

barrelles and their relationships with the various breeds surviving to-day will not only be read with interest by prehistorians but will also be equally appreciated by the zoologist. The virgin ground broken long ago by Piette, Munro and Cossar Ewart has here yielded a rich harvest.

The cave of Combarelles is one of the most important palæolithic temples in the Dordogne. Although the art is nearly all engraved, there being scarcely any paintings, the beauty of the drawings and the skill employed has rarely been surpassed elsewhere. The animals figured include: horse (in large numbers), mammoth, reindeer, bison, ibex, bear, tiger, rhinoceros, fox, wild-ass, humans (sometimes masked), signs and so on. The age of most of this art is adjudged to be Lower Magdalenian—that is, a Magdalenian before the appearance of the barbed harpoon.

The present volume opens with an account of the discovery of the art and the situation of the cave, and this is followed by a description of finds from sites nearby, as well as an account of one or two objects from Combarelles itself. An inventory of the art on the walls and ceiling of the cave follows; the work concludes with important comparative chapters on the occurrence of the various species of animals and the figures of humans found, and a short discussion as to the age of the ensemble.

It is the plates, however, which naturally first attract the student. Even those of us who knew and had studied Breuil's tracings and photographs, both in the study and on the spot, will be delighted with the results appearing here. It was no mean feat for Breuil and his photographer to have worked for months on end in that most awkward of tunnels. Besides the clear, distinct figures there are numbers of intricate panels representing a series of complicated palimpsests. Although Dr. Capitan and M. Peyrony have done their part, to the Abbé Breuil remained by far the largest bulk of the work in the cave as well as the actual writing and preparing for press.

A monograph of high scientific importance like "Les Combarelles" ought to make our English publishers and printers pause and think. The price (200 fr.) is not excessive, and it is grievous to remember that no work of this standard could ever be produced in England at even triple the price. Once more is the Institut de Paléontologie humaine to be congratulated, and it is only to be hoped that further volumes will be soon appearing, giving prehistorians some more of that mass of unpublished material Breuil possesses. Perhaps next time there may appear an account of that equally important and still less known Spanish rock shelter art (Spanish group III.) belonging to the Late Neolithic and Copper ages

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Our Bookshelf.

The Physical Chemistry of Igneous Rock Formation: a General Discussion held by the Faraday Society, the Geological Society, and the Mineralogical Society, October 1924. Pp. 411-501. (London: The Faraday Society, 1925.) 6s. 6d. net.

THE discussion on this subject arranged by the Faraday Society excited great interest, and the collected papers contain much that is of value. Whilst most of the speakers dealt with heterogeneous equilibria, and particularly with the crystallisation of minerals from magmas, one rather elaborate memoir on homogeneous equilibria was communicated by Prof. Niggli, of Zürich, in which certain considerations relating to the formation and decomposition of compounds in solution are applied to rock provinces of the Pacific, Mediterranean, and Atlantic types, a diagram being used to indicate the relationships, in such a way as to point to the differentiations which may be expected to occur during cooling.

Another question which recurs frequently in the discussion is that of the influence of volatile constituents on crystallisation. The possibility that pressure gradients as well as temperature gradients may be important is suggested by W. H. Goodchild and supported by G. W. Tyrrell, and the presence of volatile constituents is also invoked to explain the formation of alkaline rocks. Since experiments on magmas containing volatile substances can only be made in special apparatus capable of withstanding very high pressures, it has been urged that provision should be made in Great Britain for research in this field, and the paper by Dr. J. W. Evans outlines a very extensive programme of work which should be undertaken if means permitted, including the effect of shearing forces as well as of hydrostatic pressure.

Bowen's reaction principle comes in for some discussion, and the question is raised whether the methods used in metallography require much modification when they are applied to the study of such viscous and highly associated liquids as rock magmas. Prof. J. W. Gregory's detailed survey of the subject of magmatic ores leads to the remarkable conclusion that ores of magmatic origin are probably quite unimportant, all the famous deposits to which such an origin has been assigned having been shown to have been formed in other ways. The little volume is most interesting and suggestive.

A German-English Dictionary for Chemists. By Dr. Austin M. Patterson. First edition, with Addenda. Pp. xvi + 343. (New York: J. Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1924.) 12s. 6d. net.

To compile a small dictionary from data easily available in larger works, is a comparatively simple task. To compile a small dictionary of a special character, like that now under review, requires not only judgment, accuracy, and application, but also a good knowledge of the languages and the science concerned. These qualifications Dr. Patterson possesses to an eminent degree, and therefore it occasions no surprise to learn that his "German-English Dictionary for Chemists" has been reprinted no less than five times, and that 21,000