

(k) That waters heated to no more than 96° to 139° F. are, by reason of their temperature, 'plutonic' waters. (p. 317.)

(l) The impossibility of the derivation of the oil or gas of, say, the Alice Downs well from intercalated sedimentary beds. (p. 318.)

(m) That tidal wells are entirely analogous to geysers. (p. 328.)

(n) The impossibility of water percolating from overlying sedimentaries into fissures in granite (Oxton Downs). (p. 339.)

(o) That "if the water be of meteoric origin, it must continually be enlarging the underground fissures" (p. 340), and this despite the weight of 2000–4000 feet of strata already quoted by the author (p. 289) as a sufficient cause of flowing wells.

Professor Gregory throughout assumes—

(p) The impossibility of meteoric waters descending to sufficient depths to gain the temperature observed; and

(q) The impossibility of the observed gases and contained solids being derived from chemical interaction within the sedimentary strata.

Finally, Professor Gregory loses sight of the great facts that thousands of square miles of the granite through which his 'plutonic' water is supposed to have come is exposed to our investigation, and that the granite is presumably now in exactly the same condition as during the Tertiary period, when his waters were accumulating. While the fissures in the upper 500 feet of this granite contain water, as in the Queensland and Westralian mining fields and in the numerous bores near Camooweal, yet whenever great depths are reached, as the 2,600 feet at Charters Towers, with lesser depths on other Queensland fields, and the 2,000 feet of the Coolgardie bore and the Kalgoorlie mines, the granites and older rocks are dry. But Professor Gregory's theory demands, in view of the daily yield of 450,000,000 gallons, a widespread present distribution in the granite of fissures filled with hot water and extending to great depths.

With the foregoing protest against the elevation of pure assumption to the commanding position of ascertained fact I am content to leave the full discussion of the subject to the capable pens of my former colleagues in Australia, who have had a wider personal knowledge of the artesian area than I possess.

MALCOLM MACLAREN.

NOMENCLATURE OF AUSTRALIAN SILURIAN OPHIURIDS.

SIR,—A few points in Dr. Bather's article "Australian Palæontologists on Silurian Ophiurids" call for further comment. Taking Dr. Bather's remarks *seriatim*, it would appear that I had flagrantly transgressed certain established rules of nomenclature, since he says that I seem "for the moment to have forgotten the perfectly definite and, one had thought, universally accepted rule of nomenclature, according to which the genus must follow its genotype. In other words, *Sturtzura* must become a simple synonym of *Protaster*." In changing the genotype, reference was made to the Stricklandian Code of Rules of Zoological Nomenclature (which forms the basis of the several later codes), where, in paragraph 5, it says: "When the evidence as to the original type is not perfectly clear and indisputable, then the first person who subdivides the genus may affix the original

name to any portion of it at his discretion," etc. In the present instance, however, Professor Gregory did select the genotype, but had the conception that the arm-structure was similar to the accompanying form, *leptosoma*. Since, therefore, the genotype was selected in error, it is necessary to follow an unwritten, but nevertheless, patent rule, reforming the genus thus broken up, and instituting the only remaining form—regarded as congeneric, be it remembered, by Gregory—as the valid claimant. The Stricklandian rule quoted above should afford sufficient authority and reason for such procedure, otherwise rules of nomenclature, made with the best intent, may easily prove a stumbling-block to scientific progress, and a cause of confusion, instead of a simplifying of scientific terminology.

In the interpretation of the lateral ossicles in the two species of *Sturtzura*, it may be more convenient to regard the curved, fusiform ossicles as an intermediate series—derived from a boot-shaped ambulacral, but now perfectly distinct—and to still refer to the spine-bearing plate, as Dr. Bather suggests, as the adambulacrals. In fact, there seems a transitional tendency shown in these forms, from the typical Protasterid towards a Lapworthurid, especially as there is some indication of the ventral arm-ossicles tending to become parallel on the distal and proximal margins.

Dr. Bather's suggestion that *Sturtzura* can lapse and be resuscitated under a fresh diagnosis with *S. brisingoides* and another species is surely untenable? As the original genotype is now shown to be a form of *Protaster*, this action would be condemned by the rule adopted by many zoologists of "once a synonym always a synonym" as applying to generic terms.

The last paragraph of Dr. Bather's excellent and suggestive review needs no comment, for no one responsible for museum arrangement would seriously entertain the idea of translating into free English every scientific term on the exhibited labels.

F. CHAPMAN.

NATIONAL MUSEUM, MELBOURNE.
August 21st, 1907.

A CORRECTION.

SIR,—In my paper "Notes on the Invertebrate Fauna of the Uitenhage Series in Cape Colony," published in the present volume of the GEOLOGICAL MAGAZINE, July number, pp. 289–295, an inaccurate statement was inadvertently allowed to pass into print. With reference to an assemblage of fossils mentioned on p. 290, the following sentence occurs, commencing on line 21 from the top of the page: "All these, so far as we know, are confined elsewhere to the Cretaceous rocks" This statement should not, of course, refer to the genus *Solecortus*, and the sentence should read as follows: "All these, with the exception of *Solecortus*, are, so far as we know, confined elsewhere to the Cretaceous rocks" I hope you will be able to give publicity to the correction of this oversight.

F. L. KITCHIN.