

As regards mining science and technique, the Romans had only a scanty knowledge of geology and minerals, and veins lost by faulting were lost for good so far as their mining methods are concerned. They knew something about prospecting, however, and recognised many indications of ore, such as the coloured oxidation products of copper ore. They recovered gold by 'hushing', that is, by impounding or canalising waters which they directed in strong currents on to the soil or alluvium to wash away the lighter minerals and thus concentrate the gold. Their other mining methods included shaft-sinking, the driving of galleries and adits, and primitive efforts at lighting, ventilation and drainage. They used water-wheels, also iron, wood and stone tools including rilled hammers, specimens of which are often found in Roman mine-workings.

The metallurgical procedure of the Romans included crushing, washing on tables for the purpose of concentration, roasting and smelting in different kinds of furnaces. Thus their mining science was very defective, but their technique, though primitive, showed much skill and variety, and up to the standard of their requirements, was quite effective.

The remaining and larger part of the book is given to an account of mineral areas of Europe in which the Romans were interested and their mining work in these areas, including Italy, Gaul, Spain, the British Isles, Rhineland, Upper Danube provinces, Illyrian provinces, Dacia, Moesia, Macedonia, Thrace and Greece. The book has a topographical as well as a subject index, and is provided with useful maps and diagrams.

However pleasant the task of compiling this mass of interesting information may have been to Mr. Davies, it must have involved a large amount of painstaking work. Students of archaeology and the history of mining will be grateful to him for the trouble he has taken to make the information available in such a handy form.

Forensic Chemistry and Scientific Criminal Investigation

By A. Lucas. Third edition. Pp. 376. (London: Edward Arnold and Co., 1935.) 18s. net.

"FORENSIC CHEMISTRY" is not a very intriguing title but, interpreted in the generous spirit of the author of this work, it covers a varied range of phenomena, and it is certainly interlinked with some of the most tragic dramas of the century. The book may be considered under two aspects. It is primarily a text-book for the expert witness, or for him who would aspire to reach that third and highest plane. For him Mr. Lucas gives clear and meticulously careful advice on the manner of preparation of a report, and

macroscopical, microscopical and general and special analytical methods are described which cover almost every happening in the annals of crime. The help that physical science may give is not forgotten, and X-rays, ultra-violet and infra-red photography, and methods for the determination of specific gravities and refractive indices are all pressed into service.

The work has, however, dramatic elements in it which should attract the general scientific reader as well as the specialist witness. In the service of detection nothing is too great, nothing too trivial, and we pick up by the way much lore concerning the age of inks, the date of the introduction of black-lead pencils, the deciphering of documents, the composition of their seals, the making of plaster casts of footprints—in fact, we learn that Dr. Thorn-dyke is a very real person, and Sherlock Holmes's immortal treatise on the varieties of tobacco ash almost finds its fellow in Mr. Lucas's chapter on tobacco.

"Sand taken from the stomach and duodenum of a drowned man was examined and, as the quantity available was very small, only a microscopical examination was possible. The material was found to consist essentially of colourless grains, all very angular, and many having definite crystalline form that proved to be selenite; there was an absence of quartz, but on one slide there was part of a diatom. The presence of selenite in large proportion and the absence of quartz seemed to preclude the Nile valley and suggested the northern shores of Egypt. It was probable, therefore, that the man was drowned off the coast where his body was found and that he had not been transported there after having been killed elsewhere, as was at first thought might possibly have been the case."

Surely this is in Dr. Thorn-dyke's best manner?

Specialist and general reader alike will echo Mr. Lucas's wish that the scientific part of the evidence in the otherwise admirable reports of some well-known criminal trials should be given in full. The obscurities which result from condensation are peculiarly irritating.

A. F.

The Social Economy of the Himalayans:

based on a Survey in the Kumaon Himalayas. By Dr. S. D. Pant. Pp. 264+23 plates. (London: George Allen and Unwin, Ltd., 1935.) 15s. net.

DR. PANT'S book, an account of a too-little known people of the Kumaon Himalayas, is a serious contribution to the social anthropology of Indian peoples by one of themselves, based upon nearly five years of first-hand observation and investigation. The author gives a detailed account of the social and economic institutions of the Bhotiyas and other peoples of the district under survey, their methods of agriculture, their industries, trading activities, recreations and religious festivals. The governing factor in their economy is a climatic environment which makes of them seasonal nomads, migrating from lowland to upland and back as winter changes to summer and then returns—a mode of existence of special interest to both anthropologist and geographer.