PASCAL TERCENTENARY CELEBRATION

IN 1642 Blaise Pascal, a Frenchman, invented the first calculating machine. The tercentenary of this event, which has had such a profound influence upon applied mathematics and physics, should appropriately have been celebrated this year in Paris. In order that the date should not pass unnoticed, a small committee was formed, under the chairmanship of Dr. L. J. Comrie, to arrange a commemorative luncheon followed by an exhibition of calculating machines. Other members of the committee were an eminent Frenchman of science now in Great Britain, Mr. W. Desborough and Mr. R. S. Nilsson, a Swedish engineer. The celebration was held on October 19 at the Connaught Rooms, London. The 120 guests who attended the luncheon included those who design calculating machines, those who make them, those who use them, and several members of the Fighting French, including an official deputation from General de Gaulle's headquarters.

After the toasts "The King" and "La France Combattante", the chairman recalled that it was in the year of Galileo's death and of Newton's birth that Pascal invented the first calculating machine. A replica of this machine, made by Mr. Nilsson, stood on a table before him. Mr. Nilsson had also made a replica of the first English calculating machine, made by Samuel Morland in 1666, which was on show in the exhibition room. Many of those present, Dr. Comrie continued, would know of the great tercentenary held in Edinburgh in 1914 to commemorate the discovery of logarithms by Napier. Had it not been for the War, the French would certainly have held a celebration on a similar scale in honour of Pascal. It was found that two people present, Prof. T. Arnold Brown and Mr. F. E. Guy, had also attended the Napier tercentenary celebrations.

Dr. Comrie next welcomed the many distinguished French men of science and representatives of the Fighting French. He mentioned particularly Mme. Weill, a former associate of Mme. Curie, and Prof. Cathala, who had travelled from Scotland for the occasion. The Norwegian Government and the Swedish Legation were also officially represented—a reminder of the Swedish engineers Scheutz, Odhner, Sundstrand, Fridèn, Rudin and others, who had contributed to the evolution of calculating machines.

Dr. Comrie then called on Prof. S. Chapman, president of the Royal Astronomical Society, to propose the toast "Blaise Pascal—the inventor of the first calculating machine", saying that Prof. Chapman had a special claim to propose this toast, since in his capacity as professor of mathematics at the Imperial College he had been one of the pioneers in introducing the study of calculating machines and numerical methods into academic courses, and had also introduced them with conspicuous success into his own geophysical and other researches. Prof. Chapman's address is printed on p. 508 in this issue.

The reply was by Prof. René Cassin, Commissaire National à la Justice et l'Instruction Publique de la France Combattante. He thanked the committee, on behalf of the French in Great Britain, for their enterprise in arranging this celebration in honour of Pascal. He stressed the versatility of Pascal's genius: at the age of nineteen, when he invented the calculating machine—essentially a practical instrument—Pascal was already well known in the realm of pure mathematics. His perseverance with this invention helped one to appreciate more fully the character of Pascal. He had to fight not only ill-health but also the ignorance of his time, for his conception far outstripped the mechanical experience and ability of those to whom the work was entrusted. It was not until Pascal had made more than fifty models that he achieved his final design.

The invention of the calculating machine illustrated Pascal's extraordinary creative imagination, allied with mathematical genius and precision, and tempered with critical penetration. These qualities were characteristic of the man throughout his life. Prof. Cassin spoke of Pascal's conviction, also candidly expressed in his letter to Queen Christine of Sweden, that learning was greater than the power of princes—"Toute notre dignité consiste en la pensée. Travaillons donc à bien penser : voilà le principe de la Morale". It was stimulating to remember this defence of liberty of thought at a time when political tyrants tried to turn men into machines incapable of thinking, forcing upon those in their power their fanatical ideas. The spirit of Pascal was an inspiration of those who strove to restore to France her freedom.

Prof. D. R. Hartree, whose task was to propose a vote of thanks to the speakers, asked to be allowed to include Dr. Comrie in his remarks, saying that the success of the gathering was in great part due to his chairmanship. He was glad of the opportunity of paying his own tribute to Pascal, not only as the inventor of the calculating machine but also as the worthy representative of the spirit and genius of the French people.

After the luncheon a small exhibition, which was open to the public, was held in an adjoining room. Various types of hand and electric calculating machines and models were shown, and demonstrators explained their working and applications to visitors. Two short lectures were given, one by Dr. Comrie on "Mathematical Gymnastics with Calculating Machines", and the other by Mr. Nilsson on "A Description of Calculating Machine Mechanisms".

M. E. P.

EVOLUTION IN SOCIETY

SIR WALTER LANGDON-BROWN, in his presidential address to the British Social Hygiene Council on October 12, discussed "The Place of Social Biology in the Sciences". He indicated that the interdependence of all life is shown by the fact that at every stage of the journey, from the apparently inert mineral to the conscious intelligent being, the 'laws' governing the lower levels apply to the higher, though the latter also develop new laws of their own. The most complex plant has to obey the ordinary laws of chemical combination as faithfully as has the soil from which it springs, but in addition it has acquired the capacity for building up food reserves by photosynthesis. Animals have acquired kinetic energy for which they are dependent on the potential energy of the plant, and they can effect, through catalysts, chemical reactions at ordinary temperatures which can only be imitated in the laboratory under conditions incompatible with life. The same holds for the progressive stages from simple reflex action through instinct to intelligence. At each