- Hagenowia rostrata* (Forbes). *Cardiaster rostratus*, Forbes, Fig. Brit. Org. Rem., Mem. Geol. Surv. U.K., dec. iv, 1852, p. 3, pl. x. *Infulaster rostratus*, Wright: Pal. Soc. (Cret. Ech.), 1881, p. 307. *Hagenowia rostratus*, Duncan: Journ. Linn. Soc. (Zool.), xxiii, 1889, p. 211. Range: *M. cor-testudinarium* (1 example, Yorkshire) to *A. quadratus* zones.
- Hemiaster minimus* (Agassiz). *Micraster minimus*, Agassiz, Echin. Suisse, i, 1839, p. 26, pl. iii, figs. 16–18. Range: *R. cuvieri* to *M. cor-testudinarium* zones.
- Holaster planus* (Mantell). *Spatangus planus*, Mantell, Geol. Sussex, 1822, p. 192, pl. xvii, figs. 9 and 21. Range: top of *R. cuvieri* (1 specimen) to base of *M. cor-testudinarium* zones.
- Holaster placenta*, Agassiz: Cat. Syst. Ect. Ech., 1840, p. 1; Modèle 2; Ann. Sci. Nat. (3), viii, 1847, p. 27. Range: top of *R. cuvieri* (1 specimen) to *A. quadratus* zones. Very rare except in the *Micraster* zones.
- Cardiaster ananchytis* (Leske). *Spatangus ananchytis*, Leske, Addit. ad Klein, Nat. Dispos. Echin., 1778, p. 243, pl. liii, figs. 1, 2. Range: *M. cor-anguinum* (1 specimen) to Danian. Common in *quadratus* chalk, Yorkshire; common in *mucronata* chalk, Norwich.
- Cardiaster pygmaeus*, Forbes: Ann. Mag. Nat. Hist. (2), vi, 1850, p. 444 (name only); Forbes, Fig. Brit. Org. Rem., Mem. Geol. Surv. U.K., dec. iv, 1852, p. 4. Range: *R. cuvieri* zone.
- Cardiaster cotteauanus*, Orbigny: Pal. Franç. (Cret. Ech.), 1855, p. 140, pl. 830. Range: *H. planus* and *M. cor-testudinarium* zones.
- Cardiaster cretaceus* (Sorignet). *Holaster cretaceus*, Sorignet, Oursins fossiles Eure, 1850, p. 69. Range: *R. cuvieri* and *T. gracilis* zones.
- Offaster pilula* (Lamarck). *Ananchytes pillula* (sic), Lamarck, Anim. sans Vert., iii, 1816, p. 27. Range: *Marsupites* (2 or 3 known), *A. quadratus* zone (common); known from *B. mucronata* zone.

The information as to range has been obtained from Rowe and Sherborn's papers on the White Chalk in the Proc. Geol. Assoc., 1900–1904 (see Index to, etc., idem, vol. xviii, pt. 7, 1904, pp. 375–384), and Dr. Rowe's unpublished notes; and the exact distribution and history of the genus *Micraster* can be seen in Quart. Journ. Geol. Soc., vol. lv (1899), pp. 494–546. I have received much assistance from Dr. Bather during the progress of this work.

VII.—LISTS OF WENLOCKIAN FOSSILS FROM PORTHLUNEY, CORNWALL; LUDLOWIAN FOSSILS FROM PORTHALLA; AND TAUNUSIAN FOSSILS FROM POLYNE QUARRY, NEAR LOOE, CORNWALL.

By UPFIELD GREEN, F.G.S., and C. DAVIES SHERBORN, F.G.S.

IN the Autumn of 1904 we had the good fortune to find in the “Slates with inclusions” at Porthluney, near Gorran, Cornwall, a lenticle of limestone which has yielded a small but satisfactory series of forms allowing its reference to the Wenlockian beds.

In the GEOLOGICAL MAGAZINE, July, 1904, p. 289, one of us had the pleasure of recording the occurrence of Ludlow fossils at this spot in the same beds, and that discovery renders the present one of additional interest. The fossils, which have been handed over to the Geological Survey, are as follows:—

Ptilodictya lanceolata, Lonsd.

Fenestella assimilis, Lonsd.

Fenestella cf. B.M., D 571, from Wenlockian of Dudley.

Fenestella sp.

Millepora cf. *repens* (L.).

Monticuliporid, ramifying through the whole mass of the lenticle.

Rhynchotreta cuneata (Dalm.).

Amphicælia striata (Sow.).

Pterinea sp.

In the Autumn of 1905 we again visited Porthalla, and after working three days found another fossil in the "Slates with inclusions" on the beach of Nare Cove. This was a pyritized *Orthoceras* comparable with *O. bullatum*, Sow., and *O. virgatus*, Sow., both of Ludlow age, and distinct from the forms found similarly mineralized in the Devonian beds, by reason of the casts of its siphuncular chambers being barrel-shaped instead of parallel-sided. It is preserved in the British Museum and registered as B.M., C 10529.

Three days work at Polyne Quarry, in the Taunusian beds, yielded thousands of fossils. The bulk of these are in so bad a state that it is difficult to recognize even the genus, but careful collecting and a knowledge of the better specimens to be obtained in Germany render it a comparatively easy task to select sufficient identifiable examples. The following list shows the fossils obtained, the more interesting of which have been placed in the British Museum (Nat. Hist.):—

Fenestella.

Pachypora.

Petraia pauciradiata (Phillips). B.M., R 7502, 7503.

Petraia celtica (Lamouroux). B.M., R 6079.

Petraia radiata, Muenster. B.M., R 7496, 7561.

Petraia punctatocrenulata, Roemer. B.M., R 6978.

Petraia gigas, McCoy. B.M., R 2833, 613.

Pleurodictyum problematicum, Goldfuss. B.M., R 6072, 6973.

Lodanella mira, Kayser. B.M., P 7697.

Neritopsis. A fine series, some showing a broad expanded mouth. B.M., A 1158-1160.

Phacops ferdinandi, Kayser. Six quite typical eyes, one of which showed part of the head-shield. B.M., I 7233, 7234.

Strophodonta gigas, McCoy.

Streptorhynchus.

Athyris cf. *undata*, Defr.

Rhynchonella.

Renssællæria.

Orthis personata, Zeill.

Orthis vulvaria, Schl.

Orthis circularis, Sow.

Spirifer primævus, Stein.

Spirifer subcuspidatus, Schnur.

Spirifer cf. hystericus, Schl.

Crinoid columnars, some very large, $\frac{3}{4}$ inch across. B.M.,
E 14062.

The *Lodanella*, which was obtained by the last drive of the crow-bar, is magnificent and quite equal to the type-specimen.

It is hoped that these lists will stir up others to search for fossils in this interesting area. We are much indebted to Mr. G. C. Crick and Mr. W. D. Lang, who have most carefully examined and helped us with some of our material.

NOTICES OF MEMOIRS, ETC.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.
MEETING IN SOUTH AFRICA, AUGUST 15TH TO SEPT. 1ST, 1905.
PAPERS READ BEFORE SECTION C, GEOLOGY.

I.—ON THE RELATION BETWEEN ORE VEINS AND PEGMATITES.
By Professor R. BECK.

THE author gave a summary of the latest investigations on the origin of pegmatites, by W. C. Brögger, H. Rosenbusch, S. Arrhenius, J. H. L. Vogt, U. Grubenmann, and others. In conformity with these authors, he explained pegmatites as products of crystallisation from the superheated water, which remained, after the consolidation of a plutonic magma, as a concentrated solution containing many of the rarer chemical elements and compounds formerly distributed through the whole fluid mass. Being retained in the depths of a plutonic focus under high pressure, these remains of magmatic water could pass through a very gradual process of cooling; whereas the so-called 'juvenile' thermal waters (*Juvenile Quellen*) of similar origin found their way to the upper parts of the earth's crust, and caused there the formation of minerals at lower temperatures and pressures.

Most ore veins belong to the second class, but a considerable number of occurrences may be styled metalliferous pegmatites.

The best known examples of these are found in the group of tin ores, and as such were discussed the ore veins of Zimwald, Graupen, Embabaa, and others.

As examples of copper ores were cited those of Telemarken in Norway; and finally some gold-bearing quartz reefs were described which are very nearly related to pegmatites, and that not merely by their characteristic mineralogical composition (Berezowsk, Southern Appalachians, Yukon District, Passagem, and other instances in Brazil). It may be mentioned in proof of this that certain gold quartzes contain tourmaline, the characteristic mineral of all pegmatites.