

In the light of the foregoing considerations specialists are urged to furnish the Commission with answers to the following questions :—

- (1) Do you in your work accept as an available name (that is, as a name possessing rights under the Law of Priority and the Law of Homonymy) a trivial name originally published in a specific synonymy ?
- (2) Do other specialists in your field treat such a trivial name in the same way that you do ?
- (3) In what branch of the Animal Kingdom are you a specialist ?

Note.—Please answer this question as precisely as possible and indicate also whether you work on living forms or on fossils.

- (4) (*To be answered only by those specialists whose answer to Question No. (1) is "yes"*). Do you consider that confusion and name-changing would result in your special field if the *Règles* were altered in such a way as to render unavailable a trivial name published in a specific synonymy ?
- (5) (*To be answered only by those specialists whose answer to Question No. (1) is "no"*). Do you consider that confusion and name-changing would result if the present rule that a trivial name published in a specific synonymy thereby acquires availability were to be strictly applied to specific names in your special field ?

Return of replies to the foregoing questions. It is particularly hoped that as many zoologists and palaeozoologists as possible will furnish replies to the foregoing questions ; further, it is hoped that specialists will be good enough, when answering Question No. (4) or, as the case may be, Question No. (5), to cite definite examples of cases where they apprehend that confusion would arise in the circumstances there stated. All replies to the foregoing questions should be addressed to me clearly marked "Z.N. (S.) 372".

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DEPTH OF BURIAL OF SOUTH WALES COALS

SIR,—Mr. Wellman's interesting contribution on the depth of burial of South Wales coals falls into two parts. First he deals with the formula for calculating coal seam volatiles at depth, and this is independent of the second and more speculative part in which he propounds a new variation of the depth of burial hypothesis to explain the devolatilization of these seams.

Workers on devolatilization formulae would be well advised to heed Wellman's statement that "for practical purposes in order to calculate the rank of coal at depth, it is convenient to use a single gradient for the whole of the coalfield". Wellman considers that Trotter's original square-root equation fits the analyses reasonably well, but advances his own logarithmic formula as giving slightly more accurate results. At the time his paper went to press he was apparently unaware of the exponential equation for South Wales coals (Trotter, *Geol. Mag.*, 1950, p. 196) which is a blood relation of his formula.

In the speculative part of his paper, Wellman has postulated two devolatilizations for South Wales coals, (a) a devolatilization on the South Crop of the coalfield which is considered to be due to burial by the admittedly thick Coal Measures sediments of that area and (b) a second and later devolatilization thought to be due to burial by post-Carboniferous sediments which are considered to thicken northwards so as to reach a thickness of about 15,000 feet, giving an overall thickness of about 18,000 feet over the northern fringe of the anthracite field. The combined effect of both devolatilizations

is portrayed in an illustration that is founded on a horizontal section across the coalfield published by Trotter (*Quart. Journ. Geol. Soc.*, civ, p. 396).

In Wellman's illustration high rank coals of 16 per cent or less volatiles are shown, in the basal Coal Measures, to crop out in the extreme south in a position which is beneath the sea, from where there are no analyses available. But these lowest seams of the South Crop are beneath the sea only along a limited distance; for the most part they outcrop on land, across Gower, where they are bituminous coals of 28–30 per cent volatiles.

It is incontestable, on the basis of the theory that devolatilization is due to depth of burial, that high rank coals should have occurred in the basal Coal Measures of the South Crop. The fact that relatively low rank coals occur instead forces us to abandon the theory, at least in its application to the seams of the South Crop.

As regards the suggested later devolatilization such a thickness of post-Carboniferous sediments as is demanded over the anthracites to account for these very high rank coals appears to be highly improbable when one considers that the nearest Permo-Trias is represented by a mere 100 feet or so of uppermost Keuper. A thickness of post-Carboniferous sediments of 15,000 feet is, of course, acceptable for the Lancashire-Cheshire basin with the Permo-Trias alone accounting for a thickness of 8,000 to 10,000 feet, and here one may also have an additional 3,000 feet of Coal Measures above the lower coals. But the coals of South Lancashire, worked beneath the Permo-Trias down to a depth of 4,000 feet below O.D., are not anthracites; on the contrary they are bituminous coals with volatiles of 32–40 per cent. Under these circumstances one need not consider in detail whether the post Carboniferous rocks of South Wales thickened, or as seems more probable, thinned northwards against the St. George's Land of Central Wales. In either case their presence is not likely to have raised the seams to a rank higher than the bituminous coals of South Lancashire.

In one important respect, however, the rank of coal can be shown to rise with corresponding depth of cover. Wellman has shown with the aid of the Notown bore that a rise in rank from sub-bituminous to bituminous coal is due essentially to expulsion of moisture, bituminous rank being attained under an approximate cover of 8,000 feet. The writer (*Geol. Mag.*, 1950, pp. 201–2) goes further than this in stating that expulsion of water is the primary cause of rising rank with depth in all coalfields that have neither been subjected to strong compressional influences nor to the effects of vulcanicity.

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REVIEWS

DAS KLIMA DER VORZEIT : EIN EINFÜHRUNG IN DIE PALÄOKLIMATOLOGIE.
By MARTIN SCHWARZBACH. 8vo, pp. viii + 211, with 70 illustrations,
Ferdinand Enke Verlag, Stuttgart, 1950. D.M. 19.00 (geb. 21.80).

Geologists will find this a compact and most useful introduction to a very big subject and, as Professor Schwarzbach occupies the chair of geology at the University of Cologne, his approach will be acceptable. For a great part of the evidence for past climates must be provided and sifted by geologists and the critical and cautious attitude with which the author assembles and reviews the evidence is to be commended. Following a brief but welcome summary of the historical development of the study of palaeoclimatology, a third of the book is devoted to the methods by which past climates can be reconstructed. The results with regard to the earth as a whole are then summarized for each of the geological periods. Finally, the author discusses the possible causes of climatic change, terrestrial and extra-terrestrial, which will remind British readers of the somewhat different approach by Dr. C. E. P.