

SVERIGES GEOLOGISKA UNDERSÖKNING

SER. C.

Avhandlingar och uppsatser.

N:o 362.

ÅRSBOK 23 (1929) N:o 7.

MOBERGELLA VERSUS DISCINELLA;
PATERELLA VERSUS SCAPHA &
ARCHÆOPHIALA

(SOME QUESTIONS ON NOMENCLATURE)

BY

HERMAN HEDSTRÖM

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STOCKHOLM 1930

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The generic names of *Mobergella* and *Scapha* (see my paper: »On *Discinella Holsti* Mbg. and *Scapha antiquissima* (Markl.) of the division Patellacea» — S. G. U. Ser. C. No. 313 —) have not met with approval because the names are supposed to be contrary to the rules of international zoological nomenclature. Thus Rud. Richter, in a review of the paper mentioned (Neues Jahrbuch für Min., Geol. und Paläont. Jahrgang 1924, Vol. 2, page 126), says: »Die überraschende Deutung des Verf.'s wird dadurch nicht beeinträchtigt, dass seine beiden neuen Genus-Namen unmöglich sind. *Scapha*, bereits mehrfach vergeben (Gastrop., Coleopt.), wird Verf. durch einen neuen Vorschlag ersetzen müssen, während umgekehrt *Discinella* Hall 1871 in Kraft bleibt (statt *Mobergella*). Denn weit entfernt, dass der Name '*Discinella*, weil er als Diminutiv des Brachiopoden-Genus *Discina* das Fossil zur Klasse Brachiopoda verweise, geändert werden müsse', darf er es vielmehr durchaus nicht. Gattungs- und Artnamen sind von den jeweiligen systematischen Auffassungen unabhängig und müssen es sein; die 'Internationalen Regeln' lassen daran auch kein Zweifel».

Last year, with the kind help of Doctor Ch. E. Resser, I had the opportunity of examining the American form of »*Discinella*». For, through his good offices, the Geological Survey of Sweden then received as a gift from U. S. National Museum, five specimens of »*Hyolithellus micans* Billings» from the »type locality for this form», according to the label »1 mile below N. Y. Central Railroad station, Shodack Landing, New York, Lower Cambrian», and according to the letter »from the same lot as the types illustrated by Walcott».

A comparison between the American form of »*Discinella*» and the North European specimens shows that they must be referred to different genera, because, in both cases, the muscular attachments, or the impressions on the inner sides of the shells, differ in number. They also present other fundamental differences, and the shells themselves exhibit differences, cf. e. g. the figures of the two species. The generic name *Mobergella* — with the type *M. Holsti* (Mbg.) — which I have given to it should be maintained for the North European form, whereas the name *Discinella* should be reserved for the North American form. As far as I can see, the claims of international zoological nomenclature will thus be satisfied.

From the point of view of precedence, it may in this connection be of general interest to say something about the conflict that »Hall's *Discinella* paper» gave rise to, though that conflict did not directly concern this form.

The first to reproduce and describe the American form of »*Discinella*» was Billings (Dec. 1871), though he took it as an operculum of a Pteropod. For this purpose I refer to illustration 3b on page 213 of »*The Canadian Naturalist*», New Series Vol. VL, where he calls it *Hyolithes ? micans*. Later on, page 240, (published in December 1871, as was the chief report) he changes the generic name to *Hyolithellus*¹. He describes (on page 215) the operculum as follows: »The operculum does not show distinctly a division into a dorsal and ventral limb. It is of an ovate form, depth somewhat greater than the width, the nucleus about one-third the depth from the dorsal margin. Externally it is gently concave in the ventral two-thirds of the surface; a space around the nucleus is convex and finely striated concentrically. On the inner surface there is a small pit at the dorsal third of the depth, indicating the position of the nucleus. From this point radiate ten elongate ovate scars, arranged in the form of a star, the rays towards the ventral side being the longest. None of these scars quite reach the margin. — The shell and operculum are thin and of a finely lamellar structure, smooth and shining. — Occurs at Bic and St. Simon; also at Troy, N. Y. (Collectors T. C. Weston and S. W. Ford.)

Now, this operculum (according to Walcott 1886) is the same form as the one Hall (March 1872) considers to be a Brachiopod and calls *Discinella* (on page 7 in the paper of mine criticized by Richter I have quoted his description of the fossil word for word, mentioning where Hall's paper is published). Hall gives the same place of discovery as Billings (»in the Quebec Group near Troy»), but he mentions only »nine radiating depressions» and regards the fossil as a Brachiopod, without reproducing it. There is, however, a later reproduction published by Walcott, but his figures, which have been reproduced in my paper also, are none too good.

According to Hall's own statement, this paper was to have been published a year earlier, or in March 1871 (i. e. eight months earlier than that of Billings), but the whole edition, with the exception, however, of a few copies, which are said to have been distributed to some persons interested in the matter, was destroyed by fire in April 1871. A discussion now ensues between Billings and Hall as to the priority claim to some forms dealt with in the essay. As regards this controversy I refer to: 1) Billings, E: »Note on a question of Priority», »*Amer. Journ. of Science and Arts*», 3 Ser., Vol. III, Article XXXVI, page 270—273 (Feb. 1872); 2) Hall, James: »Reply to a 'Note on a question of Priority'», »*Amer. Journ. of Science and Arts*», 3 Ser. Vol. IV, Article XVIII, page 105—109; also printed as (H) in »*N. Y. State Cabinet of Nat. Hist.* Aug. 1872», page 248—252; 3) Billings E.: »Rejoinder to Prof. Hall's Reply to a 'Note on a question of Priority'», »*Amer. Journ. of Science and Arts*», 3 Ser., Vol. IV, page 399—400, Article XLVII (Sept. 1872).

I think that, in the matter of principle, Billings must be considered to be right when, in paper 1, page 271, he says: »If an author having a book in the

¹ The paper and particulars mentioned above »On some new species of Paleozoic Fossils» have also been published since by Billings (March 1872) in »*Amer. Journ. of Science and Arts*», Serie 3, Vol. III, Article XLVII, Pag. 352—360.

press, should make an abstract of four or five pages, and give away a few copies to his friends, it would not be publication, but only private distribution. This cannot take priority over fair and open publication in a scientific journal. Yet this is exactly the case with Prof. Hall's pamphlet». And in 3) page 399: »His work may be adopted as a matter of courtesy, but not to take precedence over fair publication. Prof. Hall's pamphlet was not accessible to the public at the time my paper was published. — — — —»

It was the recollection of this controversy that made me treat the matter as I did, and it must be added that I wanted to refer the fossil to an entirely different class of animals: the Gastropoda. This may be mentioned as an explanation, not as justification for my procedure.

In any case it was Hall that first (March 1872) differentiated *Discinella* under a special name, though he considered it a Brachiopod. I quite agree with him that the fossil should have a special name and not be regarded as an operculum of *Hyolithellus micans* Billings. The Americans, on the contrary, seem still to persist in the latter point of view, for the specimens given to our institution were thus labelled. In my paper, quoted at the beginning of the present essay, I supported the opinion that *Discinella* and others should, at least at present, most properly be referred to the Gastropoda and be regarded as primitive forms within the *Patellacea division*. After having examined the American form as well, I am convinced that the number of the conjugate separate scars of the muscular attachments are of *such fundamental* importance for this group that this number must be looked upon as a genus characteristic. Thus we get:

Barrella n. (Barrande's »Opercule isolé H») with three pairs of scars (six) on the inner side of the shell.

Discinella Hall with five pairs of scars (ten).

Tryblidium Ldm with six pairs of scars (twelve).

Mobergella Hdm with seven pairs of scars (fourteen).

Paterella Hdm (see below) with eight pairs (or sixteen).

Quite satisfactory reproductions of these have already been given, except of *Discinella* (see my previous paper, where Barrande's notice is also quoted), but as to *Discinella* neither Billings' nor Walcott's illustrations give any idea of the real appearance of the fossil, and therefore I will here give another illustration of one of the above-mentioned specimens presented to us.

Genus *Discinella* Hall.

Hyolithellus micans Billings 1871. (The Operculum). — Can. Nat. New Series. Vol. VI. Fig. 3 b. Pag. 213, 215 and 240.

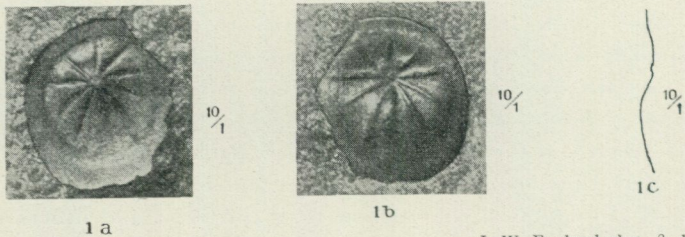
Discinella Hall 1872. — Twenty-third Rep. N. Y. State Mus. Nat. Hist. Pag. 246.

Hyolithellus micans Bill. (The Operculum). — Walcott 1886: »Second contributions to the studies on the Cambrian faunas of North America». — Bull. of the U. S. Geol. Survey. No. 30, Page 141 et seq. Pl. 14, fig. c—e.

Billings' and Walcott's descriptions are to be found in subsequent scientific literature without any new data or alterations.

»*Hyolithellus micans*» Bill. According to the label on the specimens given to S. G. U. in 1929 by U. S. Nat. Mus.

A patelline form with five pairs of separate, narrow oblong muscular attachments, arranged in the form of a star on the under-side. Genotype *D. micans* (Bill.) Fig. 1. Billings' description of the operculum of *Hyolithellus micans* (here quoted on page 4) is quite exhaustive and correct, for which reason I refer to it as holding for this Gastropod. However, I would not call the scars »elongate ovate» (see fig. 1). Hall's characteristics for *Discinella* (see my paper »On *Discinella* — — — —», page 7) are less exhaustive and in parts wrongly indicated (nine instead of ten muscular attachments).



J. W. Englund phot. & del.

Fig. 1. *Discinella micans* (Bill.) One of the specimens presented to S. G. U. by U. S. Nat. Mus. — 1 a. The under-side of the shell showing the five pairs of muscle impressions. — 1 b. The impression of the same under-side on the opposite surface of the rock. Here the scars appear as five pairs of ridges. — 1 c. A profile contour of the shell. — When the specimens arrived, a few fragments of the concentrically striated shell structure remained on the under-side and a few on the impression, but unfortunately they fell off and were lost, and therefore they cannot be illustrated.

Thus Billings' name, *Hyolithellus micans*, should be reserved for the tubes he describes, as subsequently done by E. S. Cobbold: »The Cambrian Horizons of Comley (Shropshire) and their Brachiopoda, Pteropoda, Gasteropoda etc». (Quart. Journ. Geol. Soc. Vol. LXXVI, part. 4, 1920. Pag. 325—386 & pls), by Leif Störmer: »On a lower Cambrian fauna at Ustaoset in Norway» (Fennia 45, 1925, No. 1), by Trygve Strand: »The Cambrian beds of the Mjösen district in Norway» (Norsk geol. tidskrift, Vol. X, 1929); and by A. H. Westergård: »A deep boring through middle and lower Cambrian strata at Borg-holm, Isle of Öland» (S. G. U. Ser. C. No. 355, Årsbok 22, 1928, No. 5).

Genus *Mobergella* Hdm.

A patelline form with seven pairs of separate, rounded to oblong, ovate muscular scars on the under-side. In well-preserved specimens these scars are bounded by distinct margins. See further the characteristics of the genus on page 5 in my criticized paper. Genotype: *M. Holsti* (Mbg.): In this paper of mine this form is so well reproduced and exhaustively described that I refer to it.

Johan Braastad reproduces a form belonging to this genus, or one closely related to it, in his report: »*Discinella Holsti* faunaen ved Braastadelven nord for Gjøvik» (Norsk geol. tidskrift, vol. 3, 1915). In the description he says that »han ikke har kunnet finde mere end 12 furer», »men da de foreliggende exemplarer er smaa og furerne vanskelig at holde ut fra hverandre, tør jeg

ikke opgi dette tal med sikkerhet.» («I have not been able to discover more than twelve scars, but as the present specimens are small and the scars difficult to distinguish, I dare not give this number for certain.») To judge from his reproductions (Pl. III, fig. 2—6) there do not seem to be more than ten, and thus it is very problematical whether the form belongs here or not.

As a completion of the synonymy for this species given by me (on page 6 in S. G. U. Ser. C, No. 314) I would add the paper by A. H. Westergård (S. G. U. Ser. C. No. 355, page 9—10) quoted above, where the species is cited without the number of muscular scars being mentioned. For his specimens, however, obtained from these districts, Moberg gives fourteen scars in young as well as in old individuals.

Genus *Paterella* n. (instead of *Scapha* in my paper of 1923).

Genotype: *P. antiquissima* (Markl.).

I quite agree with Prof. Richter in his objection to the use of the genus name *Scapha*. I was so influenced by the museum name *Scaphe* used by Lindström for the type in question (and wanted to differ from him as little as possible as regards denominations) that I did not ascertain that the name *Scapha* had been used before. On Richter's advice I will give this genus another name, and thus I propose the name of *Paterella* for it, a name that has not been employed before, as far as I can find. On account of a long illness I have not been able to publish this change of name until now.

However, the justification for this change of name from the point of view of the international zoological nomenclature has, to a certain degree, become complicated owing to a paper published in Leningrad in 1925 by Ernst Koken, and after his death continued by Jar. Perner: »Die Gastropoden des baltischen Untersilurs» (Mém. l'Acad. des Sciences de Russie, VIII Ser., 4:0). The authors have there set up a genus *Archaeophiala* with the genotype: *A. antiquissima* Markl., and placed still another species, *A. suecica* Koken, there. This latter species should be removed. For it is synonymous with Marklin's *Patellites antiquissimus* and should thus be called by that name from the point of view of priority. All the Swedish specimens that are described and reproduced [consequently Hisinger's *Patella antiquissima* as well as my *Paterella* (the late *Scapha*) *antiquissima* (see my paper and cf. with that of Koken and Perner!)] are from the same stratum and locality, Borensult in Östergötland, and they all belong to the Marklin collections in our State Museum of Natural History. Koken's specimens, which are the basis of the *Arch. suecica* species, are the same specimens as the originals of fig. 15 & 16 in my essay and as the original of Koken's *Patella antiquissima* in his paper of 1897, which is the basis of the species of *Arch. suecica* Koken, subsequently proposed in the paper of 1925. Thus the synonymy in the latter paper is wrong; there is only *one species antiquissima*, and my synonymy is right.

In their latest considerable work (pag. 270—271, Pl. XXXIX. fig. 16—18), these two authors have not mentioned — under the Swedish species name of

antiquissima — the Swedish specimens (which, as has been mentioned, are called *suecica*), but specimens from Norway («5 b, mit *Meristella crassa*, Hombdö b, Kristiania»). To judge from this, the Norwegian species will be the same as the Swedish, at least certain specimens of it, or have we two species? In my opinion the *suecica* is only a specimen that is worn (rounded) on the top and on the outer side of the shell, and the original terraced lines of growth, which are marked out by sharp edges, are not left; and further, the width between these edges varies on different shells, but these cannot be considered distinguishing marks for a species. Further, this species now rejected by me should have nine pairs of muscular scars on the inner side of the shell, according to the observations of Lindström, Koken, and Perner. But in this case these authors have counted wrongly, for anybody can convince himself that there are only eight pairs (as I have pointed out in my paper) by counting the numbers in Koken's own original reproduction in his earlier paper of 1897. As is mentioned in his paper with the greatest possible reserve, the Norwegian specimens would seem to have six pairs only, and that in imperfectly preserved specimens. The question of how things really are in the case of the Norwegian form will probably have to be left open and unanswered for the present. The outer side of the specimen reproduced is very similar to Hisinger's reproduction of *antiquissima*.

I have only wanted to prove by what I have said above that, as far as can be judged from the present data, there is only one certain species, *antiquissima* (Markl.) belonging here. Thus the definition of the genus *Archaeophiala*, which is absolutely too far-reaching, and whose chief characteristic would seem to be six to nine pairs of muscular scars, will disappear (it also comprises the *Tryblidium* and *Mobergella* genera), and thus the genus as such cannot be maintained, and so the genus name of *Archaeophiala*, proposed by the authors mentioned, must be rejected. Thus there remains (instead of the discarded name of *Scapha*) the genus name of *Paterella*, which I have proposed and for which genus I have given definite characteristics (see my short paper of 1923), among which the most fundamental is that the species has eight pairs of separate, muscular scars. The genotype for this genus is *P. antiquissima* (Markl.), which I have reproduced and described exhaustively.

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