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were very apparently survivals, and occur only on the sheltered rock ledges. In most cases *Rubus fructicosus* was burnt to a cinder, but in one or two instances the rootstock had escaped injury and fresh buds could be seen. *Pteris aquilina*, and *Scillia nutans* seemed to have escaped in some cases, owing to their deep-seated roots and bulbs, and made fair growth last year. *Vaccinium Myrtillus* was scarce, and only found on rock ledges on good humus, the soil here had not been burnt; these must rank as survivals.

The trees, mostly Oaks, were recovering fairly well. In the spring they were in good bud, and later in full leaf. Under the trees the fire had not damaged the soil to any great extent, and grasses occur fairly well; one, I believe a *Festuca*, and abundant on the adjacent fields, is making its way along the summit of the wood. The seed seems to have germinated on the burnt soil, and may be a new arrival. Owing to the very wet season, *Protococcus* is clothing the rocks well, and a small quantity of a Lichen, probably a *Cladonia*, was also seen. I only located one species of fungi, and this Mr. S. Fielding kindly names as *Polyporus repandi*.

In some portions of the wood are a few seedling oaks, with two, three and four leaves, also a few young Blackberry plants.

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NEOCOMIAN AMMONITES.

As an illustration of the intensive study of a particular fossil group, reference may be made to a paper by Dr. L. F. Spath in *The Geological Magazine* for February, 'On the Ammonites of the Speeton Clay and the Sub-divisions of the Neocomian.' With regard to the Speeton Clays, Dr. Spath follows Judd (*Q.J.G.S.*, 1868) in using the Ammonites for zonal purposes, although Lamplugh (*Q.J.G.S.*, 1889), owing to the relative paucity of Ammonites, adopted the more frequent Belemnites as a basis for classification of the beds. On this point Dr. Spath writes 'The modern refinement in stratigraphical and palæontological nomenclature, and the additional knowledge of the last thirty years, necessitated a revision of the Speeton sequence; but this revision would have been impossible without the study of the splendid collections accumulated by Mr. C. G. Danford and Mr. G. W. Lamplugh, F.R.S. To the latter I am particularly indebted for continuously placing at my disposal his unrivalled knowledge of the succession, and, in the course of many discussions, both before and after my visit to Speeton, criticizing my views. The section, unfortunately, still represents the "huge mess," so vividly described by Mr. Sheppard, though, with

sufficient patience, all the beds can be examined "in place," in view of Mr. Lamplugh's excellent accounts. If I follow Professor Judd in pinning my faith to ammonites, not belemnites, it may be explained as the natural prejudice of a specialist. There may be a very marked change in the belemnite fauna at all the sectional boundaries, as Mr. Danford stated, but even Stolley's minute researches on the North German belemnite successions did not enable him to zone the Aptian of that country. For from an examination of my table of Aptian zones it will be seen that the fauna of *e.g.* Ahaus is later than the *deshayesi* horizon (subzone of *Cheloniceras hambrovi* in Spath, p. 147) and earlier than the fauna with *Parahoplites schmidti* and *Sanmartinoceras trautscholdi* (*aschiltaensis* subzone of my table). Nor did Stolley discover the absence, in North Germany, of probably the whole of the Lower and the lower part of the Upper Gault.'

Dr. Spath, in his microscopic examination of the difficult species of Ammonoidea from Speeton and the Lincolnshire Neocomians, finds that his predecessors have made very many erroneous determinations leading to unsound classification and zoning. This is usually the case when one worker devotes his energies to one particular group, and, doubtless, in the future even Dr. Spath's conclusions may need revision in this way finality seems almost beyond hope.

Unquestionably Dr. Spath's work will have added to our knowledge of the palæontology of these ammonites, and for this we must be grateful, albeit the number of workers must necessarily narrow as time goes on. A quarter of a century ago the present writer could identify any of the usual ammonites found at Speeton, and he believes correctly, so far as our knowledge then went. After a further twenty-five years' acquaintance with the literature which has since accumulated on the subject, he now hesitates very much to attach a name to a single specimen! And Dr. Spath will, I know, appreciate the position when we say that his paper does not simplify matters for us, especially in the absence of descriptions and illustrations of the new species enumerated. These, it is to be hoped, will eventually appear in the *Monographs of the Palæontographical Society*, where a valuable instalment of Dr. Spath's memoir on the Gault Ammonoidea has recently been published. In the meantime the species indicating the different zones are enumerated by Dr. Spath in a manner which puts his paper out of the reach of the amateur, and can only be grasped by a fellow-specialist, though this, it may be held, does not make it scientifically of less value. For example, the following is a description of the palæontological features of one of the divisions in the B. series at Speeton

'B (top and upper). *Callizoniceras*? ("*Desmoceras*") sp.n. (*hoyeri* group) *Pseudosaynella plana* (Phillips non Mantell). *Aconeceras nisoides* (Sarasin) v. Koenen and spp. juv. *Parahoplitoides fissicostatus* (Phillips). *P.* aff. *tenuicostatus* (v. Koenen). *P bodei* (v. Koenen). *P* sp.n. (*læviusculus* group). *Ancyloceras* sp.n. aff. *pingue* (v. Koenen). *A.*? sp. nov. ? *Hemicrioceras* sp. nov. (*rude* group). *Parancyloceras bidentatum* (v. Koenen). *P scalare* (v. Koenen). *P.*? sp.n. aff. *ægoceras* (v. Koenen). *Toxoceratoides royeri* (d'Orb.) v. Koenen. *T.* aff. *royeri* (d'Orb.). *T* cf. *plicatus* (v. Koenen). *T.*cf. *fustiformis* (v. Koenen, pars). *T. seminodosum* (Roemer) *T* cf. *æquicingulatum* (v. Koenen). *T rotundus* (Phillips, non *Helicoceras rotundum* Sowerby sp.). *T. rotundus* (Bean MS. non Phill.). *T obliquatum* (Young & Bird). *T sheppardi* sp. nov. ("*Ham. attenuatus*" Phillips, i, 25). *T* ? cf. *trispinosum* (v. Koenen, pars). *Leptoceras* cf. *parvulum* Uhlig.'

The terrific multiplication of names by the specialist is presumably essential, but it is exceedingly confusing to the stratigrapher and even to the palæontologists other than a small handful of 'ammonite-men.' We thought we had done well to master Pavlow's usage of 'Hoplites,' 'Polyptychites,' 'Olcostephanus' and a few other generic terms. But now Hoplites' alone—formerly lumped—quite conveniently as *Amm. noricus*—is split up into four or five *genera*, each with its group of species. And at present (and presumably for some time to come) these names must remain as names only, unless anyone happens to be immersed in the special literature, or to have access to the specimens labelled.

In view of a recent statement* by eminent palæontologists that the Lower Gault is absent at Speeton, it is to be noted that Dr. Spath recognises 'Lower Gault' Ammonites from the top marls. When doctors disagree how is the poor amateur to decide?

By the courtesy of Dr. Spath, who has kindly assisted in the determination of some of the more difficult species from the Speeton series, we are able to publish for the first time photographs of some of the new species he has recently described, and we must thank him for the recognition he has given to recent workers on the Speeton Clay by naming certain species after them; in this way names have been given in honour of Pavlow, Stolley, Lamplugh, Danford, Stather and T. Sheppard. Upon these Dr. Spath kindly supplies the following note.—T.S.

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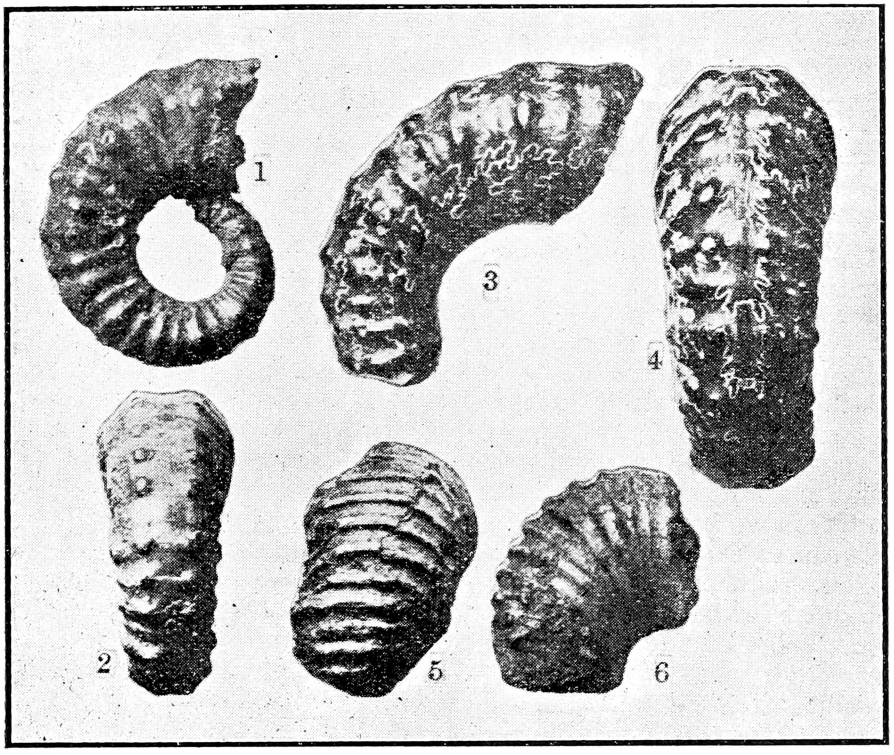
* Kitchin and Pringle, *Geol. Mag.*, May, 1924.

NEW SPEETON AMMONITES.

L. F. SPATH, D.SC., F.G.S.

The first example was labelled *Ammonitis hystrix*? and marked ' a good specimen of a rather rare species ; ' but Prof. Pavlow's later label is ' *Crioceras* or *Ancycloceras* sp. indit.'

The second specimen, in all characters, and in mode of



Figs. 1, 2.—**Paracrioceras statheri** Spath. Side and peripheral views (×2) of a specimen from Speeton, ' Zone B, lower part,' in Mr. Lamplugh's Collection.

Figs. 3, 4.—**Paracrioceras statheri** Spath. Side and peripheral views (×2) of a fragment in the British Museum (Nat. Hist.) from Speeton (Bean Collection, No. 89105a).

Figs. 5, 6.—**Toxoceratoides sheppardi** Spath. Side and peripheral views (×2) of a fragment from ' B top, Speeton,' in Mr. Lamplugh's Collection.

preservation, agrees with the holotype in the Yorkshire Museum (Phillips's *Crioceras beani*, pl. I., fig. 28, non Young and Bird), and a specimen in the Museum of Practical Geology (No. 22236, Mr. Danford's Collection) that came from ' C top,' Speeton. Another example, in Mr. Lamplugh's collection is labelled ' C4, beach,' so that the range of *Peracrioceras statheri* apparently is from Upper C into Lower B, like that of *e.g.*, *Craspidodiscus*.

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Toxoceratoides sheppardi is a later (Aptian) form, and is more hamitoid in its character than the other Speeton forms recorded. The figured example was associated with *Parancyloceras bidentatum, P. scalare* (v. Koenen), and *Toxoceratoides* sp. ind. (*royeri* group). The form figured by v. Koenen as *Ancyloceras fustiforme* (pl. xii., figs. 4, 5, 9 non 7. *Toxoceratoides* of *fustiformis* v. Koenen, pars, in Spath, 1924, p. 78) is probably close to *T. sheppardi*, but it shows a distinctly trituberculate straight shaft. The original of Phillips's fig. 25 of pl. I. ('*Hamites attenuatus*' non Sowerby) does not appear to be in the Yorkshire Museum, and the figure is diagrammatic, so that the resemblance of *T. sheppardi* to *Hamites attenuatus* had to be relied on in its identification with Phillips's form.

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Fifty Years in Madagascar, by **James Sibree.** London : George Allen & Unwin, Ltd., 359 pp., 12/6 net. Mr. James Sibree is not a beginner in the way of writing books, and his ' Naturalist in Madagascar ' was a particularly successful volume. In the present book he deals very largely with Missionary work, but among the pages are many interesting facts relating to the great island in which he lived for so many years. The natural history of the island having been dealt with so thoroughly in his previous volume, the subject is rather neglected here, but the information he gives about the people, their houses, religion and so on, is well worth perusal.

Downland Pathways, by **A. Hadrian Allcroft.** London Methuen & Co., xi.+292 pp., 7/6 net. This author is already well-known as an archæologist for his admirable volume on ' The Earthworks of England.' His knowledge of the Sussex Downs and of their various archæological and other treasures is unrivalled. Whether describing the remains of a prehistoric fortress, a mediæval castle, or modern parks and pleasure grounds, he is equally at home, and his pleasant style will make his volume popular throughout the country, though of course particularly appealing to those in the south. In the series of twenty-four chapters he deals with Lewes, Wilmington Hill, The Devil's Dyke, Steyning, Bignor, Chichester, Selsey and many other well-known places. The book is well illustrated, and though portions of it have perviously appeared, it is a welcome addition to our knowledge of Sussex topography.

The English Catalogue of Books for 1924, giving in one alphabet, under author and title, the size, price, month of publication, and publisher of books issued in the United Kingdom. London : The Publishers' Circular, Ltd., 414 pp., 15/- net. This volume contains the Eighty-seventh Yearly Record of books published in the United Kingdom for 1923. The Editor, we presume, is Mr. R. B. Marston, the Editor of *The Publishers' Circular*, gives some interesting statistics relating to the works published. From these we gather that under ' Science,' a total of 678 volumes appeared in 1923, compared with 597 during the previous year, so that the output of scientific work seems fairly regular. Fiction reaches 2487, Juvenile 1048, History 515, Philosophy 319, and so on. The Editor's method of preparing his lists is helpful to the naturalist ; thus, under Biology, or Birds, Kearton, or Witherby, one sees at once the work accomplished in a year so far as separately published volumes are concerned. A directory of publishers appears at the end, together with English Agents of American and Canadian firms. The book is indispensable to librarians.