

Research on Lac in Great Britain.

IT is two years since the Indian Lac Cess Committee deputed three research workers to England to carry out a scheme of research in the industrial uses of lac, in the fields of the paints and varnishes, the plastics and the electrical industries. In the preface to the first technical paper, Dr. Jordan refers to the several lines of investigation being pursued concurrently and the first bulletin deals with the isolation of the Pure Lac Resin, the economics of whose isolation and utilisation must, for the moment, remain an unsettled question. The paper by Dr. Bhattacharya and Dr. Verman on this subject of isolation of pure resin is a very valuable contribution which promises to find application in technological development of lac. Dr. Verman has discussed the industrial possibilities of pure lac resin, in a paper read at a joint meeting of the London section of the Plastics Group. The most hopeful application of the lac resin, which Dr. Verman has indicated, is in the manufacture of an insulating varnish for wire, which should be able to withstand elevated temperatures for long periods of time. The pure resin has a quicker rate of hardening than the original lac and this circumstance should extend the employment of the pure lac resin to regions where the "slow hardening" of untreated lac has been found defective. Another application of great promise is the manufacture of canning aluminium and tin foil lacquers. Experiments have shown that with pure lac resin, can be successfully made coloured lacquers, having good adhesion and non-sticky. Yet another possibility which Dr.

Verman has indicated is the employment of the pure resin for electric insulating moulding. The chief difficulty in shellac moulding at the moment is the slow rate of heat-hardening and any process through which the time of hardening could be reduced, will be considered a useful technological development. Properties of the pure lac resin in this respect have not been investigated except to show that it possesses a quicker rate of hardening than shellac; with the addition of accelerators it may be possible to reduce further the time of hardening and in this direction we shall await with keen interest the results of Drs. Bhattacharya and Verman.

One pauses to reflect if all this work detailed above could not have been done in India at the Lac Research Institute at Ranchi or at the Indian Institute of Science, Bangalore. It is true both these Institutes have to a large extent pioneered researches on the various aspects of lac but what has been sadly lacking with respect to both of them is that close contact with the consuming industries, which have always been responsible for stimulating applied research. The Indian research workers who have now been stationed at the Paint Research Station at Teddington, have the enviable opportunity of facing the practical problems of the industry understanding their needs and meeting their exacting requirements through research. They have done well indeed but the Indian Lac Industry expects more work from them, if it should escape the crisis.

M. S.

Alchemy in China.

IN an interesting article appearing in *Nature* (1935, 136, 287-88), Prof. J. R. Partington gives an account of an ancient Chinese Treatise on Alchemy, an obscure and mystic work of considerable historic importance. The treatise is *Ts'an Tung Ch'i* of Wei Po Yang who flourished in the 2nd century A.D., and was called the 'father of Chinese alchemy'. This treatise has been recently translated by Dr. Lu Ch'iang Wu and annotated by Prof. Tenny L. Davies. The translation is a task of no small difficulty from which, the previous sinologists had turned away in despair. The treatise has been considered

to be the earliest, in Chinese language. From the references to earlier Chinese alchemists it is reasonable to assume that for at least 2 or 3 centuries before Wei Po Yang, attempts to transmute base metals into gold and prepare elixirs of life were being made and alchemy in China and Greece was contemporary. "Dr. Wu and Prof. Davies are to publish later some alchemical chapters from Ko Hung, a celebrated Chinese Taoist Philosopher and Alchemist of the fourth century and the history of chemistry will be enriched by their work."