

GCCG

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THE GEOLOGICAL CURATOR

VOLUME 3 No 1

APRIL 1981

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

THE GEOLOGICAL CURATOR

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COLLECTIONS AND INFORMATION LOST AND FOUND.

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

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CONTENTS	Page no.
EDITORIAL	1
RELATIONS BETWEEN GCG AND NCC	2
SEVENTH ANNUAL GENERAL MEETING	4
GCG AMENDED CONSTITUTION	7
MDA/GCG MINERALOGICAL TERMINOLOGY MEETING Report by Andrew Roberts	10
DOCUMENTATION OF GEOLOGICAL MATERIAL; TOWARDS A COMMON STANDARD. Report on the Leeds meeting by Andrew Roberts.	14
FORTHCOMING MEETINGS.	17
COLLECTIONS and INFORMATION LOST and FOUND Compiled by Hugh Torrens	19
REQUEST FOR INFORMATION ON HANDWRITING REGISTERS	27
GCG TO INITIATE A GEOLOGICAL HANDWRITING REGISTER	27
THEFT OF SPECIMENS FROM MALTA.	27
COLLECTIONS and COLLECTORS OF NOTE 39. THE SEDGWICK MUSEUM CAMBRIDGE	28
MERELY RUBBISH? THE FATE OF THE CUMING MUSEUM GEOLOGICAL COLLECTION	36
THE CRABBE COLLECTION REHABILITATED	37
ICOM ADOPTS CARDIFF COLLOQUIUM RECOMMENDATIONS	39
PROPOSAL FOR A WORLD DIRECTORY OF PALAEOLOGICAL COLLECTIONS. by Barry D. Webby	40
CONTINUING CONTROVERSY AT THE BRITISH MUSEUM (NATURAL HISTORY)	41
CLADISTICS: A DIFFERENT POINT OF VIEW by Alan Charig	45
GEOLOGICAL LOCALITY GRADING IN SITE DOCUMENTATION by Stephen Drinkwater	47
GEOLOGICAL SOCIETY OF LONDON ESTABLISHES A CONSERVATION COMMITTEE by Pete Toghill	49
GEOLOGICAL CONSERVATION IN THE WARWICKSHIRE CO. COUNCIL STRUCTURE PLAN. by Tristram Besterman.	51
PICTURE PUZZLE by David Curry	53
NOTES AND NEWS Compiled by Tony Cross	53
BUILDING AND DECORATIVE STONES IN MUSEUM COLLECTIONS by Mick Stanley	59
LETTERS FROM AUSTRALIA Sue Turner	60
Ken McNamara	61
BOOK REVIEW COMPOSITION OF SCIENTIFIC WORDS by R.W. Brown reviewed by Irene King	62
RECENT PUBLICATIONS OF NOTE	63
ANSWER TO PICTURE PUZZLE	54
GCG CURRENT MEMBERSHIP LIST PERSONAL MEMBERS	i
INSTITUTIONAL MEMBERS	xiv

EDITORIAL

In the last issue of the Geological Curator there was a review by Hugh Torrens of what the Group has achieved since its inception in 1974. Perhaps, in this issue, we should look to the future whilst considering the main aims of the Group which are printed on the cover. The summary of the report on the state and status of Geological Collections in U.K. Museums (issued with this edition of the Geological Curator) emphasizes the current horrifying state and dismal outlook for geology in British museums. There is no doubt that in the eyes of many local authorities, geology, when compared to other museum disciplines, is generally rated as a 'minority interest' or 'lowest of the low' subject. This was forcibly exemplified in the last issue of the Geological Curator by the cold indifference shown by the County of Avon to the dreadful state of the once magnificent geological collections of the Bath Literary and Scientific Society. Yet another example is to be found in this issue in the description of the Cuming Museum geological collection as "merely rubbish". The stark truth is that unless we do something about it the situation will get no better and, bearing in mind the worsening economical crisis, it is likely to deteriorate even further. So how can we attempt to change this lamentable situation and stop the rot?

Perhaps, in some ways, we have ourselves to blame for our 'fossilized' public image. I have heard museum designers say that geological displays are the hardest to deal with when it comes to the provision of effective interpretation. Many of the basic geological concepts and ideas are extremely complex to the uninitiated and considerable research is needed if they are to be effectively and attractively communicated via museum displays. Bearing in mind these difficulties how much time does the average geological curator spend on 'display research' relative to other curatorial duties? I would suggest that the answer is very little. The fact is that as regards geological display techniques most geological curators in Britain are amateurs. This is mainly due to a lack of time, finance, resources and up to date guidance. However, it is the display galleries which give a museum its first and, in most cases, its only contact with the community which it serves and if there is a failure of communication and involvement between museum and community then it follows that the fate of the collections therein, however important or well curated, will remain a matter of indifference to that community.

The British Museum (Natural History) is endeavouring to develop new display techniques based partly on consumer research. This, as noted elsewhere in this issue, has aroused considerable and emotive controversy although, critical response from the museum profession has been deafening in its silence. Yet these new ideas must be of relevance to us all if we are to develop meaningful and effective displays for the future.

NOTE

In 1982 it is hoped to convene a workshop to discuss the philosophy and techniques relevant to geological displays. To this end the GCG Committee is anxious to hear from any curator who is currently involved in preparing a new geological gallery and who might be prepared to contribute at such a workshop.

RELATIONS BETWEEN GCG AND NCC

The October issue of the 'Geological Curator' contained a cartoon and article implying that the financial difficulties of the G.C.G. in 1980 resulted, in part, from having been let down by the Nature Conservancy Council.

The Committee wishes to apologise to members, and to the N.C.C., who might feel that such an attack on the N.C.C. was uncalled for. It is clear that some mutual lack of communication led to a misunderstanding on our part of the operation of the grant-aid scheme offered by the N.C.C. to the Group for the purpose of running the site documentation scheme. Unfortunately funds unclaimed by the G.C.G. were lost not only to us, but also to the N.C.C., thus creating difficulties with the Council and with those holding their purse-strings.

The Geology and Physiography Section of the Council is anxious to see the Site Documentation Scheme continued and extended, as is the G.C.G. committee. We sincerely hope, therefore, that the N.C.C. will renew their trust in our ability to run the scheme and to this end anticipate full discussion on the future organisation and financing of the Geological Site Documentation Scheme.

For the G.C.G. committee

Howard Brunton

C.H.C. Brunton

3 March 1981

SEVENTH ANNUAL GENERAL MEETING

Held at 16.30 on Friday 4th December, 1980 at the Hunterian Museum, Glasgow and attended by 25 members of the Group.

1. Apologies had been received from J. Cooper, A. Cross, D. Devenish, S. Turner, C. Waterston.
2. Minutes. The minutes of the 1979 A.G.M. had appeared in Newsletter 2.7. These were approved and signed.
3. Chairman's Report. The Chairman noted, with regret, the enforced resignation of B. Page who had been Editor since the Group was formed. Resignations of other officers had raised a number of problems but these had hopefully now been resolved.
4. Secretary's Report. A written report was distributed at the meeting.
 - a) 1980 meetings. These had been held at the Hancock Museum on 18th April, at I.G.S., Leeds on 16th & 17th June, and at the B.M. (Nat. Hist.) on 17th November. Thanks were due to the organisers of these meetings.
 - b) 1981 programme. No spring meeting was planned in view of the B.M. (Nat. Hist.) centenary meeting 'History in the Service of Systematics' from 13th - 16th April. Meetings proposed were a mineral identification workshop at the Geol. Museum on 5th June; a joint meeting with the B.C.G. on collection records at Manchester during the Mus. Ass. Conference in September; the A.G.M. in Oxford in early December, on the theme 'Local Geological displays and their presentation'. A joint meeting with M.D.A. to discuss revision of the Geology Specimen card (similar to the Mineral card meeting in November, 1980) was a possibility for June.
 - c) Museums Association. The Secretary served as G.C.G. representative on the Mus. Ass. Board of Studies and had commented on the proposals for the new curatorial training courses at the Dept. of Museum Studies in Leicester. The curatorial content of the courses was woefully inadequate in the view of many members of the Board of Studies and it was essential to strive for their restructuring as soon as possible.

The G.C.G. had also undertaken to prepare a bibliography for the proposed Manual of Curatorship. It was hoped that this would be completed in the Spring of 1981.

I. Rolfe had been successfully nominated for the Mus. Ass. Council.

d) 'State & Status' Report. After many discussions and revisions, the Geol. Soc. had finally agreed to publish this in very much the form which was originally submitted. It was hoped that it would appear early in 1981.

The report had formed the basis of the Secretary's paper to the Mus. Ass. Conference in September, and requests for information in support of cases for the appointment of geologists, and the creation of new posts, had been subsequently received. Currently the information (now in computer storage) was being used to prepare a case for a major UNESCO grant to finance the compilation of a joint catalogue of geology and natural history collections in U.K. museums.

e) NERC Meeting. Thanks to a B.C.G. initiative, a joint meeting with NERC representatives was being arranged.

The secretary thanked the Minutes Secretary and members of committee for their support. His impending resignation had been enforced by financial cuts at Ulster Museum which made it impossible to undertake the travel involved.

The Chairman expressed the Group's thanks to the Secretary for his hard and successful work on the Group's behalf.

5. Treasurer's Report. A statement of accounts had been circulated at the meeting and, in the absence of J. Cooper, the report was presented by M. Stanley.

31 new members had joined the G.C.G. in 1980. Personal members now totalled 186 (including 15 overseas members), Subscription members 87 (including 9 from overseas).

In 1981 the annual charge would be raised to £4.00 for personal members and £5.00 for subscription members. Since the new rates were announced, a number of members had paid their 1981 subscriptions in advance. As a result of this, the balances in hand on 1.12.1980 were £641.61 in the current account, and £17.64 in the deposit account. It was hoped that the increased subscription would allow the deposit account to be built up in 1981.

The Treasurer had proposed that an annual audit of the accounts should be introduced, and the necessary constitutional amendment would be put to the meeting under item 9. To avoid payment of an audit fee, it was suggested that, at each A.G.M., two members of the Group should be appointed to act as auditors for the forthcoming year.

6. Recorder's Report. The manuscript for the updated version of 'Where is the _____ Collection?', dealing with fossils and related collections in British museums, was now completed. It was hoped that it would be published in 1981.
7. C.G.S.D. Report. The full report for the year had appeared M.D.A. Information and a summary in Newsletter 2, 9 & 10. During the year, the M.D.A. had published Locality Card Instructions and the Record Centre handbook.

R. Clements was G.C.G. representative on the newly-formed Geol. Soc. Site Conservation committee.

8. Committee Elections. In the absence of alternative nominations, the following officers and committee members were declared elected:

Chairman:	Howard Brunton	(British Museum (Nat.Hist.))
Secretary:	Geoff Tresise	(Merseyside Museums)
Treasurer:	John Cooper	(Leicestershire Museums)
Editor:	Tim Pettigrew	(Sunderland Museum)
Recorder:	Ron Cleevely	(British Museum (Nat.Hist.))
Minutes Secretary:	Diana Smith	(Museum Studies Dept. Leicester)
New Committee Members:	Tristram Besterman	(Warwickshire Museum)
	Alan Howell	(Bolton Museum)
Continuing Members:	Barrie Rickards	(Sedgwick Museum)
	Mick Stanley	(Hull Museum)

9. Amendments to Constitution. Clause 16 was amended to read as follows:

Finance

- 16.1 The Group shall incur no financial obligation chargeable to the Geological Society.
- 16.2 The Treasurer of the Group will be responsible for the keeping of proper accounts and at least once a year, normally at the Annual General Meeting, will present a Balance Sheet for the inspection of Members. This Balance Sheet will have been examined and its correctness ascertained by an Auditor appointed at the A.G.M.

This amendment having been approved, it was agreed that R. Clements & M. Jones should be asked to act as auditors for 1981.

10. A.O.B. The Chairman proposed that, since the Group had no Hon. Membership category, that Brian Page should be made an Hon. Subscriber to the Newsletter. This was agreed.

Under the Constitution, 4 members could be co-opted to the committee each year. Nominations for co-option were requested from the members.

The Chairman thanked I. Rolfe for his organisation of a very successful meeting and, there being no further business, closed the meeting at 16.50

Geoffrey Tresise

30th December, 1980

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GEOLOGICAL CURATORS' GROUP : CONSTITUTION

Name and Aims

1. The name of the Group shall be the Geological Curators' Group (affiliated to the Geological Society of London).
2. The purpose of the Group shall be to improve the status of Geology in museums and similar institutions, and the standard of geological curation in general, by:
 - 2.1 holding meetings to promote the exchange of information;
 - 2.2 provision of information and advice on all matters relating to Geology in museums;
 - 2.3 surveillance of collections of geological specimens and information with a view to ensuring their well-being;
 - 2.4 preparation of a code of practice for the curation and deployment of collections;
 - 2.5 advancement of the documentation and conservation of geological sites;
 - 2.6 initiating and conducting surveys relating to the aims of the Group;
 - 2.7 such other means as the Committee of the Group may consider desirable.

Membership

3. Membership of the Group is open to those with an interest in, or responsibility for, the collection, conservation and interpretation of geological specimens and information, and/or the conservation of geological sites, who are registered with the Secretary of the Group.
4. Membership of the Group is open to all Fellows, Honorary Members and Junior Associates of the Geological Society on registration with the Secretary of the Group.
5. There will be no fee for membership of the Group.
6. Members of the Museums Association who are not members of the Group may attend all meetings of the Group.

Committee

7. The management of the Group shall be vested in a Committee consisting of a Chairman, Secretary, Minutes Secretary, Treasurer, Editor, Recorder and four members. The Committee may in addition co-opt for a specified period, up to four non-voting members, one of whom shall normally be nominated by the Museums Association as their representative.
8. Officers and Members of Committee shall be elected annually. The Chairman will serve for not more than three consecutive years in that capacity and Members of Committee for not more than two consecutive years.

9. Officers and Members of Committee for the ensuing year shall be elected at the A.G.M. of the Group, when those present shall vote by means of a ballot on a list of candidates each of which shall have been nominated by at least two members of the Group; such nomination having been received by the then Secretary, in writing, at least 21 days prior to the A.G.M.
10. Four Officers of the Geological Society will also, ex-officio, be members of the Committee.
11. Two Officers or their nominees will represent the Group on the Specialist Groups Committee of the Geological Society.
12. The Committee shall have the power to fill casual vacancies as they occur.
13. The Committee, of whom four shall form a quorum, shall meet when summoned by either the Chairman, the Secretary, or the Treasurer, or any three members of the Committee, three weeks notice in writing being given.
14. The Committee shall have the power to make Bye-Laws and Regulations consistent with the Constitution.

Annual General Meeting

15. The Annual General Meeting (at which ten shall be a quorum) shall be held in the period of December to January.

Finance

- 16.1 The Group shall incur no financial obligation chargeable to the Geological Society.
- 16.2 The Treasurer of the Group will be responsible for the keeping of proper accounts and at least once a year, normally at the Annual General Meeting, will present a Balance Sheet for the inspection of Members. This Balance Sheet will have been examined and its correctness ascertained by an Auditor appointed at the A.G.M.

General

17. The Group shall not take any action which may conflict with the terms of the Charter and Bye-Laws of the Geological Society.

Amendments to the Constitution

18. Amendments to the Constitution can only be made at an Annual General Meeting or an Extraordinary General Meeting specifically convened for this purpose. Members must be notified of the proposed changes, in writing, at least 21 days prior to the date of the meeting. Changes to be approved by simple majority.

Dissolution of the Group

19. Dissolution of the Group shall be carried out at an Extraordinary General Meeting convened for this purpose. 21 days notice shall be given of such a meeting. This meeting will be empowered to dispose of any funds in accordance with the aims of the Group. The discharge of any outstanding debts shall be the responsibility of the Committee.

Founder Members

20. Those listed as present in the Minutes of the Inaugural Meeting held at Leicester on the 15th February, 1974, are considered to be Founder Members of the Group.
-

BYE-LAWS:Annual Charge

1. An annual charge of four pounds will be made to ordinary members of the Group, for which they will receive the Group's Newsletter, and any supplementary material.

Subscription Members

2. Institutions are not eligible for ordinary membership of the Group, but may subscribe to the Newsletter by becoming Subscription Members.
3. The annual charge for Subscription Members is £5-00.

Meetings.

4. A small charge may be made for attendance at certain meetings to help cover administrative costs.

January 1981

MDA/GCG MINERALOGICAL TERMINOLOGY MEETING

Held at the British Museum (Natural History) on 17th November, 1980.

Summary of items discussed and of the main conclusions.

IDENTIFICATION

Species

Agreed that the Hey book be recommended as the approved authority list for use by all curators. Dr. Hey commented that a further edition of the index was being prepared (although it will be some time before it is published). The emphasis in the third edition will be on the alphabetical list rather than the chemical section. The literature is being rechecked to ensure that citations are correct. A note of type localities is being added. The index numbers used in the second edition will not be changed in the third edition. Other lists were also considered, notably that by Fleischer:

Fleischer, Michael
Glossary of mineral species 1980
Tuscon, Arizona: Mineralogical Record, 1980.

However, both Hey and Embrey strongly disagreed with some of the names in this and other lists. Hey emphasised the importance of using the earliest form of a name (e.g. baryte not barite), unless the International Mineralogical Association had issued a ruling.

It was agreed that Hey be used as the authority list for species names.

MDA suggests the following conventions:

- multiple species on one card to be distinguished by a list separator (';')
- species name and species code (Hey number) be distinguished by a keyword separator ('&')
- the use of the species code within identification be optional (it was decided not to have a separate box for this information)
- variety names be noted as a sublist ('{ }' or '< >') e.g.

species A <variety> & species A code;
species B <variety> & species B code

A pseudomorph could be indicated by the following convention:

subsequent after original
e.g.
galena after sphalerite

Note that both terms should appear in a species name index.

If the Hey code is being used for storage purposes it should also be noted in the storage location box.

Reference was also made to the use of the brief BMNH index to the collection:

Trustees of the British Museum (Natural History)
 An index to the systematic collection of minerals in the British Museum
 (Natural History). Twenty-ninth edition.
 London: The Trustees, 1971.

It was thought that this would include most minerals in local museum collections.

It was suggested that a workshop on identification (at BMNH) would be invaluable. Philip Doughty has noted that a workshop on basic techniques is to be held in the Geological Museum in June 1981.

Identification method

At Dr. Hey's suggestion, it was agreed to add a box for the method used to identify the species. This could include one or more keywords. Its function would be to draw attention to the technique used.

Proposed keywords:

x-ray
 chemical (qualitative)
 chemical (quantitative)
 electron microprobe
 optical
 goniometric
 visual

Full details about any process used should be noted on the reverse of the card, in the normal way.

Type status

It was agreed to recommend that the 'type' terms given by Embrey and Hey be adopted:

Embrey, P.G. and Hey, M.H.
 'type' specimens in mineralogy.
 Mineralogical Record,
 Fall 1970, 102-104,

holotype
 cotype
 matatype
 ideotype
 pleisiotype
 neotype
 topotype

In the case of 'topotypes', it was also agreed to include an opportunity to note a type site in the field collection section.

Associated minerals/matrix

Agreed that the 'matrix' should be the last entry in this box.
 Agreed that the redesigned card should have two separate boxes.

Simple name and form

Agreed to rename these boxes:

- group name } previously simple name
- common name }
- physical form (or format)

An (unresolved) problem was where to note the fact that the specimen was a 'mineral', when using the cards within a general catalogue.

FIELD COLLECTIONType site

Agreed to add a box within which could be noted whether this was a type site.

Place names

Importance of a consistent order of terms emphasised. Agreed to consult the Royal Geographical Society for advice.

It was agreed that the original geographical definition of the site was important (irrespective of subsequent name changes).

DESCRIPTION

There was a detailed discussion of the different 'aspects' which were of interest. The following list was eventually suggested:

- state of aggregation (PD's form)
- crystal habit
- twinning
- specimen size
- crystal size
- weight
- colour
- lustre

Crystal habit

It was noted that acicular and fibrous should be under the keyword 2 list. Detail should be limited to well defined crystal forms.

Size

Indication of accuracy needed, e.g.

- use 2.0 cm rather than
20 mm

It was agreed to use 'to' to indicate a range of size, e.g.

10 cm x 10 to 12cm x 18 cm

It was also agreed to use { } to surround crystal face numbers.

Colour

Royal Horticultural Society colour cards suggested.

MDA has been told by the RHS that it is out of print, and not to be reprinted.

Lustre

Agreed to use only:

adamantine
vitreous
metallic

In other cases, no entry should be made.

Term lists

In conclusion, the following categories should have agreed terminology control:

species
associated minerals
matrix
type status

group name
common name
physical form

collection method

acquisition method

state
crystal habit
twinning
specimen size
crystal size
weight
colour
lustre

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DOCUMENTATION OF GEOLOGICAL MATERIAL - TOWARDS A COMMON STANDARD.

Report on a 2 day G.C.G. meeting held at the Institute of Geological Sciences, Leeds (16th - 17th June, 1980.)

About forty curators attended the GCG meeting on the standardisation of geological documentation. It resulted in a number of positive initiatives to improve the quality of records. There was a wide-spread willingness on the part of those present to accept proposals for standardisation.

Philip Doughty (Ulster Museum) opened the proceedings by acknowledging the common adoption by geologists of the Museum Documentation System. However, he questioned the lack of uniformity of terminology among these users, and hoped that the meeting would identify the problems. He called on those present to describe their own procedures when documenting palaeontological material.

A number of these presentations emphasised the massive volume of material to be documented by understaffed departments. There was some dissatisfaction with the lack of agreed guidelines and conventions, although reference was made to those published for the Hunterian Museum (McInnes, 1978) and Tyne and Wear County Museum Service (Pettigrew and Holden, 1978).

A detailed description was given by W. Ramsbottom of the documentation system for palaeontological collections used by the IGS itself (Rushton, 1979). The collection included some 3 to 4 million macrofossils and several million microfossils.

Dr. Calver then described the work by the IGS to develop a stratigraphic code for United Kingdom geology. A provisional edition of such a code was prepared in 1977, and was now being revised. It was suggested that the list of stratigraphic terms and their associated codes could be used as a basic terminology source by curators. The IGS were urged by those present to publish the code in a form suitable for use as a discussion document.

The investigation of computer techniques in the palaeontology department of the British Museum (Natural History) was outlined by Dr. Howard Brunton. It was likely that other curators would benefit by being able to acquire fiche of some of the computer produced catalogues and indexes (Brunton, 1979).

Richard Light also considered the ability of the computer to produce a range of products. He concentrated on the problems that taxonomic names created for computer programmers.

The discussion then turned to the problems of recording mineralogical and petrological material. A number of those present remarked on their use of the Hey classification. Embrey commented that the chemical index was originally designed as a finding index, not as a structural classification. Doughty emphasised its use as a comprehensive and authoritative list of names.

There was some consideration of the conventions which had been published, describing use of the MDS mineral specimen card (MDA, 1980). It was eventually agreed that the MDA and GCG would convene a meeting to discuss mineralogical terminology (see below).

The second day concentrated on site documentation and the development of Collections Research Units. John Cooper and Mick Stanley described the National Scheme for Geological Site Documentation, initiated by the GCG and NCC in 1975.

The granting of funds by the NCC in 1977 led to the start of practical work, co-ordinated by the Committee for Geological Site Documentation. This was able to designate record centres, with some 36 eventually being established. After a substantial amount of effort by the centres, the NCC unfortunately had to withdraw its grant aid. The executive of the committee was reconvened as a subcommittee of the GCG to continue with the work. It had been able to publish both the instructions guiding the use of the record cards (GCG, 1980) and a general handbook to geological site documentation (Cooper, et al, 1980). The subcommittee hoped to be able to continue the promotion of site documentation and to extend the national coverage of centres.

By early 1980, nearly 14,000 records had been produced by the centres (including 5,000 in 1979). Of those centres that were actively recording, about 10 were using STEP schemes financed by the Manpower Services Commission. The active centres were also, understandably, those which processed most enquiries. These included advising planning departments on county structure plans, co-operating with the NCC during the geological conservation review and on SSSI designation and revision, answering education enquiries, producing bibliographies etc.

Work at one of the centres (Brockhole, Lake District National Park) was described by Stephen Drinkwater. The centre had been initiated in 1977. It was intended to cover the whole of Cumbria, through liaison with museums, the county planning authority, local societies etc. A STEP scheme was started in February 1979 and a Steering Group formed to co-ordinate the work in June 1979. The large number of potential sites meant that coverage would have to be selective at first. It was being concentrated on 'rare' sites, fragile sites, SSSI's and other sites of scientific interest.

More general concern was expressed at the lack of coverage and absence of centres in some areas, particularly of Wales and Scotland. It was agreed that a great deal of work still remained to be done.

Attention was drawn to the value of temporary exposures. It was also suggested that university students might play a valuable part in the scheme by contributing records.

The meeting then finally turned to a discussion of Collections Research Units. Alan Howell described the formation of the first, in the North West. This had been initiated by the BCG/GCG/Systematics Association meeting in Liverpool during 1977 (Hancock and Pettitt, 1980). In October of that year, the natural historians in the area agreed to conduct a numerical assessment of natural history collections followed by a more detailed analysis of their contents. A second meeting in April 1978 led to the addition of a geological input.

The first edition of a catalogue of collections was issued in 1979 (Hancock and Pettitt, 1979), and a second edition was now in preparation.

Tim Riley then described the analogous work in Yorkshire and Humberside, which began in April 1979. The group hoped to publish a first draft of their catalogue by April 1981.

Work in the Midlands began in late 1979, and was described by Tristram Besterman. He expressed concern at the lack of consistency between the areas. It had been proposed that the work in the Midlands would be more detailed than that already described, with a two year deadline for the publication of the first edition of a catalogue.

Peter Robson also felt that a more complex approach was desirable. He described work by the North East group at the Hancock Museum.

As with site recording, there was a feeling that other areas should be encouraged to form collections research units. It was felt to be desirable that there be as much standardisation of recording as possible.

References:

Brunton, 1979

Brunton, C.H.C.

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Report by Andrew Roberts (originally published in M.D.A. Information 4(5), September, 1980, 28-31. Reproduced here by courtesy of the M.D.A.)

FORTHCOMING MEETINGS

Thursday 4th June, 1981

Joint GCG/MDA workshop on the Geology Specimen Card to be held at the British Museum (Natural History) in London. Details of the programme will appear in a subsequent edition of MDA Information.
Local Secretary: Ron Cleevely BMNH.

Friday 5th June, 1981

Mineral identification workshop at the Geological Museum London.

This will be a one-day course (10.00 to 17.00) designed to familiarize museum staffs with minerals and other objects such as 'meteorites,' slags, flints, gemstones, pebbles, crystals, hand specimens of rocks etc.

There will be four or five instructors and the workshop will be conducted in a series of groups. Participants will move round these groups during the course of the day. The workshop is designed especially for those with limited geological expertise or for those who feel a little rusty. Please indicate the extent of your geological knowledge on the booking form.

Numbers are strictly limited to 20 people so early booking is essential. The course may be repeated if there is sufficient demand.

Local Secretary: Alan Jobbins, Geological Museum, London.

A BOOKING FORM IS ENCLOSED WITH THIS ISSUE OF THE GEOLOGICAL CURATOR

September, 1981

Museums Association conference in Manchester. A joint meeting (GCG/BCG) on Collection Research Units. Date and details have yet to be finalized.

December, 1981

Annual General Meeting. Possibly at a University Museum - details and date to be finalized.

Easter, 1982

Joint meeting with BCG in Cardiff.
Theme 'what happens to University Collections?'

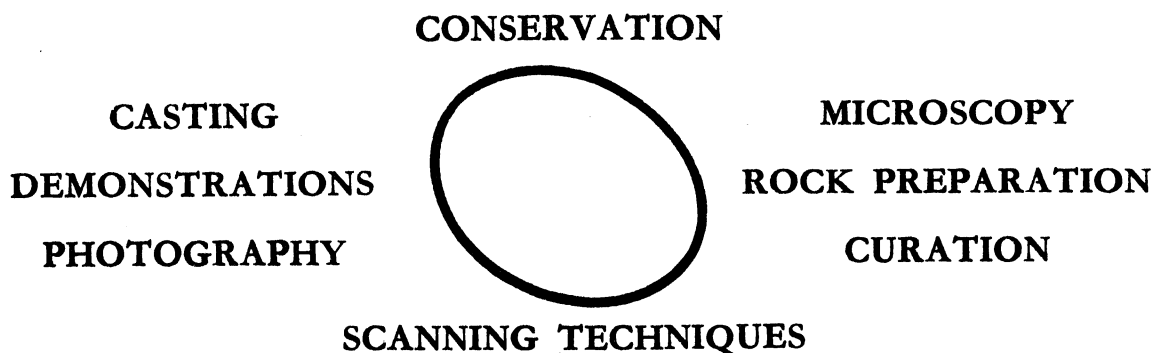
June, 1982

Two day meeting at the British Museum (Natural History). Theme
Vertebrate palaeontology - history and curation of collections.

GEO-TECHNIQUES 81

A PRACTICAL WORKSHOP AND LECTURE SYMPOSIUM ON GEOLOGY

The Royal Scottish Museum and the University of Edinburgh -
Departments of Geology, in conjunction with the Institute of
Geological Sciences (Edinburgh) propose to hold a Workshop
on Geological Techniques from 7th September to 12th September,
1981, in Edinburgh.



The purpose of the Workshop is to discuss techniques and demonstrate equipment, to provide an exchange and inter-change of ideas and an opportunity for active participation in practical techniques.

This event will be sponsored by the Edinburgh Geological Society and the Institute of Science and Technology.

Initial enquiries to: Miss F. Coxon
Geo/Techniques Secretary
Geology Department
University of Edinburgh
West Mains Road
Edinburgh EH9 3JW

SYMPOSIUM FEE — £20.00

COLLECTIONS AND INFORMATION LOST AND FOUND
 Compiled by Hugh S. Torrens.

COLLECTIONS AND INFORMATION SOUGHT.

108. ABSALOM Robert G. (1902 - 1975)

I am making a review of lower Carboniferous floras in Britain, and have been trying to trace some of the more important museum collections. One in particular has caused me trouble, namely the collection of lower Namurian 'coal ball' slides from Haltwhistle (Northumberland) made by R.G. Absalom. I have enquired at the University of Newcastle (where he prepared the slides), Merseyside Museum (since he was at one time Keeper of Geology at Liverpool), Hancock Museum and the University of Durham, all with no avail. The material may simply have disappeared into the mists of time, but there is still a chance that it is lying forgotten in a museum somewhere. Any information would be gratefully received by:-



C.J. Cleal,
Geological Conservation Review Unit.

**NATURE
 CONSERVANCY
 COUNCIL**

Pearl House Bartholomew Street Newbury Berkshire RG14 5LS Telephone Newbury (0635)

49597

See FOUND Section no. 108.

109. PLEISTOCENE - HOLOCENE AVIFAUNA from BRITAIN

I am currently researching the avifauna from the Later Pleistocene/Early Holocene of Britain, with a view to compiling a list of all surviving bird material from British sites. The location of some of the material is known, and I have been able to contact the relevant museums directly, but for the most part, bird bones have tended to be ignored and pushed to the back of drawers and cupboards of museums and private collections. It is these which I am trying to locate.

The Biological Curators Group has kindly agreed to include an appeal for Late Pleistocene-Early Holocene bird material in their next newsletter, and it was suggested that a similar appeal in the G.C.G. newsletter would help reach many more people.

Any information would be gratefully received:-

Sheila A. Sutherland.

Department of Prehistory & Archaeology, University of Sheffield,
 Sheffield S10 2TN.

Tel. No. Sheffield (0742) 78555

110. BATEMAN James F.R.S. (1811 - 1897)

Bateman is today well, and best, known as a botanist. He lived at Biddulph Grange near Congleton where he planted five gardens which still survive today. Dr. Keith Goodway (of the Biology Department, Keele University, Staffs. ST5 5BG) is investigating his life and wishes to learn more of his activities in the field of geology. An article in the Gardners Chronicle for 1862 describes his house and gardens and discusses at some length his geological gallery there.

garden conveniences. The geological gallery, which is upwards of 100 feet long, is lined with stone and lighted from the roof. It is heated by hot water, the iron tubes for carrying which are made in the form of pilasters, or, as in other portions of the house, skirting boards, and are let into the walls so as to produce no more than the ordinary projection. On a platform as you ascend into this gallery, there are recesses on either side, the one containing some choice Roman antiquities, a few of which are also affixed to the walls, and the other filled with a collection of antiquities from Central America. There is an interesting little window in one of these recesses, the tracery of which is composed of old red sandstone in a pleasing kind of mosaic pattern, and which was obtained from India. Other treasures, on which it is impossible now to linger, are scattered about profusely, and have each a history of their own. Advancing into the gallery, it will be found treated in a way that is quite unique, and is singularly illustrative of the great geological facts of the globe. On the one side, at about 3 feet from the ground, a series of specimens, showing the earth's formation, and exhibiting all the various strata in their natural succession, are let into the wall, in a layer about 18 inches wide; and above this are arranged the animal and vegetable fossils that the respective strata yield. Many rare and elegant examples are here brought together, and as the once-living organisms are placed exactly above the strata from which their remains were taken, the series constitutes at once the most simple and complete lesson in practical geology which could be imagined. The whole is distributed into "days," supposed to correspond with the six (so-called) "days" of the Mosiac cosmogony beginning with the granites, and passing into the slates, the limestones, the old red sandstones, the coal formations, &c., with such animal and vegetable remains as occur in each. On the other side of the gallery the walls are covered with geological maps and sections, and between a set of seats provided for the accommodation of those who wish to make the matter a study, is a series of tables, on which various remarkable geological specimens, including a model of the largest gold nugget that has ever been discovered, are arranged; thus rendering the general effect artistic as well as instructive.

Any information about the fate of this geological gallery of Batemans, once at Biddulph Grange, would be welcomed.

111. LOMAS, James (1857 - 1934)

A researcher wishes to establish the whereabouts of material supplied to museums and educational establishments by James Lomax. Lomax and his Palaeobotanical Laboratories supplied fossil plant and geological thin sections in the first instance. Later he also sold coal material which may have been supplied under the name of the Lancashire & Cheshire Coal Research Organization of which his laboratories became a part.

A.C. Howell,
Keeper,
Natural History,
Bolton Museum and Art Gallery,
Le Mans Crescent,
Bolton BL1 1SA (Tel. Bolton 22311)

112. ABBOTT, W.J. Lewis.

Susan Turner seeks any information about this collector other than that given in C.D. SHERBORN'S 1940 Where is the ----- collection (page 7) which states

"Ightham things bought by Sir H. H. Howarth and given to B.M., rest of coll. bought by Wellcome Museum in 1930".

See FOUND section No. 112

Sue also seeks information on the following.

113. HOWORTH Sir H. H. (see above)

see FOUND section No. 113

The following two British collectors she discovered were represented in the collections of the Queensland Museum in Australia.

114. LUCAS, F.P.

"His fossil collection comprises the bulk of the 'English' and Northern Ireland fossils at the Queensland Museum including material he must have bought or exchanged from Thomas Athey and William Dinning at the Hancock Museum and John Ward of Longton North Staffordshire. Possibly 19th century in date."

115. ALDEN W. Esq. (circa 1899)

"who collected Mesozoic reptilian material from the neighbourhood of Swindon in Wiltshire".

Susan Turner would be grateful for any information about these. (as would these columns). Her address is 16 Clarke Street,
BARDON,
BRISBANE,
QUEENSLAND 4065.

116. PALAEOZOIC FOSSIL INSECTS

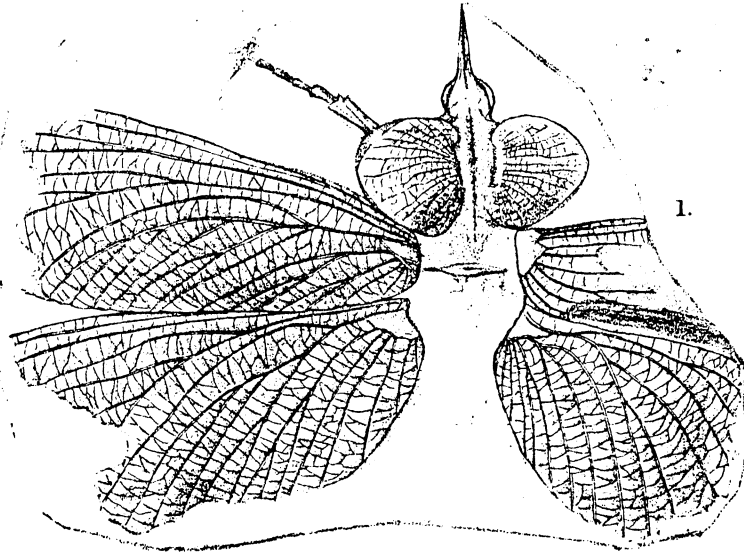
E.A. JARZEMBOWSKI of the Dept. of Palaeontology, British Museum (Natural History), London SW7 5BD., writes as follows:-

"I work on fossil insects under Dr P.E.S. Whalley at this museum. I gave a talk on Scottish fossil insects at the Pal. Ass. Edinburgh meeting last year, and included Lithomantis carbonarius Woodward (Bolton, H. 1921-2. A monograph of the fossil insects of the British Coal Measures. Palaeontogr. Soc. Monogr. p1.2 fig. 4).

The counterpart of this specimen, if it exists, would be worth examining, as this is the best preserved Palaeodictyopteran yet found in Britain. I was wondering if it might be possible to "advertise" for help in locating it via the GCG.

We are always pleased to receive any enquiries on Palaeozoic insects."

The holotype of L. carbonarius was described by H. Woodward in Quart Jl. geol. Soc. Lond. 32, pp 60 - 65 (1876) and the original engraving (plate 9 fig. 1) is reproduced below in the hope that it will enable the lost counterpart to be recognised.



G.H. Ford & C.I. Griesbach

Mintzer Bros. imp.

LITHOMANTIS CARBONARIUS.

The original specimen was acquired by Edward Charlesworth (1813 - 1893) who gave it to Woodward. He was informed that the "nodule containing the specimen was picked up by a lady in Scotland!"

COLLECTIONS AND INFORMATION FOUND

90. LAVIN'S MUSEUM, Penzance

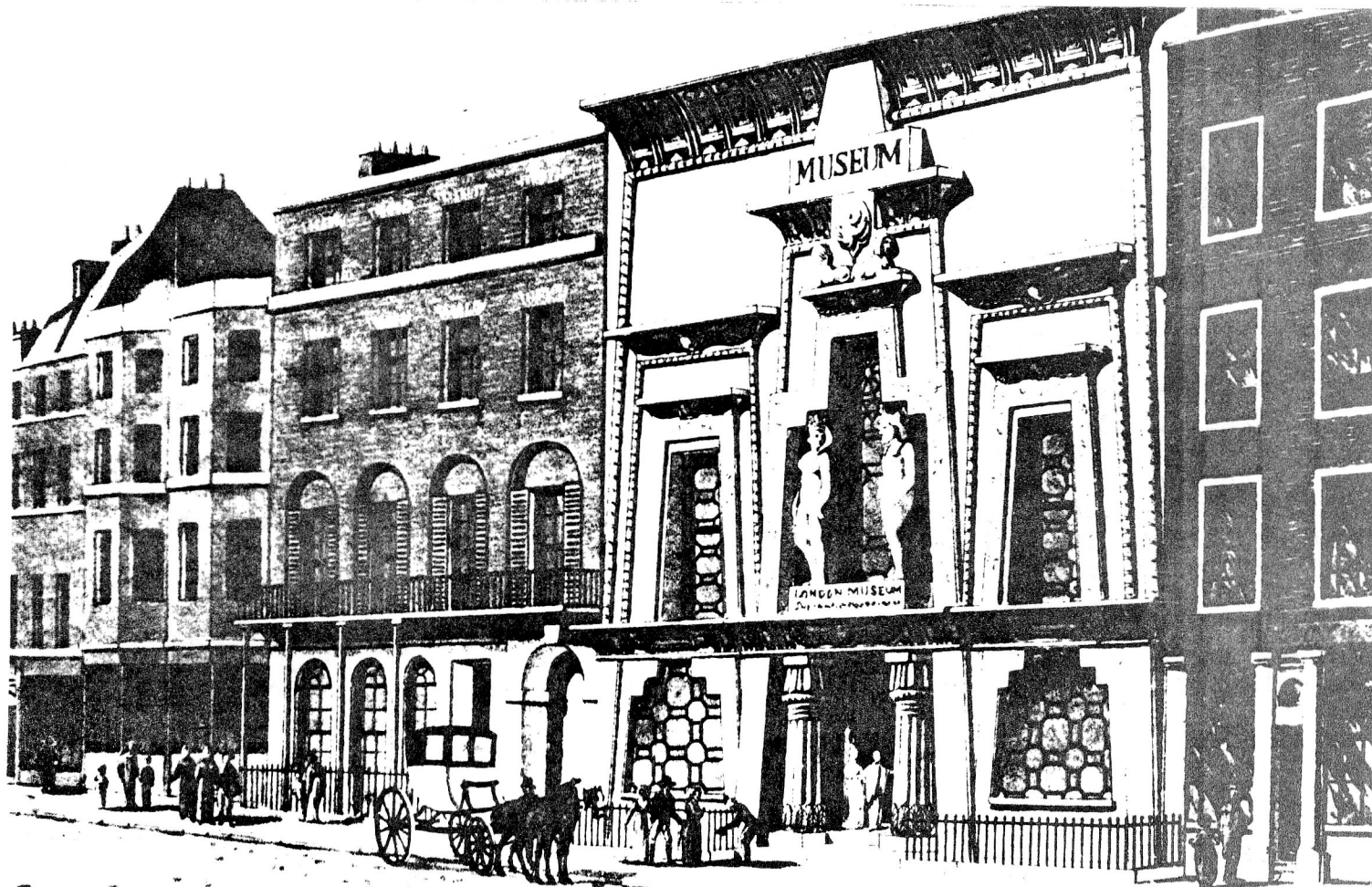
This museum building is, of course, one of several that were built following the fashion set by Bullock's celebrated Egyptian Hall, London Museum - opened on the south side of Piccadilly in 1812 (Altick, 1978, 235-252; Pevsner & Lang. 1956). In its early days, the entrance to Bullock's displays was through a replica of the columnar basalt caves of Staffa (Shephard, 1960), and it was here that the Chevalier de Barde's superb trompe l'oeuil paintings were displayed in 1814 (Hancock, 1980). One of these paintings depicts a fictitious cabinet of minerals, a conversation piece assembled from several British collections, and many of these specimens are now in the British Museum (Natural History). But more of this, hopefully, anon.

The building must have been well known to late 19th century geologists visiting the Geological Society in Burlington House, Piccadilly or the Museum of Practical Geology in Jermyn Street. It occupied the site of the building now known as Egyptian House at 170 Piccadilly, and also of the late lamented Jackson's of 172 Piccadilly.

References:

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 Hancock, E.G. 1980. One of those dreadful combats - a surviving display from William Bullock's London Museum, 1807-1818. Mus.J. 79, 172-175
 Pevsner, N. & Lang, S. 1956. The Egyptian Revival. Architectural Review 119, 242-254
 Shephard, F.H.W. (ed). 1960. The Parish of St. James, Westminster. Survey of London, 29, 266-270

W.D. Ian Rolfe,
 Hunterian Museum,
 The University,
 Glasgow, G12 8QQ.



95. HUDLESTON, Wilfrid (1828-1909)

BCG Newsletter (vol 2 no 3 p. 394 - 5, 1980)

Included a useful note about Hudleston's life and ornithological activities by Peter Davis.

Barbara Pyrah of the Yorkshire Museum also contributes the following information about Hudleston's connection with that Museum.

"He was of course born in York as Wilfrid Simpson, and educated here at St. Peter's, and although he resided in London he owned lands in Yorkshire, and was associated with the Yorkshire Naturalists Union. He held the position of Honorary Keeper of Mineralogy at the Yorkshire Museum from 1876 until his death in 1909, and although he was obviously not involved in the day to day running of the department, there is evidence that he gave much valuable help in reidentifying and cataloguing the fossils, many of which he figured in his publications, and in such matters as arranging for petrological samples to be taken of the Middlesbrough Meteorite. In 1877 he gave us specimens of Araucarites hudlestoni, Ammonites berryi and Trigonia clavellata, and in 1883 a collection of 54 minerals apparently of fine quality."

102. MITCHELL, John.

A recent paper by D.L. Strusz (1980) gives a little further information on this man after whom Foerste, in 1888, named Encrinurus mitchelli. Strusz states (p.23) that Mitchell was a school teacher at Bowning west of Yass, Australia. One of Foerste's figured specimens (reg. No. 27608) is in the British Museum (Natural History) and has now been designated a lectotype. The other material figured by Foerste is lost. Strusz states that Mitchell's collection is now "in the Australian Museum, Sydney."

Reference

Strusz, D.L. 1980. The Encrinuridae and related trilobite families with a description of Silurian species from south eastern Australia. Palaeontographica, 168, Abt. A, 1 - 68, plates 1 - 6.

P.D. Lane,
Keele University

103. BROGDEN, Alexander M.P. (c.1825 - 1892)

An obituary notice in the journal Iron (vol. 40 p. 495 issued on Dec. 2nd, 1892) gives the following information. He was "a retired ironmaster and formerly M.P. for Wednesbury (Staffordshire and) died on November, 26th under distressing circumstances. He was sixty-seven years of age and had been ailing. He was sitting by the fire and in attempting to stir it he fell forward against the grate receiving severe burns to which he succumbed."

Another notice in the Staffordshire Advertiser for December 3rd 1892 shows he was the second son of John Brogden (INFORMATION FOUND No. 104) and that he died at Leamington. A very veiled additional notice shows

he was the first M.P. for Wednesbury from 1868 and that he had been previously involved in bribing electors at the 1865 election for Great Yarmouth!!

(C.O'Leary, 1962, p. 28, 55. The Elimination of Corrupt Practices in British Elections 1868 - 1911, Oxford.).

His fortune (and one expects his fossil collection?) disappeared as the result of "litigation over family affairs."

104. BROGDEN, John (father of Alexander Brogden M.P.)

J.T. Slugg (1881, Reminiscences of Manchester 50 years ago, Manchester) contributes the following fairly useless information about John Brogden as he was from about 1830 onwards (page 105)

THE late Mr. John Brogden, the father of Mr. Alexander Brogden, M.P. for Wednesbury, at this time was a dealer in horses in Every Street, Ancoats. This led to a considerable intimacy with the late Mr. Samuel Brooks, who had always a great fancy for horses. Mr. Brogden relinquished his business, and became a contractor for cleansing the streets of the town, occupying the town's yard, which now forms part of the site of the new Town Hall. After this he became a contractor for the construction of railways, being best known for the construction of the Furness Railway, which crosses the sands at Ulverston. I well remember him and his good-looking wife, as I used to see them in the gallery of Oldham Street Chapel every Sunday morning.

This suggests the Brogdens became wealthy as a result of the "railway mania" of the mid 19th century.

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

GCG Newsletter Vol. 1 No. 7. p. 344, 1976 gives the information that Absalom was Curator of Natural History at Glasgow Art Gallery and Museum between 1931 to 1946. Their collections contain his collection of about 1000 carboniferous plants from the Scottish coal fields with full details of horizon and locality. It is not known if this contains the Haltwhistle material sought by Mr. Cleal.

112. ABBOTT, William James Lewis (c.1853 - 1933)

The following notice appeared in the Proceedings of the Geologists Association (45, p. 97, 1934).

OBITUARY NOTICES.

WILLIAM JAMES LEWIS ABBOTT, who died on 3rd August, 1933, aged 80 years, was elected a member of the Association in 1884, and for many years took a prominent part in its activities. By profession he was an expert in gems, and his first contribution to our *Proceedings* in 1887 was a paper on the formation of agates. At the same time he was deeply interested in field geology, and during his early residence in London he took advantage of every opportunity to study the superficial deposits exposed in temporary excavations. He was a good observer with a keen eye for fossils, and added much to our knowledge of the Pleistocene and later formations in the Thames Valley. Some of his results were published in two papers in the *Proceedings* of the Association in 1890 and 1892; the second paper being especially important as dealing with sections exposed in digging the extensive foundations of the new Admiralty Offices in Whitehall.

About 1892 ill health caused him to retire for a few years to Sevenoaks in Kent, where again he studied the local geology. At Ightham he discovered a fissure filled with earth and abundant remains of a Pleistocene fauna, which he collected and prepared for study by Mr. E. T. Newton. He and Mr. Newton gave an account of the discovery in the *Quarterly Journal of the Geological Society* in 1894; and the collection of fossils described is now in the British Museum (Nat. Hist). Mr. Abbott led an excursion of the Association to Ightham in 1893, and other excursions to Sevenoaks and the Kentish plateau in 1895.

About 1900 he removed to St. Leonards-on-Sea, where he resumed his business and profession, but continued to devote his leisure to field geology. While at Sevenoaks he had become interested in the coliths and other flint implements found by Benjamin Harrison and others near Ightham, and henceforth he devoted much attention to the flaking of flint and the handiwork of Stone Age man. He discovered a kitchen midden containing flint implements near the base of the cliff beneath Hastings Castle, and made a collection which is now in the Wellcome Historical Museum in London. He discussed the typical coliths in *Man* in 1909, and contributed a beautifully illustrated paper on 'The Classification of the British Stone Age Industries' to the Journal of the Royal Anthropological Institute in 1911. His last important paper was on "The Pliocene Deposits of South East England" in the *Proceedings* of the Prehistoric Society of East Anglia in 1916.

He was elected a Fellow of the Geological Society in 1888, and was awarded part of the Lyell Fund by that Society in 1897. He had a large circle of friends, who appreciated his scientific worth and enthusiasm for research.

A. S. W.

PROC. GEOL. ASSOC., VOL. XLV., PART I, 1934.

in addition I have a note that his main fossil collections were purchased in 1927 by the Geological Survey Museum (now the Institute of Geological Sciences).

113. HOWORTH, Sir Henry Hoyle (1842 - 1923)

The notice below from who was who (1916 - 1928, p. 525) summarises Sir Henry's career.

HOWORTH, Sir Henry Hoyle, K.O.I.E., cr. 1892; D.O.L., F.R.S. 1893; F.S.A.; Trustee and Hon. Librarian of the Chatham College; Trustee of British Museum since 1899; Member of the Royal Commission on Ancient Monuments; b. Lisbon, 1 July 1842; o. s. of late Henry Howorth, Lisbon, merchant, and Elizabeth Boswiche, Rochdale; m. 1869, Katherine (d. 1921), e. d. of late J. P. Brierley, Lauriston, Rochdale; three s. *Educ.*; Rossall. Barr. Inner Temple, 1867; took an active part for many years in Lancashire politics and public life; has written a large number of political letters in the Times; president Royal Archaeological Institute and the Viking Society; Vice-President Asiatic and Numismatic Societies; M.P. (C.) South Salford, Lancashire, 1886-1900. *Publications*: A History of the Mongols; Olinghis Khan and His Ancestors; The Mammoth and the Flood; The Glacial Nightmare and the Flood; Ice and Water; St. Gregory the Great; St. Augustine of Canterbury; The Golden Days of the Early English Church, 1910; more than a hundred scientific memoirs on geological, archeological, historical, and ethnological subjects, and a number of communications to the Reviews. *Address*: 45 Lexham Gardens, W.8. *T.*: Western 1748. *Clubs*: Carlton, Athenaeum, Burlington Fine Arts. (Died 15 July 1923.)

117 KETLEY, Charles (c. 1829 - 1884)

A recent visit to St. Catherines House, London enabled the date of Ketley's death to be traced in the national indexes of reported deaths. Ketley's death was reported in 1884 (records for April, May and June). He died at the age of 65 in the Kings Norton district of Birmingham. Hopefully this will enable Isles Strachan to trace notices in the local papers and then write up Ketley who, as Isles noted in GCG Newsletter (vol. 2. No. 6. p. 310) "deserves an article to himself."

REQUEST FOR INFORMATION ON HANDWRITING REGISTERS

Jennifer Stewart of the MDA writes

"Since the publication in MDA Information vol. 4 (6):35 of a request on how to set up a handwriting register, we have received some details, but even more requests for information about such a register from natural history curatorial staff. I would therefore be very grateful for information from museums which have set up and organised a register to store examples of collectors' handwriting. Please send details to Jennifer Stewart, Museum Documentation Association, Imperial War Museum, Duxford Airfield, Duxford, Cambridgeshire CB2 4QR"

NOTE

A geological 'handwriting register' is to be launched as a regular feature in the next issue of the Geological Curator. Full details of the aims and format of the register will be given in an introductory article by Ron Cleavelly B.M. (NH).

BURGLARY

The following items were stolen from Ghar Dalam Museum, Birzebbuga, Malta during a burglary on the night of April 7th/8th, 1980:

- i. Mounted skeleton of Recent Canis vulpes L;
- ii. Two tusks of Elephas mnaidriensis Adams, treated with shallac, restored with plaster and mounted on boards with metal clips;
- iii. One complete tusk of E. melitensis Falc. No preservative. Sustained considerable damage with loss of material during burglary;
- iv. One incomplete tusk of ?E. falconeri Busk in a glass casket with mohogony frame.

Should any sale offers be made kindly contact Police and inform G. Zammit-Maempel, 53 Main St., Birkirkara, Malta. Tel. 42204.
/National Museum of Natural History, Malta.

COLLECTIONS AND COLLECTORS OF NOTE
39 THE SEDGWICK MUSEUM CAMBRIDGE

"The foremost place held in the geological world by the Sedgwick Museum as the centre of the Cambridge geological School was well known and well understood in former years, but it appears now that in Egypt there are other Pharaohs who knew not Joseph." ¹

The Sedgwick Museum houses major palaeontological collections of international importance associated with one of the World's oldest geological Professorships. Its collections, because of their early start (certain specimens date back to 17th century collections), ² their rapid growth throughout the 19th century and the very active palaeontological and biostratigraphical research which has centred on them from Adam Sedgwick's time onwards, include a great many type, figured and described specimens and represent many of the classic researches of British geology as well as including important foreign material. In a British context these collections rank close to the national collections of the Natural History Museum and the Institute of Geological Sciences and they support research on a widespread national and international basis as well as the internal research and teaching of the Department of Geology. The ready availability of the collections for research stems from a very high standard of curation; this high standard has also made the Museum attractive as a repository for research material.

The bulk of the collections are housed on the first floor of the Museum building in an area of just over 11,000 sq. ft. which combines display and storage space. A further 3,000 sq. ft. on the attic floor is given over to the dense storage of specimens. These areas contain an estimated 700,000 to 800,000 specimens of which just over 455,000 are at present catalogued, the rest, the so-called "backlog", mainly pre-date the appointment of the first full-time curator. The recent accession rate of new material has been variable between 1,000 and 24,000 specimens per annum. By tradition the first floor museum area is open to the public and the curatorial staff deal with enquiries from the general public.

Brief History

The Sedgwick Museum and the Woodwardian Professorship both have their origins in the will of Dr. John Woodward (1665-1728). Professor of Physic at Gresham College, London, sometime President of the Royal College of Physicians and Fellow of the Royal Society, Woodward was an assiduous collector of (rocks, minerals and) 'fossils', catalogued these in detail and published speculative works on geological processes (notably "Essay towards a Natural History of the Earth", 1695). On his death he left to the University two cabinets of English 'fossils' and their catalogues and monies from his estate to purchase land whose rent would provide the yearly income for a lecturer (the Woodwardian Professor), part of whose duties was to exhibit the specimens in Woodward's cabinets. The following year the University purchased Woodward's other two cabinets, mainly of foreign 'fossils'.³

These collections were added to slowly at first, by Thomas Greene and John Hailstone the 5th and 6th Woodwardian Professors, but then much more rapidly under the vigorous lead of the celebrated 7th Professor, Adam Sedgwick. They thus outgrew their first home, a small room divided off from the Arts School, spilled over into Sedgwick's College rooms and then necessitated the special acquisition of two

rooms in the Divinity School. Finally overcrowding of all these spaces was so acute as to lead to the opening of a public subscription list to fund the building of a new Museum. This subscription yielded £23,400 which together with £4,000 of Woodwardian Trust money was used to erect the Cockerell Building (Old Schools); the lower two floors of this building were occupied from 1841 by the new Woodwardian Museum.

Yet the rate of accession of material was such that even in Sedgwick's lifetime that building too became inadequate and following his death in 1873 his friends and colleagues resolved at a special meeting of the Senate to build as the most fitting memorial to the great man a new and larger geological museum. Once again an appeal was made to the public and £28,000 was raised towards the cost of the present building, formally opened in 1904. (It is appropriate to mention here also that quite apart from these funds towards the two museum buildings, public subscription had also, during Sedgwick's professorship, provided money for the purchase of several collections and specimens).⁴

While the collections were thus expanding, several people were responsible for curating and cataloguing them. The original catalogues and notes with Woodward's collection were clarified and synthesised into a single document by Samuel Ogden the 4th Woodwardian Professor but it was only once the palaeontological collections had expanded under Sedgwick's direction that catalogues began to appear which were important descriptive and taxonomic works such as those of F.W. McCoy (1851-55), H.G. Seeley (1869, 1870) and J.W. Salter (1873). Later, during McKenny Hughes' professorship, Henry Woods published his catalogue of type fossils in the Woodwardian Museum (1891) and J. Watson prepared the extensive building stones collection and published his catalogue in 1911, followed by catalogues of marbles and ornamental stones (1916) and cements and artificial stones (1922).

Apart from these major published works, naming, labelling and cataloguing of specimens was undertaken by many others. The first Museum Assistant, Robert Farren, was employed by Sedgwick between 1845 and 1864. It was Farren's job to mount specimens and write labels (on the basis of McCoy's identifications) in the Woodwardian Museum. From 1864 onwards Sedgwick employed as Curator Henry Keeping, an able technician who had gained his skills working as a geological guide in Hampshire and the Isle of Wight. Keeping was trusted with the collecting and purchase of specimens as well as their labelling and general care. Later workers on the collections were of academic rather than technical status. The first of these was Walter Keeping, son of Henry and later Professor at Aberystwyth, who labelled for Professor McKenny Hughes. F.R. Cowper Reed, also under McKenny Hughes, was responsible for naming and labelling a great many specimens prior to and during the move to the new Sedgwick Museum and prepared an extensive manuscript catalogue of the collections. A.E.N. Arber curated the palaeobotanical collections at around the same time and later, during the 1920's W.B.R. King and G.L. Elles catalogued the Cambrian fossils, A.G. Brighton organised the Chalk fossils and the Jukes-Browne Collection and Dorothy Hill worked on the Carboniferous Corals. At the same time Alfred Harker worked on and built up the petrological collections, for prior to 1931, the Sedgwick collections had been geologically more comprehensive even if heavily biased towards the palaeontological. In that year, however, Harker's petrological section was severed from the geological Department and combined with the long-established Department of

Mineralogy (until then Cavendish-based) to form a separate Department of Mineralogy and Petrology in a new building adjacent to the Sedgwick Museum.

Also in 1931 A.G. Brighton, who, as indicated above, had earlier worked (unpaid) on the Sedgwick Museum's collections, was appointed as its first full-time Curator. With an industry and dedication which is quite outstanding Brighton was responsible for converting the then barely organised collections, many still in boxes and crates scattered through almost every room in the building, into the well organised and exceptionally well curated collections of his later years and for developing the methods of numbering, labelling, cataloguing, storing and indexing specimens used in the Museum today. The modern phase of the Sedgwick Museum's history thus dates from Brighton's appointment and many aspects of this phase can be covered appropriately in the later sections of this description.

Main functions of the Museum

The Museum primarily acts as a research collection - that is a collection of specimens, particularly type, figured, described and mentioned specimens and those forming the basis of published faunal lists, frequently required for reference and comparison, or for further descriptive or interpretative work, by palaeontologists engaged in research. Such workers, many from overseas, visit the Museum to work on the collections at the rate of 60 to 70 a year. They also request loans of material, again on a widely international basis, normally at a rate of about 1,500 specimens a year in 30 to 50 separate loans. A similar number of specimens are normally loaned to workers within the Department.

Coupled with this function and helping to perpetuate and improve it, the Museum also acts as an important repository for new material, particularly collections relating to published work - though in fact any material of potential scientific value. The accession rate for such material is highly variable (see figures on p.2) but perhaps normally between 5,000 and 10,000 a year. Further, the Museum acts as a repository for information relating to its specimens - original catalogues and notebooks, locality maps, correspondence and annotated papers and monographs. These documents are often very useful research tools.

The Museum collections provide specimens essential for teaching and examination purposes within the Department. In the past this has mainly been in relation to the Part II palaeontological courses but it now applies increasingly to the Part IB and even IA courses. The Department is thus given access to a vast wealth of first class teaching material. Even where plaster replicas are used for exam. and class purposes these replicas usually originate from Museum specimens - and rely on the technical skill of Museum staff for their manufacture (see section below).

Over and above these more or less well-defined functions the Museum has a more generalised, less formal but none-the-less important educational (and cultural) role. In large part this arises from the Museum displays which while the Department is open, are available for informal use not only by academic staff and students but by the general public and by more specialised extra-mural groups such as school parties (between 30 and 40 school parties arrange to visit the Museum annually, others do so without prior arrangement). In addition the Museum has two sets of specimens for loan to help schools in teaching

palaeontology, has loaned specimens to the BBC for Open University and other television programmes, has supplied specimens for use in exhibitions outside the University and has provided specimens to form the basis for illustrations and photographs in palaeontological text-books. Coupled with this generalised role are those activities of the curatorial staff related to dealing with enquiries not directly related to teaching or research; such enquiries are numerous and are further referred to **below**.

How the Museum Works

Accession & Cataloguing. Collections arrive in various states; some require considerable research prior to cataloguing, others relatively little. At worst an old collection may require the deciphering of obscure horizon and locality data - often from scribbled notes on the wrapping and perhaps with reference to notebooks and field-slips, specimens may need to be taxonomically identified and then checked against the collector's published works in an attempt to recognise types or specimens figured, described or referred to. With modern research collections such information is usually readily to hand but nevertheless must be checked. With collections straight from the field specimens often need to be developed before they can be identified.

After any such necessary researches each worthwhile specimen is given a catalogue number and catalogued in manuscript. The process thus far is normally the responsibility of the curatorial staff. The specimens and their manuscript catalogue then proceed to the Museum assistants. Specimens are trimmed of matrix if necessary, number labels attached and specimen tray labels prepared from the ms catalogue. Appropriately sized trays are then selected from a range of modular standard sizes, labelled, specimens added and an appropriate space found in the Museum (see section 4b). When this place has been determined each specimen and its drawer number are entered on the taxonomic card index. At this stage the specimens may be regarded as incorporated into the collections and available for research use - even though they are only catalogued in manuscript; the ms catalogue remains to be typed, checked and placed in the standard Shelf-Catalogue binders. The typing of final Shelf Catalogue sheets is the stage which can involve some delay; it is one advantage of the manuscript system described that numbering, labelling, indexing and final incorporation of specimens can all precede any processing of catalogue data.

Arrangement of specimens - is primarily stratigraphical; for the large British collections usually at the level of Series, Stages or Formations. This stratigraphical arrangement is sub-divided on a geographical basis and then usually further sub-divided on a broad taxonomic basis. Thus to a large extent the collections are self-indexing - South Welsh Llandovery trilobites or British Liassic ammonites each have their own "slots" within the physical lay-out of the collections. Unfortunately the system is complicated by the fact that some of the slots on the main Museum floor are full, necessitating a parallel system on the attic floor; the slots in the attic arrangements, however, are intended to be much more "elastic" to cope with additions on a long-term basis. To a large extent, too, within the framework outlined individual collections are kept together; this leads to a further degree of self-indexing in that specimens relating to, say, the published work of a particular author are usually found together within a particular slot.

Retrieval of specimens or collections from particular horizons and localities and further from broad taxonomic groups or relating to particular papers or monographs can thus often be achieved on the basis of physical lay-out alone. Otherwise retrieval is effected on a primarily taxonomic basis by the use of the Card Index system. Individual specimens whose catalogue number only is known are retrieved by use of the Shelf-Catalogue in conjunction with the Card Index.

Retrieval of information on specimens is effected through the shelf catalogue supplemented if necessary by reference to collector's notebooks, collector's original catalogues or labels or by reference to the collection of annotated publications.

The Shelf-Catalogue has an individual entry for each specimen. The entry includes a taxonomic determination and full horizon and locality data. In addition, where possible, the Shelf-Catalogue deals with each specimen's ownership history (who collected it, how it was acquired by the Museum) and with research history and specimen status (authority for specimen identification, whether a type specimen of any sort, abbreviated references to any illustration, description or citation in published works). Certain entries also contain morphological information or special notes relating to the significance of a particular specimen. The Shelf Catalogue is updated as published work on Museum specimens appears. Occasionally taxonomic determinations are updated on the basis of unpublished re-identification by a recognised authority.

The Card Index System is primarily taxonomically arranged. It distinguishes several major taxonomic groups purely on a basis of convenience for Museum purposes. Within each major group specimens are indexed under their taxonomic binomials in alphabetical order. Entries are extensively cross referenced to allow for changes in the generic assignments of species and for nomenclatural changes due to synonymy. Under each taxonomic name specimens are listed by number together with their Museum drawer numbers. Overlain on this taxonomic arrangement is abbreviated stratigraphical and geographical data for each specimen (usually Series or Formation and County name for British material) together with abbreviated reference to any illustration, description or citation of the specimen. In addition differently coloured cards distinguish type specimens (blue) and figured specimens (pink). The Card Index system is thus much more than a simple taxonomic index.

Supplementing the Card Index and Shelf Catalogue is the Curators' Library, of annotated publications dealing with Museum specimens together with various collector's notebooks, maps, original catalogues and filed correspondence. Particularly useful is the annotation of publications pre-dating (or neglecting to mention!) specimen catalogue numbers.

Related to the Shelf Catalogue and Card Index system also are Specimen Labels. All labels ever applied to specimens are retained under the Sedgwick system. The labels themselves, including collector's original labels, can be valuable sources of information on the specimens; labels or symbols such as locality numbers perhaps not understood on original cataloguing may prove capable of interpretation or re-interpretation later. Similarly the identification of the hand-writing on old labels may indicate the authority for a particular identification (for this reason the Museum keeps a sample-book of hand-written labels reliably ascribed to particular workers). In their modern form Museum tray labels give, in abbreviation, all the key points of the main Shelf Catalogue entry. Special coloured labels ensure the rapid identification

of types and figured, described and mentioned specimens.

This complex and sophisticated system of specimen documentation is a very important feature of the Sedgwick collections and proves to be of great use to research visitors who frequently praise it; such visitors have on several occasions asserted that the Sedgwick Museum is one of the best curated in the World - a just tribute to the high standards originally set by A.G. Brighton.

The Museum staff and what they do. At the time of writing the Museum staff comprises two Curators, an Assistant Curator and three Museum Assistants. The existence of two Curators is abnormal and temporary - one of these posts is limited to the tenure of its present holder and afterwards reverts to an Assistant Curatorship. The two Curators hold University Lectureships and all three of the Curatorial staff, in addition to their Museum work, are involved in teaching in Departmental lecture and practical courses, on Departmental field-courses, in examining, in research supervision and in their own research.

The staff as a whole spend their time in the following routine tasks:

1. Preparing, identifying, cataloguing, labelling and indexing specimens.
2. Showing visitors around the collections and making specimens available for them to work on.
3. Removing and documenting the removal of material for loans, packing and dispatching loans, keeping track of them and checking loan returns. This includes removal of specimens for teaching and examination purposes.
4. Dealing with enquiries and correspondence.
5. Keeping careful track of the scientific literature dealing with Museum specimens or collections and updating the Shelf Catalogue, Card Index and specimen labels accordingly as well as annotating and correcting publications where necessary.
6. Undertaking conservation and repair work on specimens where necessary (coating, impregnating, treatment of pyrite disease etc.)
7. Preparing high quality replicas or casts of specimens for research, teaching and examination purposes.

Activity 4 perhaps needs further comment. Enquiries range from research enquiries requesting information on Museum specimens or collections to general enquiries from the public. Many specimens are brought in for identification or comment. There are requests for technical advice on developing or treating specimens. In addition there are enquiries concerned with identifying or matching material from the building stone collection. Enquiries of all these types come in at the rate of several a week; dealing with them can be time-consuming. Though most routine research enquiries can be dealt with very quickly through use of Shelf Catalogue, Card Index or Curators' Library, some do demand considerable research and even physical searching of the collections.

There is a benefit to the Museum from these enquiries in that some specimens brought in for identification in this way end up as valuable additions to the collections and others reveal the existence of new fossiliferous localities worthy of further examination.

The Attic Store

When A.G. Brighton became Curator there was, apart from the labelled and partly catalogued material in the main Museum, a great mass of uncurated material scattered in drawers, crates and boxes throughout the building. One of Brighton's first tasks was to centralise this material on the attic floor of the building where its volume steadily diminished as his curating proceeded until by about 1951 it was possible for the Museum Store to be condensed to its present space releasing a large area for sub-division into the present research rooms. Since, over the years, however, the vast bulk of the curating became increasingly concerned with current accessions the attic "backlog" came to be tackled only very slowly and this was a matter of great concern up until the late 1960's. Since, then, however, major effort has gone into curating, sorting and generally organising material in the attic coinciding with a ten-year grant from the University for the purchase of new cabinets and the appointment of additional Museum staff.⁵ A complete transformation of the area has resulted whereby even the vast bulk of the remaining uncatalogued material is well arranged in a cabinet lay-out paralleling that of the main Museum (see section above) and easily retrievable for research purposes.

The attic, in fact, has largely changed in function as well as organisation; rather than a store for Museum "backlog" it is much more appropriate to regard it now as an extension or overspill to the main Museum - in which most newly catalogued material is now housed. Thus, at the time of writing between one-fifth and a quarter of the material in the attic is catalogued. This material is housed in cabinets purchased from the University Cabinet Grant referred to above. The additions this grant has enabled us to make to the stock of cabinets now gives us sufficient drawer space to cope with routine accessions for probably the next 15 to 20 years.

Museum Display

Like its predecessor the Woodwardian Museum, the Sedgwick Museum was designed to have an important display function. Apart from the obvious standing displays along the centre of the "Mahogany Wing" of the main Museum both the "upright" and "table-case" storage units used throughout it have a built-in display function.

With a few exceptions this display space has not been used for pure "display" as radically distinct from storage but rather for what is really a compromise between display and storage whereby specimens remain in dense arrangement in their appropriate position in the Museum but are on view for examination and reference. For the informed user the informational content of this type of "visible storage" display is remarkably high but for the uninitiated there is probably an overwhelming mass of material with very little explanation or guidance. Provision of more explanatory and background information, together with clearer labelling would considerably improve the usefulness of such display - though in many cases cleaning and renovation is also necessary.

From time to time attempts have been made at more direct displays or "exhibits" on particular topics and some of these are undoubtedly very useful⁶; however, their effect on the overall Museum display is small. It remains true as a generalisation that the display function of the Museum has been much neglected. Such neglect has been inevitable under the pressure of curating needs. The recent work on the Attic Store, however, made possible as noted with increased staffing from the early 1970's, has eased this pressure sufficiently for the Curators to feel that effort could - and should - now be devoted to Museum display work.

The main aim of such effort ought to be the creation of new displays relevant to current teaching needs in palaeobiology and earth-history. At the present time the main use of the Museum in formal teaching is in supplying specimens for use in Practical classes - the Museum display, as such, is very little used. Yet Museum displays would have many advantages over demonstrations in Practicals: they could use selected first-class specimens which are normally too valuable to be put out on laboratory benches, they could use more sophisticated techniques of presentation and they would be continuously available for reference. With displays geared to teaching in this way the Museum could play a much greater part in undergraduate education and displays geared to teaching, particularly part 1A teaching, would presumably be also relevant to broader, extramural, education needs and give the Museum a more significant role in the general community.

Notes

1. O.T. Jones, then Woodwardian Professor, in a letter to the Assistant Registry of the University dated November 1931 (Museum Files).
2. In particular the collection of Agostino Scilla (1639 - 1700), a Sicilian painter who illustrated fossils and was an early advocate of their organic origin ("La Vana speculazione dissingannata dal senso. & etc. Naples, 1670); Woodward obtained Scilla's collections and original drawings. The Museum also has a specimen referred to by Martin Lister in his "De Chonchitis sive Lapidibus qui quandam similitudinem cum conchis marinis habeant." 1688.
3. The fifth cabinet in the Woodwardian pew of the Museums seems to have made its appearance during the period of Charles Mason the second Woodwardian Professor, who apparently was responsible for some re-arrangement of Woodward's collections (Reports of the Woodwardian Inspectors in the Museum archives).
4. The large Plesiosaurus macropterus and the large Leckenby Collection of Mesozoic fossils are examples.
5. Appointment of one additional Museum Assistant from July 1968: appointment of present Assistant Curator from October 1972; temporary appointment of P.D. Biddlestone in early 1970's.
6. Notably the "Quaternary of Cambridgeshire" exhibit in Bay IV and the "Silurian graptolite zones" exhibit in Bay XXXII. These in their different ways show what can be done with relatively modest outlay and in the framework of the existing table-cases.

MERELY RUBBISH?

THE FATE OF THE CUMING MUSEUM GEOLOGICAL COLLECTION.

Justin Delair writes.

Recently I have been working through the little known collection of Pleistocene mammalia preserved in Gunnersbury Park Museum, London (curator is Mr. Stephen Bird, who very shortly leaves to take up a post at the Roman Baths Museum, Bath). During the course of my work at Gunnersbury some earlier documentation came to light in the records kept there and seemed to show that certain specimens were lucky survivors of a larger collection originally at the Cuming Museum, which was formerly at the Public Library Chiswick.

In view of the GCG's interest in the fate of older palaeontological material, I accordingly enclose a photocopy (of another not very clear copy) of correspondence dating from 1961/2 respecting one of these specimens. I am making enquiries at Chiswick to see if further material was "thrown away" at the time. The phrase that describes them as "merely rubbish" is both astonishing and appalling, particularly as the Cervus elaphus horn is the only known fossil mammalian from Bushey Park, and is therefore of some special significance. I am working on a survey of the Pleistocene mammalia of Greater London and have seen numerous collections. Nowhere else does there appear to be Bushey Park material.

Should further information respecting the old Cuming collection come to light, then I will let you know.

Finally, I now have a complete list of the fossil vertebrata at Gunnersbury Park Museum.

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

A transcript of the letter referred to by Justin is reproduced below.

Borough of Southwark,
Central Library & Cumming Museum
Walworth Road,
London, SE 17.

7th November, 1961

H.V. Radcliffe Esq.,
Gunnersbury Park Museum,
Acton. W.3.

Dear Sir,

Amongst the animal bones we have here for disposal are two horns labelled "Bun Royal or Crown of Cervus elephus (Hart or red-deer) 6th year. Found 30 feet below bed of Thames at Brentford Middlesex, May 1867"; also "Horn of Cervus elephus Middlesex". Would you like these as a gift.

From our point of view they are merely rubbish and will probably be thrown away if you cannot make use of them in your local displays.

Yours faithfully,

F. Boone, F.L.A.
Chief Librarian and Curator.

THE CRABBE COLLECTION REHABILITATED

Articles in the GCG Newsletter by Mrs. Irene King (2, No. 5, 286) and by Justin Delair and Hugh Torrens (2 No. 8, 461 - 463) drew attention to the generally poor condition of the Trowbridge Museum geological collections. Thanks to the valiant efforts of Martin Norgate, John Barton and Irene King the future looks much brighter for the geological collections not only in Trowbridge but in Wiltshire as a whole. The progress is documented in the following two letters.

Wiltshire County Council,
Library & Museum Service,
Bythesea Road,
Trowbridge BA14 8BS.

In the GCG Newsletter last year or so was a small comment about my arrival in Wiltshire, with a hope that I was not totally ensnared by archaeology. Perhaps, having settled in and got the Pastoral Care system going, I can bring two bits of good news to your readers' eyes.

Firstly, the Crabbe Collection of mesozoic fossils at Trowbridge Museum has now been checked. Bristol Museum kindly went through to do accurate identifications, though pressure of time limited the depth of research. As part of Pastoral Care I have documented the material using MDA, within the limits of my expertise as a non-geologist, and have improved storage of the collection so that items are now accessible and marked to link them with their documentation. It is possible that proper geological cabinets will shortly become available either second-hand from Bristol or new - the Museum has agreed to purchase. This is clearly an improvement over the "shoe box" state of the collection a year or two back. Any time one of your members wants to use the collection, or improve the standard of documentation we'd be pleased to see them.

Secondly, in the Dewey Museum, Warminster, I discovered the Manley Collection of fossils and rocks, piled in a couple of boxes in rather a poor state. In another part of the Museum I discovered the original notes made by V.S. Manley who collected the material in the 1920's and 30's, mostly locally and including stuff from the contentious Warminster Beds. The identity of specimens and their identification are being checked by a local geologist, Mrs. King in Chippenham, for which we are grateful. A programme of re-housing, marking and documenting will soon be begun, again using MDA.

Miscellaneous groups of fossils exist in other of the group of nine Pastoral Care museums in the county. All these collections, whilst their independent nature is being preserved and respected, are being treated as a whole at the data processing stage of documentation. Thus little insignificant groups are finding a useful role as part of a larger whole.

I hope this is some encouragement that geology is not losing out in Wiltshire; but I would surely like to see the major collections here properly documented and accessible.

Yours sincerely,

Martin Norgate,
County Museums Officer.

**THE TOWN COUNCIL OF TROWBRIDGE**

TOWN HALL, TROWBRIDGE BA14 8EQ

Telephone 65072 (STD 022 14)

R. J. PARSONS, F.C.I.S., I.P.F.A.
Town Clerk and Treasurer

YOUR REF.

OUR REF. M/5

Office Hours — Monday to Fridays 9 a.m. — 12 noon

9th October 1980.

Dear Mr. Delair,

Crabbe Geological Collection.

The Trowbridge Museum Committee at its last meeting decided that the Crabbe Geological Collection should be suitably housed in a proper cabinet possibly with sliding drawers and a sum of up to £300 was allowed for this. I am wondering if you could let me know where I could obtain a cabinet suitable for a geological collection.

Your advice would be most appreciated.

Yours sincerely,

John Barton
Assistant Curator.J.B. Delair Esq.,
19 Common Road,
Woolton,
Boars Hill
Nr. Oxford.

ICOM ADOPTS CARDIFF COLLOQUIUM RECOMMENDATIONS

A colloquium (sponsored jointly by GCG and the Palaeontological Association) on the Curation of Palaeontological Collections was held at the National Museum of Wales, Cardiff in March - April, 1978.

Papers presented at the Colloquium were subsequently published and the summary of the meeting included a series of vitally important recommendations reproduced below (Bassett, etal 1979)

1. Palaeontological collections should be in the charge of specialist geological curators. Museums without such staff should seek advice, and should consider passing important collections to institutions where they will be properly curated.
2. Organizations such as The Museums Association and the International Council of Museums (ICOM) should be urged to establish courses for specialist training in all aspects of geological curating and specimen conservation.
3. Type and other described and cited fossil specimens should be deposited in a reputable and publicly accessible museum. Editors of journals should accept papers for publication only when this condition is satisfied. Types should be made freely available for research purposes; in some cases preparation of such specimens may be necessary and if curators are in any doubt about granting permission they should consult other specialists in the field for advice.
4. Museums with stated acquisition policies should be encouraged to make them widely known.
5. Palaeontological sites, and especially type sections, should be treated with respect through following recommended Codes of Conduct; where necessary sites should be protected by legislation to prevent over-collecting.
6. In addition to computer technologies and data-formats, terminology and hierarchies require standardization if computerized cataloguing techniques are to become widely used and effective for indexing and data-exchange in palaeontology.

It is good news indeed to learn that these recommendations were adopted in their entirety (as resolution no. 3) at the meeting of the International Committee of Natural History Museums in Mexico City on 29th October, 1980.

Reference

Bassett, M.G. (etal) 1979. Recommendations in Bassett, M.G. (ed) Curation of Palaeontological Collections. Spec Pap Palaeont. 22, 275.



IPA

Proposal for a *World Directory of Palaeontological Collections*

BARRY D. WEBBY

Palaeontology is an international discipline with communication and cooperation essential to advances in the science. Yet all too often palaeontological collections, because they come under the control of local or national authorities, remain, for a variety of reasons, essentially inaccessible to palaeontologists. Not that restrictions on use normally exist, but rather the basic published documentation of the collections is lacking or incomplete, and so the scope and coverage of the available collections is seldom known to many people outside the particular institution. Compilation of a world-wide resource inventory of fossil collections would help to remedy this deficiency and provide all palaeontologists with the essential data of availability of fossil material for study and consultation in museums and other institutions throughout the world.

Until comparatively recently, the only kinds of published documentation of fossil collections were the detailed institutional catalogues of type and figured specimens. It remains, in accordance with recommendation 72D of the *International Code of Zoological Nomenclature* (ICZN), the essential task of every institution to continue to compile or up-date for publication its lists of fossil types. But a separate need exists for the complementary, broader-type surveys of fossil resources. The recently published CONARIP report (Glenister *et al.* 1977), dealing with invertebrate fossil collections of North America, is a good example, though it aims mainly at establishing national needs and priorities. Many aspects of recommendations in this, and the recent British survey on curating palaeontological collections (Bassett 1979), cut across national boundaries. This has led to the suggestion by Bassett *et al.* (1979:275) that 'the time is now ripe for an international assessment of the status and role of palaeontological collections'.

The compilation of a world directory will not only aid individual palaeontologists attempting to find relevant collections, but will also help those local (institutional) and national organisations which need international support and encouragement in order to promote the publication of detailed fossil catalogues.

In formulating a proposal for a world-wide stocktaking of fossil resources under the aegis of the International Palaeontological Association (IPA) and hopefully with the support of some other international bodies such as the International Council of Museums (ICOM), it is intended that information be obtained by questionnaire distributed through national representatives. Each corporate member of IPA (mainly societies with palaeontological interests) will be asked to nominate a national representative to arrange the distribution of the questionnaire and collection of data in each country. In those areas of the world not represented by a corporate member, the national committees of affiliated organisations like

the International Union of Geological Sciences (IUGS) or individual palaeontologists will be asked to assist.

At the General Assembly of IPA held in Paris on 10 July, 1980, a committee was appointed to prepare the questionnaire, arrange for its distribution and compile data from the completed responses. Information to be sought by questionnaire will include: (1) name and address of institution; (2) date of founding of fossil collection; (3) estimated size of collection and percentage adequately curated; (4) general and special emphases of collection; (5) list(s) of published catalogues of type and figured material; (6) outline of curating procedures, including use, if any, of computer-based data processing; (7) loan and exchange policies; (8) numbers of permanent staff – palaeontologists, curators and preparators – and person(s) in charge of collection; (9) nature of associated library resources; (10) in-house publication outlets; (11) items of equipment and services available to visiting palaeontologists; (12) availability of grants-in-aid to visiting palaeontologists.

Members of the committee welcome active support and participation of palaeontologists in the project. We would like the compilation of this first *World Directory of Palaeontological Collections* to have the widest possible coverage. The questionnaire will be ready for distribution in the early part of 1981. Please contact the committee's convenor, Dr. Barry Webby (address given below), if you can help.

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- Bassett, M. G. (ed.) 1979: Curation of palaeontological collections. *Spec. Pap. Palaeont.* 22, 1–280.
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Barry D. Webby, Department of Geology & Geophysics, University of Sydney, Sydney, N.S.W., 2006, Australia; 22nd January, 1980 (revised 1980 07 14).

CONTINUING CONTROVERSY AT THE BRITISH MUSEUM (NATURAL HISTORY)

The programme of new displays and developments at the National History Museum have caused considerable controversy. New and even more drastic changes are planned in the near future and these have aroused more disquiet. The letter to Nature reproduced below summarizes the very strong misgivings of many members of the scientific community over these new developments. These have been expressed very forcibly by those who rely heavily on the B.M. displays for teaching the biological and zoological sciences. The article reproduced from Private Eye indicates that the controversy is escalating to a wider audience.

Museum of Errors.

Sir - Two years ago (Nature 275,683;1978), I questioned the wisdom of what is happening at the Natural History Museum in South Kensington. If a national museum is concerned with aspects of social engineering, by promoting concepts that happen to be current in the present climate of opinion, are there not sinister implications? I was especially alarmed by the museum's new exhibition scheme, and asked that sufficient pressure should be brought to bear to "curb the activities of the Public Services Department and to ensure the survival of the museum's reputation for scholarship in its public galleries".

Since then, time has passed. It is no longer a question of raising the alarm but simply of reporting what has already happened.

Two areas of the museum's work have already succumbed: dinosaurs in 1979 and fossil man in 1980. Both the new exhibits are simply vehicles for the promotion of a system of working out relationships known as cladistics. The accompanying booklets Dinosaurs and their living relatives (1979) and Man's place in evolution (1980) explain with startling clarity the essence of cladistics. In both books the fundamental assumptions are spelt out unequivocally. "First we assume that new species arise when one species splits into two. This assumption allows us to test the relationship we suggest, because it means that every species must have a closest relative. Second we assume that none of the species we are considering is the ancestor of any of the others." It is axiomatic, therefore, that no species in the fossil record can be considered ancestral to any other nor can one species evolve directly into another.

With regard to both dinosaurs and fossil man, it is evident that the application of cladistics is quite inappropriate. The well attested sequence of human fossils representing samples of succeeding populations has, until the Natural History Museum's latest exercise, been taken as a classic example of the gradual evolution of a single gene pool. Certainly there is not any serious doubt about Homo erectus being directly ancestral to Homo sapiens.

Yet the concept of one species being directly ancestral to another is contrary to the rules of cladistics. So we read in the section on Homo erectus (under the heading "Not our direct ancestors") that "The Homo erectus people were not quite like us ... the Homo erectus skull has several characteristics that the modern skull does not share. Because of these special characteristics, we think that the Homo erectus people were not our direct ancestors".

But then on the opposite page is a photograph of the Petralona skull, from Greece, which the author considers an example of Homo sapiens or Homo erectus because of its mixture of features. This particular skull makes nonsense of the entire methodology being promoted in the books and exhibition. According to the stated assumptions of cladistics none of the fossil species can be ancestral by definition. This presents the public for the first time with the notion that there are no actual fossils directly antecedent to man. What the creationists have insisted on for years is now being openly advertised by the Natural History Museum.

The scientists on the museum staff, be they experts on dinosaurs or on fossil man, have had their scientific judgement over-ridden by the Department of Public Services. What exactly is the cladistic framework to which the Public Services Department is so fervently dedicated? Why is there such a fanatical insistence that data should be presented within such a framework?

And why should there be a deliberate policy that involves the removal from the public gaze of important and scholarly exhibits in the museum such as the Insect Gallery and the Fossil Mammal Gallery? Is it because they provide too dramatic a contrast with the propaganda of the new-style exhibits?

The questions that should arise in everyone's mind are: what is this all about, what actually is going on and what is behind it all? The answers can be found by reading the literature of cladistics. The tenor of this is seen in its abuse of E. Mayr and G.G. Simpson, and indeed of Charles Darwin himself, because of their firm adherence to the concept of gradualism and to the idea that the processes that can be observed at the present day, when extrapolated into the past, are sufficient to explain changes observed in the fossil record. The synthesis of population genetics and palaeontology presented by Simpson in his two seminal works *Tempo and mode in evolution* (1944) and *The major features of evolution* (1953) is anathema to cladists.

The next question is why should the notion of gradualism arouse passions of such intensity? The answer to this is to be found in the political arena. There are basically two contrasting views with regard to human society and the process of change through time: one is the gradualist, reformist and the other is the revolutionary approach. The key tenet of dialectical materialism, the world outlook of the Marxist-Leninist party according to J.V. Stalin, is in the recognition of "a development in which the qualitative changes occur not gradually but rapidly and abruptly, taking the form of a leap from one state to another" (Engels). This is the recipe for revolution. If this is the observed rule in the history of life, when translated into human history and political action it would serve as the scientific justification for accentuating the inherent contradictions in society, so that the situation can be hurried towards its appropriate "nodal point" and a qualitative leap supervenes.

With regard to evolution and the fossil record, neither Engels nor Lenin, both of whom discussed the subject at length - to their great credit - insisted upon a pattern of such qualitative leaps, they were merely content to see in evolution and the fossil record evidence of change, albeit gradual.

This has always been a matter of some disquiet for Marxist theorists. If it could be established that the pattern of evolution was a saltatory one after all, then at long last the Marxists would indeed be able to claim that the theoretical basis of their approach was supported by scientific evidence. Just as there are "scientific" creationists seeking to falsify the concept of gradual change through time in favour of catastrophism, so too there are the Marxists who for different motives are equally concerned to discredit gradualism.

What is going on at the Natural History Museum needs to be seen in this overall context. If the cladistic approach becomes established as the received wisdom, then a fundamentally Marxist view of the history of life will have been incorporated into a key element of the educational system of this country. Marxism will be able to call upon the scientific laws of history in its support, with a confidence that it had previously enjoyed.

This is the course of action to which the authorities of the Natural History Museum seem to have committed themselves either unwittingly or willingly.

L.B. Halstead,
Department of Zoology and Geology,
University of Reading, UK.

From Nature, Vol 288. p. 208 (20 November 1980)

Unnatural History.

At a time of stringent economies in public spending, it is odd to find that the Secretary of State for the Environment has accepted the report of his Inspector and has given permission for the Natural History Museum to demolish some of its existing galleries in the eastern wing and replace them by a new building costing some £10 million. Even odder is the Report itself, which notes that "The Trustees" scheme is expensive, would lead to the loss of two floors of the present accommodation and would take six years to materialise. It is destructive of the plan form of the Waterhouse Museum ..." The GLC's architect, John Bancroft, produced an alternative scheme to show how the same accommodation can be provided without demolishing anything of the Waterhouse building, and for less money, yet the Inspector concluded that "the Trustees" infill scheme is the best way of providing additional public space, but it would be at the expense of a significant part of a complete architectural masterpiece," and he also asserted that "the Authorities were wrong to agree to the demolition of the Waterhouse building in 1976."

The reason for these extraordinary contradictions is, no doubt, the official reverence given to museum experts and to their priorities. Museums are no longer to be static displays of objects, for the edification of the public and for the encouragement of specialist research; now they must be constantly changing exercises in "interpretation" to secure the maximum attendance figures. The desire to regard national collections and institutions as merely a vehicle for self-expression - an attitude so glamorously identified with Dr. Roy Strong - has now affected the poor Natural History Museum where, it comes as no surprise to find, the prime mover in this destructive building plan is Dr. Roger Miles, head of the Public Services Department.

Dr. Miles believes that "there is some justification for regarding the Natural History Museum as a 'kids' museum' for children under eleven." All other visitors to and functions of the Museum must be subservient to the assumed needs of "kids", for whom new extravagantly designed permanent "exhibitions" are being created, of a strongly didactic nature, which are justified by the experimental psychology and educational theories of the Swiss pseud Piaget.

Although peripheral to its central concerns with botany, zoology and palaeontology, the Natural History Museum is now dominated by the Hall of Human Biology, which one critic has seen as nothing but an attempt to encourage "social engineering". And now the unfortunate dinosaur has been moved from its home in the eastern galleries - those which are to be demolished - and put in the main hall, surrounded by verbose explanation panels: an exhibition which another museum curator thinks "makes no attempt whatsoever to interest people in dinosaurs as once-living organisms ... the new dinosaurs exhibit has precious little to do with dinosaurs as such."

Soon enough experts like Dr. Miles and his exhibition designers will be as relevant as dinosaurs, or dodos, but - unlike darling dodos - they leave destruction behind them: in this case, unless it is stopped, the destruction of soundly constructed; intelligently designed and beautifully finished galleries which form a large part of one of the best and most enjoyable Victorian public buildings in Britain.

'Piloti'

Reprinted with permission from Private Eye No. 494, p.8. (21 Nov. 1980)

These strongly worded criticisms have come largely from outside the museum profession which is strange as the issues involved are of fundamental importance to the role and function of all museums in a modern society. An interesting development has been the presentation (in June 1980) of the Museum of the Year Award (sponsored by the Illustrated London News and National Heritage) to the Natural History Museum for 'the excellence of the first three phases of its new exhibition scheme'. Perhaps this highlights the question of what constitutes and who can judge a good or a bad museum display policy. Other questions which might be asked include

should displays or galleries be aimed at specific age groups or sections of the community?

Is it possible to design displays which can supply the requirements of all sections of the community?

Bearing in mind that museums are almost the sole repositories of comprehensive collections of specimens how much space or how many galleries should be featured with little or no specimen content?

How can students and teachers of the biological and geological sciences, who depend on a high proportion of specimens on public display, be best accommodated?

Should reserve collections be made more accessible?

The issues raised by the new policies' and their critics are of vital importance and would form a good subject for debate in the Geological Curator. Any contributions on this subject will be considered for publication by the editor.

As for the other controversial issue - that of cladistics the following article by Alan Charig perhaps gives a more balanced viewpoint.

Cladistics: a different point of view

Alan Charig, also of the British Museum (Natural History), takes up the cudgels on behalf of the traditional systematists in this reply to Colin Patterson's article in the previous issue of *Biologist*

Colin Patterson's personal view of 'Cladistics' (*Biologist*, November 1980, pp. 234-240) is a model of clarity in its presentation. As for its content, much of that is admirable too and factually unexceptionable; nevertheless I find my colleague's approach to systematics very different from my own and certainly not typical of the hundreds of systematists working in the British Museum (Natural History).

Essentially he is contrasting 'evolutionary systematics' with 'cladistics', at the same time pointing out that the cladistics of 1980 has developed a long way from the system put forward by Hennig in 1966 - chiefly in that 'it has been realized that more and more of the evolutionary framework is inessential, and may be dropped.' He therefore believes that the main criticisms of cladistics (by people like Cain, Mayr, and Simpson) are now totally irrelevant, being directed against the antiquated views of Hennig on various topics connected with evolution and not against the 'non-evolutionary' cladistics of today.

I suggest that the true situation is represented much better if we recognize that the modern type of cladistics advocated by Patterson, what Platnick (1979) calls 'transformed cladistics', is altogether different from Hennigian systematics and should be treated as a separate entity. In Hennigian systematics phylogeny is all-important and is conventionally depicted by a branching dendrogram (hence 'cladistics' - Greek 'klados', branch or young shoot). In 'transformed cladistics', however, evolution is deliberately ignored, being considered unproven and possibly unprovable; the customary use of dendrograms to represent the 'natural order' is therefore highly misleading in that it suggests progression with occasional dichotomies. 'Transformed cladistics' is neither Hennigian, phylogenetic, nor cladistic, and would be referred to more appropriately as 'natural order systematics'.

Natural order systematics demands an hierarchical arrangement of shared characters and of the organisms which possess them, preferred over all other possible arrangements on the sole criterion of maximal congruence or parsimony; such phenomena

as parallelism and convergence or transformation series in stratigraphical sequences are rejected as being 'outside the scope of systematics'. The resulting arrangement is the 'natural order' - hence 'natural order systematics' - and is *ipso facto* the classification. The difficulty for those who are not advocates of this type of systematics, for people like me, lies in comprehending what the 'natural order' can possibly mean if it does not indicate any type of phylogenetic relationship. Certainly it indicates maximal congruence, for that is how it was arrived at; it consequently indicates the greatest aggregate ('overall') similarity, thus resembling a phenetic classification; and, to a creationist, it could be said to indicate the order in the mind of the Creator. But I cannot imagine what other 'relationship' can be shown by the shared possession of such a random assortment of characters - some due to common ancestry, some being similar adaptations to similar external causes, and others being purely fortuitous - unless we define 'related' as meaning nothing more than 'sharing common characters'. Not only is it impossible to disentangle those different types of character but, according to the dogma of natural order systematics, it is expressly forbidden to do so.

The true antithesis between the different types of systematics lies between what I call 'Simpsonian' (conventional evolutionary) systematics *plus* Hennigian systematics on the one hand and natural order systematics on the other. Simpsonian and Hennigian systematics are alike in that each comprises two distinct procedures. The first is an attempt to ascertain the phylogeny, an objective reality, and represent it by means of a branching diagram; the second is the production of an hierarchical classification based on that diagram. These two types of systematics might both be described as 'clado-evolutionary'. In both cases the attempt to discover the phylogeny is made by means of a character distribution analysis ('cladistic analysis'); preference is generally given to the most parsimonious arrangement, but other factors of an evolutionary nature are also taken into consideration, for example, the fossil record, parallelism and convergence. The Hennigian procedure involves a more

formal, disciplined approach and is to be welcomed on that account.

Far greater differences exist in the derivation of a classification from the chosen arrangement. The Hennigian procedure is simply to base an hierarchical classification directly on the phylogenetic cladogram; no paraphyletic taxa are permitted, that is, each taxon must include all its own descendants, so that familiar taxa like Reptilia (which does not include Aves and Mammalia, descended from it) are unacceptable. The conventional Simpsonian method, on the other hand, is to divide up the phylogenetic 'tree' in arbitrary fashion so as best to reflect the present characters of the organisms as well as their genealogy, using 'grade' taxa as well as 'clade'. This produces a classification which is consistent with the phylogeny and in which each taxon is a single continuous segment of the phylogenetic 'tree', but which is by no means an exact reflection of the dendrogram.

It is easy to demonstrate the fallacy in Patterson's contention that paraphyletic taxa like Reptilia are 'non-groups' and that, in consequence, statements involving them – such as 'reptiles were ancestral to birds and mammals' – convey no useful information. A natural order or Hennigian systematist merely regards Aves and Mammalia as subordinate clades nested within the larger clade Amniota. Given an evolutionary interpretation, however, such a pattern implies that birds and mammals arose *within* the Amniota, presumably from Amniota which were not themselves birds or mammals – that is, by definition, from the reptiles! It must be admitted that a paraphyletic taxon is not equivalent to a clade, a natural monophyletic group, it is an artificial concept of the human mind; but it may still be defined in terms of a clade from which one or more younger, smaller clades nested within have been excluded. After all, a set which is defined by the presence of certain characters and by the absence of others is still a perfectly good set. And to recognize a paraphyletic taxon is a very convenient way in which to categorize a 'stem-group' or 'ancestral group'.

Incidentally, Patterson's so-called three 'axioms of cladistics' are not axioms at all. The first, 'Features shared by organisms (homologies) manifest a hierarchical pattern in nature' should really read 'hierarchical patterns', for, as the author himself makes clear, there is a choice of patterns – to be resolved by parsimony; and, thus modified, the statement is so general as to be meaningless. The other two 'axioms' are merely statements of the conventions used in graphical representation of the resulting pattern, which is synonymous with the classification.

Other aspects of 'cladistics' which could usefully be

discussed include: the meanings of the words 'monophyly', 'polyphyly', etc.; the recognition of ancestors; recency of common ancestry; the delimitation of taxa with respect to time; and the absolute ranking of taxa. A very much longer and more detailed article covering all those points and many others is to be published shortly (Charig, 1981). Meanwhile I might summarize my own attitude as follows:

1. I recognize that we have no absolute proof of the theory of evolution, by direct evidence of the senses; all the available evidence is merely circumstantial. However, there is no scientifically acceptable evidence against it and no other theory fits the known facts so well. I therefore accept it as a working hypothesis of immeasurable heuristic value.
2. The branching pattern of the phylogeny should be reconstructed as accurately as possible by means of a character distribution analysis conducted in a strictly disciplined Hennigian manner, modified and augmented in the light of evidence obtained from any other valid source, e.g. palaeontology.
3. The reconstructed phylogeny may be conveniently expressed, as completely as possible, by means of a branching diagram (dendrogram). *The dendrogram itself* provides a 'topographical' reference system in biology.
4. The dendrogram, representing continuity in time and space, may be divided into taxa in an arbitrary fashion in order to fulfil, as well as possible, the general requirements of a biological classification. Thus the classification should impart, as far as is consistent with division in that manner, the most important characteristics of each taxon at the time of its existence as well as the broad outline of its evolutionary history. Each taxon should correspond to a single continuous segment of the dendrogram; it must be of monophyletic origin, but it need not include all its own descendants, i.e. it may be paraphyletic.

I shall end my comments by adding that the virulence of the controversy mentioned by Patterson comes almost entirely from the 'cladists', some of whom (be they of the classical Hennigian persuasion or of the 'transformed' variety) embrace their creed with a quasi-religious fervour. Surely the subject of biological classification, as much as any other branch of science, merits a less emotional, more rational approach.

Reference

- Charig, A. (1981) Systematics in biology: a fundamental comparison of some major schools of thought. In *Problems of Phylogenetic Reconstruction*, ed. Joysey, K. A. and Friday, A. E. Systematics Association Special Volume. London: Academic Press.

Biologist (1981) 28 (1)

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GEOLOGICAL LOCALITY GRADING IN SITE DOCUMENTATION

by Stephen Drinkwater.

The instructions for the completion of the Geology Locality A4 Summary Record (MDA 1980) refer on page 22 to a portion of the record reserved for a site 'grade'. Implicit in both its position on the record and in the recommendations made in the instructions, is the understanding that 'grade' applies particularly to educational use. However there are no clear recommendations on how one goes about establishing a grading system and to date no widely accepted format for grading has been either presented or discussed.

At the Geological Locality Recording Centre at the National Park Centre, Brockhole Windermere, it has been found necessary to devise our own grading system for sites of geological interest. This is reproduced below in the hope of attracting both comment and criticism in an effort to help achieve a national standard.

The "ABC" Site Classification System.

In order that the condition, teaching potential and thus the future management of sites can be easily conveyed, the "ABC" system has evolved.

Three factors are all considered before deciding the ultimate classification.

1. INTEREST. - the features of a site may be suitable for study at several levels down to that of school groups. By contrast it may be so obscure as to only interest research workers.
2. ACCESS. - the interest in a site may vary between researchers or the like and school groups. The research student may wish to visit all sites displaying a particular feature. The group of pupils need not visit remoter sites. One accessible site may be sufficient. Thus only one or two sites in similar groups of sites may be recommended as suitable for schools.
3. CONDITION. - if sites have suffered badly as a result of parties visiting then some positive effort must be made to divert attention from them. Similarly if they are vulnerable in any way undue interest should not be focussed on them. The vast majority of sites however are resilient enough such that no limitation need be placed on visits.

These three factors are balanced against one another to decide whether a site should be recommended as -

A - Actively protected using positive visitor management to turn interest away as much as possible and notices 'on site' to explain why it should be respected.

B/R - suitable for researchers, usually the more obscure points of interest. Occasionally just remote or difficult access.

B/S - suitable for small (minibus) school or college groups.

C - suitable for larger parties (several minibuses or in some cases a coach) usually showing basic features in easily accessible places.

A/B/S - These sites are already well known. Trying to divert interest from them is futile. Feasible to erect some sort of signs at these sites explaining what individuals can do to protect them.

Youth & Schools Liaison Officer
National Park Centre,
Brockhole,
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GEOLOGICAL SOCIETY OF LONDON ESTABLISHES A CONSERVATION COMMITTEE

Dr. P. Toghill, Geological Society of London, writes:-

Council of the Geological Society agreed this year to the formation of a Conservation Committee, whose membership includes Dr R.C.L. Wilson (Chairman), Dr P. Toghill (Secretary), Dr R.G. Clements, Dr J.C.W. Cope, Dr W.D.I. Rolfe, Dr D.A. Bassett and Dr C.D. Waterston and whose meetings are attended by officers of the Nature Conservancy Council.

Council has also approved the following terms of reference for the Committee:-

- i) to establish liaison with regional geological societies and nature conservation trusts to ensure that local issues are identified and acted upon.
- ii) to provide an information booklet describing and illustrating 'ways and means' of current conservation. This will be a practical guide for local geologists in objecting to footpath closures, considering planning applications, formulation of bye-laws, approaching landowners for site access, stimulating local government to use existing statutory resources, etc.
- iii) to back proposals or presentations to public inquiries launched locally, i.e. to give them national authority.
- iv) to provide a national lobby concerning conservation matters.
- v) to promote the National Site Documentation Scheme (which is intended to relieve pressure on over-used sites by unearthing alternative locations).
- vi) to provide a link with international conservation agencies.
- vii) to identify the possible sources of funds for geological conservation and to seek sponsorship for specific projects as they arise.
- viii) to undertake any activities appropriate to the advancement of geological conservation.

The Committee had its first meeting in June and a great deal was discussed. One of the thorny problems is access to working quarries and indeed any geological site. The Committee intends to have further discussion with the British Quarry and Slag Federation and at this stage is reluctant to become involved with every local issue. We would rather set up a network of local contacts who could inform us of problems and hopefully deal with these themselves, with our help and advice.

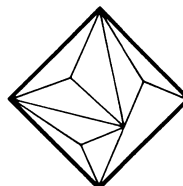
The Committee hopes to work closely with the Society for the Promotion of Nature Conservation (the parent body for all County Naturalists' Trusts), and has been in touch regarding liaison with county trusts. Similarly we are about to contact regional geological societies who are ideally placed to deal with local problems, and indeed have done so in many cases. Good relations with the Geology & Physiography Section of the Nature Conservancy Council are also, of course, of the greatest importance and we are liaising together so that the work of the two bodies does not conflict or overlap.

We hope to organise a "training conference" for geological conservation and this will hopefully coincide with the publication of our information

booklet on "ways and means" in conservation. The date and venue for this have yet to be decided.

All geologists, particularly those engaged in fieldwork of any type, are in a strong position to offer advice on many of the terms of reference outlined above. I would particularly like to hear from anyone who would be willing to be a local contact for the Committee, and also from anyone who has information on site access problems, site abuse or any other conservation problem. Correspondence should be addressed to me at the Geological Society.

Reprinted from Earth Science Conservation No. 18 December, 1980.



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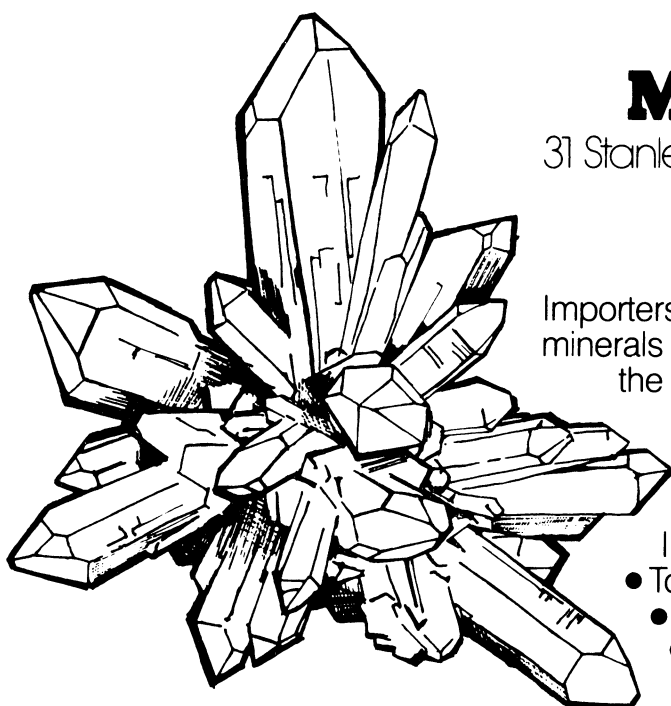
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GEOLOGICAL CONSERVATION IN THE WARWICKSHIRE CO. COUNCIL STRUCTURE PLAN.

by T.P. Besterman.

At the GCG meeting in Leeds (16-17 June 1980), I made a plea for those involved in geological site documentation and conservation to get their voices heard when their relevant planning authorities were preparing their new Structure Plans. I said this because I have received an extraordinary degree of enlightened co-operation and accommodation from the Warwickshire Planning Department.

Reproduced below are extracts from the Draft Review of the Warwickshire Structure Plan which are of relevance to geological site conservation. I think this shows the measure of success we have had in Warwickshire in putting the concept of geological site conservation on a par with the conservation of birds, beasties, flowers and ancient monuments. Much credit should go to the County Planning Officer of the Warwickshire County Council for this intelligent attitude!

When I wrote to the County Planning Officer with my report on geological items to be included in the Draft, I ended my letter with this paragraph:

"The need to protect and conserve sites of archaeological and ecological importance is one that is becoming increasingly recognised and has gained popular appeal. The concept of geological site conservation is a comparative newcomer to the field and will probably never achieve the same appeal in the popular imagination. I would, however, stress the importance of that concept in a county such as Warwickshire where most of the scientifically significant geological exposures are in quarries. Many of these are already disused, many more will become so during the Plan period. Because it is stated policy to infill or otherwise reclaim such sites it is therefore all the more important that the Planning Authority gives support to the need to conserve geological sections and thereby bring public awareness of the value of geological sites more into line with that of archaeological and ecological sites."

It seems that they have fully accepted this point. I have no idea whether the Warwickshire County Council is unique in this or whether there are several other County Structure Plans making provision of geological site conservation. I certainly consider that this is a very important step in site conservation - an undertaking as a written policy is a potent weapon with which to bludgeon the geologically ignorant philistine in whatever guise he appears.

Warwickshire County Council
Review of the Warwickshire Structure Plan
Extracts from the draft written statement
April, 1980

The more specific objectives of the Review are as follows

- (21) To conserve sites and buildings of archaeological, geological, architectural, historical and ecological significance.

ENV.5.

IT IS THE COUNCIL'S POLICY TO SECURE THE RESTORATION AND/OR LANDSCAPING OF AREAS OF DERELICTION.

Explanation

..... In some disused quarries in Warwickshire are exposed rocks of considerable scientific significance. Where no other comparable exposures exist in the area, due consideration will be given to the conservation of representative geological sections for the purposes of education and research.

AREAS OF SCIENTIFIC INTEREST

ENV. 8

IT IS THE COUNCIL'S (DRAFT) POLICY

- (i) Not normally to permit development which is likely to adversely effect ancient monuments or features of archaeological, ecological or geological interest.
- (ii) To consider the establishment of local nature reserves where a site of particular ecological importance is threatened by change or development.
- (iii) To have regard to the archaeological, ecological and geological value of an area of land or water when considering its use for recreation.
- (iv) To encourage the creation of management agreements with landowners within whose areas there are particular features of archaeological, ecological or geological interest.

Explanation

Close liaison will be encouraged with landowners within whose areas wildlife is important, or on whose land there exists an important geological site, to produce management agreements for the conservation of such habitats and sites.

Pollution

ENV. 13

It is the council's policy to seek sites suitable and acceptable for the reception of refuse so that a programme of refuse disposal by controlled landfill may continue throughout the plan period. Alternative methods of refuse disposal will continue to be investigated with especial reference to the disposal of specialist waste products, but the treatment and/or disposal of industrial or toxic wastes will be permitted only with stringent safeguards to protect the public and the environment.

Explanation:

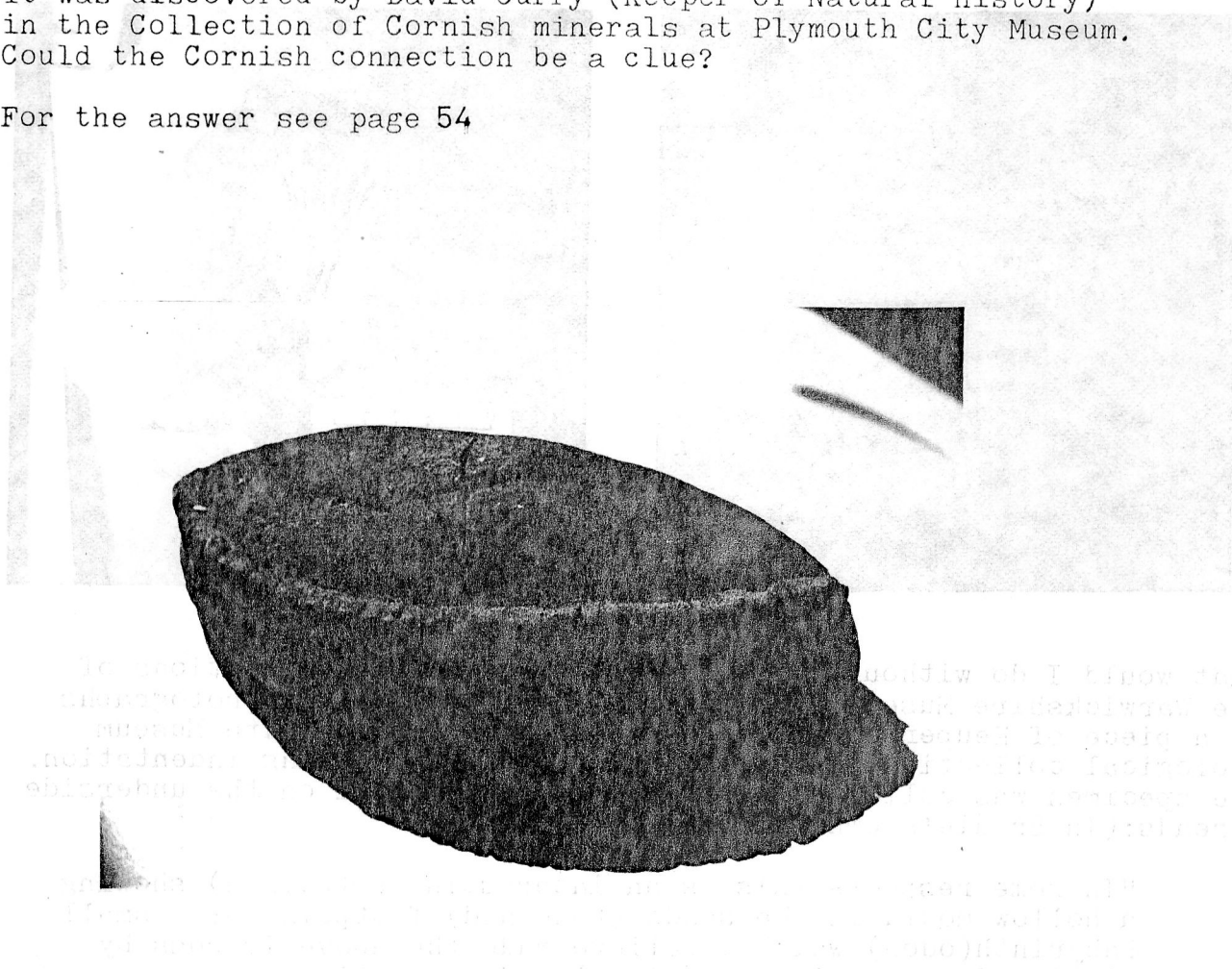
Where appropriate, tipping and ultimate landscaping in quarries should be consistent with the need to conserve representative geological sections.

Tristram Besterman,
Deputy Curator and Keeper of Geology,
Warwickshire Museum,
Market Place,
Warwick.

Picture puzzle.

Can anyone identify the specimen shown in this photograph?
It was discovered by David Curry (Keeper of Natural History)
in the Collection of Cornish minerals at Plymouth City Museum.
Could the Cornish connection be a clue?

For the answer see page 54



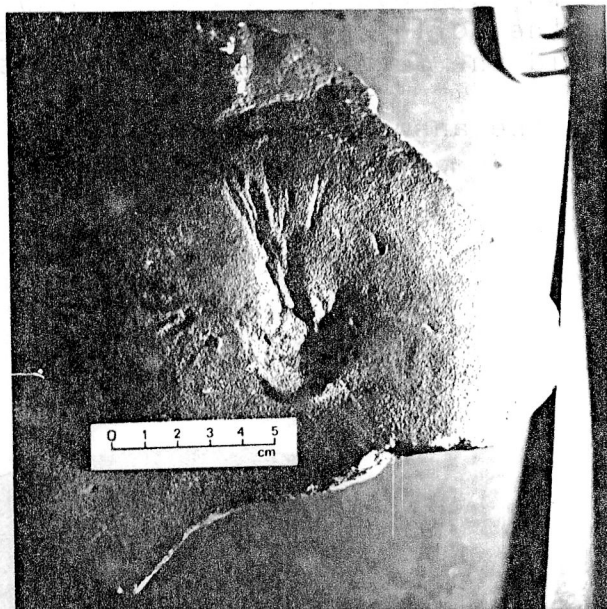
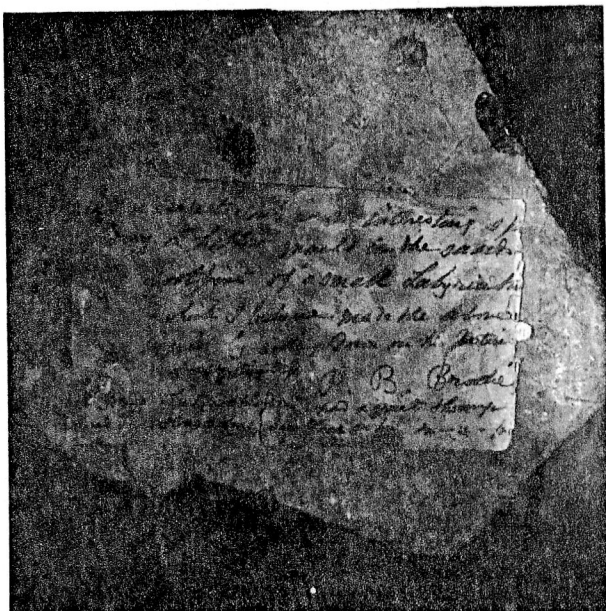
NOTES AND NEWS

Compiled by Tony Cross

Selling your Collection

Whilst enjoying the delights of the Alps recently I was interested to discover a novel use for a Museum Mineral Collection. Sachets of sugar produced by an Austrian Coffee Company carried a colour illustration of an Alpine Mineral from the collections of the Sammling Naturhistorisches Museum in Vienna. Twelve different minerals are reproduced in all with details of name, locality and minerals are reproduced in all with details of name, locality and region. Maybe the B.M. (N.H.) could approach Tate and Lyle and B.S.C. and suggest a similar scheme - but perhaps that would be stirring it!

Incidentally does anyone else miss the wide range of fossil and mineral postcards from the B.M. (N.H.)? The new dinosaur cards are very interesting but what about the other fossil groups and minerals displayed there.

ROCK BOTTOM

What would I do without Tristram Besterman and the collections of the Warwickshire Museum. In the post arrived recently photographs of a piece of Keuper Sandstone (G9435 in the Warwickshire Museum geological collections catalogue) showing an interesting indentation. The specimen was collected by Brodie, and the label on the underside - reads:(In Brodie's own fair hand:)

"In some respects this is an interesting sp(ecimen) showing a hollow mould in the sands (tone and) footprint of a small Labyrinth(odon) which I believe made the above impress by sitting down on his posteri(or) and on getting up.

P.B. Brodie"

This is followed by a splendid - but slightly coy - postscript by Brodie:

"A young Labyrinthodon had a great thump, and so nolens volens sat down on his r-u-p."

This is creative curatorship at its best. Perhaps readers may care to express opinions on alternative explanations for the observed phenomenon!

Answer to picture puzzle.

David Curry (who sent us the photograph) initially identified our mystery object as a fossilized Cornish pasty (Paleogggus cornubensis). However, on finding the label he was disappointed to find its real identity as a 19th Century fire brick heavily impregnated with tin oxide (from one of the Cornish tin mines).

"EVERYTHING HAS A VALUE" - UNFORTUNATELY

I am indebted to John Cooper for sending me a cutting from the December issue of this relatively new publication, described as "Everyone's guide to collecting arts, antiques and bric-a-brac."

SUSSEX ATTIC FISH FIND

● Mrs. Irene Jackson, of Upper Dicker, Hailsham, Sussex, writes: "I read that you are looking for people who have found anything interesting lately. Well I

was searching through the attic where a number of possessions of my late father were stored, when I came across what I thought was just a heavy stone. On closer inspection I found it was split in half, and the perfect impression of a curled up fish was clearly visible.

I then wrote to David Attenborough about it. He replied that the fossil was undoubtedly tens, if not hundreds of million years old! He recommended me to write to the Natural History Museum for more information.

They wrote back saying that the fossil in my possession was without doubt one called *aspidorhynchus comptoni* and was only found in Brazil. They said it was probably 100-150 million years old. These Brazilian fish came from deposits of the Upper Cretaceous age, and these rocks themselves are at least 70-80 million years old."

A SHORT NOTE ON PHILATELIC GEOLOGY by Brian Jackson.

As surmised in the note on Geology in *Miniature* (GCG Newsletter, 2 No. 7 p. 449) someone has come across other branches of geology on stamps. I am in fact a thematic stamp collector whose theme is geology. To date geology on stamps has covered virtually the full spectrum of the science; not only palaeontology but mineralogy, gemmology, mining, historical geology, crystallography, petroleum, vulcanology, petrology, geological maps and geologists. Stamps have also been issued to commemorate the World Diamond Congress (RSA 1980); 10th World Mining and Metallurgy Congress (Turkey 1979); 2nd Symposium on the Geology of Libya; 23rd International Geological Congress, Prague (Czechoslovakia); International Kimberlite Congress (Lesotho); 4th Latin American Geological Congress (Trinidad and Tobago).

The quality of the stamps vary from country to country with some exceptionally fine sets: from Switzerland, the Pro Patria series from 1958 to 1961 depicting minerals and fossils; from East Germany 4 sets depicting minerals, historical geology and gemstones and from Ascension Island a panoramic view of the volcanic topography separated into five values of stamps. Britain has always been noted for the quality of the stamps it has produced and it is regrettable that the GPO has not taken a leaf out of the Isle of Man Philatelic Bureau's book, whose 1980 issue to commemorate the 150th anniversary of the Royal Geographical Society contains two geological stamps, the 7p depicting conglomerate arch at Langness and the 13p stamp depicting volcanic rocks at Scarlett. The nearest thing the GPO have given us to date are the energy stamps of 1978 depicting oil and natural gas traps in stylised geological environments and the 8½p stamp depicting

coal mining. What then can we suggest as suitable subjects for stamps on Geology. We've had famous explorers, why not Famous Geologists for example James Hutton (Founder of Modern Geology), William Smith (Father of English Geology), James and Archibald Geikie, Charles Lapworth and so on but let's not forget the contribution of women Geologists e.g. Gertrude Lilian Elles. Major themes could also be commemorated e.g. The igneous origin of granite, the ice age, unconformity, volcanoes evolutionary palaeontology, the geological time scale etc. so why not give the GPO a geological thrust.

Brian Jackson,
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EH10 4EN.

Following on from above readers may be interested to know that on the 24th June 1981, the Post Office is to issue three stamps to recognise the work of the National Trust. These will feature Derwentwater in the Lake District, Stackpole Head in Wales and the Giant's Causeway in Northern Ireland. In addition, a further two stamps will commemorate the Golden Jubilee of the National Trust for Scotland. One stamp will feature the St. Kilda archipelago, the other Glenfinnan, the site of the raising of the standard by Bonnie Prince Charlie in 1745.

Although the issue is not for pure geological reasons it will be interesting to see if the 150th Anniversary of I.G.S. (and Geological Survey) will be suitably marked in 1985. It seems a pity that the centenary of the B.M. (N.H.) was not the subject of a special Post Office issue especially as the Americans produced a super Jurassic landscape stamp for the centenary of the American Museum of Natural History in 1970. Well, at least we invented stamps before them, just!

At the risk of boring readers it is interesting to note that this topic has a International press as the bibliography below shows. Additional information on these papers can be obtained from Peter I. Manning, Institute of Geological Sciences, Keyworth, Nottingham, NG12 5GG.

- | | |
|----------------------------|---|
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<u>American Philatelist</u> , Sept. 867 - 869 |
| Bennett, R & J Watson 1978 | Philatelic Terms illustrated. Stanley Gibbons. London (Second Edition). |
| Bitter, P H von 1977-8 | Fossils in the Mail.
Rotunda (Royal Ontario Museum) Vol <u>10</u> no 4, 4 - 11 |
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No. 2, 79 - 88 |
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Tucson, AZ, 46pp. |
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Nature Wonder Vol 3 (3) p 1-5. Vol 3 (4) p 2 - 5,
Vol 3 (4) pp 3 - 4.
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- Oakley, K P 1975 Decorative and Symbolic Uses of Vertebrate Fossils. Oxford Occasional Papers on Technology No. 12. 60pp.
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- Skrynnik, G. 1976 They have disappeared, yet they remain (Extinct animals depicted on Stamps) - In Russian. Filatelija USSR 1976.3., 8 - 9.
- Smith W 1969 Nickel and New Caledonia. Gibbons Stamp Monthly April 1969 pp 232 - 4
- Soeren, J.C. van 1979 Fossilien und saurier in der Philatelie Erlangen - Siegeitzhof; Germany 126 pp.
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- Strom, H & L Lewy N D Animals on Stamps London 383pp
- Valk, Laurens Van der 1979 D is for Dinosaur. Gibbons Stamp Monthly December 1979.

Young GG 1979

Gems, Minerals and Jewelry on stamps:
Checklist Mimeographed.

Ziberna, Carl. 1979

Marcofilia Paleontologica
Notizerio Tematico Part 1 48/49
(Apl - June 1979)
pp 150 - 155 Part 2 50 (Sept/Dec 1979)
pp 102 - 4.

'Philagems' is the journal of the Gems Minerals and Jewelry Study
Unit (American Topical Association)

N.B. In America 'thematic collecting' is known as topical collecting
and the above organisation provides an international group with over
11,000 readers interested in some 750 'topics'.

A METHOD OF PRODUCING DURABLE LABELS FOR HAND SPECIMENS

by Andrew Mathieson.

To minimize wear and tear on labels for hand specimens which are
in frequent use, the following technique has been used.

A number of labels are typed on white card with an 8 pt. bold
Univers type, face using an I.B.M. Composer typewriter, and these
are photocopied. Individual labels are cut to size and attached
to specimens with Durofix glue. A thick coat of acrylic varnish
(e.g. Reeves or Windsor and Newton) is painted on and immediately
around the label.

This gives a hard-wearing, waterproof and clearly read label, and
provides a means of producing several duplicates such as may be
required for teaching purposes.

Andrew Mathieson,
City Museum and Art Gallery,
Queens Road,
Clifton.
Bristol BS8 1RL.

All contributions for NOTES and NEWS should be sent to:

Tony Cross,
Curtis Museum,
High Street,
Alton.
Hampshire.

BUILDING AND DECORATIVE STONES IN MUSEUM COLLECTIONS

by M.F. Stanley.

Most geological collections contain examples of sample building stones and polished rock slabs often with little or no information as to their provenance. Publications, albeit few, do exist to aid curator's with such material and I list below those used by myself. This short note was prompted by the receipt of an off print from Michael Loynd (Museum & Art Gallery Service for Yorkshire & Humberside) of an article by Christopher Gilbert, titled "A Specimen Marble Table" which appeared in The Connoisseur October 1973. The article contains an accurate full colour plate of the table top, a translation of the title page of the manuscript documentation and the original schedule of the 150 specimens of 'marble' together with a key diagram identifying the pieces.

- | | |
|----------------------------------|---|
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London: Faber, 1947. |
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1972 | The Pattern of English Building.
London: Faber, 1972. |
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stone to be used in the building of
the new Houses of Parliament.
London: House of Commons, 1839. |
| Grant, M.H. 1955 | Marbles and Granites of the World.
London: Private Publication for the
author by J.B. Shears & Co. Ltd. |
| Howe, J.A. 1910 | Geology of Building Stones.
London: Edward Arnold, 1910. |
| Hull, E. 1872 | A Treatise on the building and ornamental
stones of Great Britain and Foreign
Countries.
London: MacMillan, 1872. 340pp. |
| Warnes, A.R. 1926 | Building Stones: Their Properties,
decay and preservation.
London: Benn, 1926. |
| Watson, J. 1911 | British and Foreign Building Stones,
Cambridge: C.U.P., 1911. |

The one inch and 1:50000 sheet memoirs of the Geological Survey and I.G.S. should also be consulted.

A more complete list of journals and series of books and papers containing further information on Building and Decorative Stones can be found in the "Geological Record Centre Handbook" by John A. Cooper et al, 1980 available from the Museums Documentation Association at £1.50.

M. F. Stanley,
Town Docks Museum,
Queen Victoria Square,
Kingston Upon Hull.

LETTERS FROM AUSTRALIA

The first letter is from Sue Turner with information relating to geological collections and activities in Melbourne.

I've just spent a few days visiting Melbourne. The main port of call was the National Museum of Victoria in Russell St. The palaeontology collections are looked after by Dr Tom Rich (vertebrates and plants) and Dr Peter Jell (invertebrates) with assistants Susan Gibson and David Holloway. Whilst there searching for Devonian fish I had a quick look at the foreign vertebrate collection and made a few notes on collectors.

Sir Frederick McCoy built up the collections in the mid to late 19th century, purchasing several British collections. I did not have the opportunity to make a complete list but reference to Chapman (1929) gives examples of foreign collections:-

Purchases from KRANTZ of Bonn

Thos BEAN of Scarborough Jurassic plants of Yorkshire - "a collection only second to that of Cambridge".

Dr Thos WRIGHT 2000 ammonites

Dr John LYCETT over 3000 English Oolite fossils

Robert DAMON of Weymouth "several notable collections, including Paris Basin and Old Red Sandstone fossils".

Of the vertebrates I saw, several came from Damon, labelled 1890 e.g. Herefordshire pteraspids and cephalaspids. The George Sweet coll. included Coal Measure fish from Newcastle. I was told there are also some Permian fossils from the North of England.

Publications of the Museum include:-

'Fossils of Victoria' by Edmund D. Gill reprinted from Victorian Year Book no.79, 1965.

'Minerals of Victoria' reprinted from Victorian Year Book 1970, and 3 sets of geological postcards are available:-

4 pc. Fossils, 6 pc. dinosaurs (paintings by George Sweeting),

10 pc. minerals.

I also visited the Geological Survey of Victoria Mines Dept. where there is also a small museum originally laid out by former deputy Chief Geologist Dr A.D.N. Bain in the 1950's (Turner 1978). Most of their fossil material is now housed in the National Museum. Both of these establishments have plans to redesign their displays.

There are three universities in the Melbourne city area; Melbourne, La Trobe and Monash. All probably house geological collections either in geology or zoology departments. At Monash I visited Prof. Jim Warren who has built up a fine collection of Devonian fish and rare amphibians. In the University of Melbourne's new McCoy Earth Sciences building there is a geology museum with a curator, and palaeontologist Dr George Thomas, currently working on Permian brachiopods.

For a brief history of geology in Victoria see Darragh (1976).

Chapman, F. 1929. Illustrated Guide to the collection of fossils exhibited in the National Museum of Victoria. H.J. Green, Govt. Printer, Melbourne.

Darragh, T.A. 1976. History of Geology in Victoria. (with contributions from J.L. Knight and C.M. Tattam). In 'Geology of Victoria' Eds. J.G. Douglas and J.A. Ferguson. Geol. Soc. Austr. Spec. Pub. no. 5. 1 - 9.

Turner, S. 1978. Notes and Records. Dr. Alexander David Neil Bain, D.Sc., F.G.S. The Nigerian Field, 43, 2, 78 - 80.

The second letter is from Ken McNamara of the Western Australian Museum. Ken is editor of the Australian Geological Curators Group.

WESTERN AUSTRALIAN MUSEUM,
FRANCIS STREET,
PERTH,
WESTERN AUSTRALIA. 6000.

9th March, 1981.

Dr T.H. PETTIGREW,
Sunderland Museum,
Borough Road,
SUNDERLAND SRI IPP,
ENGLAND.

Dear Dr Pettigrew,

I have been in contact with Hugh Torrens (hence the article in your newsletter about the Australasian Geological Curators Group) and I have exchanged our first two newsletters with him and received all of yours. So I think I'm on your mailing list already.

I do hope that we can be of mutual benefit to one another, particularly, as you suggest, with reference to information on Australian and British collections. As was mentioned in 'The Geological Curator' of October 1980, here at the W.A. Museum we have a large collection of British fossils, including, it is said, type material. The other major Australian Museums similarly hold large collections of British material. What might be useful is if I can extract from the various Museums here details of their British collections, then send that information on to you. I'm sure there is a lot of interesting material lurking in our Museums here that might be of use to people in England. Likewise there is a fair amount of Australian material in some British Museums. Perhaps the extent of this could be made known in this country.

I will send you copies of our newsletter so you can get an idea of the sort of topics of major interest to us over here.

Yours sincerely,



K.J. McNAMARA,
Curator of Palaeontology.

If any readers of the Geological Curator know of Collections of Australian geological material in Britain perhaps they could forward the information to the Editor.

We look forward to hearing more about British Collections 'down under' from our Australian colleagues.

BOOK REVIEW by Irene King

Composition of Scientific Words. By Roland Wilbur Brown 1979

Smithsonian Institution Press Washington D.C. 882pp.

(Available from Eurospan Ltd., 3 Henrietta Street, London WC2E 8LU price £7.95)

The essence of 'A manual of methods and a lexicon of materials for the practice of logotechnics' the subtitle of Brown's book, first appeared as Materials for word-study in 1927. The present version is a reprint of the greatly enlarged 1956 edition, and the remarks of the author (1893-1961) about the decrease of instruction in classical languages and 'verbicultural wrongdoing' are even more pertinent today, as anyone bent on composing a new term or altering a current one must be aware.

The book aims to satisfy two needs, how to set about producing a new word and how to translate scientific (or pseudo-scientific) ones into current English. If the aspiring wordcoiner thinks that by turning to page 33, 'Formation of Terms' he will find an easy-to-follow explanation of how it is done he will be disappointed, and even those whose latin gerundives and greek adjectival endings are rusty may find it hard going. My only criticism of the instructional part of the book (pp 7-6) is that it is just too difficult for the majority of today's geologists, biologists and geographers to use, but the very complete index at the end makes it possible to try. The transliteration section at the simplest may defeat those whose Greek is limited to the alphabet learnt via physics formulae and not everyone today recognises -us -a -um as latin gender endings.

Throughout the Introduction numerous examples are given which belie the title of the book, surely 'Composition of Words' would have been more apt here? The same applies to pages 348-350 devoted to figures of speech with lengthy quotations. Inhabitants north of the Border may shudder at being referred to as "the Scotch" and biologists to whom generic, specific and subspecific names are life blood, may not approve of Rattus rattus rattus being likened to the Hallelujah Chorus, and why should not a wasp and a puffball suit the same descriptive name Scleroderma if they both have relatively hard skins? These are small quibbles when related to the whole, and they suggest that the author was a philologist rather than a scientist. (He was a geologist with the U.S. Geological Survey! ED.)

The bulk of the book, the remaining 820 pages, consists of the lexicon (dictionary) through which word analysers and synthesisers will browse delightedly. The tubby nautiloid Eu-trepho-ceras discloses its name as Well-nourished-horn, and it is easy to imagine the Romans filing industriously away with pieces of that tough mollusc Lima, (latin lima=a file), while the sea-nymphs Nereis, Panope and Thetis, recognised by palaeontologists in Nerinea, Panopea and Thetidicrinus, comb their tresses with a Pecten. The Greeks obviously found the absence of pockets a problem as there are over twenty terms conveying the idea of a bag, purse or similar container, many of which were used by early classically minded geologists for fossil names. Dorocidaris (an echinoid) connects 'doros' a wallet with 'cidaris' a tiara, and other examples are Balantium (a mollusc) from balantion meaning bag, pouch, purse; Marsupites (a crinoid) from marsipion, marsupium, for which the meanings are given as pouch, bag, purse; and then there are the familiar Thecodonts bearing teeth in theca, from theke, a container or socket. All these words are

carefully cross-referenced. It is in fact these cross references along with derivations and diminutives which put Brown's book way ahead of other authors who have started with the same idea. I fail to agree with some of the examples given. Even if "Gr. metaceras" means "lukewarm" the crustacean Metaceradocus and the wasp Metacerapterocerus might well have the components meta- cera- docus and meta- cera- ptero-cerus rather than the single word used in their names. Unless of course they are to be found like Theridium tepidariorum (little beast in the place of warm water) a spider, in the bathroom! Regrettably few mineral words are included, no biotite, diorite or hornblende. Admittedly many minerals have place or personal names yet some of these are given. A more serious omission is that of 'ceras' Greek keras a horn, which does not have a separate entry but can be found under 'cerasto-' horned. Nor is it possible to check entirely the nature of a clasticbiosparite, a truly composed word.

Minor criticisms apart, this very thorough work is of immense importance to lecturers and the lectured, to collectors and curators, it is essential that the rules of scientific terminology are fully understood and correctly applied by these people. If we do not make the effort now to get it right, by the year 2000 meaningless words will abound and our powers to communicate scientifically and internationally will suffer. Perhaps by then the Smithsonian Institution will decide to reissue the book, having first taken it to the 'sudsateria' syn. laundry (see suffixes) and purged it of the kechap (malay, see ketchup under sauce) and other irrelevant material. So go to it you logotechnes compose your new words, with Brown to refer to you cannot go wrong, but with a live classical scholar as midwife the birth will be much easier.

This book is definitely worth using and referring to and should be found well thumbed on all library shelves.

Irene King
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RECENT PUBLICATIONS OF NOTE

MILLER, G. 1981. A prince amongst amateurs. H.H. (Arnold) Bemrose. 1857-1939. Amateur Geologist, Vol. IX, Pt. 9, pp. 48-61.

This is an interesting account of the Derbyshire amateur geologist who made a series of detailed studies on Derbyshire geology with particular reference to the igneous rocks.

The following articles appeared in Prace Museum Ziemi (Polska Akademia Nank), 31, 198

KAROL PROCHAZKA, Mineralogical Collections of the Jagellonian University in Cracow.

ANTONI LASZKIEWICZ. On the history of mineralogical-geological collections in Warsaw.

MARTA EBERT. Mineralogical and petrographical collections of H. Arctowski in the Museum of the Earth, Warsaw.

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(affiliated to the Geological Society of London)

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