

which provides that, after January 1, 1913, every fireman, examiner, or deputy employed as a fireman, with certain exceptions which need not be here specified, must possess a full certificate stating (1) that he can test for gas with a safety-lamp and is able to see a 2 per cent. "cap," (2) that he can measure an air-current, (3) that his hearing is good.

As a knowledge of the first two requirements cannot be attained by men of this position without tuition, numerous classes have been formed in all the colliery districts for the purpose of instructing them.

Prof. Burns's book is intended to serve as a text-book for these classes, and is, with certain reservations, admirably adapted to its purpose. In attempting to make it suitable to the requirements of both teachers and pupils, however, its author has produced a work which is in some parts too elementary for the former, and in others (indicated by means of asterisks) too abstruse for the latter.

The number of teachers and assistants employed by the education committee of the Glamorgan County Council and the number of candidates who have presented themselves for examination before the same authority during the last eight months are, respectively, eighty-seven and more than 8000. The candidates are thus likely to constitute by far the more numerous class of his readers, and we feel certain that they would much better appreciate the book if those parts of it intended for teachers, together with most of the chemical and other formulæ, descriptions of methods of preparing methane and other gases, and all the more complicated exercises, were omitted. We therefore recommend Prof. Burns, when preparing another edition, to avoid the solecisms which abound in the present book, to eliminate all but the simple matter suitable to the capacity of firemen—which we have no hesitation in pronouncing to be excellent in its present form—and, if he thinks it desirable or necessary, to write another more advanced book for the use of teachers and others.

#### SOUTH AFRICAN ARCHÆOLOGY.

*The Pre-historic Period in South Africa.* By J. P. Johnson. Second edition, revised and enlarged. Pp. iv + 115 + plates + map. (London: Longmans, Green and Co., 1912.) Price 10s.

IT is satisfactory to find that there is a sufficient interest in the subject of South African archæology to require a second edition of Mr.

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J. P. Johnson's book on "The Pre-historic Period in South Africa" within two years. In the new edition some new finds are referred to, and there is an appendix by Mr. A. S. Kennard on the sequence of the stone implements in the Lower Thames Valley. Mr. Johnson describes and figures chipped stones from Leijfontein, below the Campbell Rand, which closely resemble those from the plateau of Kent, and he does not hesitate to call them "eoliths." Implements of river-drift types are distributed all over South Africa. "Among the amygdaliths [his term for the common type of implement] every gradation is met with between the thick Chelléen form with unworked butt, the thinner Acheuléen type with edge carried all round, and the proto-Solutréen form pointed at both ends"; he calls them all "Acheulic." He also recognises "Solutric" implements; amongst these are "pigmy implements" of chert. Dr. Péringuey found implements at Bloemsbosch in what Johnson considers a Solutric site, apparently contemporary with a large extinct buffalo and horse. In the present state of our knowledge it is rather begging the question to apply without qualification to South African finds the terms used to designate special "industries" of European archæology. It would be a wiser plan to use non-committal designations while pointing out the similarities in the forms of the implements.

The Coast middens described by Dr. Péringuey are referred to, and several excellent reproductions are given of petroglyphs and rock-paintings, the peckings made by the Bantu being markedly inferior to Bushman work. The upper drawing of his Fig. 37 is of a rock-painting described by G. W. Stow in "The Native Races of South Africa" (p. 121). Mr. Johnson has no doubt that the "Solutric" implements were made by the ancestors of the present Bushmen, who, he believes, were very far from being a homogeneous people. Prof. Sollas, in "Ancient Hunters and their Modern Representatives," regards it as highly probable that in Aurignacian times a race allied to the Bushmen inhabited western Europe (p. 268). Mr. Johnson, however, seems to class the Aurignacian, Solutric, and Magdalenian stages under the term Solutric. Support is given to the view that the famous forts or kraals and other ruined structures in Rhodesia were built by prehistoric Bantu in connection mainly with gold-mining, and he supplies plans of four stone-walled ruined kraals at Ramoo Kop for comparison with those already published.