

CORRESPONDENCE

THE PALAEOZOIC CORAL GENERA *DEPASOPHYLLUM* YÜ
AND *DEPASOPHYLLUM* GRABAU

SIR,—Before Dr. Stanley Smith's death last summer, we had completed for publication two papers on our joint work on certain Palaeozoic corals, as well as a note on *Depasophyllum*. I quote the latter in the form in which we had written it:—

"We should like to clear up some misconceptions concerning the generic name *Depasophyllum* applied to Palaeozoic corals. Grabau [*Palaeont. Sinica*, B, ii (1), 1922, pp. 21, 22] introduced the name for Devonian aulate corals, but the name was a *nomen nudum*. It was not till 1936 [*Palaeont. Sinica*, B, viii (4), p. 43] that he diagnosed his genus and described a species (p. 44) under that generic designation, namely, *D. adnetum* Grabau (Middle Devonian, Traverse Group of Michigan, and Onondaga Limestone of New York).

"In the meantime, Yü [*Palaeont. Sinica*, B, xii (3), 1934 (for 1933)] had described and figured two Chinese Carboniferous corals as *Diphyphyllum* (*Depasophyllum*) *convexum* Yü (op. cit., p. 85, pl. 15, fig. 4. Carboniferous, Viséan, Shangssu Limestone; 1 li S.E. of Ti-wu-chung, Ting-fan-hsien, Kueichou, China) and *Diphyphyllum* (*Depasophyllum*) *hochangpingense* Yü (op. cit., p. 86, pl. 16, figs. 5a–d, 6a–b. Carboniferous, Viséan, Tzemenchiao Limestone; Ho-chang-ping, Pao-ching-hsien, Hunan, and 1 li W. of Lan-mu-chiao, Ting-fan-hsien, Kueichou, China). *Depasophyllum* was thus validated by Yü, and this antedates *Depasophyllum* Grabau, 1936.

"We here select as type-species of *Depasophyllum* Yü *Diphyphyllum* (*Depasophyllum*) *hochangpingense* Yü. Both that species and the other genus-type, *Diph.* (*Dep.*) *convexum* Yü, are diphyormorphs of *Lithostrotion* Fleming, of which genus *Depasophyllum* Yü is a junior synonym.

"Lang, Smith, and Thomas [*Index of Palaeozoic Coral Genera*, Brit. Mus. (Nat. Hist.), 1940, p. 50] and Stumm (*Mem. Geol. Soc. Amer.*, xl, 1949, p. 30) overlooked Yü and considered *Depasophyllum* Grabau, 1936, valid, citing as type species *D. adnetum* Grabau. Grabau gave no figure of the coral in 1936, but a specimen from the Middle Devonian, Traverse Group, Dock Street Clay, of Alpena, Michigan, U.S.A., was figured by Stumm (op. cit., pl. 14, figs. 20, 21). The species has the generic characters of *Amplexicarinia* (as *Amplexocarinia*) Soshkina (*Bull. Soc. Nat. Moscou, Sect. Géol.*, N.S., xxxvi, 1928, p. 379), of which genus *Depasophyllum* Grabau *non* Yü is thus a junior synonym."

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TILLITE-GRANITE TRANSFORMATIONS

SIR,—I shall be grateful for the opportunity of commenting on the paper, in the last issue of the *Geological Magazine*, concerning the tillite-granite transformations at Mount Fitton (Chinner, G. A., M. Sando, and A. J. R. White, *Geol. Mag.*, 1956, xciii, 18). The authors appear to have examined only parts of the area and, in consequence, their observations have been confined to localized aspects. Broader considerations, are, however, more relevant to the discussion.

The key to the postulation of post-Adelaide System migmatization (Bowes, D. R., *Univ. Adelaide, Sir Douglas Mawson Anniversary Vol.*, 1952, 7; *Trans. Roy. Soc. S. Aust.*, 1953, lxxvi, 85; *Quart. Journ. Geol. Soc.*, 1954, cix (for 1953), 455) is the age of the relics in the migmatite complexes. The relict sedimentary masses mapped—essentially quartzites, slates, tillites, and marbles and their sheared equivalents—correspond in type and petrographic

characters to the rocks of the Tillite Series of the Adelaide System. They also show a ghost structural pattern apparently similar to that of the Tillite Series and there is no evidence to suggest tight in-folding. On these grounds the relics were reasonably assigned to the Tillite Series and the migmatization was postulated to be post-Adelaide System in age. Further, the Terrapianna Migmatite Complex "is the northerly continuation of the Mount Painter igneous complex" (Sprigg, R. C., *Geol. Surv. S. Aust. Bull.*, xxvi, 1951, 76), which is accepted as resulting from post-Adelaide System granitization and igneous intrusion (Sprigg, R. C., *Geol. Surv. S. Aust. Unpublished Report*, 1945; *op. cit.*, 1951; Sullivan, C. J., *Econ. Geol.*, 1948, xliii, 471; Dickinson, S. B., M. L. Wade, and B. P. Webb, *Geol. Surv. S. Aust. Bull.*, xxx, 1954, 84). It is possible that an older complex, as well as the Adelaide System, was involved in the migmatization (Dickinson, Webb, and Wade, *op. cit.*), but it is well established that the granitization processes affected considerable areas of the North-Eastern Flinders Ranges and altered sediments of the Adelaide System *in situ*. In this respect the reference of Chinner, Sando, and White (*op. cit.*, p. 22) to "post-Sturtian metamorphism" in the Mount Painter-Mount Fitton area, without mention of this migmatization and granitization, is misleading.

It appears unlikely that conclusive evidence will be obtained from a study of localized aspects. However, it should be pointed out that the boulders figured by Chinner, Sando, and White (*op. cit.*, Plate II) are uncommon. Had they been derived from an immediately underlying complex, one would expect to find them in abundance, as is the case with the granite boulders in the basal tillite resting on granite at Poolamacca, Broken Hill, N.S.W. (Bowes, D. R., *Trans. Roy. Soc. S. Aust.*, lxxix, 1956). Textural evidence provides considerable difficulties in interpretation, but the presence—not in a boulder—of large quartz-feldspar intergrowths (*vide* Bowes, *op. cit.*, 1954, Plate XXIV, fig. 3) would be difficult to explain by the clastic origin postulated by Chinner, Sando, and White (*op. cit.*, p. 20) for the rocks of the transition zone. The marking in of a white line around the feldspar individual (Chinner, Sando, and White, *op. cit.*, Plate III, fig. 1), gives a false impression of the sharpness of the boundary and, further, the line obscures places where there is no break between the fine-grained inclusions in the feldspar and the fine-grained quartz-biotite matrix. Such lines could probably be as well drawn in a number of places within the feldspar individual to give the impression of fragments. The textures shown in figs. 2 and 3 of the same plate are such as would be expected from the migmatization of tillites and similar rocks.

Knowledge of the geology of the North-Eastern Flinders Ranges is still very limited and many problems of great interest and importance remain to be solved. It is hoped that the foregoing comments will be of assistance both in the search for methods of tackling the problems and in the elucidation of the geological history of the area.

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REVIEWS

DAS QUARTÄR DER LAVANTE, Teil II. DIE ENTSTEHUNG DER ÄGYPTISCHEN OASENDEPRESSIONEN. By MAX PFANNENSTIEL. *Abh. M.-N. Kl. Akad. Wiss. Lit. Mainz*, Jahrg. 1953, no. 7, pp. 337-411. Wiesbaden, 1954.

It takes a brave man to enter the geological and geomorphological battlefield of the Egyptian oasis depressions. Dr. Pfannenstiel is armed with a deep and critical reading of the literature and emerges with a brilliant and well-balanced synthesis of the geological history of the whole region from the beginning of the Tertiary to the present day.