

Military Conquest and Civil Settlement

FOR his presidential address to the Devonshire Association on June 21 Mr. J. J. Alexander surveyed "The Saxon Conquest and Settlement". Although he gave a very wide interpretation of his subject, devoting a considerable portion of his address to the question of evidence—historical, legal, and scientific—yet he brought together a useful résumé of what has been written on the matter. He made great use of the recently published volume of the Place Names Society on Devonshire, and summed up his paper by arriving at six probable conclusions: the first, as to the sparsity of the population of the district in the seventh century, and the remaining five regarding the campaigns of the seventh and eighth centuries in the west of England. Mr. Alexander has not, however, distinguished quite sufficiently between conquest and settlement. The military leaders and their soldiers prepared the way for the settlers who later, and sometimes much later, came with their wives, families, and baggage and travelled perhaps by a different route from that by which the soldiers marched. The study of place-names is most important for the history of the Saxon period, but, besides archæology and written history, it needs to be supplemented by studies of the varied systems of agriculture and the distribution of types of villages by the aid of the ordnance map—"that marvellous palimpsest which, under Dr. Meitzen's guidance, we are beginning to decipher", as Prof. Maitland has pointed out. Something has been done in this respect for eastern England, where the evidence is clearer, but in the west, where the evidence is more confused and difficult of interpretation, the subject has received little attention.

Prehistoric Society of East Anglia in 1931

THE recently issued *Proceedings of the Prehistoric Society of East Anglia* for 1931 (vol. 6, pt. 1) contains a number of communications of importance for prehistorians. The presidential address by Mr. J. P. T. Burchell on "Early Neanthropic Man and his Relation to the Ice Age" has already been the subject of reference in *NATURE* (Nov. 21, p. 879; 1931). It is printed here in full with ample illustration. Among the remaining papers, Mr. Bertram Brotherton describes a remarkable rostrocarinate implement of quartzite from Worcester, upon which Mr. Reid Moir remarks that it may be less ancient than its type suggests. Mr. Reid Moir himself chronicles further discoveries of flint implements in the brown boulder-clay of north-west Suffolk. He is now inclined to think that the brown boulder-clay was laid down before the Magdalenian period began. In a paper on the flint industries of the type station of La Madeleine, Mr. A. S. Barnes discusses their value as a basis for the classification of Magdalenian industries elsewhere. Mr. A. Leslie Armstrong deals with his further excavations in the Pinhole Cave at Creswell Crags and on a late Aurignacian site in Lincolnshire. Mr. A. L. Grimes, in dealing elaborately with the early bronze age flint-dagger in Britain, suggests that while it was undoubtedly introduced into Britain with the beaker culture, it shows resemblances to both the two main

Continental groups, the northern and the Mediterranean. An account of the excavation of an early iron age site at Great Wymondham, Herts, by Mr. C. F. Tebbutt, is especially noteworthy, as sites and finds of this 'early phase' (La Tène I. and II.) are rare in that area.

John Fitch, Pioneer of Steam Navigation

IN the June issue of *Mechanical Engineering*, Mr. W. H. Richardson gives a sketch of the career of "John Fitch: Patriot, Martyr, Pioneer Steamboat Inventor". Fitch was born in 1743 and died by his own hand in 1798, having during the last fifteen years of his life devoted himself with fluctuating fortune to the promotion of steamboat enterprises. He was the first in the world to form a steamboat company and to place a steamboat in service for carrying passengers. His work was done at a time when there were no engineering shops in America and when the export of machinery from England to the United States was prohibited, and there can be little question that had he had the assistance of Watt and Murdoch and their fellows, his schemes could have been brought to a successful issue. Above all, however, he was a man of vision, and while realising the great value of steamboats on the great waterways of America, he once wrote of steam navigation, that "The Grand and Principle Object must be on the Atlantick, which would soon overspread the wild forests of America with people and make us the most oppulent Empire on Earth". The earliest experiments of Fitch were made on the Delaware between 1786 and 1790, and were contemporary with those of Rumsey on the Potomac and of Miller and Symington in Scotland. To-day there is a monument at Trenton, on the "John Fitch Way" beside the Delaware, marking the site of the New Jersey terminus "of the first merchant marine highway in the world".

Heating the Soil Electrically

THE South Wales Electric Power Company of Cardiff is distributing pamphlets to farmers giving them useful information on the advantage of the electrical heating of the soil in frames used for growing vegetables and fruit for the early market. The soil is heated by means of a 'thermal' cable buried in the soil and carrying at certain times of the day electric current. British and continental firms are now manufacturing this kind of cable, and an electrical contractor will install it. This pamphlet demonstrates by photographs how much more rapidly a cucumber will grow in an electrical hotbed than in an ordinary frame. It is pointed out that Norwegian and Swedish market gardeners and farmers produce lettuce and other market plants at out-of-season periods by this method. It is also useful in growing cantaloup melons and other expensive fruits at times when they are very dear. It is suggested that the electrical heating of the soil may prove useful for the growing of mushrooms, and would be a pleasanter method than the one ordinarily used. Experiments with this end in view could easily be carried on in a cupboard or a cellar. Orders have been issued under the provisions of the Horticultural Products Act imposing