feet altitude, and maintained at that height until it was necessary to put it into a slow descent. This occurred over Bedford, one of the few towns that the pilot had been able to see through the clouds. He reported that he had been perfectly comfortable and warm, had had no occasion to use oxygen, and had no feeling of fatigue. The cockpit of this type of machine is entirely covered over with transparent cellulose material, and attention is paid to keeping the pilot warm.

Film illustrating Movement of a Fœtus

AT the meeting of the Royal Society held on February 10, Sir Joseph Barcroft and D. H. Barron showed a film illustrating the development of movement in the fœtus of the sheep. The development of movement was depicted in respect of: (*a*) the types of movement which appear at different fœtal ages, and (*b*) the individuation of certain sorts of purposive movement from a general mass movement. The period of gestation is about 145 days. Up to about 35 days, the fœtus is immobile (type 1). At 35 days it commences to exhibit movements which are always 'jerky' (type 2). At 47–50 days it is almost incessant motion, which is 'sustained' (type 3). After 50 days the fœtus becomes quiescent (type 4). The following analysis may be made of these types: If the spinal cord be cut just below the brain at 60 days, without taking the fœtus out of the uterus, and the fœtus be allowed to continue growing until the cut fibres have degenerated, its body will exhibit jerky movements (type 2), whilst its head is quiescent (type 2). If the central nervous system is transected below the pons, the whole fœtus exhibits jerky movements (type 4). If the central nervous system is sectioned above the red nucleus the fœtus exhibits sustained movements (type 3). The mechanism for the integration of 'jerky' into 'sustained' movements is in the region of the red nucleus, and the mechanism for the inhibition of movement is preponderantly above that. Later parts of the film showed the development of respiratory movements (especially in relation to somatic movement), the development of progressive movement and the development of 'righting' movements.

Development of Calcutta

"THE SECOND CITY OF THE EMPIRE", compiled by Dr. P. C. Bagchi, has been published under the auspices of the Indian Science Congress Association as guide book and souvenir of its silver jubilee meeting recently held in Calcutta. The brochure, which is fully illustrated, gives a historical account of the rise and growth of this city and describes the development of its municipal administration, educational, industrial, public and social services. Calcutta came into existence towards the end of the seventeenth century, and largely owing to its geographical position rapidly grew into an important town. According to the 1935 census, its population now numbers more than a million. The city is mainly industrial and commercial, textiles and tea being two of the chief commodities with which it is concerned. Rapid strides have been made in education during the last century, particularly since the foundation of the University in 1857. To illustrate the more modern developments on the medical side, mention may be made of the opening of the Pasteur Institute in 1924, and more recently still, the Institute of Hygiene and Public Health. The formation of the Vangiya Sahitya Parishad in 1894, for the cultivation and improvement of the Bengali language and literature, has done much to further the study of arts, while the Bose Research Institute, opened in 1917, is an example of the interest taken in pure scientific research.

The Volta Temple at Como

IN *Engineering* of January 7 and 21 and February 4, Mr. F. Walker gives an account of the beautiful Volta Temple at Como, erected as a permanent memorial. The erection of the Temple was made possible by the generosity of Gr. Uff. ou Francesco Somaini, whose commission to the architect Signor Federico Frigerio placed no limits whatsoever on the class of work or expenditure involved. Standing in the public gardens near the edge of a lake in Como, the Temple is a white marble building in the Neo-Classical style, measuring approximately 25 m. in length, 20 m. in depth and 21 m. in height. The main building consists of a large circular hall surmounted by a dome, which is supported by four corner pilasters and eight marble columns. Above the capitals of the pillars is a cornice bearing in gold letters an inscription of dedication. A marble staircase leads to a mezzanuil gallery around the central rotunda, and on the parapet of the gallery are four sculptured panels illustrating incidents in Volta's life. One of these represents him demonstrating his pile to Napoleon at Paris. Though much of Volta's apparatus was destroyed in the fire at the Como Exhibition of 1899, his manuscripts and books were saved and replicas of his apparatus are shown in cases, together with many personal relics. The entire expense for the collection of apparatus has been borne by Signor Somaini, who has further endowed the Temple with a capital of 500,000 lire, the interest of which is to provide scholarships. Mr. Walker's article is accompanied with many photographs of what appears to be the most remarkable monument to any man of science.

Early Hittite Civilization in Cilicia

RESULTS, which at first sight hold out great promise of additions to knowledge of the early stages in the extension of Hittite culture, have been obtained by the Neilson Expedition of the University of Liverpool under Prof. J. Garstang, now engaged in excavating an archæological site near Mersina on the Cilician coast of Asia Minor. A double-walled fortress has been discovered, which is thought to mark the site of a frontier post between the rival southern kingdom of Assawa and the allied State of Kizzuwadna (which seems to have included Tarsus) during the sixteenth or fifteenth century B.C., when the latter stage formed part of the realm of the Hatti, usually identified under the more familiar name of Hittites. According to a report of recent excavations (*The Times*, February 9), deep soundings on a con-

siderable scale have disclosed no fewer than nineteen occupation-levels, belonging to a culture which, though differing, resembles that of the Hittites of the Anatolian plateau closely enough to be considered akin to it. These levels overlie a civilization which would seem to be linked culturally with predynastic Egypt and Sumer. This indicates the incoming of Hittite culture in the fourth millennium B.C., thus antedating considerably the period usually assigned to the foundation of the Hittite capital on the Anatolian plateau. Further soundings in deeper levels have disclosed an even more considerable antiquity, in which this region was evidently a centre of no little cultural activity. Although the succession of painted pottery wares and stylized patterns reflect relationship with the oldest Mesopotamian styles, there is also evidence of local development lasting over a long period. In the lowest level a rich neolithic stratum has been found, similar to that of Sakje Geuzi, in which the most characteristic features are the use of obsidian, for weapons and tools, instead of flint, and a black pottery which is thin and highly finished.

Viking Relic in the British Museum (Bloomsbury)

THE acquisition of a remarkable example of Viking art—it is, in fact, considered to be the most remarkable Viking relic now in existence outside Scandinavia—was reported at the February meeting of the Trustees of the British Museum (Bloomsbury). It is a carving in oak of the head and neck of some beaked creature which formed either the figurehead or the stern-post of a Viking ship. Its precise purpose is at present uncertain. The animal motif, usually highly conventionalized, is one of the most familiar in the decorative art of the north European peoples in the first millennium of the Christian era; but of the zoomorphs, or animal-headed figures, which are known to have adorned the Viking ships, this is believed to be the only surviving example. It is almost four feet nine inches long, and is in the form of a rounded head on a long slender neck. The head curves smoothly into a parrot-like beak, which is open and shows teeth along the edge of the mandibles. The head is well poised on the slender neck, which is covered with a deeply carved lattice pattern, presumably representing feathers or scales. The history of its rediscovery is almost as remarkable as its character. It was found some two years ago during dredging operations in the River Scheldt. Other ship's timbers were brought up at the same time, but unfortunately were not preserved. The importance of the relic was so little appreciated that it was used for some time as a garden ornament. As it is known that the Island of Walcheren at the mouth of the Scheldt was long held by Danish Vikings at the beginning of the ninth century, this zoomorph is attributed to a Danish origin.

Yorkshire 'Bygones'

A COLLECTION illustrating the past cultural history of Yorkshire in the life of both country and town has been presented to the Corporation of York and housed in the old Female Prison, which has been converted into a museum for this purpose. The donor of the collection is Dr. Kirk of Pickering. The collection includes horse brasses, horseshoes, over one hundred insurance plates, and police truncheons, some of which were used in the Chartist and Bread riots. To these have been added fireplaces of various periods, weights and measures of all kinds and periods, and a collection illustrating the history of house lighting; all these exhibits are derived from the past custom of Yorkshire. One of the most instructive is the reconstruction of a Tudor street, some one hundred feet in length, in which are doorways, mounting blocks, shops and other features collected from various parts of the county. Parts of the Female Prison, which was built at the end of the eighteenth century, have been preserved in the original state. The Museum is not yet open to the public, but a private view for subscribers was held on February 5. Among the subscribers are the Carnegie United Kingdom Trust and the Joseph Rowntree Social Trust, Ltd., from each of which the sum of £500 has been received. The historical and geographical position of York makes it a peculiarly appropriate centre for a collection of this kind. The past cultural history of a county embodies much of interest to the student of archæology and ethnology, while custom illustrating its social history survived in a primitive form down to quite recent times, of which it is still possible to find traces in the remoter districts. In these matters, it is true, Yorkshire does not stand quite alone; and although the scheme for a national folk-museum for England seems for the time being to make little progress, it is none the less gratifying to note that local collections are being made before the material has entirely disappeared, as has been shown by recent correspondence in *The Times*.

Hooke's Experiments on Combustion

IN the issue of *Ambix* of December 1937, Dr. D. J. Lysaght publishes an interesting account of Robert Hooke's theory of combustion, which he outlined in "Micrographia" (1665) and amplified in his "Lampas" (1677) and "Cutlerian Lectures" (1679). Hooke's failure to impress his views upon the members of the Royal Society is attributed to his lowly social position, the simplicity of his conceptions, and the innate conservatism of the seventeenth-century mind. Hooke wrote only a scanty account of the experiments upon which he based his ideas, and Dr. Lysaght has done a useful service to historical chemistry by giving a critical discussion of these experiments, as transcribed in Birch's "History of the Royal Society" (1756–57) from the Royal Society's "Journal Book" (1661–87). Hooke's "many luciferous experiments" sufficed to demonstrate all the important facts bearing upon the problem of combustion. "The consumption of a selected portion of the air, the necessity for a continuous supply of this fluid, the formation of heat and light by the 'composition', the existence of solids with the essential constituent of the air 'fixed' in them and available for combustion,