

# GCCG

ISSN 0144 - 5294.

THE  
GEOLOGICAL  
CURATOR

VOLUME 2 nos 9 & 10 joint issue

OCTOBER 1980



## FRONT COVER

Our front cover was produced late at night by extremely expectant father Tristram Besterman of Warwickshire Museum. The circumstances it depicts are fully discussed on pages 546-8.

This double issue of the Geological Curator ends volume 2. We should again record our grateful thanks to all those many people who have helped in its production.

This issue has been produced thanks to financial help from Clyde Petroleum Co., Mike Crane and the Museum Professionals Group.

An index to vol. 2 will appear with the first issue of vol. 3.

BACKNUMBERS of most Newsletters are still available at £1.00 each (including postage). Payment should accompany all orders, which should be sent to John Martin, Leicestershire Museums, 96 New Walk, Leicester, LE1 6TD.

SUBMISSION OF MSS. Three issues are published each year. The last dates for submission of copy for publication are:

November 1st for first issue of following year  
 March 1st for second issue  
 August 1st for third issue

TSS should be sent to the editor typed and, if camera ready to the format we use this may help expedite publication.

ADVERTISEMENT CHARGES. Full A4 page £25 per issue  
 Half A4 page £14 per issue.

Reductions - for space taken in three or more issues.  
 Further details from Diana Smith, 25 Winstanley Road, Saffron Walden, Essex.

Typed by Stephanie Cooper and Barbara Haywood  
 Printed at Keele University.

© Published by the Geological Curators Group.

# GEOLOGICAL CURATORS GROUP

(AFFILIATED TO THE GEOLOGICAL SOCIETY OF LONDON)

CHAIRMAN AND

ACTING

EDITOR

Hugh S. Torrens, Geology Dept., University of Keele, Keele,  
Staffs., ST5 5BG. Tel: 0782-621111, Ext.493.

GENERAL SECRETARY:

Philip Doughty, Ulster Museum, Botanic Gardens, Belfast,  
BT9 5AB. Tel: 0232-668251:5.

TREASURER &

MEMBERSHIP SECRETARY:

John A. Cooper, Leicestershire Museums, Art Galleries  
and Record Service, New Walk, Leicester, LE1 6TD.  
Tel: 0533-554100 Ext. 263.

COLLECTIONS INFORMATION TO - Hugh S. Torrens. (Chairman)

## CONTENTS

## VOLUME 2 Nos 9 & 10

Joint Issue

Committee notes

Editorial	541
Brian Page	545
The GCG and its finances	546
Committee notes	549
National Scheme for GSD - Report	552

The Worst Curated Geological Object?!	553
---------------------------------------	-----

Collections and Collectors of Note

28. Colonel Birch (c. 1768-1829)	561
34. T.R. Fry	563
35. White Watson (1760-1835)	572
36. John Dunn (1865-1937)	578
37. Ferdinand Schalch (1848-1918)	586
38. North Devon Athenaeum - Barnstable	587

Sopwith's Fault Models	593
------------------------	-----

## Fossil Forgeries

- |   |     |
|---|-----|
| a) 'Constructed' cephalopods at the British Museum                              | 599 |
| b) 'Complete' Belemnite animals from the Posidonia Shales of Holzmaden, Germany | 605 |
| c) The smallest 'Improved' ammonite?  | 609 |

## Collections and Information Lost and Found

- |                                    |     |
|------------------------------------|-----|
| Collections and Information Sought | 611 |
| Collections and Information Found  | 614 |

Kimeridge Clay Pliosaur Skull	619
-------------------------------	-----

## Technical

- |  |     |
|--|-----|
| a) Monitoring Relative Humidity at the Hancock Museum  | 621 |
| b) The use of a computer based curatorial system in the Department of Palaeontology, British Museum (N.H.) | 624 |

Report of Meeting	629
-------------------	-----

Book Reviews	631
--------------	-----

Notes and News	635
----------------	-----

Published in November 1980

---

STOP PRESS

ACHANARRAS QUARRY SSSI, CAITHNESS

The Nature Conservancy Council has recently concluded a management agreement over this site and now have sole responsibility for controlling access. To comply with the terms of the agreement, the NCC has formalised access procedures. All visitors to Achanarras must first obtain a permit, to be applied for in writing, not less than 6 weeks in advance of the date of the proposed visit. Details of the conditions applying to access to the site and application forms for permits are obtainable from: Dr K L Duff, Nature Conservancy Council, Foxhold House, Thornford Road, Crookham Common, Newbury, Berks, RG15 8EL.

## COMMITTEE NOTES

### Editorial:

1981 will see a dramatic change in the running of the GCG, with voluntary but mandatory retirement of the Chairman and the much more crucial resignations of the Secretary and Editor.

It will be the task of the new officers to look forward but perhaps the time is now opportune for us to look back over the past 6 years and ask ourselves what, if anything, we have achieved. We have certainly kept ourselves busy and I, as retiring Chairman and now temporary editor, am particularly aware of the work load which has fallen on the Editor and Secretary in keeping the Group ticking over so well.

Notable achievements on the curatorial front have been the publication of the Palaeont. Association volume in 1979 on "Curation of Palaeontological Collections"; the success of the Newsletter now retitled the "Geological Curator" which has also engendered an Antipodean counterpart. We have also, I think, made more people inside the Museum Profession aware of the scale and inalcitrance of some of the geological and curatorial problems in our midst. I hope too, we may have made a slight impact in the world of museum and university research by pointing out the value of careful research in museumology and related topics.

What we have singularly failed to do is to get our message across to the world outside museums, to the local authorities and city treasurers who hold the pursestrings. This task will be the more difficult in the present financial climate of government (both local and central) cuts where Museums and their collections are a prime and easy target.

On a personal note I would like to end with some thoughts on the two provincial geological collections whose state when I first came across them over 20 years ago convinced me there was a need for some concerted action. The first was Northampton, the state and contents of whose collections we described in GCG vol. 1 no. 2. Can we really say we have achieved anything permanent which will guarantee the future of these collections despite all the hard work of John Cooper? The geological collections are still largely kept in the badly lit basement of the Museum, there being no where else to house them!

For a comment on these collections in 1894 see R. Le Schonix. "Notes on Archaeology in Provincial Museums no 36 - Northampton" Antiquary vol 33 pp 100-106, where we read this:- "In the badly lighted basement or cellars [of the Museum] there are a variety of objects for whose display elsewhere there is no accommodation".

In other words, no change over the last 86 years!

The second museum is that of Bath. In our 3rd issue we outlined the history of the Bath Geological Collections tracing them back to 1819. New information shows that proposals for a Geological Museum here go back to 1805 which must be the first such proposal in the provinces. It appeared in the Bath Chronicle of October 31 1805 and is reproduced overleaf:-

We traced the history of the collections from 1819 to 1975 in previous issues (see GCG vol.1 no.3 pp 88-124. no. 10 pp 482, vol.2 no.2 pp 59-67 no. 5 pp 235-262). Its treatment from 1890-1925 was nothing short of

**N**ATURAL curiosities, so far as science is interested in their being discovered and collected, might as well be suffered to remain in the bed of Ocean, in their original quarries, in their native woods or plains, as to lie dispersed in a mad jumble of private cabinets. Of private collections it may fairly be presumed, that not one in ten have been formed with any scientific view whatever. The beauty of each specimen has probably, and not without reason, excited the admiration, and prompted the desire of possession, in the generality of collectors. The fame of possessing rarities is a stimulus to many: but the vanity of the one, and the taste of the other, might be equally, perhaps more highly, gratified by their consenting to deposit their several collections in a public Museum, in which their names should be inscribed with honour, according to their contributions. It can hardly be doubted that men of science would gladly bring the greater part of their cabinets to such a repository, when it is considered that the value of scientific arrangement is necessarily proportioned to the number of objects duly examined; and that the accuracy of scientific education depends on the opportunity of observing numerous analogies, and of repeating experiments upon an ample scale.

I have been led to make these observations from a late occasion to consider the great quantities of valuable and interesting fossils with which the county of Somerset abounds, and especially those which have been discovered in the vicinity of Bath; as tusks, teeth, and bones, which appear to have belonged to that singular animal called the Mammoth, only the fossil remains of which are known to naturalists; and which appears to have exceeded the ordinary size of elephants. Numerous vertebrae, teeth, and palates of large fish, and of animals resembling the crocodile or alligator, have been lately discovered. Of the latter the greater part of two large skeletons have been brought to light, and have been more mutilated by the curiosity of petty collectors, who have carried off detached moricels, than by the violence of the great flood, which, while it entombed, preserved the whole.

Perhaps no place in the kingdom offers a greater variety of concurrent circumstances favourable to the establishment of a grand public Museum than the city of Bath. In addition to the natural treasures of the county, the proximity of the opulent port of Bristol facilitates the importation of curiosities from distant countries. Few towns in Europe can boast of a greater number of enlightened and ingenious men and women, resident during the greater part of the year; nor of a more numerous and elegant assemblage than that by which Bath is frequented for nearly eight months, in various change and continual succession.

The visits to a well-furnished and systematically-arranged Museum of Natural History (the fossil department of which might be consecrated to the pious and venerable De Luc, Kirwan, and others, whose philosophy has been employed in illustrating religion, and supporting the cause of virtue) might be at once instructive and amusing to the young and old of all descriptions. The idle and uninformed might gaze and admire; the curious might advance their researches; the profound might find congenially fresh occasion for reflection. The rooms might be furnished with fires, chairs enough for large parties, and tables covered with philosophical publications of the latest date, illustrative of the contents of each apartment.

A small sum collected at the door from every visitor would, I have no doubt, give ample support to the establishment; and might, if it should be requisite, provide a handsome surplus of revenue to any speculator, or promise lasting honour to any liberal donor, who would dedicate to this purpose a spacious house in a central situation. It is certainly to be wished that the house, as well as the collection, should be vested in trustees, for the purpose of constantly extending and improving the Museum.—*Bath, Oct. 29th, 1805.*

scandalous as S. G. Perceval stated in the Bath Herald of November 16 1906 under the pseudonym Pro Bono Publico:-

### Letters to the Editor.

*The Editor does not hold himself responsible for the opinions expressed by Correspondents.*

*All communications must be accompanied by the names and addresses of the writers, not necessarily for publication, but for the information of the Editor. Purdy anonymous letters are invariably rejected.*

#### THE MOORE AND OTHER COLLECTIONS AT BATH.

Sir,—I visited the Moore collection yesterday. I knew Charles Moore well. The way his collection has been treated is enough to make him turn in his grave. Consigned to an obscure upper room, and with ~~no~~ reason. The spacious apartment, which it once occupied is now fit only to be the residence of Diogenes, on account of its darkness, for that eminent philosopher was, I believe, provided with a lantern! Only conceive obscuring the light of that dark apartment by that dreadful gallery. In addition to the unfitness of the Moore receptacle (it does not deserve the name of "room") the collection is at the mercy of anybody. I might have done anything while inspecting the collection, as there is no attendant; might have broken the glass in a scientific way without making a noise, and taken any amount of specimens. Why is not the collection sent to the British Museum?

Then the fine mineral collection, in what a state it is, obscured by dust, in consequence of badly fitting cases! But this collection had better remain as it is, as it requires an expert to clean minerals, and when washed they would soon get dirty again unless in air-tight cases. Bath, I should think, is the only town in the kingdom of its size, without a municipal museum.

As for the valuable antiquities, practically open to the street, their state is a witness to the apathy and want of culture which must exist in Bath.

X Yours faithfully,  
PRO BONO PUBLICO.

November 15, 1806.

good

fine

[X omitted  
by editor  
S.G.P.]

The rescue operations mounted on these collections from 1959 by Ron Pickford and others have also been described in our earlier issues. Yet when a new curator was appointed in 1978 to "supervise all the city's museums" he was not given responsibility for the geological collections! Because of local Government re-organisation the collections became the responsibility instead of Avon County Council, who passed them to the care of the Avon County Libraries. This backward step seems a clear indictment of the fact that we have achieved nothing!

The current or near current state of play is best revealed by the following letters which speak for themselves.

## COUNTY OF AVON

Edward Grimshaw, FLA, Director of Libraries  
County Library Headquarters, Central Library, College Green, Bristol BS1 5TL

Telephone (0272) 26121 Ext. 65

Mr. J. B. Delair, BSc,  
Caledonian Land Surveys Limited,  
19 Cumnor Road,  
Wootton,  
Boars Hill,  
Nr. Oxford.

Your ref

Our ref EG/JG

Date 13th February 1980

Dear Mr. Delair,

I regret that as I have been on leave this reply to your letter of 18th January has been delayed.

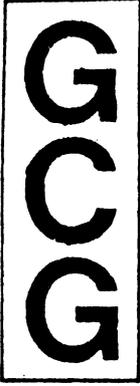
The position in respect of the geological collections in Bath is that they are the property of Avon County Council, having been inherited from the City of Bath in April 1974. The accommodation and display of the collection remain as they were under the City of Bath.

The Community Leisure Committee are well aware of the value and importance of the collection, but I am sure you will appreciate that the problems at the present time are those of accommodation and resources.

Yours sincerely,



Director of Libraries



# Geological Curators' Group

affiliated to the Geological Society of London

Please reply to: Brian W. Page,  
Editor, G.C.G.,  
Geology Department,  
Keele University,  
Staffs., ST5 5BG

My Ref: BWP/SC

Your Ref:

14th March, 1980

Dear Sir,

I write to you as Editor of the "Geological Curators Group". I have seen a copy of your letter of 13.2.80 to Justin Delair about the geological collections of the City of Bath which were transferred to your care in April 1974. We had hoped that this long-awaited transfer would have guaranteed the future of these vital collections of so great an importance to historical and taxonomic research in geology. From the letter quoted above it seems, however, as if the problem of accommodation and resources which, but for the valiant efforts of Mr. R. Pickford would have decimated parts of these collections, have not disappeared as the result of the transfer of ownership.

Would you, as Director of Libraries of the Avon County Council, be able to write a brief article for us about the future of the geological collections in Bath, now in your care, as you see it?

Great concern has been felt throughout the geological world about the future of these collections.

I am, Sir,

Yours sincerely,

c.c. Mr. Simon Hunt,  
Mr. Ron Pickford

Mr. Edward Grimshaw,  
Director of Libraries,  
County Library Headquarters,  
Central Library,  
College Green,  
Bristol, BS1 5TL

# COUNTY OF AVON

Edward Grimshaw, FLA, Director of Libraries  
County Library Headquarters, Central Library, College Green, Bristol BS1 5TL

Telephone (0272) 26121 Ext. 65

Mr. Brian W. Page,  
Editor, G.C.G,  
Geology Department,  
Keele University,  
Staffs., ST5 5BG.

Your ref BWP/SC

Our ref EG/JG

Date 31st March 1980

Dear Sir,

Thank you for your letter of 14th March asking me to write a brief article on the future of the geological collections inherited from the former Bath Royal Literary and Scientific Institution.

I do not feel there is anything I can add to my letter to Justin Delair, a copy of which you have seen.

Yours faithfully,



Director of Libraries

H. S. Torrens

## Brian Page

The news that Brian Page had resigned from the post of Editor came as something of a bombshell. Brian has played such a key role in the Group's history to date, that it is hard to imagine how it would have fared without him.

When the Group was founded at Burlington House in 1974, few of us knew Brian. At this meeting he hesitantly volunteered to serve on the committee ("People have been saying it is important to involve technicians. Well, I'm a technician") and was promptly coerced into editing the Newsletter-to-be.

It was obvious even then that a good newsletter would be essential to the Group's success but none of us realised quite how good it would turn out to be in Brian's hands. From the first, with the strong backing of Hugh Torrens,

Brian insisted that all major articles should be stringently refereed. This policy has not always been popular with the authors concerned but the final results have amply justified it.

No sooner was the Newsletter successfully launched than escalating costs of production began to threaten its existence. Advertisements became an essential source of revenue in paring the costs to an acceptable minimum and Brian proved adept at seeking out and enlisting new advertisers. Consequently the Newsletter has gone from strength to strength. The fact that new-formed professional groups have in their turn produced newsletters obviously modelled on the G.C.G. prototype, is the surest measure of Brian's achievement.

But being a technician has its disadvantages, especially if you take on other commitments, and over the years Brian had been placed in a very difficult position. This summer the pressures in the department became intolerable and he resigned - as Editor and from the University alike.

The Committee feel strongly that the singular role that Brian has played in promoting the Group's success to date deserves formal recognition. A proposal will be brought before the A.G.M. in December that Brian should become the first Honorary Life Member of the G.C.G. and would thus continue to receive the Magazine he has done so much to establish. We hope that this proposal will have the enthusiastic support of all members.

Geoff Tresise

#### The GCG and its finances

The last 18 months have not been the happiest for the Group and its bank balance. Although I believe the worst is behind us, there are still worries ahead, and not a few concerns over the cause of our problems. Although the 'newsletter' has given the bare facts of GCG's accounts, which are of course circulated at the AGM in any case, to understand the meaning of these figures fully one must dig a little deeper. In order that the whole membership is aware of the history of our present situation, I am presenting here the 'official' diggings.

The terms under which we became affiliated to the Geological Society were quite clear and two points bear repetition.

- a) Membership was free.
- b) An annual charge was to be made for which members would receive the Group's Newsletter and any supplementary material.

The implication of these points, at least in my view, is that money received on membership charges should not be used for purposes other than the production and distribution of the newsletter. Other activities of the Group (and they are growing steadily in number and size) require separate financing. This has not always been possible nor at all easy.

A case in point is the National Scheme for Geological Site Documentation. Without going into unnecessary details I have brought together the main points of the sad story:



1. January 1977            NCC offer 1 year's grant of £1300 towards the implementation of the National Scheme.
2. March 1977 - June 1978        Claims of £658.65 met in full.
3. June 1978            Second grant applied for requesting £1050.
4. July 1978            Amended application reduced to £950.
5. January 1979         Second grant of only £750 awarded. The £200 shortfall was to have covered the travel and subsistence expenses of the CGSD (Committee for Geological Site Documentation members), an allocation previously accepted.
6. April 1979            Claim made for £237.45.
7. May 1979            Claim refused on basis of financial overcommitments by NCC and (presumably) our late submission.

Subsequently:

GCG pays total of £318.25 including the refused claim for £237.45 and the balance of the previously paid CGSD Executive expenses, and MDA takes over printing costs and management of Site Documentation Locality cards and sheets, paying off a £237.45 debt.

Although the primary task of the CGSD was the implementation of the National Scheme, by its very existence it was drawn more and more into the field

of geological conservation. This trend culminated in the staging of the Conservation Conference in March 1979. The initial plans for this were made in the summer of 1978 in close consultation with the NCC's Geology and Physiography Section. Verbal offers of £2000 for speakers' expenses and publication costs were made.

In the event, the GCG accepted the burden of domestic arrangements and heavily overestimated the number of rooms required for overnight accommodation and faced a 40% cancellation fee amounting to £140. This was not helped by the additional fact that the NCC then paid the expenses of speakers in its own sessions only (2 out of 7). GCG paid the rest with the help of a donation from the other group involved - the ATG. Publication of the proceedings is awaited, but will now appear via the Geological Society.

The major losses which we thus incurred have not been helped by the financial climate of the times, or a certain shortsightedness on the part of the Group. Postal charges for the 'Geological Curator' now almost exceed printing costs which themselves have gradually been rising. Our membership charges should have been raised last year. The cushion of a healthy current account and a not inconsiderable deposit account, slowly built up through the hard work and diligence of our former Editor, his ceaseless search for advertisers and the sale of backnumbers, has gradually been whittled down.

Careful readers will see that this issue of the journal has been funded with the help of outside bodies - this support will continue to be sought. This double issue has also helped, by first being more cost effective in its production, and second by saving the postage of what would have been the December issue.

The appointment of an advertising officer should ease the thankless task of raising revenue for the Group, and prove more effective.

Membership charges have been raised - always a regrettable measure but one which I am confident will be accepted by all the Group's supporters.

The CGSD and its National Scheme is also doing its bit for the Group. Formerly, all Record Centres designated during the heady days of NCC-financed operations were supplied freely with information, recording formats and service. Direct finance is no longer available, so shortly, I will be circulating Record Centres with a request (together with an invoice to expediate matters) for a £5 servicing charge for the National Scheme, partly to help cover some of the losses it engendered, and partly to secure a viable future for its now reduced operations. I hope for a considered response from all concerned.

I will strive to uphold the principle that members' subscriptions will still pay for their 'Geology Curator' and its delivery.

Finally, there is something that we can all do to help the Group and its finances. Even at this late stage of the year, over 50 personal members have not paid their 1980 £2.00 charge. This is an unnecessary burden for us to bear. If you are one of these people, please write your cheque now. Reminders are expensive. You will have also seen on the cover of this issue a notice that 1981 subscription charges are due. Please write your cheque now.

John Cooper

## Committee Notes

Three committee meetings were held during this period: at Keele on 20 February; Leeds on 17 June; London on 22 September.

1. Officers & Committee. Co-options 1980. The constitution allows for the co-option of four members and it was agreed that T. Besterman, A. Howell, S. Locke (Mus. Ass. representative) & D. Smith should be co-opted for the current year.

Officers 1981. The resignation of B. Page as Editor and the impending resignation of P. Doughty as Secretary were causes of concern. It was agreed that G. Tresise should be nominated as the new Secretary and a replacement sought as Minutes Secretary. T. Pettigrew would be invited to take over as Editor.

H. Torrens as Chairman, and F. Howie & A. Mathieson as committee members would also complete their terms of office at the A.G.M.

2. G.C.G. Finances. Early in the year it was reported that the balance in hand was insufficient to produce three issues of the Newsletter in 1980. The following economies were therefore agreed:

- 1) One normal-sized issue of the Newsletter would be produced in April and one joint issue in November. The cost of the latter would be limited to £200.
- 2) 400 rather than 500 copies of each would be printed.
- 3) Advertising rates would be increased from £20 to £25 per full page.

By September the balance in the current account stood at £235. This had been achieved by a transfer of £100 from the deposit account; a donation of £50 from the Clyde Petroleum Company; an interest-free loan of £100 from the Museum Professionals Group; and a loan of £20 from M. Crane.

Grants were being requested from the Geol. Soc. and the N.C.C. and sponsorship by B.P. and Shell would also be sought. All C.G.S.D.-designated Record Centres were being asked to pay £5.00 towards the expenses incurred by the scheme.

It was proposed that, at the A.G.M., membership charges should be raised to £4.00 for personal members and £5.00 for subscription members. The Treasurer is negotiating with the Tax Office to determine whether members can claim tax relief on their subscriptions.

An annual audit of the books was also proposed and it was agreed that the constitution should be amended accordingly.

3. Newsletter. It was agreed that the format of the title page should be changed. The G.C.G. logo would remain but the words 'Newsletter of the Geological Curators Group' would be replaced by 'The Geological Curator'. It was hoped that the omission of the word 'Newsletter' (with its ephemeral connotations) would encourage more librarians to subscribe.

It was agreed that a 10-part catalogue of the type, figured and cited specimens at Bristol Museum should be produced as a supplement to the Newsletter on the understanding that Bristol Museum would pay the full costs of production and distribution. The first part was produced in conjunction with Newsletter 2.8.

4. Publications. 'State & Status' Report. P. Doughty reported that the Geol. Soc. were not prepared to publish the full report if the discussion and recommendations sections remained in their drafted form. These sections formed the basis of the paper presented at the Mus. Ass. Conference in September, which would subsequently be published in the Museums Journal. They would therefore be omitted from the Geol. Soc. publication, and the Society would instead be asked to circulate reprints of the Mus. Journal article with the report. It was hoped that the truncated report would be published before the end of the year.

'Fossils & Related Collections'. This B.M.(Nat.Hist.) publication, containing 4-5,000 entries, should appear in 1981. R. Cleevely is investigating the possibility of the volume being offered to Group members at a reduced price if ordered prior to publication.

Publicity Leaflet. D. Smith produced a draft for a publicity leaflet for the Group. This would be circulated after the A.G.M. when the new subscription rates could be incorporated.

5. Collections Liaison. R. King was asked to undertake the curation of the Richmond collection, on the understanding that it should eventually be transferred to the Grosvenor Museum, Chester.

It was hoped that the Group could arrange for the curation of the collections at Penrith with the aid of grants from the Eden District Council and N.W.M.A.G.S.

The S.E. Area Council was considering the appointment of a peripatetic curator to supervise geological collections in the area.

6. C.G.S.D. M. Stanley & K. Sedman had compiled the annual report for 1979/80. The M.D.A. had published the handbook for Record Centres drawn up by the Committee.

The Geol. Soc. committee for Site Conservation had met for the first time with R. Clements as C.G.S.D. representative. The main aim of this committee would be to liaise with the Soc. for the Promotion of Nature Conservation, County Trusts etc. The publication of a booklet on Site Conservation was also envisaged.

7. Meetings Programme 1981. April. No G.C.G. meeting would be arranged in view of the B.M.(Nat. Hist.) Centenary Conference on 'History in the service of Systematics' (13-16 April).

June. A mineralogical workshop at the Geological Museum.

September. 'Collections Research' - a one-day meeting held in conjunction with the Mus. Ass. conference in Manchester.

December. 'Local Geological Displays & their Presentation' at the Oxford University Museum. This meeting to include the A.G.M.

8. Museums Association. Council Elections. I. Rolfe was proposed for the Mus. Ass. Council, his nomination being supported by the Scottish Federation & the Museum Professionals Groups. (It was later announced that Dr. Rolfe had in fact topped the poll.)

Training Scheme. The Association had agreed that specialist groups should

be represented on the Boards of Studies; P. Doughty would continue to act as G.C.G. representative.

A course plan relating to the new Museums Diploma training scheme had been produced by the Leicester department of Museum Studies. A number of specialist groups had raised the point that training in curatorial work was conspicuously lacking in the course outlines proposed.

Manual of Curatorship. The Group's aid had been requested in the preparation of a bibliography for the forthcoming manual. Small working groups for each of the eight divisions were drawn from the following members: H. Brunton; J. Cooper; R. Croucher; P. Doughty; F. Dunning; F. Howie; A. Mathieson; P. Phillips; T. Sharpe; M. Stanley; A. Thomas; H. Torrens; S. Turner.

9. Life Membership. It was agreed that the A.G.M. should be asked to approve a new category of Hon. Life Membership, with B. Page as the first Life Member.

Geoff Tresise

National Scheme for Geological Site Documentation - Report for 1978/79

This is a brief resumé of a more detailed report covering the first two years (1978 & 1979) of the National Scheme which has appeared in M.D.A. Information.

There were 13,944 site records held by the 36 Record Centres as of 31st January 1980. Since the majority of Record Centres were designated in November 1977 some 8,800 records have been produced representing 60% of the total held. 10 centres utilised Manpower Services Commission S.T.E.P. schemes during 1979 which compares favourably with the 11 centres using Job Creation Projects the previous year.

Records Centres have been used by local authority Planning Departments for Public Enquiries, County Structure Plans, Mineral Assessment Reports and Waste Disposal Surveys. The Nature Conservancy Council greatly stimulated work at those centres where information was requested for the Geological Conservation Review and S.S.S.I. designations or revisions. Schools and Colleges were the other major users.

Several centres undertook little or no recording during 1979 due to either re-organisation of their own museums or the loss of staff input through cessation of S.T.E.P. Schemes. C.G.S.D. never expected all centres to be actively recording and greatly appreciates the difficulties of one-man departments. Publications ranging from Hertfordshire Puddingstone to the Quaternary Geology of Lancashire have been produced by centres using their records and two articles have appeared specifically as publicity for site recording schemes in Northern Ireland and Cumbria.

The Museums Documentation Association have published this year, on our behalf, the Geology Locality Card Instructions with 8 completed examples of the Summary Record Sheet and the Geological Record Centre Handbook, a must for all Record Centres and geological libraries.

This year and future years will see the National Scheme mature but many gaps still exist in particular in Scotland and Wales. We urge those museums, universities and colleges with geological staff to at least consider further their position with regard to site recording. All geologists are responsible for the conservation of sites and without alternative and well documented localities many classic sites may be lost to science.

M. F. Stanley  
Hull Museums

## THE WORST CURATED GEOLOGICAL OBJECT ?!

Our worst curated geological object "competition" on the cover of the last issue sparked off some fascinating replies which show there is a whole new sub-culture of research here waiting for the diligent curator or academic! It also shows that geology in Museums can have its humorous side. Dr. Mike Crane of Bristol City Museum submitted the cutting below from the Western Daily Press of January 31 1930 for the worst identified geological object - it never got to the curation stage. The original is preserved in the J. W. Tutcher Papers at Bristol Museum.

### *A Scientific Dream.*

#### *—And the Awakening!*

Members of the scientific mission from Madrid, who have been examining the skeleton of a "dinosaur" discovered near Tetuan (Morocco), have come to the conclusion that the "remains" are really those of a hay-making machine abandoned by a Spanish farmer in 1917.

Although the original investigators were in error in mistaking the curved iron teeth of the automatic rakes for the ribs of a species of dinosaur only known heretofore in the Rocky Mountains, they were clearly right in giving a transatlantic origin to their discovery, for the machine bears the name of a well-known Canadian manufacturer of agricultural implements (adds a 'Times' telegram).

*W.D.P. July 31 1930*

Graham Durant of the Hunterian Museum, Glasgow submitted an equally splendid entry for the least curated geological object - the "Auld Been" of Banff Museum. The saga below is reproduced from Samuel Smiles 1897 edition of the "Life of a Scotch Naturalist — Thomas EDWARD associate of the Linnean Society" London, John Murray pages 365-372. Graham writes the following introduction to Smiles' section in inverted commas.

Edward (see page 555) worked throughout his life as a shoemaker and was only able to pursue his interest in natural history in the evenings and overnight. Nevertheless he achieved much and was elected an Associate of the Linnean Society as well as receiving other scientific honours. He made large natural history collections and was a skilled taxidermist, but poverty at several stages of his life forced him to sell off his collections. Several attempts were made to find him a post in which he could actively pursue his naturalist interests and yet maintain his rather large family. He eventually obtained a post as curator of Banff Museum, but his interest in the museum began before this appointment as can be seen from the enclosed account of the "Auld Been". The moral of the tale should be clear and needs no further elaboration from me.

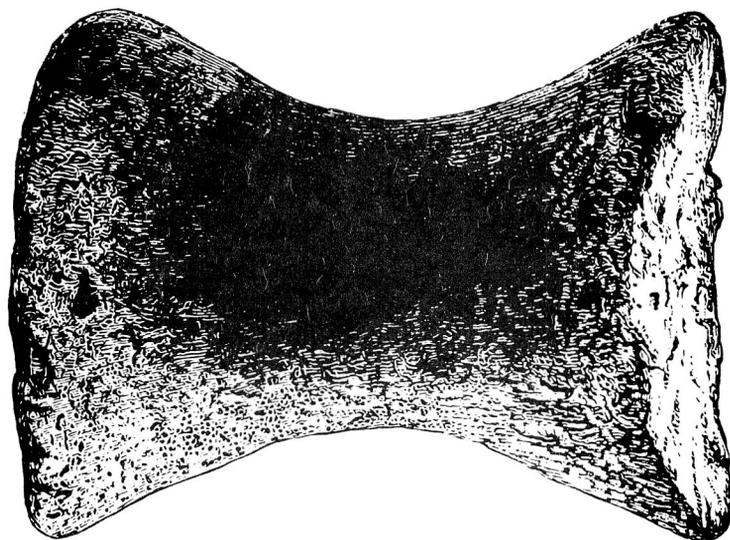
At the time of writing the "Auld Been" has not been discovered amongst the Banff Museum collections, which have suffered badly through neglect. Hopefully it will turn up again showing that it has not succumbed to another curatorial spring clean!

"Edward had also several other fragments of antiquity collected in the Banff (see page 555) Museum, one of the most interesting of which was the joint-bone of some extinct animal. The story connected with this bone is rather curious.



THOMAS EDWARD, A.L.S.

Engraved by CHARLES ROBERTS, after a Drawing by GEORGE REID, R.S.A.



THE "AULD BEEN."

Before Edward had any official connection with the museum, he visited it one day in company with his master; and there he first saw this particular bone. He was struck by its size, thickness, and peculiar shape. The idea flashed across his mind that he had seen something like it in a picture; but he could not remember where. Seeing his intent glance, the curator asked him if he knew anything about it? "Nothing," said he, "except that it appears to me to be a semi-fossilised bone of some of the pre-adamite monsters that are dug up now and then; but what it is I cannot tell." "It looks to me," said the curator, "to be nothing more than the root of a tree: in fact I am sure it is. If it were a bone, as you say, surely some of the gentlemen composing the Scientific Society would know." "Give it time," replied Edward, "and some one will yet be able to tell us all about it." "Time indeed!" said the curator, "we have had it lying here far too long. I have often thought of throwing it into the fire, and I will do so when I have next the opportunity. It would never have been here but for that old fool (naming a previous curator), whose only aim seems to have been to get the place filled up with useless trash."

In the meantime the previous history of the bone may be given. Some sixty years before, when a milldam was being enlarged at Inverichny, in the parish of Alvah, near Banff, one of the workmen came upon a dark-looking object embedded in the bank amongst clay and shingle, about six feet from the surface. After being disengaged, it was found that the object was very like a large hour-glass, though not tapering so much towards the middle. There were differences of opinion amongst the workmen about the nature of the thing. One said it was a "been," another said it was "an auld fir knot." One man tried to break it into pieces with a spade, but he failed. The hard bone turned up the edge of the spade. It was handed about, to ascertain if anybody could make anything of it. At last it got into the hands of Captain Reid of Inverichny. He showed it to the three most important persons in his neighbourhood - the minister, the doctor, and the dominie.

The minister, though he could say nothing about the bone, knew that there were great leviathans in the waters, for he had read about them in the Scriptures; but he had never seen any notice of such things being found in clay banks. The doctor, after looking at it, and turning it round and round, said that if it was a bone, at least it did not belong to the human structure. The dominie, like his other learned friends, could throw no greater light upon the subject. He did not think it was a bone at all, but only a monstrous piece of petrified bamboo! Then the men of science of the Banff Institution were applied to, but they could make no more of the object than the minister, the doctor, and the dominie. Finally Captain Reid presented it to the museum of the Banff Scientific Society; and there it remained until Edward first saw it.

It would appear, however, that the curator had become tired of the bone, or whatever else it was, and wished to get rid of it. He removed it from the case in which it was deposited, and threw it among the rubbish of the museum. When Edward was appointed sub-curator of the museum, about nine years afterwards, his first natural impulse was to go to the table where the bone had been deposited, but lo! it had been removed. He searched the whole place, but no bone was to be found. He feared lest the curator had carried out his intention, and burnt it.

Next morning, Edward received orders to destroy a lot of useless stuff which lay on the floor, consisting of broken-down astronomical and philosophical instruments, moth-eaten beasts, birds, and fishes, together with other wrecked specimens of the long-neglected museum. Edward went to work, and whilst groping amongst the rubbish at the bottom of the heap, he came upon a round dark object. He brought it up, and lo! it was the "auld been" - in other words, the old bone! It had not been burnt! He cleaned it and put it in the old place.

When the curator next made his appearance to ascertain how far the burning had gone, he gave a glance at the case where the bone had been replaced. He stood aghast. "You have put this thing on the table again!" he shouted. "Yes," replied Edward. "Do you know," rejoined the curator, "that by so doing you are insulting myself, and the gentlemen of the Society, who requested all objectionable matter to be removed from the collection?" "I am very sorry for that," said Edward. "Then remove it at once, and burn it with the rest." Edward removed it accordingly, but he did not burn it. He took it home, and kept it there until he was able to replace it in the museum.

When the curator next entered the apartment, he glanced at the place where the bone had been, and seeing that it had been removed, he said nothing further about it. Shortly after, Edward was himself appointed curator, and having the control of the collection in his own hands, he restored the bone to its former place. He was still most anxious to know of what animal the bone had constituted a part. He never failed to direct the attention of visitors to the bone, and to inquire of them whether they could give him any information about it. Thus time rolled on, and despite of all his endeavours, the bone still remained unknown and unnamed.

At last Sir Roderick Murchison and Professor Ramsay honoured the museum with a visit, in September 1859. Edward was sure that Sir Roderick would be able to tell him all that he wanted to know respecting the bone. It was the first thing that he put into Sir Roderick's hands. "Can you tell me what that is, sir?" He took it up, turned it round and round, and over and over, and remarked, "That is a most extraordinary bone;" and then he asked when and where it had been found. Edward told him all the facts he knew respecting it, and added: "But can you tell me to what animal it belonged?" "No, I cannot tell," replied Sir Roderick. Neither did Professor Ramsay know anything about the bone. "You see," said Sir Roderick, "this does not lie in my way. This is not exactly a geological specimen. I am more a stone man than a bone man. Besides, it is often a difficult matter to distinguish small fragments or single bones of a skeleton, especially such a remarkable one as this, and to determine with certainty to what creature it belonged. But," he added, "if you have any stones in your collection unnamed, or any particular rock in your neighbourhood that you can show us, and which you and the stone men of the district are in any doubt about, my colleague and I will be most happy to sort them out for you. As regards the bone, I'll tell you what to do. Send the bone to London, to Professor Owen. He's your man. He's made up of bones. He'll soon tell you all about it. And more, you can give him my compliments, say you saw me, and that I told you to send it."

Edward did not, however, send the bone to London. He knew from experience, that such things, when sent so far away, rarely came back. That had been the case with many of his Crustacea. He therefore kept the bone at home, and continued his inquiries of the savans who from time to time visited the museum; but he never succeeded in obtaining any favourable answer to his questionings.

Years sped on, and still the bone remained unknown. At last, when Edward was rummaging over some old books, he came upon the second volume of the Penny Magazine. Whilst turning over the pages by chance, he saw a picture of old bones which had much puzzled his brains some thirty years before. And now he remembered that it was the picture of the bones here drawn, that had first given him the idea that this bone in the museum was the remnant of some extinct animal. And here was the creature itself from which the bone had been taken. It was the Plesiosaurus dolichodeiras; the bone in the museum being one of the femurs of the fore-paddle of that long extinct monster.

To make assurance doubly sure, Edward took a photograph of the bone, and sent it to a scientific correspondent in London; when he had the pleasure of being informed there was no doubt whatever that the bone was one of the femurs of the fore-paddle of the Plesiosaurus. Here, then, was a discovery well worth all the care, the trouble, and the anxiety which the bone had occasioned. It may also be mentioned that, so far as is known, no other fragment of the Plesiosaurus has yet been found in Scotland. They have been met with in England in the secondary strata, and on the Continent, principally in the Oolite and Lias. The bone in question is now one of the most cherished relics of the Banff Museum."

[but so cherished that it is now once again mislaid if not lost.]

## MOULD making & REPRODUCTION

### *Silicone Rubber*

*Cold-Cure Silicone Rubber by General Electric of America. Easy to use, and can be used to cast in many materials without release agents - waxes, polyesters, plaster, cements, tin alloys, etc. RTV-700 high strength rubber can be used for making skin moulds. Booklet available. 35p*

### *Vinamold*

*Hot-Melt Re-usable Vinyl Rubber for making a whole variety of your own moulds for different School Departments - Art, Crafts, Science, Geography, Pre-history. Booklet available. 35p*

### *Materials*

*Materials for Reproduction plasters, ciment fondu, polyester resins and an extensive range of fillers, pigments, etc.*

*All in small or bulk quantities.*

### VINAMOLD MELTING POTS

*A range of thermostatically controlled melting pots for melting Vinamold & holding it at pouring temperature, with capacities from 2.5 to 20 Kg.*

*Please write to Theale*

# A Tiranti Ltd

21 Goodge Place London W1  
& 70 High St Theale Berks

# OPEN EARTH

Number 7

February 1980

ISSN 0141-3619



## OPEN EARTH

EDITOR: Peter J. Smith

..... is an informal bimonthly magazine reporting and commenting on issues and advances in the solid earth and closely related sciences. It also covers those areas (policy, history, education, etc) where the earth sciences and society/culture meet.

Founded 1978

Individuals	£6	\$14	( Air	£9.3	\$21.5 )	p.a.
Institutions	£9	\$21	( Air	£12.1	\$28.0 )	

32 ST JAMES CLOSE, HANSLOPE,  
MILTON KEYNES MK19 7LF, ENGLAND

# special offer

■ As a special introductory offer, curators writing from a museum address may obtain Open Earth at a discount of 20 percent for the first year.\* WHAT'S MORE, although concessions and offers usually only apply to personal subscriptions, in this case the first year offer may be applied to institutional subscriptions.

\* Thereafter, normal rates and concessions to apply -- see page 2 of the magazine.

OPEN EARTH,  
32 ST JAMES CLOSE,  
HANSLOPE, MILTON KEYNES MK19 7LF.

## COLLECTIONS AND COLLECTORS OF NOTE

## 28 COLONEL BIRCH. (c. 1768 - 1829)

It seems worth putting the following additional information about Colonel Birch (GCG vol. 2 (7) pp. 405-12) on record. It has come to light thanks to help received since the above was published.

Tom Sharpe of the National Museum of Wales kindly drew my attention to a letter preserved there dated 23 September 1818 to H. T. De la Beche from Sir Everard Home in which we learn that it was De la Beche who was instrumental in bringing Colonel Birch's famous ichthyosaur (Lot 102 of the Birch Sale of 1820) to Home's attention in September 1818 and in actually transporting it to London for him to study. Home asks "Will you allow me to trouble you for a short account of when and where it was found, how it came into the hands of Colonel Birch of Thorpe Hall?" This thus confirms that Col. Birch has now been correctly identified.

Ron Cleevely of the British Museum (Nat. Hist.) has also discovered from the National Army Museum the following dates of Birch's Commissions in the 1st Life Guards.

Lieutenant from 2 April 1794  
 Captain from 15 August 1798  
 Lt. Colonel from 1 September 1808  
 Retired during 1810.

He also points out that the holotype of Phylloceras heterophyllum (J. Sowerby) from Whitby which was collected by Birch, came to the British Museum (Nat. Hist.) collections in 1861 with the rest of the Sowerby collection (Reg. no. 43879), but that the type of Microderoceras birchi (J. Sowerby) from the same source, did not.

The MSS records of the Bristol Institution (in the Bristol Record Office) have shed new light on the 1820 auction sale of Col. Birch's material and also his 1823 donation to the Bristol Institution. A letter from J. S. Miller (c. 1780-1830), curator of the Bristol Institution to William Baker (1787-1853) of Bridgwater dated 7 June 1820 reads "The Proteosaurus [i.e. Ichthyosaurus] figured in the Philosophical Transactions no. 57 [and] offered for sale in London [lot 102 of the Birch sale] was bought in at £142 [not £120 as claimed later by George Cumberland]. Dr. [W. E.] Leach did bid as high as £75 for Cuvier [Paris] and Mr. [-] Kid £120 for the Imperial Austrian Museum." This clearly demonstrates the international interest aroused by this specimen.

Parts of the same letter are quoted also by John Bowen (1854 p. 75).

A recently published letter from J. B. Pentland (1797-1873) to William Buckland (1784-1856) (Sarjeant & Delair, 1980 p. 257-261) has been interpreted as showing Col. Birch had earlier transmitted additional material of ichthyosaur jaws to Georges Cuvier (1769-1832) in Paris. These jaws arrived at the Jardin du Roi where Cuvier was Professor of Anatomy in, it was claimed, July 1819 which is well before the auction sale. The internal evidence in this letter shows it has been wrongly dated and this can be confirmed by examination of the Bath cancellation postmark on the letter which reads 20 June 1821. The Birch specimens sent to Cuvier were simply bought at the Birch sale in May 1820 and arrived in Paris in July 1820. As we have seen Dr. Leach was acting as Cuvier's agent at this sale. J. M. Edmonds kindly pointed out the correct date for this letter and that it had been confirmed by the Keeper of Manuscripts at Nottingham University.

An earlier letter from Miller to Thomas Clark (1793-1864) of Bridgwater in the Bristol Institution collection, also sheds new light on Birch's collecting techniques. It is dated 17 April 1820 and includes the note "Mr. Morgan, a friend of mine found there [the Watchet coast of North Somerset] last year a nearly perfect Proteosaurus for which Col. Birch has offered him £20." The same specimen is noted in an earlier letter dated 6 Jan. 1819 and a sketch is stuck to a letter of 15 March 1820. From this we learn the specimen was about "3½ ft" [in fact 4½] long and that it is the same specimen as that drawn by George Cumberland in 1819 and reproduced by Delair (1969, p. 123). William Morgan (c. 1773-1852) then lived at Bower Ashton near Bristol but later moved to the Hotwells, Clifton. He did not accept Col. Birch's offer for his specimen which passed instead to the Royal College of Surgeons in 1820 for £25 (Home, 1820 p. 163; Cumberland, 1829 p. 346).

John Thackray also led me to another contemporary reference to Col. Birch in a letter of 28 February 1820 from Etheldred Benett (1776-1845) of Norton House near Warminster to G. B. Greenough - president of the Geological Society - which is in the Greenough MSS at Cambridge University library. Birch had visited her in the autumn of 1819 but had not impressed her very deeply. She wrote to Greenough that she thought him an amateur geologist only, and she was obviously amazed when he tried also to purchase her collection outright during his visit! There is no doubt that his major collecting technique was by purchase rather than his own collecting.

His donation to the Bristol Institution in 1823 can also be clarified by the Institution Committee Minute Book (preserved in the Bristol Record Office). The Minutes of 15 February 1823 record that a letter from J. S. Miller of 13 Hillsbridge Place, Bristol, the curator, was read "presenting by the desire of Colonel Birch sundry fossils and geological specimens from Wiltshire". It was resolved that a letter of thanks be sent to Colonel Birch who was staying c/o Mrs. Manleys, Warminster at the time.

Grateful thanks are due to Ron Cleevely, James Edmonds, Grace Gaspar, Tom Sharpe, Di Smith, John Thackray and to the staff of the Bristol Record office for access to the records of the Bristol Institution.

H. S. Torrens,  
Keele University

#### Additional References

- BOWEN, J. 1854. A brief memoir of the life and character of William Baker FGS. Taunton: F. May.
- HOME, E. 1820. On the mode of formation of the canal containing the spinal marrow and on the form of the fins (if they deserve that name) of the Proteosaurus. Phil. Trans. Roy. Soc. 110, 159-164.
- SARJEANT, W. A. S. & DELAIR, J. B. 1980. An Irish naturalist in Cuvier's laboratory. The letters of Joseph Pentland 1820-1832. Bull. Brit. Mus. (Nat. Hist.) Historical 6 no. 7.

### 34 T.R. FRY.

AN ANNOTATED LIST OF MATERIAL IN THE CITY OF BRISTOL  
MUSEUM & ART GALLERY COLLECTED BY T.R. FRY

#### INTRODUCTION

Mr T.R. Fry has recently retired from a part-time post at the City of Bristol Museum & Art Gallery which he had held since 1968. His interest in geology spans a period of over sixty years, during which time he has made extensive collections of fossil material. He is a self-taught geologist whose careful and methodical approach to recording data in the field, and to the documentation of the specimens he has collected, has made his work of inestimable value. The importance of his contributions was recognised by the University of Bristol when, in 1968, he was awarded the degree of Master of Science, honoris causa. Two species of fossils, both trilobites, have been named after him as a mark of appreciation, Piltonia fryi Goldring and Amphilichas fryi Whittard.

Material collected by T.R. Fry is to be found in a number of institutions, but the City of Bristol Museum & Art Gallery and the Department of Geology of the University of Bristol undoubtedly hold the largest number of specimens.

With a few exceptions the following list of accessions to our collection is in chronological order. The number to the left of each entry is the accession number. It should be noted that all of the items acquired as part of a particular donation or purchase carry the same accession number. This is a temporary number which serves to relate an item to its acquisition data until it is registered. It is difficult to identify all the elements of an accession once they are incorporated into the main collection and for that reason the notes given here cannot be regarded as exhaustive. Manuscript materials housed in the section are filed in one or other of two Geology File series. One is numbered in sequence and contains papers relating to items in the collection. The second series is intended for biographical information. Here file numbers are prefixed by the first three letters of the person's surname. In some instances the decision on where to file a particular item or items is made arbitrarily.

#### LIST OF ACCESSIONS

6336 (1923)

- i) Three specimens of Arthropleura, from the Coal Measures of Camerton, Ca 7192, Ca 7194, Ca 7195.

[ Destroyed by enemy action, November 1940. ]

- ii) Adelophthalmus wilsoni (H. Woodward) from the spoil tip of Camerton Colliery, Somerset, which worked coals of the Radstock Series, Upper Coal Measures. Registered no. Ca 7193.

Figured: MOORE, L.R. 1936. Some Eurypterids from the English Coal Measures. Proceedings of the Geologists' Association, 47: 352-375 [pp.353-355, fig.58] and OWENS, R.M. & BASSETT, M.G. 1976. A Westphalian eurypterid from South Wales. Palaeontology, 19: 185-190, pl.29 [fig.2].

6746 (1927)

Anthropalaemon from the Coal Measures of Tipton, Staffordshire.

Two specimens, Cb 1180. [Destroyed by enemy action, November 1940.]

8790 (1936)

Collection of flint implements.

[Destroyed by enemy action, November 1940.]

&

14/1969

Collection of implements of flint and chert, mostly Palaeolithic, from the Bristol area, together with drafts of FRY's 1956 paper and notes which, in part, were used in the preparation of that paper and LACAÏLLE, 1954 [Geology File FRY 9].

These accessions included material used in the preparation of the following papers:

DAVIES, J.A. & FRY, T.R. 1929. Notes on the gravel terraces of the Bristol Avon. Proceedings of the University of Bristol Spelaeological Society, 3: 162-172.

FRY, T.R. 1956. Further notes on the gravel terraces of the Bristol Avon, and their palaeoliths. Proceedings of the University of Bristol Spelaeological Society, 7: 121-129.

LACAÏLLE, A.D. 1954. Palaeoliths from the lower reaches of the Bristol Avon. The Antiquaries Journal, 34: 1-27.

See also acc. no. 4/1980.

9964 (1942)

Lias ammonites from the slopes of Dundry Hill collected by T.R. Fry for J.W. Tutcher, together with the field maps, some annotated by J.W. Tutcher [Geology File FRY 2]. Acquired with J.W. Tutcher's collection in 1942.

&

113/1962

Field notes on Liassic sections around Dundry (with reference to specimens and maps in the J.W. Tutcher Collection). [Geology File FRY 2.]

During the late 1920s Mr Fry began a systematic study of the Liassic rocks exposed on Dundry Hill with the object of establishing a succession within the Lower Lias. This work was commissioned by J.W. Tutcher who was then about 70 and unable to undertake the field-work. Tom Fry's maps and specimens passed to Tutcher and later came into the Museum's possession. The field notes were subsequently acquired by the Museum from T.R. Fry. The specimens and papers were used in the preparation of DONOVAN, D.T. 1978. Lower Lias ammonites of the Elton Farm borehole and the Dundry area, Avon, and a new species of Aegoceras. Bulletin of the Geological Survey of Great Britain, (69): 11-18.

[On page 14 (paragraph 1) of the above work the registration number of Androgynoceras maculatum (Young & Bird) from the spoil of a well sinking south-east of Hill Farm in 1933 is incorrectly given as Cb 4410; the correct number is Cb 4419.]

20/1952

Large ammonites from the Lower Lias of Keynsham.

Mr Fry's collection of ammonites and his field notes were used in the preparation of the following accounts:

DONOVAN, D.T. 1952a. The ammonites of the Blue Lias of the Bristol District. Part I. Psiloceratidae and Schlotheimidae. Annals and Magazine of Natural History, (12) 5: 629-655, pls. XII, XIII.

DONOVAN, D.T. 1952b. The ammonites of the Blue Lias of the Bristol District. Part II. Arietitidae. Annals and Magazine of Natural History, (12) 5: 717-752, pls. XXVII-XXIX.

DONOVAN, D.T. 1956. The zonal stratigraphy of the Blue Lias around Keynsham, Somerset. Proceedings of the Geologists' Association, 66: 182-212.

Donovan (1952a: 633) described T.R. Fry's collection of ammonites as the "mainstay of the work". Part of the collection was in the Department of Geology, University of Bristol, but the rest, "still in his possession ... has been made freely available". This accession includes material seen by Donovan while still in T.R. Fry's possession.

8/1955

Mainly fish scales from the Old Red Sandstone of Portishead.

Fish scales collected by Tom Fry from this locality have been studied by E.I. White, Department of Palaeontology, British Museum (Natural History) (1966) and A. Ritchie, The Australian Museum, Sydney (1973).

The species represented include Glyptopomus kinnairdi Huxley and Sauripterus anglicus Woodward.

86/1956

&

26/1964

Drepanopterus abonensis Simpson, a eurypterid from the Old Red Sandstone at Portishead.

In August 1948 F.S. Wallis then of this Museum and B.N. Temperley from the Department of Geology, University of Bristol, discovered a small fragment of eurypterid in fine sandstone overlying the fish bed in Woodhill Bay, Portishead. A large quantity of material was subsequently collected by Tom Fry and described by S. Simpson as Drepanopterus abonensis sp.nov. (The material which Simpson figured in his paper was deposited in the then Geological Survey Museum, but he noted that additional material was in the Department of Geology, University of Bristol.) Our specimens are merely 'topotype' material.

SIMPSON, S. 1951. A new eurypterid from the Upper Old Red Sandstone of Portishead. Annals and Magazine of Natural History, (12) 4: 849-864, pls. XV-XVI.

133/1956

Mineral specimens, including barytes from Gatherham Farm, Wick, near Bristol, and blende from Roman Gravels Mine, Shelve area, Shropshire.

114/1962

Description of Jurassic rocks exposed in a well sinking at Dundry, 1920-1. [ Geology File FRY 1.]

The succession penetrated was published by DONOVAN, D.T. 1958. The Lower and Middle Jurassic rocks of the Bristol district. Proceedings of the Geologists' Association, 69: 130-140.

118/1962

Records of Triassic and Jurassic rocks exposed in bomb craters around Yanley, Bedminster Down and North Wick, Somerset, with maps showing the positions of the craters. [ Geology File FRY 3.]

During the Second World War Mr Fry obtained details of bomb-craters from the authorities and prepared records of the rocks exposed and the fossils he collected.

Some specimens acquired with acc.no. 40/1969.

[ Tom Fry also collected from and recorded wartime exposures near Bath, particularly on Kelston Round Hill. His specimens and records were used by ARKELL, W.J. 1951-1959. English Bathonian ammonites. Palaeontographical Society Monograph and DONOVAN, D.T. 1948. Some exposures in the Jurassic rocks at Bath. Proceedings of the Bristol Naturalists' Society, 27(4): 329-342. None of the material referred to by Arkell was in our collection, or in T.R. Fry's personal possession at that time. We do, however, have representative material of some of the species listed by Donovan. See accessions numbered 100/1970 and 4/1980. ]

40/1964

Ordovician trilobites from the Shelve Inlier, Shropshire. Collected by T.R. Fry, donated by Prof. W.F. Whittard.

Tom Fry was appointed research assistant to Prof. Whittard, Channing Wills Professor of Geology, University of Bristol, in 1947. He was employed primarily to assist Whittard's fieldwork in the Shelve area of Shropshire, but he also undertook the arrangement of specimens in their museum. The need to define the fossil content of the lithological divisions established by earlier workers led Whittard to make extensive collections, but, as W.T. Dean (Bulletin of the British Museum (Natural History) (Geology), 33:3) commented, "it was not until the appointment of Mr T.R. Fry as Whittard's research assistant that the time-consuming work of fossil-collecting was eased. Fry displayed a remarkable aptitude for obtaining faunas from even the most unpromising strata and his contribution received

appropriate recognition when the University of Bristol awarded him the honorary degree of M.Sc. ...". [ Dean gives the date incorrectly as 1970; it was actually 1968.] The extensive collections made during this period by Whittard, Tom Fry and another member of the University staff, Maurice White, formed the basis for Whittard's monograph on the trilobite fauna published in parts between 1955 and 1967. T.R. Fry's outstanding contribution was acknowledged by Whittard who, in the part published in 1961, named a new species Amphilichas fryi in recognition of his work. Whittard distributed material from the Shelve to a number of other institutions in the United Kingdom and abroad, sometimes in exchange. A small selection of trilobites was donated by Whittard in 1964.

115/1967

Old Red Sandstone fish remains from Tintern Quarry [ 200 yards SSW of Tintern Parva church ].

The fish bed, which was discovered by Tom Fry, yielded material which H.A. Toombs (pers. comm. in litt. 19 June 1968 [ Geology File 68 ]) thought assignable to Holoptychius, together with an antiarch arm (possibly Bothriolepsis) and a specimen of Cosmacanthus malcolmsoni Agassiz (Cb 4606).

191/1967

Collection of 640 Carboniferous Limestone corals from the Bristol area with some associated manuscripts [ Geology File 77 ].

Folder i) Miscellaneous notes taken from papers bearing on the Carboniferous Limestone of the South Western Region ...

Folder ii) a) List of species of Carboniferous corals from the South Western Region, in the [ University of Bristol ] Departmental collections with their stratigraphical positions and regional occurrences. b) Suggested revision of names cited in local papers by Arthur Vaughan and others by T.R. Fry with approval of Stanley Smith. c) Typical specimens of various corals in [ University of Bristol ] Departmental Collection, with their numbers.

28/1968

Small collection of glass and glass slag from the site of Crews Hole glass works, St. George, Bristol.

182/1968

Specimens from and notes [ Geology File FRY 4 ] relating to a quarry in the Rhaetic and Lias at Newbridge Road, Lower Weston, Bath (ST 725651).

Site visited by Tom Fry, M.L.K. Curtis and D. Hamilton.

1/1969

Geological specimens [ miscellaneous material ] and [ Geology File FRY 5 ] Section of Fuller's Earth at Swainswick near Bath Easton, July 23 1961 [ See acc. no: 100/1970 ].

This accession number was used as a 'catch-all' number to include material collected during and after 1969 as part of his Museum duties. It includes a number of fish scales from Portishead collected during 1974.

40/1969

Collection of 690 Lias ammonites, chiefly from the Bristol area.

This donation included material collected from Bitton Hill on which the published species list was based. [ FRY, T.R. 1970. Section of Lias below the Midford Sand at Bitton Hill, Bitton, Gloucestershire. Proceedings of the Bristol Naturalists' Society, 31 (6): 631-634. ]

[ A typescript draft of this paper is in Geology File 164. ]

[ See also Geology File FRY 7, Notes on the uses of Midford Sand from Bitton, Glos. 31 December 1970. ]

41/1969

Collection of 290 Lias lamellibranchs, chiefly from the Bristol district.

100/1970

Collection of 2,169 Jurassic fossils from the Bristol area [ 142 echinoderms, 1602 brachiopods, 118 gastropods, 307 belemnites ].

Includes material from Swainswick, Bath Easton (see acc. no: 1/1969).

[ without accession number ]

Miscellaneous notes on temporary sections in the Bristol district 1921-1967. [ Geology File FRY 6.]

The mss include a draft of FRY, T.R. 1951. Jurassic rocks at Dodington Ash, Gloucestershire. Proceedings of the Bristol Naturalists' Society, 28 (2): 199-202.

Acquired 19 January 1970.

250/1971

Cambrian specimens from temporary sections in the Tortworth Inlier, Gloucestershire.

Material collected by T.R. Fry and M.L.K. Curtis, 1970-1972. Field notes and maps in Geology File 212.

2/1972

Silurian specimens from temporary sections in the Tortworth Inlier, Gloucestershire.

Material collected by T.R. Fry, M.L.K. Curtis, F.R. Jeffery 1970-1. Field notes and maps in Geology File 213.

[ without accession number ]

Report on a turbo-drill borehole at Severnside.

A log of the borehole at ST 54878400 which penetrated Recent, Pleistocene, Trias, Coal Measures, Carboniferous Limestone and Old Red Sandstone. Work done while at the University. [ Geology File FRY 8.]

Acquired 27 Sept. 1972.

47/1973

Lower Lias specimens from temporary sections in Gloucestershire.

Material collected by T.R. Fry and M.L.K. Curtis. Field notes and maps located with the collection, which awaits incorporation into the main collection: copies of locality list and field maps in Geology File 81.

This collection includes the series of Cardinia attenuata (Stutchbury) used in Palmer's biometric study. (PALMER, C.P. 1975. The British Lower Jurassic species of the bivalve genus Cardinia. Bulletin of the British Museum (Natural History) Geology 26 (1): 1-44, 5 pls. [text fig.8, p.30].) (Note that the Cheltenham specimens are not, as stated by Palmer, from our collections.)

252/1975

Small collection of Ordovician fossils.

North American brachiopods and corals acquired by exchange with W.E. Crane; a single specimen of Colpocoryphe arago (Rouault) from Covelo, near Valongo, Portugal (Cb 5062) given to him by J.T. Wattison, (See GCG Newsletter, 2 (4): 182.)

54/1979

Small collection of Tertiary molluscs from the Isle of Wight.

4/1980

Collection of 2,280 fossils from the West of England, chiefly the Bristol area, together with 248 mineral and rock specimens.

This accession includes material from the Fuller's Earth Rock collected from war-time exposures at Prior Park and Kelston Round Hill, Bath (see DONOVAN, D.T. 1948, full reference under acc. no. 118/1962); Zigzagiceras spp. from the Rubbly Beds at Dodington Ash, Gloucestershire, seen by W.J. Arkell (see FRY, T.R. 1951, full reference under acc. no. 100/1970); the two "poorly preserved ammonites ... from the Coralline beds ..." of Dundry (Cb 4993-4) referred to on p.149 of PARSONS, C.F. 1979. A stratigraphic revision of the Inferior Oolite of Dundry Hill, Bristol. Proceedings of the Geologists' Association, 90: 133-151; material from the Fuller's Earth and Great Oolite of Swainswick Hill, 1960-1 (see acc. no. 1/1969); also good collections of Rhaetic vertebrates from Aust Cliff, Coal Measure plants from local collieries and an extensive collection of ammonites from localities in the Bristol district (including a fine series from the Inferior Oolite of Dundry), Wiltshire and Dorset.

M.D. CRANE

City of Bristol Museum & Art Gallery  
Queens Road  
Bristol BS8 1RL

Hammersmith 21  
 Lower Hall Sept<sup>r</sup> 30, 1799.

Dear Sir,

Whatever you may have to send  
 to complete the collection at the British  
 Museum, I will beg you to forward as soon  
 as possible. —

The Balance due to you from me is (I  
 believe from the Statement in your  
 Letter) Seventeen Pounds, which I shall  
 be glad to remit to you, or to pay ~~it~~ to  
 any person empowered to receive it by  
 your answer to this. —

with great regard I remain  
 Dear Sir

Most sincerely Yours  
 Charles D. Peckett.

### 35 White WATSON (1760 – 1835)

White Watson features in several earlier issues, principally vol. 1, no. 8 (Stanley, 1976). Talking to Pauline Beswick, our Keeper of Antiquities, a few weeks ago, one of us (TR) was surprised to hear that she had custody of some 77 White Watson letters forming part of the Bateman collection, which Sheffield museum bought at auction in 1893. (It only shows how easy it is for items to remain hidden, yet under one's nose - in this case for the last twelve years.) Although perhaps known to antiquarians, therefore, this correspondence has apparently been overlooked by writers on Watson's geological work (see Ford, 1973).

Many of the letters have a geological flavour. A fair number relate to sales or prospective sales of Watson's tablet sections (e.g. 2 draft letters to Rev. Wm. Buckland re. tablets supplied to Oxford University in 1822), and some to other plaques such as that at Windsor to celebrate the improved health of George III (2 letters to John Davis, 1791).

Other letters cite geological collections supplied by White Watson. Two letters from Chas. Hatchett, the analytical chemist, in 1797 and 1799 concern minerals which Hatchett acquired for the British Museum (see Smith, 1969). (see the latter reproduced opposite).

White Watson also acquired specimens, and a letter in 1792 from Cruickshank contains an interesting reference to an apparently new "species of Lead ore, consisting of lead combined with the Acid of Molybdena" from Anglesey. If substantiated this might prove to be the first British record of wulfenite, although the specimen supplied to Watson may not have survived. (Any references to W. Cruickshank would be much appreciated.)

Several interesting non-geological letters are present, including one from Willm. Milnes (1804) re. the supply of clove pinks to Sir Joseph Banks. An annotation to this letter (? by Watson) records the combined weights of three Patagonian cucumbers as 55 pounds 8 oz., further testifying to Watson's varied interests! Also included are a few of Watson's silhouettes.

In all there are 69 letters to White Watson but not all addressed directly to him; 6 draft letters from White Watson; 1 letter to Henry Watson (1714-1786 his uncle); and 1 draft letter from Henry Watson. A full list of this correspondence, which covers the period 1782-1833, is appended. Matter in square brackets has been added by us.

#### Letters to White Watson

Aglionby, Julia	Breyton, Jan. 10th. 1797
Arneman, Dr. Professor [Justus] (of Göttingen)	Strand, London, July 24th. (17)89
Ashwood, Thos.	Longstone (Derbys.), Dec. 28th. 1792
Bellott, Joseph	Westminster Hospital, Sept. 17th. (17)87
Bourne, Gervase	Eastwood, Sept. 2nd. 1796
Brongniart [Alexandre] junr.	Paris, July 7th. 1791
Brooke, Miss/Gould, Mrs.	Ardwick, Oct. 19th. 1791



Watson's  
silhouette

*White Watson F.L.S.  
Bakewell, Derbyshire  
abt July 1836*

**WHITE WATSON, F. L. S.**

BATH HOUSE, BAKEWELL;

EXECUTES MONUMENTS, TOMBS, &c.

*Gives Lessons on Geology and Mineralogy;*

*And Furnishes Collections.*

**AFFORDS INFORMATION TO ANTIQUARIANS;**

**And Amusement to Botanists.**

G. Nall, Printer, Bakewell.

1825-

Watson's  
visiting card  
1825

Bullock, Dr. John	Ashford, _____
Clarke, Henry	Scarbro', July 27th. 1792
"	Scarbro', Sept. 2nd. 1792
"	Scarbro', Nov. 11th. 1792
Clark, Mrs. Price	Brompton, June 15th. 1801
Cruickshank, Mr. W.	London, March 9th. 1792
Cumming, I.	Buxton, Aug. 15th. 1807
Dakeyne, Mrs. ?D. junr.	Bakewell, Sept. 21st. 1807
Davis, John	Windsor, May 18th. 1791
"	Windsor, Sept. 26th. 1791
Graydon, George	Newport, Mayo, Oct. 9th. 1793
Hall, Thomas	London, June 14th. 1806 (to Mr. Birch for White Watson)
Hatchett, Charles	Hammersmith, Oct. 4th. 1797
"	Hammersmith, Sept. 30th. 1799 (see p. 572)
Hunter, George	York, Oct. 8th. 1791

Johnson, W[illiam] B[rookes]	Matlock Bath. 1792
for Lord Lansdown	Worcester, Aug. 1st. 1790
" " "	Bowood Park, Aug. 11th. 1790
Lawson, James	Soho, Birmingham, June 10th. 1790
Lloyd, Richard	Denbighshire, Aug. 22nd. 1795
Manning, Wm. Junr.	London, Nov. 19th. 1782
Mawe, J[ohn]	London, Nov. 29th. (?) 1796
Menish, H[enry]	Chelmsford, Oct. 11th. (17)98
"	? Feb. 3rd. 1800
Mills, A[braham]	Lime House, March 26th. 1792
"	(? Macclesfield)
"	Macclesfield, June 6th. 1792
"	Lime House, Oct. 16th. 1792
Milnes, Willm. (re. Sir Joseph Banks)	Ashover, Sept. 15th. 1804
Mitchell, Dr. George	London, Nov. 16th. 1792
Müller, Dr. J.	London, Jan. 22nd. 1792
Ordoyno, J[acob]	Newark, Nov. 4th. 1791
Outram, B[enjamin]	London, March 25th. 1789
Pegge, Dr.	July 9th. (17)91
"	Jan. 7th. 1793
Peirson, Robt.	Coxwold, nr. Easingwold, Feb. 10th. 1786
Pipe, J. S.	Nottingham, Dec. 4th. 1799
Port, John	Ilam, May 10th. 1792
Earl Radnor	—————, Oct. 26th. 1790
"	—————, Jan. 15th. 1791
Ribello, Dr. Alves	London, Sept. 8th. 179-
Smith, John	? Stanton, March 29th. 1791
Sneyd, John	Bakewell, —————
Sowerby, James	Lambeth, Feb. 4th. 1804
"	Lambeth, Ap. 28th. 1804
"	Lambeth, Feb. 8th. 1805
Stainton, Sir George	London, Ap. 13th. 1791
Sweet, David	Taunton, Aug. 5th. 1790
Taylor, B.	New York, July 25th. 1792
Warltire [John]	Birmingham, May 18th. 1782
Wedgewood, John	Etruria, Jan. 26th. 1791
Wernecke, Henry	London, Dec. 21st. 1794
Wilkinson, J.	Boroughbridge, Oct. 18th. 1796
Winnington, E.	Woodseat, Dec. 15th. 1783
for Wray	? Darley, —————

Sir -

I take my leave to state to you the great Disappointment I have experienced in not disposing of my Cabinet of Fossils. I fully expected <sup>that</sup> I had sold them through Mr James Barker for the foundation of a Mineralogical and Geological Society to which many Gentlemen are desirous of subscribing. but ~~Mr Barker~~ <sup>has</sup> recommended me to take some other mode of disposing of them. I therefore take the Liberty of making you an offer of them, and as I am very much distressed for money if you could advance me <sup>it would greatly oblige me</sup> ~~50~~ <sup>50</sup> pounds on account - I am sorry to add that unless I can procure <sup>and transfer</sup> the same money by tomorrow night I shall be <sup>being</sup> arrested.

I hope you will be my Friend in this case.

I am Sir  
Your most obedient  
Servant

Owen Cole Esq.

White Horse  
Behave 7<sup>th</sup> Nov. 1833

Farnham	Dublin, March 2nd. 1796
Knight, Richd.	London, Sept. 30th. 1801
Miller [John Samuel]	Bristol, Jan. 7th. 1828
Ayres, Thomas	Duffield, Dec. 23rd. 1830
Darwin, Francis	Sydnope, Nov. 6th. 1832
Rawlinson	1833
(+ Watson's draft reply)	
Milner	Chesterfield, Mar. 29th. 1833
Atkinson, Thomas	York, Dec. 12th. 1782

Draft Letters from White Watson to the following

Manning, Wm., M.P., of London	July 8th. 1830
Paxton, of Chatsworth	Jan. 12th. 1832
Coke D'Ewes	Nov. 7th. 1833 (see opposite)
Buckland, Rev. Wm., Prof. of Min. and Geol., Oxford	May 13th. 1822
" "	? Oct. 18th. 1822

Draft Letters from Henry Watson, White Watson's (uncle) to the following

Hawkins & Co., Macclesfield	Ap. 6th. 1782
-----------------------------	---------------

Letter to Henry Watson

Atkinson, Thomas	York, Dec. 12th. 1782
------------------	-----------------------

The greater proportion of the White Watson letters cover the period 1783-1807. Closer study of these may show whether or not Watson deserves to be regarded as a major pioneer of Derbyshire stratigraphy or whether John Farey's work in Derbyshire from 1807 was the more significant (see Ford, 1973).

A second letter reproduced opposite is a draft by White Watson to the Agent of the Duke of Rutland's Derbyshire estates D'Ewes Coke (1774-1856) dated 7 Nov. 1833. It confirms Watson's precarious financial state at this time "tomorrow night I am [threaten'd?] with being arrested"!

It is perhaps worth noting here that Sheffield Museum purchased some 3000 geological specimens at the same Bateman sale. It is possible that they include White Watson specimens. However, none have yet been recognised and certainly no tablets are present. Also, Sheffield Literary and Philosophical Society, whose collections were the foundation of the Sheffield City Museum, acquired in 1837 'various fossils' attributed to White Watson. (Ann. Report, Sheffield Lit. and Phil. 1837). Similarly these items have not yet been identified in our collections.

Ford, T. D. 1973. Introduction in White Watson 'The Strata of Derbyshire' (1811), Moorland Reprints.

Smith, W. Campbell. 1969. A history of the first hundred years of the mineral collection in the British Museum with particular reference to the work of Charles Konig. Bull. Br. Mus. nat. Hist. (hist. ser.) 3: 237-259.

Stanley, M. 1976. Geological collections and collectors of note. 13. Derby Museums and Art Gallery. G.C.G. Newsletter, 1: 392-409.

Tim Riley  
Sheffield City Museums

& Hugh Torrens  
Keele University

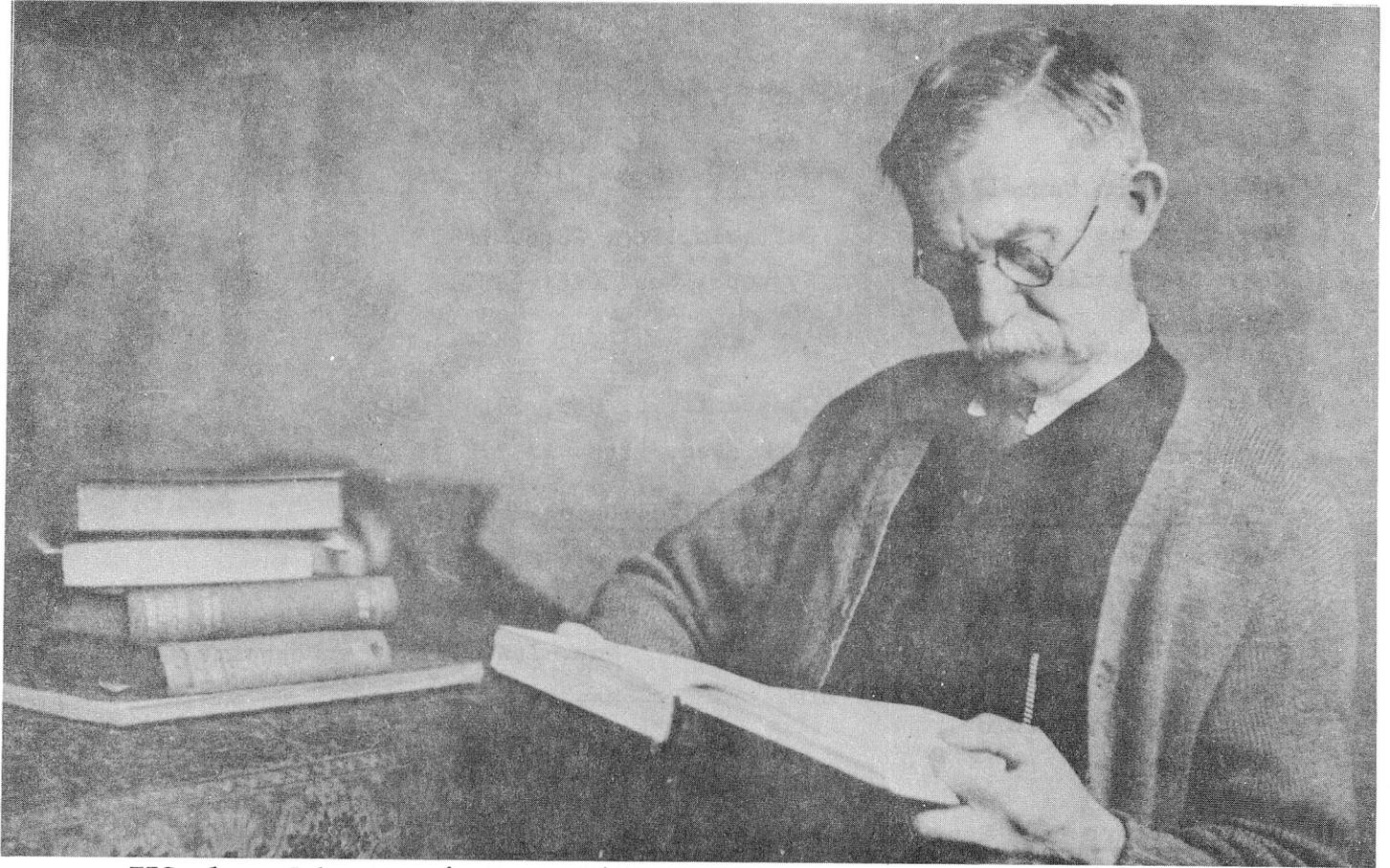


FIG. 1. John Dunn in later life.



FIG. 2. John and Mary Dunn

### 36 JOHN DUNN (1865-1937) Northumbrian Fossil Collector

The John Dunn collection of fossils from the Carboniferous Redesdale Ironstone, Shale and Limestone, was donated to the Hancock Museum in September 1955 by his son, Mr Matthew Dunn. The accession included a large wooden cabinet containing the fossils, along with notebooks, lists and some books, and papers (the latter are mostly now in the possession of the Natural History Society of Northumbria).

In the summer of 1979 after a discussion about the Redesdale Ironstone I decided to see if I could contact the surviving relatives of John Dunn. The notebook in the collection contained the address of Matthew Dunn, who was also in the 'phone book. Happily, we got in touch - in fact, Mr Dunn had been intending to contact me after watching the local natural history TV programme. Next day I was able to meet and talk to Mr Matthew Dunn (now 71 and retired), and his family. They later came to visit the Museum and see John Dunn's collection on display and in store. The party included John's great grandson, Andrew, aged 9, who is himself becoming interested in fossils. The Collection has only recently been catalogued for the first time with the help of a young volunteer. Some 500 records are at present on the H.M. computer data bank.

But what of John Dunn himself. He was a Northumbrian countryman born and bred. Born at East Woodburn on 8th April 1865, his early life was spent in and around Redesdale at a time when this valley was undergoing economic change. The great ironstone works which dominated the area in the first half of the 19th century were finally dismantled in 1863 when the rise of Cleveland ironstone made them uneconomic. However the valley was still important as the centre for William Armstrong's great weapons testing range at the Steel. It was here that John was first employed as joiner and cartwright. At some point he also worked on the Catcleugh Reservoir Scheme.

John was one of those rare men who had an innate curiosity and would devour any book he could get his hands on. He was a voracious reader and was essentially a self-educated man. From his youth he became a keen naturalist, amateur geologist, photographer, interested in everything from Egyptology to astronomy and poetry. The friends he acquired through his fine fossil collection also helped him out by lending him books. Wheelton Hind, (1860-1920) particularly, seems to have done so. See Fig. 1.

Matthew Dunn writes "as to his interest in fossils I cannot do better than type some notes which he had written in 1933, which I found after his death": They read:-

"I remember about the year 1875 or 76, when I was some ten or eleven years old, seeing a 'dressed' person come and look at a small quarry about 150 yards south of Lambert Street (a row of two dwellings), produce a notebook and write something therein.

The simple incident puzzled me so much and aroused my curiosity to such an extent that I never forgot it. What could he write about a few stones in a quarry hole? I even remember the direction he crossed the fell.

It gave me pleasure in later years to learn that the stranger was the late Hugh Miller, Junior [1850-1896], of the Geological Survey. His work

is now embodied in the Memoir of the Survey of Otterburn and Elsdon.

Our well was just below that small quarry - indeed it springs out of it. The two cottages had been built out of it; that was the sole reason for its existence. I distinctly remember more than once, going into it and wondering what he could see in it to write about a few stones scattered about and two large chunks in situ. I sometimes wonder if that simple incident supplied the impetus that led me to collect the fossils of the Ridsdale and overlying limestones.

One of my childhood fancies was that when I grew up I would collect the threads of gold that were scattered so plentifully all through the shell band. I soon learned that the 'gold' was very thin and that was probably the reason nobody bothered with it; needless to say it was merely the sheen of the spines of producta that is so numerous in the shale band.

I also remember collecting some of the more distinctly marked fossils such as Axinus and emptying our pockets at the house end. Mother mentioned that she had seen some 'dressed' men looking the heaps over. I like to think that I had supplied Mr. Miller with something good. Certainly they would be good specimens that hit the eye of an idle boy and no doubt many a fine example has been lost that might have been found if left lying on the shale tips."

(The little quarry and cottage row both seem to have disappeared from Woodburn).

He met and eventually married Mary Jane Smith, the daughter of the Woodburn policeman, formerly a maid of Redesdale, an attractive platinum blonde. They married at Christchurch, High Walker, on Monday April 29th 1890, where her father had moved to a new post. They had 6 children, the youngest being Matthew, (1891 Ernest, 1893 Hannah, 1895 George, 1899 Andrew, 1904 John, 1908 Matthew). See Fig. 2.

In 1906 he was made redundant or could not find work and so moved to Washington. John Thomas Stobbs (1865-1942), a colleague of Wheelton Hind's, the Lamelli branch worker of Stoke-on-Trent, recommended John to his brother-in-law, Mr. Ford, manager of Washington pits. John worked as a joiner at Glebe and F pits, but when J pit was sunk around 1926 Mr. Ford allowed him to work almost full time recording fossils for Mr. Stobbs (who retired in 1926 as Principal of the Stoke-on-Trent Mining School).

Many scientists used and acknowledged John Dunn's collection and expertise. Early on he became friends with Richard Howse (1821-1901), curator and geologist of the Hancock Museum, and they seem to have watched birds and collected birds eggs, as well as fossils, together. One bird, possibly the raven, was so rare that John and Howse kept the nest site secret. Through Howse Dunn met Wheelton Hind, with whom he had a close friendship. He also corresponded with Helen Muir-Wood, Stanley Smith, Jane Longstaff and T. Rupert Jones, and his specimens were also used by A. Vaughan, H. Woodward and F.A. Bather. He did offer specimens to the B.M.(N.H.) and apparently these were rejected by A.S. Woodward, because of a misunderstanding (see letters). However, some specimens which were loaned to the B.M.(N.H.) apparently were never returned. John Dunn was always anxious for the return of any specimens on loan because he considered his collection to be a useful scientific tool only if it were complete and kept together. As far as possible this has been done, although some specimens have recently been used in a display of regional geology, which

features John Dunn's collection in the Lower Carboniferous.

John Dunn died 43 years ago, 2 weeks after the marriage of Matthew and Millicent Dunn, but his collection is still being used today. It is a great asset to the Museum, one of the finest Lower Carboniferous fossil collections from the North East - and we nearly missed it! After John's death his brother offered the handmade cabinet to the Museum but got the cold shoulder from the curator, a non-geologist. Fortunately for us Mr. Matthew Dunn repeated the offer.

Susan Turner  
Hancock Museum  
Newcastle-on-Tyne

Acknowledgements:

I would like to acknowledge the help given to me by Mr. Matthew Dunn in preparing this article on his father, and Mr. Harry Green of B.B.C. North-East for the initial impetus.

Some references to papers including citations of John Dunn's specimens

Stanley SMITH 1913. On the Genus Aulophyllum.  
Quart. J. Geol. Soc. LXIX, 51-77

Wheeldon HIND 1896-1905. A monograph of the British Carboniferous  
Lamellibranchiata. Pal. Soc. Mon.

Jane LONGSTAFF 1926. A revision of the British Carboniferous  
Murchisoniidae. Quart. J. Geol. Soc. LXXXII, 4, 526-555.

JONES, T.R. & WOODWARD, A.S. 1898. A Monograph on the  
British Palaeozoic Phyllopora (Phyllocarida, Packard). pt. III.

I shall be pleased to hear of any more papers referring to John Dunn's specimens.

Letters (acc. no. 30/1/79) of John Dunn to and from various geologists

Arthur Smith Woodward (1864-1944)

JD offered to make a collection for the B.M. apparently on request from ASW.

1. ASW to JD - 6th Dec. 1905 - he declines specimens as they can't be purchased from duplicates - only the best for the B.M. he says!
2. Copy JD reply to ASW - 8th Dec. 1905 - from West Woodburn.

Helen Muir-Wood (1896-1968)

Mostly letters to JD from HMW (of BMNH)

3. 12.3.1923 - Stanley Smith had told her of JD's collection - asks to borrow Producti.

4. JD of 1 Richardson Terrace, Washington, March 25th 1923 - to Helen Muir-Wood, reply to send Productus. "My collection is quite small and local. It represents many years collecting in the lower beds of the series and merely owes its value (if that is not an assumption) to its completeness for that particular fact. It is shown on sheet 106 NE new series, sheet 13 of the Geological Survey. I do not know whether a memoir has been issued or not." Lends with a proviso that they are returned in a reasonable time, "experience has made me just a little testy in that direction".
5. 28.3.1923 - received specimens, notes that Dr. Hind's collection is badly preserved due to lack of care after collection.
6. 1.5.1923 - returns specimens with thanks, does not require to figure any of the semireticulata group.

Richard Howse

Curator and Geologist, Hancock Museum, 12 St. Thomas Crescent, Newcastle Upon Tyne.

7. Letter dated 15th Dec. 1894 - informs JD that he has lent the Myalina specimens to a gentleman in Staffs., (Wheelton Hind) who "is busy describing some of the Carboniferous shells of the Staffordshire Coalfield, he has since asked me to lend it to him to figure."

Dr. Wheelton Hind of Poxteth House, Stoke-on-Trent

8. Pencil copy of letter by JD to Wheelton Hind in answer to Oct. 3rd 1894, dated Linn, Nov. 3rd-5th 1894. Is collecting Myalina from boulder clay at Wallington. Sends specimens showing muscle scars. Mentions Richard Howse. Thanks him for photos and kindness in naming specimens. Description of specimens.
9. April 16th 1905 - He is working on specimens sent by JD of Edmondia and Edmondia oblonga, Leiopteria, Myalomorpha, N.? radiata. Wishes to see corals JD has collected because "a clue has turned up in the Bristol district, that the beds which can certainly be determined by the corals and bra chiopods they contain, and I want to see how far we can cover on these lines." Mentions Lebour's work.
10. Dec. 22nd 1913 - WH 'humbly' obeys JD who has forbidden him to send food parcels. Family matters. Hopes to be sent to Redesdale 'to shoot'.
11. Incomplete letter n.d. - mentions a strike in the medical profession. Is to give a popular lecture at Royal Inst. Soc., Feb. 19th. "Life Zones in British Carboniferous Rocks." Wants to begin a monograph on Silurian and Ordovician Lamellibranchs.
12. Obit. of Wheelton Hind, aged 60 from "Colliery Guardian", June 25th 1920. Lt. Col., M.D., F.R.C.S., F.G.S., 1860 - 1920.

John T. Stobbs

Dunelm, Basford Park, Stoke-on-Trent

13. 13th Jan. 1906 - Letter to Dr. Hind re JD. He has spoken to Mr. Ford, his brother-in-law and manager of Washington Colliery about a job there as joiner for JD.

[N.B. - When JD moved to Washington he lodged first with Mr. & Mrs R. Pearson (S.T.)]

Professor G.A. Lebour (1847 - 1918)

Dept. of Geology, University, Newcastle/Radcliffe House, Corbridge-on-Tyne

14. 9th Sept. 19-? - Wishes to meet JD and thanks him for photos. of his 'wellknown specimens'.

Stanley Smith (1883 - 1955)

6 Manor House Road, Jesmond, and then, Brandon House, Hughton-le-Skerne, Darlington.

15. undated Jesmond letter - Wants names of nautiloid fossils and encrusting Chaetetes on the Spirifer laminosus. Sending JD specimens. Wants to know if JD has any "thick" Lithostrotion, like enclosed from the Redesdale and Furlaws Limestones. Wants a list of all corals, sponges and all fossils not on Dr. Hind's list. SS. living c/o Mrs Blenkiron, West View House, Reeth, Yorkshire.
16. 4th April 1909 - Had sent some of JD's specimens to Dr. Vaughan. Smith mentions figure of JD's Productus undatus. SS says he will acknowledge JD in his paper.
17. 24th May 1909 - Returns specimens from Vaughan. Lends him Hugh Miller's "My Schools and Schoolmasters". Vaughan wants to cut a slice off a specimen of Lonsdaleia cf. portlocki. Checks geological horizon for JD's C. giganteum. Various geological matters.
18. Incomplete undated letter - will identify a Dibunophyllum, notes Thompson's bad naming of Campophyllum gigantea. Includes a geological sketch map of Ryal area.
19. Undated 1909? but precedes 16. Intends to send specimens to Vaughan. Thanks JD for specimens sent. Identifies corals, very pleased with specimen of Cerriopora. Sends JD some fossils other than Carboniferous Limestone. Questions on stratigraphy and fossils from Redesdale.
- Also - August 12th 1910 - Is sending Lepidodiscus specimens to Bather at BMNH with his own crinoid. Pencil copy JD reply to SS - doesn't wish to split up the collection.
20. Copy letter from JD to ?Smith - Nov. 1st - about Lonsdalei and localities for corals, including Campophyllum. (see letter 18). Mentions Combe Quarry - 2 miles S.W. of Furlaws Limestone. Gives list of fossils.

Jane Longstaff (1856 - 1935)

(Letters re gastropods)

21. 25th Nov. 1925 - Lansdown Grove Hotel, Bath. Referred to by Dr. Stanley Smith. Wants to borrow Murchisonia as she is making a revision of the group. Mentions the Jenkinson colls., Cambridge of Lowick specimens. Wants to know who has charge of the 'Tate collection' in Alnwick Museum (S.T. - this collection appears to have been lost). Sir ASW told her it was in the Lit. & Scientific Institution there. Longstaff got no reply from secretary!  
Signed J. Longstaff (née Donald).
22. 11th Dec. 1925 - Stanhope Court Hotel, 50-52 Stanhope Gardens, S. Kensington. Note as to where to send specimens. Note on back by JD - he has sent specimens.
23. 21st Dec. 1925 - Received specimens. One Pitlaodeas? amplissima de Koninck, she thinks is variety of P. percinta (Portlock) probably the first from an English locality.
24. 26th Dec. 1925 - Lansdown Grove Hotel, Bath. Notice of return of specimens.
25. 21st Oct. 1927 - Now wants to borrow Loxonema's including L. rugiferum and L. lefeborei.
26. 2nd Nov. 1927 - Returns all except the small ones.
27. To Mrs Longstaff copy of JD letter c. 1925.  
"I have not seen Dr. Smith's list, indeed since I left Redesdale almost twenty years ago I have been quite out of touch with people interested in geology."

T. Rupert Jones (1819 - 1911)

12 Parson's Green, Fulham, London S.W.

28. 19th Aug. 1898 - JD had lent specimens to him and H. Woodward - "several of your specimens have been figured in our plates."  
List - needs to know localities and age of beds.

F.A. Bather (1863 - 1934)

29. 26th July 1911 - Stanley Smith sent three of JD's fossils to him to see. Asks if JD will present or sell them to BMNH, and would include them in a future publication in a large catalogue.
30. 3rd Aug. 1911 - JD has told him he intends to give specimens of Lepidodiscus to the local collection (most probably Hancock Museum - S.T.) Bather tries to persuade him that he should give them to the national museum.
31. 30th Sept. 1912. Bather has not yet worked on the Edriosteroids and still has the Lepidodiscus. JD has written to enquire.  
(This specimen appears not to have been returned - is it still therefore at B.M.N.H? S.T.)

32. 20th March 1923. A final note of apology that he still has the specimens and will return them and that the War had upset his workload and he never had time to work on them.

Acc. 57/1955

Includes notebook on localities and specimens, box of photographs and glass plates of specimens taken by John Dunn, and list of fossils by John Dunn, and other workers. There are some 600 fossil records on computer to date, details of which are available from the Hancock Museum.

## 37 Ferdinand SCHALCH (1848-1918)

A recent issue of the German Paläontologische Zeitschrift contained an article of direct curatorial interest - a description of the newly rescued geological and palaeontological collections of the Schaffhausen geologist Ferdinand Schalch (1848-1918). We reproduce the abstract below;:

Paläont. Z.	53	3/4	237—247	Stuttgart, Dezember 1979
-------------	----	-----	---------	--------------------------

Professor Dr. Helmut Hölder  
zum 65. Geburtstag gewidmet

### Die geologisch-paläontologische Sammlung des Schaffhauser Geologen FERDINAND SCHALCH (1848—1918)

RUDOLF SCHLATTER, Schaffhausen \*

Mit 3 Abbildungen im Text

**Abstract:** The great geological and paleontological collection of FERDINAND SCHALCH (1848—1918) is described. During the bombardement of Schaffhausen at 1<sup>st</sup> April 1944, the collection has been damaged. Since about a year the author is occupied with its restoration. It contains mainly important material to the diverse geological maps, worked out by SCHALCH in Saxony (1878—1889) and Baden (1889—1918). The immense collections of Triassic and Jurassic age from the region between Danube and River Rhine (Schwarzwald-Baar Kreis, Wutach, Randen, and Klettgau) are of remarkable importance to the knowledge in biostratigraphy. Furthermore collections of minerals from Saxony (e. g. Johanngeorgenstadt), and from the Black Forest (e. g. Schauinsland) are noteworthy. Important written documents of SCHALCH, and originals to diverse studies have been recognized hitherto (HORN 1909; LEUZE 1889; PEYER 1940, 1945; RÜBENSTRUNK 1909; † SCHALCH & PEYER 1919 a, b; STROMER & PEYER 1917, and STUDER 1898).

#### Einleitung

Im Juni 1978 wurde mir von der Stadt Schaffhausen die interessante Aufgabe übertragen, die geologisch-paläontologische Sammlung von FERDINAND SCHALCH (1848—1918) zu restaurieren und neu zu ordnen. Infolge der Bombardierung von Schaffhausen am 1. April 1944 wurde das an der Frauengasse gelegene Naturhistorische Museum zerstört. Die reichhaltigen Bestände konnten nur zum Teil gerettet werden (s. UEHLINGER 1944 a, b: 309 f.). Dank dem Einsatz von Pfadfindern unter der Anleitung von Herrn ARTHUR UEHLINGER konnte die Sammlung fast vollständig aus dem Schutt geborgen und provisorisch untergebracht werden.

\* Anschrift des Verfassers: Dr. RUDOLF SCHLATTER, Museum zu Allerheiligen, Goldsteinstraße 7, CH-8200 Schaffhausen.

0031—0220/79/1979—0237 \$ 2.75

© 1979 E. Schweizerbart'sche Verlagsbuchhandlung, D-7000 Stuttgart 1

## COLLECTIONS AND COLLECTORS OF NOTE

### 38 NORTH DEVON ATHENAEUM - BARNSTAPLE

#### A) GENERAL INTRODUCTION AND PARTICULAR PROBLEMS

Shortly before last Christmas I paid a visit to the North Devon Athenaeum in Barnstaple to inspect the herbarium and any other Natural History collections that might still be held there. There are now virtually no zoological collections in the building and I was informed by the honorary curator (a retired engineer) that they had been given to another museum (I believe it was Birmingham) some years previously. It was during this visit that my attention was drawn to the geological room and its magnificent collection of Devonian fossils.

The Geological Room is of moderate size and tightly packed with the sloping glass-topped desk cases with storage drawers typical of nineteenth century museums. In the time available to me, I could make only a brief inspection of the cases and drawers. The specimens comprise collections made by Townshend Hall, Miss E.M. Partridge, Hamling, Porter, Gover and Dr. Wavell (after whom the mineral Wavellite was named). Most of the specimens are on their original wooden tablets with handwritten labels; many stating plate and figure numbers referring to various major monographs, particularly Whidborne's "Devonian Fauna" although there are also references to works by Partridge, Woodward, Salter, Davidson and others.

I estimated that there could be something approaching 100 type and figured specimens on display and in the accompanying drawers. The significance of these specimens was completely unknown to the staff and indeed the curator showed great surprise and delight when I was able to explain to him that a tray full of belemnites which he showed me were not slate pencils but actually once belonged to animals!

One of the things that I found most disturbing about my visit was that in talking to the curator, it became clear, that many people concerned with Devonian fossils have visited the place (including the International Symposium on the Devonian) and left little evidence of their activities. Several of the specimens have even been redescribed or selected as Lectotypes in recent years (among them certain crinoids and Goniatites) but there is no documentation to this effect with the specimens, the only indication being a few reprints in the Athenaeum Library. Furthermore the security of the specimens is at best precarious. The room is visited by parties of all kinds and several of the drawers are unlocked. In one such drawer I found three figured Goniatites in a tobacco tin as well as fine specimens that had recently been used by a dealer for the production of plaster casts.

These may be harsh judgements; the curator is fond of the specimens even if they are not curated as one would hope and visiting students are free to inspect them but this can only be a temporary safety based on the care of a single retired individual.

There is no doubt that this is a collection of major importance. British marine Devonian fossils are not abundant and the number of type and figured specimens in this collection make its careful conservation and curation all the more urgent.

I think a number of questions arise from this case:

1. What are academics doing, using and redescribing specimens of this nature without making sure that the specimens are thoroughly documented and making an effort to inform those in charge of them, of their significance and need for adequate curation?
- [2. How do academics working on such precious material make their discoveries known to those in charge? (especially if they believe belemnites are slate pencils.) Editor]
3. Should an almost defunct society without any permanent, trained staff still hold on to such specimens in what is now effectively a reference library? If not, who should approach them and how should they be compensated for parting with specimens of which they may still have some pride of ownership and limited use?
4. Can the Geological Curators Group, possibly in conjunction with the Biology Curators Group help in either situation?

There may be no simple answer to these questions but perhaps the problem of defunct collections would be a good symposium topic out of which might come some greater publicity for the problem and some suggestions for more co-ordinated activity in its solution.

C.J.T. Copp  
 Assistant Curator, Natural History  
 City of Bristol Museum and Art Gallery

#### B) FIGURED DEVONIAN FOSSILS IN THE COLLECTIONS

The North Devon Athenaeum, located in The Square, Barnstaple, was established in 1888 by William Frederick Rock and is now maintained by the Rock Trust. It houses some important collections of fossils from North Devon, including material formerly in the possession of Townshend Hall, J.C. Hamling and Miss E.M. Partridge. The Curator is Mr. G.A. Morris.

On a recent visit to the Athenaeum I took the opportunity to examine the Devonian material on display and to compare those specimens labelled as figured with the original illustrations. In a few cases it proved to be the species, not the specimen, which had been illustrated in the work indicated, but the majority of the labels proved to be correct in this respect. In some instances the specimens could be neither verified nor dismissed with confidence for various reasons, such as lack of suitable optical equipment and of the appropriate illustration for comparison. These are marked with an asterisk\* in my list, given below. The numbers refer to the Athenaeum's catalogue of fossils.

Figured Whidborne, 1896-1907

<u>Plate</u>	<u>Figures</u>	<u>As</u>	<u>Athenaeum No.</u>
1	1	Fish remains	751
2	2	<u>Phacops latifrons</u>	434
2	5	<u>Phillipsia hicksii</u>	437
3	4*	<u>Primitia sparsinodosa</u>	419
3	5*	<u>P. sparsinodosa</u>	419
3	6	<u>P. sparsinodosa</u>	419
3	8*	<u>Primitia</u> sp.	419
3	9*	<u>Primitia</u> sp.	419
3	12*	<u>Primitia?</u> sp.	419
3	13	<u>Primitia dorsicornis</u>	419
4	2	<u>Agoniatites</u> sp.	734
4	3	<u>Poterioceras?</u> sp	749
4	4	<u>Orthoceras speciosum</u>	733
4	6	<u>Orthoceras</u> sp.	747
4	10	<u>Actinoceras?</u> ( <u>Huronia</u> ) <u>crickii</u>	745
4	14,14a,b	<u>Tentaculites conicus</u>	337
5	1*	<u>Macrochilina turbinea</u>	716
5	4,5	<u>Loxonema trochleatum</u>	714
5	22	<u>Murchisonia similis</u>	720
6	9	<u>Pleurotomaria hamlingii</u>	725
8	1	<u>Bellerophon labyrinthoides</u>	726
8	4,5	<u>Salpingostoma?</u> <u>macromphalus</u>	729
9	3	<u>Edmondia?</u> <u>athenae</u>	679
9	8	<u>Edmondia bodana</u>	683
9	16	<u>Prothyris contorta</u>	676
9	22	<u>Cypricardinia?</u> sp.	235
10	15	<u>Ctenodonta newtonii</u>	675

<u>Plate</u>	<u>Figures</u>	<u>As</u>	<u>Athenaeum No.</u>
11	5	<u>Cucullaea unilateralis</u>	219
11	9	<u>C. unilateralis</u>	219
11	11	<u>C. unilateralis</u>	203
12	8	<u>Ctenodonta? tensa</u>	199
12	11	<u>Nuculites? latissimus</u>	666
13	2	<u>Ctenodonta (Palaeoneilo) lirata</u>	668
13	3	<u>C. (P.) lirata</u>	669
13	6	<u>Ctenodonta? elliptica</u>	671
14	1	<u>Leptodesma sp.</u>	646
14	12	<u>Ptychopteria damnoniensis</u>	640
15	3	<u>Pterinopecten hallii</u>	649
15	5*	<u>P. hallii</u>	648
15	6	<u>P. hallii</u>	647
16	5	<u>Aviculopecten nexilis</u>	652
16	6	<u>A. nexilis</u>	650
16	9*	<u>Pleuronectites piltonensis</u>	659
16	10	<u>P. piltonensis</u>	660
16	11	<u>P. piltonensis</u>	661
16	14	<u>Pleuronectites hicksii</u>	662
17	5	<u>Pernopecten insperatus</u>	663
18	4	<u>Athyris (Cleiothyris) royssii</u>	491
18	11	<u>Spirifer verneuillii</u>	545
18	12	<u>S. verneuillii</u>	561
20	9*	<u>Orthis sp.</u>	624
20	12	<u>Productus praelongus var. simplicior</u>	519
22	9	<u>Craniella insecurea</u>	361
22	11	<u>Discina nitida</u>	621
22	13	<u>Lingula squamiformis</u>	622
22	16	<u>Fenestella? umbrosa</u>	329

<u>Plate</u>	<u>Figures</u>	<u>As</u>	<u>Athenaeum No.</u>
29	6	<u>Pentremitidea phillipsii</u>	339
30	3*	<u>Adelocrinus hystrix</u>	342
30	5	<u>A. hystrix</u>	340
30	6	<u>A. hystrix</u>	341
34	5	<u>Mariocrinus? sp.</u>	365
36	2	<u>Scytalocrinus? stadiodactylus</u>	396
36	5	<u>S.? stadiodactylus</u>	401
36	8	<u>S.? stadiodactylus</u>	402
37	8	<u>Plactycrinus? anguliferus</u>	414
37	14	<u>Scytalocrinus? stadiodactylus</u>	396
38	1*	<u>Poteriocrinus tensus</u>	413

Figured Partridge, 1902

17	7	<u>Echinocaris whidbornei</u>	262
17	8,9	<u>Echinocaris sloliensis</u>	263

Figured Salter, 1864-83

1	12*	<u>Phacops latifrons</u>	431
---	-----	--------------------------	-----

Figured Davidson, 1864-5

13	12*	<u>Rhynchonella pleurodon</u>	537
----	-----	-------------------------------	-----

REFERENCES

DAVIDSON, T. 1864-5. A monograph of the British Devonian Brachiopoda.

Palaeontogr. Soc. [Monogr.], 131 pp., 20 pls.

PARTRIDGE, E.M. 1902. Echinocaris whidbornei (Jones and Woodward) and

Echinocaris sloliensis, n. sp. Geol. Mag. (4) 9, pp. 307-8, pl.17.

SALTER, J.W. 1864-83. A monograph of the British trilobites from the Cambrian, Silurian and Devonian formations. Palaeontogr. Soc. [Monogr.], 224 pp., 30 pls.

WHIDBORNE, G.F. 1896-1907. A monograph of the Devonian faunas of the south of England, vol.3. The fauna of the Marwood and Pilton Beds of North Devon and Somerset. Palaeontogr. Soc. [Monogr.], 247 pp. 38 pls.

Dr. David Butler  
Palaeontology Unit  
Institute of Geological Sciences,  
Exhibition Road,  
London  
SW7 2DE

(Published with the permission of the Director)

## SOPWITHS FAULT MODELS

The working drawings for a set of seventeen three-inch Sopwith geological models (Dearman and Turner, 1980) show that the models were cut from a single laminated block with twenty-seven layers of five different kinds of wood. Clearly shown on the drawing (*ibid.*, Fig. 3a, page 485) are two cross cuts separating models 10 and 12 from model 13 which left an unwanted half inch length of the block. An additional model shows how Sopwith utilised this piece as a further working model to demonstrate the effects of faulting.

Planed smooth on both faces, the block was then sawn diagonally, thus giving a fault plane dipping at fifty degrees (Fig. 1, page 595). Full width and height of the original block are retained on the lower righthand block. The saw cut and planing removed a quarter of an inch from the upper lefthand block which thus retains only nineteen of the twenty seven beds.

With that model was another also intended to represent faulting, but only the lower half has so far been found. This is a quarter inch thick offcut of the block from which a three-inch version of Model II from the 1841 set was made (Sopwith, 1841, Fig. II; Turner and Dearman, 1979, Fig. 4). Representing gently inclined coal measures near Newcastle upon Tyne, the model is a distinctive laminate of sycamore and ebony. Thin veneers of ebony represent the coal seams with the thick coals; the High Main Coal, the Bensham Seam and the Low Main Coal, picked out in thicker ebony layers.

One corner of the rectangular block was sawn off (the missing part) at an angle of fifty degrees to represent the fault. Comparison of the fault offcut with the actual model shows that the block was cut from the face of the block with end grain. This is the elevation of the model illustrated by Sopwith (1841, Fig. II) in which the strata are gently inclined. The effect of dipping strata in Model II was therefore achieved by planing wood with the grain from the bottom and two opposite sides of an original rectangular block, with the surface topography carved on afterwards (Fig. 2).

No mention is made of these two fault models in the descriptive book on the 1841 models and it seems likely that at least the complete fault model (Fig. 1) is unique, as indeed is the set of seventeen models outlined on the working drawings. It is of interest to contrast the fault dip of fifty degrees in the fault models with the steeper seventy eight degree dip of faults as shown on the working drawings and the actual set of twelve 1841 models.

Despite our enquiries into the whereabouts of Sopwith models (Turner, 1979) no other examples of the fault models are yet known.

### Acknowledgments

Both models are in the Hancock Museum, Newcastle upon Tyne and we are indebted to the Curator, Mr. A. Tynan, for permission to describe them.

### References

- Dearman, W. R. and Turner, Susan, 1980. Discovery of working drawings for the Sopwith models of 1841 at the Hancock Museum. Geological Curator Vol. 2, No. 8, pp. 467-495.
- Sopwith, T. 1841. Description of a series of geological models. Newcastle upon Tyne, J. Blackwell & Co., 84 pp.
- Turner, Susan, 1979. Geological Curators' Group Newsletter. Vol. 2, No. 2, p. 187.

Turner, Susan and Dearman, W. R., 1979. Sopwith's Geological Models.  
Bull. Int. Assoc. Engng. Geol., No. 19, 331-345.

W. R. Dearman\* and Susan Turner<sup>+</sup>

\* Engineering Geology Unit,  
University of Newcastle upon Tyne

+ Hancock Museum, Newcastle upon Tyne

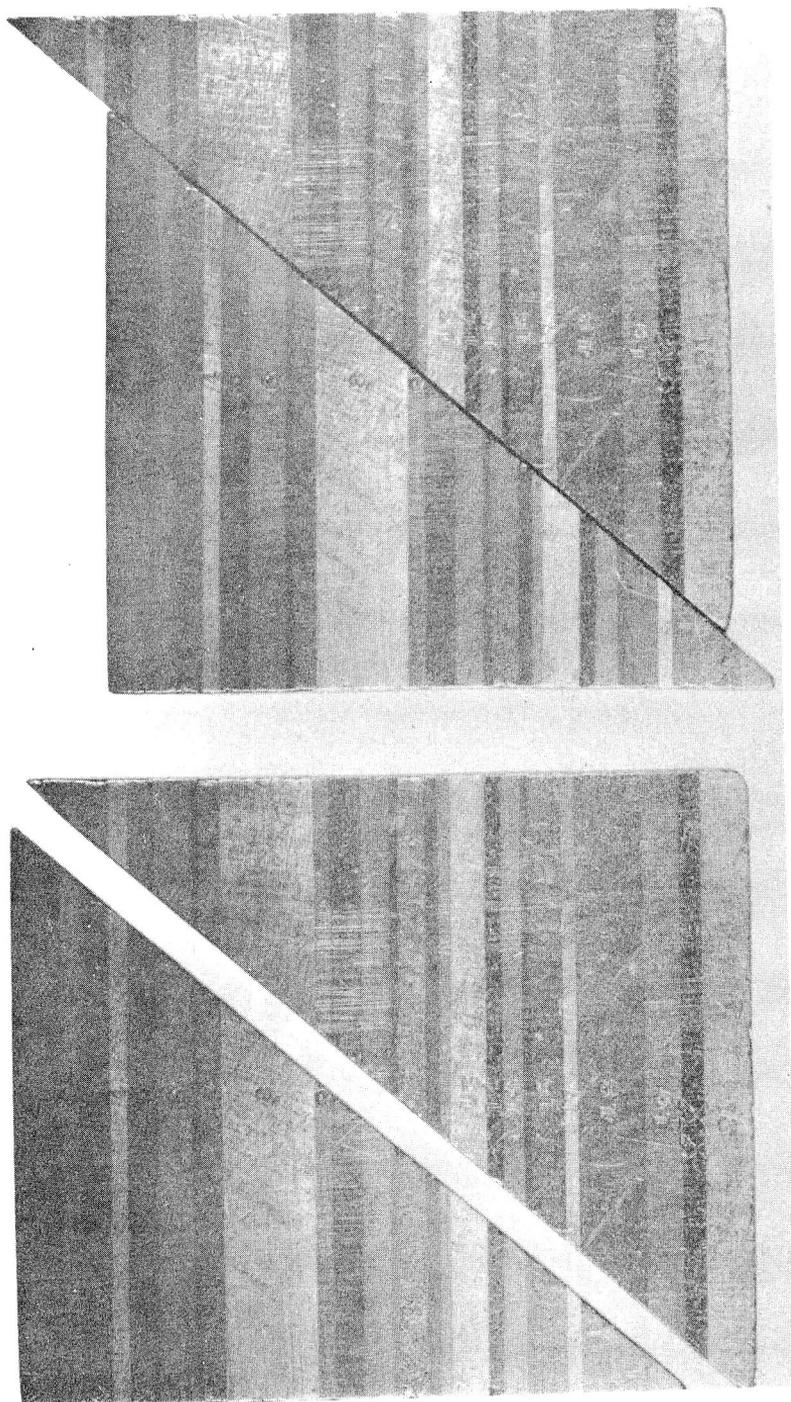


Fig. 1 Faulting model made from a block representing the complete succession of twenty seven strata in the 1841 models. Twenty one strata are marked by punched numbers; five coal seams and one other thin bed are not numbered. Before cutting, the block measured 75 x 90 mm, and was 10 mm thick. Details of the succession are given in Dearman and Turner, 1980, Figure 6.

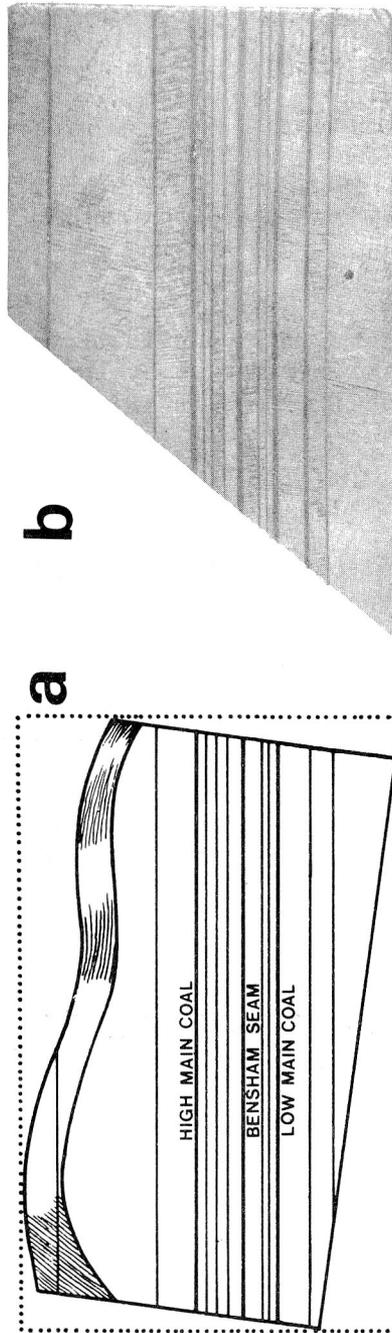


Fig. 2 Faulting model of the succession of Coal Measures near Newcastle upon Tyne. (a) end elevation of Model II of the 1841 set (Sopwith, 1841) showing the orientation of the fault block; (b) one half of the fault model.

## Spot the difference

### A.

528. ADEQUACY OF CURATION Curation of the main non-living collections of present-day plants and animals is nearly always good or satisfactory. Deficiencies of curation are almost always due to staff shortages. All the major national institutions considered additional supporting posts to be desirable and some, IGS for example, particularly stressed this need. Many smaller collections are doubtless inadequately curated and some have been long neglected. In palaeontology, the Geological Curators Group of the Museums Association has recently highlighted problems in a few of the smaller provincial museums where some type specimens are receiving inadequate curation.

Paragraph 528 (p.18) from the HMSO publication 1979 Taxonomy in Britain report by the Review Group on Taxonomy set up by the Advisory Board for the Research Councils under the chairmanship of Sir Eric Smith FRS.

### B.

The survey revealed a number of other important issues related to staffing. Over 60% of museums admitted that they needed specialist geological help urgently, including a large number with full-time geological staff. Only one-third of museums with figured and cited rock collections have geological staff. Only one-third of museums with fossil type material have geological staff, which means that there are forty museums with type holdings and no geological expertise. Documentation of collections tends to be practised more where full-time staff are available, but only one-quarter of the collections with most of their specimens documented have qualified staff, which leads one to question the quality of documentation in the other three-quarters.

Indeed the general geological curatorial situation in United Kingdom museums is horrific.

Part of p.23 of P.S. Doughty The State and status of geology in United Kingdom museums pp.17-26 in M.G. Bassett ed. Curation of Palaeontological Collections. Pal. Ass. Special Paper in Palaeontology 22 1979.

## FOSSIL FORGERIES

### a) 'Constructed' cephalopods at the British Museum.

The slab of Bradford Abbas Fossil Bed illustrated in December G.C.G., Vol. 2(7), p. 437 is not in the fossil cephalopod collection of the British Museum (Natural History), but there are other examples of the same kind in that collection. The largest slab, measuring approximately 600 x 600 mm, was purchased in 1886 from the Weymouth dealer, R. Damon. There are no indications, on this slab, of specimens having been artificially added, and no obviously stratigraphically misplaced ammonites, which are mainly species of Graphoceras with one or two Haplopleuroceras. Of three smaller slabs, that were formerly in the collection of King's School, Sherborne, one is genuine. The other two contain ammonites and other mollusca that have been artificially added, although the ammonites added are species of Graphoceras, Darellia and Euhoploceras that come from the same stratigraphical horizon. These specimens have been inserted using a plaster made with reconstituted matrix that is not easily detectable except where a specimen has been removed.

There are other examples of manufactured cephalopods in the collection, excluding those ammonites with "snake" heads carved at the apertures, or specimens in which missing portions have been restored with varying degrees of skill. Some years ago the writer discovered that the specimen (B.M.N.H. No. 5762) listed in Crick, 1898 and labelled as the original of Turrilites tuberculatus Bosc. figured by Mantell, 1822, pl. 24, fig. 7, and Sharpe, 1856, pl. 25, fig. 1, was really two different specimens glued together with resin! The three smaller whorls are of Hypoturrilites gravesianus (d'Orbigny) and are probably the original of Mantell, 1822, pl. 24, fig. 6 (and possibly fig. 2 also), particularly since it bears one of the small green labels common to figured specimens in the Mantell collection, reading "XXIV.6". The three larger whorls are Hypoturrilites tuberculatus (Bosc) and also bear a green label reading "XXIV.7". A more recent figure of the two specimens, joined together, is given by Kennedy, 1971, pl. 6, fig. 11. The view given here as figure 1, of the formerly unfigured side demonstrates the different apical angles of the two specimens, and the arrow indicates the point at which the whorls diverge revealing part of the ribbing of the basal part of the whorl of the smaller specimen.

Two Coleoid specimens (B.M.N.H. Nos. 74106 and 39855), that purport to show the natural association of belemnite guard with phragmocone, pro-ostracum, ink sac and arm hooklets, are also spurious as noted in Donovan, 1977, p. 31. The specimens were figured by Huxley, 1864, pl. 1, figs. 1 and 2, and are here refigured as figures 2 and 3. To date there is no unequivocal record of a specimen showing the natural association of belemnite guard with ink sac and/or arm hooklets. The specimen figured by Wiesenauer, 1976 was found, subsequently, to have been artificially manufactured (see p.605). Another specimen (B.M.N.H. No. 39852), figured by Huxley, 1864, pl. 3, fig. 1 (here refigured on figure 4), for which he erected the new genus Xiphoteuthis, was critically examined by Müller-Stoll, 1936, p. 193. The specimen was found to be the telum of a new species Atractites claviformis (Müller-Stoll), artificially attached to the telum and phragmocone of Atractites elongatus (de la Beche). M. L. Bairstow writing to Prof. L. Ruger in 1936 concerning the anomalies of this "Xiphoteuthis" specimen, records a story repeated to him by Dr. W. D. Lang, who had learnt in conversation with a Charmouth resident of a local legend to the effect that a belemnite figured by Huxley was a counterfeit made by a local collector.

The motives for producing artificial fossils were probably various and in some cases there was no intention to mislead. Crick, 1907, p, 273 even

published the fact that the arms of the holotype of "Belemnoteuthis montefiorei" (J. Buckman) (B.M.N.H. No. C.5206) had been reorientated from their original position at right angles to the body, as figured by Buckman, 1880, to a position in the same general direction as the body. Falsification is sometimes very evident, as in the apparently natural section of a belemnite from S. Petherton, Somerset, here figured as figure 5. The erroneous continuation of the adoral part of the alveolus with lines of reconstituted cement, attracts the attention to its abrupt apical truncation at 'a'. The fragment of guard 'a-b' has the apical part of an alveolus discontinuous with the rest. The fragment 'b-c' has lines of growth that terminate abruptly at b and there is a sharp change in the character of the apical line also.

When no falsification is suspected it is easily overlooked, and one can understand how, for example, although Sharpe, 1856, noted the differences in tuberculation in the two parts of "Turrilites tuberculatus", and included Mantell's pl. 24, fig. 6 in his synonymy of Turrilites gravesianus, the falsification apparently remained un-noticed for another hundred years.

#### Bibliography

- Buckman, J. 1880. On the Belemnoteuthis montefiorei. Proc. Dorset nat. Hist. antiq. Fld. Club, 3: 141-143.
- Crick, G. C. 1898. List of the Types and Figured Specimens of Fossil Cephalopoda in the British Museum (Natural History), 96 pp. London.
- \_\_\_\_\_ 1907. The arms of the Belemnites. Proc. malac. Soc. Lond., 7 (5): 269-279.
- Donovan, D. T. 1977. Evolution of the Dibranchiate Cephalopoda. Symp. zool. Soc. Lond., 38: 15-48.
- Huxley, T. H. 1864. On the structure of the Belemnitidae etc. Mem. geol. Surv. U.K. Monogr. 2: 1-22, pls. 1-3.
- Kennedy, W. J. 1971. Cenomanian ammonites from Southern England. Palaeontology Spec. Pap. London, 8: 1-133, pls. 1-64.
- Mantell, G. A. 1822. The Fossils of the South Downs. 320 pp., 42 pls. London.
- Müller-Stoll, H. 1936. Beiträge zur anatomie der Belemnoidea. Nova acta Leopoldina N.S. 4 (20): 159-226, pls. 1-14.
- Sharpe, D. 1857. Description of the fossil remains of Mollusca found in the Chalk of England. Palaeontogr. Soc. Monogr., London. 1857: 37-68, pls. 17-27.
- Weisenauer, E. 1976. Complete belemnite bodies from the Posidonia shales of Holzmaden. N. Jb Geol. Palaont. Mh. 10: 603-608.

Dennis Phillips  
 Department of Palaeontology  
 British Museum (Nat. Hist.)  
 London, SW7 5BD

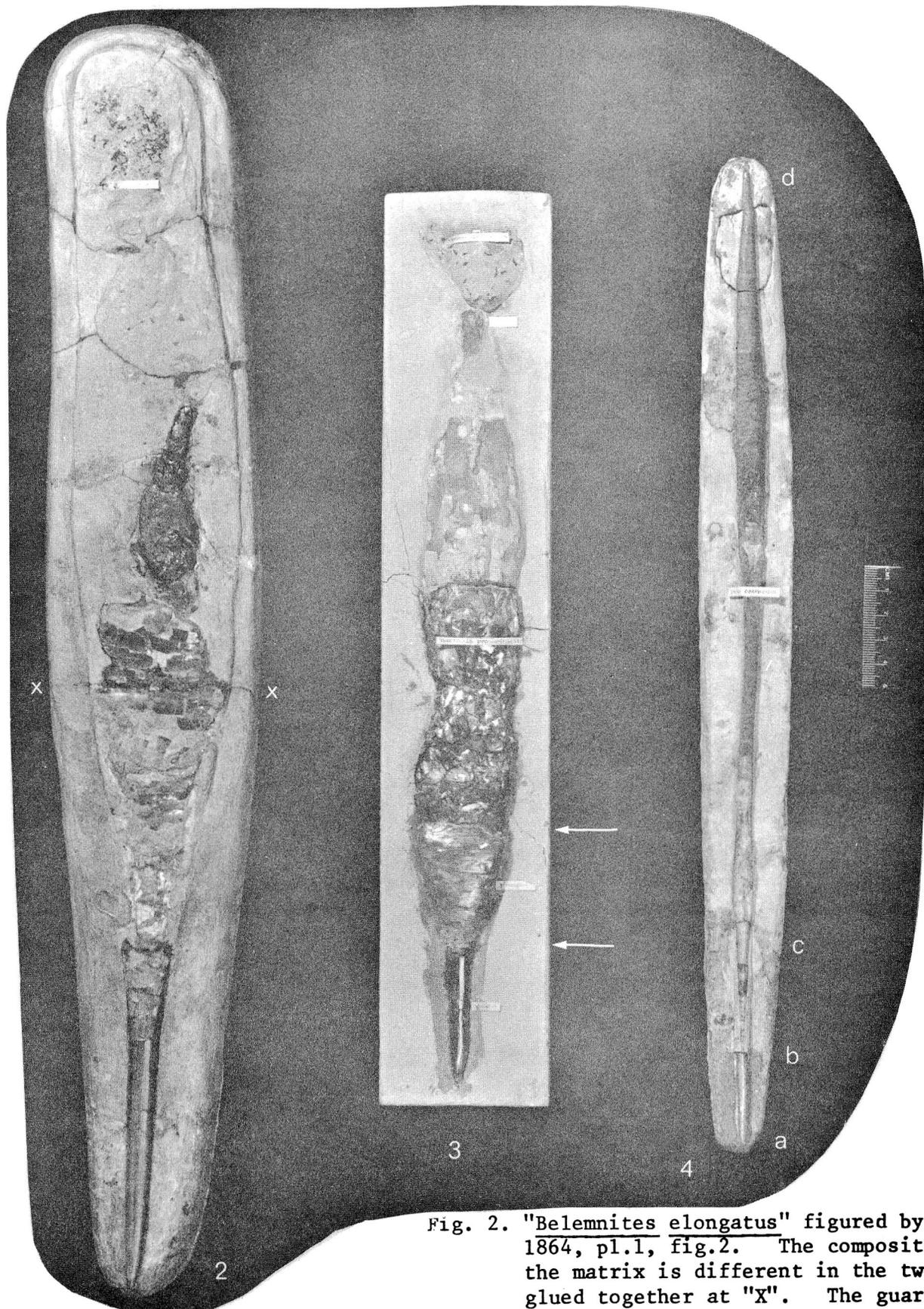


Fig. 2. "Belemnites elongatus" figured by Huxley, 1864, pl.1, fig.2. The composition of the matrix is different in the two parts glued together at "X". The guard is probably also added. B.M.N.H. No.39855 x2/5.

Fig. 3. "Belemnites bruguierianus" figured Huxley, 1864, pl.1, fig.1. The "phragmocone" between the arrows is artificially constructed, and the guard has been added. B.M.N.H. No. 74106 x2/5.

Fig. 4. "Xiphoteuthis elongata" figured Huxley, 1864, pl.3, fig. 1. The slab between a and c is an artificial cement. The "guard" a,b and phragmocone b,c may belong to one specimen. If so, they are wrongly orientated. The specimen c,d is apparently authentic. The fusiform part has a solid "guardlike" structure. B.M.N.H. No.39852 x2/5.

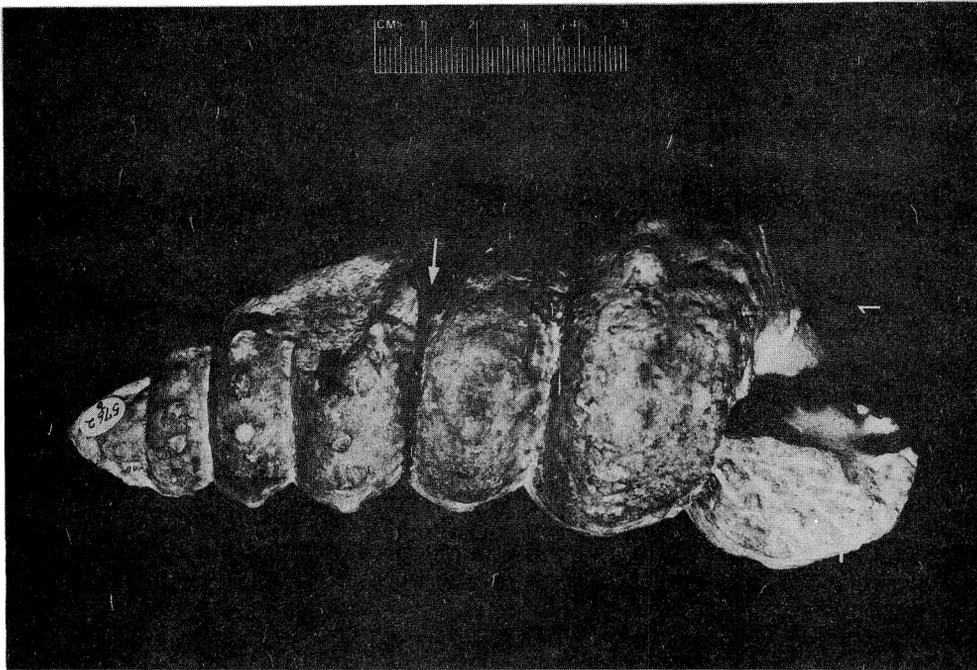


Fig. 1. The formerly unfigured view of "Turrilites tuberculatus Bosc." figured by Mantell (1822) and Sharpe (1856). The different angle of coiling of the smaller specimen - Hypoturrilites gravesianus (d'Orbigny)- can be seen at the point arrowed. B.M.N.H., No. 5762 a, b. x2/3.

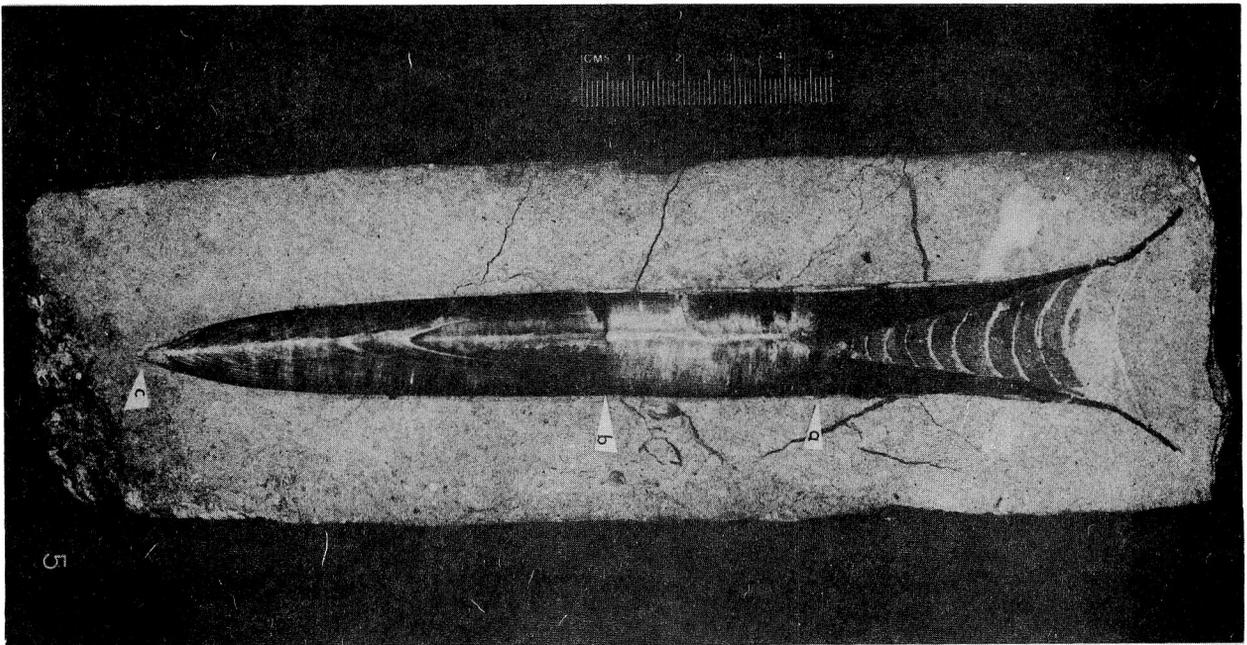


Fig. 5 Polished section of belemnite guard showing the discrepancies in structure of the three parts. x2/3.

b) 'Complete' Belemnite animals from the Posidonia shales of  
Holzmaden\*

(Lower Lias, Germany)

by Ewald Wiesenauer, Waiblingen

Text includes 4 figures

translation from Neues Jahrbuch für Geologie u. Paleontologie. MONATSHEFTE 1976  
 pt 10 pp 603-8

**Abstract:** Complete specimens show the relationship of arm hooks ("*Onychites*"), soft body with muscles and ink sack ("*Acanthoteuthis*"), conotheca and rostrum (*Odontobelus*) and the particular conditions favoring their preservation.

**Summary:** Specimens of belemnites from a horizon in the middle lias epsilon are described in which the rows of arm hooks, remains of muscles and ink sacks are preserved in association with the shell and the rostrum. Preservation was facilitated by the fact that the rostrum was bitten off, as was probably usual when these creatures were attacked by the ichthyosaurus.

In contrast to the vertebrates, which are to be seen and appreciated in their entirety in all the museums, invertebrates from the Posidonia shales have hitherto contributed little to our knowledge of extinct groups of animals. This is in part due to their small size and lack of attractiveness to the collector, in part to the laborious preparation involved in exposing anatomical details.

Whereas with ammonites collected from the Posidonia shales, no remains of soft parts have to date been discovered with the exception of aptychi, we have for some time known details of soft part remains of teuthids, especially the ink sacks and the system of mantle muscles in a phosphatic preservation. In addition, arms provided with hooks (*Acanthoteuthis*) are recorded in association with shell remains (MÜLLER & ZIMMERMANN, 1962, Fig. 115); but whether they should be classified as belonging to the belemnites has up to now been a matter of conjecture, since the rostrum was always missing. A systematic search for this type of material in a particular horizon of the Holzmaden profile has now brought to light not only well-preserved teuthids and other specimens of *Acanthoteuthis* lacking the rostrum, but at least two specimens in which the rostrum is preserved in connection with the soft parts. One of these is described here (fig. 1).

---

\*German Editor's note:

At a time when private collecting of fossils has become a fashion and often tends to obstruct rather than aid the work of professional palaeontologists, this contribution represents a most encouraging step. It demonstrates that private collectors who know what they are about and who are capable of careful preparation can still make remarkable discoveries and evaluate them themselves in collaboration with scientific institutes.

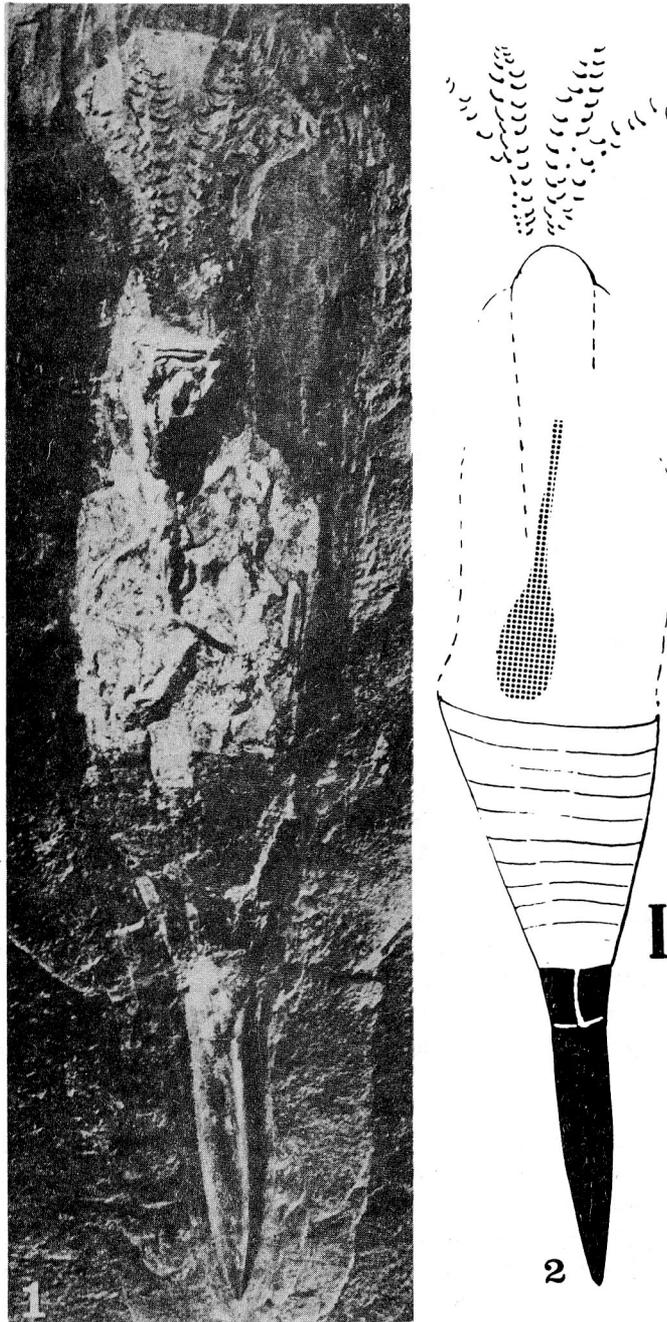


Fig. 1. Complete belemnite. In contrast to the light area (due to laquering) around the arms, the whitish mass in the region of the mantle is phosphatized muscle substance. The conical structure behind the head is absent in other specimens and is probably due to postmortal crushing of the ink sack. All scales = 1cm.

Fig. 2. Simplified outline drawing. Note the proportions of the rostrum, conotheca, proostracum and relatively short claws. The outline of the ink sack (dotted) has been added on the basis of other specimens.

In the context of these introductory remarks it is now possible to proceed to the most significant points arising from this discovery:

1. Acanthoteuthis and at least some of the Onychites are to be classified with the belemnites.
2. Owing to their having hooks (Onychites), belemnites were probably predators.
3. Belemnites had an ink sack and were therefore genuine cuttlefish.
4. Belemnites - like other dibranchiates - had a powerful muscular system specialised for swimming and located in the mantle. This did not, however, extend into the region of the fins. This would explain why no outlines of fins have been definitely identified to date.
5. The proostracum was very thin and lacks any identifiable growth lines. In several finds it extended up to the roots of the arms, i.e. the head could largely be retracted beneath the protective proostracum.
6. The arms were relatively short and each was provided with some 15-20 pairs of Onychites, becoming shorter towards the extremity and the root of the arms. The number of arms was presumably 10.
7. It has not so far been possible to identify jaws with any certainty.
8. The relative sizes of rostrum, conotheca, proostracum and arms with hooks may be seen from figs. 1 and 2.
9. An onychite (fig. 4) was found at the same horizon whose rostrum, by analogy, would have to have been almost 80 cm in length. Since rostra of this size have been unknown in the lias hitherto, it is presumably the case that the corresponding giant relations of the belemnites either had no rostrum or one which was porportionately much smaller.

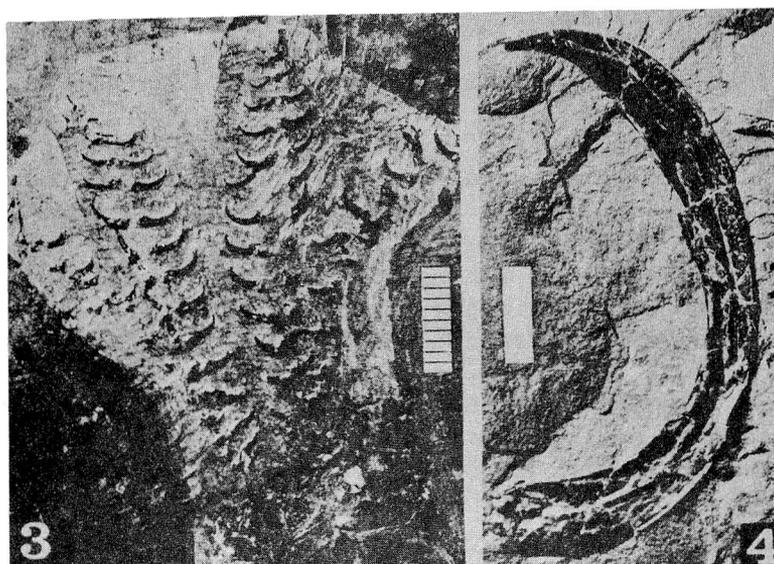


Fig. 3. Enlarged detail showing the pairing of the Onychites on the arms and the front end of the proostracum.

Fig. 4. Giant onychite from the same stratum.

[The remainder of the paper discusses the preservation of belemnites in the horizon of the Posidonia shales whence came the material described. These remarks are not translated here. The author concludes ...]

"Attempts are in progress to extend the provisional findings by means of careful preparation of other specimens and to clarify still open questions (e.g. concerning the form and position of fins and jaws)."

#### Acknowledgement

The author's thanks are due to Herr J. Fischer (Holzmaden) for permission to work in his quarry and to the palaeontologists of the Tübingen special research section "Palaeoecology" for their assistance with the evaluation of the finds.

#### Bibliography

MULLER, A.H. & ZIMMERMANN, H. 1962. Aus Jahrmillionen (Tiere der Vorzeit) 409 p. 290 figs. Jena, VEB Fischer.

Translated by Dr. Eric Dickins.

#### POSTSCRIPT!!

This translation is as published. Unfortunately, as the extract reprinted below (from the Cephalopod Newsletter no. 3, April 1979) shows, the editors of the journal concerned and several German Museums too had been taken for a ride. The complete belemnites described above were also simply forgeries!

From Helmut Hölder, Geologisches Inst., 4400-Münster, Gievenbecker Weg 61, W. Germany.

"The "complete belemnite animals" described and illustrated by E. WIESENAUER in the Neues Jahrbuch für Geologie und Paläontologie, Monatshefte, Jg. 1976: 603-608, proved to be falsifications by the investigations of J. REITNER and W. RIEGRAF as indicated by the Geol.-Paläontologisches Institut of Tübingen. Ink sacs as well as other soft parts and phragmocones occur in the Upper Liassic black shales but their connection to the belemnites cannot be proved. Furthermore ink sacs of teuthoides, were found to have been artificially assembled together with belemnite rostra! As a result the possible existence of an ink sac in belemnites is no more certain than it was before Wiesenauer's paper. One should be cautious when purchasing such false belemnite 'reconstructions', which are sold on the market at high prices."

c) The smallest 'Improved' ammonite?

The various legends attributing the origin of ammonites to the curses or prayers of mediaeval saints troubled by over-abundant serpents will be well known to most readers of this journal. In the area around Whitby the abundant Liassic ammonites were, up until the nineteenth century, commonly said to be the remains of snakes petrified by the prayers of a local abbess, St. Hilda (614-680). Presumably St. Hilda's anti-ophidian orisons were also supposed to have decapitated the serpents and caused them to curl up into spirals - in which order it is uncertain. Similar legends attach to the, possibly fictitious, St. Keyna, of Keynsham in Somerset (Skeat, 1912) and to the, rather better accredited, St. Cuthbert (e.g. Crick, 1910). For over 150 years, fossil dealers, notably around Whitby, have carved snake-like heads on well preserved ammonites and sold these "perfect" specimens for suitably high prices. As early as 1815, James Sowerby figured a Whitby Dactylioceras commune (Sowerby) bearing a rather elegant head, in Volume II of his 'Mineral Conchology'. Most British museums with geological collections of any size probably possess examples of ammonites similarly "improved". However, a specimen recently discovered in the course of cataloguing Hull Museum's palaeontological collection seems worthy of special note. Not only is it (Figure 1) the smallest example of a "perfected" ammonite known to the writer, having a maximum diameter of only 15 mm, but (notwithstanding its small size) the carving is remarkably fine and detailed. Can any other museum compete, and produce an (already existing!) smaller and finer specimen? Presumably, individual Whitby ammonite carvers developed their own particular styles - perhaps a detailed survey of British 'snakestones' might allow some to be traced back to their originators.

References

- Crick, G. C. 1910. Snakestones. Naturalist, 1910, 145-146.  
 Skeat, W. W. 1912. Snakestones and stone thunderbolts as subjects for systematic investigation. Folklore, 23, 45-80.

Michael J. F. Boyd,  
 Dept. of Natural History,  
 Kingston upon Hull Museum,  
 Queen Victoria Square,  
 Kingston upon Hull, North Humberside.

Editor's note

In the world of real ammonites the smallest adult specimens are those known from the Middle Jurassic of the Venetian Alps, Italy. Complete specimens of Sphaeroceras pusillum Sturani are known with a diameter of only 2.8 mm! Cynics who say it is easy to make any ammonite smaller with crafty hammerwork should note these specimens are of adult, mature individuals and not the broken internals of other specimens!

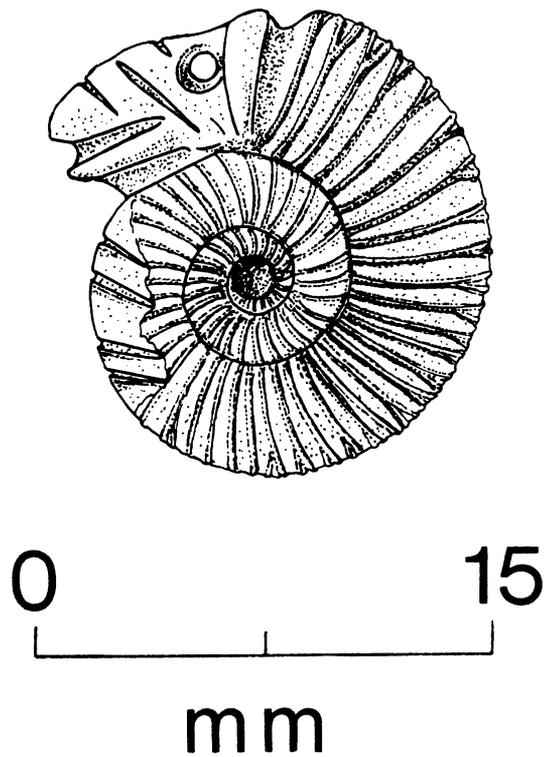


FIGURE 1. Ammonite (species undetermined) with carved head. Hull Museum specimen 693. 1980. (x4). No data available as to horizon and locality from which specimen was collected, or mode of its acquisition by Hull Museum.

## COLLECTIONS AND INFORMATION LOST AND FOUND

## COLLECTIONS AND INFORMATION SOUGHT

96. BELCHER, Admiral Sir Edward (1799-1877)

Sir Edward Belcher is perhaps predominantly remembered for his much criticised search for Sir John Franklin in the Arctic and for the monographs produced on the zoological material collected during the surveying voyages of H.M.S. Samarang and H.M.S. Sulphur, which he commanded. One of Belcher's interests appears to have been in geology (he was elected a Fellow of the Geological Society early in his career and a number of his descriptive notes appear in the Proceedings.)

The only extant geological specimens I have traced are a few Arctic fossils in the British Museum (Natural History). I would be most interested in information on any of his scientific pursuits or collections.

Dr. Peter F. Lingwood,  
15 Bain Road, Boston,  
Lincolnshire, PE21 7QE

97. CECIL, Mr. ? (fl. 1860's Dates unknown)

A collection of British Fossils made by this man and an associated notebook for the period between September 1860 and October 1867 has been re-discovered in the collections of the Hampshire County Museums Service. He appears to have been in Warwickshire before apparently moving to Northampton in 1863. Specimens from, and papers by, the Rev. P. B. Brodie indicate his interest in the geology of Warwickshire. Any information on him is sought by:-

Tony Cross,  
Hampshire County  
Museums Service.

98. Permian Fish from Fulwell Quarries, Sunderland

Information is sought as to the type, number and location of fish from the Permian Upper Magnesian Limestone of Fulwell, Sunderland. The quarries were worked extensively during the late 19th and early 20th centuries, and yielded numerous specimens of Acentrophorus varians and Acrolepis kirkbyi, many of which were sold and hence became parts of prestigious collections throughout the country. Preservation is usually good and easily recognisable, the fish often being a golden brown colour in a characteristic creamy yellow matrix as opposed to the more typical black Marl Slate fish in a bituminous matrix.

Fossil synonyms for the above two species include:-

Acentrophorus glaphyrus  
Palaeoniscus varians  
P. altus  
P. abbsii  
P. angustus?  
Acrolepis sedgwickii

Jane Holden,  
Sunderland Museum,  
Borough Road, Sunderland,  
Tyne & Wear, SR1 1PP.

99. HUNTON, Louis (1814-1838)

Information is sought about this Yorkshireman, described by W. J. Arkell in 1933 (The Jurassic System in Great Britain, Oxford, Clarendon Press, p. 14) as a pioneer in the use of ammonites for the accurate correlation of Jurassic strata. This is an assessment based on Hunton's 1836 paper, published in 1837 in Trans. Geol. Soc. London (2) 5 215-220, and described by Arkell as a "truly remarkable document" of "remarkable qualities". Basic biographical information about Hunton and his parents is now available, and at last his early fate is also known, but further information is sought and especially news of any of his publications apart from the above and another on chemistry in London and Edinburgh Phil. Mag 11, 1837, 152-156.

Some of his collection is known to have gone to the Whitby Literary and Philosophical Society Museum but exactly what and whether it still survives is not known. Any information about his collections would be of particular interest. He lived at Loftus on the North Yorkshire coast so Yorkshire Museums are the most likely to contain his material.

H. S. Torrens,  
Dept. of Geology,  
University of Keele, Keele,  
Staffordshire, ST5 5BG.

100. PERCEVAL, Spencer George (1838-1922)

Was a collector of minerals and fossils, books and manuscripts who lived first in Henbury and later in Clifton, both near Bristol. He was the benefactor, as well as the merciless critic, of museums and libraries up and down the country. Although he never wrote a major book or paper I have so far listed 70 contributions to journals, magazines and newspapers. I am particularly interested in Perceval as a collector of old geological books and manuscripts, and am keen to locate items bearing his signature or plain book label. He was left the geological books of his uncle, W. C. Trevelyan, in 1879, and was certainly buying seriously by 1881 when he attended the sale of James Tennant's library. Many items, both books and manuscripts, were presented to museums and libraries during his lifetime, many almost as soon as he bought them. Up to 1900 he must have had a substantial library, for in that year he gave 500 or so volumes to the Bristol and Bodleian libraries, while in 1904 he still describes packing his books as "a great undertaking". The materials still in his possession at his death he bequeathed to the Fitzwilliam Museum, Cambridge, where most of them still remain. Any information on scattered items would be welcomed by:-

J. C. Thackray,  
Geological Museum,  
Exhibition Road, London SW7.

101. AUSTEN, Edwin (died before 1868) of Conster Manor, near Staplehurst

Jim Nunney of Leeds City Museum seeks information about this collector. The 47th Report (1867) of the Council of the Leeds Philosophical and Literary Society for the Session 1866-67 records his donation thus, p. 7

To the Geological department, the Executors of the late Edwin Austin, Esq, of Conster Manor, near Staplehurst, have forwarded to the Museum his Collection of the remains of the Iguanodon and Hylæosaurus from the Weald of Sussex, which had been bequeathed by that gentleman. This timely bequest enriches the Museum with several characteristic Bones of these rare and extraordinary Reptiles; and it is gratifying, not only from its intrinsic value, but as evidence of the interest which the Collections of the Society excited in a casual visitor from a distant part of the kingdom.

GEOLOGY AND MINERALOGY.

A valuable Series of Bones of the Iguanodon and Hylæosaurus from the Weald of Sussex ..... } Bequeathed by the late Edwin Austin, Esq. of Conster Manor.

A printed label with the collection states they were collected at PEASMARSH near RYE in Sussex and were presented by Mr. Edwin Austen of Knellstone, Udinore, Sussex, presumably an earlier address?

102. MITCHELL, John (dates unknown)

The collection at Perth Museum & Art Gallery contain four trilobite fossils from New South Wales: 3 Encrinurus mitchelli and 1 Bronteus juskensii. Modern typed labels accompany the specimens and the accession registers shed no light on their donation. However, one label on E. mitchelli states, "From the collecton of John Mitchell who first discovered trilobites in Australia." Can anyone shed any light on J. Mitchell or his collection?

M. A. Taylor,  
Perth Museum

see also Found section (no. 102)

103-107. information sought on five additional collectors see under Found section (no. 88).

## COLLECTIONS AND INFORMATION FOUND

55. DOWNING, Francis (died 1857)

The date of his death is given by N. Mutton 1969 in "An Engineer at Work in the West Midlands" J1. West Midland Regional Studies, Special Publication 1 p. 31. It may help locate information of the fate of his collection via local newspapers, if notices of his life appeared.

56. INWOOD, H W

The fate of Murchison's specimens which were loaned from this collector's cabinet was previously sought (GCG 2 (3) p. 126) without success. E. G. Allingham 1924 "The Romance of the Rostrum" records that Stevens, the auctioneers in Covent Garden, sold between 1834 (p. 32) and 1863 (p. 51) "Mr. Inwood's fossils .... a fine collection". Unfortunately no copy of the sale catalogue apparently survives to give more information about Mr. Inwood but it must surely be the same man?

82. CARRINGTON, Samuel (1798-1870)

Although no fossils at Stoke appear to have been collected by him, we do have a notebook, which must have been made about 1869, containing notes for his school teaching along with various pieces of miscellanea. One item of interest is an advert - see photograph - which has been cut out of an unrecorded newspaper;

D. I. Steward,  
Assistant Keeper of  
Natural History,  
City Museum, Broad Street,  
Hanley, Stoke-on-Trent

---

**T**O GEOLOGISTS and COLLECTORS of  
FOSSILS.—The Advertiser, having collected about 400  
species, or well-marked varieties, of Mountain Limestone Fossils  
from the counties of Stafford and Derby, is ready to furnish Col-  
lections, consisting of Shells, Zoophytes, and Trilobites, to pur-  
chasers who may desire them, at the charge of 12s. 6d. per 100 for  
the first and second 100, and 20s. for the third. Many of them are  
very perfect, most of them good. The last hundred are very rare  
or imperfect.—Address Mr. S. CARRINGTON, Wetton, near Ash-  
bourne.

---

Dr. Bill Ramsbottom of the Institute of Geological Sciences, Leeds also records the preliminary information that their collections contain 2,200 specimens of Carboniferous fossils from Staffordshire which were purchased apparently for £21, from Samuel Carrington or his executors on 15 December 1870. Two catalogues are with the collection. This material is being worked through at IGS and further details will be given when they are available.

84. CLARKE, (Rev.) William Branwhite FRS (2 June 1798-17 June 1878)

Geologist. Curate of Ramsholt, Suffolk who emigrated to become an Anglican clergyman in New South Wales, 1840-70. He also served the Government of that State on various geographical and geological surveys, discovering gold, 1841;

tin, 1849; and diamonds, 1859. His British collections were sold in 1838, -- see *Athenaeum*, 1838: 829, and *Newsl. Geol. Cur. Gp.*, 2 (7) 1979: 434-5.

*Proc. Roy. Soc., Lond.*, 28, 1879: i-iv; *Q. Jl. Geol. Soc., Lond.*, 35, 1879: 44; *Geol. Mag.*, Dec. 2, Vol. 5, 1878: 378-82; *Jl. Proc. Roy. Soc. N.S.W.*, 13, (1879) 1880: 4-23, *DNB*, 10: 450; *Newsl. Geol. Cur. Gp.*, 2 (7) 1979: 434-5.

Cambridge, Sedgwick Museum. Has some British and Australian material.

London, BM(NH). Jaw of *Sthenurus minor* from N.S.W. presented in 1877.

London, IGS. Pleistocene Red Crag fossils.

Sydney, Australian Museum. Australian Palaeozoic fossils.

Ron Cleevely  
Palaeontology Department,  
British Museum (Natural History)

85. BEATTY, A. Chester (1875-1968)

The "A. Chester Beatty" referred to by Mr. Ryback (*G.C.G.* vol. 2 (7), p. 432) concerning the mineral collection at the Court Hall at Milton near Sittingbourne was most probably the well known philanthropist and art collector Sir Alfred Chester Beatty, first honorary citizen of Ireland. Born in New York of Irish descent, Sir Alfred studied at Columbia School of Mines and Princeton University and had an illustrious career as a mining engineer, explaining his interest in minerals. His most important contribution to geology was to develop a new method of extracting copper from low-grade ore, and in 1935 he was awarded the Gold Medal of the Institution of Mining and Metallurgy.

A visit to Egypt in 1913 prompted the beginning of his world famous collection of oriental manuscripts (13,000 vols.) and art. Sir Alfred spent his later years in Dublin when he founded the Chester Beatty Library and Museum to house his collection which was eventually bequeathed to the Irish nation. In 1954 he was knighted by Queen Elizabeth II for his services during the War and for his contributions toward cancer research.

Unfortunately, we have no knowledge of the whereabouts of the rest of the collection. Certainly the Chester Beatty Library and Museum do not possess any geological specimens and are unaware of any such collection.

Susan Pyne  
John R. Nudds  
Department of Geology,  
Trinity College,  
Dublin 2, Ireland.

88. BOLTON (or BOULTON), John (1791-1873) of Ulverston

Geoff Hancock of Bolton Museum is a fellow native of Ulverston with John Bolton and sends the following preliminary report of progress.

"John Bolton used Boulton as an alternate spelling with equal facility both in print and in his letters to Adam Sedgwick preserved at Cambridge University. The year of his birth given in our last issue was incorrect in crediting Bolton with an extra three years of life. The problem as to where his collection is preserved is complicated by the fact he gave away many of his fossils before he died.

The "small collection" mentioned in the last issue as preserved in the Institute of Geological Sciences, London, is one of three accessions they have of Bolton's own material. These are one small purchase (1862), a donation in the same year and a purchase of 570 specimens from his widow in 1873. The lot of specimens include the two crinoid heads figured in his book and many of the cited specimens from his excursions through the Lake District. Some of his material has subsequently been described and therefore now includes types. They are, of course, amalgamated into the IGS Collections. Apart from a very few specimens elsewhere (two specimens, for example, are in Bolton Museum identified from among material on loan from Blackburn Museum ex Rawtenstall - see G.C.G. Newsletter, 2 (2); 103-115) the basic problem remains - where is the rest of the masses of material he must have acquired during a lifetime's collecting?

There are many clues among his works and local contemporaries for making a beginning to a search. These I intend to follow and would be grateful for any information about the following

103. BROGDEN M.P., Alexander - the person to whom Bolton gave many specimens (superior to his own) for the Brogden Cabinet.

104. BROGDEN, John - father of the above.

105. HODGSON, Miss E. - lady geologist interested primarily in the quaternary some of whose material is in the IGS.

106. MORRIS, James P. - local antiquarian.

107. SMITH, Charles - FGS of Dalton.

The last three may have acquired some of Bolton's specimens. The Brogdens definitely had a large collection of his specimens as well as their own (they owned local iron mines, built the Furness Railway, etc.).

It is intended to write a comprehensive biography and bibliography of John Bolton. Samples of his hand-writing are available to compare with any suspected original labels. If we allow that his personal collection is in the IGS then Ron Cleevely can give him an entry in the forthcoming directory of palaeontological collections but the story is nowhere near complete as yet. I wish to acknowledge the assistance of Steve Tunnicliffe of the IGS and Dr. Forbes at the Sedgwick Museum so far and look forward to hearing from anyone with any additional information."

89. ESCHALAZ

No collector of this name is known at Bolton Museum. There is an Echalaz whose collection of birds is at Bootle Museum, but whether it contains or contained geological material is as yet unknown.

Information from Geoff Hancock  
Bolton Museum.

90. LAVIN'S MUSEUM, Penzance

Peter Embrey kindly sent a postcard of Lavin's Museum built c. 1830 as it is today in Chapel Street, Penzance "lovingly restored by the Landmark Trust" in 1973. He also records that the Eagle at the top of the building is nothing to do with Lavin or his Museum but a hang-over from the days in the late 19th century when the building was in use by the German Consular service!



Michael Taylor of Perth Museum also reports that they have a manuscript catalogue of Cornish Minerals with the 4 drawer collection which came from Lavin's Museum as is shown by the printed wrappers of the catalogue reproduced here:-

A  
CATALOGUE

OF

Cornish Minerals,

WITH THEIR

NAMES AND LOCALITIES.

SOLD AT

LAVIN'S MUSEUM,  
CHAPEL STREET, PENZANCE.

By the Stranger and Tourist,  
THE LARGEST AND BEST ASSORTMENT OF  
Views, Guides, and Pocket-Maps,  
OF CORNWALL AND DEVON.

STUDENTS OF MINERALOGY AND GEOLOGY, AND TOURISTS  
 TO THE  
*Scenery, Antiquities, and Minerals of Cornwall,*  
 WILL BE INTERESTED BY A VISIT TO  
**LAVIN'S MUSEUM,**  
**CHAPEL STREET, PENZANCE.**

This unique Collection of Cornish Minerals contains specimens of the most interesting and rare substances, with perfect crystallisations, for which the above county has been so justly celebrated.

100 MINERALS, scientifically arranged in a case, with descriptive catalogue, from £1 to £5. Larger specimens neatly set in a Mahogany Cabinet, from £5 to £10. More extensive selections and first-rate specimens, from £20 to £50, and upwards.

GEOLOGICAL SELECTIONS, comprehending specimens of the various Rocks of the county.

*As a Specimen of Carbonate of Iron, from Wheal Meudlin Mine, for which the sum of £100 has been refused; as well as a great many others, presumed to be unrivalled.*

AGENT FOR THE SALE OF ARTICLES MANUFACTURED BY THE  
**LIZARD SERPENTINE COMPANY,**

(UNDER THE PATRONAGE OF HER MAJESTY THE QUEEN, ETC.)

Comprising Chimney-pieces, Columns, Balustrades, Fountains, Obelisks, Vases, Chaises, Hebe Jars, Thermometers, Inkstands, Candlesticks, Toilet Bottles, Bookstands, &c. &c. No material, British or Foreign, equals this stone, either in brilliancy of colour, or in elegance of appearance.

Views of Cornish Scenery in Photographs, Stereoscopes, Plate Paper, &c.

HAND-BOOKS, POCKET-MAPS, &c.

This collection belonged to the Hon. Francis Charles Drummond and was donated to Perth Museum in 1907 by his widow.

102. MITCHELL, John

The species Encrinurus mitchelli was described by A. Foerste in 1888 "Notes on Paleozoic fossils" in Bull. Scient. Labs. Denison University 3 117-137. Study of this might yield some information about the man after whom Foerste named this trilobite.

P. D. Lane,  
 Keele University.

## KIMERIDGE CLAY PLIOSAUR SKULL

619

A well-preserved pliosaur skull from the Kimeridge Clay  
(Jurassic) of Westbury, Wiltshire

In July 1980 the Blue Circle Cement Company presented an almost complete pliosaur skull, associated lower jaw bones and elements of the post-cranial skeleton to the City of Bristol Museum and Art Gallery. Few examples of pliosaur skulls have been recorded from the Kimeridge Clay of this country, and none appears to approach the new specimen in terms of completeness.

The material is from the clay pit at the Blue Circle Cement Company's works at Westbury, Wiltshire (National Grid reference ST 88175267). The sequence exposed in the pit extends from the Rasenia cymodoce Zone to Aulacostephanus eudoxus Zone, Lower Kimeridge Clay (Birkelund et al. 1978, 35). The pliosaur remains are from the Aulacostephanus eudoxus Zone. The horizon from which they were obtained is approximately one metre below the stone-band (Propectinatites? - rich band); both are within Bed 30 of Gallois & Cox 1976, which forms a lithologically persistent horizon throughout the English Kimeridge Clay from Dorset to north Yorkshire (R.W. Gallois, pers. comm., in litt. 14 August 1980).

The discovery was made by a party from the Institute of Historical Geology and Palaeontology, University of Copenhagen (Prof. T. Birkelund, Dr B. Buchart, C.K. Clausen, H. Noer-Hansen, Miss I. Salinas) and Institute for Palaeontology and Historical Geology, University of Munich (Dr F.T. Fürsich). They collected a large number of loose bones from the sloping side of the clay pit and partially excavated other bones protruding from the slope revealing the lower jaws (unfortunately incomplete) and, lying a few feet away, the palatal surface of the skull. Subsequent excavation was carried out by Museum staff (Dr M.L.K. Curtis, Dr M.D. Crane, Miss S.A. Swansborough, Miss J. Ratcliffe).

Well-preserved pliosaur skulls from the Kimeridge Clay appear to be uncommon, and we believe this new find to be of some importance.

### References

- Birkelund, T., Thusu, B. & Vigran, J. 1978. Jurassic-Cretaceous bio-stratigraphy of Norway, with comments on the British Rasenia cymodoce Zone. Palaeontology, 21 (1), 31-63.
- Gallois, R.W. & Cox, B.M. 1976. The stratigraphy of the Lower Kimmeridge Clay of eastern England. Proc. Yorks. Geol. Soc. 41, 13-26, pl.3.

M.D. Crane

City of Bristol Museum & Art Gallery  
Bristol BS8 1RL

185 YEARS OF MOVEABLE STONES

from the Times of 7 January 1795, page 1

submitted by  
Hugh Torrens.

**EXHIBITION of LIVE and MOVEABLE STONES**, a surprising Prodigy of Nature.—The wonderful Stones here mentioned, by an invisible agent, receive both life and motion, are seen by the Spectators to walk, turn, and move in every direction. The Proprietors of these extraordinary Stones, and sole Possessor of the secret that produces this phenomena, is surprising and singular. The price of these Stones is ten Guineas each. The experiments may be repeated at pleasure, without any loss of power or virtue in the said Stones.—The Curious, that may desire to see the phenomena here mentioned, are to pay Half-a-Guinea for their Exhibition.

The Professor is to be met with every day, at his House, No. 100, St. Martin's-lane, from 2 o'clock in the afternoon till five.

from the Daily Telegraph, 23 August 1980.

submitted by  
Patrick Boylan.

---

**ANCIENT STONE FIND**

A 50 million-year-old stone, dredged from the River Orwell, Ipswich, was sent yesterday to Amersfoot, Holland, where there is a collection of European ancient stones.

---

## TECHNICAL

### MONITORING RELATIVE HUMIDITY AT THE HANCOCK MUSEUM

Since January 1978 I have carried out a programme of measurements of temperature and relative humidity at the Hancock Museum. Following the GCG meeting in London where Frank Howie spoke on the causes of pyrite rot (Howie 1979) I decided to check the conditions in our stores.

The Hancock Museum fossil and mineral collections have been subject to the vagaries of pyrite rot probably since their housing in the present building in 1884, if not before.

Particularly affected are the important Coal Measure fish and amphibian specimens collected by Thomas Atthey in the mid-1860's. The most tragic example is that of the amphibian, part of the type Eogyrinus. This was a vertebral column, originally 1 m long, of articulated vertebrae and ribs, now sadly reduced to a few knobs of bone, still pyritised and still at risk, despite several attempts in the past few years to stop the rot, using antiseptics and other methods previously recommended.

In January 1978 Velson Horie, then conservation officer to the N.E. Museums Service, came and measured the relative humidity and recommended we place several monitoring devices around the stores. We chose 5" diameter precision hair hygrometers (from F Dalton & Co. Ltd., Watford).

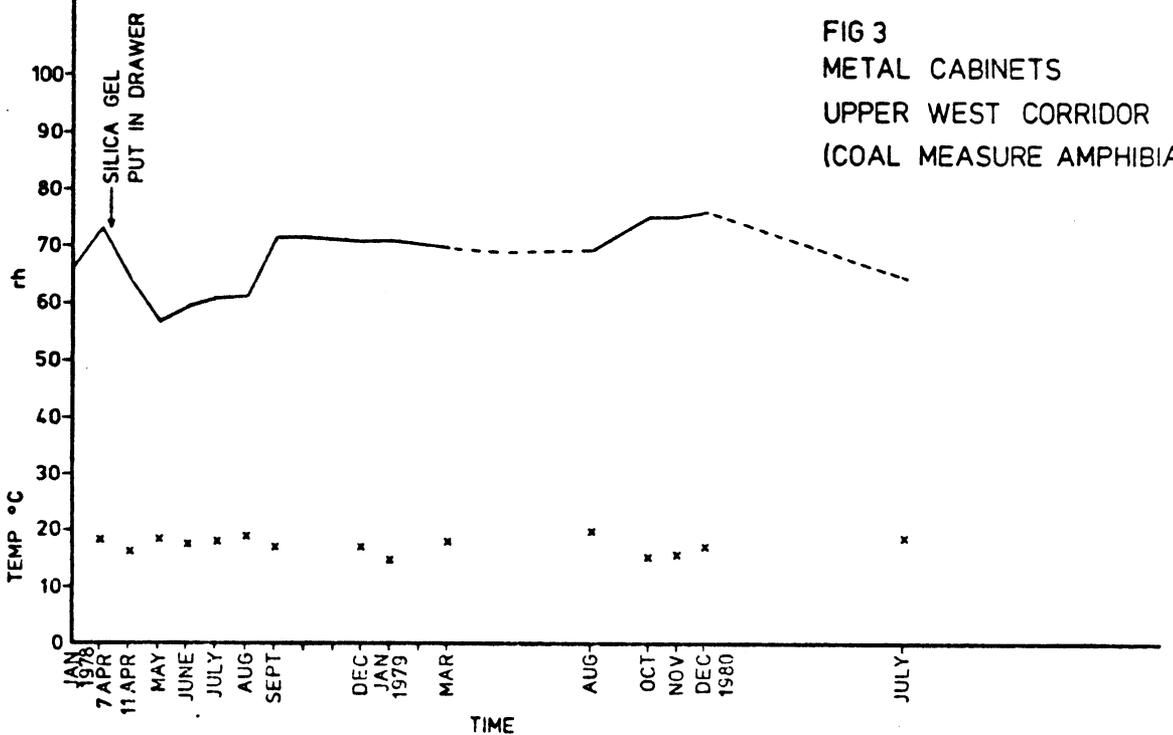
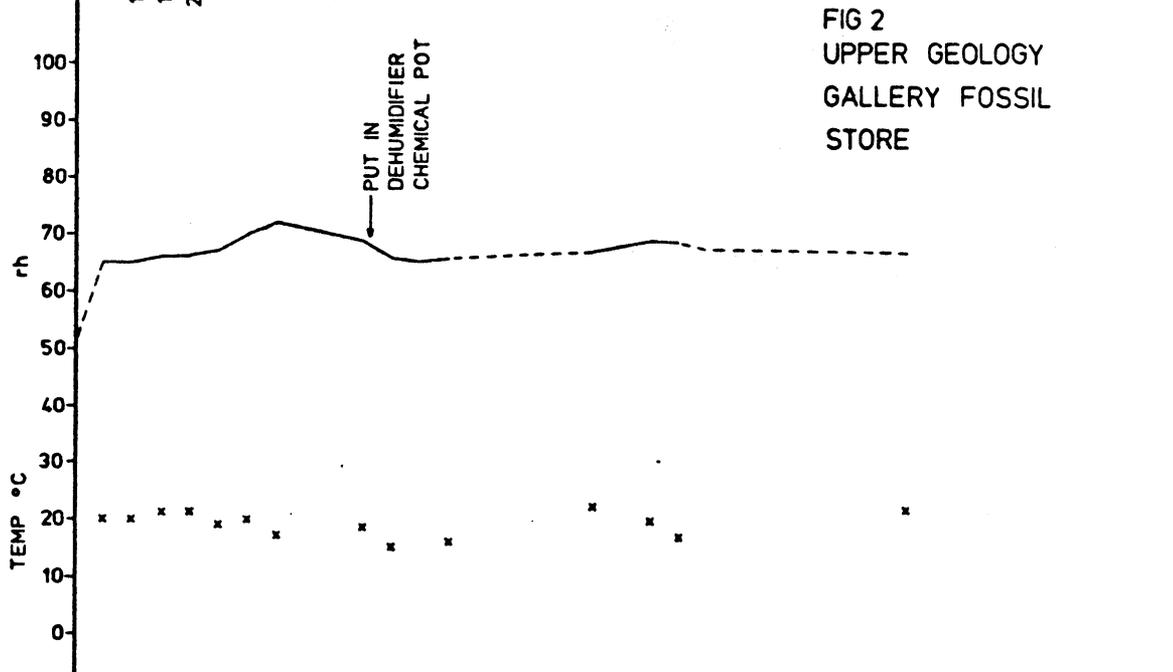
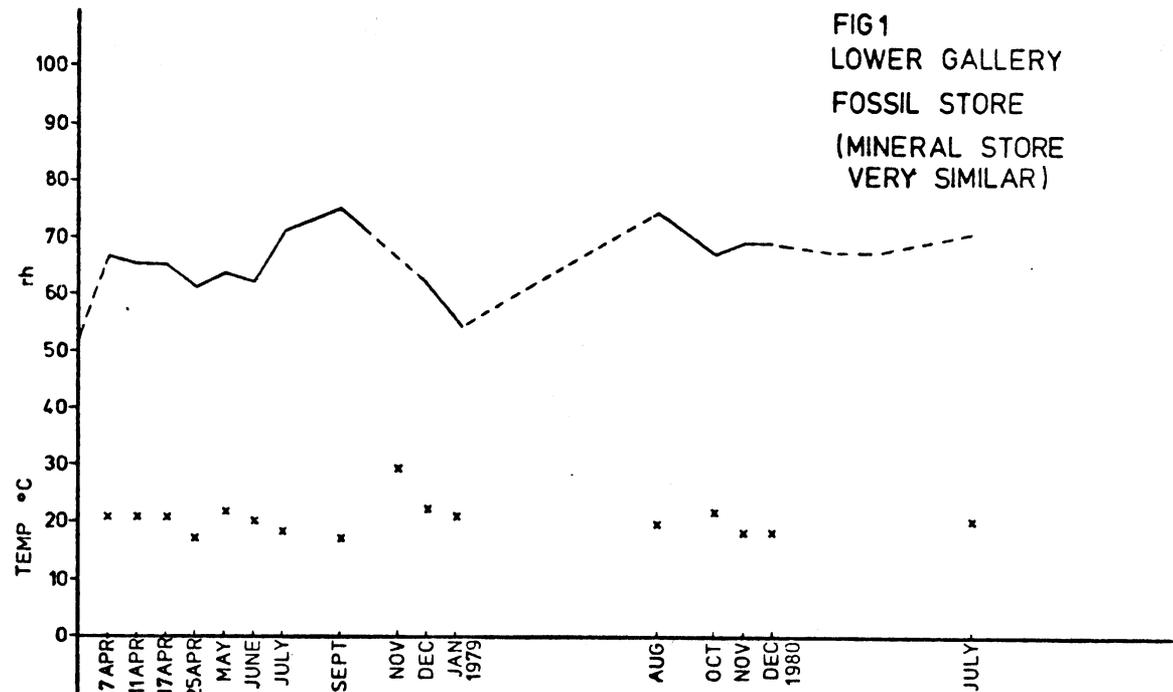
Readings have been taken fairly regularly over the past 2 years and the results can be seen in Figs 1-3. (page 622)

Introduction of silica gel or proprietary dehumidifiers to any one drawer did bring down relative humidity but never enough. Certainly I only once recorded a figure below Frank Howie's suggested 55% rh. since the original recording!

The main problem, of course, is the amount of fluctuation, with summer highs and winter lows, as the heating is turned off and on. The upper gallery cupboards, however, seem to stay more stable, perhaps because the display lights above give constant heat.

During 1977 we transferred all our important amphibian material into metal cabinets nearest to the geologist's office and laboratory area. There has been some fluctuation in these cabinets but not as great as in the fossil storage corridor. However, the relative humidity of over 70% is still too high and we are watching these fossils very closely.

The problem is how to dehumidify the various storage areas effectively and cheaply. Possibly the answer is regular heating as recommended in Thomson and Bullock (1980) but of course this would be unbearable for humans in summer and may not be effective if winter readings are taken as a guide. Silica gel, unconditioned and conditioned, has been tried, with some success, but we do not have the staff to change this regularly in several hundred drawers. So, the Hancock collections remain at risk.



HOWIE, F.M.P. 1979 Museum climatology and the conservation of palaeontological material. In 'Curation of Palaeontological Collections' Spec. Pap. Palaeont no. 22 , 103 - 125.

Garry THOMPSON & Linda BULLOCK 1980 Simple control and measurement of relative humidity in museums. Museums Assoc. Informtn. Sheet 15, no. 24.

Susan TURNER  
Hancock Museum  
NEWCASTLE-on-TYNE  
NE2 4PT

## The use of a computer based curatorial system in the Dept. of Palaeontology B.M. (N.H.)

A brief history of the development of this system was given by Brunton (1979) and a technical description of the data entry system in use at the BM(NH) is obtainable from the Biometrics and Computing Section of the Museum. The essential structure of the Museum's system is a minicomputer (Varian V72, Univac) which controls the input and output of information via magnetic tapes or discs, line-printer or visual display terminals remote from the computer, but connected by telephone lines. As the Varian is not large enough to handle large amounts of data, manipulation is carried out at the Computing and Automation Division of the Rutherford Laboratory. In addition, the Museum's holdings are too great for it to be possible to maintain all the files in a computer for direct interrogation. For these reasons the operating system produces catalogues, files and indexes for use by staff and external distribution.

In the Palaeontology Department we have several visual display terminals connected to the minicomputer. These are keyboards (like a typewriter), with a screen on which typed data are displayed (enabling corrections to be made) and a variety of extra command buttons communicating with the computer. The operator, having 'signed on' to the correct data file, types a line of information, checks it and then sends it to the minicomputer via the telephone lines. This is easily done and quickly learned.

The Departmental use of the Museum's system developed with three main aims in mind:

- 1) To allow the recording of all available data accompanying fossils. (The traditional register books have insufficient space for more than brief locality, horizon and acquisition information, yet today there is a great need to record data of possible value to research, and so help prevent the need to re-collect specimens).
- 2) To enable the recording of specimen data once only, rather than having to repeat these in the register, on specimen labels and on cards for various files.
- 3) To generate a wide selection of catalogues and files, by computer manipulation, to further and aid the use made of our collections.

In establishing a format for the collection of palaeontological data we were concerned that the information should be of use in research, such as noting the occurrences of certain taxa in particular lithologies, or in association with other taxa. In addition, that it be useful to as many sections in the Department as possible, from anthropology, vertebrate and invertebrate palaeontology to palaeobotany.

To cope with the many possible types of information we have provided a format with over one hundred data fields, capable of recognition by the computer. 'Fields' of related information are clustered as 'Groups', also capable of recognition. Thus, by suitable programming, information from 'Groups' or 'Fields' can be rearranged by computer as required.

In practice only a small proportion of the available fields are normally completed, since the information for the others are either unavailable or unsuitable for the material being curated. On the brachiopod section, where the development has taken place, we enter to the computer data on new acquisitions and on what we consider to be our most important existing

collections. Once a system is in operation it is a stimulus to the logical ordering of full specimen data. This ordering, prior to entry of the data to the computer, is most important as it allows all common information (e.g. taxonomic names, locality, stratigraphical or collecting information) to be entered once only, to be recalled and collated to the unique information in the computer by reference to a simple abbreviation. We use Data Recording Forms (pp.627 to 628) for the storage of correctly arranged information, prior to entry to the computer, when a curator familiar with the system and the material is unavailable to enter the data directly from existing records, publications etc. We have, therefore, two basic procedures: firstly, filling in Data Forms with all available information, observing certain conventions, so that a copy typist could enter the data at a later date without errors. Secondly, by collecting the specimen information together at the terminal and, with or without the aid of a prompting facility on the screen, enter the data directly via the keyboard. Inevitably it is necessary to make some notes relevant to the collection, such as items of common data, the registration numbers to be applied to the specimens being curated etc., but the second procedure does not require the writing of Data Forms. The procedure adopted depends on the experience of the curators and the availability of support staff, such as typists able to operate the terminal.

Sometimes we are given thesis collections to which registration numbers have already been assigned to the specimens. On the old system the register would have to be written up in that registration number order and, if poorly organised, this order may not correspond to logical groupings of specimens. Thus the information would have to be repeated in the register, as well as on labels etc. By using the computer system the information is analysed so that items of common data are extracted. These are entered and labelled for recognition by the computer. Then unique (e.g. registration numbers) and rare data (rare taxa, comment etc.) are added, calling on the common data by label only at the appropriate places. The computer collates and arranges the information and prints, for us, a master catalogue or brachiopods arranged in registration number order. We also receive indexes of taxa arranged alphabetically, collection localities and lists of collectors arranged alphabetically, together with the relevant registration numbers, allowing reference to the master catalogue. Type and figured specimens are listed as a separate file, and a brief information abstract can be printed, using small typeface, as specimen labels.

On a part-time basis, two of us spent a couple of years working with the Museum's computing section to develop the present system. However, now that it is working the results are flowing and added advantages, such as picking up spelling errors in the original specimen information, become apparent.

This Museum's system, being based on that developed by IRGMA, is broadly compatible with the system developed by the Museum Documentation Association (MDA), and their GOS package at Duxford. Thus information on our files could, with little difficulty, be read by the MDA system. I believe it is very important that Museum documentation be widely available, and one means of ensuring this is to have the data in a form that can be "read" by central bodies such as the MDA. Most museum information is public and it is irresponsible to lock it into some computer system incompatible with systems more usual in the museum world, and unable to produce printed versions of the information acceptable to researchers. The plea, therefore, is that should they think of using computers for data storage and handling they first seek advice and consider the future availability of that data to science at large.

Holdings of specimens at institutions such as the BM(NH), I.G.S. and probably some major regional museums are too large for amalgamation in computer

storage. However, it is to be hoped that the present scheme of files on regional collections may be extended to the building of files on the specimens in those collections, kept on computers in regional centres. I hope it is not many decades before I, or any successors, could expect to see listings of, for example, the Dinantian brachiopods collected in the U.K. and held in the Museums and institutions of Britain and elsewhere.

Reference:

Brunton, C. H. C., 1979. The development of a computer-based curatorial system for palaeontology at the British Museum (Natural History). In Curation of Palaeontological Collections. Special Paper in Palaeontology, No. 22, pp. 159-173.

Howard Brunton,  
Department of Palaeontology,  
British Museum (Natural History),  
Cromwell Road, London, SW7 5BD



Faunal Association  
<FF>

Associated Taxa (Same major group)<FA>	Storec<FAL>
Associated major groups<FAP>	Storec<FAPL>

Collection  
<COL>

Collector<C>	Method<CM>	Collector's No.<CN> Date<CD>
--------------	------------	------------------------------

Specimen History  
<SH>

Associate<SA>	Association<SN>	Date<SAD>
---------------	-----------------	-----------

Notes<SHD>

Acquisition  
<ACQ>

Nature<NA>	Source<SAC>	Date<DA>
------------	-------------	----------

References  
<R>

Tags available (see explanation sheet) <RC> <RA> <RY> <RT> <RB> <RJ> <RPU> <RS> <RV> <RPT> <PP> <RP>
--

Reproduction  
<REP>

Cast<CAST>	Mould Store<LOCM>	Photo.<PH>
Other reproduction<OR>	Serial No.<RAN>	

Preservation

<CP>
------

Conservation  
<CV>

Treatment<CVT>	Date<CVD>
1	
2	
3	

Remarks  
<RM>

--

Cataloguing  
<CAT>

Name<COM>	On behalf of<CA>	Date<CATD>
Store<LOC>		

## REPORT of MEETING

### "Geology and Conservation"

A session organised by Dr. Beverley Halstead, which took place at Salford University on 2nd September, as part of the 1980 Annual Meeting of the British Association for the Advancement of Science.

I don't know what the students at Salford have done to earn the disfavour of the Manchester taxi-driver. The look of deep suspicion with which I was greeted, when I gave my destination to the driver after I emerged from Manchester Piccadilly Station, proved a portent for the rest of the day.

The title turned out to have been interpreted very liberally, though perfectly correctly in the literal sense. There was little in common with the very successful Conference held at the Geological Society in March 1979, entitled "Future Development of Geological Conservation in the British Isles". Most of the morning's papers were devoted to the impact of quarrying (and mining) activities on the environment from the biological and aesthetic viewpoint, and the means by which such an impact can be minimised during and after quarrying. The Group Geologist for Sir Alfred McAlpine was particularly proud of his company's record of restoration so that you'd hardly have known there had ever been a hole in the ground. The particular problems for reclamation after over 200 years of intensive cement and lime quarrying in the Chalk of Essex Thameside were described by the Land Reclamation Officer of Thurrock Borough Council. Geological conservation did get a mention from the Mineral Resources Manager for Amey Roadstone Corporation Ltd., who tempered his recognition of the desirability of conserving "artificially produced outcrops" with the harsh realities of social and economic pressures. Dr. Gribble from Glasgow University finished me off for the morning with an exhaustive survey of the physical properties industry requires from aggregate and how different rock-types met such criteria - supported, alas, by a succession of incomprehensible diagrams and graphs (largely illegible). Such data he then used to identify key coastal sites around the Highlands and Islands where tomorrow's aggregate-hungry society could satisfy its needs on a grand scale.

The afternoon set off with yet a different approach to the title theme. How a knowledge of geology and hydrogeology can be used for the long term replenishment of depleted groundwater supplies was expounded by the Principal Engineer (Hydro-geology) for the North-Western Water Authority Rivers Division. Though, as he had to admit, it was not yet possible to see if the theories that they were putting into practice were actually having any effect, since the changes would only be measurable over a matter of decades. And here's a plug for Women's Lib. The most interesting, best prepared and most professionally presented paper of the day (despite one of the aides going to sleep outside the lecture room with her slides on his lap), was from Dr. Jane Plant from the IGS, on the environmental and economic significance of natural deposits of uranium in Britain. For anyone interested in the important survey work which she has undertaken, I strongly recommend getting hold of a reprint of her paper.

Then, at the end of the day, George Black of the NCC took over the chair from Professor Knill and we got down to the problems of Geological Site Conservation. Bill Wimbledon explained the aims and working of the Geological Conservation Review Unit, and Dr. Keith Duff gave a well illustrated exposition on some of the practical problems they have tackled in cleaning and protecting sites. Dr. Ian Rolfe, as fluently eloquent as ever gave us the shock horror probe on Lesmahagow - and if the story is familiar to many of us, this is no reflection on Ian to whom a great debt is owed for bringing geological site conservation so articulately into the public consciousness. Indeed he was to be heard later on Radio 4 broadcasting the message to the nation on "PM".

Which helps to put the day's session in perspective - apart from speakers, there were perhaps 30 audience at most. We've a long way to go before we can claim to command the same popularity or notoriety as the imminent extinction of Pretty, Fluffy, Furry or Feathery Things or Places Built by People Long Ago.

Apart from Ian Rolfe I was the only person there from a museum. So, largely disgusted that the role of museums in geological conservation had been mentioned only once - and that, fleetingly, by the NCC - I got up at the end and waved the flag a bit. Not just to mention the Geological Locality Recording Scheme, but also to point out that to most of us geological conservation includes collections - on which there was no paper - and that a more proper title for the day would have been Geology and Environmental Conservation. It's always easy to criticise the organisation of such a day, but the other omission that I felt important enough to mention is that of the Planners. Minerals (in the plannerese, not geological sense) are a County Responsibility, and ultimately, permission to dig and fill in large holes in the ground is decided by County Planning Authorities. A paper from one such would not have come amiss.

So it was a somewhat despondent geological curator that left Salford at the end of the day. Not a propitious day for museums, nor for geological locality conservation.

Tristram Besterman  
12th September, 1980

## BOOK REVIEWS

### Geological Howlers

edited by W.D. Ian Rolfe

with drawings by David L. Dineley and others

published by the Geological Society of Glasgow

Retail price £1 (by post £1.15). Bulk discount available.

#### Orders to:-

DR. G. FARROW, Geology Department, University, GLASGOW G12 8QQ.

I have always felt that there is a shortage in this world of books that one can take into the lavatory without being regarded as antisocial by the rest of the household. Books such as this are ideal because they are best read in short bursts. Longer exposure at any one time bludgeons one's surprise at the sudden unexpected turn which makes any sort of joke, including the howler, funny.

Ian Rolfe has produced a collection of howlers which cover the whole range of Geology. Most were first encountered as rare pearls lying hidden in the turgid and insubstantial mantle of examinee prose. Anyone who has marked large numbers of examination scripts from the lower levels of the educational hierarchy knows how screamingly dull they are, and how welcome is the diversion created by any sort of mistake. When these errors are corralled into a compendium, however, the element of relief may be lost and the nugget turns to ash. A few such examples appear in this book: "micas are pyroxines"; "oysters are brachiopods". Untrue, yes; but elegant, no. These examples are so rare in this anthology, however, that they in no way detract from the considerable entertainment value of the whole.

So what makes a good howler? There are several recipes, but a promising ingredient, as in good bad poetry, is bathos: "The 920 feet terrace is well given by  $y = 1121 - 175 \log(160x) + 1.1x$ , where  $x$  is measured in sixths of a mile from Totnes railway bridge". Good malapropisms are a special case of bathos: "Worthless rock associated with ore is called mange", and spelling mistakes often have the same effect: "Fairly well defined choral bands are also visable". Evidence of a major conceptual misunderstanding is also good ground: "If the geology of a site is not studied it may not be noticed that it is in the middle of a geosyncline and thus the plans may not be altered accordingly". I know of Open University students who, on seeing their first joint plane, have enquired as to whether it is a plate boundary!

Personally, I also like those arguments which sound very well but can't help making one wonder if they wouldn't prove a bit leaky if reduced to syllogistic form: "Foliage is leaves, so exfoliation is the removal of leaves by ice action. This is known as onion weathering because onion trees are very easily attacked by ice". So many of this type of howler have been submitted by T.N.G. that I start to suspect the hand of deliberation. Still, I suppose if I'd spent a lifetime in the Lower Carboniferous, I'd feel like a holiday too.

This book is well produced, contains only intentional spelling mistakes (actually, there's no way of knowing, is there?), and is greatly enhanced by David Dineley's gentle and pleasing little cartoons. And for a quid! I mean, if the same thing was published by a well-known Dutch publisher under the title "Recent Developments in Geoscatology" it would be at least £28.50.

Profits go to the Geological Society of Glasgow and may they be legion.

Oh, and to the gentleman who thinks that my "Oxford Colleagues" are made more of Superior than Inferior Oolite (p.14) it's not really true: they only think they are.

Tim Palmer  
University Museum  
Oxford.

Catalogue des collections paléontologiques françaises

Redacteur: A. PRIEUR avec la collaboration de M. GAILLARD et H. VIGNE.  
Office National de Gestion des Collections paléontologiques françaises.

Edité et Imprimé par le Département des Sciences de la Terre, Université  
Claude - Bernard, Lyon 1, Lyon, 1980: (vi) + 306 pp.

No price given.

In 1978, the Office National de Gestion des Collections paléontologiques was created to administer palaeontological collections in France and to ensure their well-being. Its first self-appointed task was to produce an inventory of existing collections (see Introduction for others). With financial aid from the CNRS and material help from several other organisations a questionnaire was distributed to institutions, museums and universities throughout France. The results of the response from more than 75% of the organisations approached are presented in the three sections of this catalogue.

The basic information is presented as a series of computer print-outs for each institution (= 'organisme') in the first of these: "Tableaux analytiques des Collections", where each contributing institution is identified by a reference number. The holdings of these establishments are listed alphabetically by collector, or collectors, but begin with entries for their general collections; each of these entries is assigned a four-figure identification tag using intervals of five to allow for additions. The analysis is made on the basis of Phylum or Class; the geological period and the country or region of the material is included in each entry. Such a procedure is extremely informative when it relates to an individual, who has collected a particular group of fossils from one area; but when a single entry contains a large number of collectors involved with accumulating assemblages of fossils from European localities throughout the geological column there is far less certainty.

The short section: "Index des Collecteurs" (pp. 269-284) indicates the whereabouts of the material of a particular collector. It records the total number of entries for the name (N.B. not just the number of institutions possessing some of his collection) and lists their identification numbers. Reference to these numbers in the table of institution holdings then reveals the general nature of the material. The breakdown of these holdings into three categories: of less than 100 specimens, between 100-1,000, and more than 1,000, conveys a useful measure as to the significance of a collection. A further column showing the presence of type, and, or figured specimens shows its importance for the taxonomist. Three other indexes adopt a similar procedure to list identification collection numbers under zoological, geological and geographical headings.

Despite some obvious drawbacks, the method works reasonably well after a little use of the catalogue. The numbers of the institutions become familiar together with the sequence of numbers relating to their holdings; it is soon

possible to recognise that a collector has material at Lyon, or in the Musée National d'Histoire naturelle in Paris. What is less certain, possibly because of the method of compiling the data, is the identification of a collector, for in numerous entries an initial is not included as part of the name. However, as the Editor is at pains to point out, the Catalogue is not intended to be a detailed inventory of palaeontological material available in France, but is provided as a method of guiding interested researchers to the principal holdings and to facilitate research in locating the older collections. I believe that a significant number of the entries relate to material collected since the Second World War. This publication is undoubtedly better than anything else that has been published so far as an aid to locating fossil material in a particular country and it certainly fulfills the aims of its editor. In fact, it would seem that the French have become the first to provide the information that is to be sought by national representatives of the International Palaeontological Association, in order to provide the long-sought World Directory of Palaeontological Collections (-- see B. D. Webby, Proposal for a., Lethaia 13, 1980: 208).

R. J. Cleevely  
British Museum  
(Natural History)

The Journal of the Society for the Bibliography of Natural History containing all but 3 of the papers presented at the International Conference on the History of Museums and Collections in Natural History in London April 1979, was published earlier this year (vol. 9 part 4 pages 365-670).

The contents are

Collectors and collections in Europe

- Joachim Barrande (1799-1883), life, work, collections. By R. Horný. pp.365-368  
History of the Prague National Museum, with special regard to zoology.  
By Jan Hanzák. pp.369-373  
A history of Liverpool natural history collections. By E. F. Greenwood. pp.375-382  
The history of the Bavarian State Collection of Palaeontology and Historical  
Geology in Munich. By Peter Wellnhofer. pp.383-389  
The development of ornithological collections in the late eighteenth and  
early nineteenth centuries and their relationship to the emergence of  
ornithology as a scientific discipline. By Paul Lawrence Farber pp.391-394  
Medical politics and the founding of the Jardin des Plantes in Paris. By Rio  
Howard. pp.395-402  
Dr William Hunter's Museum, Glasgow University. By C. H. Brock. pp.403-412  
Florentine scientific museums. By Annalisa Berzi, Curzio Cipriani, and  
Marta Poggesi. pp.413-425  
William Swainson (1789-1855) and his shell collections. By Nora F.  
McMillan. pp.427-434  
The Museum of the Earth in Warsaw, its collections, aims, and publications.  
By G. Jakubowski, K. Jakubowski, A. Kohlman-Adamska, B. Kosmowska-  
Ceranowicz, and E. Popiel-Barczyk. pp.435-447  
Palaeontological collections in Poland: an historical outline and present-day  
possessions. By Gertruda Biernat. pp.449-453

Travellers and explorers

- Burchell's serpents. By K. C. Davies. pp.455-475  
Hugh Cuming (1791-1865) Prince of collectors. By S. Peter Dance. pp.477-501  
Alfred Wallace, the gentle trader: collecting in Amazonia and the Malay  
Archipelago 1848-1862. By Wilma George. pp.503-514  
Charles Darwin's plant collections from the voyage of the *Beagle*. By  
Duncan M. Porter. pp.515-525  
On the botany of James Bruce's expedition to the source of the Blue Nile  
1768-1773. By F. Nigel Hepper. pp.527-537

Zoological gardens

- Notes on the menageric and zoological cabinet of Stadholder William V  
of Holland, directed by Aernout Vosmaer. By Florence F. J. M. Pieters. pp.539-563  
The Zoological Society of San Diego: its history and development. By  
Marjorie B. Shaw. pp.565-571  
Carl Hagenbeck's Tierpark and modern zoological gardens. By Herman  
Reichenbach. pp.573-585

## Books in the museum

- The Library of the American Museum of Natural History. By Nina J. Root. pp.587-591  
 History of the Smithsonian Institution Libraries, with special emphasis on  
 the natural history. By Sylvia J. Churgin and Ruth Schallert. pp.593-606

## North American collectors and collections

- Organizing Federal paleontology in the United States, 1858-1907. By  
 Clifford M. Nelson and Ellis L. Yochelson. pp.607-618  
 Science, popular culture and profit: Peale's Philadelphia Museum. By Toby  
 A. Appel. pp.619-634  
 Spencer F. Baird and his collectors. By William A. Deiss. pp.635-645  
 Henry A. Ward: the merchant naturalist and American museum development.  
 By Sally Gregory Kohlstedt. pp.647-661

## Book notices.

pp.663-669

The cover price is £20.00 but members of the Geological Curators Group qualify for a 50% discount - and thus saving five times your current annual subscription! Cash must accompany all orders from G.C.G. members to:

A. P. Harvey,  
 Palaeontology Librarian,  
 British Museum (Nat. Hist.),  
 Cromwell Road,  
 London, SW7.

### Newsletter of the Australasian Geological Curators Group

The First Newsletter of the Australasian Geological Curators Group appeared in May 1980, with a list of the 37 recipients to whom it has been sent. In view of their numbers and the distance which separates most of them the Groups members face special difficulties which there is every indication they aim to overcome. The editor is Dr. Ken McNamara, Western Australian Museum, Francis Street, PERTH, West Australia 6000.

This first issue is of 16 pages and includes a variety of contributions on such matters as the regulation of the "Export of Geological Materials" from down under, "Geological Monuments (i.e. sites) in South Australia", "Exchange of Specimens", "Deposition of Paratypes" (should they be spread around or kept in one institution? - what do you think?) and "Recent Discoveries" in the field. Of special relevance to us is the record of yet another large (8000 specimens) Victorian collection from the U.K., now in Australia (see G.C.G. vol. 1 (10) p. 490-493 for other examples). This is a collection accumulated by London fossil and mineral dealer James Tennant (1808-1881) and now in the West Australian Museum. Ken McNamara notes that "little of the material has been registered ... [but] it is said to contain type specimens from the works of Dixon, Mantell, Buckland and others". We await further news with great interest and send best wishes for the Group's success.

## NOTES AND NEWS

### Literary Supplement

What an unread readership we seem to have for no-one submitted the correct solution to the questions in the last issue (pp. 527-8). Accordingly, we do not have a passage for your perusal here, although you may be interested to learn that the first quotation was from "The dud avocado" by Elaine Dundy. The second was by one of our members, John Fowles, in "The French Lieutenant's Woman" which is currently being filmed.

Does no-one read anything except geology?

### Philatelic Geology

Amongst the many interesting aspects of the Leeds Meeting, considerable interest was shown in a collection of stamps illustrating a wide variety of geological subjects which was hanging in one of the corridors.

The stamps form part of a collection of the late J. V. Stephens who was a member of I.G.S. and a dedicated stamp collector. The collection will stay in Leeds until the office closes down when it will be transferred to the new office at Keyworth near Nottingham.

I have a list of the stamps in question and will be pleased to forward a copy to anyone who is interested and who sends a stamped addressed envelope.

However, it appears that we are not alone in our interest for Dr. Peter Manning, also of I.G.S. has written on this subject. He is also arranging a display titled "Aspects of Earth Sciences on Stamps" for the Geologists Association Annual Reunion on Saturday, 8th November 1980 at University College, London. Why not go along and have a look, if it has not already happened!

### Andover Museum

In June 1980 the Hampshire County Museum Service assumed responsibility for the collections lodged in the Town Hall at Andover, formerly in the local museum, as part of the programmed development of a new museum in the town.

The geological collections numbered some twelve undocumented specimens and it is envisaged that fieldwork will be necessary to supplement this material before new displays are constructed!!

### Film preview

Having seen "Star Wars" I was interested to read the publicity material for the sequel "The Empire Strikes Back" in the Sunday Times Colour Magazine back in May. Imagine my surprise when I saw a picture of Luke Skywalker (Mark Hamill) riding the Taun-Taun a strange mammal with a note added by the film's producer, "We started out with a lizard-like creature, then moved to a dinosaur, because on an ice planet there'd be no reptiles". Bring back Racquel Welch and Pterodactyls!

## Fossil Fish

With the interest of the N.C.C. in Scottish vertebrate sites, colleagues may be interested to learn of fossil fish which are more readily available for research. Jonathan Cooter of Hereford Museum has recently published a list of the fossil fish in his collections which in addition to including local Devonian material has much from Scotland too.

The collection shows the usual signs of past neglect and one hopes that the appearance of a catalogue will help to put matters right. It is interesting to note that the cephalaspids were examined by Professor Stensiö of Sweden and several were cited in his monograph of 1932.

Copies of the modern list which is complete to June 1980 can be obtained by sending 50p (which includes postage) to:-

Mr. J. Cooter,  
Keeper of Natural History,  
Hereford City Museum,  
Broad Street,  
Hereford, HR4 9AU

## Triceratops rules O.K.

Geological readers of 'The Guardian' on 10th June 1980 may have been interested to see a photograph of a metal sculpture of a Triceratops overlooking an industrial site on the River Tees with the caption "will Cleveland's industry follow the dinosaurs into extinction?".

A photograph of the sculpture is reproduced opposite, whilst the original item may be seen at Riverside Park in Middlesborough. The Triceratops is the first step in implementing the concept of a "Teessaurus Playground" devised as a recreational and landscape feature for the Industrial Estate which was awarded the first prize in the 1977 Ark into Landscape competition. Other dinosaurs were planned so watch this space.

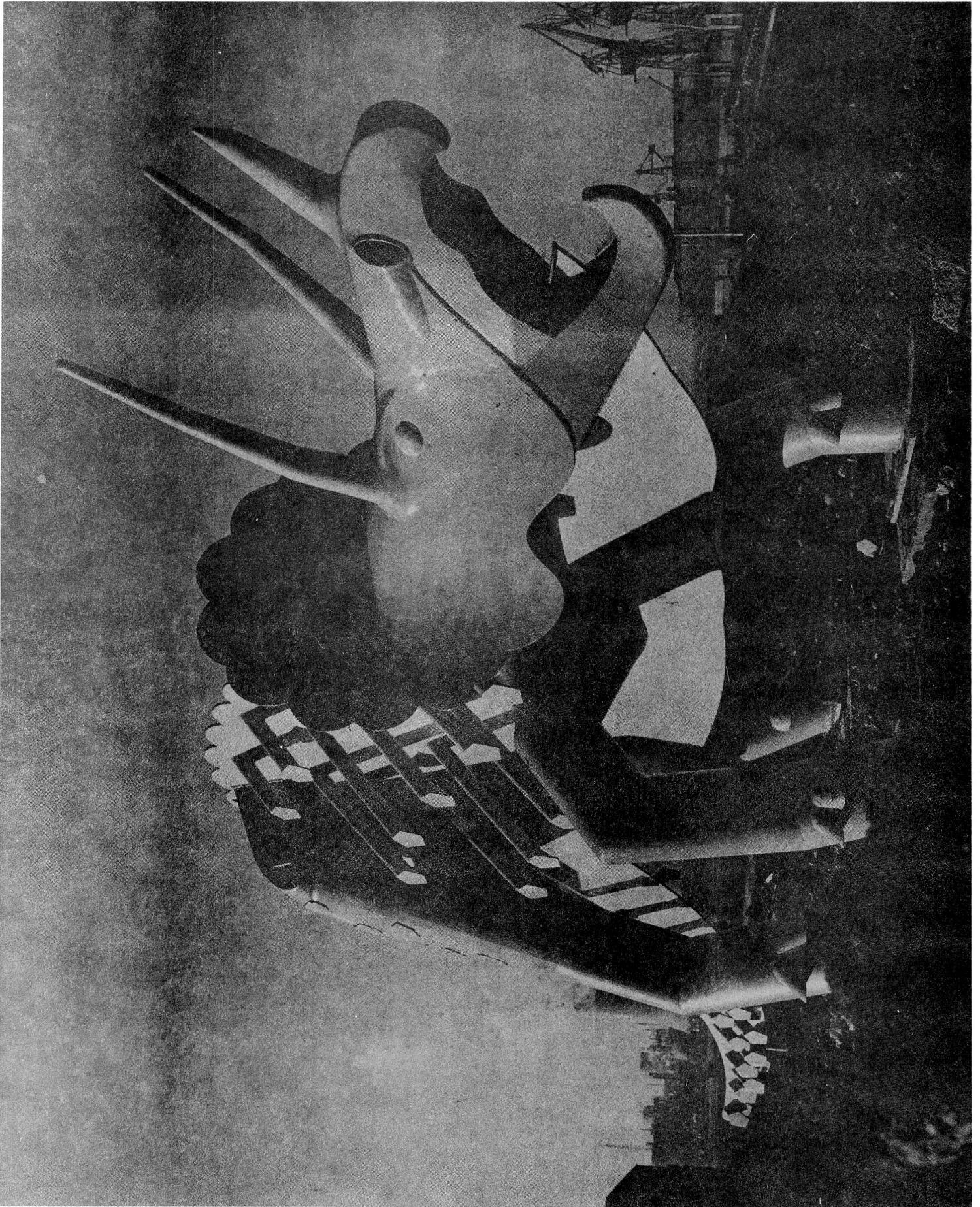
## People

1) A familiar face in G.C.G. (and many other) circles will be absent in future. Sue Turner, formerly of the Hancock Museum has emigrated to join her "intended", Dr. Tony Thulborn of Queensland University. A graduate of Reading University, Sue's research interests have been on the Thelodonti (Agnatha) and their importance in Silurian-Devonian stratigraphy which has been recently submitted for a Ph.D. Sue joined the Hancock Museum in 1971 after being Research Curator at Reading and has left her mark on the profession with a number of papers on Fossil Fish and a range of other geological topics not to mention the new displays at the Hancock.

At the risk of sounding like an obituary, we will be all the poorer for her departure.

She has sent the following first impressions of Australia.

"Three rock types seem to stand out in the city of Brisbane, 'Gateway to the Tropics'. The suburb of Bardon where I have come to live is built on a pale grey-green foliated rock - the Lower Palaeozoic Bunya Phyllite; there's a good road cutting round the corner and several outcrops in these north-western suburbs. We're on the eastern flank of the Indooroopilly Anticline



(name is Aboriginal - 'a place of leeches'). There is a great quarry in the phyllite to the south, on the side of Mt. Coot-tha below which the City has laid out its new Botanical Gardens and Planetarium. The higher hills to the north west are of vivid pink Enoggera Granite (adamellite) also seen in a large gash quarry (Enoggera - 'a meeting ground or corroboree').

The city centre with its skyline of highrise insurance blocks and banks rests on the Lower Palaeozoic Neranleigh - Fernvale Group, some of which may be Devonian (I have hopes of finding fossil fish close at hand yet!). But the rock that dominates is the beautiful Jurassic Helidon Sandstone, a warm orange-pink with fine concentric weathering patterns, quarried in a town to the north west. This stone has been used in many of the older buildings - e.g. Brisbane Post Office, the City Hall, and the original Court of the University of Queensland at St. Lucia, including the Geology department.

Geology in museums is primarily in the hands of the Queensland Museum Director, Dr. Alan Bartholomai who works on Mesozoic vertebrates, amongst other things. Dr. Mary Wade, a specialist in Precambrian fossils and Coelenterates, is curator with responsibility for geology. She is currently working on some of the museum's fossil vertebrates with the aid of her research assistant who is preparing the bones of Rhoetosaurus, a giant sauropod described by Heber Longman (then Director) in the 1920's. An expedition about 6 years ago to Durham Downs, including Dr. Wade and Dr. Tony Thurlborn of the Zoology Dept., U.Q. supplemented this collection. The bones are preserved in Limonite which means it's a slow process revealing the complex bones. A new museum is planned for 1983-4 which will incorporate many new geological displays, currently being designed. All will be moved to the new Queensland Cultural Centre now being built on the south side of the city.

There is apparently a small teaching collection and some display space in the Geology Dept., U.Q., and at the Queensland Geological Survey, housed in temporary accommodation in the city, there is a vast store of material curated by Graham M'Clung and the officers of the Survey.

If any colleagues have any 'problematical' Australian collections or collectors, especially from the East, I shall be pleased to try and help with information or research. Now members can liaise also with the Australian Geology Curators Group through Ken McNamara at the West Australian Museum.

An interesting passage in one book already seen:-

"Collecting of rocks and minerals is prohibited in national parks, unless special permission has been obtained. Many fossils are of scientific value, but this value is lost to science if they are put in private collections or if their exact location is not recorded. Well-preserved fossils should be offered to university geology departments or museums" (Stevens, 1973). It will be interesting to see how this works in practice, especially with the popularity of 'fossicking' in certain parts of Australia, let alone folk rushing out for gold, opal etc. If you don't hear from me again you'll know I've resorted to pan and metal detector too!

Longman, H. A. 1924. Australia's Largest Fossil. The Australian Museum Magazine. iii, 3, 97-102.

Stevens, N. C. 1973. A Guidebook of Field Geology in Southeast Queensland. Univ. Queensland Press. i-xi, 1-131.

Sue Turner (alive & well & unemployed)  
16 Clarke Street,  
Bardon,  
Brisbane, Q. 4065.

2) Rosemary Preece formerly of the Manchester Museum will also be missing from our future functions as she has decided to be a full-time mother to her recent child, rather than a part-time curator.

One hopes these positions will be filled but in these difficult times freezing posts is an easy way out. Do you know of any geological posts in Museums that are under threat in this way? Please let us know.

3) Through Peterborough Museum, however we welcome a new face, Peter Crowther. It is to the credit of the local authority that they reappointed a geologist to their small staff. Peter is interested in graptolites having obtained his Doctorate on them at Cambridge, although he is getting involved in the local Jurassics and Pleistocene and the varied life in a local museum.

Items for "Notes & News" should be sent to: Tony Cross,  
Curtis Museum,  
High Street,  
Alton, Hants.

Tel: Alton 82802

## NOTICE



## PEAK NATIONAL PARK STUDY CENTRE

LOSEHILL HALL • CASTLETON • DERBYSHIRE S30 2WB

Principal, Peter Townsend

*Telephone:*  
Office: Hope Valley 20373 & 20693  
Visitors: Hope Valley 20568

### CAVES AND KARST IN THE PEAK DISTRICT

14th - 16th November, 1980

This weekend course will provide anyone interested in geology and landscape with an introduction to the Derbyshire limestone area. The landscape forms and cave systems are part of a continuing evolutionary process started perhaps a million years ago. The details show contrasts with the other classic Karst areas of Britain, the Yorkshire Dales and the Mendip Hills, as well as with overseas limestone regions. During the weekend we will visit representative Derbyshire cave systems. Underground visits will be supplemented by short surface walks and evening talks.

Course Directors: Dr T D Ford, Department of Geology, University of Leicester.  
Miss B King, Lecturer, Losehill Hall.

Course Fee: £38.00 (all inclusive).

# FELKER GOLDEN RIMLOCK DIAMOND BLADES

641

Now available for immediate delivery



Bore sizes as required

Postage and V.A.T. not included

Diameter	Core Thickness	Price
6 in	.025 in	£11.60
8 in	.032 in	£17.50
10 in	.040 in	£25.00
12 in	.040 in	£28.45
14 in	.050 in	£32.55

**HIRSH JACOBSON MERCHANDISING CO. LTD.**  
91 MARYLEBONE HIGH STREET, LONDON, W1M 3DE.

# British fossils

*British fossils* is a new permanent exhibition which explains what fossils are and how to collect and interpret them, and which displays a large number of British examples. It is designed to appeal to fossil collectors of all ages and indeed to anyone interested in the past life of the Earth. It is the third stage of the renewal of the exhibitions on the Ground Floor, and follows 'Story of the Earth' (1972) and 'Britain before Man' (1977).

*British fossils* differs from our other new exhibitions in that its essential feature is a collection of specimens. All diagrams, photographs, slide shows and models are provided as aids to understanding the fossils. It should be a valuable complement to 'Britain before Man', on the floor below, where the geological story of Britain is told in detail but where specimens are deliberately few. We have been careful to use the same terminology and popular headings in both exhibitions.

*British fossils* is in two contrasted parts. The first, along the north wall, is introductory in content and light in treatment. It can be read through as a single story. The second part, in bays and alcoves on the south side, consists of displays of fossils arranged in stratigraphic order; most visitors will only wish to study a few of these on any one visit.

The first part of *British fossils* answers the questions: what are fossils? where are they found? how do we find out about them and give them names?

Through the entrance archway, on the left, are display panels mounted in front of a wall on which casts of fossils stand out in high relief. A photograph of this wall is the basis of the poster overleaf. First on the left is a slide sequence describing all the stages of a fossil-collecting trip. This is followed by displays illustrating the different biological groups that fossils belong to: and here text and photographs are backed up by six very detailed and lifelike models reconstructing the appearance of a giant club moss, cycad, coral, ammonite, trilobite and graptolite. Further on are sections on microfossils, stressing their importance in the search for oil and gas, and on trace fossils. This part of the exhibition ends with a quiz in which visitors are invited to decide whether objects on show are fossils, trace fossils or mineral structures.

In the centre, and clearly visible from both entrances, is a large backlit geological map of the British Isles. The map functions as a visual focus for the exhibition, it sets the fossil cases of the second part into a geographical

context, and it is an aid to visitors who have a specimen that they want to identify. As long as the locality of the fossil is known and as long as it is not from a Quaternary glacial deposit, the map will reveal the geological age of the specimen and will point the way to the appropriate showcase.

The second part of *British fossils* is made up of thirty one separate displays, each laid out in the same way, and each dealing with the fossils of one chapter of geological time. The first, early Cambrian, is at the northeast corner, and the last, late Quaternary, at the southwest. An unusual feature of the British Isles is that all twelve geological systems are represented by fossiliferous rocks, so there are no major gaps in the panorama of ancient life that we present. Each display is titled to show the geological system being dealt with and its subdivision into series, stages and zones. The title strip runs without interruption through this part of the exhibition and links the displays together. Forty to fifty specimens are laid out in the case, each one labelled with a popular name and description as well as with detailed technical information. Above the case is a map showing the outcrop of the strata, fossil localities and ancient geography, as well as a reconstruction of the sea floor or land environment showing some of the fossils in the case in their life-positions. Above the title is a cartoon reconstruction showing representatives of living and extinct animal groups, with the ones alive at the time picked out in colour. The geological systems have their own colours, which are the ones used on the backlit map.

The fossils on show are, with only three exceptions, from the collections of the Institute of Geological Sciences, and its forerunners the Geological Survey and Museum of Practical Geology. The collections have been built up by purchase, gift and fieldwork over nearly 150 years, and include many specimens of great scientific importance. In choosing the 1500 fossils for the exhibition we have concentrated on typical forms that a collector might encounter, while including zone fossils where possible, and making sure that specimens are from a wide range of localities and rock units. Fossils of great rarity and scientific importance have generally not been included.

A plan of the exhibition is shown below.

