

from Dr Bruning (son-in-law)
fax 49 5468 1013

H.Malz, Neulandstr. 3; D-49565 Bramsche
fax sent by Dr. J. Bruning: 49 (Germany) - 5468 - 1013

Febr. 10th, 1999

fax: 61-8-9447-6064

Dr. M. Apthorpe
Geol. Dept.
Univ. Western Australia
Nedlands W.A.

Dear Dr. Apthorpe,

At first I have to apologise for so long a time that I didn't give you any further notice of my Bringo activities. Yet, you may be sure that things are going on and that the Bringo topic is still on my mind. It kept me busy (with interruptions) for days, weeks, and months picking ... picking ... picking! There was a huge sack of residue, but only rare specimens came out of it. Certainly you know by yourself that this work can not be done, if you have to pay for it. It rather turns out as a kind of a hobby of someone who has retired. - Anyhow everything comes to an end and as a result there are now about 1.000 specimens (or even more) at my disposal. To keep things going on, I thought of involving you in the further steps. So, please, hear my questions and proposals in case you can agree to cooperate in a joint publication (forams and ostracs).

1. Most of Ch.'s foram species are referred to then known European taxa - and: did you or someone else do any revisional work on his species in the meantime? - and: did you or someone else refer to Ch.'s taxa, either to his newly introduced ones, or to the ones he took over from the literature? - If so, please, let me know and be so kind as to send me copies, reprints (COD) or just give me the citations.
2. Are Ch.'s catalogued foram specimens still available at the Natl. Mus. Melbourne? -- If so, can you get good SEM photos to illustrate them due to modern standard?
3. Together with these photos and the ones I can prepare from the material at your or my disposal, Ch.'s species can be revised, updated to a modern level and seen in a larger assemblage.
4. Dr. Bartenstein (who is a friend of mine and whom you may know by literature), a skilled, very experienced foram worker (also retired, but still very active), is acquainted with world-wide Lower/Middle Jurassic forams and can be of great help herewith (not to forget the reputable frame).
5. If you are in need of some odd literature, I would be pleased to help you
6. How did you succeed with your work in Frankfurt (Sept. '95)?

Yours sincerely,

Heinz

To : Dr. Heinz Malz, Neulandstrasse 3; D-49565 Bramsche, GERMANY
Via : Dr. J. Bruning Fax : 49 - 5468 - 1013

From : Marjorie Apthorpe, 35 Bailey St., Trigg (Perth) W.A. 6029, AUSTRALIA
Phone / fax : 61-8-9447 6064 Date : 31st March 1999

Dear Dr. Malz,

Thank you for your fax, and I am sorry to take so long to reply.
Some items of explanation - I am not "Dr." Apthorpe; I am still doing my PhD degree (part-time) at the University of Western Australia. Please call me Marjorie. I actually made almost no progress on the PhD during 1997-98 due to work, illness and stress generated by my teenage (16) son. However, this year my son has gone to stay with relatives for a year (if they can tolerate him for so long). I have no work at all, and none in sight, so I am now working on the PhD, and living on my savings.

Your question 1) Most of Chapman's identifications are misidentifications, according to me and Stefan Revets. I have not nearly finished the work on Bringo, but as I have more time now, and more incentive (see below) I am now working on it. Nothing has been published on Bringo as far as I know (unless someone in Europe has done it recently). As far as a joint publication is concerned, that would be good, but how long are you prepared to wait for the forums? I do not think I will be finished the Bringo work until later this year. (I have to finish the PhD by the end of this year).

2) Your fax on the Bringo Cutting stimulated me to write to the Museum of Victoria to request the loan of Chapman's foraminifera. After some hesitation they agreed to loan the specimens to Dr. Stefan Revets, who is a Research Fellow at the University of W.A. He will photograph them for me in the environmental SEM, as I am essentially not permitted to touch them, and the specimens are not permitted to be coated. The specimens arrived this week and I have looked at some of them and started making notes. They are badly preserved, and some are broken (which does not show in Chapman's drawings, which are not very accurate). However, Stefan is very skilled at environmental SEM work and he should be able to make good photos, with me looking over his shoulder.

3). I have SEM access to a Philips 505 and to the environmental SEM, for photography of the Bringo specimens. The photos which you gave me (via Dr. Jellinek) in '95 are very good, but it would be better for the coherence of my study if I don't use too many illustrations of specimens which are housed in overseas museums.

4). Of course I know of Dr. Bartenstein, and have just finished redescribing the neotype of his species *Discorbis dreheri*, which was made the type species for the important genus *Reinholdella*. I have prepared a short paper on the diagnosis of the genus (with ESEM assistance from Stefan Revets) for publication, and as part of my PhD, with some good Australian material included as well. I would welcome any assistance or comments that he could give me, particularly on the variability of the *Lenticulina* - group, which I find very difficult to subdivide. I think I am not the only person who has problems with this group!

5) On your offer of help with literature : I have not yet been able to obtain a paper by W. Deecke (1884) : *Die Foraminiferenfauna der Zone des Stephanoceras humphriesianum im Unt. Elsass. - Abh. geol. Spec.-Kt. Elsass-Lothringen*, 4: 1-68, 2 Taf.; Strassburg 1884. I would appreciate a photocopy if you have access to this publication.

6). My work in Frankfurt in September '95 was extremely useful in comparing the Bringo material (and much other West Australian Jurassic) with European forms. I wished that I had arranged to stay longer in Frankfurt, rather than going straight on to London after the Brussels conference. Unfortunately I did not get a chance to write up much of these notes when I got back in '95, and I am now starting again to re-sort the forams and write up observations on identifications as seen in the Bartenstein and Brand material, variation etc.

Apologies again for taking so long to reply,

Yours sincerely, *Marjorie Apthorpe*

To : Dr. Heinz Malz, Neulandstrasse 3; D-49565 Bramsche, GERMANY
Via : Dr. J. Bruning Fax : 49 - 5468 - 1013

2 Pages

From : Marjorie Apthorpe, 35 Bailey St., Trigg (Perth) W.A. 6029, AUSTRALIA
Phone / fax : 61-8-9447 6064 Date : 19th April 1999

Dear Heinz,

Thank you for the 1884 Deecke paper, a good copy of which arrived from Dr. Jellinek last week. I will fax him to thank him also.

Unfortunately I became busy with two weeks' work (of the paid type), so please forgive my slow response to your last note.

In answer to your concern about my "proposed neotype" of *Discorbis dreheri* - indeed, there probably is a mistake, but it is not my mistake. Loeblich and Tappan in their 1988 major publication, "Foraminiferal Genera and their Classification", erected the "neotype" as the type of *Reinholdella* from among specimens which they received from Dr. Bartenstein. (They did this because they accepted the statement made by U. Ohm (1967), who said that the holotype of *D. dreheri* was almost totally destroyed). They had previously figured the same specimen, in their 1964 Treatise on Invertebrate Paleontology : Part C. It would be good if the state of the holotype could be verified, and even a photograph taken, so that the "neotype" could either be rejected, or verified as necessary. The drawing of this specimen has received ~~wide~~ wide circulation as the so-called type, ~~that~~ that is why I decided to investigate it, as I suspected that it was broken.

I did not see the holotype of *Discorbis dreheri* when I was in Frankfurt. I only looked at the paratypes. At that time, I was more interested in examining the many *Lenticulina* spp. in the Senckenberg, including species described by Brand and Ohmert in *Senckenbergiana lethaea* 72 (1992). The genus *Reinholdella* was not of so much interest at the time, because I had not paid much attention to the very small *Reinholdella* in the Bringo material, and because I did not think *Reinholdella* occurred as more than rare specimens in my other Jurassic material. I have (since 1995) found more specimens, and became interested in the genus and other related genera.

The paratypes that I saw in the Senckenberg present a problem, IF the holotype is destroyed. The paratypes XXVII 666 a 2-5 were 4 specimens in one slide. Two of these specimens had disintegrated : the chamber filling has swollen, and the specimens have broken into many pieces. The other 2 specimens appear to represent 2 different species, of which I attach my drawing of the umbilical side. I would be very interested to have Dr. Bartenstein's comments on which of these he would regard as closest to his holotype.

The other paratypes #666 a 6-8 were difficult to interpret. There were 3 specimens in the slide. One of these contained glauconite, and had disintegrated due to swelling. Specimen No.2 was in a very bad state of preservation, for the same reason. Specimen No.3 was OK. It was mounted with the spiral side up, so the diagnostic features in the umbilicus cannot be seen, and it has the final chamber missing, so would not be a good choice for a replacement for the holotype. I did not see the paratypes XXVII 666 b 1-4. If Dr Bartenstein could find the time to comment on the surviving paratypes (as I illustrate them here) and the state of the holotype, I would be delighted to hear from him, or you, on this.

Yours sincerely,

Marjorie Apthorpe



Enclosed: Drawings of 2 paratypes (in XXVII 666 a 2-5)
= (Text-figure 4)

H.Malz, Neulandstr. 3; D-49565 Bramsche
via Dr. J. Bruning: 49 (Germany) - 5468 - 1013

April 23rd, 1999

fax: 00 61-8-9447-6064

Marjorie Apthorpe, 35 Bailey St., Trigg (Perth) W.A. 6029, Australia

Dear Marjorie,

Thanks for your fax (April 19th). I have not been to Frankfurt in the meantime to check the fate of *Discorbis dreheri*, but I shall do so as soon as possible. This goes likewise to the specimens XXVII 666 b 1-4 which you have not seen.

Anyhow you should be cautious, for Loeblich & Tappan were on the wrong way in designating a neotype founded on a specimen that was not among the originals, but sent to them later privately, from either topotypic or stratotypic materials. This specimen does not have any rank at all, nor a nomenclatural status, as long as paratypes are available. As you found out by yourself there are still paratypes in the SMF collection, among which a lectotype *could have been* selected by L. & T. - or a future researcher *can do* now. I wonder why Ohm (1967) did not do that before!

I send a copy of your fax to Dr. Bartenstein for his comment on your drawings from two specimens in slide SMF VII 666 a. You shall hear from him or from me later.

All best wishes and kind regards,

Yours sincerely, 

To : Dr. Heinz Malz, Neulandstrasse 3; D-49565 Bramsche, GERMANY
Via : Dr. J. Bruning Fax : 49 - 5468 - 1013

From : Marjorie Apthorpe, 35 Bailey St., Trigg (Perth) W.A. 6029, AUSTRALIA
Phone / fax : 61-8-9447 6064 Date : 24th April 1999

Page 1 of 2 pages.

Dear Heinz,

Thank you for your fax of April 23rd. I hope this reply reaches you before you go to Frankfurt to check out the surviving *Discorbis dreheri*.

Loeblich & Tappan had their invalid "neotype" of *D. dreheri* from the type sample (or locality), from Dr. Bartenstein. Your comments on the invalid "neotype" are similar to those of Dr Stefan Revets to me. However, he does not feel that paratypes, of necessity, have to be selected as replacements for a destroyed holotype, if I have understood him properly.

Reinholdella (and some other aragonitic foraminifera) present problems, due to their small size. Now, with electron microscopes to function as our eyes, we can see features which are not visible, or only poorly visible, in the light microscope. The aperture in *Reinholdella* can only be seen if the final chamber is unbroken. The aperture in earlier chambers is secondarily closed, and the chamber wall is modified by resorption. In 95% of *Reinholdella* specimens, the final chamber is broken off, and the aperture is destroyed. IT IS ESSENTIAL THAT ANY NEW DESIGNATION OF A LECTOTYPE BE OF A COMPLETE SPECIMEN WITH THE FINAL CHAMBER INTACT. This is necessary in order to compare *Reinholdella* with other (previously and subsequently) described Jurassic genera. The Loeblich & Tappan "neotype" is a broken specimen.

There are problems with the paratypes. I will try to explain clearly, without any criticism being intended, what I believe are the problems.

1) The paratypes appear to represent two different species.

2) The paratypes I saw are :

SMF XXVII 666 a 2-5 :

- i) destroyed
- ii) destroyed

iii) my Specimen "A" : might be B & B 1937, Tafel 8, 42d;

Specimen "A" has an apparent plug in the centre, which corresponds with Dr Bartenstein's description of a "knopf-förmiger Verdickung", if I understand correctly. However, the specimen is broken, and the final aperture is removed. It is not suitable to be a lectotype.

iv) my Specimen "B" : might be B&B 1937, Tafel 8, 42b, or more likely, not illustrated (only 3 specimens of the 4 paratypes listed for the slide are shown on this plate).

Specimen B has the final chamber present. It is slightly broken along the umbilical margin, partly covering the apertural opening. It is the most intact of the specimens I saw. However, I do not think it is *Discorbis dreheri*. There are only three chambers visible on the umbilical side. There is no separate umbilical plug, or button; only the cover plates, which are not the same thing. I do not think that it corresponds with the description of Dr Bartenstein, but I would be delighted to hear his comments. At this stage, I do not think it would be a good choice as a lectotype, because today one might put this specimen in the genus *Conorboides*; or at least into a different species of *Reinholdella*. However, it needs ESEM examination.

SMF XXVII 666 a 6-8 : paratypes seen :

- i) destroyed
- ii) very bad condition
- iii) Specimen viewed from spiral side only, so I did not see the diagnostic features of the umbilical side. The last-preserved chamber is broken. 5 or 6 chambers in the last whorl. Not suitable as lectotype due to the broken last chamber (which may not have been the final chamber of the specimen).

Loeblich & Tappan "neotype" : by Environmental SEM examination : final chamber broken largely off. Drawing given by L & T does not correspond to the specimen. Also the specimen has no umbilical plug. The specimen is not suitable to be a lectotype due to the broken final chamber, although some interpretation of the apertural features can be made from SEM evidence.

So I think there may be a problem finding a suitable specimen for a lectotype.

Yours sincerely,

Marjorie Apthorpe



rec'd 1/10/99

H. Malz, Neulandstr. 3; D-49565 Bramsche

September 23rd, 1999

Marjorie Aphorpe, 35 Bailey Street, Trigg (Perth), W.A. 6029, Australia

Dear Marjorie,

It may be very disappointing for you, but from the discussion I had with Dr. Bartenstein lately, I learnt that he is no longer in the mood of discussing or determining Rotaliiformes, neither their apertures, nor their splitting in species and genera. From the experience he made, this chapter belongs for him to the past. From the reasons he told me, I can understand his point of view quite well. One of his reasons sounds like that: When he helped Hofker (1955-1957) with his research on the "toothplate apertures", he criticized his drawings which did not correspond with the specimens under observation. At the end he resigned from any further discussion, for Hofker answered, that if the last chamber and the aperture were well preserved, they would look in the way he had drawn them. (Really a very self-conscious, but by no means convincing argument!) – So far to Dr. B's statement. – On the other hand Dr. B. was very helpful in another way: He offered to look through further washed residues of the Hambühren cores still kept in the Museum, in order to find more *dreheri* specimens. I think he was rather successful in picking specimens, but the result is not very encouraging: many, many specimens, but poorly preserved as concerns apertures. To give you an idea I picked some of the best preserved ones and send them to you (enclosed).

As to the holotype of *dreheri*, I was at the Museum lately, but unfortunately Dr. Jellinek was not there. So I shall find out about the fate of the holotype next time I go to Frankfurt.

Since you have drawn my attention to *dreheri*, I myself felt a little bit engaged in this complex: It is not only *dreheri* in the sense of Bartenstein which is involved! Since Brotzen (1948) based *Reinholdella* on a specimen determined by Ten Dam (1947) as belonging to *dreheri*, the identity of this specimen with *dreheri* Bartenstein has also to be ascertained (or otherwise *Reinholdella* is based on a misidentified species for which a new name has to be proposed). You see, the problem becomes more and more complex. – I don't think that you'll be able to find a "true, genuine" solution under the pressure of time still available for the termination of your thesis. Therefore I suggest that you put the generic determination "*Reinholdella*" in parenthesis explaining the problem in a separate chapter "Remarks". – The extent of these remarks may also cover quotations/annotations of other studies by (for example) Espitalié & Sigal (1963), Ohm (1967), and the bulk of Russian authors.

As to the specimens I send to you:

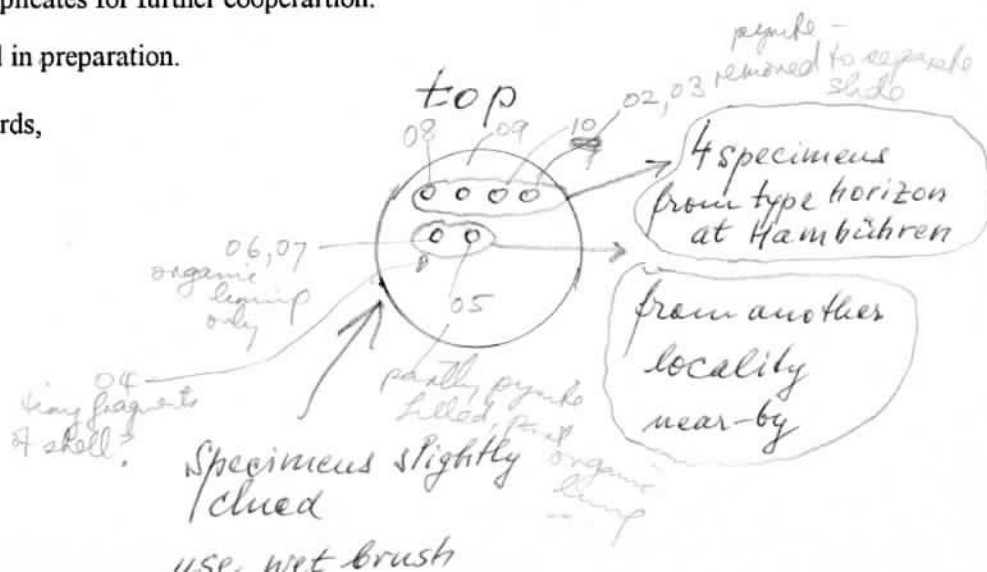
You may choose which one(s) may be useful for photographing. Specimens figured in a publication should be registered and deposited in a Museum (I leave it to you whether it is an Australian Museum or Senckenberg). Specimens not figured, but only mentioned in your publication should be returned, in order to be registered at Senckenberg (so please ask for cat. nrs then).

Did you succeed in getting SEM photos of Chapman's specimens in the meantime? If so, it would be very helpful to get a set of duplicates for further cooperation.

The Bringo ostracods are still in preparation.

All best wishes and kind regards,
Yours sincerely,

Heint



To : Dr. Heinz Malz, Neulandstrasse 3; D-49565 Bramsche, GERMANY
Via : Dr. J. Bruning Fax : 49 - 5468 - 1013

From : Marjorie Apthorpe, 35 Bailey St., Trigg (Perth) W.A. 6029,
AUSTRALIA
Phone / fax : 61-8-9447 6064 Date : 11th October 1999

Page 1 of 2 pages.

Dear Heinz,

Thank you for your letter of 23rd September which I received a week ago. However, as I had been away for 3 weeks, I put the letter down with a pile of other letters, and thought the specimens were in a separate package. It was a couple of days before I found the specimens taped to the back of the letter, and had a look at them. Unfortunately all except two of the specimens have been totally destroyed in the glue, which absorbed a lot of water, and this seems to have dissolved any aragonite shell wall. (The envelope and the letter itself were dry when received). Only the organic internal lining of the specimens, and some pyrite internal filling is left, plus 4 little lumps of a jelly-like substance where the specimens were. With this piece of bad news, could I ask you please, if you have the time, to send some more of the specimens that Dr. Bartenstein picked? It would be better if they were sent dry in a slide or vial, without glue, and it would be better for specimens to be sent to me, c/o Department of Geology and Geophysics, University of Western Australia, Nedlands W.A. 6907, Australia. The reason is that Australia has very strict quarantine laws, and all material of an organic or "natural history" nature, which is detected in packages coming into Australia, would be routinely destroyed if found by the postal authorities. The Geology Department at the University has a special quarantine license to import rocks, fossils etc., so that is the only way we can be sure of getting specimens into the country.

I will examine what remains of the specimens in the existing mount, in the Environmental SEM, where the fact that they are wet and soft does not matter. However, the absence of any shell wall makes them of questionable use as Museum specimens. I will be happy to return them to the Senckenberg, however you will not be pleased by the condition that they are in now. I will send photos soon. I think it is better that the German material is lodged in the Senckenberg, for accessibility to other workers, better cataloguing etc. Besides, it is German material and it should be permanently lodged there.

Of course I am disappointed that Dr Bartenstein does not want to discuss *Reinholdella*, but I can well understand his reasons. I am very grateful for his help (and also yours) in providing specimens for me to look at.

I agree with the question-mark (raised also in the Catalogue of Foraminifera : Ellis and Messina) over whether the plesiotype of *Reinholdella* designated by Brotzen (= *Asterigerina dreheri* of ten Dam and

Reinhold) is actually the same species as *Discorbis dreheri* Bartenstein. I could only answer that question by borrowing the specimen in question from Haarlem, if it is available. I don't know if this will be possible.

I have finished (or rather, Stefan Revets has finished) photographing Chapman's foram specimens, and they have been returned to the Museum of Victoria. I will print a duplicate set of prints when I print the negatives for the plates. I am still working on the taxonomy / identifications of these and the rest of the Bringo forams.

While picking the Bringo material I found an ostracod that I do not remember seeing previously. I am sending computer-printed rough photos by post, in case it is of interest.

After all your work on the *Reinholdellas* on my behalf, I am very sorry to report, that they have arrived in such a bad condition.

Very best wishes, and many thanks for your efforts,

A handwritten signature in cursive script, appearing to read 'Marjorie'.

Marjorie Apthorpe

35 Bailey St.,
Trigg (Perth) W.A. 6029,
AUSTRALIA Phone / fax : 61-8-9447 6064

OR c/o Department of Geology & Geophysics,
University of Western Australia,
Nedlands W.A. 6907 AUSTRALIA

Date : 31st October 1999

To : Dr. Heinz Malz, Neulandstrasse 3; D-49565 Bramsche, GERMANY

Dear Heinz,

I enclose computer prints of the uncoated specimens of *Reinholdella dreheri* which you sent. I took these pictures on Friday on the Environmental SEM, which is a machine I am not very experienced on, so the pictures are not very good. (I use a conventional SEM nearly all the time for my photos). However, you can see the condition of the specimens. The problem appears to have been that the glue (which I assume is gum tragacanth??) has become acidic, and has dissolved all the calcareous shell wall. The pH of the glue is around 4 - 5. It is still absorbing water from the atmosphere, and refuses to dry permanently, in spite of me drying it several times with a brush, microscope lamps etc. The specimens cannot be moved as they now consist only of the soft organic inner lining of the chambers (mostly collapsed), with a powdery remnant of the altered aragonite shell, plus some pyrite (the light material in the centre of the destroyed specimens). It appears that aragonite is very susceptible to dissolving in this way in acidic solutions, more so than calcite.

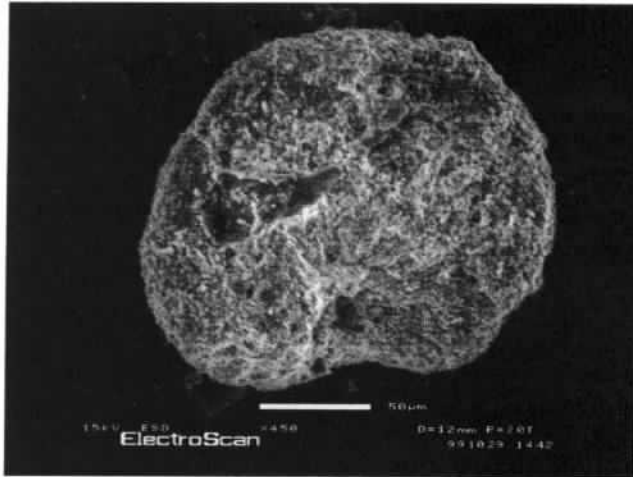
According to Stefan Revets, gum tragacanth is notorious for becoming acidic. He says that the d'Orbigny collections, which he examined in Paris, have been largely destroyed because they are mounted in gum tragacanth. He suggests that if you have any specimens which you wish to keep for posterity, that they should not be mounted in tragacanth. Methyl cellulose or diluted polyvinyl alcohol glue are preferable, being inert as far as we know.

I will have another session on the ESEM at the end of this week, and I should be able to improve the photo quality with the help of one of the technicians, who was not available on Friday. (However, considering the state of the specimens I am not sure whether the Senckenberg will want them back). I will consult Dr. Jellinek on this point. If the holotype of *dreheri* was also mounted in gum tragacanth, that would explain why it has been nearly destroyed, and why the paratypes I saw were largely disintegrating. It is all very unfortunate and frustrating, after all your work assisting in this matter.

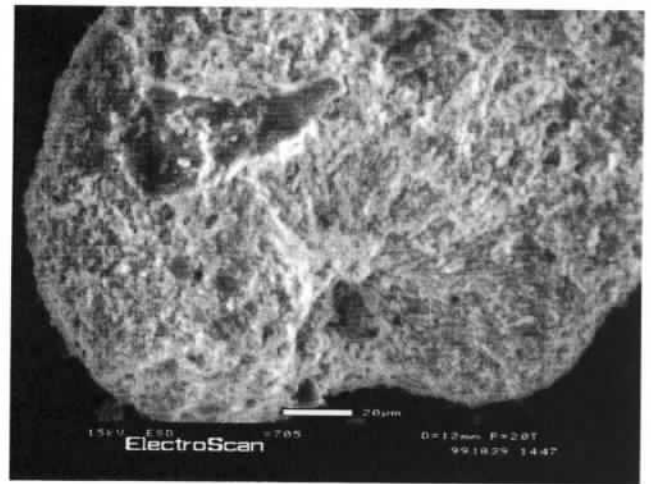
Kindest regards,

Marjorie Apthorpe

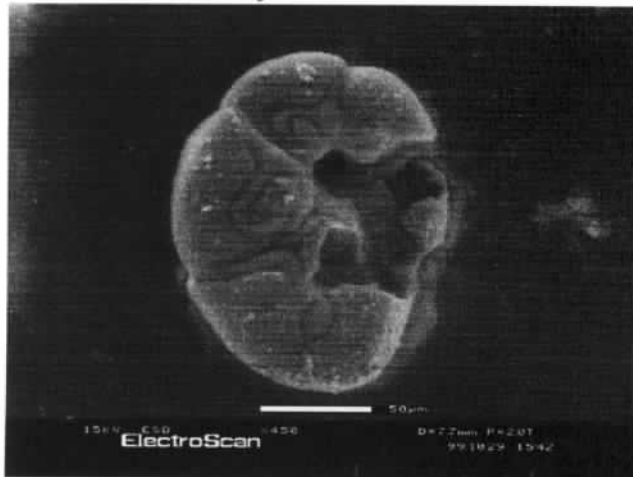
Specimens lost/dissolved



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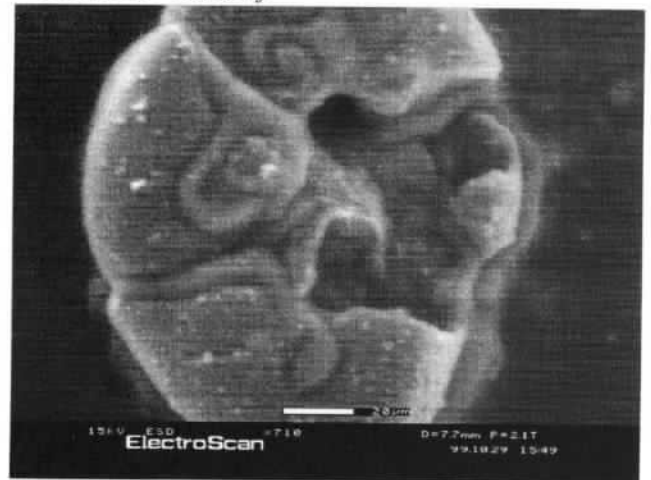


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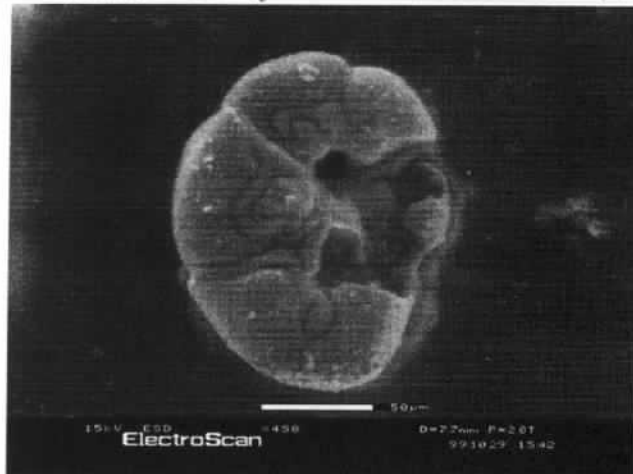


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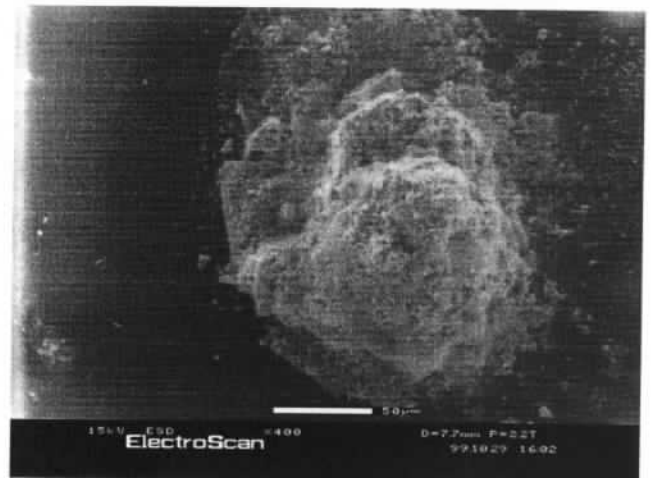
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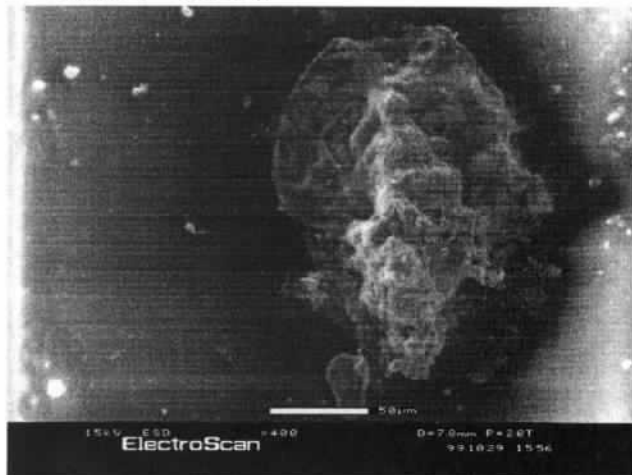
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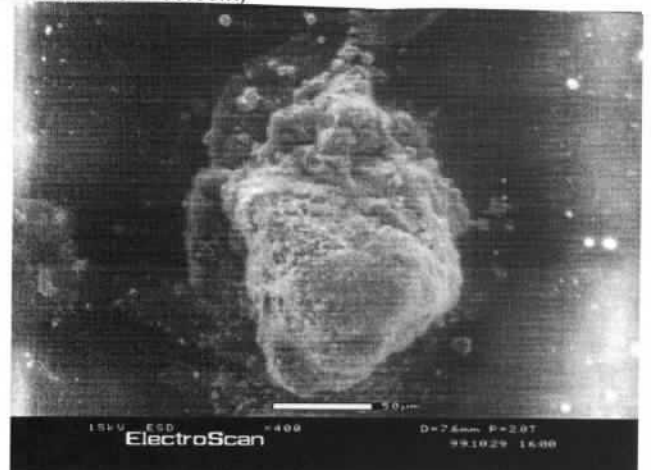
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H. Malz, Neulandstr. 3; D-49565 Bramsche (fax no. corresponds with teleph. no.) November 12th, 1999

To: Marjorie Apthorpe, 35 Bailey Street, Trigg (Perth), W.A. 6029, Australia

Dear Marjorie,

Thank you for your fax (Oct. 11th). Since the *dreheri* specimens arrived in a bad condition, I thought I should send you some more. So I was in Frankfurt this week to look for some more unpicked residuc. In returning yesterday I received your letter (Oct. 31st) with the pictures included, many thanks.

The photograph of the ostracod specimen turns out very well. Since I have quite a lot of specimens, I shall add some of these for your collection when returning the material I have still on loan (and among which is also your sample B2 from Bringo cutting).

When being at Frankfurt I had a look to the holotype slide of *dreheri*; result: "exploded" and disintegrated into three parts (near to eachother, as so they were tipped), but with the aragonitic wall still preserved. [From our experience with ichthyosaur bones at the museum it is not the pyrite, but the marcasite oxygenating to sulphuric acid and by that destroying the calcareous matter.]

I think it takes too much time to send the unpicked residuc to Dr. Bartenstein in order to let him pick *dreheri* specimens. You have got the idea what they should look like and therefore I shall send this residuc directly to you (University address), under separate cover and in good hope that you will be successful in getting good specimens (not altered by any kind of glue).

(not done)

You need not return the photographed specimens from which you sent the pictures. As concerns your intention to contact Dr. Jellinek, I must tell you that he is very busy right now and will be abroad again very soon. So I suggest that we keep in further contact on this matter, for I got the confidence to handle things correctly.

All best wishes and kind regards,
Yours sincerely,

Heinz

Bräunche, Nov. 13th, 1999

Dear Marjorie,

When sending you my fax yesterday, I had in mind sending you the unpicked residue. Later on I got some doubt: may be nothing was in it! Therefore I took a short glance at it and became happy! — Within three hours I picked some 30 specimens — rather well preserved. — Since I did not glue them, you should take care when removing the tape. Certainly some will be lost, but the bulk will be somewhere in the slide.

— Good luck,
Yours sincerely, J. J. J.

35 Bailey St.,
Trigg (Perth) W.A. 6029,
AUSTRALIA Phone / fax : 61-8-9447 6064

OR c/o Department of Geology & Geophysics,
University of Western Australia,
Nedlands W.A. 6907 AUSTRALIA

11th February 2000

To : Dr. Heinz Malz, Neulandstrasse 3; D-49565 Bramsche, GERMANY

Dear Heinz,

I must apologize for another long delay in answering your last letter. Here is a quick note to express my thanks for the specimens.

Some 10 or 12 of the *Reinholdella dreheri* specimens survived the journey; unfortunately many slipped between the cover and the slide, and were crushed.

I do not think there is any solution other than to either glue specimens down with methyl cellulose or very dilute PVA glue, or else to put them in a rigid plastic slide with a tight-fitting, glass cover. I would be very happy to pick the residue, if the Senckenberg Museum would agree to lend it. The specimens would all be returned to their collection after study and photography, as the material belongs to them. There is not a properly curated micropalaeontological collection in any museum collection in this country, so I would not request specimens to remain here even for comparative purposes.

I enclose the first photographs of some of the *R. dreheri* specimens, which are very interesting. There appears to be an identical form in the Bringo Cutting material, plus a new species of *Reinholdella* as well. I hope to get back to photographing (and cleaning) some more of the specimens in a week or two.

The reason for the long delay is that I finally ran out of money for myself (and son) to live on, and fortunately, a sudden influx of paid work arrived. I have been working on 3 separate jobs for the past 2 months, and with the heat and humidity being extreme, I have been too tired to do anything on my Ph.D. or to write letters in the evening, for which rudeness I sincerely apologize. This week has been cooler, my house has cooled down, my computer is working, so I have finally written this note.

If you could send some of the washed residue from Hambühren, or the other sample which you mentioned, I would be delighted to pick more specimens. I enclose a glued slide, and a protective cover, either for specimens, or for a small residue in a bag.

Kindest regards,

Marjorie Apthorpe

35 Bailey St.,
Trigg, Western Australia 6029
AUSTRALIA

17th March 2001

Dr. Helmut Bartenstein,
Spoercken Str. 102,
D-29221 Celle
GERMANY

Dear Dr. Bartenstein,

I was away in New Zealand on holiday when your letter arrived. Thank you very much for the reprints. They are very relevant to my studies of *Lenticulina* (including *L. quenstedti*) in the Middle Jurassic in Western Australia.

I think that Dr. Malz has told you, I am also examining Australian *Reinholdella*. This led me to examine the definition of the genus. In this Dr Malz has been very helpful, with his suggestions raising some important questions.

I examined, redescribed and (by courtesy of Dr. Stefan Revets) photographed in the environmental SEM the "neotype" of *Discorbis dreheri* Bartenstein. This "neotype" (USNM 383567) was designated by Loeblich and Tappan in 1988, from among specimens which you sent them from the type sample at Hambühren. Dr. Malz then pointed out to me by letter that Loeblich and Tappan were wrong to designate a neotype when the holotype still exists.

Because the holotype is nearly destroyed, Dr. Malz very kindly sent me on loan some specimens of *Discorbis dreheri* from the Hambühren sample (WA2 : 342m) I have photographed them in the SEM (some photos enclosed).

He also pointed out that, because of a mistake of Brotzen, the genotype of *Reinholdella* is not *Discorbis dreheri* Bartenstein, but is "*Asterigerina dreheri*" of Ten Dam and Reinhold, 1941 (Geol. En Mijnbouw, vol.4, no.1, p.10-11, Figure 1). Brotzen in 1949 tried to fix his mistake by saying that he had meant to designate the type of *Reinholdella* as "*Reinholdella dreheri* (Bartenstein) = *Discorbis dreheri* Bartenstein, 1937". From this I think Brotzen believed that the Ten Dam and Reinhold specimens were the same species as your *Discorbis dreheri*. However, Brotzen did not formalize this correction. He did not ask the ICZN to suppress his original designation and to replace it with *Discorbis dreheri* Bartenstein as the type species of *Reinholdella*. Therefore the type remains "*Asterigerina dreheri*" of Ten Dam and Reinhold.

Brotzen's mistake would not matter too much if the two species were conspecific / the same species. However, this does not appear to be the case, in my opinion. Dr Revets has borrowed Ten Dam and Reinhold's type specimens from the Geologische Stichting, Haarlem. He has started to photograph them in the environmental SEM for me, and I have had a good look at the specimens under the light microscope. The first photographs are of the umbilical side. The specimen which corresponds to their Figure 1 is broken. The last 3 chambers are missing. The "rhomboid supplementary chambers" shown on the drawing are partly artificial because of the cracks in the specimen wall. Under the light microscope these chambers are not clear. The specimen has a raised umbilical area, but not a distinct umbilical button as shown in the drawing (Figure 1b). The umbilical side looks very

different from the concave to flat Hambühren specimens sent by Dr. Malz. In my opinion it is a separate species.

I would be most grateful if you could tell me whether the Hambühren specimens (M76-05), which I have photographed here, are representative of the holotype of *Discorbis dreheri* Bartenstein. These Hambühren specimens with a rounded margin do not have the "button-shaped thickening" on the umbilical side which you described. Otherwise they seem to correspond to some of the paratypes, and are similar to the Loeblich and Tappan (1988, USNM# 383567) "Neotype".

In the Hambühren sample are also one or two other species of "*Discorbis*". One is perhaps part of *Discorbis dreheri* Bartenstein. This specimen (M76-09) has raised sutures on the spiral side, on all chambers. Would you also call this *D. dreheri*?

The other specimen (M76-07) is perhaps your *Discorbis paraspis* (Schwager, 1866) (1937 : S.25; Taf. 5, Fig. 77)?

I realise that your work on *Discorbis dreheri* is a very long time ago, and that now you may not be interested in this genus. However, I would greatly value any comments from you on these identifications, even a "yes" or "no", if you would be so kind.

Yours sincerely,

Marjorie Apthorpe.

amlinken *D. dreheri* similar to holotype?

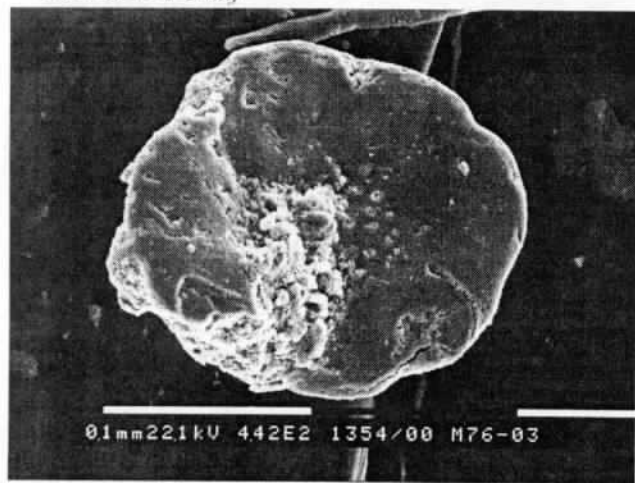
②
A



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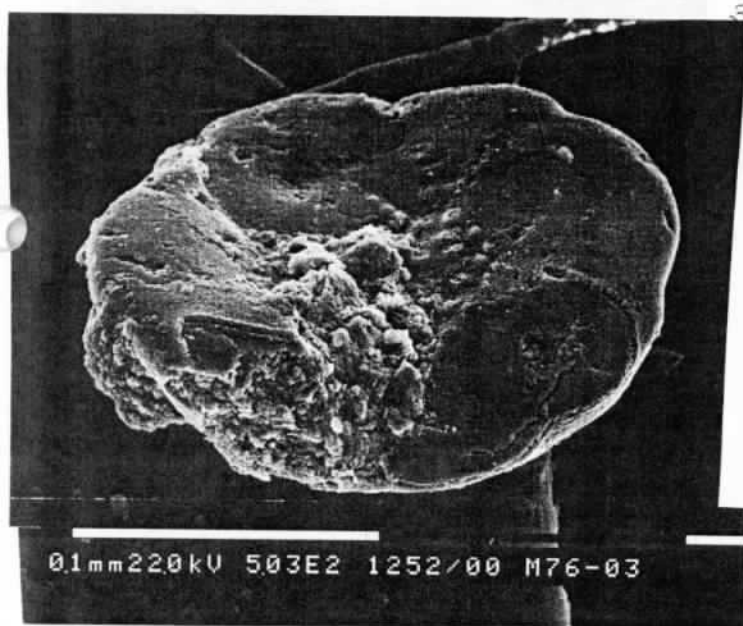
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Files:m76-b-03.tif



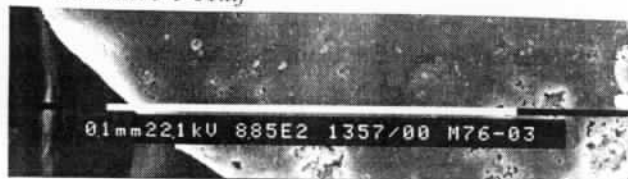
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m76-a-01



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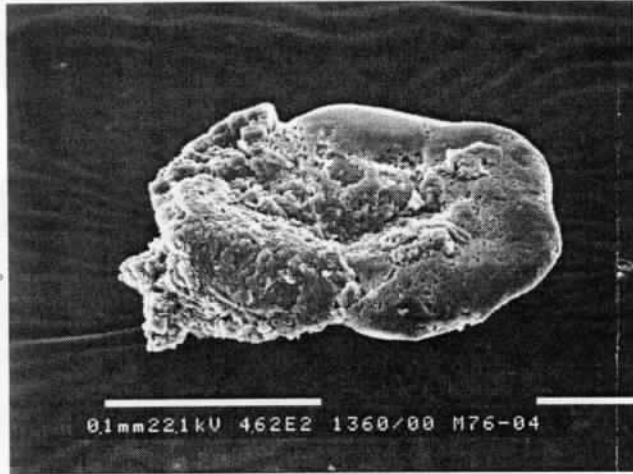


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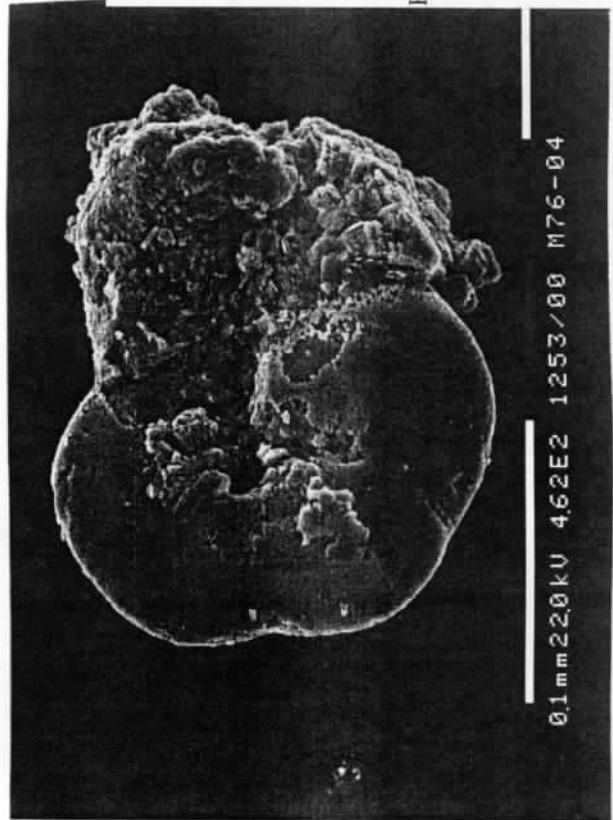


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alles M76-03



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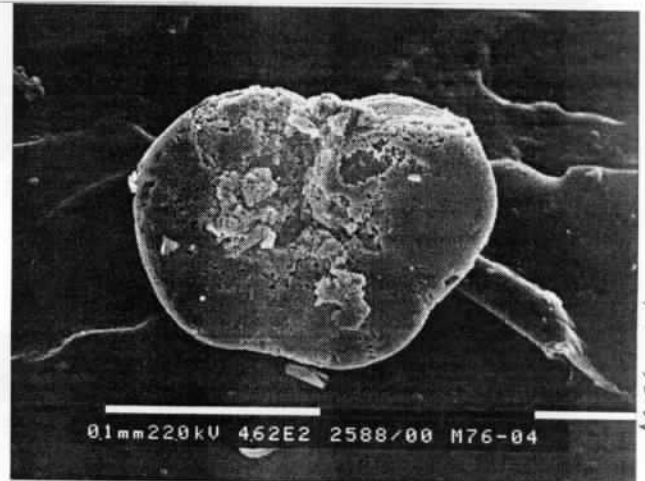


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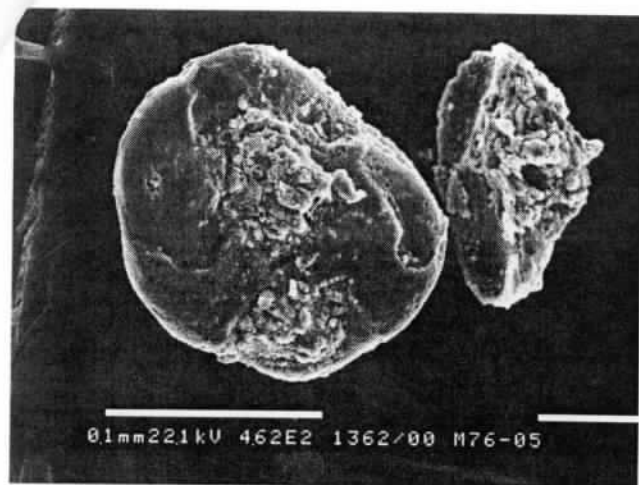


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M76-04
Hambühren

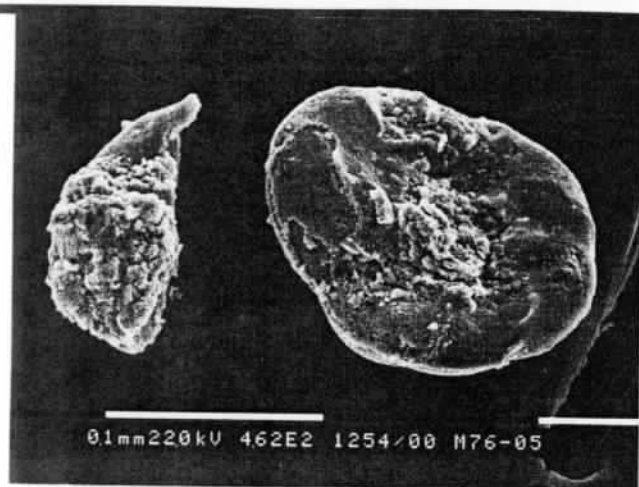


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Files:m76-b-12.tif

M76-05
Hambühren



Files:m76-a-03.tif



Files:m76-a-04.tif

Hambühren
M76-05



Files:m76-d-01.tif



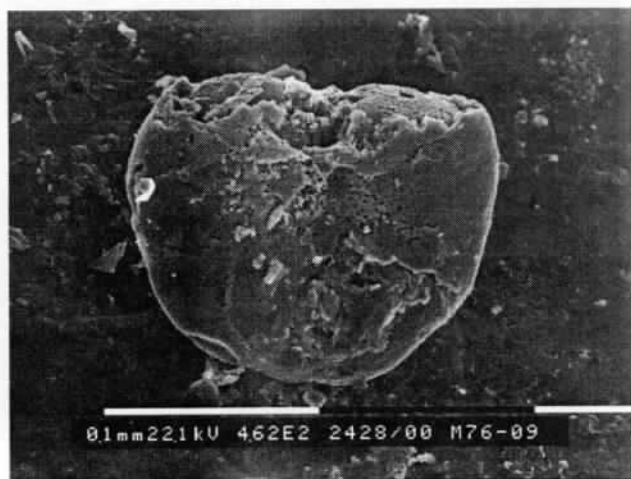
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and *D. dreheri* ?

③



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Files:m76-c-19.tif



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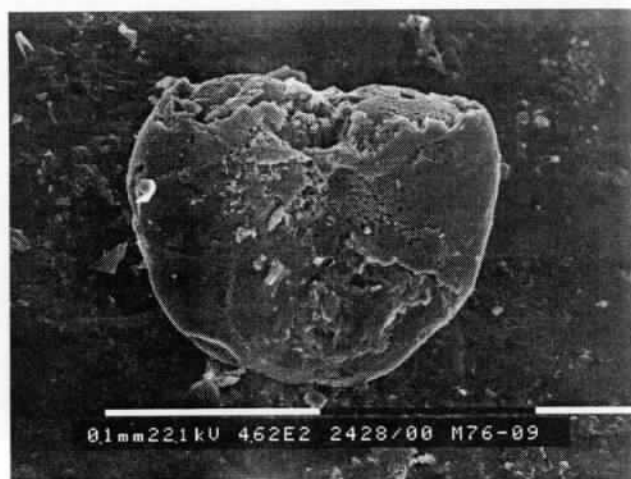
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and *D. dreheri* ?

③



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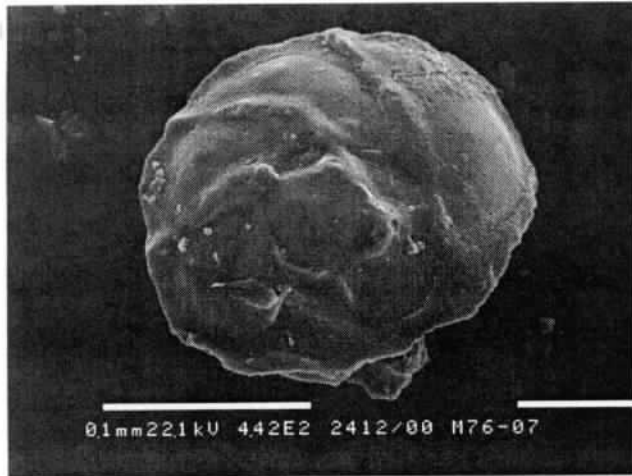
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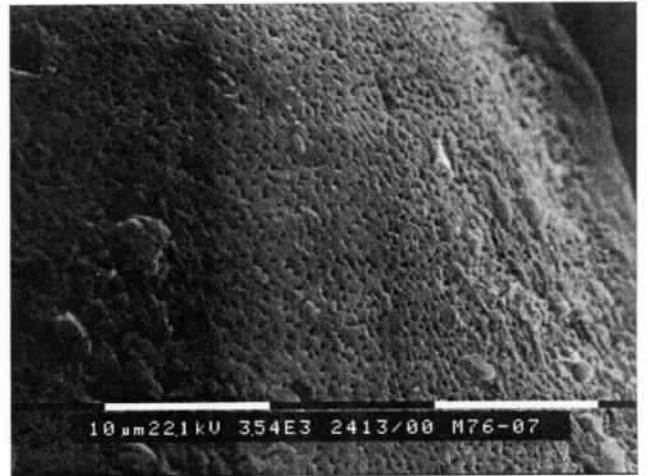
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Discolus paraspis (Schwager 1866) ?

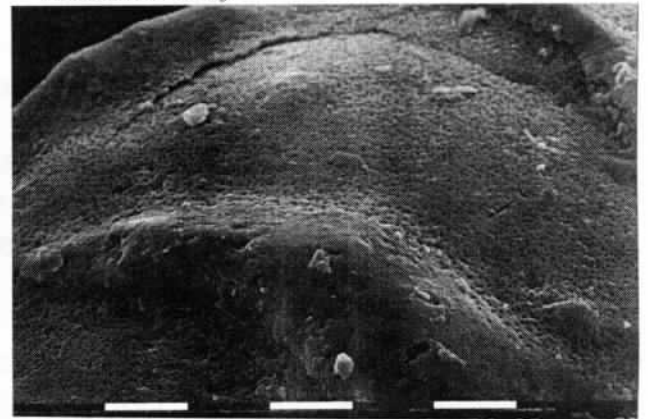
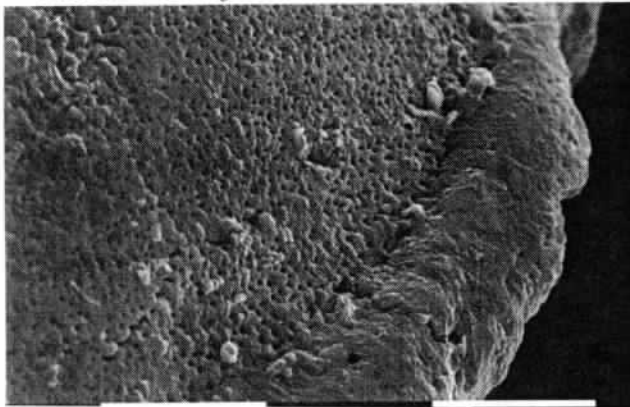
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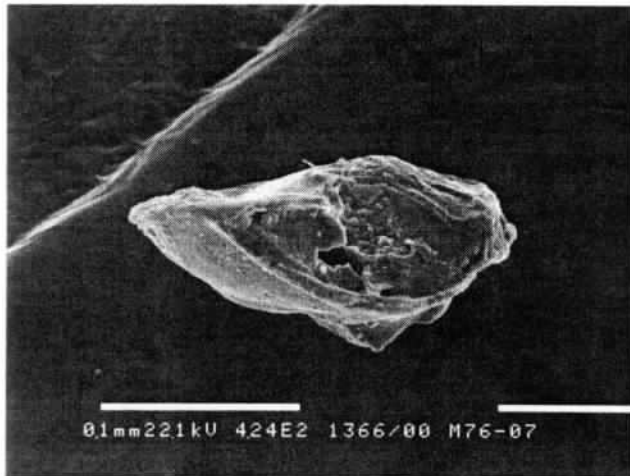
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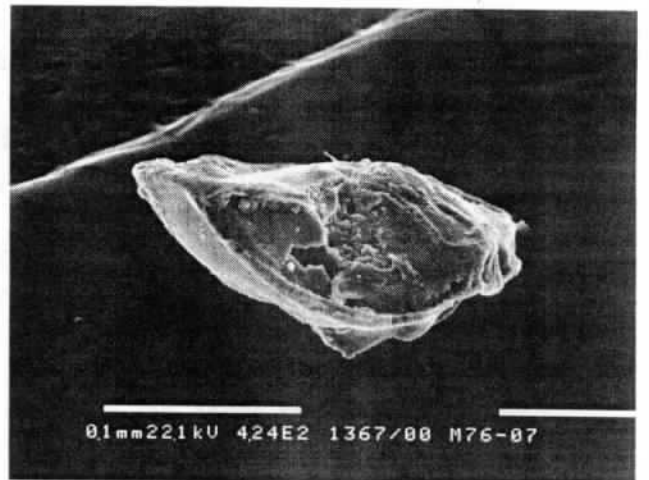
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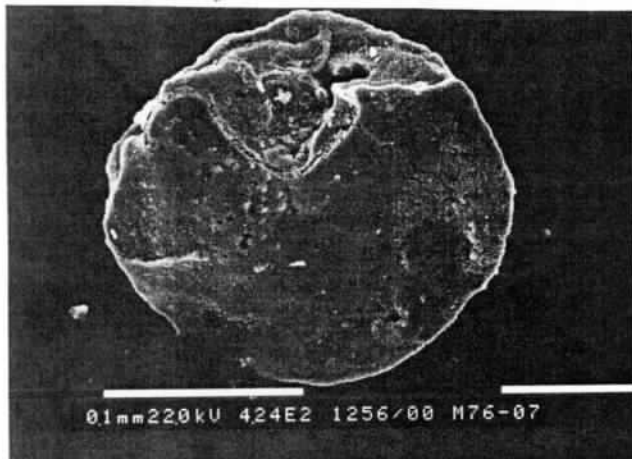
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Files:m76-b-15.tif



Files:m76-a-06.tif



Files:m76-a-05.tif

Dr. HELMUT BARTENSTEIN
Spoercken Str. 102
D-29221 CELLE
Tel.: 05141 / 2 55 64

D-29221 Celle, April 30, 2001.

Mrs Marjorie Apthorpe
35 Bailey Street,
Trigg (Perth),
W. A. 6029,
Australia

Dear Colleague, dear Mrs Apthorpe,

Translation into German of March 17th letter

Thanks for your letter of March 26th together with the "North West Shelf" reprint. Since you wrote your letter in such an excellent German, you urge me to reply to it adequately in English. Many years ago it was one of my daily duties to write in English and I am quite sure that I still succeed in doing so now, but after being out of the "official business" I prefer to stay with my native language helping me to express myself more precisely.

Indeed, you are right: Since I am in good contact with Dr. Malz, I know about your efforts to find out the "truth" about Reinholdella, therefore I hope that my arguments can be of some help to you. So, let us come to the facts in historical order:

In 1937 Discorbis dreheri was introduced as a new species for which the **umbilical knob** is a characteristic feature distinctive for further determinations. – TEN DAM & REINHOLD (1941) transferred the species to Asterigerina. [my comment: The authors had not seen the original(s) and therefore their identification of the species is doubtful. This assumption gets verified now by your results, no "pronounced umbilical knob"! Furthermore, I think that this observation of yours also fits to their drawing ("Fig. 1c"), the "apertural view", which should show the elevated knob, if there was one (as may be suggested from "Fig. 1b").]

From your re-investigation of TEN DAM & REINHOLD's specimen(s) in the Dutch collection it turns out that these authors mis-identified the species, for – as you found out – their specimen(s) lack(s) the umbilical knob. The consequence is: dreheri Ba. '37 \neq dreheri T. D. & R. '41 (for which a new species should be proposed; see below).

Since BROTZEN (1949) based his Reinholdella on the mis-identified "Dutch" species, the genus should be rectified by naming a new species as type (including T. D. & R's specimens as synonyms).

OHM (1967) found the holotype of dreheri disintegrated with the paratypes belonging to two different species (but he did not comment on which is which).

For two purposes the designation of a "neotype" for dreheri (in '88) does not withstand the IRZN:

(1) A neotype is needed if all of the original material is lost and – on the other hand – a lectotype should have been designated among the deposited paratypes. (Unfortunately I do not remember where the material came from when sending it to L. & T.; may be they just asked for some comparative material which was at my disposal at that time.)

(2) Since the "Dutch" species has to be the measure for Reinholdella (see above), there is no sense of designating a neotype for the genus from the German material. (Nevertheless, the German dreheri requires a lectotype for the species to replace the disintegrated holotype, but this is of secondary demand.)

In summarizing, I come to the conclusion that the gordian node in which the original Discorbis dreheri is involved, can be cut in an alexandrian way that makes you independent of whatever occurs to the German species. With this consequence in mind, D. dreheri remains open for any further (generic) discussion and you have an open hand for a new genus in Australia (as long as it is seen different from the Dutch species). Additionally this solution, "new species and new genus" for your Australian specimens, seems reasonable for your work, since there is a legion of dreheri quotations (by CIFELLI, STOERMER & WIENHOLZ, BIELECKA et al., MORRIS & COLEMAN, OHMERT & ROLF, BALLENT), all of which you cannot check by the originals.

With kind regards and all best wishes,
Yours,

Helmut Bartenstein

In describing your new species/genus you can add D. dreheri to the list of related species.