megaloblasts typical of Addisonian anæmia. Addisonian anæmia, the authors point out, has a distinct racial incidence. It is generally regarded as a disease of Nordic races and as less common among southern races. In America also a higher incidence has been recorded among immigrants from northern Europe (Anglo-Saxon) than among those of Latin extraction. It is also regarded as further supporting this view of racial susceptibility that the Finns, out of all races, are more liable to develop the disease when infested with *Diphyllobothrium fatum*—a parasite which produces a blood-picture indistinguishable from that of genuine Addisonian anæmia. The disease rarely occurs in Asiatics and is unknown in the tropics. In Egyptians it is extremely rare. The authors, after

examining hundreds of anæmias, have found only this case now recorded, while another authority has encountered two cases only since 1935.

#### Demography of Madagascar

IN his inaugural thesis (Thèse de Paris, No. 657; 1939) Dr. Félix Randriamanana states that a study of the population of Madagascar since the beginning of the century shows an annual rise, which was very pronounced during the first twelve years but underwent a decline during each of the subsequent twelve years. In 1936 the population was 3,777,951 as compared with 2,244,876 in 1900. In 1904 and 1908 various devastating epidemics, especially smallpox, measles, malaria and influenza, had a considerable effect upon the population. The annual birth-rate has increased from 64,847 in 1906 to 88,351 in 1936; but the increase is probably more apparent than real owing to the notification of births being carried out more completely than previously.

During 1933–36 the death-rate was 20.7 per 1,000, as compared with 28.5 in Réunion (1933–35), 24 in Egypt (1930–34), 22 in Cochín-China (1931–35) and 15.7 in France (1931–35). During the first year of life the mortality in 1934–36 was 177 per 1,000 births as compared with 83 in France (1930–34) and 206 in Japan (1934). The maternal mortality in childbirth showed a rate of 100 per 1,000 births, this high rate being due to disease and the poor constitution of the mothers. The most prevalent epidemic diseases in Madagascar are plague and malaria at the beginning of summer (December), followed in April by influenza, measles, whooping cough and dysenteries. In June and July pulmonary diseases, especially pneumonia, predominate, followed by influenza, while in September and October more or less severe outbreaks of alimentary diseases are prevalent.

#### Animal Organisers

*Current Science* is to be congratulated on presenting to Indian readers a comprehensive résumé of research on organisers ("Organisers in Animal Development", Supp. *Curr. Sci.*, August 1939, Bangalore). There are eight articles contributed by the distinguished investigators, O. Mangold, E. Rotmann, J. Holtfreter, P. Weiss, W. Luther, C. H. Waddington, S. Hörstadius and C. M. Child. Four of the articles are in German, the remainder in English. There are numerous illustrations. The subjects discussed range from the general work of organisers during development and the special factors influencing their activities, to collateral fields of research such as the study of regeneration of lost parts and physiological gradients. A certain amount of repetition and overlapping is inevitable in a series such as this, and it would have been helpful if a summary of the articles could have been provided.

The story of the experimental work undertaken by Spemann and his collaborators at Freiburg im Breisgau on blastoporic organisation centres in the amphibian egg is well known in Great Britain. The old 'epigenesis' versus 'preformation' controversy