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CONDUCTED BY
SIR GUY A. K. MARSHALL, K.C.M.G., D.Sc., F.R.S.
W. T. CALMAN, C.B., D.Sc., LL.D., F.R.S.,
HERBERT L. HAWKINS, D.Sc., F.R.S.,
AND
W. N. EDWARDS.

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XLVII.—*The Type of the Genus Ammonites.*
By L. F. SPATH.

MUCH has been written on this subject, but the problem is not yet settled and renewed discussion seems necessary. It is desirable to formulate an objective statement of the case for eventual presentation to the International Commission and subsequent standardization of the name. The writer's interpretation may or may not be acceptable to the Commission, for there are certain difficulties, as will be seen in the following pages. What matters is to get a final ruling; for though many authors may not realize the importance of having this problem settled, it has an adverse influence on the nomenclature of a number of related genera. In his recent monumental work on the Ammonites of the Jurassic and Cretaceous, Roman (1938), for example, played havoc with the genotypes of the "arietid" genera. In his discussion of the relative advantages of *Coroniceras* and *Arietites* (its synonym), he even suggested that the original genus *Ammonites* might be ignored; but that, of course, is out of the question.

It is now generally accepted that the genus *Ammonites* dates from Brugière (1789), since he was the first to give proper specific names to a number of *cornua ammonis** figured by previous authors. Some authorities quote Gesner (1758) as the first post-Linnean author to use the term *Ammonites*, but he did not mention a single species and therefore cannot be claimed to have priority before Brugière. To both, however, as to all the other early authors, *Ammonites* was merely another term for *cornu ammonis*, and it included all the heterogeneous forms scattered in literature, without any systematic arrangement.

Lamarck, at first (1799), also listed the genus without mentioning any species, but later (1801) he quoted *Amm. bisulcatus*, one of Brugière's species, as the only example of the genus; and he is thus commonly taken to have

* Probably not the original *cornua ammonis* of Pliny, which may have been Tertiary gastropods (e. g., the casts described as *Natica ammonis* Blanckenhorn); for no ammonites with any resemblance to a ram's horns occur in Libya or Egypt.

been the first author to indicate the genotype. Meek (1876) was the first modern authority to state that the citation in Lamarck fixed the species *Amm. bisulcatus* Bruguière, as "the typical form of the genus."

There had been several attempts to subdivide this old genus *Ammonites* by separating from it groups of unrelated forms, characterised by some common feature, *e. g.*, an evolute or an involute shell (*Orbulites* Lamarck, *Simplegades* Montfort, *Globites* de Haan, etc.), but since Montfort, for example, described as type of his genus *Ammonites* the living *Nautilus umbilicatus*, and since *Globites* was made to include such diverse objects as the flat Lower Liassic *Amm. loscombi* as well as the Gault gastropod *Bellerophina minuta*, these early classifications did not receive much attention or favour. Reynès (1867), indeed, went so far as to say they could not be taken seriously. They were in fact abandoned, as Fischer (1879) pointed out, by Lamarck himself and the majority of authors of the first half of the nineteenth century who took the genus again in the wide sense in which it had been understood by Bruguière.

From 1832 onwards L. v. Buch's groups "or families" within the genus *Ammonites* held the field. They were adopted and added to by all the foremost systematists, notably d'Orbigny and Quenstedt, and retained by some long after the general splitting-up of the genus *Ammonites* had begun. This modern subdivision into smaller genera may be said to have started with Suess (1865), and though it was promptly rejected by Reynès in 1867, Hyatt in that same year created a large number of independent genera for Liassic forms alone.

As already mentioned, however, Meek in 1876 was the first to restrict the genus *Ammonites* itself. He stated that, however much the original genus might be divided or subdivided, the name *Ammonites* should be retained for the group to which *Amm. bisulcatus* belonged. It thus seemed to Meek that the genus *Coroniceras* Hyatt became an exact synonym of his restricted *Ammonites*, a significant conclusion in view of subsequent developments. Curiously enough, Hyatt, who, unlike most of his contemporaries generally paid attention to the Rules, did not accept Meek's restriction or abandon his own genus

Coroniceras; and the confusion he caused in this one comparatively compact family of Ammonitidæ is still reflected in the nomenclature of some authors of the present day, including the writer's earlier work.

Hyatt first used the term "Arietidæ" in 1870 (to replace his family "Discoceratidæ" of 1867) and since, in his paper on the "Evolution of the Arietidæ" (1873) he still spoke of a "genus or group" *Arietes* of von Buch, it is clear that Arietidæ is not a misprint for Arietitidæ but an irregularly formed name, like Angulatidæ, contrary to Art. 5 which requires the family name to incorporate the name of the typical genus. In his well-known work, the "Genesis of the Arietidæ" (1889), in fact, Hyatt rejected the genus *Arietites*, Waagen, 1869, and declared his own *Coroniceras*, created two years earlier, to be the typical genus of the "family" Arietidæ. Yet he did not adopt the family name Coroniceratidæ or more correctly Ammonitidæ, since Meek had in the meantime shown *Coroniceras* to be a synonym of *Ammonites*, s. s.

Hyatt was equally irregular in his treatment of the so-called suborder Ammonitinæ. This name, really a subfamily name, was used by him (1889) for one of the subdivisions of the Order Ammonoidea, comparable with the other five "suborders" he recognized, though he gave them all subfamily names (Clymeninæ, Goniatitinæ, Ceratitinæ, Lytoceratinæ, and Arcestinæ). Moreover, Hyatt stated that his "family" Arietidæ represented the "normal forms" of the Ammonitinæ, but as this "suborder" was said to range from the Triassic to the Cretaceous, this cryptic passage seems particularly fortuitous.

In his 1900 classification (in Zittel-Eastman) Hyatt abandoned the suborder Ammonitinæ and still ignored the genus *Ammonites*, but he now introduced a "super-family" Arietida in addition to the "family" Arietidæ, yet, again in defiance of the Rules, he listed a genus *Arietes*, Waagen (which should be *Arietites*) only as a synonym of the genus *Coroniceras*. So much confusion was not readily disentangled; and the question was not opened again until 1922 (Spath), but Buckman in the following year, while giving an incomplete historical review of the genus *Ammonites*, made no mention of Meek's restriction or the discrepancies in Hyatt.

The first author to accept the restriction of *Ammonites* in Meek's sense was Fischer (1879), who quite rightly put not only *Coroniceras* but also *Arietites* in its synonymy. In 1882 Fischer again cited *Amm. bisulcatus* as the only species of the restricted genus *Ammonites*, and he reproduced d'Orbigny's ventral view of that form. D'Orbigny's figure, in fact, copied also by Hyatt (1900) and recently again by Roman, was the earliest recognizable if not the only illustration in existence when Meek and Fischer wrote, apart from the unreliable figures in such ancient oryctographers as Lister (1678), Lang (1708), and Bourguet (1742), opinions on which differ considerably.

When the writer, in 1922, had occasion to refer to the genus *Ammonites*, he did not enter into historical details but merely remarked, parenthetically, that he restricted it to the group of *Amm. bisulcatus* Bruguière, in d'Orbigny. Knowledge, by the reader, of the previous history of the genus was taken for granted, as also the fact that Meek, in common with every other author, had to rely on d'Orbigny's interpretation of Bruguière's species. As was explained more fully in 1924, d'Orbigny's figure of 1843, being universally accepted at the time Meek wrote, was one of the original syntypes of *Ammonites* (Bruguière) Meek, 1876, as Fischer correctly termed it. It was fixed by Hyatt's (1867) description of *Coroniceras bisulcatus*, quoting only d'Orbigny's figure, and by Meek's subsequent identification of *Coroniceras* with *Ammonites*, s. s.

It did not greatly matter, prior to the restriction of *Ammonites* in 1876, that the original *Amm. bisulcatus* of Bruguière was based on old and ambiguous figures. The syntypes, depicted in Lister and Lang respectively, were generally believed to be "*arietes*" of sorts; d'Orbigny, however, excluded Lister's figure from his synonymy and only quoted Lang (and Bourguet who copied Lang's figure). This only left one (inadequately figured) syntype, and in d'Orbigny's interpretation, with its excellent illustration, *Amm. bisulcatus* became for the first time a well-recognizable species.

Now Buckman (1924) objected that "Meek had said nothing at all of *Amm. bisulcatus* d'Orbigny," and that the latter was a bad imitation of Bruguière's *Amm. bisulcatus*. This is manifestly untrue and contrary to the ruling that an author must be assumed to have interpreted a species correctly. Buckman, indeed, went so far as to hazard
Ann. & Mag. N. Hist. Ser. 11. Vol. xii. 35

definite determinations of the ammonites figured by Lister and Lang, making the first a species of *Pleuroceras* (" *Paltoleuroceras* ") and identifying the second with *Amm. bucklandi* J. Sowerby. This may seem clear-cut and conclusive, but both the identifications (of what are at best unreliable figures) are unsupported by the conclusions of other observers; they are subject to differences of opinion and might well be suppressed by the Commission. Since Bruguière himself created a species (*Amm. spinatus*) for the very form that Buckman claimed to recognize in *Amm. bisulcatus* (as figured in Lister), he probably would have noted the resemblance as much as Buckman. Moreover, Bruguière commended Lister's figure as " *icon. bona* " of his *Amm. bisulcatus*, but not of his *Amm. spinatus*, which does not speak well for the likeness. D'Orbigny's *Amm. bisulcatus* belongs not only to a different genus but to a different family from Lister's alleged Middle Liassic form, and would have to be renamed if Buckman's rejection of d'Orbigny's interpretation were upheld.

The reference of the other syntype (Lang's example from the Hartz Mountains) to *Amm. bucklandi* has been criticised before (Spath, 1924). The resemblance of Lang's figure (with especially badly drawn inner whorls) to the form depicted by Buckman (1919) as *Coroniceras bucklandi* may be entirely superficial; and Schmidt (1914) has nothing like it from the Harzburg Lower Lias. The identification with *Amm. bucklandi* is merely more guesswork, and while it is impossible, in the writer's opinion, to determine Lang's ammonite specifically, it may well be congeneric with d'Orbigny's much smaller *Amm. bisulcatus*. Buckman's attempt to substitute the meaningless *Ammonites*, s. l., of the end of the eighteenth century for the definite *Ammonites*, s. s., of 1876 is thus covered by Opinion 93, which condemns the changing of existing names without clear-cut necessity.

The writer proposes to submit to the International Commission a request to retain *Amm. bisulcatus* Bruguière, emend. d'Orbigny, 1843, as lectotype of the genus *Ammonites* (Bruguière) Meek, 1876. He claims that in so far as the original syntypes of *Ammonites* (Bruguière, 1789) Lamarck, 1801, are not definitely identifiable, they are unavailable, whereas d'Orbigny's unambiguous figure was not only one of Meek's syntypes of the substituted

genus *Ammonites* of 1876. but almost certainly his (undesigned) lectotype.

If this view be accepted, *Ammonites*, s. s., would cover a well-defined group of species, intermediate between *Epammonites* and *Megarietites*; in Buckman's interpretation *Ammonites* is restricted to the group of *Amm. bucklandi* of an earlier horizon, but on the basis of a doubtful, ancient figure. The most recent author to discuss the genotype of *Ammonites* Jaworski (1933) thought Buckman was right, according to the Rules; but he unquestioningly adopted Buckman's identifications of the old illustrations, while at the same time, he significantly referred to the genus as "*Ammonites* Bruguière, 1789, emend. Meek, 1876." Jaworski's remarks on the genotype of *Coroniceras* are equally uncritical, and, in any case, *C. coronaries* and *C. bucklandi* are congeneric, i. e., *Coroniceras* and *Ammonites* (in Jaworski) are identical. Buckman did take *C. coronaries* as the genotype in 1911, but Jaworski omitted to mention that previously (1898) Buckman had listed *C. rotiforme* and *C. bucklandi* as syntypes of *Coroniceras*. As the list was headed "in most cases the name which stands first may be considered as the type-species," I have always taken this to be a definite designation of *C. rotiforme* as the genotype of *Coroniceras*. For, though par. III i. of Art. 30 says that in selecting types authors should give preference to species of the same origin or meaning as the generic name (type by tautonymy), that is only a Recommendation and not a Rule (see also Spath, 1926). I propose to submit this minor point also to the Commission: fortunately it causes no practical difficulty since the three species mentioned are all congeneric.

In the same list, Buckman cited *Amm. turneri* as the genotype of *Arietites*, Waagen, 1869, in defiance of the Rules. Waagen definitely called *Amm. bucklandi* the most distinctive species of his genus, and though he did not actually use the word typical, its being the only specific name associated with the genus *Arietites* automatically made it the genotype. In 1911 Buckman again attempted to justify his selection of *Amm. turneri* (which he had called "merely a matter of arrangement"), but there can be no doubt that *Arietites*, 1869, is synonymous with *Coroniceras*, 1867.

Nor will it be possible to retain a "family" *Arietidae* as

was done, for instance, by Roman. But the latter author's work clearly shows how little stability there is as yet in the naming of these "arietid" genera, and it would be premature to claim suspension of the Rules by the Commission. The placing of *Ammonites* (with or without *Coroniceras*) in the Official List of Generic Names will be a first step in stabilising the nomenclature of the Ammonitidæ.

The elimination of *Arietites* (as emended by Buckman) would seem to leave the group of *Amm. turneri* without a generic name. Buckman himself used *Arietites* both for the early forms like *Amm. turneri* and *Amm. brooki* and for the later group of *Amm. tenellus* and *Amm. denotatus*, so that *Eparietites* Spath, created for these late forms, might seem to be available as a generic name. But the two groups must be kept apart; they are not connected by transitions, so far as is known, and they are derived from different ancestors. The *turneri* group originated in the Arnioceratidæ, while *Eparietites* is a post-*Asteroceras* development, tending towards Oxynoticeratidæ. Hyatt included all these forms of "*Arietites*" in the genus *Asteroceras*, the dominant ammonite stock of this Astero-ceratan Age (Buckman), so that the family name Astero-ceratidæ seems the obvious choice, historically and systematically, in place of Arietitidæ, in the restricted sense. As generic name for the *turneri* group, Buckman's *Cænisites*, 1925, is available; for though it is based on a malformation, *C. cæneus*, the genotype and only example known, is only an individual variation of the common *Amm. plotti*, Reynès (1879), with deformed body-chamber. There is little doubt that Reynès's species and *Amm. turneri* are closely related; but as the typical genus of the family, *Cænisites* can scarcely compete with the well-known genus *Asteroceras*.

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XLVIII.—*Description of a new Species of Asellus (Crustacea, Isopoda) from the Isle of Man.* By WALTER E. COLLINGE, D.Sc., President of the Northern Ecological Association.

I AM indebted to the kindness of Mr. R. Wagstaffe, Keeper of the Yorkshire Museum, York, for a small collection of Asellids from Kirk Michael, Isle of Man. Amongst these

THE
ANNALS AND MAGAZINE
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[ELEVENTH SERIES.]

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XLI.—*New Curculionidæ (Col.) from Tropical Africa.*

By Sir GUY A. K. MARSHALL, K.C.M.G., F.R.S.

THE types of the following new species have been deposited in the British Museum (Natural History):—

BRACHYDERINÆ.

THAPTOGENIUS, gen. n.

Head continuous with rostrum, but sometimes with a very fine stria between them at the sides; eyes prominent, separated from the prothorax by half their length or less. *Rostrum* transverse, about as long as the head, rather deeply incised at apex, without any definite epistome; scrobes short, rapidly becoming wide and shallow behind, but the scape, when at rest, passing well below the eye; mandibles very large, smooth and convex, without scales but with 4–6 setæ, all placed on the outer side of the unusually small scar; mentum small, immersed, bearing two setæ. *Antennæ* long and slender, without any scaling; scape passing the front margin of the prothorax, abruptly clavate; funicle with the joints elongate, 1 much longer than 2; club elongate, fusiform, hardly wider than the knob of the scape. *Prothorax* truncate at base and apex, finely marginate at base, without postocular vibrissæ. *Scutellum* not elevated between the elytra, the scutellar area flat and on a level with the mesonotum. *Elytra* soldered together, not marginate at base but sloping

Ann. & Mag. N. Hist. Ser. 11. Vol. xii. 31