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 wholehearted 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 Moult 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