

of the Piltdown relic by Mr. Alvan T. Marston, which appears in *Discovery* of January. Here the basis of argument is the character and arrangement of the teeth, in which it is maintained the jaw is anthropoid and not human. The form of the canines, it is said, points to a gap between canines and incisors and an outside bite of the former, such as are found in the apes, but never appear in man, even in such an early and primitive form as Peking man. Similarly, such indications as are afforded by the Piltdown jaw on the order of eruption of the teeth point to the anthropoid, rather than the human, character of the dentition. The canine, instead of preceding the second molar, as in man, was here the last to erupt, and indeed, Mr. Marston infers, was still incompletely formed. Further, he concludes, the jaw shows no evidences of the adaptations for speech, for which capacity is to be inferred from the advanced character of the brain. When Prof. Weidenreich's promised monograph on the teeth of *Sinanthropus* appears, in view of the relatively large amount of evidence at his disposal, it may be anticipated that we shall learn whether the teeth show the variability, which he has found in the mandible, and whether it supports the evidence already available to Mr. Marston, on which he relies to no little extent in stating his case.

France and its People

IN "France: a Handbook for Beginners in French" (Cambridge: W. Heffer and Sons, Ltd. Pp. 48. 1s. net) are reproduced three lectures by Dr. Cloudesley Brereton, originally broadcast in Great Britain in December 1935 and January 1936 and afterwards repeated, at the invitation of the French Government, from Paris. The sub-title, in so far as it may tend to suggest that the pamphlet is unlikely to appeal to the general public, is misleading, for here is no mere catalogue of dry facts but a lively appreciation of the genius, to quote the author's own words, of a hard-working, cheerful, amiable, keen-witted, polished, social, artistic and, at bottom, spiritually-minded people. That it is eminently fitted to promote that mutual understanding and appreciation between nations which a strident modern nationalism threatens to stifle has been recognized by the judges entrusted with the awarding of the recently instituted "Prix internationaux du Tourisme". They have awarded to the author the second prize of 15,000 francs; the first prize, of 25,000 francs, having been awarded to Mrs. Brangwyn, an American, for "Everybody in Paris". As an example of Dr. Brereton's method may be quoted his comparison between French and English science teaching in secondary schools. Practical science is, he holds, rather neglected in the French *lycée*. "In the more abstract side of science, however, a very high standard is attained. Our schools possibly err in the other direction—somehow the glamour of science has rather been overshadowed by the excessive cult of the test tube in this country".

Archæological Expedition to Nubia

SIR ROBERT MOND'S appeal on behalf of the archæological expedition to Nubia projected by the

Egypt Exploration Society merits, and no doubt will receive, full measure of support. The valuable work of investigation which the Society has carried out at Tell el-Amarna under its present concession from the Egyptian Government, on a site which might have been thought already to have yielded its precious material to the excavator, is a warrant that the expedition will spare no pains on the new sites to secure that nothing of moment is overlooked which may throw light on the history and culture of this little-known part of ancient Egyptian rule. As Sir Robert points out in his letter to *The Times* of January 4, the two sites which have been reserved provisionally for the Society, Sulb (Soleb) and Sesebi in Upper Nubia in the region of the Third Cataract of the Nile, will both throw further light on the Amarna age, upon which the Society has been engaged now for some years. Their comparative inaccessibility accounts for the fact that they have been little studied; but it is known that at both these fortress cities there are remains which date from the reigns of Amenophis III and Akhnaton. The temple of Sulb is in fact described by Breasted, as quoted by Sir Robert, as "the most important monument surviving in the Sudan, and one of the two greatest architectural works surviving in the Nile Valley, the other being the temple of Luxor . . . We have in Soleb, therefore, one of the first creations of the Empire". As the temple has on its walls running reliefs which depict scenes from the Sed festival, to celebrate which Amenophis caused this temple to be built, its investigation will supply information as to ritual and belief which is unique. Further, as the two fortresses probably occupied the sites of earlier Nubian towns, some data, at least, should be forthcoming bearing upon the earlier population of Nubia, which, it will be remembered, the late Sir Grafton Elliot Smith held to be of considerable moment in the understanding of the early racial history of ancient Egypt.

Academy of Natural Sciences, Philadelphia

IN the course of the current month, the Academy of Natural Sciences, Philadelphia, will issue invitations to an international symposium on early man and the origins of the human race which is to be held in Philadelphia on March 18–20. This symposium will form part of the proceedings celebrating the one hundred and twenty-fifth anniversary of the foundation of the Academy. Among those who have already promised to contribute to the symposium are Dr. P. Teilhard de Chardin of China, Dr. Ralph von Koenigswald of Java, Dr. R. Broom of South Africa, Miss D. A. E. Garrod of Great Britain, and Dr. Kaj Birket-Smith of Denmark. The arrangement of the programme is in the hands of a committee which includes Dr. John C. Merriam, president of the Carnegie Institution, Washington, D.C., Dr. Edwin C. Conklin, vice-president of the Academy and president of the American Association for the Advancement of Science, Dr. George G. MacCurdy, director of the American School of Pre-historic Research, Dr. Hellmut de Terra of the Carnegie Institution and Dr. E. B. Howard,

acting curator of the Academy's Department of Geology and Palæontology, who will act as secretary of the Committee. An attraction additional to the original papers which will be presented at the symposium is a "Hall of Prehistory" in which will be represented all the fossil remains of early man and his weapons and tools, as well as replicas of the principal sites of discovery. Among the exhibits for which arrangements have already been made is a cast of *Homo Modjokertensis*, the recent discovery from Java, which has been claimed to be "the earliest datable human fossil". This will be exhibited by Dr. von Koenigswald. Dr. E. B. Howard will be responsible for a reproduction of the site of Folsom man at Clovis, New Mexico, and casts of the recently discovered relics of Peking man will be shown by Dr. Teilhard de Chardin.

Wool Industries Research Association

AN apologia on a research association's work and policy is an unenviable task for any of its officials to essay. Mr. Wilsdon, director of the Wool Industries Research Association, in his recently issued annual report, has frankly stated those especial difficulties which beset his and other research associations in endeavouring to establish and increase the confidence and support of its members, whose subscriptions are on a voluntary basis, whose individual interests are widely divergent and, with the many subdivisions of the industry, even competitive, and whose expectations, apart from some particular information yielding direct financial benefit, are largely nebulous in character. Such associations are for these reasons an easy mark for destructive criticism, always louder than the praise for specific individual benefits, which is too often uttered unobtrusively, if at all. Standardization, on which Mr. Wilsdon rightly puts insistence, has an undoubted place within this, as other, industries. There is also much to be said in favour of pooling information for the general raising of manufacturing excellence; but there are limiting factors which make the effective bounds much narrower than in most manufactures. As the architect puts his individual skill and experience, as well as his knowledge of fitness of material, design and colour, into the creation of the structure, so is cloth-making largely a 'creation' in this sense. The devising of woollen blends and of worsted tops is of similar complexity, and such circumstances tend to narrow the field within which the personal factor can be replaced or even checked by scientific classification.

ON the other hand, the trade should give whole-hearted adherence to the dictum that "research on the fundamental properties of the wool fibre is the surest way of maintaining its pre-eminence among the textile fibres". Of the two discoveries referred to, the neutral bleach and the new unshrinkable process for wool initiated by Prof. A. T. King, of the University of Leeds, while chief chemist of the Association, the latter now promises to take front rank in modern textile developments, but might well have

languished in face of incredulity and prejudice in some quarters. The Director of Research and his committee are to be congratulated on having brought it to the point of imminent release, against the considerable inertia which revolutionary changes have to overcome. Discoveries of this kind, however, which cannot be expected to occur frequently, should not, as Mr. Wilsdon has cogently reasoned, constitute the only means of bringing conviction to the trade of the Association's usefulness.

Artificial Thallium Moulting in Sheep

IT has been known in medicine since 1898 that thallium compounds taken internally will cause loss of the hair. This method has recently been used to produce moulting of the fleece in sheep, instead of shearing. Prof. N. A. Iljin (*J. Genet.*, **33**, No. 2) gives a short account of experiments in which the sheep's fleece becomes loose a few days after treatment and can be removed whole with the hands in a few minutes. Sheep with coarse and mixed wool have a natural annual moult which is absent from fine-woolled breeds such as the merino. Hybrids are found to exhibit segregation of this character of natural moulting. By thallium treatment, the moult may be induced in merinos and their naturally non-moulting hybrids. Extensive experiments with this method have been carried out on Soviet State Farms in the Crimea, Ukraine, Caucasus and the Moscow district, but as a considerable number of sheep were killed by an overdose during the experiments, it is evident that the effects of repeated doses on the animal will need to be known before the treatment can come into practical use.

Development of Crystal Analysis

SIR WILLIAM BRAGG, delivering the Sir Henry Trueman Wood lecture before the Royal Society of Arts on December 16, gave an account of the development of crystal analysis by X-rays during the last decade. The X-ray data may now be made to give a 'shadow picture' of the molecular structure which can be compared with chemical ideas of structural grouping. The dimensions of the structure can be determined with very considerable accuracy—the separation of atoms within about one per cent—and it is found that the characteristic separation of, say, carbon atoms persists in a number of related structures. Chemical ideas of valency, double and triple linkages, the benzene ring are all clarified by this method of study of the atomic separations. The investigation of structures is progressive in the sense that the information already gained can be used in the attack on more complicated structures. Important results have been obtained with proteins, and the properties of the protein chain explain the peculiarities of hair, muscle and similar biological structures. The X-ray diffraction patterns obtained from alloys show how a small quantity of an alloying element fits into the main lattice; while the progressive addition of alloy leads to the formation of new, characteristic lattices. The peculiar alloy structure called the γ -phase depends apparently on a fixed