

Mr. Pourtales' first dredgings, were written under very considerable difficulties, as I well remember hearing from the author himself. But the 'priority in scientific research,' which Mr. Rathbun claims for Pourtales' work, had been accorded to it four years previously, at the earliest possible opportunity, in the Proceedings of the Royal Society. So far as I know, this honor has never been 'denied' to one who would have been the last to claim it for himself. I fully admit, however, that the date of his earlier work has been incorrectly given in certain popular accounts of the subject; but this was done accidentally, and without the slightest intention of appropriating any credit for the work of British naturalists which was justly due elsewhere, as will be evident from what I have said already.

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Eton college, Windsor, Eng.,
Aug. 11.

The 'bassalian fauna;' 'Pentacrinus asteriscus.'

I notice that Mr. Gill has "recently proposed the name 'bassalian realm' for the collective deep-sea faunas." I do not know whether it is proposed to define this name more strictly by assigning to it any particular bathymetrical limits; but it may be well to notice, that, in his presidential address to the biological section of the British association at Plymouth in 1877, Mr. Gwyn Jeffreys suggested the use of the name "'benthal' (from the Homeric word *βένθος*, signifying the depths of the sea) for depths of one thousand fathoms and more," while retaining the term 'abyssal' for depths down to one thousand fathoms.

There is another point to which I have long thought of directing the attention of the readers of *Science*, and I therefore take this opportunity of doing so.

The surveys of Hayden, Wheeler, and others, in Utah, Idaho, and Wyoming, have revealed the very wide distribution, in beds of Jurassic age, of a crinoid which has been called *Pentacrinus asteriscus*. Nothing is known of this form but a number of stem-joints (I speak under correction, and shall be pleased to hear that I am wrong); but most of the figures of these joints which I have seen (e.g., that given by White in the paleontology of Wheeler's survey) seem to me to indicate that the type should be referred to *Extracrinus* rather than to *Pentacrinus*. The essential characters of the stem-joints of *Extracrinus* are well shown in plate liii. of Buckland's 'Geology and mineralogy,' figs. 9-13; on tab. 101 of Quenstedt's 'Encriniden,' especially figs. 24, 27, 33, and 37; and also on plate xii. of the Austins' 'Monograph of recent and fossil crinoids.' The five interradial petals are quite narrow, and much less distinctly oval than in *Pentacrinus*, sometimes becoming almost linear, with rounded outer ends. The interpetaloid spaces are plain, and devoid of sculpture; while the markings at the sides of the petals are much more delicate than in *Pentacrinus*, having more the character of striae or crenulation than of coarse ridges. They are also much more numerous than in *Pentacrinus*, and are limited to the sides of the petals, not reaching the outer edge of the joint-face. Under these circumstances, I suspect that it is to *Extracrinus*, and not to *Pentacrinus*, that we must refer the joints which were described by Meek and Hayden as having lance, oval, petaloid areas, "bounded by rather narrow, slightly elevated, transversely crenulate margins."

Extracrinus was proposed by the Austins for the two well-known liassic fossils, *Pentacrinus briareus*

and *P. subangularis*; but recent investigations have shown that the genus extends up into the great oolite (Bathonien) of Britain, France, and Switzerland. I have no knowledge, however, of any triassic species of *Extracrinus*; though *Pentacrinus* is well represented in the St. Cassian beds, and has been found associated with *Encrinus* in the 'wellenkalk' of Württemberg.

It is therefore interesting to find that the triassic form of *Pentacrinus asteriscus*, which was obtained by the fortieth parallel survey from the Dun Glen limestone and the Pah Ute range, differs from the Jurassic specimens found in south-east Idaho and western Wyoming, almost precisely in those points which distinguish *Pentacrinus* from *Extracrinus*. According to Hall and Whitfield, the chief distinction of the triassic forms lies "in the more obtuse points of the star, and the filling-up of the angles between the points, and also in the broader form of the elliptical figures on the articulating surfaces of the disks." They suggest that the differences may possibly be of specific value; but, having carefully studied a large variety of stem-joints of *Pentacrinidae*, both recent and fossil, I am inclined to go farther, and to suspect that the triassic type may belong to *Pentacrinus*, but the Jurassic form to *Extracrinus*.

The two genera differ very considerably in the characters of the calyx and arms, as will be fully explained in the report on the *Pentacrinidae* dredged by the Challenger and the Blake, which will appear in the course of the winter. But, in the mean time, I shall be most grateful for any information respecting *Pentacrinus asteriscus*, in addition to that which has been already made public; and I need not say that I should much like to have the opportunity of making a personal examination, both of the triassic and the Jurassic specimens.

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Points on lightning-rods.

The following passage occurs in J. E. H. Gordon's excellent "Physical treatise on electricity and magnetism," vol. i. p. 24: "It was held that the knobs [on the ends of lightning-rods] must be most efficacious, because the lightning was seen to strike them, and never struck the points. The fact that a point prevents the lightning from ever striking at all was not known."

This is not true. The highest rod on my house is some fifteen feet above the others, and about thirty feet higher than the surrounding buildings; and yet, notwithstanding the fact that it is tipped with a brush of five points, it was struck a few years ago. The points are gilded iron, and the topmost one was melted into a ball about one-eighth of an inch in diameter. The rods are all connected by horizontal pieces held about three inches from the tin roof by glass insulators, after the fashion of ignorant lightning-rod agents. The neighbors say that the sparks flew so thickly between the rods and the roof, as to resemble a sheet of flame. The shock was, singularly enough, so slight that it is doubtful whether it was due to the electrical discharge, or the deafening crash of thunder that instantly followed the splitting sound of the spark.

A. B. PORTER.

Indianapolis, Aug. 23.

Photographs of the interior of a coal-mine.

One of the most interesting enterprises to which the preparations for the New Orleans exposition have