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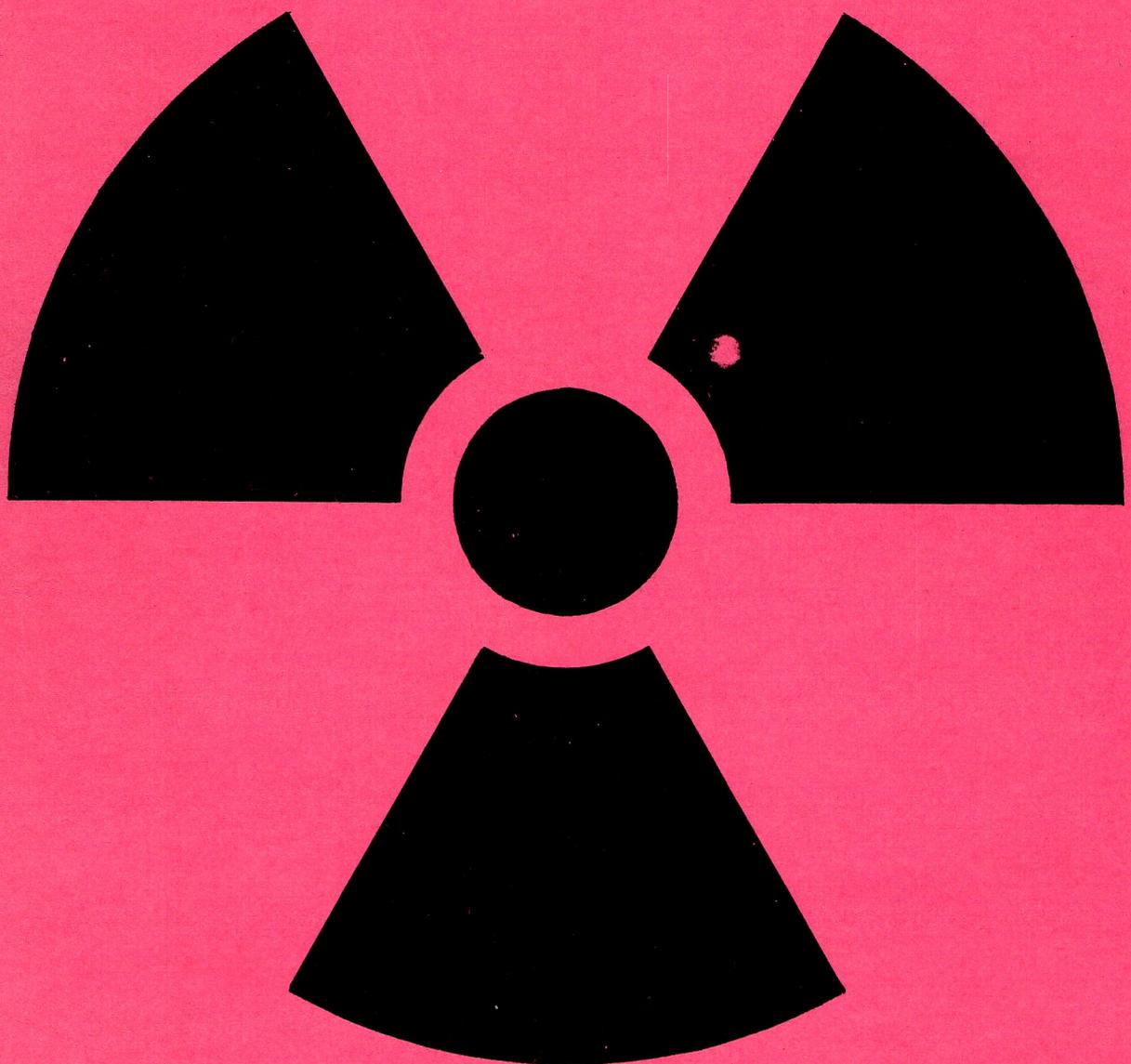
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# GCG

# THE GEOLOGICAL CURATOR

VOLUME 3 No 5

NOVEMBER 1982



**See articles inside on the curation  
and display of radioactive specimens**

THE GEOLOGICAL CURATOR

## 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.

Articles should be sent to the editor typed and, if possible, camera ready to the A4 format we use as this may help expedite publication.

## COLLECTIONS AND INFORMATION LOST AND FOUND.

All items relating to this section in the Geological Curator should be sent to:

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

## INFORMATION SERIES ON GEOLOGICAL COLLECTION LABELS

All enquiries and items should be sent to:

Ron. Cleevely, British Museum (Natural History), Cromwell Road, London SW7 5BD. Tel. No. 01-589-6323 ext. 418.

## NOTES AND NEWS

All items relating to this section should be sent to Tony Cross, Curtis Museum, High Street, Alton, Hants GU34 1BA.

## ADVERTISEMENT CHARGES

Full A4 page	£25 per issue
Half A4 page	£14 per issue

Discounts for space bought in three or more issues.

Further details from Diana Smith, Castle Museum, Norwich, Norfolk NR1 3JU. Tel. No. 0603-611277 ext. 287.

## SUBSCRIPTION CHARGES

Members subscription £5 per year  
 Institutional Membership £7 per year  
 Overseas Institutional Membership £9 per year

All enquiries to Treasurer/Membership Secretary.

BACKNUMBERS of the Geological Curator (and its predecessor; the Newsletter of the Geological Curators Group) are available at £1.75 each (except vol. 2. Nos. 9/10, and Vol.3. Nos. 2 & 3 which are £3.50). Prices include the cost of postage. Payment should accompany all orders, which should be sent to John Cooper, Booth Museum of Natural History, 194 Dyke Road, Brighton, BN1 5AA.

Typed by Sylvia Robson, Tyne and Wear County Council Museums.

# THE GEOLOGICAL CURATOR

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COLLECTION LABEL REGISTER  
 SHEET 6 JOSEPH WRIGHT (1834 - 1923)  
 SHEET 7 THOMAS DAVIDSON (1817 - 1885)

ERRATUM  
 Please note in Sheet 6  
 re first sentence, read  
 Hancock Museum for Hunterian  
 Museum.

# EDITORIAL

## Industrial geological waste products

Its a sad fact that most commercial companies involved with geology have little regard for the scientific and educational value of the geological material which they handle. I know of rock cores, which must have cost hundreds of thousands of pounds to drill, showing superb and in many instances unique assemblages of evaporites, minerals, fossils etc., which have been tipped, buried or otherwise destroyed and, in one case, thrown overboard from an offshore drilling platform. In another instance a famous fish bed which yields superb vertebrate fossils, is quarried on a vast scale to be subsequently dumped as a waste product and buried before any interested geologists can examine it.

This seems to be a dreadful waste as there must be many teaching institutions and museums for which such material would be extremely useful. The main problem is the sheer difficulty for the company of even short term storage of such material. Unwanted rocks 'get in the way' and in the case of borehole cores proper storage accommodation costs money and so as soon as the cores have served their commercial purpose they are usually discarded. The companies have neither the time or the money to consider contacting interested parties. Furthermore some borehole cores are considered to contain confidential information.

However, by law, all borehole and shaft data have to be notified to the Institute of Geological Sciences and, in many cases, the borehole cores are offered to the I.G.S. Obviously the I.G.S. can only take a very small proportion of this material and the remainder is destroyed. Bearing this in mind, several years ago, I discussed the acquisition policy of my museum with the appropriate I.G.S. District Geologist. This resulted in a whole range of superb borehole material, surplus to the requirements of the I.G.S., being offered to the Museum. Perhaps closer liaison between geological curators and the appropriate District Geologists of the I.G.S. would go some way towards the salvaging of commercial geological material which would otherwise be discarded.

## Recommendations for the preservation of research collections

Members of the Group have expressed concern over the large number of geological collections, amassed during research projects, which have subsequently been improperly documented and/or destroyed after termination of the project. Some potentially valuable collections of unique material have been ruined or lost in this way because the institutions and individuals concerned have been ignorant or unwilling to undertake responsible curatorial care. To try and rectify this Howard Brunton, on behalf of the Group, has produced a set of recommendations which have now been circulated to all relevant institutions undertaking geological research. These are reproduced on page

## A G.C.G. publicity leaflet

Enclosed with this issue of The Geological Curator is a leaflet publicising the work and aims of the Group. It is hoped that this will help to attract new members. Further copies can be obtained from Geoff Tresise. The leaflet was compiled by John Cooper and Diana Smith and designed by Sally Cooper. The Group is extremely grateful to Robertson Research International Limited who printed the leaflet free of charge.

G.C.G. new-style meetings

To enable GCG members to participate more fully it has been decided to devote part of each meeting to an 'Open Session' where members can present a talk or demonstration on a geological topic of their choice. It is hoped that this will provide a stimulus for lively discussion. It is also hoped to institute a 'Poster Session' where members can exhibit graphics and/or specimens to give a focal point for informal discussion during the meetings. Please support us in this new venture. The first opportunity for you to participate in this way will be during the meeting at Buxton (see p. 269 ). Contact local secretary Mick Stanley.

Subscriptions - appeal for prompt payment

Subscriptions for 1983 are due and should be paid no later than January. It is VITALLY important to the financial well-being of GCG that subs are paid AS SOON AS POSSIBLE in the new year. Late payment by the membership may mean that we cannot pay for the printing and distribution of The Geological Curator or that interest may have to be paid on outstanding debts. So please support the Group by paying your sub promptly in January.

Overseas subscription - airmail option

Apart from European members, all other overseas subscribers receive their issues of The Geological Curator by surface mail. The present rate of subscription is not sufficient to cover the costs of air mailing. In view of several complaints, it has been decided to introduce a scheme whereby overseas subscribers have the option to pay an increased subscription to enable their copies of The Geological Curator to be delivered by airmail. Overseas members and subscribers wishing to take advantage of this scheme should write to the Treasurer for further details.

Labels register - request for entries

Ron Cleavelly, who produces the entries for the register, urgently requires examples of Collector/dealer labels so that he can produce further sheets for this series. Examples of just one collector/dealer from each geological curator in the Group would be sufficient to provide entries for at least another year.

# THE GEOLOGICAL CURATOR: EDITORIAL POLICY

The Geological Curator is a journal published three times a year by the Geological Curators Group. Contributions are invited from members and non-members of the Group on such topics as techniques of specimen preparation, Curation and display, reports of meetings and biographical accounts of Collectors and Collections. Letters discussing a variety of geological topics are also published. All articles should be sent to the editor typed and if possible camera ready to the A4 format used. Articles are subject to refereeing and the author(s) may be required to modify their original script. Authors requests for re prints of individual articles must be submitted BEFORE publication in The Geological Curator. These will be charged for at the current rate. Items and enquiries relating to the specialist sections listed below should be sent to the appropriate sub-editor listed in a current issue of The Geological Curator.

1. Collections and Information Lost and Found.
2. Information Series on Geological Collection Labels.
3. Notes and News.

In future nine issues of The Geological Curator published over three years will constitute 1 volume. An index for each volume will be published as soon as possible after the ninth issue.

Periodically Special Publications and Supplements will be published with The Geological Curator. Supplements may consist of special reports on an aspect of the Groups work or be a series of papers on a common theme presented at a meeting organised by the Group. Each supplement will be a complete entity to be bound in with the issue with which it is published.

Special publications may consist of catalogues of type figured cited or other important Collections which would otherwise not be published. These may be published as a single issue or in several parts spanning several issues or volumes of The Geological Curator. Librarians should note that Special publications should be bound separately from The Geological Curator. Several parts of one catalogue should be bound in one volume.

Persons or institutions asking the Group to publish a catalogue as a Special Publication must first contact the editor with details of the size and scope of the proposed catalogue. Each case will be considered on its own merits but in general at least part of the cost must be borne by the sponsor. Where appropriate the sponsor can elect to undertake the typesetting but only after consultation with the editor.

# FORTHCOMING MEETINGS & NEW EXHIBITIONS

## Annual General Meeting at Oxford University Museum

### Geological displays and associated problems

The AGM will take place on Friday 10th December, at Oxford University Museum, Parks Road, Oxford OX1 3PW. For further information please write to local secretary H.P. Powell at the museum.

### Programme

- 11.00 Coffee
- 11.15 Introductory talk on the geological collections at the University Museum followed by a guided tour.
- 12.30 Lunch. There is a self service cafeteria available in the University Club.
- 1.45 Exhibition Conservation of Geological Specimens, Frank Howie (Palaeontology Dept. BM(NH)).
- 2.05 Collection of a Dinosaur Trackway and problems of its display. Paul C. Ensom (Dorset County Museum.)
- 2.25 Site Conservation on wheels; problems of a mobile display on site-conservation in Warwickshire. Tristram Besterman (Warwickshire County Museum Service)
- 2.45 Nineteenth Century Collections of fossil marine reptiles and the problems of the Curator, researcher and layman. Michael A. Taylor (Oxford University Museum).
- 3.05 The Mineral display at the Ulster Museum. Philip S. Doughty (Ulster Museum, Belfast).
- 3.30 Tea.
- 3.45 Annual General Meeting of the Geological Curators Group.

Friday 29th April, 1983. Geology teaching in and around the museum. This ATG/GCG meeting will be held at Merseyside County Museum. Speakers will include Andy Mathieson (Bristol Museum) and Alun Thomas (Nat. Mus. Wales.)

Wed. - Thurs, 22-23 June, 1983 (provisional dates). Technical and conservation techniques. To be held at the British Museum (Natural History)

Friday - Saturday 9-10 September, 1983 Buxton Museum. Part of the session on the 9th September will be devoted to Site Documentation and will possibly extend to site meetings, a mine visit not to mention a party!!? As an experiment some of the sessions will be open to contributions from any GCG member wishing to talk on any aspect of geological curation. There will also be an opportunity for exhibiting/demonstrating specimens or material of interest.

**NOTE** This meeting is a bit of an experiment designed to give the membership a chance of increased participation. Please give us your support in this venture.

Local Secretary; Mick Stanley (Derbyshire Museum Service)

Friday 9th December, 1983 AGM at Warwick Museum. Papers on the history of the museum and a chance to see the collections. Again there will be a series of open sessions where members of GCG can present papers on any aspect of geological curation. Local Secretary Tristram Besterman (Warwickshire Museum).

April 1984. A meeting at Leicester to celebrate 10 years of GCG. The inaugural GCG meeting was held in Leicester in April 1974.

1984. (to be confirmed) Meeting at Ludlow Museum.

**LOST** **DISCOVERING**  
**LEICESTERSHIRE'S**  
**PAST**  
**LANDSCAPES**

**WORLDS**

**MUSEUM AND ART GALLERY**  
**NEW WALK, LEICESTER**

**Volcanoes and early life** — Late Precambrian  
**Coastal swamp** — Upper Carboniferous  
**Red desert** — Triassic  
**Mammoths in a cold wasteland** — Devensian

Our new geology gallery shows you how geologists reconstruct Leicestershire's past landscapes, using the evidence of fossils, rocks and minerals. It includes some of the best specimens from the collection and four large, landscape reconstructions painted specially for the exhibition.

Owing to the illness of Professor G. Malcolm Brown, the exhibition will now be opened by F.W. Dunning OBE BSc FGS, Curator of the Geological Museum, London, at 11.30am on Thursday 25th November 1982. It will be open to the public that afternoon and then from Saturday 27th November.

Further details from:

John Martin  
Keeper of Earth Sciences  
Leicestershire Museums  
96 New Walk  
Leicester LE1 6TD  
Tel: Leicester (0533) 554100

Museum opening times:

Monday - Thursday, Saturday 10am - 5.30pm  
Sunday 2pm - 5.30pm  
CLOSED FRIDAYS

Admission free

## THE NORTH EAST BEFORE MAN

A new geology gallery at Sunderland Museum.

A new gallery devoted to the geology of Tyne and Wear, Durham and Cleveland was opened by Professor J. F. Dewey of Durham University on Saturday 14th August. The gallery features the most comprehensive display in Britain on the English Zechstein rocks which are so magnificently exposed in the region. Exhibits include well preserved fish from the Marl Slate, the only British specimen of a Permian gliding-reptile, a selection of fossils from the Middle Magnesian Limestone reef complex and polished borehole cores from the North Sea. Apart from the Permian specimens the displays show Pennine minerals and Carboniferous rocks and fossils.

Admission is free and classroom facilities are available.

Tyne and Wear County Council Museums gratefully acknowledge support by the British Petroleum Company p.l.c.

Sunderland Museum,  
Borough Road,  
Sunderland,  
Tyne and Wear.

(0783) 41235 Telephone.



Palaeoniscum ; a 240 million year old fossil fish from the Upper Permian rocks of County Durham.

# MINUTES

## OF THE 8th ANNUAL GENERAL MEETING OF THE GEOLOGICAL CURATORS GROUP

at Birmingham University Museum

Tuesday 8th December 1981 3.50 p.m.

The Chairman, Howard Brunton, was unable to reach Birmingham due to bad weather, Phil Doughty agreed to Chair the meeting.

Apologies received from H. Brunton, R. Cleevely, R. Markham, J. Nunney and R. King.

Minutes. The minutes of the last annual general meeting were approved and signed by P. Doughty.

Matters Arising. There were no matters arising.

Chairman's Report. There was no report due to the absence of the chairman, see appended report.

Secretary's Report. Group meetings this year consisted of a workshop on the M.D.A. Geology Specimen card held at the British Museum (Nat. Hist.) in June; a session on the Computer Storage of data at Manchester Museum in September; and the Annual General Meeting at the University of Birmingham. A proposed Mineral Workshop at the Geological Museum had to be cancelled through lack of support (probably because of the very short notice given to members) but it is hoped that this can be rescheduled for June 1982.

Other meetings planned for next year are 'Geological Exhibitions for the Mid-80's at Stoke on 23rd April; a two-day joint meeting with the Palaeontological Association on 'Vertebrate Palaeontology: History of Collecting and Curation' to be held in London on 8th and 9th September; and the A.G.M. at Oxford University on 10th December.

P. Doughty's report on the 'State and Status of Geological Collections in British Museums' is expected to be published very soon. It is being produced by the Geological Society in their series of Special Publications. Members will already be well aware of the dismal state of affairs revealed by this report and it is vital that these facts are now published as widely as possible. The committee have already met the Chairman of the Institution of Geologists who will provide a list of those Members of Parliament most likely to be sympathetic to the conclusions of the report, so that selective Parliamentary lobbying can be undertaken. A stand to publicise the report is also planned at the joint meeting of Geological Societies in Glasgow next September.

Two other publications likely to be of particular interest to Group members should appear in 1982. R. Cleevely's 'Index of Fossils and related Collections in British Museums' will be produced as one of the British Museum (Nat. Hist.) Centenary publications; and T. Sharpe's Bibliography of Geology in Museums will be published jointly by the National Museum of Wales and M.D.A.U. It is hoped that the latter will form the basis for shorter bibliographies produced for Leicester students and for the Museums Association's forthcoming Manual of Curatorship.

Following the successful nomination of I. ROLFE for the Museums' Association Council in 1980, the Committee agreed to support the nomination of the Secretary in the 1981 Council elections. This nomination was also supported by B.C.G. and was again successful.

Earlier in the year the Committee submitted its comments on the Associations proposals for a revised constitution and the proposals which were finally adopted included many of the G.C.G. suggestions. The limiting of the new Professional Groups Consultative Committee to those groups representing curatorial interests is particularly to be welcomed. It is hoped that this new committee (on which M. Stanley represents the Group and the Secretary serves as one of the Association representatives) will be able to exert a more positive influence over Council decisions than has been the case in the past.

The choice of 'Use and Abuse of Collections' as the theme for the Associations Conference in Manchester was the direct result of the interest aroused by the papers given by P. Doughty and G. Hancock at the 1980 Conference. It is greatly to be hoped that the Association's better-late-than-never concern over curatorial matters can be maintained.

The Secretary has represented the Group on the Federation for Natural Science Collection Research (FENSCORE), set up to co-ordinate and extend the work of the Collection Research units in the various Federation areas. It is hoped that a national register of the collections can ultimately be produced and to this end an application has been made to ICSU/UNESCO for a grant for the five year period 1984-89. This would provide funds for the employment of a staff of four, two based at Manchester, two at Edinburgh. A decision on whether the grant will be forthcoming is expected early in 1982.

A FENSCORE working party on a proposed register of type specimens has also been set up, with the Chairman acting as G.C.G. representative. A joint B.C.G./G.C.G. meeting has been held with representatives of I.G.S. and NERC. The Chairman, R. Clements and H. Torrens represented G.C.G. and stressed the need for collections amassed in the course of research projects funded by NERC to be properly curated and housed in institutions where their future safeguarding is assured. Initial reaction from I.G.S. and NERC had been encouraging and the meeting is seen as a first step towards making these bodies more museum conscious.

The Committee have discussed priorities for Group activities. The first priority was agreed to be the production of 'The Geological Curator' to a high standard. Second priority was the production of a set of 'Guidelines for the Curation of Geological Collections'. Third came Group action with regard to collections at risk; their discovery, curation and possible removal to a more suitable repository. It was recognised that this last objective could only be achieved through close liaison with such bodies as the Museums Association, the Area Council and the Government's new Museums and Galleries Commission.

Finally my thanks to the Group's officers and committee must be gratefully recorded. The work undertaken by my fellow officers will be readily apparent and needs no additional commendation from me. What may be less obvious are the special responsibilities undertaken by many members of the committee. Thus Diana Smith acts as Advertising and Publicity Officer as well as Minutes

Secretary; Ron Cleevly represents the Group on the Geological Society's Specialist Groups Committee; Alan Howell acts as Collections Liaison Officer and also served on the Museums Association working party on Natural Science Collection Resources; Mick Stanley is Group representative on the Association's Professional Groups Consultative Committee. Were it not for their unfailing assistance in these and other matters, the duties developing on the Secretary would be far more arduous than they are.

Treasurer's Report Account sheets were distributed at the meeting. As a result of the change to the Constitution last year this years accounts were audited. It had been agreed that two members of the Group act as auditors each year. For this year R. Clements and M. Jones had been auditors. The accounts of the last three years were also submitted to them. In 1978 the Group made a profit, in 1979 there was a loss and in 1980 a slight profit. The auditors approved all the accounts. J. Cooper pointed out that money from the deposit account is transferred to the current account as necessary, so for this year £600 has been transferred to cover the £500 deficit and leaving £100. However the production cost and postage of the next double issue of the 'Geological Curator' has still to be covered.

J. Cooper is confident that the Group will be able to cover its costs for another year without having to raise subscriptions. M. Stanley thanked J. Cooper for securing tax deduction on the subscriptions.

T. Besterman asked how J. Cooper envisaged covering costs in the forthcoming year. J. Cooper replied that he was hoping to increase funds by gaining adverts for the journal. T. Besterman suggested that it would not be unreasonable to increase subscriptions as the journal is very good value. J. Cooper replied that if the members present supported this suggestion then he would not object. It certainly would make things comfortable for the coming year. J. Cooper added that a reminder is being issued with the next journal. He pointed out that 31 personal members, including overseas and 5 institutional members, including overseas have still to pay this years subscription. The current membership is 185 personal including 16 overseas and 93 institutional including 13 overseas. There were 17 new members this year and he expects about this number will leave the Group. Twelve complimentary copies of the journal are sent out for exchange, goodwill and official reasons.

M. Stanley asked if there had been any reaction to the change of name of the journal. J. Cooper replied none.

J. Cooper thanked R. Clements and M. Jones for auditing the last three years accounts and he proposed that T. Getty (Portsmouth Museum) and A. Insole (Sandown Museum) be invited to act as auditors for the forth coming year. This was seconded by M. Stanley and passed nem.con.

T. Besterman proposed that the subscription rates are increased. This was seconded by B. Boneham. Votes were as follows;

For	17
Against	3
Abstention	4

The subscription rate for personal G.B. members will now be £5 due on 1st January 1982.

Recorder's Report. There was no report due to the absence of the Recorder, see appended report.

Editor's Report. T. Pettigrew apologized for the late publication of issue 3/2 but he has had internal museum pressures. He also explained that at the moment the typing is free but delays are incurred when contributions arrive late. The printers have been changed since the last issue so the type face will now be uniform. This issue, unforeseeably delayed, will now be a double issue of 110 pages. It sees the launch of the label register with an introduction by R. Cleevly and a supplement; Parl 1 - Cassiterites, R. King's Mineral Collection.

R. Clements enquired whether authors should supply their articles in a camera-ready state. T. Pettigrew replied that this would result in a great variety of type faces which is not wanted if the standards of the journal are to be increased.

C.G.S.D. Report. J. Cooper reported that last years annual report had been sent out to all record centres and that abstracts will appear in the next issue of the journal. There are 36 record centres holding in excess of 1600 records. There is one new centre - Hampshire. There are three MSC posts running at the moment, this is lower than in previous years when there have been ten posts, so it is hoped that there will be more posts in the near future.

The Committee members are J. Cooper, M. Stanley, K. Sedman and P. Phillips and has met once this year to examine their role and future aims. It was decided not to disband the committee and J. Cooper explained that the recent inactivity of the committee is due to members being concerned with more important curatorial duties and there has not been the financial backup necessary for activity.

J. Cooper pointed out that good relations with the NCC have been restored and hopes that this will bear fruit in the near future. Plans for 1982 are to see new centres, possibly ones at the Dick Institute, Ayrshire and at Brighton, and to change the committee. J. Cooper asked for anyone interested to contact him.

J. Cooper also reported that the Conservation Committee of the Geological Society, Chaired by R. Clements, had been successful in purchasing the Devonian fish site at Achanarras in Orkney.

Election of Officers. P. Doughty thanked the present officers and members of the Committee for all the work they had done in the past year. In the absence of alternative nominations the following officers and committee members were declared elected.

Chairman	Howard Brunton	British Museum (N.H.)
Secretary	Geoff Tresise	Merseyside Museum
Treasurer/Membership Sec.	John Cooper	Booth Museum, Brighton
Editor	Tim Pettigrew	Sunderland Museum

Recorder	Ron Cleevely	British Museum (N.H.)
Publicity/Minutes Sec.	Diana Smith	Bristol City Museum
New Committee members	Tony Cross	Hampshire Museum Service
	Ken Sedman	Middlesbrough Museum
Continuing members	Tristram Besterman	Warwickshire Museum
	Alan Howell	Bolton Museum

A.O.B. D. Smith informed the meeting about a publicity leaflet she is compiling and which will hopefully be printed early in the new year. It is intended to distribute the leaflet around to as many people and places as thought suitable in an attempt to increase membership members. The leaflet outlines the aims of the Group and gives details about the journal and meetings. An application form will also be included.

There being no other business the meeting finished at 4.33 p.m.

#### APPENDED REPORTS

Reports that were unable to be given at the Annual General Meeting

Chairman's Report. Thanks to Committee, especially officers about to report and to Di Smith for minutes.

BCG/GCG initiative with NERC; following Dec. '80 meeting, Jeremy Smith of NERC called meeting on 11th June 1981 at which Hugh Torrens, Roy Clements and I were present, representing GCG. We presented the case showing wastage of specimens and data during and after research studies and urged that NERC make a condition that specimens and data must be curated as part of the research project, and offered to a museum where it can be kept safely. The unsatisfactory situation was accepted and Mr. Smith agreed that something should be done, but was against built-in legislation as part of the grant aiding. Instead he suggested action via the universities, and guidelines published and distributed with grant applications.

IGS and the Inst. of Terrestrial Ecology were represented, and it seems have little active policy about collections!

Imp. Coll. amongst other universities, has 'Guidelines for the handling and disposal of specimens that have been used by research students.' It suggests that a degree may be withheld if the conditions are not adhered to.

FENSCORE Type Specimen Working Party. Two meetings have been held; 25th June and 20th Oct. 1981. At the first meeting the concept of attempting to produce a list of type and figured specimens in museums was accepted. Much time was spent on trying to agree the amount and type of data to be gathered.

At the second meeting, perhaps on reflection, a much reduced data-base for possible publication was accepted, while it was agreed that as much data as possible should be collected about specimens, at the time of searching, so that this data could be used by referees in assessing the worth of the specimen. The evaluation of specimens to be via the local CRU with backing, if necessary, from outside experts. The aim being to put specimens on one of five lists;

irrelevant to the register  
 unlikely to be relevant  
 worth including  
 confirmed  
 status unknown - more info needed

The register aims to be a guide to taxonomists as to where they may find relevant material. The MDA has offered to run a pilot project of about 1000 specimens, selected from the NW Register, the first Collections Register to be published, for which they are to be congratulated.

The pilot project will aid assessment of data gathering and refereeing. Further discussion is to take place about machine processing the data.

Guidelines. Last year's committee stressed the need to produce guidelines on geological curation. We agree to this need and have circulated to the committee suggestions on the contents of such guidelines.

The Museums Association has produced a 'Manual of Curatorship' and engaged Dr. D. Prince to research/edit the 'Manual', which seems to be of a philosophical nature.

We are looking for a practical guide, kept short, but with extensive appendices of technical data and addresses. We hope to have sections prepared by people knowledgeable in particular aspects of curation, and some of these sections may be 'tested' to the membership by publication in the 'Geological Curator'. Ultimately we aim at a loose-leaf production of the Guidelines.

'Guidelines for the Curation of Geological Materials' are much needed and will have important influences in many directions. I hope we can see real progress in 1982.

Also in Dec. 1980 there was talk of a publicity leaflet. Di Smith and John Cooper took on this job, both moved during the year, but despite this I am pleased that we have now a leaflet which will aid in the recruitment of members.

Howard Brunton 8th Dec. 1981.

Recorders Report. Owing to various business financial takeovers affecting the publishers with whom the BM(NH) are co-operating, the promised publication of the index of fossil collections did not materialise. The situation has since become stabilised and the publication of 'World Palaeontological Collections - A Preliminary Index' is now envisaged for the summer of 1982. The corrected MSS has gone to the printers and galleys are expected in the New Year. At present, it is thought that the publication will be relatively expensive. However, I am arguing strongly for a cheaper version to be produced either as part of the original 1,000 copies, or in addition to them. It is possible that a scheme for ordering this special printing might evolve prior to publication utilising distribution of forms through BCG and GCG journals.

In an effort to minimise the loss of geological research collections the organisation of editors of geological journals Editeere, was approached. They were asked to ensure that for all papers published the material cited

had been adequately registered and housed in a reputable and publicly accessible museum, or institution in accordance with the recommendation of ICOM at the meeting in Mexico, 1980.

A joint meeting with the MDA was held at the BM(NH) on 4th June 1981 to consider USE OF THE MDA 'Geology' specimen card -- WHY?, or WHY NOT? Howard Brunton distributed a sheet outlining the basic requirements and purposes for which an EDP system might be used in recording data of fossils prior to the meeting. Contributors either discussed their experience of using the MDA system or explained their reasons for preferring a separate method relating to their own organisation or needs. Although the occasion was felt to have been successful, a unified policy or approach to the matter did not ensue.

In collaboration with Howard Brunton and Frank Howie, all on behalf of GCG - we examined Tom Sharpe's 'Geology in Museums' - a bibliography, providing additional entries but without making substantial alterations apart from suggesting the inclusion of a general geological reference section.

A general liaison with Charles Pettitt was made arising from the formation of FENSCORE with its commitments to maintaining and accumulating data on Natural History Collections and forming a register of Types. Provisionally collection information (- apart from that on fossils.-) accumulated during the revision of Sherborn has been lent to Manchester in order that they can assess its potential usage for the scheme. However, there are possible difficulties in this, since the BM(NH) feel that they have some rights to this information, although I am sure the problem can be resolved.

The series on Collection Labels and Hand-writing was initiated by the production of several Reference Sheets for distribution with the journal. An introductory article was also produced for inclusion in the same issue and was accompanied by a request for other curators to submit similar examples from their own collections for use in future issues.

Ron Cleevely Dec. 1981.

# REPORT OF MEETING: VERTEBRATE PALAEOLOGY, HISTORY OF COLLECTING & CURATION

8-10 September, 1982. Organised by the GCG  
and the Palaeontological Association.

Although originally planned as a 2 day meeting additional offers of papers justified an extension to three days; the first held in the lecture theatre of the British Museum (Natural History) and the remainder using the more comfortable facilities of the Geological Society at Burlington House.

Unfortunately, no attempt was made to present a general view outlining the developments within the subject of Vertebrate Palaeontology during its history with a discussion of the problems that had occurred. The only hint of such an overall review was made in the introduction to the meeting programme where the earlier appraisals of Romer (1959), Simpson (1968) and Gregory (1979) were mentioned. However, several speakers provided more detailed summaries within particular fields of the subject.

Opening, Dr. Charles Waterston (Royal Scottish Museum) emphasized the difficulties inherent in accumulating fossil specimens of vertebrates and then in ensuring the conservation of both the material and their sites. Robin Reid (Queens University, Belfast) then provided a colourful argument over some of the interpretations of the structures present in vertebrate bone and the conclusions that have been made over the years to support certain theories of vertebrate relationships and mode of life.

Amongst significant reviews presented were those of Peter Whybrow, (British Museum Nat. Hist.), who considered the methods adopted for collecting and preserving vertebrate skeletons in the field and the various processes used for developing such specimens back in the laboratory; the detailed historic account, given by his colleague Frank Howie, of the numerous attempts to conserve and mount skeletons of the more spectacular finds over the years and the mistakes that have been made; Theya Molleson (British Museum, Nat. Hist.) gave a summary of the use that has been made of analytical techniques in the interpretation of fossil material, which ended with her announcement of the results of current research that has confirmed the orang-utan source of the Piltdown jaw, the significance of which was lost on the majority of the audience; by request Professor Bill Sarjeant (University of Sas Katchewan) repeated part of his 1974 published comprehensive account of the study of fossil footprints in the British Isles, adding several amusing anecdotes and a few instances of his own involvement in ensuring the conservation of important, but hitherto neglected specimens.

Other contributors from, or associated with the B.M.(N.H.) were Peter Forey and Brian Gardner, who each presented some aspects of the problems associated with interpreting the relationships and in classifying vertebrate fossils within accepted systems. Inevitably, their criticism and comment produced an element of controversy. Jill Cook and Peter Andrews produced a British guide to the taphonomy of fossil bone based on their own series of observations over a lengthy period at particular sites, to augment the various papers written by Anna Behrensmeyer and others.

Various papers mentioned the problem as to the uncertainty of the provenance of many of the earlier historic specimens. Martin Pickford (Nairobi Museum) in his examination of case histories from Kenya pointed out that the verification of the geographical and stratigraphical position of specimens was an essential part of curation. He only had time to discuss the evidence demonstrating the confusion over the relative position of two important hominid specimens. In the second of the duo-presentations made by Judy Maguire and her colleagues of their work in South Africa, Friedemann Schrenk demonstrated the importance of establishing the stratigraphical sequence occurring in the Makapanggat Caves. Most of the fossils obtained hitherto have come from blocks of rock that had been extracted by earlier lime miners. The fossil assemblage is essentially composed of the more resistant skeletal elements and such accumulations may represent a considerable period. Knowledge of the stratigraphy of the sediments still preserved will inevitably assist in a more accurate taphonomic interpretation of the assemblage and resolve the 'pseudotool' controversy that has occurred. Similarly, David Norman, (Dept. Zoology, Oxford University), in his elucidation of the discovery of the Bernissart Iguanodons from the surviving notes relating to the excavations, showed the need for establishing the precise positions of the finds, in order to understand their significance.

Other historically orientated accounts were those relating to particular individuals: Patrick Boylan (Leicester Museum) providing the authoritative vindication for Buckland's fundamental role in establishing the scientific approach to VP in Britain; Michele Aldrich (American Association for the Advancement of Science) and Alan Leviton (California Academy of Science) discussing the influence that a vertebrate discovery had on James Hall's career and then presenting Ellis Yochelson's (U.S. Geol. Survey) paper on the same theme relating to an Ordovician find of C.D. Walcott, another palaeontologist also noted for his work on invertebrates; Alan Charig, (British Museum Nat. Hist.), before departing to China in an attempt to locate a new BMNH spectacular (?), found time to correct the historic myths relating to the discovery of the Cuckfield Iguanodon and to reveal the probable sites from which the specimens came. Apart from indicating that anyone attending the Geological Section of the British Association in the past, was virtually compelled to undertake a tour of noble houses and Scottish fish localities, Mahala Andrews (Royal Scottish Museum) provided evidence from stratigraphy and correspondence to sort out the muddle that the more eminent palaeontologists made in their field collecting and subsequent descriptions.

'Mac' Dickins from Canberra, was persuaded to interrupt his research at the B.M. and provide an authentic 'Down-under' voice to read Sue Turner's (Queensland Museum) account of the discoveries of fossil vertebrate remains in Queensland and the problems relating to ensuring the specimens stayed there. The background and history of fossil collecting in South Africa, both vertebrate and hominid, was colourfully, anecdotally, succinctly and attractively explained by Judy Maguire and Jane Dugard;

Eric Buffetaut (Laboratoire de Paleontologie des Vertebres, Paris) took the opportunity to deal with the complete history of a series of vertebrate fossil collections obtained from the Mesozoic deposits of Normandy, recounting the circumstances of their collection accumulation and use, ending with information on their subsequent destruction and attempts to replace such unique material. Having practically earned a place in the Guinness book of records by ingeniously discovering a new method of getting his fare paid and then implementing it within a matter of days, Alec Ritchie (Australian Museum,

Sydney,) reached the U.K. to give several accounts of vertebrate work in Australia. The various explorations of the Wellington Caves provided a framework for dealing with the individuals concerned, the nature of the fossils and the various interpretations of them, and, of course, their dispersal. Prof. R. Savage, (Geology Dept, Bristol University), showed that the scientific pronouncement of Richard Owen on a unique Eocene mammal from Jamaica, although severely criticised at the time, has since been proved to be close to the mark.

In addition to the official programme, both of the institutions providing facilities for the meeting, responded significantly by arranging additional events. The Keeper of Palaeontology at the B.N.(N.H.), Dr. H.W. Ball organised tours of the palaeontology laboratory, and the collection storage areas of his department. Through the good offices of Patrick Boylan and Mahala Andrews, and then the Librarians and Archivist at the Geological Society, an exhibition of the unique fish illustrations used for Agassiz's work and other material from the Geol. Soc. archives was made available at lunch-time on the Friday.

Another of the notable events connected with the Symposium was Alan Charig's entertaining after dinner speech, when he vied with (and outdid) the famed occasion of Gerald Hoffnung's Oxford Union effort, and proceeded to read a couple of letters he had received during the years which provided philosophical and practical explanations for the demise of the dinosaurs. Alan's laconic reading - and interspersed comment - produced a succession of laughs that became progressively more eruptive and cataclysmic.

The only remaining doubt is just How? and where? the presentations will be published. It is certainly worth producing and together with the review presentations should provide a valuable reference tool. The content of the meeting did convey and confirm the impression of a mere invertebrate worker that the branch of palaeontology dealing with fossil vertebrates is fraught with its own peculiarities, problems and methods.

You may feel that this account is biased, but then I was the organiser!!

Ron Cleevely,  
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London.

# REPORT ON THE FIFTH MEETING OF FENSCORE

FENSCORE Committee met on 17th July 1982 at Manchester University.

The Secretary reported that information exchange was in progress between the FENSCORE database and the authors revising the BSBI volume on British Herbaria.

At the beginning of July the collection Register database contained 5731 records, made up of contributions from Midlands CRU (668), North East CRU (84), North West CRU (1247), South East CRU (266), South West CRU (1388), Scottish CRU (91) and Yorks and Humberside CRU (1987) - about 2000 more records are currently being processed. Some records in the database were considered to be too detailed, and a degree of data compression is to be exercised on these records. It was agreed the aim of the FENSCORE database is to provide only a signposting service which will permit researchers to establish the location of aggregations of material possibly of interest to them, but expecting them to contact the holding institution(s) so identified for more detailed information. For economy of resources and efficiency in use the information about material held by an institution should be compressed into the minimum convenient number of records concomittant with the inclusion of all the primary level information necessary to permit retrieval by any of the primary routes, i.e. name of collector, geographic origin, taxonomic classification or geological era.

The reports from each of the CRU's indicated a generally high level of activity. The South West CRU are exploring the establishment of a detailed regional collections database at Bristol Museum, from which the summary records would be sent to Manchester. The Yorks and Humberside CRU have almost completed the main input and are planning to produce a Register of Collections for their region in 1983. The Council for Museums in Scotland had obtained a grant of £15,000 from the Wolfson Trust to assist the work of the Scottish CRU for two years. The Midlands CRU have already recorded many more 'living' private collectors than any other CRU, and documents outlining their approach have been distributed to the other CRU's.

The second report of the FENSCORE working party on a Provisional Register of Type and Figured Specimens present in collections in the British Isles was discussed and confirmed. The pilot study made by the North West CRU, covering a total of 1358 specimens from eight NW institutions, has shown that the compilation of a Register is feasible. The data gathering will be done on a regional basis via the established CRU network, and the Working Party is to re-convene to prepare a programme for implementing their proposals.

The next meeting of FENSCORE will be on 11th Nov. 1982 at Manchester University.

Charles Pettitt.  
Secretary.

# GEOLOGICAL CONTROVERSY GREMLINS OR HOW THE GCG STOKE MEETING BECAME A FABLE by D. I. Steward

The April meeting of G.C.G. held at Stoke Museum provided food for thought for the forty or so members that attended. The theme of the discussion centred around geological exhibitions for the mid-80's and to this end the speakers gave lively and interesting talks on the finance, design and organisation of travelling and permanent geological displays.

Philip Doughty opened the meeting with a heart felt discourse on the lack of funding to 'Science', as opposed to 'Arts', in museums in general and made many pertinent points that should, and hopefully will, be brought to the attention of our government policy-makers. Andrew Millward reviewed the design problems of setting up a travelling exhibition that is lively, informative, easily transported and at an educational level that can be interesting to a generally non-geological public. He used Manchester Museum's excellent travelling exhibition "A Young Person's Guide to Geology", (still available for hire) as a working example to give ideas of costs and possible content. Giles Velarde presented the complexities of preparing the new fossil gallery at the Geological Museum and strongly made the point that any praise for the finished product is due to the harmonious relationship between design and curatorial staff. Jocelyn Orchard finalised the prepared speeches by revealing some of the considerations needed to be taken by Area Services who act as centralised organisers of travelling exhibitions. She broached the subject of organising exhibitions with material from several museums in a region, but was sceptical that current facilities were adequate for Area Services to act as project overlords.

This, very briefly, was what delegates had to contemplate over lunch and the afternoon session provided a lively discussion period led by Hugh Torrens. In his own inimitable way Dr. Torrens steered the topics from his own preference of a Sedgwick Museum type display, of many objects portraying the wonderment of geology, through a not-all-together harmonious debate on the role of designers, to an imaginative, and potentially viable, assessment of using geological controversies of the past (and present - re. cladistics) as a basis for exhibitions that are both enlightening and interesting. On this last point it was correctly pointed out that many people knew about, and were interested in, such issues as those created by the publishing of the Origin of the Species, but little was known about the equally vexing situation that arose following the mapping work done by Sedgwick and Murchison in Wales. Other possible topics were aired, including an attempt to inform the public (and baffled curators like myself) why scientific names keep changing as more information about a species is accumulated, but by the time the discussion period had elapsed the fundamental questions of who would centrally organise and finance such projects remained, if not surprisingly, unanswered.

However all may not be lost. As sometimes happens after attending general discussion meetings a seemingly unrelated activity may suddenly spark off a train of thought which could prove profitable in the long-run. For me this activity happened to be reading an old copy of Aesop's Fables in an attempt to relax after a gruelling day of

identifying bits of slag and Bunter Pebbles for members of the public who appeared to have been bringing to the Museum the contents of their garden sieve. Whilst flicking through the pages of this august journal my eyes alighted on the following prose (quoted in full but I will leave the Editor with responsibility for copyright).

The Groaning Mountain

*Long ago, in a far country, a big mountain lifted its purple head high over the village in the valley. It was a very magnificent mountain indeed, with pine-trees on the slopes, and great precipices beneath it. For hundreds of years it had sent its long shadow down the valley in silence, and no sounds had been heard from it but those made by the screaming hawks, and the waterfalls, and the wild winds that sometimes blew through the trees.*

*Then, one day, a most remarkable thing happened. The people in the village distinctly heard the mountain groan!*

*It was such an amazing sound that everybody stopped what they were doing and stood still to listen. The maids and men ceased milking, the hay-makers dropped their scythes, and the farmers' wives let their bread burn in the ovens as they ran out into the orchards to see what was the matter. However the sky and the fields and the distant sea looked the same as usual; and by and by folks began to enquire from each other if they had not been mistaken. But even while they were asking the question, the mountain gave a second groan, much louder than the first.*

*It really was a dreadful noise, and this time the people who lived quite a long way off heard it too. Presently they began to arrive at the village in little groups, asking everybody they met what had happened. Nobody knew anything except that the mountain had groaned, as if it were in dreadful pain and trouble. Some of the men thought it was the beginning of an earthquake; but the women said they believed the mountain was groaning because a giant that was inside it was trying to get out.*

*They discussed the question anxiously, standing in crowds round the foot of the mountain. Those who believed in the giant pointed to the great cracks in the slopes, and said that surely these must have been made by giants breaking out of some hidden caves. Gradually the men who at first had believed in the earthquake grew to believe in the giant. Meanwhile the mountain groaned louder and louder, and more and more frequently, and other people arrived from villages that were miles and miles away, and joined in the discussions about the earthquake and the giant.*

*At last the mountain - which was now giving about thirty awful groans a minute - let out a perfect yell. At the same moment a really enormous crack showed in its side. The people held their breath, and some of them covered their eyes in terror. Dead silence followed, and then - what do you think happened?*

*Down the path that led to the village from the enormous crack in the mountain slope, its tiny feet making no sound on the stones, its long tail waving, and its bright eyes glancing timidly from side to side, scampered a mouse! When it saw the crowds it gave a little squeak of terror, and ran away into the long grass!*

*The people still waited, but now the mountain was quite quiet again! Not a single groan came out of the sides or the top. So everybody went home, laughing at the mountain that had made such a dreadful to-do all the morning, and then had nothing to show for the fuss but one teeny-weeny mouse!*

With a fertile imagination this can be seen to have everything to make an exciting display on the disagreements associated with geological phenomena. It satisfies the historical geologist. My copy of the Penguin Encyclopaedia reliably informs me that the earliest fables are Greek and had, by the mid 5th century B.C., become associated with the semi-mythical Aesop. This then must surely be one of the first documented accounts of a geological event - i.e. possible volcanic tremors associated with subduction zones in the Mediterranean region - to be recorded. It embodies the powerful forces created in the Earth and demonstrates the strange psychology of mankind in being attracted to a possible source of annihilation. It suits the male chauvinists as it portrays women as believers of unfounded superstition, whilst suiting feminists as it shows men to be wishy-washy and not sticking to their principles.

All in all it has the potential of relating geology to the emotive level of human experience. However, one of its main advantages is also a distinct disadvantage with regards to Museum display; the only 3-D specimens required (which has the advantage of making it cheap) are a replica of a mountain with a loop tape of a volcanic rumble, and a mouse.

So, as with all fables, it has a moral: before getting too involved with a theme think about its relationship to the Museum; this story could be ideal for a television play, but the lack of objects would make it a very uninformative vehicle for geology in a Museum environment.

The latter part of this discourse is written to be, and hopefully taken to be, lighthearted. It is prompted by the turn of the discussion at the meeting which headed for displays with many captions and few specimens. I think that there is a useful place for geological controversies and the Sedgwick-Murchison example would be an ideal start. The arguments could be displayed using fossil and stratigraphical specimens as indicators of the view points of the two adversaries, and the human interest is provided in the story of how position and dogmatism can affect a once friendly relationship. An account of the controversy is already well reviewed (see Thackray, J.C., 1976; and Rudwick, M. J. S., 1976; both in Journ. Geol. Soc. Lond. vol. 132). All that is needed now is a Museum, group of Museums, or an Area Service to provide the storyline, graphics and specimens, and, of course, the money.

Don Steward,  
Assistant Keeper of Natural History,  
City Museum and Art Gallery,  
Stoke-on-Trent.  
ST1 4HS

## LETTER TO THE EDITOR



Royal Albert Memorial Museum

Queen Street Exeter EX4 3RX  
Telephone 0392 56724

David Rodgers M.A.

Director of Museums

21st July, 1982

Your ref

Our ref

Dear Sir,

In your issue of June 1982 David M. Bertie writes that the three local authority museums in Wolverhampton "Professed complete ignorance as to the existence of any geological collections in the Borough". As the then Curator of Museums I have to say that this is simply not true. I knew the past history of the Fraser Collection and that it had been transferred to the Technical College (now the Polytechnic). I therefore passed Mr Doughty's letter to the Polytechnic secretary and assumed that he would reply to the enquiry.

At the risk of appearing unprofessional I should add that although an art historian by training I was aware to some extent of the unfortunate state of the collection but as I was a governor of the Polytechnic at the time I assumed that an answer from the paid officers of the Polytechnic was more appropriate than any criticism, based upon inadequate knowledge, from me. Had I known that the Polytechnic had not had the courtesy to reply to Mr Doughty I would have taken the matter further.

Yours faithfully,

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

David Rodgers  
Director

Mr Tim Pettigrew,  
Sunderland Museum,  
Borough Road,  
SUNDERLAND, SRI IPP.

EXETER CITY COUNCIL  
MUSEUMS SERVICE

Rougemont House Local History Museum  
Guildhall  
St. Nicholas' Priory  
Underground Passages  
Topsham Museum

# LETTER FROM AUSTRALIA

## by Sue Turner

Rather than a look at collections this is more of a warning from the other side of the world. Along with various American colleagues I think it's time for all scientists to 'stand up and be counted'. Here, in Queensland, the battle for scientific truth is beginning to 'hot' up again. The issue - Creationism and Creation (so-called) 'Science' vs Evolution, and, incidentally, the right to be a sceptic. The American-based Moral Majority has a sister group over here called the Creation Science Foundation which published a magazine *Ex Nihilo* (reminiscent of the old *Plain Truth* magazine's fallacious 'anti-evolution' articles - well-sprinkled with capitals). This group is based in Queensland (where else!!), where creationist ideas are allowed time in schools' science courses, and fronted by a man called John Mackay B.Sc., an ex-teacher at Brisbane Grammar School. A year or so past he 'debated' the issue with Dr. Alex Ritchie, palaeontologist of the Australian Museum, Sydney at the Sydney Opera House, and, needless to say, neither side backed down.

Recent editor of 'Search', ANZAAS journal, Ron Strahan, a Research Fellow of the Australian Museum and author/editor of a fine book on that museum's history ("*Rare and Curious Specimens*" (1979) The Australian Museum) recently had remarks to make about the insidiousness of these creationist folk when he wrote an article entitled 'Ex Nihilo ad absurdum' (Strahan 1981a, also see 1981b). In it he talks about the fundamentalists' "first onslaught against reason" i.e. their concerted attack on all hypotheses of evolution.

Most recently the ball came into the home court. In the Education section of the local Brisbane paper 'The Courier Mail' (Tues. 4th May 1982) there was a piece called 'The case for Creation' by K. Ham B.App.Sc., Dip.Ed. and J. Mackay B.Sc. which purported to show how all earth history could be explained in terms of the Biblical Flood. (see below). It included errors of fact and downright falsehoods as well as their own brand of interpretation of geological data. This was a spur for Tony Thulborn (Dept. Zoology, Univ. of Qld) to write a letter complaining about the inclusion of this piece in the Education Section and pointing out that Creationism is not Science. (see below). The creationists - Messrs Mackay, Ham, Snelling and Morris (the latter in the Physiology Dept of the University!) sent Tony and the Mail a letter which they headed 'The Anti-Creationists' in which they say, amongst other things, that "science is and always has been based on beliefs" and finish by saying "Either you believe in the observations of a God who was there at the beginning or you believe in the speculations of men who were not" (I leave our members to decide which alternative they favour). Tony has just replied at length to this letter, and no doubt, the correspondence will go on.

But from America comes news of a rather worrying sort - an attempt to put a bill through Congress that would cut funding to the Smithsonian unless they give equal space in displays to creationism or delete mention of evolution (Lewin 1981). Our cladist friends at BMNH have certainly helped fuel this type of approach. I think it is time for curators in all museums to gird their loins. No doubt some colleagues will disagree or be hearily sick of the whole business but unless we do stand up and make our position clear, learning how to put our views to the media and the public, then, unless the trend is reversed and rationality prevails, in a few years we may

see the curatorship of our museums as well as the education of our children in the hands of these pseudo-scientists. Remember - although we would not deny them their faith or beliefs - they do seek to stop people, including scientists, from thinking and reasoning. The ethic of the Creationist is - either you're for us or against us - and if you're against us then you are evil. So, whether you like it or not you shouldn't stand on the sidelines because you will be tarred with the 'Anti-Creationist' brush by default.

As an addendum for my female colleagues the creationists (along with the Moral Majority) believe in the "supremacy of husbands over wives", and (for all parents) that "physical punishment (the rod) has a real and God-ordained place in the upbringing of children" (Strahan 1981a). I apologise if this letter seems like a political tract but I think all true scientists, whether Christian or not, should combat this Creationist movement which would put science back into the Middle Ages, and advocates replacing it with dogmatic drivel.

Lewin, R. 1981                      A Response to Creationism Evolves. Science 214, 6 Nov. 635-638.

Strahan, R. 1981a.                  Ex Nihilo ad absurdum. Search 12, 7, 189

Strahan, R. 1981b.                  Creation anti-science. Search 12, 11, 373.

Sue Turner  
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The article referred to by Sue (Ham et al 4th May 1982) is reproduced below together with the reply by Tony Thulburn.

# The case for creation

## Authors:

K. Ham, B.App.Sc., Dip.Ed.

J. Mackay, B.Sc.

Creation Science Foundation.

**HOW did life begin? Some people have the belief that all life is related and developed from a common ancestor over millions of years.**

People who have this belief (commonly called 'evolution', of which there are many versions), consider that the facts from the fossil record and living organisms can be fitted to their belief system. There are many other people (including many scientists) who accept that all life was created by an intelligent designer. They claim that fossils and living organisms fit their model of origins called 'The Creation Model'. It is important to realise however, that most people do not accept Evolution or Creation because of the facts. Most are unaware of what these really are. The argument is not about the facts, but about beliefs. This article shows some of the startling evidences which can only be explained within a Creationist framework.

The Creation Model has a number of predictions including: (a) A young age for the earth and the universe (approximately 6-7000 years); (b) Organisms exist in groups called kinds; (c) Design will be evident in living things; (d) A world-wide flood (called Noah's Flood) occurred some 4000 years ago involving the death of millions of plants and animals, and produced massive sedimentation and fossilisation.

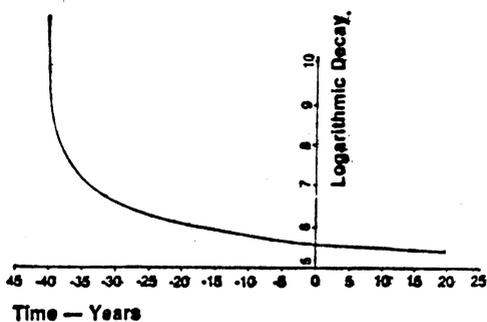
Consider some of the many evidences for these predictions:

### (a) YOUNG AGE FOR THE EARTH

In 1978 at the Louisiana State University, an important conference was held to tidy up the details about how old the earth was. It was supposed to be a fact that the earth is billions of years old, and this is one of the chief evidences against Creation and for Evolution.

Surprisingly, the conference produced some shocks. The first speaker, John Eddy, a leading high altitude research astronomer in the USA opened the conference with the claim that whilst he suspected the solar system was at least 4.6 billion years old, we do not have much in the way of astronomical evidence to disagree with the value of only 6000 years proposed by Archbishop Ussher (Geotimes, September, 1978). How old is the earth?

There is interesting evidence for a young age for the earth from studies conducted on the speed of light by a South Australian astronomer, Barry Setterfield. His work shows that light has been slowing down, and that it began this process about 6000 years ago (Ex Nihilo, Vol. 4, No's 1 & 3 1981). A fascinating finding from his work is that about 6000 years ago, light would have been travelling about  $5 \times 10^{11}$  times faster than it does now. Therefore light from the furthest star would have reached Earth in much less than 6000 years. Barry Setterfield's work is very important because the rate of radioactive decay is governed by the value of the speed of light. If light travelled much faster in the past, so radioactive decay happened more rapidly. The vast ages for the earth, which people claim are proved by uranium and other such radioactive rocks, can now be shortened to only 6000 years or less.



#### (b) ORGANISMS EXIST IN GROUPS CALLED KINDS

The inventor of the present classification system used in biology today, was a man named Linnaeus (1707-1778). He believed, as outlined in the Bible, that all life was created separately as distinct KINDS by God. On this basis, he developed a classification system in which each group of plants or animals is given distinct labels. The organisms in the fossil record are also classified according to this system. If plants and animals had slowly developed from ancestors over millions of years, then this classification system would not work as there should be a continuous series of transitional forms.

As the curator of the Field Museum of Natural History in Chicago stated: "Knowledge of the fossil record has been greatly expanded . . . Ironically, we have even fewer examples of evolutionary transition than we had in Darwin's time." (Raup, Field Bulletin, January, 1979).

#### (c) DESIGN

Some of the most convincing evidence for creation comes from a look at man himself. We all pride ourselves on having invented the computer. We stand back and say: "See that! It took a pre-existent intelligent designer to build that thing. It didn't happen by accident, it was a deliberate and painstaking creation!" Can you see the inconsistency of looking at a computer and saying, "It was designed, but the mind that designed it is an accident of nature?"

Imagine a research scientist saying to himself, "If only I can make life in a test tube, it will prove that no intelligence was necessary in the beginning." Again the inconsistency is obvious because in the 60 years or so in which man has been trying to make life in a test tube, we haven't succeeded, though we have used highly intelligent chemists, good equipment and a lot of taxpayers' money. If we do create life in a test

tube, it will show one thing — that a pre-existent, intelligent designer made life in the beginning because that is what was needed the second time.



If we study a living cell, we note that each part is not 'alive' although the cell itself is. In other words, it needs each part to function as an integrated unit. A good analogy is the aeroplane which could be defined as 100 percent of non-flying parts, yet as an assembled unit, it flies. A single cell consists of 100 percent non-living parts, yet the unit itself is 'alive'. Thus, the structure of a living cell points to its being created as a finished unit — or it wouldn't work.

#### (d) NOAH'S FLOOD

Australia shows much evidence of Noah's Flood. The Aboriginal people have a story of a great flood and of the creation of woman after man. Most cultures have similar stories about a great flood sent for judgment, where human seed was saved along with animals in a large boat. All these stories are similar to the account in the Bible of Noah's Flood. This world-wide existence of traditional stories about the Flood, provides some evidence that the common ancestor of today's races was Noah.

The coal beds in Australia show evidence of having been formed rapidly in a flood.

At Swansea, near Newcastle, trees without roots poke 10m from the tops of the coal seams into the sediments above. It should be obvious that since they have no roots they did not grow there. If they did not grow there, they were washed there into that position and buried rapidly before they could rot. Furthermore, if the trees did not grow there, the coal did not originate from a swamp. Many geologists tell us that coal formed slowly in swamps over millions of years. The evidence is not consistent with that belief. At Yallourn in Victoria, upwards of 1000 cubic km of brown coal is found which contains, amongst other things, pine logs at all angles. The interesting thing is that these pine trees have been identified as similar to ones growing in Tasmania — most of which will not tolerate swampy conditions. The coal at Yallourn sits on a layer of white clay. There is no evidence of soil, therefore it could not have been a swamp. The evidence is consistent with its being the product of a huge flood which deposited the clay, then dumped thousands of logs and other plant material on top of that clay. Experiments have shown coal doesn't require millions of years to form. It can be made in a laboratory in a day — all it takes is the right plant material, pressure and heat.

#### WHERE DO PEOPLE GET THEIR IDEAS ABOUT ORIGINS?

The basis of their beliefs does not come from science alone. Just as some start with a belief called evolution, which has been devised by man — others start with the belief called creation which has its basis in the Bible. It then becomes a question of which fits the facts best. Ideas like evolution which depend upon belief in Chance or Nature, are no less religious than ideas based on a belief in a Creator God.

**DOES IT MATTER ANYWAY?**

People build their lives on their view of where they came from.

If you believe that you owe your origin and existence to the Creator God of the Bible, your behavior must be directly related to what God states is right and wrong. On the other hand, if you believe that you originated and exist by chance evolution, then, if you are consistent, you can 'do your own thing', for nothing is really right or wrong.

What we believe about where we came from is a serious matter indeed, and something which all parents and educators cannot afford to ignore or abuse.

**Beliefs not alternative**

ALLOW me to reply to the article which appeared in The Courier-Mail on May 4.

The article, "The case for creation," written by K. Ham and J. Mackay, begins by introducing an "argument" between those who entertain theories of organic evolution and those who believe in creation.

They then state that the argument is not about facts, but about beliefs.

This statement is incorrect. Evolution and creation are not alternative beliefs.

Messrs Ham and Mackay admit that creationists "start with the belief" and then set about finding evidence to "fit" the belief. This is not a difficult task.

Every piece of evidence they find in the universe will seem to support their belief in creation — because they have already assumed that the evidence was created in the first place.

More important is the fact that a creationist will never find a piece of evidence which does not fit his belief.

This means that the belief can never be tested by finding new evidence; it cannot be falsified or tested scientifically.

A belief which cannot be evaluated scientifically (creation) is not in the realm of science — it is something non-scientific masquerading as "science." It is what I prefer to call pseudo-science.

Theories of organic evolution are not beliefs. They are interpretations attached to bodies of evidence. Such theories are proposed by scientists as working hypotheses — which can then be treated against new evidence.

If the new evidence "fits", then the theory will be vindicated (until such time as even newer evidence is found to warrant re-testing). If the new evidence does not "fit", then the theory will be falsified (and it will have to be replaced or modified).

This endless process of building, testing and (often) destroying hypotheses is the growth, or rather the advance, of science.

This is the crux of the matter: A belief (creation) cannot be tested scientifically whereas a hypothesis (theory of evolution) can. That Messrs Ham and Mackay should maintain belief and hypothesis to be logically valid alternatives is misleading. — Dr Richard A. Thulborn, senior lecturer, Department of Zoology, Qld. University.

# RECOMMENDATIONS FOR THE PRESERVATION OF RESEARCH COLLECTIONS

## Preservation and curation of research collections

Geological research projects frequently result in the collection of scientifically important material. Often, after completion of the project, such material is discarded without its scientific importance being appreciated. To try and remedy this the Geological Curators Group has produced the following set of recommendations which are being circulated to all relevant institutions involved in geological teaching and research.

## RECOMMENDATIONS FOR THE CURATION OF GEOLOGICAL MATERIALS

### Introduction

Research collections, both specimens and data, are commonly at risk following the completion of projects. These materials may be unique, collected at considerable expense and may have formed the basis of intensive studies - perhaps resulting in publications. Researchers, and the departments in which they work, have a responsibility to science now and in the future, to curate these materials in such a way as to prevent their loss and allow them to be kept in museums where their future curation and availability is ensured.

The following recommendations aim at helping the organisation of collections and associated data, so that materials are in a suitable condition at the end of a research project for ready acceptance by the future host museums.

It should be remembered that:

- 1) Specimens collected may be unique or difficult or impossible to recollect. Their scientific potential may not yet have been fully exploited.
- 2) It is irresponsible to make collections which are ill-documented or which are inaccessible to others.

We recommend the following when collections are to be made:

- 1) At the project planning stage thought must be given to the type and quantity of materials to be collected, bearing in mind principles of conservation.
- 2) Especially if large collections are to be made, thought must be given as to where the collections will ultimately be offered for safe keeping. This repository will usually be a national, regional or university museum with assured curatorial staff in the correct subject.
- 3) The museum selected should be contacted at an early stage to discover
  - a) their willingness in principle to accept the collections;
  - b) their willingness to assist in the curation of the specimens by, for example, providing labels, boxes or reference numbers for the specimens;
  - c) the museum staff should be asked for advice on the organisation of the collections to suit both the research topic and ultimate storage system employed by the museum.

- 4) Good curation starts in the field where specimens are collected, and all relevant details must be recorded (e.g. in a field notebook) and each specimen made clearly referable to its locality. The details of how this is achieved differ with the materials being handled, but each specimen must relate unequivocally to its specific locality.
- 5) In the study or laboratory all specimens should be marked permanently in such a way that they relate to all the collecting data and also to parts of specimens which may be removed for special investigations, e.g. chemical analysis, microscope slide, S.E.M. study, etc.
- 6) A register of specimens with information on their collection and subsequent treatment should be prepared. The organisation and extent of this will depend upon considerations of 3(c), but the primary grouping might be taxonomic or by locality. An aim should be to achieve useful groupings of common data, i.e. groupings of specimens having the same information.
- 7) While being studied, as well as in their ultimate storage place, specimens must be maintained safely and be readily identifiable by adequate documentation. Time must be allowed towards the end of the project for specimens and data to be organised, safely boxed and transferred to the museum which is to care for them. Once the collector/research worker has 'disappeared', his specimens, however fine in quality, may be useless if inadequately documented.

In conclusion, we hope that better liaison between researchers and museums, where collections are assured of being well curated, will result in less loss of material and an improvement in the quality of those collections which are preserved. We hope that university staff conducting and supervising research will take a more responsible attitude towards guiding their students into a realization that the material they handle is important, forming part of our scientific heritage, and that inadequate organisation of the material may jeopardise the successful outcome of their studies.

Geological material is not infinite and we must be caring and responsible in its use, curation and preservation.

Prepared by the Geological Curators Group.  
September, 1982.

# HAZARDS IN THE CURATION AND DISPLAY OF MINERAL & ROCK SPECIMENS WITH ESPECIAL EMPHASIS ON RADIOACTIVITY

by Paul Henderson

## Introduction

The geological curator is fortunate in having relatively few hazards with which to contend with the proviso that he should maintain a clean working environment and avoid unnecessary risks in the handling of specimens (e.g. specimens might be poisonous, sharp, or radioactive so they should not be licked). This article is concerned with the handling, storage, and display of radioactive specimens whether they be minerals, rocks, or fossils. It also makes brief reference to two other problems: the handling of asbestos minerals, and the use of ultraviolet radiation. Its main purpose is to give an introduction to the problems and to direct the curator to the relevant literature and advisory bodies. It is addressed mainly to the curator working in the U.K. (with respect to legislation), but workers in other countries should find it useful since similar regulations and advisory services exist in many parts of the world.

The presence of radioactivity can all too easily be ignored, yet safe handling of radioactive substances is both straightforward and relatively inexpensive. Natural radioactive specimens can emit alpha, beta, and gamma radiations. All three types are hazardous to a person handling minerals, especially if there is the risk of inhalation or ingestion, but the alpha and beta emissions are not a problem in storage because these particles travel only short distances through matter. Gamma rays are much more penetrating, and so require special provision for a safe working environment. Fortunately, gamma rays can be readily detected using quite simple radiation detectors. The curator needs to be aware that specimens can be radioactive, and that legislation and guidance exist on their safe handling and storage. The objective of radiological protection is to keep all doses as low as reasonably achievable; it is the responsibility of every worker to ensure that this is done.

There are many naturally-occurring radioactive isotopes, but most of them present an insignificant hazard because they and their decay products have long half-lives, low abundance, or both. Only specimens containing appreciable uranium or thorium need concern us here. For example, the radioactive isotope of potassium,  $^{40}\text{K}$ , is only 0.012% of naturally-occurring potassium, has a long half-life ( $1.3 \times 10^9$  years), and decays to only two stable daughter products ( $^{40}\text{Ca}$  and  $^{40}\text{Ar}$ ). Uranium and thorium, on the other hand, have long decay series involving many radioactive daughter products; some of which are gaseous (e.g. radon) and some have relatively short half-lives, although the half-lives of the uranium and thorium isotopes themselves are very long.

There are several introductory and advanced texts on radiation and radiological protection but none have been written specifically for the curator. A useful, introductory booklet<sup>1</sup> 'Living with radiation' has sections on 'Radiation of natural origin' and 'Radiation effects' among others. Examples of more advanced texts<sup>2,3</sup> are those by Martin and Harbison and Shapiro, but they contain more material than is likely to be required by a curator.

## Legislation and advisory bodies.

The principal international body which is concerned with the standard of protection is the International Commission on Radiological Protection (ICRP).

It makes recommendations on radiological protection, which often form the basis of legislation. In the United Kingdom, the current legislation affecting the curator is summarised in the publications <sup>4,5</sup> entitled 'Guidance notes for the protection of persons exposed to ionising radiations in research and teaching' and 'Code of practice for the display of sources of ionizing radiations at exhibitions'. In the near future (probably within the next 12 months), however, the UK will implement the European Community's Directive on Radiological Protection. New regulations, approved codes of practice, and notes for guidance will replace existing regulations and codes. For this reason and also because of the inherent dangers in over-simplifying the Guidance Notes, no attempt is made here to state the regulations. The curator who handles radioactive specimens or places them on display should consult these documents. Limits of radioactivity, as laid down in current regulations, are given below in the section on 'handling', 'storage' and 'display', where these are free from ambiguity. Curators should also be aware of the Exemption Order<sup>6</sup> relating to geological specimens; this allows exemption from registration of persons and premises holding radioactive minerals, provided that the total weight of uranium and thorium contained in all the specimens does not exceed 100kg. The forthcoming regulations, however, will almost certainly supersede this order.

The principal advisory body in the U.K. is the National Radiological Protection Board (NRPB). It is a public authority which is a national point of authoritative reference in radiological protection. It provides technical services and training in radiological protection. It issues publications including evaluations of available radiation monitors and detectors. There are three NRPB centres in the U.K. (see Appendix 1).

The Health and Safety Executive can also give some advice on radiological protection.

#### Sources

Any ores or rocks containing uranium or thorium minerals (e.g. pitchblende) are likely to be significantly radioactive and should be treated accordingly. Rock-forming minerals which can contain more than trace levels of U and Th include allanite, monazite, xenotime, and zircon. Granites and black shales are occasionally rich in these elements, as can be some fossilised bones.

#### Handling

It is a sensible precaution to check, using a radiation detector, whether or not any new acquisition is radioactive. It is also good practice to wear a laboratory coat and plastic, disposable gloves when handling radioactive specimens. Handling times should be kept to a minimum, precautions taken against any risk of ingestion (e.g. handling away from any food or drink or cigarettes), and working conditions should be very clean. Any dust or small, unwanted mineral fragments can be collected using a dampened tissue, (see Disposal).

A shallow, plastic tray (about 1 metre x 0.5 metre) provides a good working surface and helps prevent contamination.

It is recommended that specimens be carried in plastic bags. These can be marked with a small sticker showing the trefoil radiation symbol (available from suppliers of laboratory signs). Washing the hands with soap and water is usually an adequate procedure after the handling of specimens, but any

possible contamination may be checked using a contamination monitor. If contamination remains on the hands after a second washing, the wearing of rubber gloves for two hours, to sweat out the contaminants, should be tried. Curators who frequently work with radioactive specimens might need to become 'designated' radiation workers (see the Guidance Notes, ref. 4). This could apply if the worker is exposed to a dose in excess of 7.5 micrograys per hour ( $\mu\text{Gy/h}$ ), see units in Appendix 2.

### Storage

Radioactive specimens are best stored away from general working areas but it is not necessary to store all of them in one place. Indeed, if this is done the total radiation may become sufficiently high to necessitate special protective measures and the assigning of a 'radiation area' (i.e. an area where the radiation dose averaged over any one minute exceeds 7.5 microsievert per hour ( $\mu\text{SV/h}$ ); see Guidance Notes, ref. 4).

Each specimen should be placed in a container and the drawers or cupboards marked with the trefoil radiation symbol. Uranium and thorium-bearing minerals give off radon gas so it is important that the storage units are vented to a well-ventilated room (or to the outside) to prevent build up of this gas and its solid daughter products, which attach themselves to dust particles in the air, with the attendant risk of inhalation.

### Display

Radioactive specimens may be displayed to the general public under conditions that accord with the Code of practice for the display of sources of ionizing radiations at exhibitions<sup>5</sup>. This code, however, will be superseded by the forthcoming legislation. Display cases should be vented to prevent build up of radon gas. Under the present code the dose rate to members of the public must not exceed  $5\mu\text{SV}$  per hour; shielding or effective barriers should be provided around the display to achieve this. One inexpensive way this can be done is described in the article by R.P. Hicks (this issue p. 297).

### Disposal

Information on the safe disposal of radioactive waste is given in the Guidance Notes. The exemption order allows for the disposal of small quantities of radioactive minerals, contaminated tissues and gloves, which should be deposited directly in the main refuse bin, but not in waste paper bins etc. Waste should be wrapped before disposal. Advice should be sought from the NRPB on the safe disposal of significant quantities of radioactive waste specimens (e.g. where the weight of uranium and thorium contained in all the waste disposed of in any one day on or from the premises, in the aggregate, exceeds 100 g; see Exemption Order<sup>6</sup>).

### Asbestos

Asbestos is the term applied to the fibrous forms of several minerals including chrysotile, riebeckite (the asbestiform variety is called crocidolite or 'blue asbestos'), anthophyllite, grunerite, and tremolite. Amosite ('brown asbestos') is a commercial name for a variety of asbestos that is mainly grunerite. Asbestos fibres are a hazard in that they can lead to asbestosis, mesothelioma, and lung cancer.

The quantities of asbestos handled by a curator are likely to be small but it is desirable to keep handling to a minimum, and to prevent the generation of asbestos dust, especially if it is likely to become airborne. Crushing of asbestos should be avoided but, if necessary, the mineral should be crushed under water.

#### Ultraviolet radiation

The worker who uses ultraviolet (UV) light sources for mineral identification, display or other purposes should be aware of the associated hazards, especially with UV of short wavelength (the exposure can cause erythema, skin scaling, keratitis and conjunctivitis). Two booklets <sup>7,8</sup> give information on these hazards and protection against them. Some 'do's and don'ts' include:

- DO
1. Keep exposure time to a minimum
  2. Protect eyes and skin
  3. Contain the radiation, whenever possible, within a sealed housing. (Observation ports should be made of suitably absorbent materials - such as some acrylics, PVC, and window glass).
- DON'T
1. Use UV lamps if the outer protective envelope is broken or cracked.
  2. Use short UV radiation in poor ventilation, (short UV radiation produces ozone from the oxygen in the air. Ozone has significant toxic effects at concentrations as low as 0.1 parts per million).

Acknowledgements: I am grateful to many colleagues who constructively criticised the draft version of this article.

#### References.

1. Living with radiation. National Radiological Protection Board, 2nd edition, 1981. HMSO, London.
2. An introduction to radiation protection. A. Martin and S.A. Harbison, 1972. Chapman and Hall, London. 214pp.
3. Radiation protection. A guide for scientists and physicists. J. Shapiro, 1972. Harvard University Press, Cambridge, Massachusetts. 339 pp.
4. Guidance notes for the protection of persons against ionising radiations in research and teaching, 2nd. edition, 1968 (5th impression 1976). HMSO, London.
5. Code of practice for the display of sources of ionizing radiations at exhibitions, National Radiological Protection Board, 1973. HMSO, London.
6. The Radioactive Substances (Geological Specimens) Exemption Order 1962; HMSO, London. England and Wales: S.I. 1962 No. 2712; Scotland S.I. 1962 No 2771 (S. 131); Northern Ireland: S.R. and O. 1962 No. 248.
7. Protection against ultraviolet radiation in the workplace. National Radiological Protection Board, (undated). HMSO, London.

8. Hazards of occupational exposure to ultraviolet radiation. D. Hughes (1978). Occupational Hygiene Monograph No. 1, University of Leeds Industrial Services Ltd.

#### Appendix 1.

#### National Radiological Protection Board Centres:

##### Southern

Chilton, Near Didcot, Oxon OX11 0RQ  
Tel: 0235 831600.

##### Northern

Hospital Lane, Cookridge, Leeds LS16 6RW  
Tel: 0532 679041

##### Scottish

155, Hardgate Road, Glasgow G51 4LS  
Tel: 041 4402201.

#### Appendix 2

##### Units

<u>Quantity</u>	<u>SI unit name and symbol</u>	<u>In other SI units</u>	<u>Old Unit name and symbol</u>	<u>Conversion factor</u>
Absorbed dose	gray (Gy)	$\text{Jkg}^{-1}$	rad (rad)	1Gy = 100 rad
Dose equivalent	sievert (Sv)	$\text{Jkg}^{-1}$	rem (rem)	1Sv = 100 rem
Activity	becquerel (Bq)	$\text{s}^{-1}$	curie (Ci)	$1\text{Bq} \sim 2.7 \times 10^{-11} \text{Ci}$

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# THE PUBLIC EXHIBITION OF URANIUM MINERALS: A NOVEL TECHNIQUE

by R. Paul Hicks

Visitors to the Mineral gallery of the British Museum (Natural History) will have seen that in recent years many of the more attractive, brightly coloured specimens have been removed, leaving noticeable gaps in the systematic display. These were all uranium minerals, and were removed in order to comply with recent radiation safety requirements for public exhibits.<sup>1</sup> It was found that to achieve the low level of radiation permitted (not more than  $5\mu\text{Sv}/\text{hour} = 0.5$  millirem/hour), the size and number of specimens that could be exhibited in the table cases were so reduced as not to be worthwhile, and consequently all the oxides and phosphates (and related species) or uranium were transferred to storage away from the gallery. Storing so many radioactive specimens together has increased some of the radiation hazards, but these problems affect only staff and have been dealt with satisfactorily.

Uranium minerals emit alpha, beta, and gamma radiation, of which only gamma, because of its penetrating nature, is of concern in displays of these minerals in closed glass cases. Radon is also produced, but because of the good ventilation of the gallery does not constitute a hazard to the public. For a wider discussion of the hazards involved in curating geological materials, see the article by P. Henderson in this issue. (p. 292).

Measurements showed that in air the distance needed to reduce radiation to the permitted level varied from 100mm. for a typical small 'secondary' mineral, through 450 mm. for a moderate sized specimen, up to 900 mm. for a large piece of uraninite, which is generally so radioactive because of the proportion of uranium and radioactive decay products it contains. From these tests it was obvious that the table cases with an inside depth of only 100 to 250 mm. were unsuitable for any but the most restricted of uranium mineral displays: for a comprehensive display, the wide safety zone required would cause viewing problems.

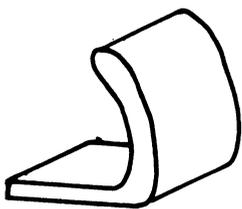
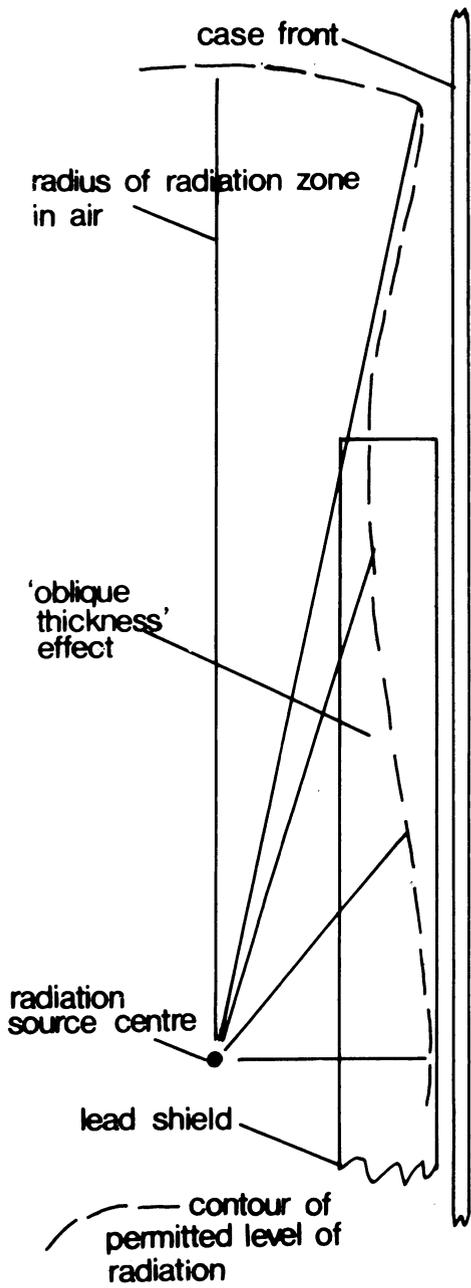
In view of these difficulties, the use of special radiation-absorbing glass was investigated, with disappointing results. Glass that was not too thick to distort the colour or image of the specimens did not absorb enough gamma radiation for the intended purpose, also, the amount required would have been prohibitively expensive.

Finally, a display was devised using lead to absorb the radiation, and mirrors to view the specimens; its design will be clarified by reference to the accompanying diagrams.

The display is housed in an upright, glass-fronted case, fixed against a thick masonry wall. In this position all the radiation is absorbed harmlessly, in inaccessible air spaces or the building fabric, or by the lead shielding.

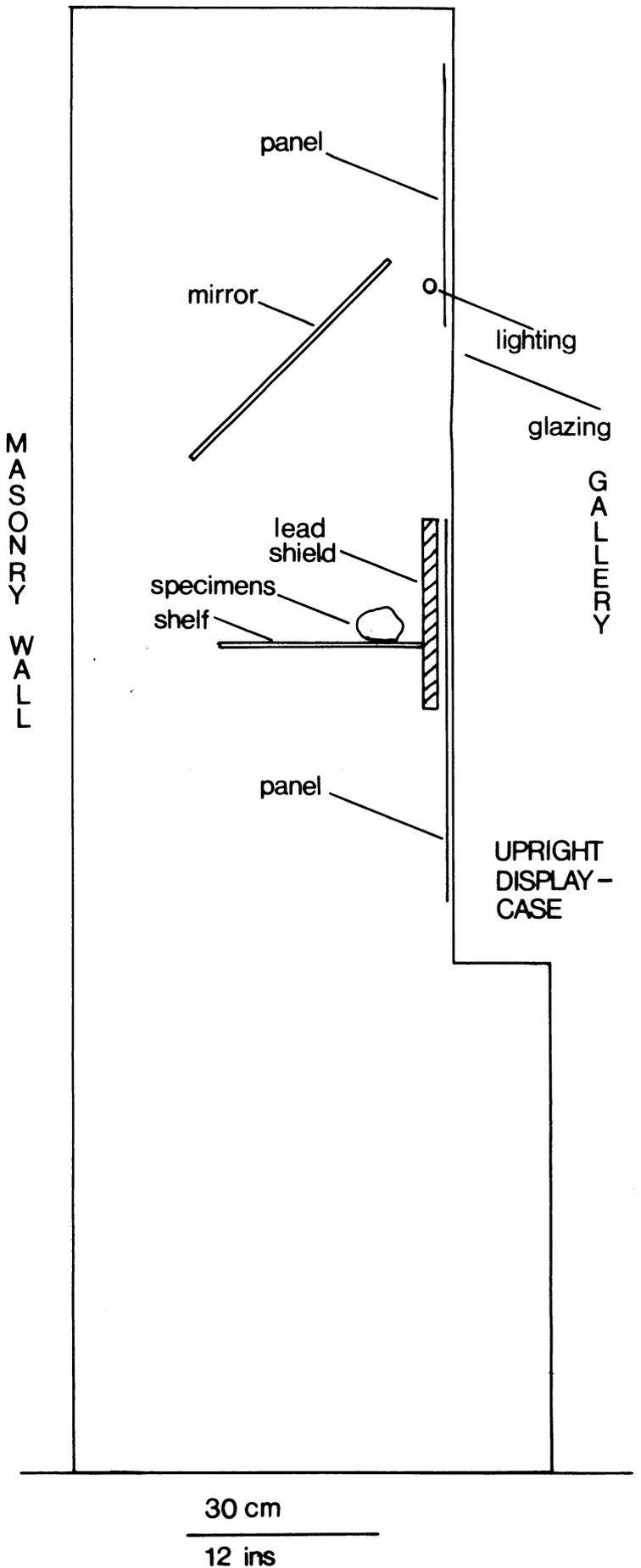
This shield is made from 4.5mm thick, 300 mm. wide lead sheeting, standing on edge to form a wall across the display. The design allows for up to 8 thicknesses to be used; laminating the shield in this way uses the lead more effectively and makes the construction more manageable. As the specimens are arranged in a row, a moment's consideration will show that the radiation field around them is in the form of a cylinder with a diameter that varies along the length. The height of the shield is fixed, so that to intersect and absorb the required 'sector' of radiation

Diagram showing radiation absorption in air and lead.



shaped supplementary shield

Schematic cross-section through the uranium mineral display.



the specimens are offset, with the more radioactive ones closer to the shield, which is appropriately laminated to absorb the radiation propagated perpendicularly to its thickness. With this done, radiation propagating at an angle to the shield is absorbed to a proportionately greater extent according to the 'oblique thickness' effect. Where with the more substantial uraninite-bearing specimens, additional lead may be incorporated in plinths and in partial covers over the specimens. Adjustments to the arrangement are made and checked by careful radiation measurements.

Experiment showed that by exploiting this 'oblique thickness' effect, using thin sheets of lead, it would be possible to graduate the absorption of a shield to match the transmitted radioactivity precisely to the permitted level. However, such a method, though using the least amount of lead, is over-complicated and not in keeping with the principle of radiological protection - that all radiation doses should be kept as low as is reasonably possible.

The display graphics are carried on panels, which are fixed inside the glass doors of the case to conceal the display fabrication and fluorescent lighting. The fluorescent tubes are fixed to the doors in order to facilitate their replacement away from the unshielded upper part of the display. The mirrors and other components of the display are arranged to give visitors of different height a satisfactory view of the specimens.

Although in practice a visitor cannot view the specimens from less than about 600 mm. this is sufficient to see even small details, and in addition, the exhibition of specimens is not restricted by their radioactivity.

#### References.

1 Code of practice for the display of sources of ionising radiations at exhibitions (1968): HMSO, London. (The 5th impression, 1976).

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# FROM MATCHBOX TO COMPUTER OR THE COMPUTERIZATION OF THE PHILIP CAMBRIDGE COLLECTION AT THE SEDGWICK MUSEUM by Stephanie H. Etchells - Butler

## Introduction.

Seventy-eight years ago, the Sedgwick Museum Cambridge was opened by King Edward VII and Queen Alexandra on March 1st 1904. Previously, the palaeontological collections had been housed in the Arts School, Sedgwick's rooms at Trinity College and eventually the Old Schools, which was the original Woodwardian Museum as it was then called. During the period of Sedgwick's professorship (1819-1873) and subsequently, the size of the collections increased enormously. Sedgwick and his successors, T. Mc.K. Hughes and J.E. Marr, directed the policy of the museum including the acquisition of major collections. Up to 1931, members of the academic staff collected, identified, mounted, labelled and often catalogued specimens each in his own field. Assistant staff were sent on collecting expeditions; Henry Keeping (Sedgwick's curator from 1864) was especially important as a collector, working in most areas of Britain and in strata of all ages from Cambrian to Recent; Charles Gray was largely responsible for collecting, preparing and mounting the mammalian bones from the gravel of the River Cam at Barrington. Henry Woods, Lecturer and later Reader in Palaeozoology, was author of the Catalogue of Type Fossils published in 1891. More recent workers have included E.A.N. Arber who made a complete catalogue of the fossil plants up to 1927 and Miss G.L. Elles who catalogued the graptolite collections.

The first full-time Curator was A.G. Brighton, appointed in October 1931. He came to a Museum with an estimated half-million specimens and no comprehensive catalogue nor even a cataloguing system. With Henry Brand as assistant in his early years and from 1954 with C.L. Forbes as Assistant Curator, Brighton not only initiated a system, but by the time he retired in 1968 had catalogued about 400,000 specimens.

## The Manual Cataloguing System.

The main resources provided by the Brightonian cataloguing system are the card index and shelf catalogue. The card index is arranged taxonomically with respect to the major invertebrate and vertebrate groups. Within each major group, the taxonomic names are arranged in alphabetical order, first by referring to the generic name and then to the specific name of the specimen. The information included on each card is brief, but includes all one needs to know for a preliminary investigation:- the Sedgwick Museum (SM) number, taxonomic name, basic stratigraphic and locality information, plus the storage information. Type and figured specimens are distinguished by having their information placed on blue and pink cards respectively.

The Museum itself is arranged stratigraphically from Cambrian to Pleistocene, and within each bay the collections are then arranged as in the card index, according to their respective taxonomic groupings. Thus entry to the collections is equally easy for either palaeontological or stratigraphical enquiries.

Each specimen is allotted an SM number when it is catalogued. The number is preceded by a letter, which in turn refers to the geological period from which the specimen originated. viz.

A = Lower Palaeozoic	H = Devonian
B = British Cretaceous	J = British Jurassic
C = Tertiary	K
D = Post-Tertiary	L
E = Carboniferous	M = Plants
F = Foreign Mesozoic	N
G = Permo-Triassic	

If there are several parts to the same specimen, as is the case with many of the vertebrate specimens, the catalogue number is always the same, but this will be followed by consecutive letters, each referring to a portion of the complete specimen. In the cataloguing of the early A-section, Brighton's systematic method of giving one specimen one number was not employed at first. This is illustrated by the fact that in many cases, four or five examples of the same species, sharing the same information referring to stratigraphy and locality, have all been attached to one tablet, and the tablet has been given one SM number. Today, each of the five specimens would be given its own catalogue number; complication of the old catalogue occurs when re-identification divides several specimens all with one number, among two or more species. Recataloguing the material in the early A (Lower Palaeozoic) section of the catalogue, will be an important undertaking in the near future.

The second and more informative resource available in the Museum is the shelf catalogue, which is in order by SM numbers. Information is typed on loose leaves held in large quarto-binders. Up to now, all the information known about each specimen has been added to these records. New information concerning catalogued material being added to the relevant record, facilitated by the loose-leaf nature of the binders and the spaces left between entries.

### Why Computerize?

The Brightonian system is a most efficient manual cataloguing system. The need to computerize arises when large numbers of records are involved, as will be the case with Philip Cambridge's material. It is expected that in time Cambridge's Collection will amount to some 20,000 specimens. At the present time about half a million specimens out of a total of approximately 800,000 have been fully catalogued, labelled and entered on cards and in the shelf catalogue. Although a specimen can be located quite easily within the Museum from palaeontological or stratigraphical data in a matter of a few minutes; - in trying to locate a collection such as Philip Cambridge's or for more complex enquiries such as - to locate all the Museum's Carboniferous Brachiopods, or a long list of all the material say, of all fossils from the British Bathonian, - then a system has to be used whereby a large number of specimens can be located together with all their relevant data, within a very short period of time. Without the advantages of a computerized system, such a search would involve several hours and possibly a prohibitive amount of work.

### The Sedgwick Computer Project.

Following research, commenced in the mid-1960s by J.L. Cutbill, the input of data from the shelf catalogue began in the early 1970s with a pilot project, which resulted in a variety of indexes being produced for the Museum's Devonian material. The aim of the project was to recreate the existing shelf catalogue without any loss of information whatsoever, but with vastly

CATALOGUE SHEET SEDG1 SPECIMEN  
 SEDGWICK MUSEUM, CAMBRIDGE Fig. I. Sheet of \*key J.69659-69660 \*g code 9

Parts \*part \*pt \*pn \*pd  
 Continuation \*part \*pt \*pn \*pd

Store Status \*store \*st

Ownership history \*oh \*f \*pers Cambridge, P. Coll.  
 \*date 1981 \*rn V337

Continuation \*note

Collection \*cs \*pers Channon, P.  
 \*date \*rn \*note

Locality \*ss \*loc  
 \*ll/\*gr  
 \*ln \*gd

Stratigraphy \*age Middle Lias \* Jurassic  
 \*comp \*rk \*loc Battledown Brickpit \* Chettonham  
 \*zone \*age \*sd

Reference \*a \*d  
 \*t \*r \*v  
 \*p \*rd

Continuation \*note

Research event \*re \*f identified \*prt \*pers Cox & Dr  
 \*date

Name \*gn \*tax + Amberleya + subimbricata  
 (d'Orbigny)

Description \*td \*key w  
 \*dd

Reference \*a \*d  
 \*t \*r \*v  
 \*p \*rd

increased indexing possibilities. All the information pertaining to a particular specimen obtained through letter, manuscript, label or journal was to be input onto the computer.

The program package which was originally used was the Cambridge Geological Data System (CGDS) developed by Dr. J.L. Cutbill. This was later replaced by GOS (nonacronymic) which is in use today, developed by Dr. M.F. Porter 1976-78 after Cutbill, and written in BCPL (Basic Cambridge Programming Language.) GOS is a program package for handling catalogues, and will not only be useful for handling museum information, but could be implemented in all sorts of ways, where large scale information sorting and retrieval may be necessary. The package is very flexible in that it can be run on machines other than the IBM 360 range of computers. No attempt will be made here to explain GOS in any detail, and the information below is given at a very basic level, - in order to describe briefly how museum records are input onto a computer in machine readable form, and how the package is able to manipulate the data to give the required result.

The data describing the specimens must be put into machine readable form which GOS can utilize. During the last project, typists copied the information directly from the catalogue records onto paper tape, which was later fed into the computer. Before direct typing onto paper tape could take place, the typists had to familiarize themselves with the input method. The Sedg 1 (SM1) and Sedg 2 (SM2) preformatted forms (SM1 is illustrated in Fig. 1) were developed, so that all the information concerning each individual specimen could be accurately placed in its appropriate field. By reference to one of Philip Cambridge's specimens in Fig. 1 it can be seen how material which comes into the Museum is documented. All the information is placed in the relevant keyword or detail fields. A keyword such as "Cambridge, P." will be used for producing a variety of indexes. All data is structured, for example "Mr. Philip Cambridge" can be split up into three main "elements":-

Cambridge,  
Philip,  
Mr.

Cambridge is the main element, followed by two subelements in the structured file - Philip and Mr. In order that correct indexes are eventually produced, it is essential that every piece of information concerning a specimen, right down to the journal page and figure number, is placed in its appropriate field. In order to explain more fully how information relevant to a specimen is catalogued and finally computerized at the Sedgwick, it is interesting to refer to the large number of specimens recently donated to the Museum, and collected over a lifetime by Mr. Cambridge.

#### The Computerization of the Cambridge Collection.

By referring to the flow diagram in Fig. 2 it can be seen how the computerized cataloguing system has developed alongside the Brightonian manual system.

Philip Cambridge, now based in East Anglia, has been collecting both invertebrate and vertebrate fossils for almost fifty years, - from every geological system and from every continent. Locations have been as diverse as, a World War II bomb crater, to "from the railway station, Chattanooga Formation, Chattanooga, U.S.A." The enthusiasm Mr. Cambridge has for palaeontology is exhibited by the care with which each specimen is meticulously wrapped in cotton wool

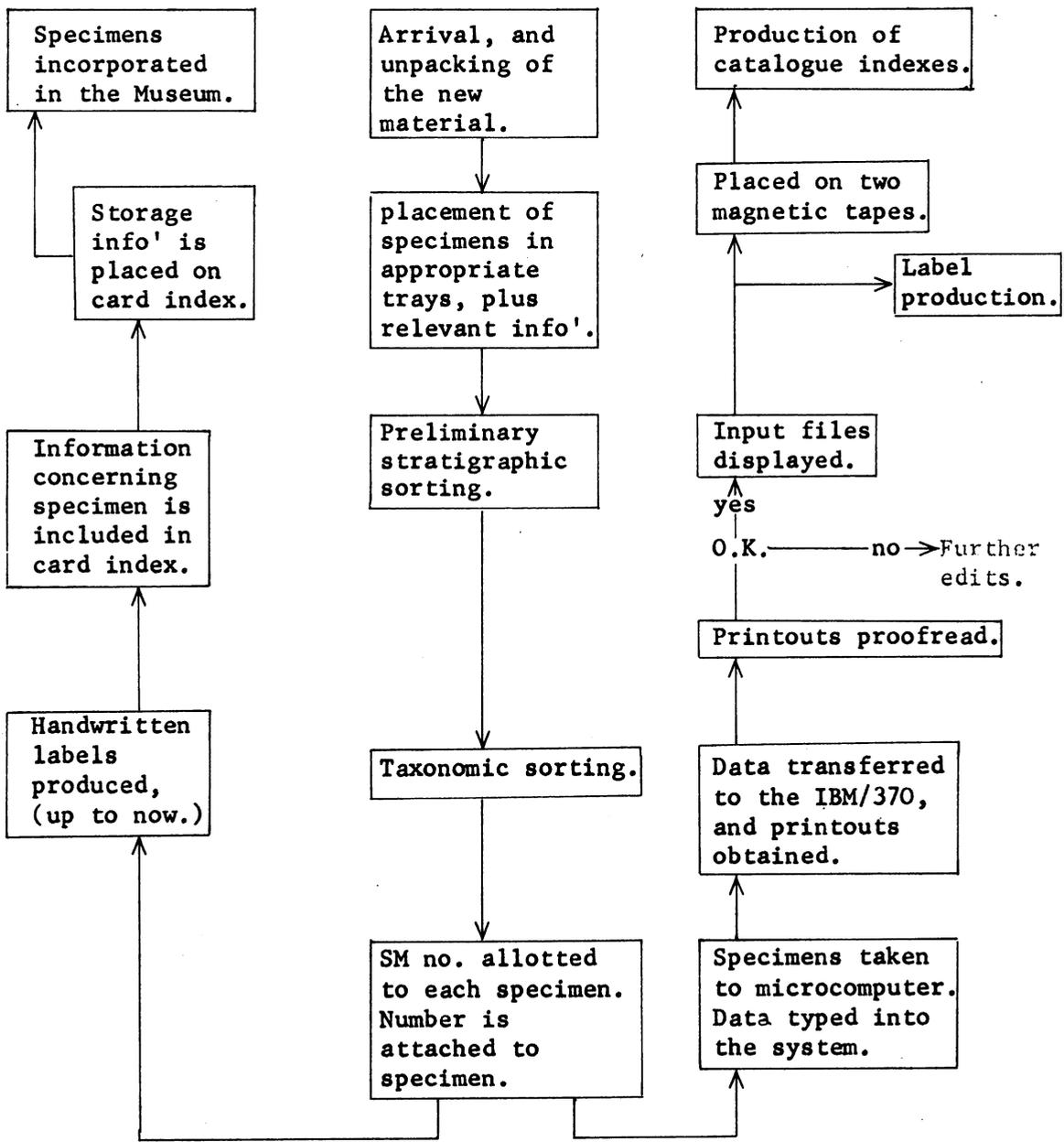


Fig. 2.

The cataloguing of the Philip Cambridge Collection.

A. The manual system.

B. The computerized system.

and placed in its individual matchbox. (Many of these matchboxes and other containers date from before the war, and may prove to be worth collecting themselves.) The specimens are vividly remembered:-

"The large piece of Upper Cretaceous fossil wood has a special memory for me. I was walking along a small beach alongside the South Saskatchewan River and I saw a piece of driftwood and kicked it out into the river. At least that was the intention. The chunk of "wood" turned out to be silicified and moved only a couple of feet; my toes were sore for a few days. At almost the same spot, just outside Medicine Hat, I learned not to slide down a nice icy chute on the banks into a thick snowdrift below. The snow concealed a healthy growth of Opuntia (Prickly Pear Cactus) and I spent some time having the spines removed before I could sit down comfortably. Travel is very informative." (From Cambridge's Museum Correspondence.)

The parcels which arrive from Norwich contain not only the matchboxed specimens, but also Cambridge's own handwritten index cards, which contain all the information known about each specimen, i.e. the taxonomic name, age, rock formation, locality, the collector's name and the name of the authority who identified the specimen. Cambridge's own personalised identity number is recorded on each of the specimen cards, and this too in turn is eventually recorded on the computer as ownership number. On unpacking the specimens, they, (together with any other information in the matchbox, such as an old label,) are placed in the appropriately sized specimen trays and from there to the standard museum trays to await further sorting. The next stage in this cataloguing process is to place each of Cambridge's small index cards with its appropriate specimen or specimens. As the index cards are in no particular order, the most efficient way of finding card and specimen is to sort the cards into their various taxonomic groupings:- Brachiopods, Ammonites, Reptiles or whatever, and from here card and specimen are easily matched up within a few minutes.

When a large quantity of material has undergone this preliminary sorting, a more detailed cataloguing process can get underway. The specimens within a large batch of material may range in age from the Cambrian of North America to the Cretaceous of Britain, therefore with reference to the flow diagram, the next stage is to sort the specimens into their respective geological age groups. The specimens are further subdivided within their age units into their taxonomic groups, on the lines of the Brightonian card index system, - from Foraminifera to Mammalia, - and again into alphabetical order within that taxonomic group. It is at this point that a SM catalogue number is given to each specimen, and this identity number is attached to the fossil itself. (This accession number is also noted down on Cambridge's index cards, as these will eventually be returned to him for his own reference.) We have now reached the stage where the initial computer input can take place.

The first batch of Cambridge's material to be computerized included specimens from the Devonian of North America and the British Jurassic. The information from Cambridge's labels was entered initially onto the SMI preformatted sheet, each piece of information being placed in its relevant field. However this stage has now been withdrawn, as, with experience it is now possible to type the information directly into the system in machine readable form, from Cambridge's labels. The information is typed initially into a micro-computer based in the Museum itself and stored on two double sided, double density, 5½" floppy discs, - the information entering the system being screened on a visual display unit. The material is also edited interactively using an

```

366
367 *key J.69659-69660 *gcode G
368 *ch*rn V337
369 *cs*pers Channon, P.
370 *re*tax +Amberleya +subimbricata (d'Orbigny)
371 *f identified *pers Cox < Dr.
372 *ss*age Middle Lias
373 *loc Battledown Brickpit * Cheltenham
374 #
375
376 *key J.69661-69662 *gcode G
377 *ch*rn V1001
378 *re*tax +Amberleya +capitanea (Mu-unster)
379 *ss*age Upper Lias
380 *loc Grantham * Lincolnshire
381 #
382
383 *key J.69663 *gcode G
384 *ch*rn V2400
385 *re*tax +Promathildia +sinemuriensis (Martin)
386 *f identified *pers Cox < Dr.
387 *ss*age Lower Lias
388 *loc Honeybourne Battle Head Quarters * Worcestershire
389 #
390
391 *key J.69664-69674 *gcode G
392 *ch*rn V2401
393 *re*tax +Promathildia +tenulcostata (Portlock)
394 *f identified *pers Cox < Dr.
395 *ss*age Lower Lias
396 *loc Honeybourne Battle Head Quarters * Worcestershire
397 #
398
399 *key J.69675-69683 *gcode G
400 *ch*rn V969
401 *re*tax +Promathildia +crickii Hudleston
402 *ss*age Upper Lias *loc Lincoln
403 #
404
405 *key J.69684-69686 *gcode G
406 *ch*rn V2414
407 *re*tax +Promathildia +lbex (Tate)
408 *f identified *pers Cox < Dr.
409 *ss*age Lower Lias
410 *loc Battledown Brickpit * Cheltenham * Gloucestershire
411 #
412
413 *key J.69687-69693 *gcode G

```

Fig 3A. The basic input file, i.e. the original information in machine readable form.

J.69652-69660  
 Cambridge, P. Coll., 1981, V337.  
 Collected, Channon, P.  
 Middle Lias, Jurassic; Battledown  
 Brickpit, Cheltenham.  
 Identified, Cox (Dr.), as Amberleya  
subimbricata (d'Orbigny).

J.69661-69662  
 Cambridge, P. Coll., 1981, V1001.  
 Upper Lias, Jurassic; Grantham,  
 Lincolnshire.  
Amberleya capitanea (Munster).

J.69663  
 Cambridge, P. Coll., 1981, V2400.  
 Lower Lias, Jurassic; Honeybourne Battle  
 Head Quarters, Worcestershire.  
 Identified, Cox (Dr.), as Promathildia  
sinemuriensis (Martin).

J.69664-69674  
 Cambridge, P. Coll., 1981, V2401.  
 Lower Lias, Jurassic; Honeybourne Battle  
 Head Quarters, Worcestershire.  
 Identified, Cox (Dr.), as Promathildia  
tenuicostata (Portlock).

J.69675-69683  
 Cambridge, P. Coll., 1981, V969.  
 Upper Lias, Jurassic; Lincoln.  
Promathildia crickii Hudleston.

18. The same information, this time seen as displayed records.

integral word processor. Therefore errors are altered easily, resulting in an initial input of a high standard, thereby reducing the work load in the later stages. Six drawers of the British Lias were typed onto floppy disc by this method. The close proximity and availability of the Cambridge IBM/370 computer enabled easy transferrance of information from micro-computer, to personal filespace in the Cambridge computer system. Once the Liassic material was transferred to the '370', printouts were obtained of the various sections, these were proof read - corrections being made to the respective files using ZED, the interactive text-editor.

These basic input files are then, through smaller 'sub-programs' within GOS itself, rearranged to give what is known as a "displayed" record (illustrated in Fig. 3). This record includes all the information which was originally typed into the system, but in its displayed format it closely adheres to the structure of the records in the manual shelf catalogue. Once the displayed file has been obtained this, together with the file, containing the original input material, is dumped securely to two magnetic tapes. The displayed file is used, in the case of the Cambridge material, to give computer produced labels. In the Brightonian manual system the labels were meticulously written out by hand, together with the updating of the card index, - a tedious and time consuming task. However, the displayed file can be printed out in label format as in Fig. 4. This is the result after the reduction of the original A3 format on a xerox reducing machine. These labels are then guillotined and placed in the appropriate specimen trays. The procedure of printing out a batch of displayed labels, having them reduced, guillotined and allotted to their respective specimens, greatly alleviates the burden of painstakingly writing the labels by hand, which for a thousand specimens (the approximate number in the six initial drawers of the Liassic material), would have been several days work.

The placement of computer produced labels within the specimen trays is the penultimate step in the cataloguing process. The fossils are finally incorporated in the Museum when they take their final placements in their respective areas. At this point, the storage information (comprising of bay and drawer number) is added to the card index in the manual system. This is noted down in pencil, facilitating easy alteration should it be necessary to reallocate specimens. The storage information is also input onto the computer but as a separate file from the main records file, - again for easy updating purposes. Should the need arise to display the storage information with the original input, this may be done by GOS, which enables the user to merge files together, thus incorporating material from separate sources. More generally, a variety of records from various sources can be combined to form a single structured file from which various indexes can be produced.

### Conclusion.

Currently, almost all the 500,000 catalogued specimens have been input into the Cambridge computer system, in machine readable form. A relatively small backlog of recently accessioned material, including the Cambridge Collection, together with recent published material citing SM specimens, has also been input into the system. Printouts of these records have been produced and they are now in the process of being checked. Once the files have been sorted out into their final format, - it is hoped that in the immediate future, catalogue indexes of Sedgwick material will be produced.

J.69478

Cambridge, P. Coll., 1981, V443.B.1.  
 Lower Lias, Jurassic; Fenny Compton,  
 Warwick (12 miles S.E.).  
Montlivaltia rugosa Duncan and Wright.

J.69490

Cambridge, P. Coll., 1981, V2077.  
 ibex Zone, Lower Lias, Jurassic;  
 Battledown Brickpit, Cheltenham.  
 Identified, Howarth (Mr.), as Berenicea  
archiaci (Haime).

J.69479-69481

Cambridge, P. Coll., 1981, V443.3.  
 Lower Lias, Jurassic; Down Hatherley,  
 Cheltenham, Gloucestershire.  
Montlivaltia rugosa Duncan and Wright.

J.69491-69495

Cambridge, P. Coll., 1981, V2015.A.5.  
 Lower Lias, Jurassic; Battledown  
 Brickpit, Cheltenham.  
 Identified, Ager, D.V. (Dr.), as  
Lobothyris punctata (J. Sowerby) var.

J.69482-69483

Cambridge, P. Coll., 1981, V1398.  
 Lower Lias, Jurassic; Warwick.  
Montlivaltia mucronata Duncan (see  
Oppelismilia).

J.69496-69498

Cambridge, P. Coll., 1981, V2015.4.  
 Marlstone, Middle Lias, Jurassic;  
 Leiston, Lincolnshire.  
Lobothyris punctata (J. Sowerby).

J.69484

Cambridge, P. Coll., 1981, V1810.  
 Lower Lias, Jurassic; Rhoose Cliffs,  
 Glamorganshire, Wales (south).  
 Identified, Dighton-Thomas (Dr.), as  
Montlivaltia (Oppelismilia) sp.

J.69499

Cambridge, P. Coll., 1981, V2541.  
 Upper Lias, Jurassic; Vigo Brickpit,  
 Northamptonshire.  
Discina reflexa J.de C. Sowerby.

J.69485-69489

Cambridge, P. Coll., 1981, V1042.  
angulatus Zone, Lower Lias, Jurassic;  
 Marton, Gainsborough (near),  
 Lincolnshire.  
 M.P.S., p.36 pl.x figs.15-18,  
Montlivaltia papillata Duncan.

J.69500-69502

Cambridge, P. Coll., 1981, V743.  
 Lower Lias, Jurassic; Honeybourne  
 Brickpit, Worcestershire.  
Discina holdeni Tate.

Fig 4. The displayed file printed out in label format, prior to guillotining.

The card index is still a very important resource within the Museum and will continue to operate alongside the computerized system, as a valuable source of information. The shelf catalogue in its present form will remain, - the results of computerization giving way in effect to a miniaturized shelf catalogue, on microfiche, whereby rapid large scale information retrieval will be available. It is hoped that the success of the present computerization project will be a major contribution to museum documentation.

#### Acknowledgements.

I thank Dr. C.L. Forbes, Dr. M.F. Porter, M.G. Dorling, R. Long and particularly, Philip Cambridge, for many helpful comments and provision of information.

#### References.

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Stephanie H. Etchells-Butler,  
Sedgwick Museum,  
Cambridge.

# LOST AND FOUND

## compiled by Hugh S. Torrens

In the previous two issues we reported the loss and subsequent finding of the Lost and Found columns destined for issue vol. 3 no 2/3. Since the tale of what happened to the missing postal package is an instructive one and also demonstrates some of the skills needed to uncover lost geological collections we tell it here.

The package was deposited with the secretaries of the Keele University, Geology Department in late August 1981 and it was assumed that its subsequent loss was the fault of the Post Office who were roundly blamed (GCG 3 2/3 p. 68). Then on 19th March, 1982 Tim Pettigrew received it quite out of the blue after it had been lost 6½ months! It had been postmarked only two days earlier 17th March 1982, so it seemed difficult to blame the Post Office. It was then found to carry one of the postage stamps issued by the Post Office to celebrate the centenary of the death of Charles Darwin! Since Darwin died on 19th April 1882 and the commemorative stamps were only issued on 10th February, 1982, the package must then have been posted after this date. The only possible explanation is that the package lay at Keele unposted from late August to mid March. We must apologise to the Post Office, and hope for some secretarial improvement.

## 1. Items & information SOUGHT

### ERRATUM

No. 129 in the last issue should have read 128.

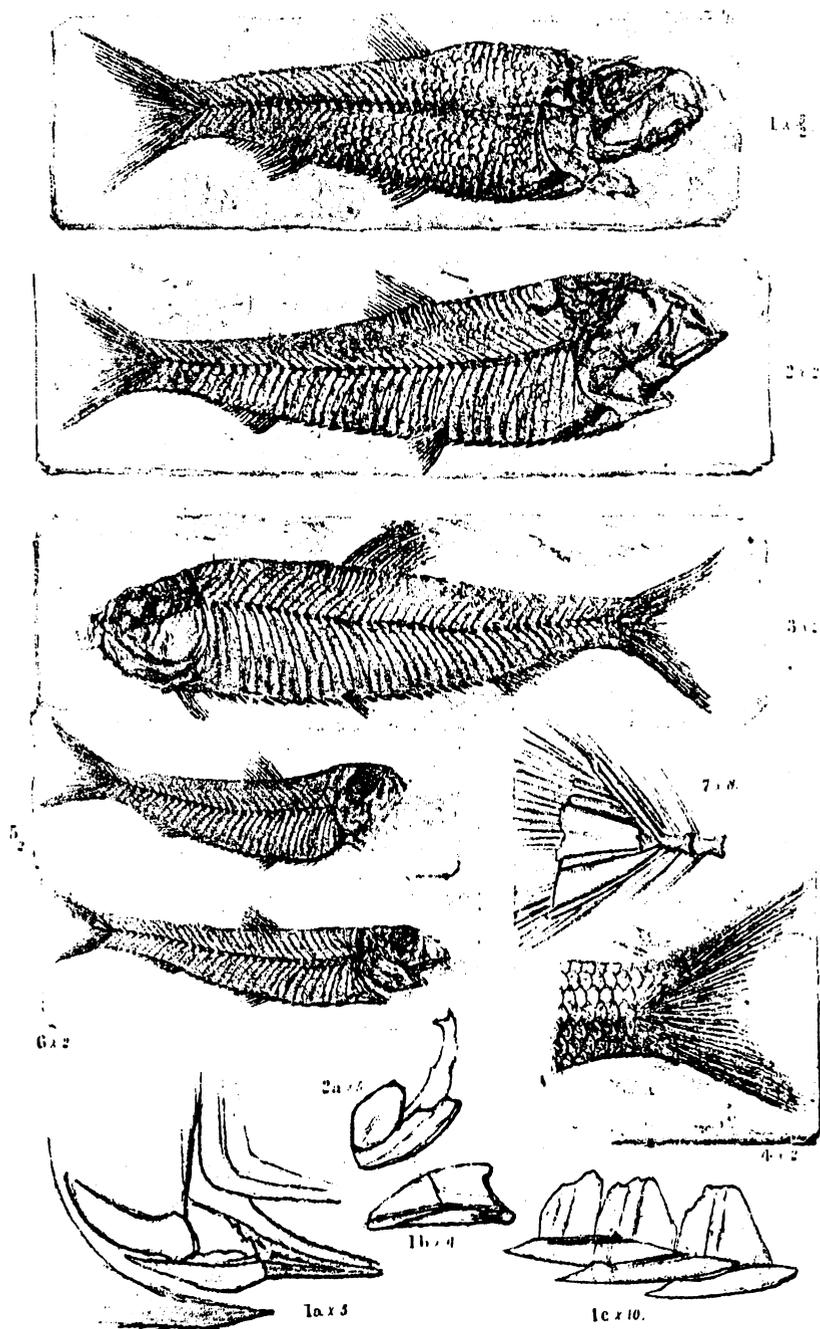
129. COLENUTT, George William (c.1862-1944)

Together with Mr. W.J. Quayle (see no. 118) from Southampton, I have just finished writing a manuscript of fossil fishes and prawns from the "Chapelcorner Fish Bed" (Osborne series) of the Isle of Wight. However, we have still an important problem to solve as I have found no figured specimen (cotype) of the new species Clupea vectensis described by E.T. NEWTON (1889). Q.J. Geol. Soc. London, Vol. 45: 112-117, pl. IV and reproduced here. A) The same is almost true for the fossil prawns described by H. WOODWARD (1903), Geol. Mag., N.S., (IV), vol. X, p.97-99 pl.V and again reproduced here. B) These prawns have been described as Propalaemon osborniensis and P. minor. Six of the seven figured specimens are still missing as the original specimen of Pl. V, fig 2 is the only one to have been found again by Mr. QUAYLE. All this material (fishes and prawns) was initially in G.W. COLENUTT's collection.

So, I would be deeply grateful to you if you could place a note under "Collections and Information Lost and Found", in the next issue of the Geological Curator. In fact, as the paper is to be published on the first semester of 1983 in the Bull. B.M. (N.H.), I have to decide rapidly if it is necessary to choose a neotype for Clupea vectensis.

Dr. Jean Gaudant,  
University Paris VII  
17 rue du Docteur Magnan,  
75013 PARIS,  
France.

See also FOUND SECTION no. 129.



F. H. Michael del. et lith.

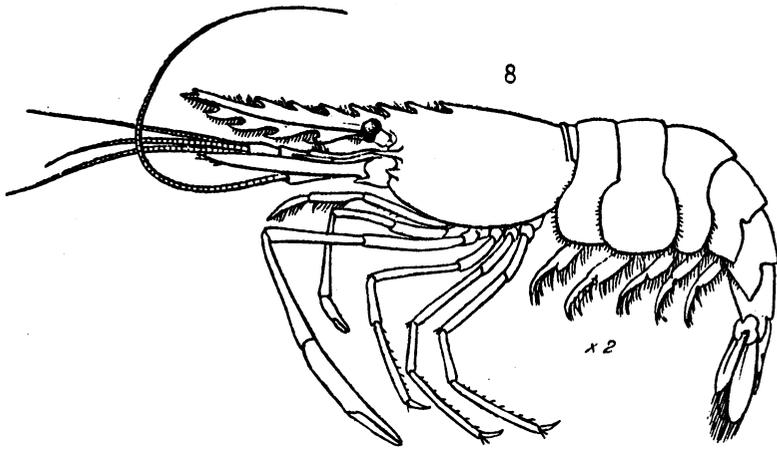
Mintern Bros. imp.

## CLUPEA VECTENSIS.

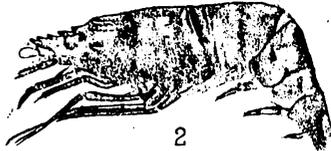
## EXPLANATION OF PLATE IV.

*Clupea vectensis*, new species from the Osborne Beds of the Isle of Wight,  
in the possession of Mr. G. W. Colenutt, of Ryde.

- Fig. 1. Specimen from Ryde House.  
 1 a. Opercular apparatus of same specimen. *op.*, operculum; *sub. op.*, sub-operculum; *i.p.*, interoperculum; *p.op.*, preoperculum; *cl.*, clavicle; *br.*, branchiostegal ray.  
 1 b. Mandible from left side of same specimen.  
 1 c. Three abdominal spines and plates.  
 2. Specimen from Ryde House.  
 2 a. Maxillary bones of same specimen.  
 3. Specimen from King's Quay.  
 4. Tail of a specimen from King's Quay, showing scales.  
 5. Small specimen from Ryde House.  
 6. Small specimen from King's Quay.  
 7. Bones of the tail of a specimen from Ryde House.



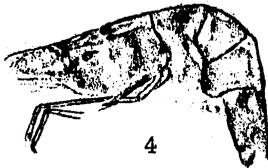
1



2



3



4



5



6



7

G.M. Woodward del. et lith.

West, Newman imp.

Figs. 1-7. Fossil Prawns &c. Osborne Beds, I. of Wight. †.  
 Fig. 8. Palæmon affinis, M. Edw. (recent) ‡.

EXPLANATION OF PLATE V.

FIGS. 1-4.—*Propalæmon Osborniensis*, H. Woodw. Osborne Beds: Isle of Wight.  
 FIGS. 5-7.—*Propalæmon minor*, H. Woodw. Osborne Beds: Isle of Wight.  
 FIG. 8.—*Palæmon affinis*, M. Edw. Recent: Port Jackson, Sydney, New South  
 Wales.

130. Maltese Terra Sigillata

Dr. G. Zammit - Maempel is preparing a monograph on Terra Sigillata Melitensis and its Seals. Information is earnestly requested from Curators who have not already been contacted or who have not as yet returned the questionnaire, about:

1. Maltese sealed earth material in their care stating Nature/Form available (blocks, bowls/jugs, balls, loaves, medals, models, dices etc.) --- Reg. No. -- Colour--Seal on obverse and reverse--Size/weight--Past history/History of acquisition (purchase/donation,date,etc.)--any other information. Photographic documentation highly appreciated.
2. Present whereabouts of sealed earth material collected by: Franciscus Erasmus--- M.B. Valentini ---J.C. Kundmann.
3. Availability of other Terra Sigillata (form and origin/seal).

T.S.material was a common item in ancient cabinets of Natural History. It is now encountered mostly in Departments of Geology/Mineralogy (mostly unrecognised) and in Museums of Medicine/Pharmacy. Very often Curators of Nat. Hist. Cabinets/Dept. Mineralogy are completely unaware of the significance of such items but if they write informing him what they have (medals/Cups/small or large balls/loafs/dices or other items bearing special seals usually incorporating a Maltese Cross or St. Paul), he could visit the collection personally or correspond with the Curators concerned for further details.

Dr. G. Zammit-Maempel,  
53 Main Street,  
Birkirkara,  
Malta,  
(Ass.Curator, National Museum of Natural History, Malta).

# LOST & FOUND

## 2. Items & information FOUND

40. MURRAY, Peter M.D. (1782-1864)

In GCG 1 (10) p.492 and 2 (2) p.83 we gave details of some of his collection which had found their way in part to Australia and some sparse biographical information about this Scarborough collector of fossils. It now emerges that Peter Murray is rather better known than we claimed since his biography was published on his death in 1864 by Rev. R. Balgarnie whose title page we reproduce below:-

“THE BELOVED PHYSICIAN;”

MEMOIR

OF

PETER MURRAY, M.D.,

OF BELLE VUE, SCARBOROUGH.

BY THE REV. R. BALGARNIE,

*Minister of the Bar Church.*

COLOSSIANS iv. 14.

LONDON:—

SIMPKIN, MARSHALL, & Co., STATIONERS' HALL COURT.

SCARBOROUGH:—

S. W. THEAKSTON, St. NICHOLAS STREET.

1864.

This 146 page biography says a little about his geological activities. Born in Jamaica he came to England in 1786 and started attending St. Andrews University at the age of 12. In 1799 he enrolled as a medical student at Edinburgh University and then "especially applied himself to chemistry, botany and mineralogy". He started in medical practice first at Knaresborough in 1803 where he remained until 1826, when he moved to Scarborough. He was elected curator of the Scarborough Philosophical Society in November, 1829 and although he published little he built up an important collection of fossils especially of the local fossil plants so common in the Scarborough area. Two new species of these were named after him by Lindley, and Hutton and by Brongniart. He died on 27th February, 1864 aged 81 leaving many friends and a geological collection of some importance but of whose dispersal we know all too little.

90. LAVIN'S MUSEUM, Penzance. (CGC 2 67, 3, 23)

Owen Baker of 7 Canterbury Road, Exwick, Exeter, EX4 2EQ, has very kindly sent us a file of information on the Lavins of Penzance, their Museum and Mineral Collections for which we are very grateful. It can be divided thus:

## 1) BIOGRAPHICAL INFORMATION.

## a)

LAVIN, JOHN. *cf. Bibl. Cornub.* 1204. Stationer, and Mineralogist and Geologist; Built the Egyptian hall, Chapel st. Penzance; *dead.* m 5 Feb. 1822 at Illogan, Frances Roberts of Paul. She d Chapel st. Penzance 19 Mch. 1864 aged 61.—Issue i Edward Lavin, formerly mineralogist and printer, Chapel st. Penzance; He sold the whole of his collection of minerals to Miss Burdett Coutts (now Baroness Burdett Coutts) who gave the collection to the Oxford University Museum; Proprietor of Mount's bay house hotel, The esplanade, Penzance, *dead.* His widow (formerly Miss Herneman) keeps the hotel 1883. A dau. b Penzance 24 Nov. 1868.—ii John Lavin, biscuit baker d North parade, Port Adelaide, South Australia 2 May 1881. -

## Source.

G.C. Boase. 1890.

COLLECTANEA CORNUBIENSIA p. 478.

## b)

About 1839, Mr. Edward (recte John) Lavin erected in Chapel Street, opposite the "Union" hotel, a new house, planned and built in imitation of the Egyptian Hall, Piccadilly, London. Few had, at this ante railway period been in London; and the house, from its peculiar ornamentation, excited considerable interest. It was probably much more satisfactory to Mr. Lavin than it was to his neighbours, as it cut off a view of Penzance pier which they had formerly possessed, and, perhaps still worse, caused all their chimneys to smoke. In one portion of the Egyptian Hall Mr. Lavin for many years kept his cases of minerals, and was there visited by all collectors who desired to make purchases of rare specimens. The fate of this well-known collection may be briefly stated. Mr. Edward Lavin, the son, about 1865 sold it for £3,000 to the Baroness Burdett Coutts, who presented it to the University Museum, Oxford, where it is now preserved.

## Source.

G.C. Boase. 1883-4 reprinted 1976

REMINISCENCES OF PENZANCE

## 2) ARCHITECTURAL

The most remarkable building in this street is Nos. 6-7 Egyptian House. From an examination of the Deeds of the property it is clear that an older building on the site, variously in the ownership of Richard Hichens of Madron in 1800, and afterwards of John Fleming, Perukemaker, was put up for auction by James Tregarthen, Master Mariner, of St. Mary's in Scilly. The sale took place at the Three Tuns Hotel in Penzance on 3 April 1835, when the property was purchased by John Lavin, mineralogist, of Penzance. G.C. Boase states that the "Egyptian Hall" in Chapel Street was built by John Lavin, and a Deed of 1850 refers to his occupation of the Dwelling House Shop and Premises at 6-7 Chapel Street "some time since erected and built by him". Furthermore

the Royal Arms high up on the street facade are those adopted by George III in 1814 and used by his sons George IV and William IV, but not by Queen Victoria.

With a fair degree of accuracy therefore, the building can be dated 1835-36, and the architect may well have been John Foulston (1772-1842), pupil of Thomas Hardwick, who practised in Plymouth from 1811 to 1842. In 1823 he demonstrated his ability to build in the Egyptian manner in his design for the Classical and Mathematical School in Ker Street, Devonport. This, in fact, became the Civic and Military Library, containing an impressive mineral collection presented by Sir John St. Aubyn Bart. It closely resembles the Egyptian House in Penzance and is still extant. (see illustration)

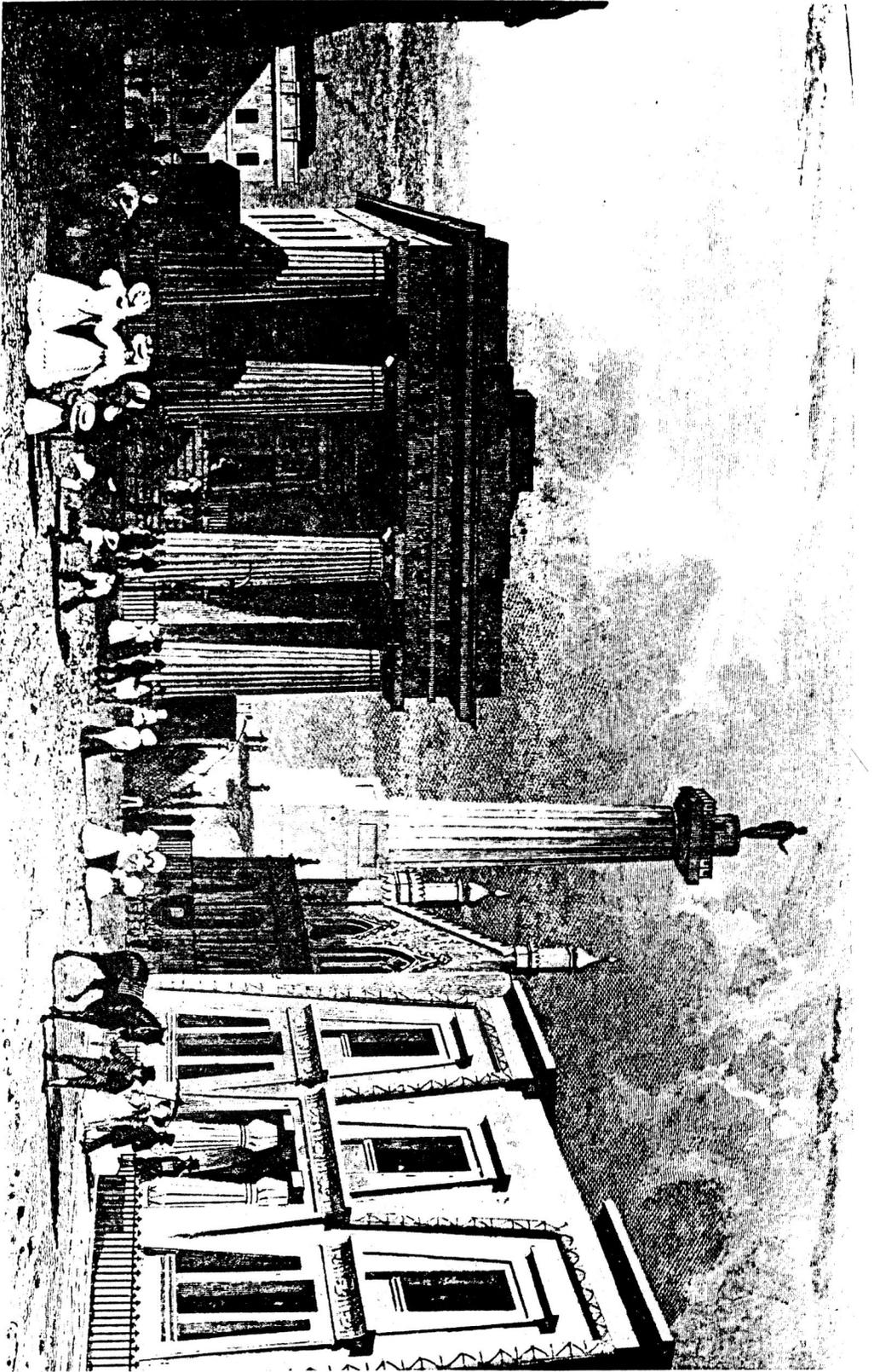
During a period of popular interest in Egyptology, Peter Robinson (1776-1858), a Midlands architect and pupil of Henry Holland, had designed and built a museum for a site in Piccadilly, London, in 1811-12. This too had an ornate facade in the Egyptian style. About 1824-25, Robinson rebuilt the great house "Trelissick" at Feock for Thomas Daniell, and this has given rise to the theory that he designed Penzance's Egyptian building. The oft-repeated assertion that the Penzance building is an exact copy of the one in London is not correct, and if one compares Penzance with Devonport, it is certainly possible that Foulston designed both as stated in the Sunday Times in March 1972. Lavin's building also housed his own impressive collection of minerals which were later sold by his son Edward, also a mineralogist, to the Baroness Burdett Coutts, who presented them to the Oxford University Museum.

Up to about 1960, this building was dirty and scarcely ever noticed. Then it changed hands; Mr. Norman Shipton had it painted in bright colours to the astonishment of very many people. In the summer of 1973 scaffolding, that had been erected against the main facade for several years, was removed, to reveal a refurbished building, with new paint predominantly in browns and creams. The architect responsible, Mr. Paul Pearn, A.R.I.B.A. of Plymouth, stripped layers of paint from the elaborate mouldings, many in Coade stone, and came to the conclusion that the colours now visible are the same as the original. Over the years, the very ornate glazing bars of the ground floor windows had been removed, as well as those of the doors. All have been faithfully restored under the new ownership of the Landmark Trust, and once more this splendid building, wholly reconditioned, takes pride of place in Penzance.

Source

P.A.S. POOL. 1974.

The history of the town and borough of Penzance. pp. 186-188



### **Devonport Town Hall and Column - 1829**

George IV granted authority for Plymouth Dock to become the Borough of Devonport in 1823. This unusual group of buildings designed by John Foulston is an expression of the town's civic pride at this time. Foulston experimented here with a variety of architectural styles—the Classical town hall and column, Oriental Mount Zion chapel and Egyptian Civil and Military Library (later the Odd Fellows Hall).

The Civil and Military Library housed the St. Arbyn Mineral Collection which was donated to the Borough of Devonport in 1824 (not 1834 as stated in GGC vol 1 no. 3 p.133 where the collection is described). It provides yet another mineralogical link with an Egyptian style building which, as at Penzance, still stands.

## 102. MITCHELL, John (1848?-1928)

My attention has been drawn to 'Information sought' item 102 in issue 2 (9-10), concerning John Mitchell and Mike Taylor's query on his trilobites in the Perth Museum. I can provide the following (partly from his obituary in the Proc. Linn. Soc. N.S.W. for 1928):

Born about 1848 in Ballieston near Glasgow, Mitchell came with his parents to Newcastle, N.S.W., in that year. In 1873 he entered the N.S.W. teaching service, and after training taught for 9 years at Balranald before being transferred to Bowning on the western edge of the Yass Syncline. He became interested in palaeontology there, and made extensive collections from the Yass Silurian (reputedly even using gelignite in some cases!), and later from around Narellan where he taught from 1890 to 1896. After becoming Principal of the Newcastle Technical College and School of Mines in 1898 (a position he retained until retirement 16 years later), he published a number of papers on the Yass brachiopods and trilobites, mostly with Robert Etheridge Jr., and all in the Proceedings of the Linnean Society of N.S.W. Mitchell died in 1928, aged 79.

The bulk of Mitchell's collections was purchased by the Australian Museum, although he had previously sent specimens to Foerste, to the National Museum of Victoria, and (it now seems) to the Museum in Perth, Scotland. Foerste's material is now in the British Museum (Natural History), including the holotype of Encrinurus mitchelli, which I have recently redescribed (Palaeontographica A, 168). The specimen in Perth labelled Bronteus juskensis is presumably B. jenkinsi -- redescribed and placed in Kosovopeltis by Chatterton & Campbell, 1980 (Palaeontographica A, 167)

D.L. Strusz,  
Bureau of Mineral Resources,  
Canberra, Australia.

## 108. ABSALOM Robert G. Dr., (1902 - 1975)

I am writing in connection with your appeal in the latest issue of the Geological Curators' Group Newsletter (Vol. 3, No. 1) for information concerning Absalom's "coal-ball" slides from Haltwhistle.

As pointed out in "Collections Found No. 108", Absalom was the Curator of Natural History here at Glasgow from 1931 to 1946 and we have a large collection of his specimens. However I am afraid that we do not have the material for which you are looking.

In case it is of interest I include details of Absalom's material which we do have in our collections. The bulk of the collection is made up of hand specimens of Scottish Carboniferous plants but it also includes 13 slides. These are of Pityx antiqua, Pityx primaeva, Pityx sp. and Dadoxylon brandlingii. The Pityx specimens are from Lennel Braes and are marked Witham so I assume they are the specimens mentioned in his paper "On a specimen of Calamopityx (Eristophyton) beinertiana (Goepfert) containing annual rings" in, I think, the North West Naturalist. The Dadoxylon brandlingii slide is from Newbiggen-on-Sea and is marked "J. MacKay 1861" who I assume was the collector.

In addition there are typed manuscript copies of 4 of Absalom's papers together with a typed copy of a letter from D.H. Scott. In this he answers queries put to him by Absalom including that quoted in the above mentioned paper concerning Calamopitys (Eristophyton) beinertiana.

Alastair H. Gunning,  
Assistant Keeper,  
Department of Natural History.  
Art Gallery and Museum,  
Kelvingrove,  
Glasgow, G3 8AG.

Reply by Chris Cleal

Dear Mr. Gunning,

I was not aware that Absalom had written any papers other than the Haltwistle one in the 1929 Proc. Univ. Durham Phil. Soc. Do you have a list of these other publications, which I could borrow? We are presently preparing a complete bibliography of British palaeobotany, to which Absalom's papers should obviously be added. As far as I am aware, nobody else has referred to them, which seems a little puzzling.

Do you know where Absalom went after 1946? Did he retire or did he move to another museum? If the latter, perhaps his Haltwistle specimens are there.

C.J. Cleal,  
Geological Conservation Review Unit,  
Nature Conservancy Council,  
Geological Conservation Review Unit.  
Pearl House,  
Bartholomew Street,  
Newbury,  
Berkshire RG14 5LS.

Dear Dr Cleal,

I am pleased that the information proved of some use. I am afraid that I do not have full references at present of the papers I mentioned in my letter but invoices for reprints which are attached to the typescript copies indicate that they were published in the North Western Naturalist in the early 1930's. I have not had a chance to see this journal as yet but as I want a note of these references myself for our files here in the museum I will send you a list when I track down the full information. Meanwhile the titles of the four papers are as follows:-

1. On a specimen of Calamopitys (Eristophyton Beinertiana (Goepfert) containing Annual Rings.
2. A New Plant Structure from Coalballs.
3. Spiropteris sp. from the Coal Measures of Westbury, Yorkshire. (Absalom states that this specimen was in Liverpool Museum and was collected by a Mr. Moore who was Curator of the Derby Natural History Section at Liverpool).
4. Two Unpublished Letters of Hugh Miller.

After Absalom left Glasgow he became Director of Newport Museum and Art Gallery where he remained until he retired in 1967. The present address of this museum is John Frost Square, Newport, Gwent NPT 1PA.

It may also be worth contacting the National Museum of Wales. When Absalom left Glasgow a note about him was included in our Annual Report for 1945-46. This mentions that in 1927 he gained a special appointment for work on fossil plants in the National Museum of Wales before, in the same year, he became Keeper of Geology at Liverpool Museum.

The enclosed obituary of Absalom is from the Museums Bulletin, vol. 14, No. 12 for March, 1975.

Alastair H. Gunning,  
Assistant Keeper,  
Department of Natural History,  
Art Gallery & Museum,  
Kelvingrove,  
Glasgow, G3 8AG.

#### Dr R. G. Absalom, MSc, FMA

Members of the museum profession, particularly those of an earlier generation, will learn with regret of the death of Dr Robert Gregory Absalom at his home in Newport, Gwent, on 8th January at the age of 72.

A Tynesider by birth, Robbie (in the north, Bob in the south) Absalom studied geology at Armstrong College, Newcastle upon Tyne, then a constituent college of Durham University. He was awarded his PhD degree in 1927 and in 1928 took up the post of assistant in the Department of Geology in Liverpool Museums and was shortly afterwards promoted to Keeper. Two years later he deprived Liverpool of both his own services and those of the Director's secretary, by moving to Glasgow to become Curator of Natural History, and by marrying the lady, Miss Ethel Etheridge. In 1946 he accepted the post of Director of Newport Museum and Art Gallery in South Wales, then a comparatively small one-man affair. He saw the job as a challenge and an opportunity of extending his interests, and Newport was fortunate in obtaining the services of a man of long and varied experience and sound academic background.

Soon after his arrival in Newport Absalom became active in museum affairs at national level. He was a member of the Council of the Museums Association and of its Education Committee at a time when important revisions were being made to the Diploma regulations with a view to raising standards and professional status, and coinciding with the introduction of the Associateship and Fellowship. He felt, however, that whilst acquisition of the Diploma, and with it the AMA, gave satisfaction and status within the profession, it had little practical value in terms of conditions of employment and salaries until its status was recognized by employers of museum staffs, notably local government authorities. A firm believer in the principles of collective bargaining, and an active Nalگو member — he was president of his local branch — he maintained that negotiations on behalf of museum staffs in local government museums could be conducted only through Nalگو. He was therefore appointed the Association's representative to that body and was responsible for the initial spade-work in obtaining recognition of the Diploma as a professional qualification.

Showing splendid indifference to the delicate question as to whether Monmouthshire (now Gwent) was in England or Wales, Robbie Absalom determined that his museum at least should enjoy the benefits, if any, deriving from both sides of the Bristol Channel and, whilst maintaining the close relationship with the National Museum of Wales and its Affiliation Scheme, he became involved in the activities of the South-western Federation of Museums and, later, played an important role in the formation of the country's first Area Council, in the South-West. He also became involved, a few years later, in founding a similar Council for Wales, where his experience and advice were invaluable; to him any organization which furthered the cause of museums in general was worthy of support, regardless of location.

The last few years of his service in Newport were marred by a serious illness which resulted in the loss of both legs, and it was a matter of great distress to him that he was unable to participate fully in the planning and designing of a new museum building for Newport. By nature a shy man, Robbie Absalom through this critical period of pain and torment revealed unsuspected resources of courage and determination, and actually returned to duty for a few months before he retired, at the end of 1967. Remarkably, he continued with his university extra-mural lectures and was chairman of the county Naturalists' Trust in which capacity he attended meetings and conferences and even conducted field excursions, driving himself around in a specially adapted motor-car. Severely incapacitated, he refused to become an invalid.

The passing of Robbie Absalom represents the end of a transitional era in the history of museums in Britain. He and others of his generation, all scholarly and dedicated people, did much to sweep away the dusty image of museums and introduce a new element of professionalism and academic and technical proficiency.

C.B.

## 109. Pleistocene - Holocene Avifauna from Britain.

I noticed in the latest issue of the Geological Curators' Group Newsletter that you are looking for information on Late Pleistocene/Early Holocene bird material from British sites. I am afraid we only have one such specimen in our collection but it may be of interest.

The specimen is the proximal end of the left humerus of a swan, probably the mute swan, *Cygnus olor*. Its museum registration number is G1981-112. A label states that it was collected in 1877 fourteen feet below the surface during the excavation for the Paisley Gas Tank, Paisley (Map reference NS 473643) and belonged to a Mr. Coulthurst. I have no information as to the identity of this gentleman.

It is probably Late-Devensian in age. However, although Late-Devensian marine clays were exposed during the excavation, David Robertson in his paper on the locality (See Transactions of the Geological Society of Glasgow 1882, vol. 6, pp. 53-57) raised some doubt as to the age of the higher sediments and unfortunately there is no record to say from which beds the Swan humerus came. Robertson (See Trans. Geol. Soc. Glasgow 1882, vol. 6, p. 128) exhibited the specimen along with others from the locality at a meeting of the Geological Society of Glasgow to illustrate the reading of the above paper.

Other bird material has been found in these sediments in the Paisley area (Crosskey & Robertson, 1868 Trans. Geol. Soc. Glasgow., vol. 3, p.338) but this is not in our collections. However Robertson seems to have given some of the Paisley material to Paisley Museum and as Delair (Geological Curators' Group Newsletter 1975, No. 4, p.184) lists Paisley as holding British fossil bird material it may be worthwhile contacting this museum.

A.H. Gunning,  
Natural History Dept.  
Art Gallery & Museum,  
Kelvingrove,  
Glasgow, G3 8AG.

## 122. Chequerbent Fossil Tree

The notes reproduced below were given at a meeting of the Manchester Geological and Mining Society on 9th February, 1909 and printed in the Transactions of the Institution of Mining Engineers vol. 37. pp. 174-5 in 1909. They show the tree was found in 1908.

## FOSSIL TREE IN THE ARLEY MINE AT CHEQUERBENT COLLIERY.

Mr. ALFRED J. TONGE (Hulton collieries) exhibited a portion of the impression of a fossil tree, which had been found in the Arley Mine at Chequerbent colliery, at a depth of about 750 feet from the surface. It was, he said, remarkable from the fact that the tree had been traced for a length of 115 feet. It was a *Lepidodendron aculeatum*, found lying in the bassy shales, about 3 feet above the Arley seam, and was of a flattened ovate form. The underside of it only could be seen. The measurement taken at a distance of 14 feet from the root gave a width across at that point of 2 feet 10 inches, or, measured along the circumference of the bark, a little over 3 feet. As this apparently was about one-half the circumference, the tree would appear to have been about 2 feet in diameter at that point. At the thin end of the tree, and at the point where he (Mr. Tonge) ceased to trace it, owing to the broken nature of the roof, the horizontal measurement was 1 foot 11 inches.

The estimated diameter of the tree at this point would be about 9 inches. The tree was in one straight line, and did not appear to bifurcate, or to branch out in any way along the part that had been measured. At the larger end of the tree, there were two distinct pot-holes in the roof, and *Stigmaria* roots were found adjacent to the tree at the root, but those might or might not have some connexion with the tree referred to.

The CHAIRMAN (Mr. William Watts), in proposing a vote of thanks to Mr. Tonge for his short but valuable communication, remarked that the specimen was unique on account of its length and slenderness. The measurements given by Mr. Tonge indicated that it was a very slender tree for its length. He had found similar specimens in the Millstone Grit, but the impressions in the hard grits were seldom very good, whereas those found in the shales were invariably perfect. The specimen exhibited did not show the impressions clearly.

Mr. GEORGE B. HARRISON (H.M. Inspector of Mines, Swinton) seconded the motion, which was adopted.

The CHAIRMAN said that he thought it was very characteristic of this kind of fossil for the bark to be preserved. He had often found it present in a compressed form, and the interior or woody part gone altogether. Perhaps members would remember that one of the first air-breathing animals, found by Sir Charles Lyell, was discovered inside a tree of this kind. It appeared as if the animal had taken shelter inside the tree, and had remained there until its fossil remains were found by Lyell. He presumed that the specimen now submitted was found in a horizontal position.

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#### 127. **BURGON** Family.

The complex membership of the Burgon group of fossil collectors was discussed in our last issue (3 no. 4. pp. 248-9). It can now be increased by the addition of "new" collector John Alfred Burgon FGS whose collecting was noted by James Mitchell in "Remarks on certain Beds in the neighbourhood of London containing peculiar flints in Mag. Nat. Hist (New Series) 2 1838 p. 220. "Fossil remains are seldom discovered in the Blackheath flints, ..... Mr. John Alfred Burgon FGS has found two Echins and a Pecten in flint on Blackheath" J.A. Burgon, of 35 Bucklersbury, London, appears in Geological Society lists at least between 1837 and 1852 but his relations with other members of the Burgon family are unknown.

## 129. COLENUTT, George William (c.1862 - 1944)

GCG 1 4 p. 174 records that Messrs. Crane and Getty were in 1975 preparing an account of the work of this amateur geologist. In hope that they or other curators can help locate these type specimens we reproduce below the obituary notice of Colenutt which appeared in the Proceedings of the Geologists Association vol. 56 p. 49, 1945.

GEORGE WILLIAM COLENUTT died suddenly on June 18th, 1944, at the age of 82. He is best known for his discovery in 1888 of vertebrate remains in the Osborne Beds between Ryde and King's Quay (*Geol. Mag.* 1888, p. 358). His discoveries were rewarded by valuable memoirs by H. Woodward on Fossil Prawns from the Osborne Beds (*Geol. Mag.* 1903, p. 97) and E. T. Newton on "The Remains of *Amia*," etc. (*Q.J.G.S.*, vol. lv., 1899). In these beds, Colenutt found a shoal of small fish, *Diplomystus (Clupea) vectensis* (Newton), specimens of which he neatly trimmed up from slabs of shale and distributed to continental museums and any student who came his way. He was always interested to find the famous insect bed in the Bembridge Marls and for years practised a routine of carrying away, in a wheelbarrow if necessary, small outcrops as they presented themselves from time to time at low tide and examined them at home. The writer well remembers the out-buildings and stables where these and kindred operations were performed. It was not until 1929 that his labours were rewarded in finding a rich exposure at Gurnard Point quite near to the original site discovered by E. J. A'Court Smith seventy years previously. Thus Colenutt was able to present choice material to the Hope Museum, Oxford, an undescribed aquatic Potamogeton to the British Museum (Nat. Hist.) and a fine representative collection of insect remains to the Museum of Isle of Wight Geology. His last contribution to the Geology of the Osborne Beds appeared in *Geol. Mag.* 1903. He was very successful in his experiments and apparatus for extracting small fossils from Eocene and Oligocene Clays; his last paper was on the subject and appeared in our *Proceedings* (1941, vol. lii).

The writer made his first acquaintance with the Oligocene of the Isle of Wight under the guidance of Colenutt. His powerful physique and commanding appearance impressed one immediately and within half an hour of his company one learned that he was an art connoisseur, critic and collector, an authority on Prehistory, and a good all-round archæologist and naturalist. His interests were wide, for in his correspondence with the writer such subjects as coast erosion, well borings, lignite mining and the manufacture of Vandyke brown from lignite are discussed.

Colenutt was a well-known solicitor and had practised at Ryde and Cowes since 1885. He took great interest in local societies and directed the excursions of the Hants Field Club to the Island on more than fifty occasions. He was a joint director on the occasions of the Association meetings of 1919 and 1931, was the first President of the Isle of Wight Natural History Society (1919) and a Vice-President until his death. His geological and archæological finds, for he only kept a small reference collection, were ever at the disposal of science and the student. Colenutt joined the Association in 1895 and in his passing it loses a veteran and a great amateur.

[A.G.Davies]

Another obituary was published in the Proceedings of the Isle of Wight Natural History and Archaeological Society, Vol. 3 part 7, p. 399-400, for 1944 (published in 1945).

#### GEORGE WILLIAM COLENUTT, F.G.S

By the death of Mr G. W. Colenutt on June 18th, at the age of 82 our Society loses one of its foundation members and its first President. Although Mr Colenutt's diversified interests and intimate knowledge of the Isle of Wight brought him into personal touch with all the Society's activities, it is as a geologist that he will chiefly be remembered. As the result of many years devoted to geological research he made valuable contributions to the Science, and amongst his articles that bear directly on the Island the following may be mentioned:

An Outline of the Geology of the I.O.W., "Notes on the Geology of the North-East Coast of the I.O.W.", "Geology of the Osborne Beds."

Fifty Years of Island Coastal Erosion, "The Bembridge Limestone" and "The Plateau and Valley Gravels of the I.O.W."

As a geologist Mr Colenutt first came to the fore in 1889 by his discovery of seams rich in small vertebrate fossils in the Osborne Beds, between Ryde and Kings Quay (*Geol. Mag.* vol. v, p. 358), including shoals of the little fish named *Clupea vectensis* by E. J. Newton. Specimens of this fish were distributed to various European museums. In about 1929 Mr Colenutt discovered a rich exposure of the famous insect bed in the Bembridge marls, on the foreshore west of Gurnard Point. At the cost of considerable labour Mr Colenutt transported a number of the limestone blocks to his residence at Ryde, where he devoted much of his leisure to the task of breaking them up. He secured a number of finely preserved insects and various plant remains. Some mosquito or gnat wings of special interest were presented to the Hope Museum, Oxford, and an undescribed species of the aquatic plant *Polamogeton* to the Natural History Museum, South Kensington. The remainder were given to the Museum of Isle of Wight Sandown, where they occupy a special wall-case together with some additional specimens presented by Mr H. F. Poole.

Mr. Colenutt was very successful in extracting minute fossils by washing samples of the Eocene and Oligocene clays and marls (see his last paper in *Proc. Geol. Assoc.* vol. li, 1941, Pt. 3, p. 194).

Mr. Colenutt's wide range of interests embraced questions of local water supply, Island folk lore, history, and pre-history, and he was a keen collector of pictures and antique. His collection of stone implements included some good palæoliths from Priory Bay and a series of mesolithic picks from various localities on the northern shore of the Island. The remarkable and enigmatic flint "tribrach," found at Ventnor about 90 years ago, which he purchased at a sale in Ryde about 1909, was presented to the Carisbrooke Castle Museum some years before his death.

Mr. Colenutt acted as director of the visits of the Hants Field Club to the Island on over 50 occasions, and also of excursions of the Geologists' Association; the last being in 1931. Although not very fond of lecturing, Mr. Colenutt frequently acted as guide at field meetings of the I.W. Natural History and Archaeological Society until failing health compelled him to forgo geological excursions.

His commanding appearance and powerful physique, and the forthright manner in which, shod in ponderous "geological" boots, he was wont to march over rocks and mud direct to his objective, aroused feelings of envy and despair among the weaker brethren. His easy courtesy, breezy good humour, and never-failing store of local anecdotes rendered him a very popular guide at excursions, and in his passing the Society has lost a leader who will not easily be replaced.

## THE FIRST STATE & STATUS REPORT?

The following extract is taken from *Museums and Art Galleries* by Thomas Greenwood published in 1888 by Simkin Marshall & Co. London.

Greenwood (1851 - 1908) was a pioneer of public libraries and museums in the U.K. I am grateful to Hugh Torrens for drawing my attention to this most interesting book. The statistics are very reminiscent of the recent GCG State and Status report and, like the latter, they were based on a questionnaire or 'circular' sent out to museums by Greenwood. The prominence of geology in nearly all the museums listed is most striking.

### Statistics

This has been a somewhat difficult section for which to gather material. Many Curators replied immediately to my circular with words of encouragement. Others replied more reluctantly, and some required a second and third application, while from some there has not been any reply at all. This especially applied to Museums supported by subscriptions and fees. It will be noticed that the plan of the Committee appointed by the British Association has not been followed.

The following were the questions asked:- 1. Town? 2. Name and address of Museum? 3. When established? 4. How supported? 5. Terms of admission? 6. What governing body controls it? 7. Average number of visitors per week? 8. Special features of Museum? 9. Does it form part of Free Library work or other institution? 10. Have you Lectures in connection with the Museum? 11. Is your work extending? 12. Is the Museum associated with Board or other schools? 13. Approximate value of gifts since established? 14. Aggregate annual expenses? 15. Curator's name and address? 16. Have you ever had any loan exhibits from South Kensington or elsewhere? 17. What are the special local features of your Museum? 18. Have you any special methods of classification? 19. What do you consider the best means of extending the work of Museums generally and of increasing their individual utility?

RATE-SUPPORTED MUSEUMS.

Town & name of Museum.	When established.	How supported.	Terms of admission.	Governing body.	Average No. of visitors per week.	Special features.	9	10	11	12	Gifts 13	Aggregate expenses.	Loan exhibits from S. K.	Special local features.	Curator's name.
Birmingham	1885	rate	free	Corporation	18,000	Indus. Art, Italian Art, &c.	yes	yes	yes	no	£ 50,000	£ 3500	yes	Metalwork, glass, lacquer, &c.	Whitworth Wallis, F.R.G.S.
Birmingham, Aston Hall	1864	rate	free	Corporation	2000	Old Elizabethan Mansion	no	yes	—	no	10,000	1000	yes	Antiq. fur. of Elizabethan & Jacobean periods	A. J. Rodway, F.R.H.S.
Blackburn	1862	rate	free	Corporation	1500	General	yes	no	yes	no	12,000	150	yes	Geology, Nat. History and Antiq.	D. Geddes
Bolton (Chadwicks)	1883	rate	free	Corporation	5000	Geology, Zoology, Ornith.	no	yes	yes	yes	7000	400	yes	Geology of coal measures, Local Textiles, Machinery made and used by Arkwright & Crompton	W. W. Midgley, F.R.M.S.
Bootle, Lanc.	1887	rate	free	Corporation	600	Col. of 17,000 European coleoptera	yes	yes	yes	yes	520	—	yes	"Gregson" collection of Economic products	John J. Ogle
Bradford, Yorkshire	1879	rate	free	Corporation	6500	Pictures, Sculpture	yes	yes	yes	no	4000	800	yes	Fossils, Pictures by local artists	Butler Wood
Brighton	1873	rate	free	Corporation	1000	Composed entirely of donations	no	no	yes	no	—	1100	no	Geology & Archaeology	Benj. Lounax, F.L.S.
Burslem (Wedgewood)	1869	rate	free	Corporation	3000	—	yes	no	yes	yes	—	400	yes	Local pottery from earliest period	Thos. Holme
Canterbury	1823	rate	free	Corporation	700	—	yes	no	yes	no	—	300	yes	Roman and Saxon relics	A. D. Blaxland
Colchester	1855	rate	free	Corporation	250	—	no	yes	grad-	no	—	—	no	Local Roman antiquities	F. Spalding
Darwen, Lanc.	1871	rate	free	Corporation	large	—	yes	no	yes	no	—	375	no	Rocks and Coal	E. Neville
Derby	1872	rate	free	Corporation	5000	—	yes	no	yes	no	large	—	yes	Geology and Mineralogy	W. Crowther
Devonport	1882	rate	free	Corporation	—	Minerals	yes	no	no	no	—	—	—	—	Chas. R. Rowe
Dover	1838	rate	free	Corporation	—	—	no	no	yes	no	—	—	no	Kentish Ornithology	E. Antley, M.D.
Exeter	1908	rate	free	Corporation	400	British birds	yes	yes	yes	no	large	200	yes	Mammals, Caveremains	James Dallas, F.L.S.
Folkestone	1870	rate	free	Corporation	100	Local productions	yes	yes	yes	no	—	70	no	Fossils	H. Ulyett, B.Sc.
Hanley	1887	rate	free	Corporation	700	Pottery	yes	no	yes	no	none	—	yes	Old pottery	W. A. Taylor
Hereford	1873	rate	free	Corporation	100	—	yes	no	yes	no	—	40	no	Ornithol., Geol. & Arch.	Alex. Gott
Hindley	1888	rate	free	Corporation	—	—	—	—	—	—	—	—	—	—	—
Ipswich	1847	rate	free	Corporation	1500	Geology, Botany, &c.	yes	yes	yes	no	large	500	no	Splendid collec. of Geol.	Dr. J. E. Taylor
Leeds	1884	rate	free	Corporation	1100	—	yes	no	yes	no	none	—	yes	—	James Yates
Leek (Nicholson Institute)	1884	rate	free	Corporation	200	—	yes	yes	yes	no	Building, &c.	—	yes	Birds, Geology	Wm. Hall
Leicester	1849	rate	free	Corporation	1500	—	yes	yes	yes	no	Thousands	—	yes	—	Montagu Browne, F.Z.S.
Lichfield	1859	rate	free	Corporation	—	—	yes	no	—	no	—	100	no	Relics of Dr. Johnson.	J. P. Roberts
Liverpool	1852	rate	free	Corporation	6522	—	yes	no	yes	yes	very great	—	no	Minerals.	T. J. Moore, L.S.L.
Malden	1862	rate	free	Corporation	601	General	yes	no	—	no	20,000	500	no	Special (see Liverpool) Zoology, (Geology)	E. Bartlett
Macclesfield	1883	Sch. of Art	free	Committee	100	Textiles and Manufactures	—	yes	no	yes	—	—	yes	Specimens of silk	Walter Scott
Middlesboro'	1888	rate	free	Corporation	—	British birds	no	—	—	—	—	100	—	Lias collection	Dr. W. Y. Veitch
Northwich	1885	rate	free	Corporation	100	—	no	no	no	no	large	—	—	Salt & its manufacture	F. A. Howe
Northampton	1865	rate	*	Corporation	56%	Geol. collection	yes	yes	yes	no	4000	225	yes	Land and fresh-water shells, Antiq. Roman Remains	T. J. George, F.G.S.
Nottingham	1872	rate	free	Corporation	6000	—	yes	yes	yes	yes	large	1220	yes	Birds, Mam., fish, shells	J. W. Carr, B.A.
Oldham	1885	rate	free	Corporation	—	—	yes	yes	yes	no	—	—	yes	Geology	T. W. Hand
Poole	1830	—	free	Corporation	—	Local Antiq.	no	no	no	no	300	—	no	Geol. Nat. His. Sea birds	Wm. Penny, A.L.S.
Preston	1880	rate	free	Corporation	850	Natural History	yes	no	yes	no	—	—	yes	—	Jonathan Shortt
Reading	1883	rate	free	Corporation	1300	Marine and fresh-water shells	yes	yes	yes	yes	Valuable deposits	100	yes	Lepidoptera. Typical Mammalian remains	Joseph Stevens
Salford	1849	rate	free	Corporation	7000	Brit., For. Zoology	yes	no	no	no	50,000	small	yes	Portraits of local celeb. Lancs. birds & animals	John Plant, F.G.S.
Sheffield	1875	rate	free	Corporation	3000	Tech., Nat. History, Metalwork, &c.	yes	no	yes	no	large	1000	yes	Hist. col. of Cutlery.	E. Howarth,
Stafford	1879	rate	free	Corporation	600	—	—	no	yes	no	150	—	no	Yks. & Derbys. fossils	F.R.A.S.
Staleybridge	1875	rate	free	Park Com.	large	Botanical	no	no	yes	yes	—	—	no	Fossils, Birds' eggs, &c.	C. J. Culvert
Stoke-upon-Trent	1878	rate	free	Corporation	1200	Geol., Ethno., old pottery	yes	no	no	no	—	—	yes	Fossils from coal meas. Geol. and Mineralogy	Wm. Bardsley
South Shields	1878	rate	free	Corporation	600	Roman Antiq.	yes	no	alwly	no	100	12	no	collection	Alfred Caddie
Shrewsbury	1885	rate	free	Corporation	—	Bot., Arch., Geol.	yes	—	—	—	—	—	—	Local Sea birds	Geo. Lyall, F.G.S.
Stockport	1860	rate	free	Corporation	600	Zoo., Geol., Art	—	—	—	—	—	—	—	—	A. C. Phillips
Sunderland	1880	rate	free	Corporation	1800	British birds, Permean fossils	yes	no	rapidly	no	100	800	yes	Ship Models, Brit. Birds	John Tym R. Cameron
Tynemouth	1830	rate	free	Corporation	—	—	yes	no	not much	no	—	15	no	Skins of animals, birds, and curiosities brought by sailor's fr'm for. coun.	No one appointed
Warrington	1838	rate	free	Corporation	600	Shells	yes	—	—	—	—	—	—	—	C. Madeley
Winchester	1847	rate	free	Corporation	—	Stone mpls.	yes	no	yes	no	—	40	once	Local antiquities	J. T. Burchett
Wolverhampton	1884	rate	free	Corporation	3000	Ironwork, Electrodeposits	no	no	yes	no	80,000	400	yes	—	W. J. Wheddon
Watford	—	rate	free	Corporation	—	—	yes	yes	no	—	small	—	yes	—	Dr. A. T. Brett
Worcester	1837	rate	free	Corporation	—	Geol., Bot., Arch.	yes	—	—	—	—	—	—	—	G. Reece

SCOTLAND.

Dundee	1874	rate	free	Corporation	4000	Arctic Fauna	yes	yes	slightly	no	—	600	yes	Fossils of old Red sand-stone, &c.	J. Maclauchlan
Paisley	1870	rate	free	Ten Magistrates	0	Nat. History	yes	yes	yes	yes	Considerable	650	yes	Local Nat. Hist.	Morris Young

WALES.

Bangor	1871	rate	free	Corporation	300	Foreign collection	yes	no	no	no	—	150	no	—	Peter Williams
Cardiff	1867	rate	free	—	—	Fossilised timber	—	—	—	—	—	—	—	—	John Storrie
Welshpool	1867	rate	free	Corporation	—	—	yes	yes	yes	no	1000	small	once	Antiq. Nat. Hist.	M. C. Jones

\* Mondays free ; one penny other days.

MUSEUMS SUPPORTED BY SUBSCRIPTIONS, FEES, ETC.

Town & name of Museum.	When established.	How supported.	Terms of admission.	Governing body.	Average No. of visitors per week.	Special features.	9	10	11	12	Gifts 13	Aggregate expenses.	Loan exhibits from S.K., &c.	Special local features.	Curator's name.
Alton, Hants, Curtis Mus.	1855	—	Members free, others 2d.	Com'ttee of Mech. Inst.	very few	Geol., Zoology	no	no	no	no	£ not known	£ can't say	yes	Geology, Antiquities	Wm. Curtis
Andover, Lit. Institute	1803	by instl.	free to members	Com'ttee of Instit.	10	—	no	no	yes	no	—	—	no	Spec. of Chalk formation, Rom. antiq.	A. W. Smith
Aylesbury, Rucks, Arch. & Archit. So.	1849	subn.	6s. per annum	—	—	None	no	no	no	no	none	—	no	None	Robert Gibbs, F.S.A.
Bath, Royal Lit. & Sci. In.	1825	—	6d. each	—	—	Moore Geol. collection	no	no	—	no	—	400	no	Herbarium	H. Mitchell
Berwick - on - Tweed	1867	—	1d.	—	20	—	no	yes	no	no	500	30	no	Birds, Moths' eggs, Fish, Geol. Bot., Arch.	John Scott
Burt'n-on-Tr't	1882	Nat. His. Soc.	—	—	—	Geol.	no	no	no	no	—	—	—	—	F. E. Lott
Bury St. Edmunds	1844	Ed. In C'n'l of £20 per an.	free	Town Council	30	British fossils	—	no	no	no	—	20	no	Birds, Roman and Saxon antiq.	Hy. Prigg
Bristol Mus'm and Library	1867	sub. 21s. per year	6d. for 8 wk days	Co'ncl. elected by subs	240 (*)	Geol., Zool., Egypt. Antiq. Roman and Med. Antiq.	no	yes	alw'y	no	all the collections	—	no	Miner., Land & Fresh Water Shells, Bees	Edwd. Wilson, F.G.S.
Carlisle, Mon'thale's	1837	C'rp't'n pay'm't and gas subns.	2d.	Corporation Committee	—	—	no	no	—	no	—	20	no	Local Roman antiq., Geol.	R. S. Ferguson, F.S.A.
Chester (Grosvenor)	1886	—	free Wedn's-days, 6d both r'd's	Trustees	60	Archaeological	no	yes	yes	no	—	180	yes	Nat. Hist.	R. Newstead
Chesterfield..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chichester ..	1830	subns.	3d.	Council	20	Geol. Arch. Ornith., Geol., Coins	no	yes	alig'y	no	—	10	no	Fossils, Bot., Flints, Roman interments Arch. Roman	Rev. J. M. Mello, Josh. Anderson, Jun.
Cirencester ..	1856	—	3d.	—	—	—	—	—	—	—	—	—	—	—	—
Coalbrookdale, Salop	1858	inst'n't & fees	small charge	Committee	few	Zoo., Geol.	no	no	no	no	—	—	yes	—	C. Bowley, Isaac Dunbar
Devizes .....	1853	—	—	—	30	Geol., Zool.	—	—	—	—	—	—	—	—	—
Dorchester	1848	subns.	2d.	—	66	Fossils, &c.	no	yes	alw'y	no	—	—	yes	Arch. Dorset antiq., specially good	H. J. Moule, N.A.
County Mus. Eastbourne ..	1872	—	3d.	Trustees	15 (†)	Geol., Miner., Zool.	no	no	no	no	trifling	—	no	—	No Curator

\* Closed during the winter months, the attendance is so small.

† One hundred and forty-three per week when free.

Frome .....	1844	—	free to members 4d. & 2d.	Committee	few & irr'gl'r small	Miscel. collection	no	no	no	no	—	—	yes	Shells, Minerals, and Geol.	W. West
Glastonbury..	1886	—	—	Antiq. Socy.	—	—	no	yes	yes	no	—	—	yes	Local antiq.	G. Bullen
Gloucester ..	1870	subns. & contri. subn.	2d.	Sci. & Art. Society	100	—	no	yes	no	—	—	—	no	Fossils, Shells, Antiquities	Hon. Curator
Halifax .....	1831	—	1d.	Committee	100	Nat. Hist., Geo., Ant.	no	yes	no	no	—	no	no	Nat. Hist., Geol.	Hon. Curator
Hull .....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Huntingdon..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Kendal .....	1840	subn.	free to members	Council	45	—	no	yes	yes	no	—	—	no	Geology	I. Severs
Keswick .....	1887	—	—	Committee	40	—	—	—	—	—	—	—	—	Geo., Zoo., Bot.	Jno. Birkett
King's Lynn ..	1844	—	free	Committee	70	Ornith., Geo., Zoo.	no	no	no	no	5000	90	no	Plants, Mammalia, Birds	Hon. Curator
Lancaster....	—	—	—	Committee	—	Geol., Zoo.	—	—	—	—	—	—	—	—	G. Kelland
Launceston ..	—	subns.	—	Committee	—	Undergoing reorg'n	—	—	—	—	—	—	—	Antiq. Flora & Fauna	W. Wise
Leeds, Yorks	1882	sub. n'ts fm exhib'n	free	Council	100	Building and Decorative Appliances	no	yes	no	no	—	300	no	—	L. F. Hicks
Leeds Phil. & Lit. Society	1820	subn.	1d.	Council	500	Nat. Hist., Geol.	no	yes	no	—	—	—	no	Antiquities	Prof. L. C. Miall
Lewes Castle	1850	adm'n'n fees	6d.	Arch. Socy.	—	—	no	no	no	no	—	—	yes	Arch., Tapestry	R. Crosskey
Ludlow .....	1842	subns.	3d.	—	50	—	no	no	no	no	—	—	no	Salurian Fossils, Birds	C. Fortey
Manchester ..	'84-6	—	free	Committee	1200	Oral addresses and conversation	no	yes	yes	yes	7900	800	yes	See chap. vi.	Henry Brooke
Malton, Yks.	1880	—	2/6 & 5/- per ann	Committee	50	Geol., Herbarium	no	yes	no	no	—	—	no	Sponges fr'm middle chalk, Fish remains	S. Chadwick
Much - Wenlock	1830	—	6s. pr. ann	12 trustees	200 to 300	Free reading-room	yes	no	no	no	7000	50	no	Geol., Fossils	Mrs. S. Landon
Newcastle-on-Tyne	1873	—	6d.	—	—	Castle & Blackgate Mus. of Antiq. Soc.	—	—	—	—	—	—	—	—	R. Blair
Newcastle-upon-Tyne, Barras Bridge	1829	subns. & fees	ad'l'ts 3d child'r'n 1d.	Committee	350	Hancock collection of British Birds	no	yes	yes	no	very large	600	no	Amphib. Fishes and Plants, Drawings by Bewick	Richard Howse
Norwich and Norfolk Mus.	1834	subns. & don.	free two days o'r d'y sub. orders	Committee	500 to 600	Raptorial Birds, Mammalian Remains	no	no	yes	no	—	320	no	Norwich Chalk and Craig Fossils, Local antiquities	James Reeve
Nottingham Castle	1878	—	—	—	4000	Indus. Arch.	—	—	—	—	—	—	no	—	G. H. Wallis
Penrith .....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Penzance Nat. His. & An. So.	1839	subns.	free to members	Committee	20	Flora and Fauna	no	yes	—	no	—	—	—	Cornish sepulchral urns, mosses, &c.	John Symons
Plymouth .....	1829	society	6d., Sat. free	Plymouth Institution	80 to 100	Palen., Miner.	no	yes	yes	no	considerable	—	yes	Petrology, Ornith., Entom.	J. C. Inglis

MUSEUMS SUPPORTED BY SUBSCRIPTIONS, FEES, ETC.—Continued.

Town & name of Museum.	When estab-lished.	How sup-ported.	Terms of admissi-on.	Governing body.	Average No. of visitors per week.	Special features.	9	10	11	12	Chrs 13	Aggregate ex-penditure.	Loan exhibits from S.K., &c.	Special local features.	Curator's name.
Peterboro' ...	1880	subns.	6d. each	Committee	10	Engrvngs, Norman & French Prison-work	no	yes	yes	no	—	£ 50	no	Roman and Saxon Remains	J. W. Bodger
Richm'd, Yks.	1886	"	"	Committee	—	Shells	—	—	—	—	—	—	—	—	W. D. Benson
Ripon .....	1888	"	"	Naturalist Clb	120	Antiq. and Geology	no	yes	no	no	—	—	no	Antiq., Geo., Entom.	N. Waite
Salf'r'n Waid'n	1839	4s. per a. am'l en-dow. & subns.	free on applica-tion, & to trans-fer, &c.	Trustees	200	British Birds, An-tiq.	no	no	yes	no	8000	800	yes	Geology, Archæol., Zool.	G. N. Maynard
Scarbro Arch. & Philoa. So.	1834	subns.	6d. each	Council	100	Geol., Ornith., and Conch.	no	no	yes	no	2000	100	no	Geol. and Arch. (has good scientific lib.)	C. F. Strange-ways
Southampton Harle'y Inst.	1868	endow-ment	free	Council	600	Geol., Antiq., Paint-ings	yes	yes	yes	—	1000	—	yes	Etchings & Engrav-ings, Mollusca, &c.	T. W. Shore, F.G.S. W. Fish
Southport ...	1876	Botanic Gard'ns	6d.	—	2500	(Mus. of Lit. & Sci. in Min., Geol., Arch.)	—	—	—	—	—	—	—	—	H. Mitchell
Stamfr'd, Lincs	1842	subn.	6d.	Trustees & Committee	180	Min., Geol., Arch.	no	yes	yes	no	—	900	yes	Geol., Cave bones from Mendip Hills	W. Bidgood
Taunton, Som'r's March & N. H. Soc.	1874	subn.	2d. & 1d.	—	—	(Mus. of Royal Instn)	—	—	—	—	—	—	—	—	W. Newcombe
Truro .....	1818	subns.	—	Council	200	Geol., Lias and New-Red Sandstone	no	yes	—	no	valuable	—	no	Birds, Conch., Local Lias	P. B. Brodie, M.A.
Warwick .....	1837	subns.	6d.	Council	200	Bot., Geol.	—	—	—	—	—	—	—	—	Mrs. Landon
Wenlo'k, Sal'p	1840	"	"	—	—	—	—	—	—	—	—	—	—	—	—
Whitby .....	1823	"	"	—	—	—	—	—	—	—	—	—	—	—	—
Windsor .....	1880	"	free	Committee	—	—	no	yes	yes	no	—	—	yes	Pottery, &c.	Joseph Lundy
Albert Inst.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Wisbeach .....	1835	endowmt	6d., one even. 1d.	Committee	20	British Fish, Arch., Min'ls, Birds, Shells	no	no	no	no	consider-able specimens chiefly given	—	no	Geology of the Fens	George Oliver
York, Yorks. Philoa. Secy.	1828	subns.	members £3 & £2 an. sub.	Council	500	Fine Gardens, Palen, and Arch. collect'n especially good	no	yes	no	no	large, one gift of £10,000	1100	no	Yorkshire fossils, land and fresh water shells	H. M. Plat-nauer, B.Sc.

LONDON.

City, Guild-hall	1872	Corpor-ation.	free	Library Committee	2232	Roman remains	yes	no	yes	no	—	—	no	Showing the occupa-tion of Londinium by the Romans	W. H. Overall, F.S.A.
Westminster, Royal Archi-tect. Mus.	1851	subns.	free	Council	70 or 80	4000 casts	no	yes	yes	no	900	600	no	Casts from West-minster Abbey	Edgar John Varley

IRELAND.

Armagh, Nat. History and Philoa.	1860	subns.	—	Committee	—	—	—	yes	yes	—	—	—	no	Sharks' teeth	Mrs. Reid
Belfast .....	1821	Nat. Hist. & Philoa. Society	6d. & 2d.	Council	yearly 7000	—	no	yes	yes	no	10,000	250	—	Fossils, minerals, plants, shells, &c.	W. Darragh

WALES.

Swansea ...	1886	—	1d.	—	—	M. of Royal Inst. of South Wales	—	—	—	—	—	—	—	Geo., Zoo., Botany	H. Huxham
Tenby .....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Ed. Laws

SCOTLAND.

Alloa .....	1868	subn.	—	—	—	(M. of Society of Nat. Science)	—	—	—	—	—	—	—	Zoology, Botany, Anth.	J. F. Lyon
Banff .....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dumfries Ob-servatory Museum	1886	charges	6d. & 3d.	Committee	1500	Ancient pottery	no	no	—	no	—	60	—	Minerals, fossils, &c.	Miss Locke
Dumfries .....	1866	free	—	Committee	—	—	—	—	—	—	—	—	—	Botany, Geol., Zoology	J. Wilson
Elgin .....	1836	subns.	6d.	Committee	16	Egyptian fossils	no	—	—	—	2500	32	—	—	John Gatherer
Forres .....	1871	endowmt. and fees	6d.	Committee	10	Geology, Zoology, Botany	—	—	—	—	—	—	—	Zoology, Botany	J. D. Davidson
Glasgow, Kelvingrove	—	—	—	—	—	See chapter xviii.	—	—	—	—	—	—	—	—	James Paton
Greenock .....	1876	endowmt	free	Committee	860	Marine Zoology	—	yes	yes	no	—	270	yes	Ships' models, post-Pliocene geology	Thos. Bennie
Hawick .....	1866	subns.	3d.	Committee	—	Geology, Ornith., Indian fishes	—	yes	yes	no	—	20	yes	Antiq. portraits	James Waugh
Inverness .....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Kelso .....	1838	subns.	—	—	—	—	—	—	—	—	—	—	—	—	E. Johnson
Kircudbright.	1881	subn.	6d.	Committee	25	Fauna, Flora, Ar-chæic Sculptures	no	yes	yes	no	1500	80	yes	Botany, birds' eggs, antiq.	J. McKie
Largo, Fife.	1868	—	free	President & Sec. Council	20	(Field Naturalists' Society)	no	yes	no	—	—	—	no	Conch., Geol., Ornith.	Robt. Smith
Mentrose .....	1857	—	6d.	—	—	(M. of Nat. History and Antiq. Society)	—	—	—	—	—	—	—	Geol., Zoology, Botany	R. Barclay
Perth .....	1785	subns.	—	—	—	(M. of Lit. and Antiq. Society)	—	—	—	—	—	—	—	Geo., Zoo., Bot., Arch.	A. R. Urquhar M.D.
Peterhead .....	1861	Burgh funds and fees	2d.	Town Council	20	Zoology, Geology, Arch.	no	no	no	no	—	50	yes	Shells, Crustacea, Fishes	Alex. Wood
Stirling .....	1871	—	—	—	100	(Stirling M. Smith Inst.)	—	—	—	—	—	—	—	Zoology	James Sword

SCHOOL AND UNIVERSITY MUSEUMS.

Town & name of Museum.	When estab-lished.	How sup-ported.	Terms of admission.	Governing body.	Average No. of visitors per week.	Special features.	9	10	11	12	Gifts 13	Aggregate expenses.	Loan exhibits from S.K., &c.	Special local features.	Curator's name.
Cambridge Mineralogical Museum.	1863	University	free to students	Museum Syndicate	small	Crystallographic	—	yes	yes	—	£ abt. 20,000	150	no	None	Prof. W. J. Lewis C. C. Babington
Cambridge Botanical Museum.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cambridge Woodwardian Museum.	1728	endowmt & grants	free to students	University	—	Specimens collected & arranged to promote orig. research	no	yes	yes	no	two mil. specimens	500	no	Geol. specimens	Hy. Keeping
Cambridge Zoology.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cheltenham College.	1867	Council	free to students	Curator University	50	Nat. Hist., Geol., Botany	no	yes	yes	no	considerable	100	no	Fossils, Skulls of stone period	C. Pierson J. Cullingford
Durham.	1838	University	free to students	—	—	Zoo., Geo., Arch.	—	yes	—	—	—	—	—	Bot., Arch.	—
Eton College, Windsor.	—	school	—	—	—	Rocks, Mineral, &c.	—	—	—	—	—	—	—	Under revision and re-building	Frederic Drew
Harrow Sch.	—	—	—	—	—	—	—	—	—	—	—	—	—	For teaching purposes	A. Hen-ley
Hertford, Haileybury College.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Huddersfield.	1884	—	free	Gov. of Sch.	—	Technical, Scientific	no	no	yes	no	500	small	no	Birds	A. Keen, F.C.S. E. H. Jacobs, M.D.
Leeds Yks. Col.	1830	Yks. Col.	—	—	—	Med., Pathy., Anat.	—	—	—	—	—	—	—	—	—
Liverpool Univ. Col.	1881	College	—	College Council	—	Teaching collection, good col. of Tunica	—	yes	yes	no	—	—	—	Fauna of Liverpool Bay	Prof. W. A. Herd- man, D.Sc. G. E. Mackie Prof. W. Boyd Dawkins, F.R.S. T. M. Lindsay
Malvern.	—	Mal. Col.	—	—	—	Geo., Zoo., Arch.	—	—	—	—	—	—	—	—	—
Manchester, Owens Col.	1872	endowmt.	—	—	—	Miner., Geol., Zool., Bot.	—	yes	yes	no	large	1,000	—	Carboniferous Flora	—
Rugby School.	1879	subn.	—	Headmaster &c.	—	Oil & Water-colour paintings, &c.	—	yes	yes	—	10,000	—	yes	Work done byschol. drawings esp. good	—

SCOTLAND.

St. Andrew's.	1788	University	—	Museum Committee	—	—	—	yes	yes	no	—	—	no	Local Marine Fauna	Thomas Walker &c.
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IRELAND.

Galway, Queen's Col.	1849	Government Grant	—	Council	—	Teaching collection	—	yes	—	no	—	150	yes	Galway Minerals	R. J. Andrews, M.A.
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ISLE OF WIGHT.

Ryde, Sch. of Sci. and Art.	1850	—	—	Committee	—	—	—	no	no	no	no	500	yes	Geol., Arch., Flora, Ornithological	Benj. Barnes
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PRIVATE MUSEUMS.

Bakewell, Bingham's Geol.	1878	By owner	free	—	—	County and foreign fossils	—	—	—	—	—	£12 to £20	—	Minerals, lavas, &c.	L. F. Bingham
Carne, near Penzance	1800	By prop. C. C. Ross	free	—	—	—	—	—	—	—	—	—	—	Cornish Mineral.	C. C. Ross
Huddersfield, Beaumont Park	1890	By owner	free	—	20	Insects injurious to farm and garden crops	—	yes	yes	yes	100	—	no	Fauna and flora	S. L. Mosley
Sheffield, St. George's Museum	1875	St. George's Guild	free	St. George's Guild	50-100	—	—	no	yes	no	Many thousands of pds. almost entirely by Mr. Ruskin	250	no	Plants, flowers, &c.	Henry Swan
Stratford-on-Avon	1847	—	—	—	—	Shakespeare relics	—	—	—	—	—	—	—	—	—
Thornhill, Dumfriesshire	1872	Owner	ed.	—	20	—	—	—	—	—	—	—	—	Arch., Anth.	T. B. Grierson, M.D.

MUSEUMS SUPPORTED BY GOVERNMENT AID.

Edinburgh, Mus. of Sci. and Art	1855	Annual Grant	Free some days and charges on others	Lords of Com. of Council on Education	6500	Nat. Hist., Tech- nology	no	no	yes	no	—	12,000	yes	Geology	Col. Sir R. Mur- doch Smith
Edinburgh, Nat. Mus. of Orig. Antiquities	1780	—	—	Trustees & Society of Antiquities	1450	Arch. of Scotland	no	yes	yes	no	400	—	yes	—	Jos. Anderson, LL.D.
Gosport, Haslar Hospital	—	—	—	Inspector of Hospital	—	Anat., Nat. History, &c.	—	—	—	—	—	—	—	—	Dr. W. Reid, R.N.
Woolwich.	1814	—	free	Sec. of State for War.	200	Military appliances	no	no	yes	no	—	200	no	Engines of War	Mr. Loose
Dublin, Sci. & Art Mus.	1792	—	—	Council of Education	3903	Natural Hist. and Fine Art	—	—	yes	—	One-third of entire col.	9000	yes	Irish Zoology, Geology, &c.	Prof. V. Ball, M.A.

The statistics section is followed by the two small sections reproduced below which provide a marvellous insight into how the Victorians viewed the rôle of the museums they set up.

#### Useful Rules to Keep in Mind on Visiting a Museum.

1. Avoid attempting to see too much.
2. Remember that one specimen or one article well seen is better than a score of specimens casually inspected.
3. Before entering a Museum ask yourself what it is you wish particularly to see, and confine your attention largely to those specimens. Consult the attendant as to what is specially interesting in each room.
4. Remember that the main object of the specimens is to instruct.
5. Have a note-book with you and record your impressions, so that on a succeeding visit you may pick up your information where you left off on the previous visit.
6. Introduce in conversation your impressions of what you see in Museums.
7. Consult frequently the technical literature on the special subject in which you are interested.
8. Visit the nearest Museum periodically, and let it be to you an advanced school for self-instruction.
9. Remember there is something new to see every time you go.
10. Make a private collection of something. Remember that a collection of postage stamps has many uses.
11. Follow up some special subject of Museum study.
12. See slowly, observe closely, and think much upon what you see.

#### Why Should Every Town have a Museum?

1. Because a Museum and Free Library are as necessary for the mental and moral health of the citizens as good sanitary arrangements, water supply and street lighting are for their physical health and comfort.
2. Because the rate for their support is very small as compared with other rates, the utmost amount which can ever be charged being one penny in the pound per year on the rateable value.
3. Because a rate-supported Museum is the town's property, into which any person can enter during the recognised hours without let or hindrance.
4. Because there is no rate for which there is a more immediate and tangible benefit than the penny rate for the support of a Free Library and Museum.

5. Because in no town where they have been established is the rate felt as a burden, and is, in fact, often the most cheerfully paid item in the ratepaper.
6. Because where these institutions have been established in Birmingham, Liverpool, Leeds, Manchester, Derby, and other places they are thoroughly appreciated by the inhabitants.
7. Because Museums and Art Galleries not only give widespread pleasure, but are, with Free Libraries, the Universities of the working classes.
8. Because they are open to all classes, rich and poor, and where they exist and are free to all, they are actually used by all classes, from the professional man to the humblest artisan.
9. Because they are educational institutions for young and old, and education deepens the sense of the duties and privileges of citizenship.
10. Because the existence or absence of a Museum and Free Library in a town is a standard of the intelligence and public spirit manifested in that town.
11. Because for young people of both sexes they afford a place for recreation to which they can go, instead of loitering aimlessly about the public streets.
12. Because they bring under one roof priceless gifts which could not be seen by the public in any other way.
13. Because they provide places of reference for specimens of local geology, botany etc., to which the citizens in every town should have easy means of access.
14. Because they cultivate habits of thought and conversation, which stimulate reading and brighten life, and make the home more cheerful and attractive.
15. Because Museum and Free Library buildings always improve the adjoining property. Some tradesmen advertise their business as being within so many minutes' walk of the Free Library.
16. Because we do not want Old England to be behind other countries, and America, France, Germany, and the Australian Colonies are setting us an example worthy of imitation.
17. Because it is said that the workmen of some other countries are better educated than ours, and Englishmen are determined that this shall not be so in time to come, but that our children after us shall be able to hold their own in the van of peaceful progress.

The editor is grateful to J.B. Delair who sent in this article by C. Bird. Again it highlights the aims and the difficulties encountered by the Victorians in establishing local museums. It is a sad fact that over 100 years later many of the same difficulties still prevail in the funding and support of our provincial museums.

## TOWN MUSEUMS WITH SPECIAL REFERENCE TO ROCHESTER & CHATHAM by C. Bird

Reprinted from the Chatham and Rochester Observer

The Editor of the Observer has invited me to contribute a short article on the above subject, presumably as an expansion of and supplement to a few remarks which I made a short time ago to the members and friends of the Rochester Naturalists' Club, and I am very pleased to comply with the request, since, taking it for granted that an editor knows what kind of matter will be acceptable to his readers, I consider it as evidence that there is some little interest manifested in this museum question at the present time. I therefore propose to set forth very briefly what I conceive to be the proper function of a provincial museum, how it may be brought into existence, and how, when founded, it may be supported.

The popular notion of a museum varies somewhat, but is generally erroneous. It is usually regarded as a receptacle for "curiosities," either dug up or brought from foreign countries, a sort of place to which useless lumber, whose only merit is age or ugliness, may be sent out of the way, and upon which the casual and infrequent visitor gazes with that awe and veneration which distant origin, age, or extreme rustiness generally excite in the uneducated mind. Here, cheek by jowl, may be seen, when the dim light permits, the foot of an Egyptian mummy, a damaged Roman pot, and the portrait of a female cannibal who assisted in the eating of a missionary, with perhaps a few personal effects which once belonged to the latter. But the progress of science and educational reform is now changing all this, and we are gradually obtaining clear views as to what a museum should really be. Now, a museum may, and indeed should, have a two-fold object. Firstly, it should be local, that is it should serve as a centre to which objects of local interest are brought, and where they are carefully preserved. Few people have probably any idea of the large number of things of this kind which are continually coming to light and again disappearing, often never to be seen or heard of any more. To take an example or two. There are at present on view in Rochester a spear head and sword of bronze, probably of the Roman period, and a coin of the Emperor Trajan, all dredged up in the Medway near Rochester Bridge a few days ago, and only last week I was shown a very perfect specimen of pottery which from its rude form and want of finish was probably of pre-Roman age. This latter was lately discovered at Upnor in a river deposit five or six feet from the surface, and high up above the present river. At the same time I was told of a bottle with a date on it, now destroyed, which, together with an old English coin, were found in digging mud for cement making. How interesting it would be to many if such things could be preserved in a public institution with a careful record of the circumstances under which they were found. They are instructive both historically and geographically, and of much more value in the town near which they are found than they would be anywhere else. Then again there are always points of interest connected with the natural history and geology of a neighbourhood, and their connection with and bearing on local industries which can be set forth in a museum. But there is quite another view of the museum question which as time goes on will come more and more into prominence, viz., the educational aspect.

It is gradually coming to pass, very slowly, and in spite of a good deal of apathy, and some direct opposition, it is true, but still surely, that all our large towns are getting provided with schools of the modern type, schools in which the impossibility of teaching everything is recognised, and which deliberately give up the attempt to impart a classical education, so useless to many who get it, and which with modern languages and mathematics combine a considerable amount of scientific instruction both in the experimental sciences and in natural history. These are certainly the schools which are destined to play a great part in the future, and it is in them that the great bulk, both male and female, of what are generally called the middle classes of our towns will be educated, and at these schools they will acquire an interest in, and a taste for, natural history matters, and will, as they grow up, look to their town museum for the opportunity of further study. To satisfy this demand, complete suites of zoological, botanical, and geological specimens, properly mounted and classified, will be needed, and are indeed already provided in many of our large towns, although in most cases their arrangement leaves much to be desired.

There is in many places a tendency to locate the museum, if one is possessed or contemplated, in some ancient and historic building, either public or private, if it can be secured for the purpose. This is so at Maidstone and at Rochester, I believe, Eastgate House was a short time ago mentioned in a similar connection. This is, however, I am quite convinced, a great mistake, especially if there is any desire to make the museum popular and useful. The awkward staircases, bad lighting and ventilation and extreme dustiness of old houses make them bad enough to live in, and quite unfit them for museum purposes in every way. A perfect museum should consist of four rooms, large regular in shape, well lighted from the upper part, preferably, perhaps, the roof, thus leaving all the wall space clear. These four rooms should be devoted to geology, botany, zoology, and antiquities respectively. It is a moot point how and to what extent the local should be incorporated with the general collection, but probably the most perfect arrangement on the whole would be, with certain modifications, to place the general and typical collection round the walls in tall, plate-glass fronted cases, and to place the local collection in cases in the centre of each room. The zoological collection is perhaps the most attractive to the general public, and may be made much more so, and at the same time much more instructive, if the objects are arranged, not on formal wooden stands and perches, but in their more or less natural positions and surroundings, with descriptive charts and tables outside the cases so as not to damage the pictorial effect. Most natural history collections are almost useless from the manner in which the objects are huddled together on separate wooden stands. In addition to the charts, cheap guide books should be obtainable, there should be a reference library of standard natural history works, and if courses of popular lectures can be given on the collection, so much the better. Throughout the whole arrangement the main objects of a museum should be constantly kept in view, viz, to interest and instruct the public mind, and to be of service to students. The formation, arrangement, and preservation of such a collection as sketched above necessitates, of course, the employment of a competent naturalist, and at the same time a man of taste and ingenuity, as curator and lecturer, and although it is very desirable that a museum should be open free, yet possibly courses of natural history lectures might be made to assist in paying expenses.

I have spoken only of natural history and antiquities, but there are other branches of knowledge which may be advantageously illustrated by public collections, viz, Technology and Art. The former is the application of scientific knowledge to the various arts of life. It should be illustrated by examples of machinery and the material operated on, in various stages of manufacture, with illustrations of the uses to which different materials can be put. Here local requirements should, of course, be kept clearly in view. For Art purposes a gallery of pictures and sculpture is required, preferably copies or engravings of celebrated pictures and casts of sculpture,

rather than cheap originals.

We now approach the consideration of how a museum is to be started and maintained. Many of our museums have originated in the bequest of some local collector, as for instance those of Maidstone and Salisbury. A private collector, however, generally has a special preference for some one branch of study, and, if rich, spends much money in making a collection to illustrate it, and a collection of that sort, bequeathed to the public, generally requires considerable additions to be made to it to render it as complete in all branches as a public collection ought to be. Moreover it is to be remembered that the bequest of a collection does not settle the question of a museum unless some body, public or private, is prepared to undertake the expense of keeping it in order. The town of Sittingbourne has just seen fit to decline an offer of this kind, not probably through unwillingness to accept the gift, but on account of the unwillingness of the ratepayers to undertake the expense of housing and taking care of it. Other museums originate in the labours of local scientific or antiquarian societies, who either keep the collection in their own hands, and make a small charge to the public for admission, or hand them over to the Corporation if they are willing to undertake the charge. The former is the case at Leeds, where one of the best provincial collections in England, that of the Leeds Literary and Philosophical Society, is located in an excellent building and well displayed and taken care of, and shown to the public at a charge of one penny. Since the passing of the Public Libraries Act, in 1855, however, many local societies, such as those of Bradford and Leicester, have handed over their collections bodily to the Corporations, and thus secured their proper display and exhibition to the public at no cost to themselves. By the above named Act, and its amendments and extensions in 1871, Corporations, Local Boards, and Vestries are to convene a public meeting when requested, and if two-thirds of the ratepayers there present agree they are empowered to take steps to establish a Free Library and Museum and to support the same by a sum derived from the rates not exceeding one penny in the £ per annum, and further on the security of the rates a loan may be raised for the necessary preliminary expenses. It is through the operation of this Act that we may hope in time to see our towns supplied with libraries and museums, but before it can come to pass the ratepayers have to be educated up to an appreciation of the advantages of such institutions. The misfortune in England at present is that the great bulk of people care nothing about these things, and as legislation is permissive in the matter they will make no move. Undoubted advantages are derived from our system of local government, but as far as educational work is concerned I cannot but regard it as an almost unmitigated evil. Even as regards elementary education, the work is often hindered and thwarted by the presence on School Boards not only of persons pledged to spend as little money as they possibly can, but by a still worse set who are actually present on the Board to oppose its work, and are sent there for that very purpose by the ratepayers. In the face of a state of things like this, and in view of the utter want of interest among most of the middle and upper classes in anything connected with higher education, we can hardly hope to see many town museums started just yet on the initiative of the ratepayers. This is one of the things they manage better abroad. In France and Germany, to go no further, education, from bottom to top, is in the care of the State; and schools, museums, and art galleries are placed wherever there is need of them. In the second report of the Royal Commissioners on Technical Instruction, which is just issued, they recommend (vol.I., page 538), among

other things, that ratepayers may be allowed to expend more than at present allowed under the Free Libraries' Act. A few towns will undoubtedly do so if the recommendation takes effect, but in the case of the great majority, unless they are, not permitted, but compelled, to expend at least a penny in the f, things will remain as they are for some time longer, that is to say till our slowly developing higher modern schools have done their work. To anyone interested in these matters there is nothing so humiliating as to see, the way in which a German town is supplied with all the machinery of higher education, and then to come back and compare it with our small performances at home. Compulsion on these matters is only wanted for one generation. The next generation, being better educated and appreciating these things, would never let them die out again. In illustration of this we have the example of Zurich, in Switzerland, a town supplied in the most lavish manner with all kinds of educational institutions almost entirely paid for out of the rates and taxes, and yet although these press heavily on the people, no candidate dare attempt to recommend himself to his constituents by hinting at a reduction of educational expenditure.

The Technical Commissioners, demoralized by their foreign travels, make another recommendation respecting museums, which is worth notice, viz., that they shall be open on Sundays. If they are supported by the public funds, it seems somewhat difficult to grasp the exact condition of mind of those who object to this. Surely it will be time to cry out when there is any attempt to pass a law compelling people to go to museums on Sundays. At present it is merely proposed to open them to those who wish to go. The idea that such a step will draw people from the public-houses, however, is probably quite as mistaken as the idea that it will affect the attendance at churches and chapels.

To return to more purely local considerations, we may hope that eventually the nucleus of a museum may spring from the labours of the naturalists and antiquarians of the neighbourhood, who would be competent to get together and arrange the local collection if they could be induced to do so. I can speak for the naturalists, as represented by the Rochester Naturalist's Club, who would be glad to do all in their power for the geology, botany, and zoology. Some of the trustees of the Rochester and Chatham Charities, which seem to be rapidly increasing in value, might, I venture to hope, at some future time, with the consent and approval of the Charity Commissioners, feel themselves justified in providing land and a suitable building, in which the local collection might be placed. Supposing that point to be reached, is it possible that the ratepayers of Chatham and Rochester, who could, I think, unite in the matter, would agree to devote a penny rate to the extension and support of the institution? I cordially invite them to think over the question seriously.

# HOW TO SUCCEED IN MUSEUMS WITHOUT REALLY TRYING?

Hugh Torrens contributed this item by T. Shepherd which was originally published in 1916 in a publication entitled Yorkshire's Contribution to Science.

Those who are fortunate enough to be combined Chief Librarians, Museums Curators, and Pooh-Bah's generally, will agree that museum curators, pure and simple (if such words can be used in description of museum curators) require something to do to occupy their spare time.

Golf, literary work, and other recreations help to pass the hours of many. In my own case, however, the hobby that helps to while away the weary hours is that of producing museum hand-books. These are either written by myself, written by others under their own name, or written by others under my name. The main point, however, is that they are written, printed and published.

Our handbooks vary in thickness from say 20 or 30 pages to 160 pages, and with two exceptions sold at a penny each. Over one hundred have been published during the past ten or twelve years. They are illustrated, some containing over 100 blocks. Many have run into three or four editions; a few are out of print, but will be reprinted as opportunity offers.

As is usual I believe with practically every place in the country, the people in Hull do not (in my opinion) give their museums sufficient financial support, and 'shortness of funds' has been a chronic complaint with us ever since I went to the museum.

For this reason our publications have to appear at a minimum of cost to the Corporation. To print 1,000 copies of a pamphlet of say 32 pages, and with say 100, 50, or a dozen illustrations, will probably incur an expense of eight to twelve pounds, and to sell them at a penny each, even assuming they all are sold, and not sent out 'with compliments,' means that a loss is bound to occur. Yet such things must not and cannot be, in Corporations where accountants, assistant accountants, treasurers, assistant treasurers, auditors, and assistant auditors do congregate. And it is to evade the affectionate attentions of these gentlemen that the 'pure and simple' curator must have spare time.

Probably in the vicinity of each museum in England there are scientific or other societies. In Yorkshire they are legion. Naturalists' Field Clubs, Scientific Societies, Geological Societies, Antiquarian Societies, and Numismatic Societies abound.

Your poor curator must join all these. Of course the subscriptions require paying, and at present he has not found a way of evading them, except in some cases by being elected an honorary member, which usually means his membership costs him more! Then he must take an active part in the indoor and outdoor meetings of the various societies, and in turn act in the capacity of committee-man, secretary, president, or whatever turns up. In time an opportunity may arise of editing one or other of these societies' publications. This opportunity should be taken. Correcting MSS. and proof-reading are most amusing, and rival golf in drawing forth those short sharp words which have such force and meaning.

At the various meetings and excursions it is necessary, in as tactful a way as is possible, to give the members the impression that he is fairly familiar with any and every branch of science:- geology, botany, ornithology, entomology, archaeology, etc., etc. This will result in his being frequently called upon to attend meetings or conduct excursions; at which he will be asked to describe the antiquities, physical features, the flora or fauna of the district; or, at the indoor meetings, to read papers on the Britons, Romans, Saxons, Danes, The Gunpowder Plot, Evolution, The Flood, The Shells of the Shore, Grasshoppers, The Evolution of the Three-stringed Lyre, Tobacco, Peru, Money, The Ice Age, and in fact any subject under the sun. These papers and addresses are reported in the local press, and if the respective societies publish transactions, a record should appear there. This is where the curator comes in, especially if he happens to be the editor of the particular publication! By the time his manuscript finds its way to the printer, it has probably developed into a catalogue of the tobacco pipes, tokens, Roman coins, spiders, or what not, in the museum! The society pays for the printing and illustrations. Then the curator obtains the editor's permission to strike off the necessary number of reprints as a "Museum Publication," the cost to the museum being merely the paper, machining, and stitching. In this way, as time goes on; the various objects in the collection can be catalogued, described and illustrated in a far, far better way than by the publication of a massive and expensive general guide, which is invariably out of date.

With regard to current acquisitions: I have found the plan of issuing an illustrated 'Quarterly Record of Additions' to be a profitable one, and I have since been awarded the 'sincerest form of flattery' by other museums. I arrange with the local papers to insert articles on such subjects as 'Important local discoveries,' 'Recent interesting finds,' etc., etc., written in language that can be understood by our old friend 'the man in the street.' These notes are illustrated by photographs or sketches. The newspapers keep up the type, and at the end of each quarter this is gathered together, divided into pages, corrected, and the 'Quarterly Record' appears.

Of course it does not follow that the curator must do all the work himself, but so long as the work is done it is immaterial who does it. Personally, a chronic disinclination for work enables me to say that I prefer other people to do it if they will, and I find that a little persuasion, with a glass of lemonade and a bun, often results in people undertaking to catalogue and describe certain of our specimens for us, provided we print the list when ready. In this way some of our Roman coins, tokens, geological specimens, spiders, pictures and moths have been catalogued. In each case the person who undertook the work spent much time upon it; the catalogue of lepidoptera (our only shilling guide) alone occupied its author two summers.

The only other catalogue not sold at one penny is the list of birds. This has 122 pages and numerous plates, and under no circumstances whatever could the price be brought down to anything like a penny, or it certainly would have been done, as in my opinion the cheaper the handbook the more the museum benefits.

Now with regard to the value of these penny pamphlets. In the first place they prevent a certain gentleman finding mischief for idle hands, by keeping the curator occupied. Secondly, they form a running descriptive catalogue of the exhibits, which will be a boon and a blessing to following curators and committees; for we must remember that our museums are to last for all time. Thirdly, they enable those interested in any particular subject to have every information thereon at a minimum of cost. Fourthly, as 'sprats'!

# NOTES & NEWS

## compiled by Tony Cross

### THE CHARMOUTH INQUIRY - LATEST INFORMATION

A byelaw to prohibit fossil, mineral and rock collecting from the Lias and Albian of Charmouth, Black Ven and part of Stonebarrow Hill, unless under licence has been proposed by West Dorset District Council. This measure was debated at a Public Inquiry at Bridport on the 27th and 28th April 1982. Not opposing the Council and providing details of a hierarchal licensing scheme that should allow collecting by permit were the Nature Conservancy Council and the Geological Society of London, both represented by Dr. Keith Duff.

Amongst those speaking in opposition to the proposed byelaw and arguing for continuation of the present freedom to collect was Paul Ensom (representing the Dorset County Museum and Dorset Natural History and Archaeological Society), Mr J. Fowles (Lyme Regis Museum), Mr. Archer-Thomson (Dorset Naturalists' Trust), Mr. David Sole (private collector) and Dr. Ian West (representing the Geology Department, Southampton University). Miss Muriel Arber, former president of the Geologists' Association provided valuable local information. It will be some time before the outcome of the inquiry is known.

After the Inquiry, informal discussion between geologists and local inhabitants revealed that much future trouble could be avoided if collectors and geologists could keep clear of just a short stretch of cliffs with houses above (only a small part of the coast discussed at the Inquiry). The stretch is the 350 metres from the seafront car park at Charmouth westwards to just beyond the first mudflow (Raffey's Ledge - Higher Sea Lane mudflow), map reference 361931. The mudflow is at a marked reentrant in the cliff. Collectors and party leaders please help by strictly avoiding this and thereby improving relations with the local people.

Ian West  
4th May, 1982

Note that in earlier privately circulated versions of the above letter it was erroneously stated that the NCC and Geological Society were 'supporting' the District Council whereas in fact they were 'not opposing' the Council (as above). Recently the report of the inspector was published and the conclusions are reproduced below.

#### 10. CONCLUSIONS

10.1 Bearing in mind the facts I am of the opinion that insufficient evidence was adduced at the inquiry to persuade me that the activities of the fossil hunters have such a material effect on erosion to justify the making of the Order. All parties are agreed that the principal cause of erosion is through the action of ground water at the cliff top and by the sea at its foot. The evidence of the Council's Chief Engineer (his written proof covered less than a sheet of foolscap) was that the effect of the activities of fossil hunters on the cliff face was unquantifiable.

10.2 On the other hand, Dr. West who had carried out a great deal of research and preparation attempted to quantify the problem and concluded that the total material removed per annum by fossil collectors does not exceed 2 cu m,

excluding commercial collecting. He was of the opinion that the system of licensing proposed by the Council was unnecessary and unenforceable. I found his evidence authoritative and convincing.

10.3 As to commercial collectors I am not satisfied that they operate on any considerable scale and the Council say that the Order is not specifically aimed at them. The evidence of Mr. D. Sole was impressive. He claims that the allegations that pneumatic drills and explosives had been used by collectors were wildly exaggerated and certainly I found no evidence to the contrary.

10.4 Dr. Duff, for the Nature Conservancy Council and the Geological Society of London was in favour of the Order principally on the grounds that geologists ought not to go onto private land in search of fossils without permission. I find that argument commendable but insufficient to justify the making of an Order.

10.5 On safety grounds the issue of licences on demand, as proposed is unlikely to reduce the numbers scaling the cliffs. Finally I must deal with the fears of the Parish Council and the residents of Higher Sea Lane. I found merit in the argument of Mr. Kine who suggested that the expert witnesses might be wrong in their assessment of the effect of fossil hunters and in any event the cumulative effect, however small, must contribute to the erosion caused by natural forces. I accept that the rate of erosion in the vicinity of Higher Sea Lane must be a real cause of concern to the residents. It would, in my view, be a sensible precaution for the Council to consider making an Order under Section 18 of the Act covering only a very limited area south of Higher Sea Lane on which there would be a complete ban. It was my impression at the inquiry that such a limited measure would not be generally opposed.

## 11. RECOMMENDATION

11.1 I recommend that the Order be not confirmed.

I have the honour to be  
Sir  
Your obedient Servant

W.B. KIRBY

The position of the Geological Society was clearly expressed in their Newsletter, Vol. II, No. 5, September, 1982

## JOURNAL EXCHANGE

Bolton Museum has for exchange or sale a quantity of duplicate Geological Society Journals. Complete volumes on offer form two runs: Vol. 103 - 118 (1947-1962) and Vol. 129 - 138 (1973-1981) inclusive. There are also a few odd parts. An exchange would be preferred to make up the gap in the museum set, substantially for the years 1912-1945, though Bolton does have odd parts and volumes from this period.

Bolton also has for disposal a duplicate set of the B.M.(N.H.) fossil catalogues issued in the early years of this century. Offers concerning these items to Alan Howell (0204) 22311 ext.361.

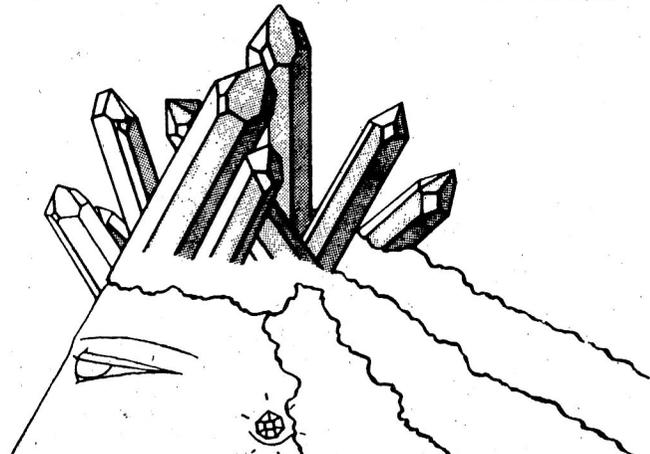
Bolton Museum  
Le Mans Crescent,  
Bolton.

## ANTIPODES ACTIVITIES - SHOCK, HORROR, PROBE!

The following advert was spotted by our Australian correspondent Sue Turner.

**5th Annual**  
**MINERAL SALE**  
incorporating a  
**Museum Warehouse Sale**  
**6 - 12th AUGUST 1982**

Australian & overseas minerals including gold, gemstones and fossils from  
50 cents to \$1000.  
Plus mysterious items from the bowels of the Australian Museum.



**at the australian  
museum**

6-8 Coliege St. Sydney 339 8111 open 7 days.

## AUSTRALIAN JUBILEE

The Association of Australasian Palaeontologists has just celebrated the happy event of Dorothy Hill's 75th birthday with a two day Jubilee meeting at the University of Queensland. About 60 of Professor Hill's students and friends came to listen to ten key papers and to see exhibits of all aspects of palaeontology. Much of the work will be gathered into a special issue of Alcheringa. Social events included a very pleasant 'wine and cheese' in the departmental museum (new curator - Sarah Dowling from Western Australia), and the Jubilee Luncheon which took up most of Friday afternoon. Here Dorothy's many friends wished her happy birthday and there were quite a few reminiscences and some nostalgia for past student days. Dorothy Hill thanked all and said she thought the pleasures of the meeting would last at least for the next five years!

Professor Hill is one of Australia's most distinguished geologists, with a special interest in palaeontology.

She was the first woman to become a full professor at an Australian university, and the first to become president of a university professorial board, both positions held at the University of Queensland.

Professor Hill has published, either as sole or senior author, more than 100 scientific works.

These include around 70 palaeontological papers predominantly on fossil corals.

After graduating from the University of Queensland with first class honours in geology and mineralogy in 1928, she took further degrees and received high honours within Australia and overseas.

Professor Hill was the first woman elected to the Australian Academy of Science, and only the second Queenslanders elected a Fellow of the Royal Society of London.



*Two portraits of Professor Dorothy Hill.*

SCOTTISH FORAY

Last Summer while staying at Tarradale House, the home of the late Sir Roderick Impey Murchison I had the opportunity to visit 3 local museums.

CROMARTY Hugh Miller's Cottage under the auspices of the National Trust of Scotland has a good but small representative collection of Hugh Miller's material from Edinburgh.

ULLAPOOL In the back of the book shop there is a museum room, half of which is given over to geological material. If ones only experience of the pipe-rock and the furoid beds is when clinging to Knocken Cliff in pouring rain and a force 8 gale, go to Ullapool Museum -

Finally the disaster story

THURSO Ever since the Thurso Scientific Society received the remains of Robert Dick's Collection after his death in 1866, there have been sporadic attempts to provide Thurso with a worthy museum. In the summer of 1981 what had been the Natural History Museum in the Library was closed to the public and the Superb Jack Saxon collection of material from the O.R.S. of N.E. Scotland returned to private ownership. All this had come about since 1966, when the previously neglected Robert Dick Collection had been re-organised by tremendous voluntary effort and exhibited.

The cause of the present state of affairs is the totally indifferent hand of beauocracy. The Town Council/County Council/Regional Council have all had a hand in, and opportunity to change matters. In the summer of 1983 there may be a thriving tourist and palaeontologist attracting museum or the old old story of cardboard boxes and packing cases in the main repeated once more.

Irene King (Mrs.)  
Etymological Research,  
(Palaeontology Unit),  
1 Laines Head,  
Chippenham,  
Wilts.  
SN15 1PH.

The following letter and article was sent to Brian Page (former editor of the Geological Curator) and relates to Dean Hannotte and his remarkable Collection of 'Vernacular palaeontology.'

Dear Fellow Dinosaurian,

In March of this year, Tom Hanley, a reporter from Collectibles Illustrated, visited me and took lots of colour photos of my collection of what Don Baird calls "vernacular paleontology". Enclosed is a copy of the article that just appeared. The entire issue can be had for \$1.95 from Collectibles Illustrated, Circulation Office, Depot Square, Peterborough NH 03458.

I should correct two misunderstandings in the article: 1) The Panini card set is the largest in number, not in size. 2) Knight sculptures are avidly sought by collectors, but the average antique dealer doesn't know how to find us. One Terrytown dealer was so paleontographically dim that he gave away a two-foot long glass-eyed plaster Knight Triceratops (albeit covered with lawn paint and with a busted horn) to Simon Deitch on the condition that Simon repair the hand of a plaster baby Jesus. (Simon found the deal inspirational.)

Other News: Hollister Jameson is developing ideas for a major new exhibit on early dinosaur discoveries, emphasizing the assimilation of paleontological theories by newspapers, films and even dinosaurabilia. She'd like to hear from anyone with ideas on this subject (especially those with information on the life and times of Philadelphia's famous Hadrosaurus Foulki and its progeny in other museums). Hollister can be reached at the Academy of Natural Sciences, 19th Street and the Parkway, Philadelphia PA 19103, (215) 299-1061.

I've just learned that the first sequel to Raiders of the Lost Ark will be a lost-world dinosaur saga called Raiders of the Forbidden City. The film will be shot in Peking, with saurians courtesy of Industrial Light and Magic.

If anyone would like a guided tour of what Simon calls my Museum of Mesozoic Memorabilia, just call (212)674-5848 or drop me a postcard to let me know when you're coming. And if you'd like more of my new calling cards (sample enclosed) to give to your paleofriends or tack up on bulletin boards, just let me know.

Sic Semper Tyrannosaurus,

Dean Hannotte.



## THE COLLECTORS

ket, while Barbie changed from a pony-tail to flip hairstyle when the first bendable doll was issued. Barbie wigs were added to the line early on and a "sleepy-eyed" Barbie was produced for one year in 1964. "The first black doll, Francie, was marketed in 1967 and is today very difficult to find. It, too, was issued for just one year," said Ruth.

Recent issues of Barbie include "Super Star" Barbie and "Pink and Pretty" Barbie, which have thicker, shinier hair than the models that preceded them. There are new black and Hispanic Barbies, as well as India Barbie and Eskimo Barbie, which are among the most beautifully crafted yet.

Today, Cronk's entire house reflects Barbie's presence. There is storage space for Barbie's paraphernalia in the attic and cellar, with Barbie displays to be found in the hallway, living room and dining room. Her husband, daughter and two sons have accepted, with good-natured humor, Barbie's invasion of every nook and cranny of their comfortable home.

From her self-styled office, Ruth initiated the International Barbie Doll Collectors Club in 1978 with 29 members and began editing and publishing the monthly *International Barbie Doll Collectors Gazette*, with the help of two fellow members, Fay Jordaens and Helen Gayarill. The *Gazette* provides news items about club members and their dolls, hints on Barbie's makeup and hair care, as well as information on doll restoration, clothes patterns and suggestions for exhibiting Barbie collections. The club, which now counts 700 women, men and youngsters among its ranks, held its first convention in October, 1980, at Kennedy International Airport's Travelodge to celebrate Barbie's 21st birthday. A 60-page book published for the event is now part of the Barbie collection in the Smithsonian Institution in Washington, D.C.

Ruth Cronk's enthusiasm for her hobby has been contagious, particularly among her own family members. "You know," she said, "I realized how much a part of our family Barbie had become the night I came into the house after a meeting and overheard George saying to someone on the phone, 'Well, it may not be a number one Barbie if it doesn't have holes in the feet.'" ♦

## America's Top Dinosaur Hunter

by Tom Hanley

Remember all those science fiction films where dinosaur-like monsters trampled Japanese cities; the comic book heroes who fought dinosaurs in time-warp battles, and the children's stories you used to read about the "friendly dinosaur?" Dean Hannotte remembers.

Dinosaurs have played a big part in Hannotte's life ever since he received his first set of plastic prehistoric creatures as a gift at the age of ten. "I remember haunting the American Museum of Natural History as a kid, staring at the huge dinosaur skeletons for hours," the 34-year-old collector recalled. "I read all the books on paleontology I could find and sent in a mountain of cereal box tops to receive dinosaur-related giveaways."

Ten years ago Hannotte, an affable bachelor, decided to pick up where he had left off as a boy. "Dinosaurabilia" became his passion as he embarked on an odyssey through used book stores and flea markets in search of prehistoric creatures. "I'm more intrigued by man's fascination with the idea of prehistoric monsters than the actual creatures themselves," Hannotte explained. The results of that fascination fill his New York City apartment — which is literally crammed from floor to ceiling with dinosaur memorabilia. Included among the assemblage are more than 1000 books, as well as films, records, newspaper stories, postcards, puzzles and games, all with dinosaur themes. Over 300 dinosaur toys of all shapes and sizes can also be found in the collection, including a large red plastic tyrannosaurus with menacing teeth, produced by the Auro-



ra model company. Hannotte purchased it from the back of a candy box in 1974 for \$7.50.

Motion pictures have often turned to dinosaur subjects in their quest to attract movie-goers. The first commercially successful animated feature was "Gertie the Dinosaur" (1909), a film short by cartoonist Winsor McCay. Among the dinosaurs' great moments on the silver screen, Hannotte feels, was the 1925 film adaptation of Sir Arthur Conan Doyle's novel, *Lost World*, and the 1931 classic "King Kong." Dinosaur battles in both films were produced under the guidance of legendary special-effects wizard Willis O'Brien. "The technical work behind the dinosaurs in these films remains far superior to anything else ever attempted. All the animals look like they stepped right out of paleontology books."

Hannotte explained that dinosaurs first captured the American public's imagination in the 1880s and '90s, when fossil discoveries in the West touched off what Hannotte called "a bone rush." Newspaper headlines proclaiming new discoveries almost daily whipped fossil fever to a frenzy. "Even the American Museum of Natural History got into the act when it auctioned off a dinosaur egg for \$5000 during the height of the craze," Hannotte said. The egg was found in the Gobi Desert, and when the Chinese government got word of the sale, it closed the desert to further exploration, keeping it off limits to archaeologists until the 1940s.

Despite the dinosaur's place in American history and folklore, Hannotte stands virtually alone as a collector of dinosaurabilia. "I've yet to meet anyone else who collects the stuff on this scale," he stated. He is working to correct that. It is typical of him to send a visitor home with a shopping bag filled with duplicate dinosaur books, "just to start off their collection."

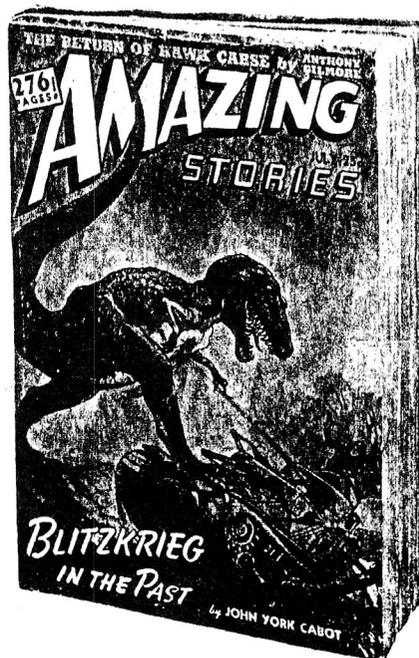
In fact, books — comic books, pulps, magazines and hardcover volumes — make up the largest portion of the Hannotte dinosaur collection. Over the collector's bed, a tyrannosaurus crushes an armored tank on the cover of a pulp magazine of World War II vintage which reads: "Blitzkrieg in the Past." "I don't think there's any book on dinosaurs in the last 30 years that I don't have," Hannotte ventured to say. He has achieved

this by regularly combing used book stores around Manhattan and keeping up correspondence with 300 book dealers around the country.

Turning to specific titles on his shelves, he noted, "Here's the rarest book in my collection, a 1902 dinosaur takeoff on *Alice in Wonderland* called *Wonders in Monsterland*." Other eye-catching titles stand out, such as *I Married a Dinosaur* and *Bring Them Back Petrified*, both by Lillian Brown, wife of the late Barnum Brown, a noted paleontologist who made extensive expeditions in search of fossils.

Comic books have long been fertile terrain for dinosaurs and Hannotte has accumulated boxes of them, including the popular "Turok, Son of Stone" series and DC Comics' "Star Spangled War Stories," in which dinosaurs battled with airplanes. "Even Mickey Mouse and Goofy went back on occasion to the pre-historic era," Hannotte said.

One of the biggest producers of dinosaur items was the now defunct Sinclair Oil Company, which used a dinosaur for its corporate symbol. The friendly Sinclair brontosaurus appeared in advertisements as well as company literature, many of which have found their way into Hannotte's collection. "The company



Our boys had to contend with dinosaurs as well as enemy soldiers in *Amazing Stories'* *Blitzkrieg in the Past*.

gave away dinosaur banks, jigsaw puzzles, stamp albums and inflatable toys," the collector said. Ironically, like the dinosaur, Sinclair was doomed to eventual extinction. The company logo disappeared in 1969 as a result of a merger with Atlantic Richfield.

Dinosaurs have appeared on all sorts of media over the years. Unlike baseball cards, America never went in big for dinosaur trading cards. "The few available are quite expensive today, going for as much as \$2 apiece," he said. One such series, consisting of 60 cards, was issued by Nu-cards Sales of Seaford, New York, in the early 1960s. "They're quite difficult to find," Hannotte explained. Foreign companies, on the other hand, have a history of producing dinosaur trading cards. Perhaps the most lavish set ever produced was issued by an Italian firm, Panini, in 1970. "The set contains 360 cards and are the largest I've ever seen," Hannotte remarked.

"Precious" is the word the dinosaur collector uses when asked to assess the value of his collection. Hannotte figures he's spent at least \$10,000 during the past decade acquiring his treasures. "But I really can't say what the value is," he admitted, explaining further that there is no one qualified to appraise such a collection. "Dinosaur memorabilia has not established its own market, simply because there's not enough people collecting the stuff. For example, dinosaur figurines done by Charles Knight, the premiere paleontologist artist in the country back in 1892, are in one sense very valuable, as they are hard to find. But on the other hand, it would be equally hard to find people who would want them in the first place."

Hannotte has reached the point where his greatest pleasure comes in simply enjoying the items he has acquired. "I don't make quite as many extended forays to New Jersey book sales as I once did." He still maintains hope of someday finding others who share his appreciation for dinosaurabilia.

"It's difficult to explain," Hannotte said. "All I know is that, for me, the hours spent combing racks on a bookstore ladder and getting crooked knees, just to have the thrill of finding an elusive dinosaur gem like *The Book of Prehistoric Animals*, written in 1935 by Raymond Ditmars, keeper of the Bronx Zoo, are all worthwhile." ♦

## RECENT PUBLICATIONS

Charles Darwin "A man of enlarged curiosity", Peter Brent. (336pp), published by Heinemann in October 1981 price £12.50.

April 1982 was the centenary of Darwin's death and this book was the first of several to 'cash in' on that fact. Production of the book is uninspiring in appearance and of poor quality, with end papers so fussy as to make the route of the 'Beagle' indistinct, and a tight binding which split half way through reading the book. However, while Peter Brent is not a scientist he generally provides good descriptions of Darwin's findings, thoughts and published works, but only very briefly does he discuss these with a modern context, at the end of the book.

The author had done his home-work and is able to write into his biography quotations from many sources, including Darwin's own fascinating notebooks and from letters. He is at his best in describing the family and social scene, both before and after the Beagle voyage, when working from reliable materials. He does, however, allow himself some flights of fancy when writing speculatively about Charles Darwin as a boy, or about his supposed love affair with Fanny Owen, whose letters, however, Darwin did keep.

The revered, well-off and, for its day, broad-minded family in which Darwin was nurtured is well described and convincing. We read of his normality as a student, and yet he was already making friendships with eminent older men who, had they not recognised something special about the young Darwin, would not have bothered to befriend him and maintain their contacts.

Darwin's interest in geology can be traced from his dislike of Professor Jameson's lectures in Edinburgh in 1827 (as an 18 year old student) to the influence of Charles Lyell and Adam Sedgwick, with whom he had just completed a field trip in North Wales when the fateful letter from his Cambridge mentor, Professor John H. Henslow, arrived inviting him to join Captain Fitz-Roy and the Beagle as naturalist. It was in a letter of support for this project to Charles' father, Dr. Robert Darwin, that the influential and liberal Josiah Wedgwood described the 23 year old Darwin as "a man of enlarged curiosity". This characteristic, his total honesty, ability to work hard despite illness, and powers of synthesis led to Darwin's greatness. There was also an important element of humility, for as a largely untrained naturalist launching on his career he did not always know the conclusions at which he was supposed to arrive, and so viewed everything freshly.

The larger part of the book covers Darwin's life after the voyage, his marriage to Emma Wedgwood of Maer in 1838, when he noted in his diary simply "The day of days". A fascinating section of the book stresses the importance of Darwin's Transmutation Notebooks and we read of his early ideas on evolution, a tree of life, and of the 'world divided into zoological provinces, united ... and now divided again'.

Brent makes the point that in his day Darwin did not have the language of today with which to describe his ideas and consequently some may seem clumsily expressed. He treats Darwin's illness, and concern over it, fully and sensibly, making the point that despite all the time lost through ill-health. Darwin achieved a remarkable output, especially during the last decade of his life.

There are a few minor quibbles of content, largely resulting from a lack of zoological knowledge, like the 'expert ... on the genus Brachiopods.' called by Brent T.W.St.C. Davidson, presumably Thomas (no other name) Davidson. The book achieves its aim of placing Charles Darwin within the context and climate of his time and of revealing more of the man himself than we can read from any other single book. Still, at the end of it all we do not get close to the man, and this is not Brent's fault but part of Darwin's withdrawn character.

If you would be pleased to read something about Darwin devoid of debate on evolution, creation, cladistics, gradualism or punctuated equilibrium, then this may be your book. Parts are somewhat repetitive, others turgid and a few quite speculative, but on the whole it is an informative and good read.

Review by Dr. C.H.C. Brunton.

THE CAVE HUNTERS. Biographical sketches of the lives of Sir William Boyd Dawkins (1837-1929) and Dr. J. Wilfrid Jackson (1880-1978). Edited by M.J. BISHOP. Published by the Derbyshire Museum Service, 1982: 48pp.

The introduction opens with the explanation:

"This booklet was produced in the first instance to accompany the exhibition on the life and work of Sir William Boyd Dawkins and Dr. J. Wilfrid Jackson held at Buxton Museum in 1982".

Without having seen that display, I am unable to judge its merits as an accompaniment, or as a souvenir of items seen. However, I can assess it as a significant biographical reference of these two eminent prehistorians.

The biographical account of Boyd Dawkins was written by Dr. Jackson and has previously appeared in the journal Cave Science (Vol. 5, 1966) and has been up-dated with references and augmented by photographs selected by the editor. Mike Bishop also admits that his own account of Wilfrid Jackson had been put together in a matter of months from the enormous archive that exists in the Buxton Museum and from reminiscences provided by Miss A.S. Jackson. He sees both accounts as preliminaries to fuller studies that could be produced from the same source and which might consider the role of these two 'cave hunters' in the development of prehistory and geology between 1860 and 1960.

The two sketches provide all the essential details concerning the lives of the two men and convey their breadth of interest, authority and involvement with the significant excavations made in their lifetimes. An example of this is the utilisation by Jackson in his later years of his earlier specialisation in conchology when reporting on animal remains found in cave investigations. Similarly his interest in rodent remains, that arose from research when appointed Asst. Keeper at Manchester Museum in 1907, also contributed to Jackson being regarded as Britain's leading cave pre-historian from the 1920's until the 1960's. The study of such remains has since become one of the dominant features of mammalian palaeontology and cave investigations.

It is also possible to glean a little of the problems that both men had with their contemporaries and administrators. At one time, because of such difficulties and his wife's desire to join relatives in Australia, Jackson endeavoured to obtain a museum, or survey post in that continent. Reluctant to endure such drastic upheaval without some surety of a secure post, he sought the recommendation of various officers at the B.M.(N.H.) e.g. Bather, Melvill and Smith Woodward. Reference is also made to Jackson's concern as a curator for gathering information together, this resulted in his catalogue of the type and figured specimens in the Geology Dept. of the Manchester Museum (1952) and his significant enduring contribution to British Caving literature, listing knowledge of every bone cave in Britain (1953, 1962). This interest in collections existed from his conchological days and in a letter to L.R. Cox (Jan. 1944) he wrote:

"I have been hunting old Captain Brown's types for years, and have been able to find one or two. There was no indication on the specimens and this makes it difficult. I am afraid many are lost as the collections have passed through many vicissitudes".

Equally, Jackson's efficiency in producing the many reports mentioned and listed in the booklet, might also be explained by the anxiety expressed in a letter to Dorothy Bate referring to High Wheeldon:

"I want to make the Rpt. as complete as possible .. It is always the way with these caves, everyone wants a finger in the pie and goes scratching here and there for bones .."

Although I have dwelt on the Jackson section, the booklet is equally comprehensive and rewarding on the events in the life of Boyd Dawkins, whose bequest has ensured that this rich collection of material is in the Buxton Museum and within the Peak District beloved of both men.

As a reference tool the two detailed bibliographies impart a valuable quality. This is further enhanced by the admirable, unique feature of a short list that summarises the holdings of U.K. museums which once belonged to Boyd Dawkins and, or Jackson. If only all biographers would produce such a useful condensation, or were even aware that such information is desirable! Mike Bishop closes his contribution by making a comparison of the two men suggesting that at the end of the day a scientist's worth lies in his powers of accurately recording data. Ending my appraisal, I can only suggest that by providing a wealth of reliable information in these two biographies, the Editor has established the worth of this booklet. At to-day's values the price of £1.50 (plus postage) is a bargain.

R.J. Cleevely,  
Dept. of Palaeontology,  
British Museum (Natural History)  
Cromwell Road,  
London, SW7.

Copies can be obtained from: Dr. M.J. Bishop of Buxton Museum.

The Derbyshire Country House

The larger Country Houses, originally supported by land or an estate and designed for more than a functional purpose, have attracted public interest for many years; not so the smaller residences, many now farmhouses, which are tucked away from the main tourist routes.

This book records 155 both large and small houses, each with an illustration and description of the building materials, architecture, present function and status, history and ownership. The houses described provide a wide cross-section of nearly seven hundred identified within the County of Derbyshire and listed in the gazetteer.

The book also attempts to give equal prominence to each house, whether standing or demolished, great or small and so provide the reader with a history of domestic building, builders and owners over a period of eight hundred years.

The Derbyshire Country House presents a brief but concise account of the geology, history, architecture and building materials of the County and illustrates many houses for the first time and others better known from a different view point. It also, again for the first time on a county basis in this country, describes the building materials in some detail.

In producing this book, the Derbyshire Museum Service have kept the cost to the customer down to a price more usual for a booklet with few illustrations. A hard back version was contemplated but rejected in favour of soft covers to maintain the low price.

Authors Maxwell Craven - Keeper of Antiquities, Derby City Museum and Art Gallery.  
Michael Stanley - Deputy Museums Officer, Derbyshire Museum Service.

Foreword Her Grace The Duchess of Devonshire.

Promoters Derbyshire Museum Service and Derbyshire Building Society.

Printers Barnes and Humby Ltd., Carlton Road, Nottingham.

Publishers Derbyshire Museums Service.

Cost £2.50 for colour cover and back - illustrations of Duffield Hall, 99 pages with 177 illustrations, maps and 2 text figures.

Note This publication will be reviewed in a subsequent issue of the Geological Curator.

The Dorset Natural History and Archaeological Society announce the publication of the following offprints from recent volumes of the Proceedings of the Dorset Natural History and Archaeology Society.

Vol 102 1980

'Multiple Dinosaur Trackways from The Isle of Purbeck' J.B. Delair,  
3pp A4 55p.

'Naleds in a Wessex Downland Valley' J.A. Catt, M. Green & N.J. Arnold.  
7pp A4 85p.

'Observations of Short-term Profile Changes on Chesil Beach' Phillip Gibbs,  
6pp A4 70p.

Vol 103 1981

'An Historical Survey of the Landslips of the Axmouth Lyme Regis Undercliff'  
J. Pitts 6pp A4 65p.

Prices inclusive p&p. Available from Dorset County Museum, High West Street, DORCHESTER, DT1 1XA. Cheques payable to DNHAS.

A NEW PERIODICAL

FOSSILS QUARTERLY is devoted to articles, news and reviews of interest to the fossil-collector, student and museum curator. It is issued quarterly and the subscription is 9.00 dollars per year. It is published by Geotech Archives Ltd, 3616 Garden Club Lane, Charlotte, North Carolina 28210, United States. It is edited by Richard L. Casanova (address not given)

The first edition (Volume 1 no. 1.) was published earlier this year. It is an attractively produced 'glossy' magazine illustrated with black and white photographs. (format 228mm. x 153mm.) This first issue has 32pp. and contains the following articles.

Famous Palaeontologists and Collectors Gideon Algernon Mantell by Dennis R. Dean.

Trilobites of the Ordovician Martinsbury Formation at Swatara Gap, Pennsylvania by Richard M. Busch.

An Amateur Collection of Fossil Flora from the Clarno Formation of Oregon by Thomas J. Bones.

Palaeontological Displays of the Cleveland Museum of Natural History, by Dr. Michael E. Williams.

Fossil Book News.

Fossil Finds in the Media 1980-81.

In the editorial Mr. Casanova states that the periodical is aimed at catering to the interest of the fossil collector, offering the very best in all phases of palaeontological studies, techniques, locality data, and the historical aspects of Collecting and Collectors.

Poster Offer!

The National Museum of Wales has published a colour print of Henry De La Beche's water colour Durior Antiquior or Ancient Dorsetshire. The print, which is accompanied by an explanatory leaflet, is available from the Bookshop, National Museum of Wales, Cardiff, CF1 3NP, price £1.50 including postage and packing.

# GEOLOGICAL DEALERS

## LISTED IN 'MEDALS OF CREATION'

The following Lists of Dealers in Fossils and Minerals were published in G.A. Mantell's book The Medals of Creation or First Lessons in Geology and the study of Organic Remains. vol. 2.

The first list was published in the 1st edition of 1844 (pp. 986-990).

The second list appeared in the 2nd edition of 1854 (pp. 905-908).

The editor is grateful to Hugh Torrens for bringing these lists to his notice.

### MISCELLANEOUS.

—  
*List of Dealers in Fossils, Minerals, &c.*  
—

#### LONDON.

CUTTELL, Mr., 52, New Compton-street, Lapidary. Prepares fossil teeth, &c. for the microscope.

DARKER, Mr., Lapidary, 9, Paradise-street, Lambeth. Fossil and recent objects for the microscope. Specimens of the infusorial earths; teeth of fishes and reptiles, marbles, &c.

EDWARDS, 40, High-street, Camden Town. For boards for cabinets, to affix fossils, shells, &c. instead of trays.

McLELLAN, 107, Great Russell-street, Bloomsbury. Manufactures the trays for the British Museum. Wooden trays with black sides, 2 inches by 2, to 6 inches by 2, price 7s. per dozen. This price is much too high, except for public collections. Common card or pasteboard trays answer every purpose.

SOWERBY, Mr. G. B. (the eminent naturalist), 50, Great Russell-street, Bloomsbury. All kinds of fossil and recent shells.

STUTCHBURY, Mr., 47, Theobald's-road. Fossils, minerals, and objects of natural history in general, at very moderate prices. Series of specimens of fossils and minerals, illustrative of any particular department of the science, are made

#### DEALERS IN FOSSILS.

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up, arranged, and ticketed. Mr. S. also attends and arranges private collections; and gives instruction in mineralogy, geology, conchology, &c.; sciences in which he is eminently skilled.

TENNANT, Mr. J., Professor of Mineralogy to King's College, 149, Strand. This establishment is too well known to require comment. Every purchasable species of fossil, mineral, or shell, may here be obtained; as well as the various microscopic fossils, infusorial earths, slices of teeth, and wood, marble, &c. The collections formed by Mr. Tennant for the student in Geology, Palæontology, and Mineralogy, are admirably calculated to afford that acquaintance with specimens, so indispensable to the acquisition of a knowledge of Geology. A series may be obtained, illustrative of the system of instruction suggested in these volumes, and arranged in a sequence corresponding to the order in which the fossils are described. The price of a mahogany cabinet with five trays, containing 200 specimens, illustrative of the elementary works on Geology, is five guineas: cabinets with fewer and less valuable specimens from two to three guineas. The following is an outline of the contents of the five guinea cabinet—

MINERALS which are either the components of Rocks, or occasionally imbedded in them:—Quartz, Agate, Chalcedony, Jasper, Garnet, Zeolite, Hornblende, Augite, Asbestos, Felspar, Mica, Talc, Tourmaline, Calcareous Spar, Fluor, Selenite, Baryta, Strontia, Salt, Sulphur, Plumbago, Bitumen, &c. &c.

NATIVE METALS, or METALLIFEROUS MINERALS; these are found in masses or beds, in veins, and occasionally in the beds of rivers. Specimens of the following Metallic Ores are put in the Cabinet:—Iron, Manganese, Lead, Tin, Zinc, Copper, Antimony, Silver, Gold, Platina, &c.

ROCKS; Granite, Gneiss, Mica-slate, Clay-slate, Porphyry, Serpentine, Sandstones, Limestones, Basalt, Lavas, &c.

SILURIAN FOSSILS from the Llandeilo, Wenlock, and Ludlow Rocks.

*Secondary Fossils* from the Devonian, Carboniferous, Lias, Oolite, Wealden, and Cretaceous Groups.

*Tertiary Fossils* from the Plastic Clay, London Clay, Crag, &c.

Mr. Tennant has also models of many unique and rare fossils; as for example, of the horn, claw-bones, &c. of the Iguanodon; lily encrinite; small models of the upright coal-trees, near Bolton; Mr. Sopwith's models of stratification, &c.

TOPPING, Mr., 1, York-place, Pentonville-hill; supplies boards and cases, and every kind of fossil infusoria, &c.; polished slices of fossil wood and teeth; and all kinds of microscopical objects, admirably prepared, and at moderate prices.

MICROSCOPES.—A microscope is now almost an indispensable instrument for the collector of fossil remains; and, in fact, for the cultivator of any natural science. A microscope sufficient for every useful purpose may be obtained, at the price of from seven to twenty guineas, of

POWELL, Mr., 24, Clarendon-street, Clarendon-square.

PRITCHARD, Mr. Andrew, Fleet-street; the author of various useful works on microscopical subjects. Mr. Pritchard's microscope, of from seven to ten guineas, has been purchased by several of my geological friends, and admirably answers the purpose of investigation,

Ross, Mr., 21, Featherstone-buildings, Holborn.

#### BRIGHTON.

THATCHER, Mr., West Cliff, King's-road, has often very choice chalk fossils, admirably cleared, and at fair prices. Most of the pebbles cut and set in brooches, and sold by the lapidaries and jewellers in this town, as Brighton productions, are common German moss-agates. The green brooches, called *Brighton aqua marines!* are rolled fragments of wine-bottles. Occasionally good sections of the *Chouanites*

(see p. 264.) may be obtained: inquire for "*petrified sea-anemones.*"

#### DOVER.

MOSES, Snargate-street; has generally a large collection of Chalk and Marl fossils; his prices are high.

#### HASTINGS.

BISSENDEN, THOMAS, West-street; OLIVER, ELIZABETH, 7, Parade: of whom Wealden fossils from the neighbouring cliffs may often be obtained.

#### LEWES, SUSSEX.

MARTIN, J., *Mason*, Fisher-street: the usual Chalk fossils from the neighbouring quarries; and polished slabs of Sussex marble, and of Bracklesham *Septaria* with shells (p. 373.). Fossil wood from Portland. Any collector or Institution having large specimens imbedded in stone to develop, may safely entrust them to Mr. Martin; he was the only person that assisted me in dissecting the Tilgate fossils now in the British Museum, and has become an expert and cautious workman.

#### MAIDSTONE.

SIMMONS, T., a well-known dealer; has usually a large collection of the Kentish Green Sand and Chalk fossils.

#### SHEERNESS.

HAYES, PATRICK, Sheppey-street, Blue Town. The usual Sheppey fossils. According to his own list, he has for sale,—petrified whelk-shells, cockles, clams, screws, *Nautilus*. Fruits, various: as beans, coffee, figs, nuts. Crabs, lobsters, turtles. Fishes' heads, teeth, and spine-bones. His charge for perfect specimens is high; a *Nautilus*, cut in half and

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MINERALS.—A complete series of the minerals of Cumberland, comprising specimens of great beauty and interest, can be obtained of JOHN COWPER, Alston, Cumberland. This collector formed one of the finest series I have ever seen, for the Rev. Charles Pritchard, F.R.S.; he may be relied upon for his knowledge and attention, and his prices are very moderate.

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BRITISH NATURAL HISTORY SOCIETY, for the distribution of Fossils and Recent Shells, London Agent for the, 30, Tavistock-street, Covent Garden.

CHARLTON, Mr., at the Geological Society's apartments, Somerset House. For boards and tablets for fossils; prepared and backed paper for diagrams; cabinets for specimens, &c. An excellent and intelligent workman, and moderate in his charges.

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DARKER, Mr., Lapidary, 9, Paradise-street, Lambeth. Fossil and recent objects for the microscope. Specimens of the infusorial earths, teeth of fishes and reptiles, marbles, &c.

EDWARDS, 40, High-street, Camden Town. For boards for cabinets, to affix fossils, shells, &c. instead of trays.

MCLELLAN, 107, Great Russell-street, Bloomsbury. Manufactures the trays for the British Museum. Wooden trays with black sides, 2 inches by 2, to 6 inches by 2, price 7s. per dozen. This price is much too high, except for public collections. Common card or paste-board trays answer every purpose.

SIMMONS, Mr., 6, Francis-street, Newington Butts. Collector of fossils; especially of choice Chalk fossils and fossil Foraminifera.

SOWERBY, Mr. G. B. (the eminent naturalist), 50, Great Russell-street, Bloomsbury. All kinds of minerals, fossils, and recent shells.

TENNANT, Mr. J. Professor of Mineralogy and Geology to King's College, 149, Strand. Every purchasable species of fossil, mineral, or shell may be obtained; as well as the various microscopic fossils, infusorial earths, slices of teeth, wood, marble, &c. The collections formed by Mr. Tennant for the student in Geology, Palæontology, and Mineralogy are admirably calculated to afford that practical acquaintance with specimens, so indispensable to the acquisition of a knowledge of Geology. A series may be obtained, illustrative of the system of instruction suggested in these volumes, and arranged in a sequence corresponding to the order in which the

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POULTON, Mr. C., Wooburn, near Marlow, Bucks; beautiful preparations of minute fossil animal and vegetable structures for the microscope at 1s. 3d. per slide. Infusorial earths admirably prepared. Specimens of foraminifera, recent and fossil. Grignon sand with foraminifera, &c.

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ROSS, Mr. 21, Featherstone-buildings, Holborn; justly celebrated for the perfection of his instruments.

SMITH and BECK, Messrs. 6, Coleman-street, City.

## BRIGHTON.

NIGHTINGALE, Mr. 52, Frederick-street, near the railway station, Brighton. A large assortment of Sussex chalk and other fossils. Mr. Nightingale is a first-rate artist in clearing chalk fishes and crustaceans.

THATCHER, Mr., West Cliff, King's-road, has often very choice chalk fossils, admirably cleared, and at fair prices.

Most of the pebbles cut and set in brooches, and sold by the lapidaries and jewellers in this town, as Brighton productions, are common German moss-agates. The green brooches, called *Brighton aqua marines* are rolled fragments of bottle-glass. Occasionally good sections of the *Choanites* (see p. 234) may be obtained: inquire for "*petrified sea-anemones*."

## CHIPPENHAM, WILTS.

BUY, WILLIAM; for Oxford Clay fossils of the greatest variety and in the highest perfection. Especially celebrated for his discovery and admirable development of the soft parts of Belemniteuthides, Belemnites with phragmocones, &c.

## DOVER.

GRIFFITHS, Paradise-street.

MOSES, Stroud-street; has generally a large collection of Chalk and Galt fossils.

## HASTINGS.

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MICROSCOPES.—A microscope is now an indispensable instrument for the collector of fossil remains; and, in fact, for the cultivator of any natural science. A microscope sufficient for every useful purpose may be obtained, at the price of from seven to twenty guineas, of—

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## DEALERS IN FOSSILS.

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HAYES, PATRICK, Sheppey-street, Blue Town. The usual Sheppey fossils. According to his own list, he has for sale,—petrified whelk-shells, cockles, clams, screws, Nautilus. Fruits, various; as beans, coffee, figs, nuts. Crabs, lobsters, turtles. Fishes' heads, teeth, and spine-bones. His charge for perfect specimens is high; a Nautilus, cut in half and polished, presenting two perfect sections, 25s.; if imperfect, 1s. or 2s. A fish's head, or lobster, 10s. to 15s.; imperfect examples, 6d. to 2s.; see p. 840.

## VENTNOR, ISLE OF WIGHT.

WHEELER, CHARLES, Holder's Sea-side Cottage. An excellent guide to the most interesting localities along the southern shore of the island. Collects and sells specimens.

## WARMINSTER.

BAKER, Mr.; dealer in fossils. The Warminster Green-sand, and Chalk fossils.

## WEYMOUTH.

DAMON, Mr. ROBERT, dealer in fossils; has always on sale a large and excellent collection of the organic remains from the neighbourhood of Weymouth, the Isle of Portland, and Lyme Regis, &c. A series of recent British shells, from 200 to 400 species, correctly named.

## YORK.

BRITISH NATURAL HISTORY SOCIETY, for the distribution of Fossils and recent Shells; conductor, &c. Mr. Charlesworth, Curator of the York Museum.

NOTES ON THE PRICES OF FOSSILS.—A short communication by the Author to Charlesworth's London Geological Journal, No. I. p. 13, contains a list of the prices of several interesting fossils and collections of fossils.

MINERALS.—A complete series of the minerals of Cumberland, comprising specimens of great beauty and interest, can be obtained of JOHN COWER, Alston, Cumberland; he may be relied upon for his knowledge and attention, and his prices are moderate.

## POETS CORNER

The following two poems were spotted by Susan Lewis (Hull University) and are from *A Century of Humorous Verse* edited by Roger Lancelyn Green and published by Deut (1968).

### THE LAY OF THE TRILOBITE

A mountain's giddy height I sought,  
Because I could not find  
Sufficient vague and mighty thought  
To fill my mighty mind;  
And as I wandered ill at ease,  
There chanced upon my sight  
A native of Silurian seas,  
An ancient Trilobite.

And then, quite natural and free  
Out of his rocky bed,  
That Trilobite he spoke to me,  
And this is what he said:  
'I don't know how the thing was done,  
Although I cannot doubt it;  
But Huxley - he if any one  
Can tell you all about it;

You've Kant to make your brains go round,  
Hegel you have to clear them,  
You've Mr Browning to confound,  
And Mr Punch to cheer them!  
The native of an alien land  
You call a man and brother,  
And greet with hymn-book in one hand  
And pistol in the other!

'But gentle, stupid, free from woe  
I lived among my nation,  
I didn't care - I didn't know  
That I was a Crustacean.  
I didn't grumble, didn't steal,  
I never took to rhyme:  
Salt water was my frugal meal,  
And carbonate of lime.'

'I wish our brains were not so good,  
I wish our skulls were thicker,  
I wish that Evolution could  
Have stopped a little quicker;  
For oh, it was a happy plight,  
Of liberty and ease,  
To be a simple Trilobite  
In the Silurian seas.'

So calm, so peacefully he lay,  
I watched him even with tears:  
I thought of Monads far away  
In the forgotten years.  
How wonderful it seemed and right,  
The providential plan,  
That he should be a Trilobite,  
And I should be a Man!

'How all your faiths are ghosts and dreams,  
How in the silent sea  
Your ancestors were Monotremes -  
Whatever these may be;  
How you evolved your shining lights  
Of wisdom and perfection  
From Jelly-fish and Trilobites  
By natural selection.

'You've Politics to make you fight  
As if you were possessed;  
You've cannon and you've dynamite  
To give the nations rest:  
The side that makes the loudest din  
Is surest to be right,  
And oh, a pretty fix you're in!'   
Remarked the Trilobite.

Reluctantly I turned away,  
No other word he said;  
An ancient Trilobite he lay  
Within his rocky bed,  
I did not answer him, for that  
Would have annoyed my pride:  
I merely bowed, and raised my hat,  
But in my heart I cried:

May Kendall (1861-1943). The poem dates from 1885.

## THE MISSING LINK

Beside the rail, despite the gale,  
Old Noah took each ticket,  
And registered each beast and bird  
That passed inside the wicket.

With heave and yank, up came the plank,  
A-straining and a-creaking,  
When, rising o'er the wind and roar,  
They heard two voices shrieking -

Down went the gang, and up there sprang  
Before them, through the curtain  
Of blinding rain, the oddest twain,  
Of genus most uncertain.

Quoth Noah: 'Pray, who are you - say?  
Human, or anthropoidal?'  
'You takes your choice!' as with one voice  
They cried, which so annoyed all

Said Noah: 'Though you're rare, I know  
You're not for my collection;  
And though not vain, I must refrain  
From claiming the connection.'

And when at last they had made fast  
As much as they could stow away,  
He cried 'Let go! cut loose! yo ho!  
Hoist gang! avast! heave ho - away!'

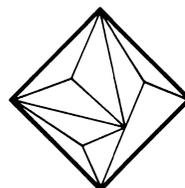
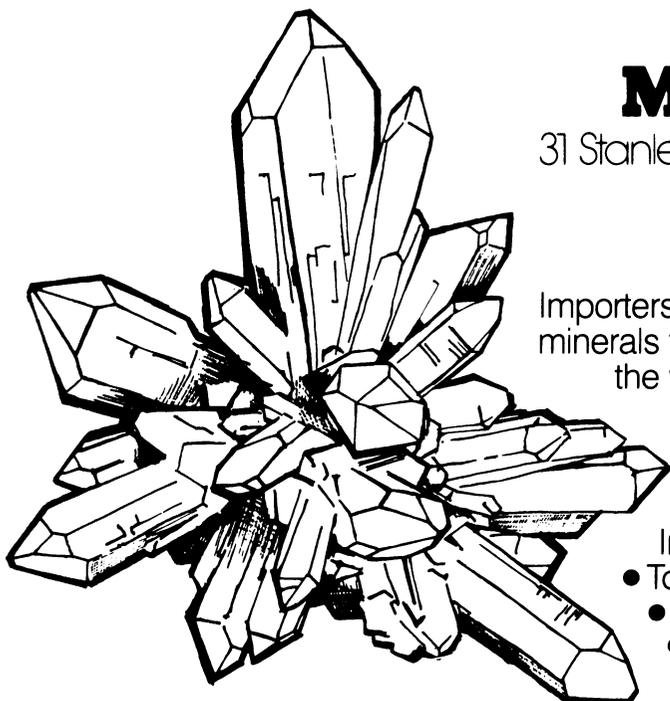
'Take us aboard! You can't afford  
So cruelly to flout us!  
We are a pair extremely rare;  
No ark's complete without us.'

They'd human shape, yet like the ape  
Were caudally appended;  
And, strange to tell, their feet as well,  
Like apes', in fingers ended.

The apes on board with one accord  
They screamed for indignation;  
'Twas very clear they would not hear  
Of any such relation.

With small regret the pair he set  
On shore mid cheers and hissing,  
And that's the way it comes today  
The MISSING LINK is missing.

Oliver Herford (1863-1935) The poem dates from 1906.



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## THE GEOLOGICAL CURATORS GROUP

The purpose of the Group is to improve the status of geology in museums and similar institutions, and to improve the standard of geological curation in general, by:

- holding meetings to promote the exchange of information
- providing information and advice on all matters relating to geology in museums
- the surveillance of collections of geological specimens and information with a view to ensuring their well being
- the preparation of a code of practice for the curation and deployment of collections
- the advancement of the documentation and conservation of geological sites
- initiating and conducting surveys relating to the aims of the Group