GCG

NEWSLETTER OF THE GEOLOGICAL CURATORS GROUP

VOLUME 2 No. 7 DECEMBER 1979

The Museums of the Country

It must be obvious to any scientific person visiting the provincial museums of this country, how inefficient they are for the purpose of preserving Geological and Natural History collections, which are being formed more or less throughout the land.

Whilst the British Association directs so much attention towards the advancement of science by means of investigation, and grants money for the purpose, it is short-sighted on its part to neglect the subject of Local Museums as means for preserving collections for the benefit of science and of posterity.

To give an illustration of the way in which such museums are too often conducted. In a west-country museum there has lately been an addition; consisting of a valuable collection of cave bones, and that is well-preserved and arranged, but why? In a great measure because one of the members of the local society happens to take an interest in that department. But in what condition is the local geological collection? In a state of neglect and disorder, because in that department no one takes an interest. In other museums, where there is nobody to take an interest in the subject, the state of the collections may be imagined.

It is much to be regretted that museums should remain in such a condition. The formation and preservation of local collections ought not to depend upon impulse, or the chance enthusiasm of individuals, but should be the result of a generally recognised business-like system ; and it should be the interest of the various local societies to provide competent curators. It should also be the duty of these societies to preserve for the museum of the district the collections which have been formed, by local geologists or collectors, and not to permit them to be scattered or added to those in the British Museum and to that in Jermyn Street, where they may be said to become buried, and where the geological collections are already of an unmanageable size.

F. G. S.

from NATURE Sept. 7th 1871

FRONT COVER

The writer of the provocative letter on our cover can be identified (from his own annotated copy) as Spencer George Perceval (1838-1922) who has already featured on several occasions in our newsletter. His obituarist (Min. Mag. 20, 267-268, 1925) said he "was of a very retiring and nervous disposition", a description which certainly did not also apply to his pen. He had a passionate concern for the welfare and the state of our Museums and it is perhaps a little ironic to read this letter in conjunction with Philip Doughty's recent paper "The state and status of Geology in United Kingdom Museums" in M. G. Bassett (ed) Spec. Papers Palaeont. 22, 17-26, 1979.

Perhaps his most important point is one already made by the Group that research grants should also include some proportion earmarked for the preservation and curation of the raw material of that research where needed and appropriate. He also points a telling finger at the problem of collections needing competent curators since they will not look after themselves. These points made over 100 years ago need bringing home today. The one bright point perhaps is how the national Museums have redeemed themselves since the final aspersions of Perceval's letter. Many if not all would not now agree with him that consignment of material to one of these two national collections involves "unmanageable burial"! There is however too much else in the letter with which we can only and sadly agree.

H. S. Torrens

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

Submission of MSS

Three Newsletters are published annually. The last dates for submission of MSS for publication are:

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February 1st for April issue
July 1st for September issue

MSS should be sent to the editor typed and double-spaced, please.

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GEOLOGICAL CURATORS GROUP

(AFFILIATED TO THE GEOLOGICAL SOCIETY OF LONDON)

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

CONTENTS

VOLUME 2 No 7

Actual Date of Publication 31st January 1980

Trip . . . "What fool left that rock there?"

From a Christmas Cracker
pulled by Becky Torrens

SIXTH ANNUAL GENERAL MEETING.

Held at 14.30 on Friday, 30 November 1979 at the Sedgwick Museum, Cambridge and attended by 33 members of the Group.

P. Doughty took the chair and presented the apologies of the Chairman who was in hospital.

1. Apologies had been received from M. Bassett, R. King, I. McKenzie Smith, C. Paine, I. Rolfe, H. Torrens.

2. Minutes. The minutes of the 1978 A.G.M. had appeared in Newsletter 2.4. These were approved and signed.

3. Secretary's Report. A written report had been distributed at the meeting.

a) Meetings Programme. The March meeting on 'The Future Development of Geological Conservation in the British Isles' had been sponsored jointly with the N.C.C., Association of Teachers of Geology, Earth Sciences Education Methods Group and the Committee for Geological Site Documentation. The April meeting on 'The History of Museums and Collections in Natural History' had been sponsored jointly with the B.C.G. and the Society for the Bibliography of Natural History. Both these meetings were held in London and, thanks to careful advance planning, were well attended and highly successful.

The July meeting held in conjunction with the Mus. Ass. Annual Conference was, in contrast, planned at a very late stage and might have fallen through altogether but for the efforts of Prof. Hodson who organised the final programme on 'Geological Collections in Hampshire'.

The meeting on 'The Curation of University Research Collections' was held as part of the Sheffield conference of the Geological Societies of the British Isles.

The programme for 1980 includes a spring meeting in N.E. England, a summer meeting in Leeds and a September meeting in London. The last-minute salvage of the Hampshire meeting had emphasised the importance of advance planning of meetings to leave adequate time for organisation of the programme.

b) Collections Liaison. The demands for "rescue" activities were proving greater than the Group could meet and the wisdom of attempting to curate collections which would subsequently be left without specialist curatorial supervision was under discussion. In future the main emphasis was likely to be placed on those collections in physical danger, or those where adequate curation was assured. A. Howell & H. Torrens had spearheaded the Group's work in this field over the past year.

c) Drew Report. This report, published earlier in the year, had been debated in the House of Lords in November. The Hansard report noted that both the G.C.G. & B.C.G. had expressed concern over some of the recommendations. As a result of this, Sir Arthur Drew had asked to meet the Secretary. The chief points for concern were the strong support given to Area Councils which lacked curatorial expertise, the suggestion that a 'once and for all' grant could solve the problems of neglected collections, and the composition of the proposed Museums Council. It was hoped that both the Chairman and Secretary would meet Sir Arthur to press the curatorial viewpoint which the report seemed largely to overlook.

d) 'State & Status' Report. The Geol. Soc. of London had agreed to bear the full publication and distribution costs of this report which would appear as one of their Miscellaneous Papers.

e) G.C.G. Committee. The increasing pressure of committee work suggested that new working parties and additional co-opted members might soon be needed if Group activities were to be maintained and extended.

4. Treasurer's Report. A statement of accounts prepared by J. Martin, the Acting Treasurer, had been circulated at the meeting.

Two major items of expenditure during the year had been £108 towards C.G.S.D. expenses necessitated by the cut of the expected N.C.C. grant, and £213 towards the loss made by the Geological Conservation conference in March.

Balances in hand on 21 November 1979 were £135.94p in the current account and £102.52p in the deposit account.

No increase in subscriptions was being sought for 1980 but this would need to be seriously considered for 1981 to offset rising costs.

5. Editor's Report. The Editor apologised for the late appearance of recent issues of the Newsletter which had resulted from staff sickness and pressure of work at Keele.

The column of topical news announced for the September issue had been held over until January because of initial lack of copy. It was hoped that this would be established as a regular feature of the Newsletter.

New advertisers were urgently required to offset the increase in costs which would result from the forthcoming rise in postal charges.

P. Doughty thanked the Editor for his work in producing the Newsletter and for his success in finding advertisers for each issue. It was thanks to the revenue from advertisers that no rise in subscriptions need be contemplated at present.

He also pointed out that the problem of finding a new Editor when B. Page retired would be a crucial one for the continued success of the Group, and urged members to give this matter serious thought.

6. Recorder's Report. A written report had been circulated with the agenda.

Considerable progress had been made on the revision of Sherborn's 'Where is the —— Collection?' and an Index to Palaeontological Collections would be also published by the B.M.(Nat.Hist.) in 1981. Together with the 'State & Status' report, it would provide valuable information on the availability of fossil material in the U.K.

7. Committee for Geological Site Documentation. In the absence of J. Cooper, M. Stanley presented a verbal report.

35 record centres and 5 recording units had been set up to date.

The 2-day meeting in March had provided a successful forum for airing problems on site conservation and the proceedings of this meeting would be published in due course.

The Geol. Soc. had agreed to set up a sub-committee to consider site conservation and the Group would be seeking formal representation. It was hoped that the Society would become increasingly involved in this work.

The loss of N.C.C. funds had resulted in the disbanding of the C.G.S.D. committee and the reconstitution of the Executive. In future the sale of site record cards and he publication of instruction books and record centre handbooks would be handled by the M.D.A.U.

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

Chairman	Hugh Torrens	(Keele University)
Secretary	Phil Doughty	(Ulster Museum)
Treasurer	John Cooper	(Leicestershire Museums)
Editor	Brian Page	(Keele University)
Recorder	Ron Cleevely	(B.M.(Nat.Hist.))
Minutes Secretary	Geoff Tresise	(Merseyside Museums)
Continuing Committee Members	Frank Howie	(B.M.(Nat.Hist.))
	Andy Mathieson	(Bristol Museum)
New Committee Members	Barrie Rickards	(Sedgwick Museum)
	Mick Stanley	(Hull Museum)

As there was no further business, the Acting Chairman closed the meeting at 15.10.

Geoffrey Tresise
20 December 1979

COMMITTEE NOTES May - December 1979

Two committee meetings were held during this period: at Leicester on Tuesday 4 September, and at Cambridge on Thursday 29 November.

Meetings Programme. 'Recent Developments in the North-East' at the Hancock Museum on Friday 18 April 1980.

A seminar on 'Standards & Terminology of Geological Documentation' at the I.C.S. offices in Leeds in the early summer.

A joint session with the B.C.G. on Monday 22 September prior to the Mus. Ass. Conference in London. The theme suggested for the Conference was 'The Care, Maintenance & Presentation of Collections'.

The Hunterian Museum, Glasgow was proposed as a possible venue for the 1980 A.G.M. Joint meetings with the Min. Soc. and/or A.T.G. were suggested for 1981.

Forthcoming Publications. The Secretary reported the unanimous decision of the Geol. Soc. publications committee that the Society should bear the full costs of publishing and distributing the 'State & Status' report. In view of this, an offer from P. Boylan to produce the report as a joint publication with the Leicestershire Museum Service would be declined with thanks. Once a publication date had been set, a publicity campaign would be mounted since the work would be wasted if pressure could not be kept up in political quarters. Publicity via the scientific press (e.g. 'New Scientist'), T.V. programmes ('Horizon') and radio programmes ('Science Today') would be sought. To attract widespread press coverage it would probably be necessary to name the museums which gave most cause for concern.

The Geol. Soc. would also publish the proceedings of the 'Future Development of Geological Conservation' meeting held in March 1979.

'Where is the —— Collection?' would appear in the spring of 1981 as one of the centenary year publications of the B.M.(Nat.Hist.). It would concentrate on fossil collections and suitable illustrations were still required.

Officers & Committee. B. Rickards and M. Stanley were nominated for the two vacancies on the committee and no alternative nominations were received.

Stephen Locke had replaced P. Boylan as Mus. Ass. representative on the Committee.

B. Page wished to resign at the 1980 A.G.M. if a new Editor could be found.

The Secretary would write to the B.C.G. Secretary to suggest that one of their committee should attend G.C.G. committee meetings and vice versa.

Collections Liaison. Bath. It was reported that, although a new curator had been appointed, he had not been given responsibility for the geological collections which remained in the charge of the Libraries dept. The Secretary had written to the County Librarian to offer the Group's assistance, but only a formal acknowledgement had been received to date.

Richmond. A notice appealing forahome for the Richmond collection had appeared in Newsletter 2.6 and in the Museums Bulletin. Applications from the Grosvenor Museum, Chester and the University of Leicester had been received.

Committee for Geol. Site Documentation. The annual questionnaire to record centres had been circulated for return by 31 January. Work was still in progress on the handbook for record centres and it was hoped to publish this in April. It would appear in the standard M.D.A. A4 format.

Problems had arisen with the N.C.C. over the funding of the scheme and, as a result, the C.G.S.D. had been left with unpaid expenses as follows:

Printing costs	£237.45
Travel expenses	£130.56
Postage & Xerox costs	£46.53.

The M.D.A. had generously agreed to pay the printing costs in full and record centres would in future buy recording cards direct from the M.D.A. It was agreed that the remaining debts would be met by the Group.

In future the C.G.S.D. committee will form a sub-committee of G.C.G. and will concern itself solely with the Nat. Scheme for Geol. Site Documentation. The full C.G.S.D. committee has been dissolved but its members will be asked to act in a consultative capacity when necessary. A revised constitution for the C.G.S.D. sub-committee has been drawn up and approved.

Drew Report. Following the debate in the House of Lords, Sir Arthur Drew had asked to meet the Secretary to discuss the Group's reservations concerning aspects of the Report. It was hoped that the meeting (to which the Chairman would also be invited) could be arranged for mid-December.

Mus. Ass. Training Scheme. Concern was expressed over the curatorial input into the Association's forthcoming Manual of Curatorship. Specialist groups would be asked to compile bibliographies for both the Manual and the Museums Diploma. The Association had also asked for nominations for the Board of

Studies which would supervise the reorganised Diploma system. This matter would be fully discussed at the February committee meeting.

Technical Resources Survey. F. Howie produced a draft questionnaire on technical resources for circulation to all museums with geological staff.

Health & Safety at Work. Official proposals for Radiological Protection under the Health & Safety at Work Act could affect museums with collections of radioactive minerals. P. Henderson would be asked to supply a note for the Newsletter outlining the proposals and their likely implications.

A wider role for G.C.G.? A. Mathieson had submitted a paper suggesting that the Group habitually concentrated on the collecting and conserving aspects of curation while virtually ignoring education and interpretation. In discussion, it was suggested that, under the Constitution, the preservation of collections must be the Group's main aim and that to shift the emphasis to education would run the risk of duplicating the work of the A.T.G.

It was agreed that A. Mathieson's paper should be published in the Newsletter and the matter reconsidered in the light of members' reactions.

The next Committee meeting will be held at Keele University on Wednesday 20 February 1980.

Geoff Tresise

In Whole or in Part? Some members have suggested to the Editor that Committee minutes should appear in full in the Newsletter. The arguments against this are purely economic ones: the two sets of minutes summarized above totalled 11 pages and reproducing them in full would have increased the size of the issue and hence the costs of production and, possibly, postage.

It is obvious that in such curtailed notes many things are left out and the policy adopted should perhaps be explained. Sometimes, when the same matter has been discussed at two committee meetings, combination and condensation of the record presents no problems. Some items (programmes of meetings, contents of newsletters) can be omitted completely since all members will have received programme or newsletter before the notes appear in print. Other items are omitted because they seem (to me at least) to be trivial or of only ephemeral interest. All major items are, however, included and no item has ever been omitted because it was regarded as confidential or too delicate a matter to be passed on to the membership at large.

These are personal comments, and this is a matter on which the committee would welcome the guidance of the membership at large. If you have strong views either way, please pass them on to the Editor as soon as possible.

G.T.

4 THE BATH GEOLOGICAL COLLECTIONS

AN ILLUSTRATION BY CHARLES MOORE?

Although resident in Bath, Avon, for some time (during the periods 1837-1844 and 1853 until his death in 1881), Charles Moore spent much of his early life in Ilminster, Somerset (1815-1837 and 1844-1853). He appears to have shown an interest in palaeontology from an early age (Winwood 1892) although his passion for the subject of geology in general appears not to have emerged until his mid-twenties (Copp 1975). Moore's early endeavours in the collection of palaeontological specimens were concentrated on the then well exposed Upper Lias (Toarcian, Lower Jurassic) strata in the environs of Ilminster.

The collection of vertebrate fossils made by Moore from the Upper Lias of Ilminster includes ichthyosaurs (McGowan 1979), the mesosuchian crocodile Pelagosaurus (Duffin 1979a, 1979b), the actinopterygians Dapedius, Lepidotus, Caturus, Pachycormus and Leptolepis (Woodward,1896, Egerton 1852, Duffin 1978) together with numerous invertebrates (Moore 1852 etc., Woodward in Moore 1866).

A series of exceptionally fine pencil drawings of certain of the Upper Lias fossils are present in the Bath Geology Museum. The drawings were made by J. Dutton of Bath in 1843 and 1845, and by Sarah M. Moore, Charles's sister, between April 1845 and August 1846 (cf. Duffin 1979a). These illustrations were made during the time when Moore returned to live with his sister in Ilminster in order to manage the family bookselling business on the death of his father. There is, unfortunately, no detailed information concerning the history of these drawings. The bulk of the illustrations will be considered in detail in a later paper (Duffin in preparation).

One of the illustrations is executed in a style quite distinct from the others in the collection. This drawing forms the subject of this article, and is probably the work of an artist other than J. Dutton or Sarah Moore.

Two copies of the drawing exist (Bath Geology Museum Catalogue numbers CD.MD.1 and CD.MD.2). One (CD.MD.1), dated very lightly in pencil as being completed on August 2nd 1844, is assumedly a rough copy. It is drawn on thin card and entitled "From the Lias at Ilminster by Mr. C. Moore. F.G.S. F.A.S. etc." The nature of this title suggests that Charles Moore may have been the illustrator. As further evidence in support of this interpretation it should be noted that the title is handwritten in a style exactly similar to that of Charles Moore's normal handwriting (as evidenced in his letters to Richard Owen).

The second copy of the drawing (CD.MD.2) is presumably a fair copy and is undated. It is drawn on flimsy card mounted on a thicker card base. Like the other drawings in the collection, it would appear to have been used to illustrate the specimens on display in the Moore Museum at a later date. In the case of this drawing, the title is written in capital letters. The remainder of the illustrations in the collection are all signed and dated by their author, with a brief title only. The handwriting on these other drawings is distinct from that on the above two sketches. Unfortunately, neither of the two illustrations mentioned above has a discernible watermark.

It could be that this was Moore's own initial and personal attempt to begin illustrating his collection. Certainly, his sister appears to have used her superior artistic talents in continuing this labour, even illustrating some of his publications.

The drawing is also of importance since it illustrates a specimen which is

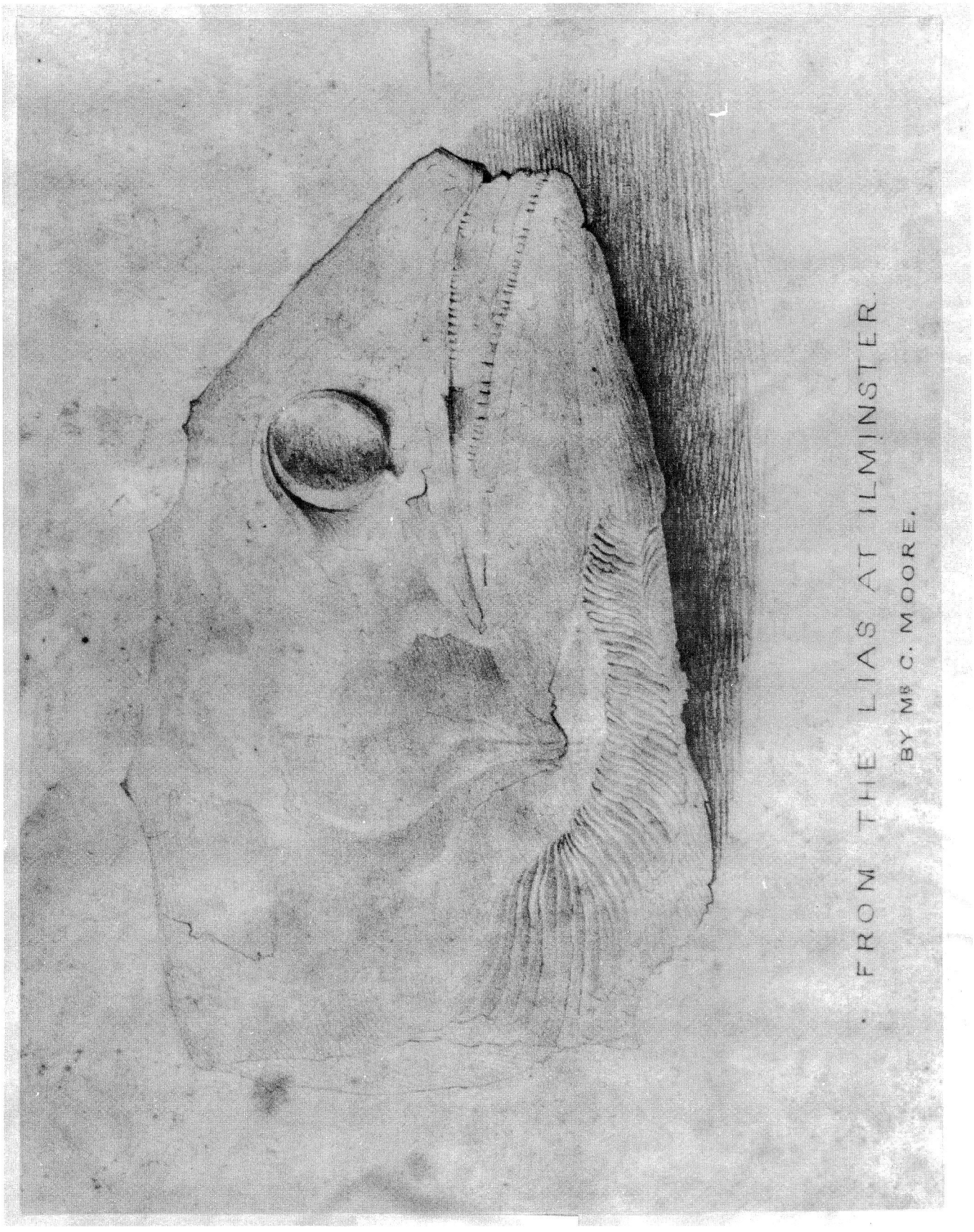

FIGURE 1

no longer held by the Bath Geology Museum. This is also true for certain of the other drawings in the collection (Duffin 1979a).

The fair copy shows greater attention to detail and more careful shading than does the trial copy (see fig. 1, the fair copy). In detail, the two copies differ only in number and size of the teeth, and representation of the branchiostegal rays. Assuming that the drawing was made to actual size, like the other drawings in the collection, then the skull of this bony fish must have measured 13 cm in length, from the posterior tip of the branchiostegal rays to the snout tip. The drawing illustrates the specimen in right lateral view. The postero-dorsal part of the skull is missing, together with the remainder of the body. The distribution and relationships of the composite bones in the ventral or gular region of the specimen, and to some extent the jaws, can be ascertained from the diagram. The round orbit, relatively short supramaxilla, deep dentary, and the nature of the gular plates and branchiostegal rays suggest that the affinities of the specimen lie with the pachycormid holosteans. The skull could well have belonged to Pachycormus esocinus (Agassiz 1833-1844), which is also well known from the Upper Lias of Whitby, Yorkshire (Woodward 1896) and the Posidonienschiefer (Lias epsilon 115) of Holzmaden, southern Germany.

Thus, the diagram described and figured above may testify to another facet of Moore's capabilities, and his deep concern for his specimens. In conclusion, it is evident from this and other records that a number of exceptionally well preserved and important specimens collected by Moore are lost. This is certainly true for some specimens which he collected from the Upper Lias of the Ilminster district. In view of the fact that material from the Moore Collection passed to the Manchester Museum, Somerset County Museum, Bournemouth Natural Science Society Collection etc. (cf. Copp 1975 for full details), it may be that the fish skull described above and other valuable specimens may be present in the collections of other museums. I would be most interested to hear from any institution housing material of Upper Lias age from Ilminster.

Acknowledgements

I would like to thank Mr. Ron Pickford for his continued help during my examination of the material held in the Bath Geology Museum.

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CREDIT WHERE IT IS DUE.

I am glad to see the story of Ammonites defossus in the GCG Newsletter (vol. 2, p. 333-340) since it has obvious lessons for curators.

Although it was my job to supply notes and photographs and permission to publish, I did not see the final draft and did not expect any personal credit.

The cleverness ascribed to me in the bottom line of p. 333 should really be credited to A. G. Brighton. The type of Am. defossus was among the 12,363 specimens that he catalogued in 1933. You will see from the annexed print of his record that, 42 years later, I had little to do beyond bringing the references up to date and casting the whole into a form suitable for the International Commission.

Brighton retired in 1968 when the catalogue he had started in 1932 stood at the staggering total of 372,902 records, mostly drafted by himself.

B.11945. Ammonites defossus Simpson ex Bean MS. For original description of this species see M.Simpson, 1843, Amm. Yorkshire Lias, p.15.
From the Marlstone [Mid.Lias], Robin Hood's Bay, Yorkshire. Leckenby Coll.
MS. note by Leckenby "Specimen marked x [i.e. B.11945] was Bean's type. Mr. Bean first named and distinguished this species. The other specimen [B.11946] must be the same."
MS. note by Leckenby in his copy of Simpson, 1855, Fossils of the Yorkshire Lias, opposite p.48, "I have Bean's type specimen, which neither agrees with this description nor with the example in the Whitby Museum."
S.S.Buckman, 1913, Yorks. Type Ammonites, II, p.76b, Pl.lxxxvi, has figured a specimen (No.103) in the Whitby Museum as the Holotype of Ammonites defossus Bean-Simpson.
= Defossiceras defossum (Bean MS.,Simpson).

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28 COLONEL BIRCH. (c. 1768 - 1829)

The Mysterious Colonel BIRCH.
alias Lt. Col. Thomas James BOSVILE né BIRCH (c.1768-1829).

To anyone who has investigated the early history of Liassic vertebrate discoveries at Lyme Regis in Dorset the name at least of Colonel Birch will be familiar. Yet he is a figure shrouded in mystery as the relevant entry in the History of the Collections contained in the Natural History Departments of the British Museum vol. 1, 1904 Geology page 268 and reproduced below will show.

> Birch (Colonel)
>
> In 1820, some Chalk Echinoderms and some fossils from the Dorsetshire Lias were presented by this gentleman, who lived at Bath. The rest of his collection, which was sold at auction on May 15, 1820, by Bullock "in his Egyptian Hall, Piccadilly," included valuable remains of Reptilia and Crinoidea from the Lias of Lyme and Charmouth, many collected by Miss Mary Anning. (See G. A. Mantell, London Geol. Journ., p. 13; 1846). Several of these were bought for the British Museum, which also possesses the copy of the sale-catalogue that belonged to "the fossil shop at Lyme," signed Joseph Anning.

This shows he flourished in 1820, lived at Bath but that even his christian name was then unknown. The 1820 sale catalogue cited above adds nothing further as the title page also illustrated here shows. It was held in London on 15 May 1820 by the former Museum proprietor and, by 1820, auctioneer William Bullock. (see overleaf)

The sale catalogue is 12 pages long and offers 102 lots for sale. Most are from Dorset especially from Lyme Regis and the Isle of Purbeck, while two (lots 35 and 70) are an ammonite and nautiloid from Whitby and one (lot 63) is part of "the foot of a prodigiously large animal" from the Lias near Bath (see Delair, 1969, p. 124). The great majority however have no locality detail given, in common with most sale catalogues of this period, but as the cover states the great majority are from the Blue Lias of Lyme Regis and Charmouth in Dorset. The copy at the Zoology Department library, Cambridge University is annotated with the prices and many names of buyers (Chalmers-Hunt, 1976, p. 78). Three lots are of particular interest. Lot 40 is "an entirely unknown crustaceous insect approaching the Paloemon of Olivier - an unique specimen" this is figured on a plate accompanying the sale catalogue and is a rare example of the real taxonomic interest of such sale catalogues. As Rolfe (in Chalmers-Hunt, 1976, p. 36) points out, this plate is the "earliest representation of the Liassic eryonid decapod Coleia and hitherto unrecorded."

Lot 60 is "part of the head of a very large animal this magnificent specimen is figured in Philosophical Transactions [of the Royal Society, vol. 109, plate 13] for 1819 from a drawing by Mr. [William] Clift of the Royal College of Surgeons and referred to in a paper by Sir Everard Home Bart. addressed to the Royal Society" [vol. 109, pp. 209-211].. Lot 102 was an Ichthyosaur skeleton which "presents a most interesting illustration of the osteology of the Icthiosaurus or Proteosaurus [an early name for Icthyosaurus]; it was the subject of a celebrated paper by Sir Everard Home and a very fine engraving of it from a drawing by Mr. Clift was published in the [same] Philosophical Transactions for 1819" [vol. 109, pp. 209-211, pl. 15].

A CATALOGUE

OF

A SMALL BUT VERY FINE COLLECTION

OF

ORGANIZED FOSSILS,

FROM THE BLUE LIAS FORMATION

At Lyme and Charmouth, in Dorsetshire.

CONSISTING

PRINCIPALLY OF BONES,

ILLUSTRATING THE

Osteology of the Ichio-Saurus, or Proteo-Saurus,

AND OF SPECIMENS OF

THE ZOOPHYTE, CALLED PENTACRINITE,

THE GENUINE

PROPERTY OF COLONEL BIRCH,

Collected at a considerable Expense,

WHICH WILL BE SOLD BY AUCTION,

BY MR. BULLOCK,

AT HIS

EGYPTIAN HALL,

IN PICCADILLY,

On MONDAY, the 15th Day of MAY, 1820,

PUNCTUALLY AT ONE O'CLOCK.

To be Viewed Three Days preceding, Sunday excepted, when Catalogues (1s. each) may be had at the Egyptian Hall, Piccadilly.

Printed by W. Sams, King Street, Seven Dials.

The latter specimen was one of some celebrity and George Cumberland (1829, p. 347) wrote of it that "it was said he bought in at £120" showing it had not reached the reserve price Birch had placed on it. Of the sale in general Cumberland said "the specimens procured him a great price" and "that the professed object of the sale was to provide for Miss Mary Anning of Lyme Regis" the famous fossilologist of Lyme Regis. Gideon Mantell also attended this sale and recorded his impressions of it in 1846 (pp. 13-14). It was the first important collection of Lias fossils Mantell had seen and he says "it was subsequently understood that all the most valuable fossils had been obtained by the indefatigable labours of Miss Mary Anning" [of whom more anon].

Mantell records that Lot 102 - the finest and noted above - fetched £152.5.0. but we know from the Cambridge University Zoology library copy of the sale catalogue, that it was bought in by Birch at this price having failed to reach the reserve price. The annotator of the Cambridge copy has written against this lot "Bought in - wants £300 for it" [it was then the most complete specimen known according to Home (1819) so the price is understandable] and that it was "since purchased for £100 for the Surgeon's Museum, London (the Royal College of Surgeons)" (History of the Collections contained in the Natural History Departments of the British Museum, vol. 2, 1906, Birds p. 245). The later history of this specimen, item 156 in a catalogue published in 1854, is outlined by Delair (1969, p. 124). It was destroyed in an air raid in May 1941.

Mantell lists also the following prices realised for some of the other lots at this sale; and very rarely the buyer's name.

Lot	Description	Buyer	Price
13	Ichthyosaur femur	Baron Cuvier	£ 1.10.0
23	Small Ichthyosaur head	-	£ 6. 0.0
41	ditto (fragment)	-	£26. 5.0
33	Ichthyosaur jaw termination	-	£ 3. 3.0
60	Part of an Ichthyosaur head (figured by Home 1819 as noted above)	-	£14.14.0
72	ditto (not figured)	-	£11.15.0
59	Ichthyosaur partial skeleton	-	£17. 6.6
81	Fish (Daepedium)	-	£ 5. 5.0
1	Fish vertebral column - Purbeck	-	£ 0.12.0
52	etc. etc. Various lots of fossil crinoids (Pentacrinites)	-	
		from 5/- to	£ 3. 0.0
(the best slab 3 feet by 2 feet lot 101 fetched			£ 8. 8.0)
40	The unique decapod Coleia (cited above)	-	£ 7. 7.0
Various	Dorsal rays of fishes Ichthyodorulites from 13/- to		£ 2. 6.0
Various	Ammonites and Nautiloids [including the figured specimen of Ammonites birchi noted below]	from 9/- to	15/-

Mantell notes the total amount realized [without lot 102 bought in] was upwards of £400 - an impressive total.

Apart from this we have a few more published references to Col. Birch. In May 1820 the Sowerby's figured both an ammonite from the Lias of Whitby and another from his collection from Lyme named as Ammonites birchi in his honour (Mineral Conchology vol. 3, p. 120-1). This latter is the well known ammonite today called Microderoceras birchi (J. Sowerby) and the index species

of the Sinemurian Birchi Subzone. These specimens had been borrowed by Sowerby for illustration before the auction sale. In 1821 he appears as "Col. Birch of Bath" as a subscriber to J. S. Miller's monograph The Natural History of the Crinoidea published in Bristol and the first British palaeontological monograph dealing with one well defined group of fossils. In 1823 the donation records of the Bristol Institution note the donation of geological material on 15 February 1823 by "Colonel Birch of Warminster". This suggests he was not permanently resident in Bath but peripatetic round the West Country probably adding to his collection as there is strong evidence he continued collecting after the 1820 sale. Two references in papers published by W. D. Conybeare in the Transactions of the Geological Society 2nd series, vol. 1 in 1824 are to his material (1824a) p. 122, pl. 21, fig. 1, 2, 3 is a part of a saurian jaw perhaps a plesiosaur found in the Lias of Weston near Bath with an associated humerus figured in the same plate figs. 4, 5, 6. The same paper refers to additional specimens Col. Birch had lately procured (p. 122) this paper being one read on May 3 1822. W. D. Lang (MSS) is therefore wrong to suggest that Colonel Birch's sale in 1820 was "sold presumably on his death to a Mr. Bullock", Birch was alive and Bullock was the auctioneer merely handling the sale.

A later reference by Conybeare (1824b) in the same volume of the Geological Transactions 2nd series vol. 1, 1824, p. 386, refers to some of his "saurians having been presented to the Oxford [University] Museum by Colonel Birch". This paper was read on 20 February 1824 to the Society.

There is however no evidence that he was ever permanently resident in Bath as has been suggested. A search of the relevant Bath directories (Bath City Reference Library) shows only one Birch - a Mrs. listed over 1812-1824 at the latter date as a dress maker of 11 Kingston Buildings. He is not known either to be in any way associated with Bristol as has been stated by Delair (1969, p. 127).

But who was Colonel Birch? Sherborn (1940) cites him as Col.? John Birch and he has been followed by Delair (1969, p. 122). Sherborn was presumably following the British Museum Catalogue of Printed Books which lists their copy of the 1820 Auction Sale catalogue as under John Francis Birch, who was also the author of a "Memoir on the National Defence" which went through two editions in 1808. This latter work is listed by Watt (1824 vol. 1, p. 115f) as by the Birch named here as a "Captain in the Royal Engineers", and thus demonstrating an Army connection. Boase (1965, col. 282) gives us further biographic information on this man as born 1776 or 1777 and who died at Folkestone on 29 May 1856 aged 79. However he cannot be "our" Colonel Birch, the fossil collector, for two reasons. First John Francis Birch only became a colonel from 1825 and secondly we know "our" Colonel Birch was dead by 1834 when he is described as "the late" by Thomas Hawkins (1834).

The vital clues to the correct identity of the fossilising Colonel Birch come from two sources. The first which sheds fascinating new light on the Anning family of fossil collectors and dealers of Lyme Regis in Dorset as well, is 3 letters between Colonel Birch and Gideon Algernon Mantell preserved in the Mantell collections in the Alexander Turnbull library, P.O.Box 12349, Wellington, New Zealand.

On 16 July 1819 Birch who crucially signs himself T. Birch writes to Mantell from the White Horse, Brighton, where he is staying, about his fossil collecting expedition in the previous week to the cliffs at Newhaven and Brighton in Sussex. On the 17 July he leaves he says, for London where he will present Mantell's plates of fossils to Sir Everard Home [the describer of the ichthyosaurus] and "express at the same time the pleasure I enjoyed in viewing your magnificent collections. It will not be many weeks before I visit Charmouth [Dorset] when I shall not fail to bear in mind your wishes in regard to the fossils of that coast".

On 17 December 1819 Mantell writes back to thank Birch for an engraving he has sent him [presumably one of Birch's specimens of ichthyosaurus published in the 1819 Philosophical Transactions] as Mantell says he would very much like to obtain some specimens of this. Birch's second letter to Mantell is dated 5 March 1820 from no. 5 Miles Buildings, Bath and continues "I have not forgotten my promise to select for you some fine things from the blue Lias - I cannot however perform it yet as I have great occasion for every individual specimen I can muster. The fact is that I am going to sell my collection for the benefit of the poor woman and her son and daughter at Lyme who have in truth found almost all the fine things, which have been submitted to scientific investigation: when I went to Charmouth and Lyme last summer I found these people in considerable difficulty - on the act of selling their furniture to pay their rent - in consequence of their not having found one good fossil for near a twelvemonth. I may never again possess what I am about to part with; yet in doing it I shall have the satisfaction of knowing that the money will be well applied. The sale is to be at Bullocks in Piccadilly the middle of April [in fact on 15 May]. Should you then be in town don't miss seeing it. I wish I possessed such a pencil as yours to make drawings of my specimens". This letter explains James Sowerby's remark (1820, p. 122) about the fact that Colonel Birch's "generous method of disposing of his collection will long be remembered". It also explains Joseph Anning's signature on the copy of the sale catalogue held in the British Museum (Nat. Hist.) library (see p. 406) as he (1796-1849) is the son (of Richard Anning and Mary) mentioned in the letter. The letter also strongly suggests, what is supported by other evidence, that a major part of the early Anning fossil collection and dealing business in Lyme was conducted by Mary Anning (c.1764-1842), the wife of Richard who died of consumption in 1810, after his death rather than the daughter Mary Anning (1799-1847) who has been given almost all the credit for Anning fossil discoveries by her many uncritical biographers. This is a subject which will be examined in a future publication.

Colonel Birch then, we know, flourished from 1819 to 1824, was already a colonel in 1820, had a christian name beginning with T and was dead by 1834. The final clue to his identity comes from the membership lists of the Geological Society of London published by Woodward (1907 p. 283) where we find the following entry as an ordinary member for the year 1824.

"Birch Thomas [Thomas James Bosvile]".

With this vital clue our search for Colonel Birch has ended. The Bosvile family of Ravenfield Park near Doncaster, Yorkshire is one of the oldest landed families in the British Isles. Burke's Landed Gentry (1846 edition vol. 1, pp. 120-121) gives a pedigree from which it is also possible to construct the following skeletal pedigree of the Birch family and to show the connection between the two families. Additional details on this pedigree are extracted from Foster (1887, p. 111) which shows the three members of the Birch family who attended Oxford University.

From these sources we learn of a Lieut-Col. Thomas James BIRCH who, succeeding to the Ravenfield estates in 1824 on the death of a relative, Rev. Thomas Bosvile (died 22.1.1824 - Gents. Mag. 94 (1), p. 475), had to take the name of Bosvile instead of Birch. Thus is explained Colonel Birch's apparent disappearance in 1824 - he merely changed his name. He was a lieut. colonel in the 1st Life Guards, was born in about 1768 in London and matriculated at Queens College,Oxford on 9 November 1786 aged 18. He did not graduate from Oxford but his connection with Oxford explains his donation of saurian material to the University Museum by 1824. It must have been he who was elected as an annual subscriber to the Royal Institution in London on 14 January 1805 when he is recorded as Captain Birch,Life Guards Barracks,

James BIRCH
of Coventry

Margaret BOSVILE
-1778)

=

James BIRCH
(c.1709-
of Coventry and later Thorp Hall, Lincs.
matric Queens Coll. Oxon 1726.

eldest son.

Thomas BIRCH
of London c.1768
& of Thorpe Hall
Lincolnshire

Rev. James BIRCH
(c.1739-1823)
B.A. 1761, M.A. 1764, B.D. 1773
Oxon.

Elizabeth BIRCH
-1819)

m

ROBERT LEE
of Louth & Littlecoate

↓

descendants who took the name BOSVILE in 1829 on July 28 (Gents. Mag. 199 (2), p. 172 August 1829) after the death of Colonel BIRCH.

THE FOSSIL COLLECTOR

LT. COL. Thomas James BIRCH
(c.1768-1829)

matric. Queen's Coll. Oxon 1786 who took the name BOSVILE in 1824 on the death of all direct descendants from Margaret Bosvile (above)'s father's brothers.

Knightsbridge (Minutes of the Royal Institution,printed, vol. 4, p. 5). A further interest in science and technology is shown by the entry in the Transactions of the Society ... for the Encouragement of Arts, Manufactures and Commerce vol. 26, p. 258, 1808 where in the list of members to December 1808 appears Thomas James Birch Esq. Captain of the 1st Regiment of Life Guards. He must have been promoted to Lieut. Colonel between 1809 and 1820, and was presumably retired or on half pay when he started his active geological career. Certainly on June 18 1824 when his change of name to Bosvile was announced (Gents. Mag. 94 (1), 1824, p. 559) he was late Lieut-Col.

This story makes sense at least to its author but it would be nice to learn if the records of Bristol City Museum and Oxford University Museum can confirm or deny it!

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I am very grateful to Moira Long of the MSS Department of the Alexander Turnbull library, Wellington, New Zealand for providing copies of the Mantell-Birch correspondence from which extracts have here been quoted, Victor Adams of Blandford kindly allowed some of our joint conclusions on the Anning family of Lyme Regis to be revealed, and Justin Delair kindly pointed out the reference by Thomas Hawkins which provided a vital clue in the jigsaw.

H. S. Torrens

'PRESERVATION' AT THE HUNTERIAN.

Contained in these boxes are garnets, uncut emeralds, opals and fish scales – not decorations for a masked maritime ball, but ingredients for a large mural to be erected in the Geology Department at Glasgow University. The burly man in the picture is George Garson, artist, ex-shipwright and head of the Murals Department at the Glasgow School of Art, whose 25 ft by 7 ft abstract has the catchy title of 'Theophilus Paton, Esq and His Highness the Maharana of Cacheypore', two 19th century philanthropists who donated to Glasgow's Hunterian Museum some of the geological ingredients mentioned above. Other materials being used are slate from the quarry of Easdale, Argyllshire – flooded by a sea storm which forced the entire village to flee to the surrounding hills – and sandstone from an Edinburgh dumping site.

Martha Ellen Zenfell

Arthur Foster

From the 'Observer' 9/12/79

COLLECTIONS AND COLLECTORS OF NOTE

29 BRADFORD CITY GEOLOGICAL COLLECTIONS.

We reproduce below an article from 'The Naturalist' 104: 17-23 (1979) by Alison Armstrong of Cliffe Castle Museum on the geological collections in the Bradford Metropolitan District Museums with grateful thanks to the Editor, Dr. Mark Seaward, and the author.

CITY OF BRADFORD METROPOLITAN COUNCIL NATURAL SCIENCES COLLECTIONS: PART 2 — GEOLOGICAL

ALISON C. ARMSTRONG
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Following Local Government re-organisation in 1974, the geological collections at Cartwright Memorial Hall (Bradford), Cliffe Castle (Keighley) and specimens at the Manor House (Ilkley) were united to form a reference collection for the City of Bradford Metropolitan Council Museum Service.

Most of the geological collections are now stored in one area at Cliffe Castle, where work is progressing on sorting, cataloguing (using IRGMA M.D.A. computer cards) and storing. Parts of the collections are still in boxes and tea chests, or otherwise rather inaccessible. This survey, therefore, is only as thorough as present conditions allow. Some of the collections listed (those asterisked) are only known from old accession books and may yet come to light.

The collections consist of material acquired by local scientific societies in the last century, and of individual collections acquired this century. All the collections have some local connection. There is some type and figured material.

The collections originating from the old Keighley Borough Museum (which became part of the Bradford Metropolitan District in 1974), consist of material from the Keighley Scientific and Literary Society (KSLS), a mass of "duplicate" minerals from the old Beaumont Park Museum in Huddersfield, and the large fossil collections of Charles Croft, James Spencer and (G?) Campbell. All these were acquired before 1910 and were uniformly relabelled at that time and the specimens glued on to blue, paper-backed glass. Fortunately the curator at that time (S. L. Mosley) did record details of the collections, although very few original labels survive from before this time.

Seth Lister Mosley was curator at Keighley's public museum from 1904–1910. He was formerly curator of his own museum in Huddersfield, and later became curator of the first public museum there as well as holding the curatorship at Keighley. According to Mosley's 1907 notebook, "16,230" specimens, including hundreds of minerals, were transferred to Keighley from his private museum. These included specimens from individual collections, such as those of C. S. Gregson of Liverpool and of H. Crowther. "Duplicate" specimens from Keighley were similarly transferred to Huddersfield's public museum. No details of these specimens are known. In 1908 Mosley wrote in his report on the Keighley Museum "I have been much harassed during the year in the endeavour to get all the loose material, which has come in, into order. The Campbell, Croft and Spencer collections have all been cleaned, remounted and labelled and also a very large number of fossils, minerals and marine shells from the late Beaumont Park Museum, in all not less than 10,000 specimens have been got out of the way".

The Croft Collection was acquired in 1907; [and] some more of his collection was acquired in 1910, and presumably the Campbell and Spencer collections came in about the same time. The thousands of fossils which make up these three collections come mainly from the classic British localities. Amongst Charles Croft's collection are some type and figured branchiopod specimens, illustrated in Thomas Davidson's monograph on brachiopods (1883–1885) in the Journal of the Palaeontographical Society. Croft had a successful literary career in Manchester and Shropshire, when he probably put together much of his collection, and then became editor of the "Keighley News" from 1891–1906.

Little is known about Campbell except that a few remaining original labels show he collected in the 1860's. J. Spencer was a Halifax man and connected with the museum there.

Table 1. The former Keighley Borough Geological Collections

Collector (biographical dates)	Source or method of acquisition (collection number)	Approximate number of specimens	Period of Collection	Collecting Area
Keighley Scientific and Literary Society (KSLS) (1881–1914)	Given to the Corporation between 1899 and 1914. Some probably sent to Huddersfield Museum. (5780–6781, 6807–6840, 523/14)	130 fossils and few rocks	Pre. c. 1900	Mostly English, Jurassic and Cretaceous areas.
E. T. Connold	Presented by G. H. Moncrieff. (Part of 6807–6840)	30 polished sections of fossil sponges in flint nodules.	c. 1899	Sussex coast
Beaumont Park Museum (BPM) (–c. 1900)	Transferred to Keighley Museum as 'duplicates' by S. L. Mosley	300 (possibly more) minerals with very little data	Pre. 1900	
S. Gregson (Pre. 1903)	Formerly part of BPM collection and also transferred to Keighley Museum	100 minerals with little data	Pre. 1903	
S. L. Mosley (1849–1929)	Donations 1904–1914 of 'duplicates' from his own collection at BPM (033–1904)	About 30 minerals	Pre. 1910	
H. Crowther	Formerly part of BPM collections and transferred to Keighley	20 Coal Measure fossils	Pre. 1913	Yorkshire
(G) Campbell	Gift c. 1906	40 stratigraphical rock samples 35 Minerals 380 Fossils (mostly Carboniferous, Silurian and Red Crag)	1860's, 1870's	Yorkshire and classic British localities
Charles Croft 1836–1914	Main collection acquired in 1907 More in 1910 (37–1910)	Over 4,000 fissils from most periods but largely Palaeozoic	1860's–c. 1900	Mostly Wales and Shropshire and classic localities. Also Bradford and Yorkshire.
J. Spencer	Acquired between 1904–1908	200 fossils mostly from the Silurian, Carboniferous, Jurassic and Cretaceous. A few microscope slides		
W. Gelders	No record	20 fossils, mostly Coal Measures	1880's, 1890's	Yorkshire
B. Southwell-Lees	Purchase 1904 (43/1904)	Minerals		N. England and Foreign (e.g. Bohemia)
*Burnley Literary and Philosophical Society	? Donation 1907, Miss Heaton	Fossils		Clitheroe
C. Bairstow	Donation 1907 (216/1907)	Minerals		No data
Moses Fieldhouse	Purchase c. 1910 (M. 313)	52 Microscope slides most petrological		
Dr. Wheelton Hind (1860–1920)	Donation from the British Museum 1923/4 (1924–950)	129 Carboniferous fossils		
James Ellison	Purchased in 1928 from Ilkley Museum (1145–7/1928, 8480)	2,000 fossils mostly Carboniferous, Jurassic and Cretaceous and Red Crag. A few minerals	Pre. 1891	Craven, Wales, Yorkshire, Isle of Wight, N. Pennine minerals
E. E. Gregory	Donation (072/1904)	Local glacial erratics		Keighley area
R. Boxhall	Donation 1934 (1935–1523, 1934–1454)	Minerals		Cornwall
John Holmes 1867–1945)	Main collection on loan in 1942 (3, 42, 4.42, 8.42, 12.41)	500 Carboniferous marine band and other fossils	1920's–1930's	Craven and Keighley areas, Yorkshire
Thomas Hodgson	Donation c. 1953	300 Petrological specimens		Northern England, Scotland, a few foreign
Rev. E. Jones	Gifts 1910–1913 (713–1917 and 311–1912 etc.)	Cave material with fossil Pleistocene bones, bear jaw etc.		Elbolton (Grassington)
*Sir John Brigg (1834–1911)	Formerly part of the KSLS coll, later kept at the home of A. Bottomley. (M. 320)	Coal Measure fossils (His 'collection of Yorkshire fossils' not yet found)		
*Alfred Bottomley	Formerly part of KSLS coll. and amalgamated in (part of 6782–6800)	Rock specimens	c. 1890's	
*J. Crowther	Loan coll. (possibly returned) (462–1913)	Coal Measure fossils		
*Mrs. Eckroyd	Donation of Mrs. Eckroyd (028–1904)	155 minerals, eggs, etc.		

Table 2. Collections from Cartwright Memorial Hall, Bradford

Collector (biographical dates)	Source or method of acquisition (collection number)	Approximate number of specimens	Period of Collection	Collecting Area
Joseph Dawson (1740–1813)	Probably the collection purchased by the BPS in the 1860's as the Richardson collection	Over 2,000 minerals with a collection of rocks and marbles	Pre. 1810	World wide and Britain
Bradford Philosophical Society	Loaned to public library in 1879/80 and later given to Town Museum in 1880's (Z1–Z109)	Several hundred fossils from the Carboniferous, earlier Palaeozoic and also Jurassic	19th century	Northern England and classic British localities
John Maclandsborough	Bequest 1900 (L1–L129)	Mostly Coal Measure fossils	1840's	Mostly Yorkshire
W. Popplewell	1908 Donated by B. B. Popplewell (1725/08)	About 60 miscellaneous fossils including a collection of fossil fish from the Devonian		Devonian from Northern Scotland
William Cash (1843–1914)	Purchase 1913 (57.13)	Coal Measure fossils		Yorkshire
J. Monckman (1842–1906)	"Sent to Cartwright Hall"	100 miscellaneous fossils with catalogue list		General British
William Cudworth	Probably donated c. 1904 (250.32–264.32, 269.32–272.32, 287.32–331.32)	Cave material (and archaeological material) from Boyd Dawkins excavations. Fossil mammal bones	1890's	Cresswell Crags and Robin Hoods Cave, Victoria Cave (Settle) S. E. England and Norfolk
Percy Lund (Active 1885–1919)	Donation (5.1930)	300 Petrological specimens and other fossils		Northern England Craven and British
Clarence Becker	Donated by Mrs. Becker (NH.10.49)	103 Petrological specimens	1930's	World wide (USA, Egypt, etc.)
Dr. Mossop	Given by Mrs. West-Watson (G.8.57)	200 miscellaneous and unlabelled geological specimens and shells	c. 1890's	
Rev. D. Simon and J. H. Scarfe	? No record	30 minerals and ores	c. 1890's	South Australian mines
H. E. Wroot	Gift of Mrs. Wroot (NH 2.40–9.40)	Annotated books including "Geology of Yorkshire" and specimens		
W. P. Winter 1867–1950)	Donated by Mr. Gaskill (NH 42.52)	200 minerals, rocks, fossils		Gordale, Yorkshire and Britain
F. G. Woodgate	G.3.1969–G.11.1969	110 miscellaneous minerals and fossils		Mostly Yorkshire and Kent
Rev. E. Jones	'Permanent loan' (350.1932 to 368. 1932)	Cave material		Yorkshire — Elbolton and Calf Hole Caves and Derbyshire
R. Pennington	(335.32–343.32)	Cave material		Windy Knoll (Castleton) and Raygill fissure (Lothersdale)
*T. Tate	Donation (or loan) 1880's	Fossils and shells		
*Miss Cockbain	Donation (9.13)	Minerals		
*Isaac Teanby	Donation or loan (1886)	16 fossil teeth		
*F. Crowther	Donation	"Coll. of Minerals and fossils" "13 Fossil Mammoth Teeth"	c. 1880's	
*John Speak	Possible loan in 1890's. Perhaps later donated or possibly purchased by Clarence Becker	180 Petrology and fossil specimens		World wide
*Mrs. Ward	Donation 1912 (59.12)			
*J. A. Hargreaves	Donation (57/13)	About 80 Chalk fossils		
*Lomax Palaebotanical Co. Ltd.	1907 (28.1907, 29.1907)	Microscope slides		

Natural Sciences Collections: Part 2 — Geological

The collections of the KSLS were acquired between about 1900 and 1914 and were described as 'moribund' and "the greater part of this collection was delapidated and nameless". An old catalogue of some of this collection exists and shows rocks and fossils (mainly from the Mesozoic) some minerals, and shells. One entry reads "specimens of fossils found in making the turnpike road between Keighley and Utley".

A collection of fossil sponges made by E. T. Connold also came in as part of the KSLS collection. He was the Honorary General Secretary of Hastings and St. Leonards-on-Sea Natural History Society at the turn of the century, at the same time that Ruskin Butterfield (brother of Rosse Butterfield who was curator at Keighley from 1910–38) was curator at the museum in Hastings.

E. E. Gregory — the geological recorder for Keighley Naturalists and the Bradford Scientific Association — was particularly interested in the glacial history of the area and contributed to scientific journals, e.g. *The Naturalist*. His collection of erratic boulders was deposited in the museum.

In 1928, the large fossil collection made by James Ellison of Steeton (near Keighley) during the 19th century, was purchased from Ilkley Corporation Museum. The specimens all have data and many are from the Craven area.

In 1941 an important local fossil collection from the Millstone Grit, made by John Holmes of Cross Hills (near Keighley), was acquired, originally as a loan. Holmes was a member of local naturalist societies and a frequent donator to Keighley Musuem. He worked with W. S. Bisat on the zonation of the Millstone Grit using goniatite fauna and several species were first collected in this area. Although type specimens went to London, this remaining collection contains a variety of fossils with data, mostly from marine bands in the Keighley district. Holmes also contributed articles to *The Naturalist*.

Thomas Hodgson was a naturalist colleague of Holmes and hundreds of petrological specimens with his data came to the museum in the 1950's.

The geological collections originating at Cartwright Memorial Hall are essentially based on those of the Bradford Philosophical Society (BPS). They were originally on loan to the old public museum in the later nineteenth century, but finally came permanently to the museums after the opening of the public museum at Cartwright Hall in 1904. Most of the mineral, rock and fossil collections have data, but some have suffered from re-labelling processes, and misinterpretation of original labels. Most of the BPS collection has also suffered from having various temporary homes in the last century. Even in 1864 when demand for a public museum began to grow, the collections were "in a state both disgraceful and deplorable". The same year, Louis Compton Miall was appointed curator of the BPS collections, and £300 was spent on purchasing the collection of "W. Richardson of Southowram". No trace of this collection can be found, but there is a large mineral collection made before 1810 by Joseph Dawson of Royds Hall (Bradford), complete with catalogue and original labels. Dawson was a minister who owned coal and stone mines, and was a founder of the Low Moor Iron Company in Bradford in the 1790's. He was a keen scientist and a friend of Sir Joseph Priestley. The Richardsons were also a scientific family (Richard Richardson, an ancestor, was a friend of, and corresponded with, Sir Hans Sloane, and exchanged geological specimens with him) and Dawson lived in one of the Richardson family houses. With deaths occurring in both families in the 1860's it seems not unlikely that a geological collection, which may have changed hands earlier, may have come up for sale. This "valuable mineralogical collection", often referred to in the Society's reports, contains many interesting specimens. Some bear old purchase prices. Labels have become detached from many specimens, and cannot be re-united with any certainty.

The BPS fossil collection, although general, has an emphasis on the Carboniferous. Included in the collection is a holotype labyrinthodont *Pholiderpeton scutigerum* Huxley, which was found in a Bradford coal pit in 1868 and was described and figured by Huxley in Q. J. G. S. Vol. XXV 1869. This year the specimen has gone on loan to Newcastle University for research by Dr. A. Panchen and Ms. J. Agnew.

About 1900 a bequest of Coal Measure fossils was left by John Maclandsborough F.G.S., who was a civil engineer and an active member of the Y.N.U. and BPS. His correspondence

shows that he purchased much of his collection from other amateur geologists. Dr. James Monckman, a founder member of the Bradford Scientific Association and contributor to local scientific journals, particularly with articles on the glaciation of Airedale, also gave his miscellaneous collection. Other local amateurs were J. A. Hargreaves, a Baildon schoolmaster and frequent lecturer to local societies; and William Cudworth, noted for his historical notes on the Bradford district in the nineteenth century, who purchased some of Professor Boyd Dawkins excavation material from Victoria Cave, Settle, and Derbyshire.

John Speak, who seems to have had a private museum display at Queensbury (and perhaps is the same Speak whose ethnographic collections went to Huddersfield) loaned some items to the Bradford public museum in the 1880's. Although part of this collection was accessioned as a 'bequest' in the 1930's, it does not include the geology section which appears in a catalogue of the Speak collection. Some of the undated specimens in the Clarence Becker collection came from the same localities as the Speak geological specimens, and Becker may, therefore, have purchased part of this collection.

Part of the large collection made by William Cash, F.G.S., was purchased in 1913. He was a Halifax man and collected much in the Bradford area. He studied and wrote on Carboniferous cephalopods and later Coal Measure plants. He was an honorary member of the Bradford Naturalists Society and a member of the Y.N.U. Fossil Flora Committee.

Percy Lund was a printer from Ilkley and collected Craven fossils. His comprehensive collection contains rocks from all over northern Britain. He also wrote articles in scientific journals, including *The Naturalist*.

Amongst documentary material in the museum collection is an annotated edition of P. F. Kendall and H. E. Wroot's classic *The Geology of Yorkshire*. The book, given by Mrs. H. E. Wroot in 1945, contains a number of original letters and notes by eminent geologists with whom the authors corresponded. H. E. Wroot was also a member of the Bradford Scientific Association.

There is also correspondence between John Brigg of Keighley and W. H. Dalton and J. R. Dakyns of the Geological Survey.

Enquiries about any parts of the collections are welcomed and collections may be seen by appointment.

This article is available as an offprint from the author, at Cliffe Castle Museum, Keighley, West Yorkshire, BD20 6LH at a price of 10 p each plus S.A.E. (8" x 6").

30 ELI CAULDWELL

On July 11th, 1908, members of the Geologists' Association, during an excursion to Culham and Abingdon, briefly inspected a collection of local mammalian fossils then owned by Eli Cauldwell of nearby Blewbury. These remains which were not generically identified, had been discovered in a gravel-pit at the eastern end of Drayton(1) - a village about 2 miles due S. of Abingdon and 6½ miles NW. of Blewbury, in what was then Berkshire(2). As far as can be ascertained, the above reference constitutes the only known record of the existence of Cauldwell's collection or of his discovery of mammalian remains in the Drayton gravels(3).

Curious as to the fate of these fossils, the writer tried in 1969 to trace the whereabouts of the specimens, as no museum or palaeontological repository known to him contained Pleistocene mammalia associated with the name Cauldwell. It was also established that, although a gravel-pit had formerly existed E. of Drayton(4), it had been filled-in long ago. This was presumably the pit from which Cauldwell had obtained his specimens.

After some initial difficulty, a Mr. M. E. Cauldwell, of "Ashbrook" (a bungalow), Westbrook Street, Blewbury, was traced late in 1969 via relations - Mrs. Bigland and Mrs. Saunter of Reading. He proved to be Eli Cauldwell's son. At that time Mr. Cauldwell was very ill - he in fact passed away just before Christmas 1969 - but in response to enquiries (relayed via Mrs. Bigland) disclosed that Eli Cauldwell had died in 1911 and that, as a boy, he had seen fossil bones decorating his father's garden. These, he said, comprised horns, "elephants" teeth, and various "big bones", all of which, however, had perished years before through frosts and general neglect. It may be concluded that these were the specimens viewed during the above mentioned excursion. Certainly, Eli Cauldwell's collection of fossils no longer exists, although we now know the broad identity (i.e., ?Mammuthus, ?Bos or ?Cervus, etc.) of some of the animals represented.

Relative to the loss of Cauldwell's specimens, the opening-up in 1976-7 of large gravel-pits immediately E. of the A.34 adjacent to the southern built-up limit of Drayton afforded excellent opportunities for collecting from gravels essentially co-eval with those of the area in which Cauldwell's pit must have been sunk. These new excavations were less than one mile SW. of the site of Cauldwell's pit, and ultimately extended slightly less than ¾ mile in an E-W. direction and about ½ mile in a N-S. direction, the base of the gravel (which here overlies Gault Clay(5)) averaging 11 feet below ground level.

Up to 1979 (when these pits were in-filled and returned to farm land), these gravels yielded a rich harvest of Pleistocene mammalia, including portions of over forty molars and tusks of Mammuthus, and twice that number of bovine horns, skull fragments, and leg bones. Teeth, vertebrae, and various bones of cervids and horses were also retrieved, together with numerous unidentifiable mammalian bone fragments. Derived ichthyosaur and pliosaur bones from the nearby Kimmeridge Clay were also encountered. All these remains have been lodged in the geological collection at Abingdon Museum.

Apart from their intrinsic interest, these newer finds confirm that the Drayton gravels yield vertebrate fossils of the forms reportedly collected by Eli Cauldwell earlier this century. Sandford's papers cited previously dealt with only two forms, it will be recalled. Nevertheless, the loss of Cauldwell's material is to be deplored and serves to emphasize the importance of museums arranging with owners of local private collections for their specimens to ultimately pass into permanent professional care.

Notes

(1) L. Treacher. "Excursion to Culham and Abingdon; Saturday, July 11th, 1908", Proc. Geol. Assoc., vol. 20, 1908, pp. 548-552 (see p. 550).

(2) This region of Berkshire was transferred to Oxfordshire in 1974.

(3) K. S. Sandford. "The River Gravels of the Oxford District", Q.J.G.S., vol. 80, 1924, p. 168 (also see K. S. Sandford. "Fossil Elephants of the Upper Thames Valley", loc. cit., vol. 81, 1925, pp. 62-86).*

(4) To the N. of Brook Farm, at 94.000N 48.500E. (O.S. 6" to 1 mile sheet SU 49SE, 1960).

(5) The Gault and Kimmeridge Clays meet unconformably about ¼ mile N. of the northern-most boundary of these pits. Ammonite fragments from these horizons, and saurian bones from the latter occur as derived fossils in the overlying gravels.

The gravels in Cauldwell's pit almost certainly overlay Kimmeridge Clay.

* Molars of Mammthus primigenius (Q.1089 and Q.1090 Ox. Univ. Mus.) were found at the Pumphouse, Drayton, in 1958.

J. B. Delair,
19 Cumnor Road,
Wootton, Boar's Hill,
Nr. Oxford

December, 1979

THE PENGELLY DIARIES.

The Museum of the Torquay Natural History Society is small, privately owned and lacks the sophistication and services usually available in other similar institutions, and it was quite a shock when a senior officer of the Department of Anthropology at the Natural History Museum in Kensington rang up to enquire whether the Society would be bidding for a volume of Pengelly's Diaries, due to be sold in London within the next few days. It was thought that these Diaries were safely housed in our library so immediately a full investigation was thought necessary.

Let us start by going back and recalling the story of William Pengelly, F.R.S., F.G.S., so intimately connected with the Torquay Natural History Society that in its first 50 years they are inseparable (in fact he was its honorary secretary for 40 of them). The Society was founded as a book club in 1844. Its declared aim was the study of the Natural Sciences. Pengelly (who was 32 years old at that time) was one of the leading founder-members. In the following year 1845, it was decided by the Society that 'a Museum be established, the primary object to be the illustration of Devonian Natural History'. At the same time permission was sought from Sir Lawrence Palk to explore Kents Hole (subsequently to be known as Kent's Cavern), for the purpose of obtaining fossil remains. It is recorded that 'Sir Lawrence ceded to the Society the sole right to explore the cave with the proviso that all the remains found in the cave should be deposited in the Society's Museum'.

Pengelly, along with two others, started the excavation in 1846 and within a short time had acquired a 'valuable and varied collection of over 3000 specimens'. Attention was then transferred to the Brixham Caves, which also provided a wealth of material, but it was not until 1865, during his Presidency of the Society, that work recommenced in Kent's Cavern. This was made possible by a grant of £1,900 from the British Association, providing funds for the next 15 years. During this period Pengelly had the work under constant supervision. He visited the caves almost every day and spent an average of five hours daily over the work, which included the washing and arranging of the specimens and writing the reports. His services were gratuitous and afford a rare example of devotion to the causes of science, for he was not a wealthy man. The results were outstanding. No other British cave has yielded such a comprehensive series of human artifacts. These extend from crudely-worked flints to the products of the Iron Age, a period of about half a million years. Remains of the lesser scimitar cat, wolf, cave lions, mammoth, hyena and Irish Elk were amongst the thousands of bones which were collected, classified and catalogued. As each layer of earth was carefully excavated, the continuing identification of artifacts alongside those of recognisable animals (many long extinct) provided convincing proof that man had existed for many thousands of years earlier than what was realised (a theme the Rev. J. MacEnery had proclaimed 50 years previously). In fact Palaeolithic man existed in the Pleistoceine age.

The biography of Pengelly[1], his notebooks and copies of numerous papers give intimate examples of this friendly man with exceptional ability. Self-taught in most things he undertook, his capacity for teaching and lecturing seemed to be boundless and this went well with his sense of humour and unlimited zest for work and knowledge. The annual reports of the Kent's Cavern

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1 A Memoir of William Pengelly of Torquay, F.R.S., Geologist with a selection from his correspondence. Edited by Hester Pengelly, London: John Murray, 1897.

excavations presented to the British Association "were listened to with so much pleasure by the crowds and are the most complete ever published". Of all the 50,000 items unearthed the Diaries record in exact detail the salient features of some 7,340, together with their ultimate destination. These include most of the outstanding Museums in this country as well as others abroad, though the majority of the specimens (not always the best) remain in Torquay. His memorial, in the form of a plaque in the hall of the Torquay Museum, summarises as follows:- 'This Lecture Hall was built in the Jubilee Year of the Torquay Natural History Society 1894 as a Memorial to William Pengelly, F.R.S., in appreciation of his services as one of the founders and Honorary Secretary for 40 years, of his contribution to Science especially as an Explorer and Expounder of Kents Cavern and of his worth as a man. He was thorough in all things.'

When all the relevant papers became the property of the Torquay Natural History Society is not really known. Following his 40 years as Secretary a lot of his writings had a permanent home in the Museum and it is quite probable that these diaries were amongst them. However, if that was not so his surviving family donated in the form of gifts or legacies his private collections which included many bound volumes of his work. It is therefore unlikely that ownership of them should ever be questioned. In recent years Dr. Norman Harris a former Curator presented an exhibition of Pengelly's work which was illustrated and in addition, records show that visiting students of paeleolithology have examined them as late as 1976. Presumably the diaries were all together at that time reclining in a box in the Curator's office alongside other books (for the Society library contains some 40,000 volumes). So it was most surprising when on opening the box, whilst all the others were intact, Volume III was found to be missing.

Hence the mystery. Had Volume III been spirited away or just borrowed, forgotten and sent to be sold? Anyhow it turned up in London and was described by the auctioneer as follows:-

"An autographed notebook containing detailed account of the latter part of the celebrated exploration of Kent's Hole, Torquay with the daily entry recording the progress of the examination, the people present and the specimens found."

In a private museum, which for a long time has been deprived of funds the cataloguing leaves much to be desired. It is difficult and probably impossible to keep a constant check on its belongings. How the missing book found itself in London may for ever remain a mystery, but now it has been brought back and is safely nestling with its companion volumes in the Curator's office. It is hoped they will never be separated again, but will remain together as an accessible and outstanding example of Victorian diligence and thoroughness.

W. S. Holden, F.R.C.P., F.R.C.R.
(President Torquay Natural History Society)

1829 LIST OF GEOLOGICAL COLLECTIONS.

In view of the Group's active interest in the preservation of old geological collections it was thought the list below would be worth reproducing in its entirety. It appeared in the Edinburgh Philosophical Journal 21 (1829) and appears to be the first such list available. Any information about the current state and location of the collections cited would be of interest, as would any similar early lists. There are a number of obvious errors in the spelling of personal names.

H. S. Torrens

List of Geological and Mineralogical Collections in Great Britain and Ireland.

I. ENGLAND.

BUCKINGHAMSHIRE.—Duke of Buckingham's, (contains the mineral cabinet of Haüy). *Stow.*

CAMBRIDGESHIRE.—At *Cambridge*, the Woodwardian Collection, belonging to the University, augmented by Professor Sedgwick, &c.

CORNWALL.—Royal Geological Society of Cornwall, *Penzance*, (a general collection of Cornish rocks and minerals). Williams, Esq. *Scorrier House;* and Rashly, Esq. of *Menabilly*, (superb collections of Cornish minerals); Mudge, mineral-dealer, *Falmouth.*

CUMBERLAND.—Hutton's and Crossthwaite's collection, *Keswick*, (minerals and rocks of the county).

DERBYSHIRE.—White Watson at *Bakewell, mineral-dealer;* Brown and Mawe at *Derby*, and at *Castleton* (collections for sale).

DEVONSHIRE.—Johnson, Esq. *Exeter* (Devonshire minerals). Philosophical Institution, *Exeter.* Reverend Mr M. Every, *Torquay*, (interesting collection of fossil bones from that neighbourhood).

DORSETSHIRE.—Miss Phillpotts, *Lyme Regis*, (lias fossils); Miss Anning, *Ditto*, (specimens for sale) Colonel Gordon, Shaftesbury, (fossils).

DURHAM.—Marquis of Cleveland, *Raby Castle*, (splendid collection of fluors and calc spars from the lead-mines of Alston and neighbourhood).

ESSEX.—Philosophical Institution, *Colchester.* Mr Dyk's collection of crag fossils, *Harwich.*

GLOUCESTERSHIRE.—At *Bristol*, the Philosophical Institution in Parliament Street contains a good collection of specimens, illustrating the

neighbouring country, including the collection of encrinites, &c. belonging to Mr Miller, the curator. Private collections at Bristol, rich in the fossils of the adjacent country; Mr Johnson's; Cumberland's and Blackenridge's. Other collections there belonging to the Reverend Dr Beelie, and to R. Bright, Esq. Ham Green. At *Tritworth*, Reverend Dr Cooke's.

HAMPSHIRE.—Philosophical Institution, *Portsmouth*. Vine, Esq. *Isle of Wight*. Mrs Murchison, Nurstead House, near *Petersfield*, (chalk and green-sand fossils). Miss Beaminster, *Christchurch* (sells collections of tertiary fossils). Mr Griffith, near *Christchurch*. Mrs Newby of Newlands, near *Lymington* (London clay, plastic clay, and fresh-water shells of Herdwell).

KENT.—Philosophical Institution of *Canterbury*. Mr Crow of Margate (Sheppy fossils).

LANCASHIRE.—Philosophical Institution of *Liverpool*. Dr Traill (minerals).

LEICESTERSHIRE.—At *Queenby Hall*, an interesting suite of lias fossils.

MIDDLESEX.—In *London*, the best collections of minerals are at the British Museum; at Mr Heulands', mineral-dealer, King's Street, St James's; at Sir A. Hume's, &c. Best collections of rocks at the Geological Society, Somerset House; Royal Institution in Albemarle Street; London Institution in the City; Mr Greenough's, Regent's Park. Mr Stokes, Grey's Inn, (fossil shells and plants, &c. &c.

NORFOLK.—Philosophical Institution, *Norwich*; Mr Woodward, *Ditto*; (crag and chalk fossils); Mr Henley of Landringham, *North Lynn*, (lias fossils); Reverend Mr Leith, (*Shropham Hall.*)

NORTHUMBERLAND.—Duchess of Northumberland, *Alnwick*; Messrs Winch and Hutton at *Newcastle*, (coal fossils); Philosophical Institution at *ditto*; Sir J. Trevelyan, *Wallington*; Mr Bigg of *Lindon*, near *Morpeth*.

OXFORDSHIRE.—At *Oxford*, public geological collection, (extensive series of British rocks and organic remains, together with a considerable assemblage of foreign ones; private collections of rock specimens, particularly volcanic, belonging to Dr Daubeny.)

SOMERSETSHIRE.—Philosophical Institution, *Bath*; private collections at *ditto*; Mr Lamb; Mr Pratt's; Dr Davies; and Reverend Mr Richardson's (illustrative of the adjoining country), near Bath; Mr Meade's, (fossil remains, minerals, &c.); Reverend Mr Skinner of *Camerton*, (coal fossils).

SUFFOLK.—Miss Edgar, Red House, near *Ipswich*; Mr Leather, *ditto*.

SURRY.—Mr Turner of *Rook's Nest*, (minerals).

SUSSEX.—Mr Mantell of *Lewis*, and Reverend Mr Hoper of Portslade near *Brighton*, (chalk fossils).

WARWICKSHIRE.—Philosophical Institution, *Birmingham*; Mr Russel, *ditto*. (minerals).

WESTMORELAND.—At *Kendall*, Todhunter's collection, containing fossils and minerals for sale.

WILTSHIRE.—At *Warminster*, Miss Benett, (fossils from the chalk and green sand); at *Salisbury*, Mr Shorte, (chalk fossils, especially alcyonia from flint).

YORKSHIRE.—Philosophical Institutions with Museums, at *York*, *Leeds*, *Hull*, *Sheffield*, *Wakefield*, *Whitby*, and *Scarborough*. Collections for sale at Mr Calvert's, *Leeds*, Mr Behne's, *Scarborough*, Mr Meynell, *Yarm*.

SOUTH WALES.—Mr Dellwyn's at Pentlegarve, near *Swansea*.

II. SCOTLAND.

MID-LOTHIAN.—At *Edinburgh*, the mineralogical and geological collection in the College Museum; collection at the Royal Society; the private collection of Professor Jameson; Dr Hope; Mr Allan, banker; H. Witham, Esq. of Lartington, Yorkshire; Mr T. Jameson Torrie; Mr William Copland; Mr Nicol. Rose, mineral dealer.

At *Leith*.—Near to *Edinburgh*, Dr Charles Anderson.

FIFESHIRE.—At *Raith*, Robert Ferguson, Esq. of Raith.

ABERDEENSHIRE.—At *Aberdeen*, Dr Knight; Dr Davidson.

RENFREWSHIRE.—At *Glasgow*, the mineralogical collection in the College Museum; the private collections of Dr Thomas Brown, Dr Cowper, Dr Thomas Thomson, Mr Edington, &c.

INVERNESSHIRE.—At *Inverness*, the collection of the Northern Institution, and that of the Secretary, Mr Anderson.

III. IRELAND.

DUBLIN.—The collection of minerals and rocks of the Dublin Society, in Leinster House, in Dublin; the private collections of Sir Charles Giesecké; Mr Joy.

CORK.—The collection of minerals and rocks belonging to the Cork Institution.

BELFAST.—The collection of minerals and rocks belonging to Dr Macdonald.

ROCK BANDS.

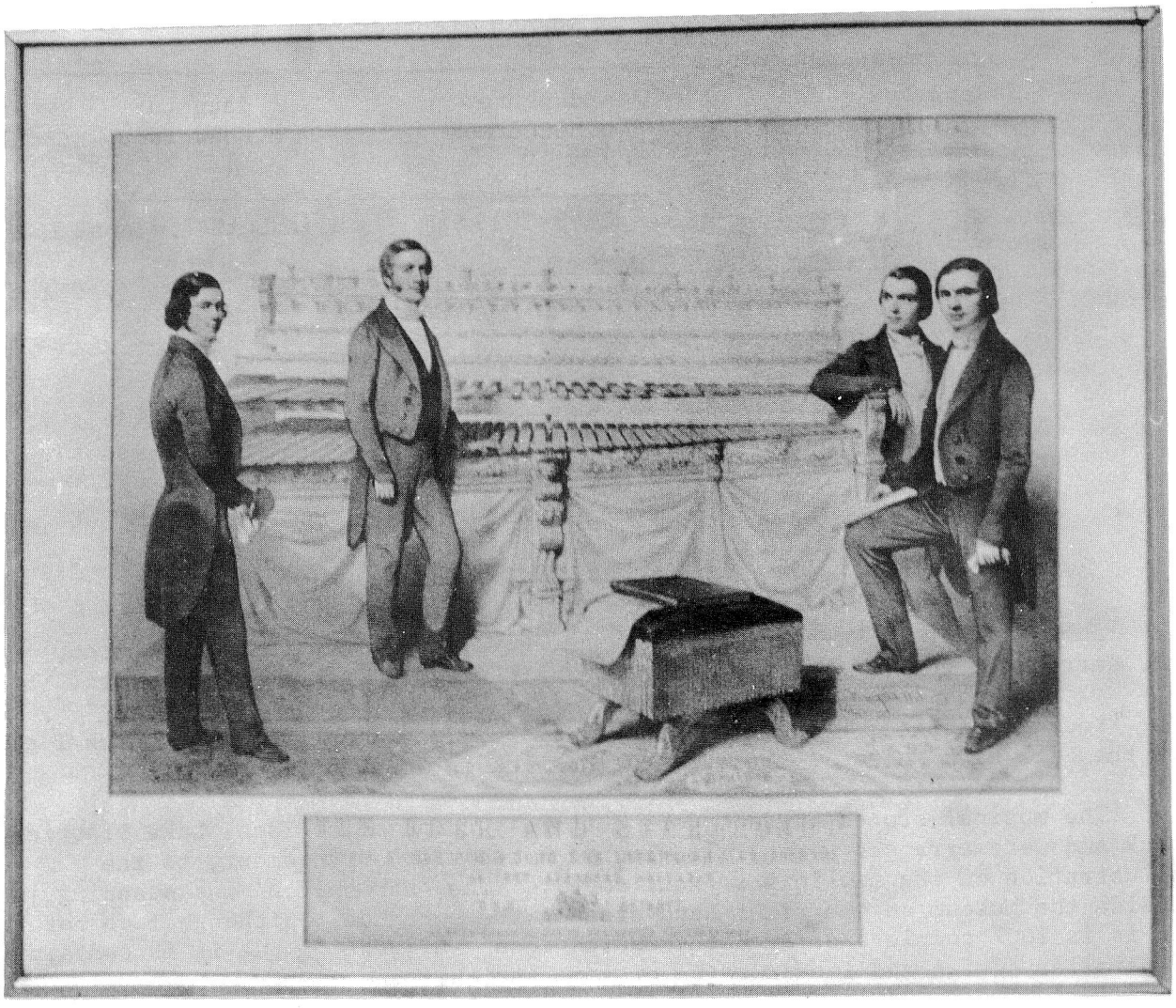
Judy Francis of the I.G.S. writes (9.3.79):-

"Here is such information as I have gleaned from my mother about Joseph Richardson and his Rock Band:-

Joseph Richardson was born towards the end of the 18th century, a member of a family of builders who lived in the Keswick area. Joseph's job was to get slate from Skiddaw for roofing. The first rock band (shown in the Illustrated London News 1842) was scrapped during the 1840's and a later version with 4 rows of stones and 2 rows of bells produced. In all 13 years were spent perfecting this instrument. My mother has a large engraving (approx. 24" x 18") - one of 5 made, showing Joseph Richardson and his 3 sons with the later version. The caption reads

The Rock and Steel Band

Jeseph Richardson & Sons, the Inventors & Performers as they appeared before Her Majesty at Buckingham Palace 23rd of February 1848 Baugnut, 1848 London (reproduced below)



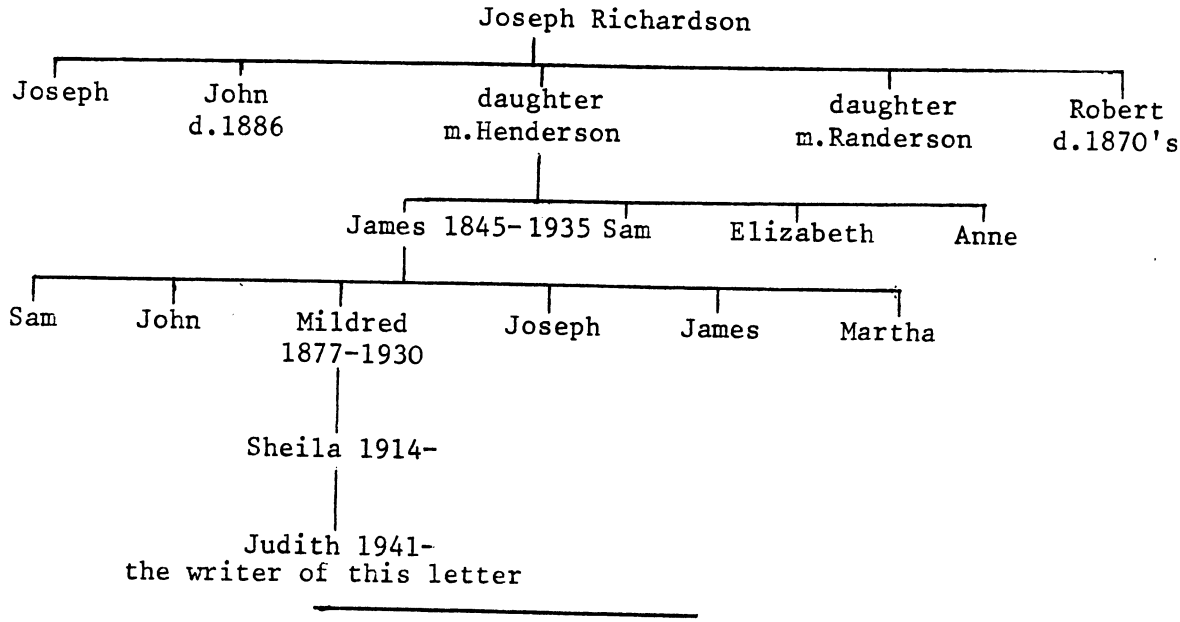
Our thanks to Mrs. Sheila Moss for permission to reproduce this engraving and to John Fowles of Lyme Regis Museum for obtaining the copy.

The Band toured Europe and visited various courts - my mother recalls her grandfather (Joseph Richardson's grandson) showing her a programme for Vienna. They made a lot of money which was invested in pubs; Joseph Richardson putting his relatives in to run them. Great Grandfather James Henderson gave up engine driving and went to the Portman Arms near Paddington, my grandmother Mildred was born there in 1877.

I understand that there are records of the Richardson marriage at St. Kentigern Church, Crosthwaite, but I've no information as to dates.

The band was given up during the 1870's after one son (Robert) contracted pneumonia and died after sleeping in a damp bed on tour. It was first stored in a bookshop in Keswick run by another Richardson, and subsequently in Keswick Museum (date of transfer unknown, though Keswick Museum could have more information). I saw the Band there personally in 1962. Another of the engravings is hanging above it, as I remember.

There is a grave in St. John in the Vale near Keswick to John Richardson who died in 1886. This was Joseph Richardson's son who was the schoolmaster there, and built the schoolwith the help of his father."



John Mennear of Wigan Museum Service, Lime House, Newton Road, Lowton, nr. Warrington confirms the location of this"Rock Harmonicon." He writes (5.3.79):-

"Your Frontspiece brought to mind a very similar 'contraption' which I saw in the Fitz Park Museum & Art Gallery, Keswick in June 1977.

The musical stones present were certainly composed of local Lake District rock and were arranged very similarly, in a two tier arrangement, to the illustration on the newsletter front cover. The 'Harmonicon' was standing just inside the Museum on the right hand side of the entrance - although I do not know if it is 100% complete or even the 'Harmonicon' in question but it is certainly of similar design and looked to be of some antiquity.

For further information, direct from the horse's mouth so, to speak I suggest you contact Fitz Park Museum."

We did, and received the following reply from N. Gandy of the Fitz Park Trust, Keswick (20.3.79):-

I can confirm that we have a large instrument in the museum, consisting of some 60 rock notes, arranged in tiers of ordinary notes and semi-tones (like a piano), and a similar number of steel notes, and sundry bells. It is labelled "Richardson's original Rock, Bell and Steel Band". It was played at Buckingham Palace in 1848, and throughout Europe.

We also have the engraving you mention, [as that reproduced on p.423]. The Rock Band is written up in Professor Blades' book*on percussion instruments. I do not know the title, but it was published c.1970.

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*The book is 'Percussion Instruments and their History' by James Blades 1970, Faber & Faber. The relevant passage is reproduced:-

One of the most striking instances of the discovery of musical stones and their use as musical instruments is to be found in the 'rock harmonicas' connected with the English Lake District. Exhibits in the Keswick Museum and the private museum of Messrs G. P. Abraham Ltd., Keswick, are probably unique throughout the world.

One instrument (in the town museum) dates back to 1785. It consists of 16 stones embracing two diatonic octaves plus one note. Each stone is lettered (by chipping) ascending according to the lettering from B to C. The pitch of the instrument does not conform to the present-day A – 440. The stone marked A sounds D, and so forth. It is possible the instrument was tuned from, or to comply with, an organ or other keyboard instrument in the district. (There was no accepted standard of pitch at the time this lithophone was conceived – organs varying between one third above or below modern pitch; the dampness of the Keswick area could well account for a further difference).

According to local history this set of musical stones – the first to be discovered in England – was found by Peter Crosthwaite, a local publisher of maps. Eight stones were found in the bed of the river Greta, and eight on the nearby mountain of Skiddaw. Here indeed is a link with the past, if we accept the Chinese tradition (and why not?) that about 2,000 years ago a complete stone chime was found in a pool, from which by Imperial decree future instruments were modelled.

A later instrument to be seen in the museum is of similar proportions and rock formation to the original model by Crosthwaite. It is comprised of eighteen stones and sounds F sharp to B in the key of A major. In this case the notes are identified by pencilled lettering. The instrument is one third away from our normal pitch, the note sounding C sharp being marked A, and so forth. Both instruments are well in tune with themselves – chipping or flaking is apparent.[1]

The *pièce de résistance* of the Keswick exhibits is a rock harmonica 12 feet in length, comprising five chromatic octaves of rock slabs. The largest slab measures 37 inches in length and four inches in width. It sounds identical with the lowest note on the normal orchestral marimba, one octave below middle C. The smallest slab measures a little over six inches in length.

A handbill advertising a public performance on the instrument supplies this information:

RICHARDSONS'

ORIGINAL MONSTRE

ROCK BAND

Invented and manufactured by
Messrs Richardson and Sons
after 13 years' incessant labour and application
from rocks dug out of the mighty Skiddaw in Cumberland (1827–40)[2]

In construction the instrument bears certain resemblance to Asiatic and African xylophones. The slabs lie over a sound box, insulated at the appropriate points, on ropes of straw. The slabs are not secured in any way.

The instrument bears a remarkable history. The Richardson family became expert performers upon this unique construction, reputed at this time to have embraced a compass of seven octaves. The family met with tremendous success as concert artists, touring Britain and the Continent. Their repertoire included works by Handel, Mozart, Donizetti and Rossini, press reports speaking highly of their great artistry. The ensemble was honoured with two command performances at Buckingham Palace. During the period between these two performances, various instruments of percussion, including steel bars, Swiss bells and drums were added to the instrument. It is interesting to note that at the second royal performance (1848) Her Majesty did not approve of the additional instruments.

Most of the accoutrements remain intact. They include several beaters, among them a 'T'-shaped double-ended beater evidently for the bass notes, some interesting drum pedals (for a bass drum), a cable-tensioned bass drum patented by Cornelius Ward, a few loose calabash gourds (obviously an attempt at resonating), and much of the original music. (The use at this period of a pedal-operated bass drum etc., is interesting, cf. nineteenth-century patents).

Within a short distance of this interesting museum is to be seen a further example of the musical properties of Lakeland stone. Here, in the museum above the shop of (originally) Messrs G. P. Abraham Ltd., (Lakeland photographers and publishers), amid a mine of Lakeland interest, is to be seen a lithophone of similar proportions and character to the Richardson Rock Harmonica. It is a fine specimen of workmanship, with a range of nearly five chromatic octaves. Played with soft sticks, the tone is similar to that of a marimba. A notice above the instrument reads: 'Visitors are allowed to play gently on the stones, but please treat them with care'. On a quiet off-season morning, the author recently performed a few 'snippets' from the orchestral repertoire on this instrument. The choice of programme attracted the attention of the proprietor, Mr. G. P. Abraham, a Lakeland authority, who gave the following interesting facts. The instrument took twelve years to complete, commencing in the year 1886, and was built by Mr. Abraham's forbears. The 58 stones which are similar in appearance and composition to the Richardson instrument are of volcanic igneous origin known as spotted schist (or hornblend). They were all removed from the nearby mountain of Skiddaw. The musical property of these stones is apparently unique to this small area of Cumberland. The stones are rendered musical because of a freak of nature, caused when the active volcano of Skiddaw overflowed. The lava, being unable to flow out evenly all round because of the other close mountains of Blencathra (Saddleback), became compressed over a very small area.

To-day the stones are extremely rare, particularly those with a deep tone, so that it seems highly improbable that Skiddaw could provide a further instrument of any size.[3]

[1] The Horniman Museum, London, has a lithophone with twenty stones of similar dimension collected from the Keswick region.

[2] Curt Sachs lists a *Lithokymbalon* built by Franz Weber and displayed in Vienna in 1837. Sachs, *Reallexicon*, p. 243.

[3] In 1881 another Lakeland family (Mr. Daniel Till and his two sons) exhibited and performed upon a similar instrument at the Crystal Palace. Later the trio toured in the United States. Their instrument is preserved in the Museum of Orange. N.J.

80. SIBERIAN MINERALS

The recent note on Richard Warner (1763-1857) (61) in the GCG Newsletter (2, 4, p. 188) mentions his collection of Siberian Minerals. Though there is probably no connection at all, I have been trying to trace the source of a smaller collection of Russian minerals which is part of the collections here (Perth & Kinross District Council Museum). I suspect that it was a part of the collections of the Literary and Antiquarian Society of Perth (1784-1914) and the style of the hand written numbers on each specimen seems to indicate a date in the first half of the last century. However the collection does not figure in the list of collections published by the society in its one and only 'Transactions' in 1826. None of the collections in these lists have been identified in the Perth Museum & Art Gallery collections as yet but the lists themselves may be of some historical interest. The collection of Russian minerals is accompanied by a typed data list. This does not correspond to any of the collections listed in the L & A Soc. Transactions but in my opinion probably did come from that Society when it's collections passed to the District Council in 1914. The list (reproduced below) was probably copied from a manuscript now lost and does not indicate the origin or collector of the specimens.

A brief account of the history of the Perth Museum can be found in BCG Newsletter vol. 2, no. 1, p. 20-24.

I would be most grateful for any comments on either of these lists.

Michael A. Taylor,
Keeper of Natural Sciences,
Perth & Kinross District Council Museum,
George Street, Perth, PH1 5LB

CATALOGUE OF MINERALS FROM RUSSIA

1. Amethyst druse out of the Wolost Lipowska District Worchoturskay, Permischen Gouvernment.
2. Amethyst Crystal, taken from the same place.
3. Amethyst on calcarious Spar from out of Oriyaroi in Finland.
4. Do. from the Island of Kisch in the Plomischen Gouvernment.
5. Do.
6. Do.
7. Do.
8. Mountain Crystal druse from Schaydona Village in the District Powenezkoy in the Plonischen Gouvernment.
9. Native Gold on Quartz with Pitch Copper Ore Copper Pyrites and Glasshead, (another name for Hematitian Iron Ore).
10. Native Gold on Quartz with Glasshead.
11. Do. in white Quartz, from the Beresowsky Soloty Promisla in district Ekatherinburgskoy.
12. Gold holding Silver, or Silver containing Gold on heavy Spar, or sulphate of Barytes.
13. Native Silver on heavy Spar.
14. Do. in Hornstone out of the Kolywansky Rudniki.
15. Do. on Lime Spar with Pitch Copper Ore and Glasshead out of the Turiynski Rudniki, belonging to the Bohoslowski Sawodi.
16. Goosedung Silver Ore, with Copper Lazur and Copper green out of Blahodatnoy Rudnik and District Ekatherinburgskoy.
17. Native Copper in dinetrites.

18. Do. crystallized.)
19. and 20. Moss native Copper.)
21. and 22. Native Copper in leaves) from Turiynski Rudniki belonging to the Bohoslowski Sawodi.
23. Compact Glass Copper Ore)
24. The same Ore with Atlas Ore)
25.)
26.)Red Copper Glass Ore with Malachite from Turtschaninowski Sawodi.
27.)
28.)
29. Compact Malachite from Humeschewskoy Rudnik, District Ekatherinburgskoy.
30.)
31.)Kidney formed Malachite from Turiynski Rudnik, belonging to the
33.)Bohoslowski Sawodi.
34. Atlas Ore with Ironstone containing Copper) from the Turiynski Rudniki.
35. and 36. Schlaken Ore)
37. Do. with Red Copper Ore and Native Copper)
38. and 39. Lazur Copper from Lasurskoy Rudnik in Kolywan.
40. Quartz penetrated with Copper Lazure from the same place.
41. Copper Pyrite with Copper green from Miaskoy Sawod.
42. Lead glance with Native Gold, Needle Ore and Chromate of Lead in Quartz from the Beresowski Soloti Promisla.
43. Lead glance with Sulphur Pyrite out of Mingrelia.
44. Do. with White Lead Spar and Antimony Ochre from Serentuyskoy Rudnik in Nertschinsk.
45. Grey Leadspar with Goosedung Silver Ore and Copper green from Beresowski Soloti Promisla.
46. Crystallized White Lead spar from Ridderskoy Rudnik in Kolywan.
47. and 48. Phosphate of Lead from Beresowski Soloti Promisla.
49. 50. 51. 52. Chromates of Lead from the same place.
53. Yellow Phosphate of Lead with Chromate of Lead and Lead glance from the same place.
54. Tin Ore from the Ononaki Priiski beyond the Baikal.
55. and 56. Black Hermatite or Glasshead from Kamenskoy Sawod, Ekatherinburgskoy.
57. and 58. Brown Do. from Do.
59. Cubic Crystals of Brown Ironstone from Baresowski Soliti Promisla.
60. Chromats of Iron from Miaskoy Sawod.
61. Part of a Chalcedony Ball with Amethyst Crystalls from Nortschinck.
62. and 63. Lapis Lazuli from the River Sludenka, which discharges itself into the Lake Baikal.
64. Stony Wood with Copper green from Orenburgischen Gouvernment.
65. Sardonix from Umkreisen of Irkutsk.
66. Aquamarine from the mountain Odon Schelon in Nortschinsk.
67. Do. with White Topas, called in Russian Tiaschelowies, from Do.
68. A Calcedony Ball filled with Mountain Crystals from Do.
69. Calcedony in Lava from Umkreison from Baikal.
70.)Crystallized white Felspar, one piece of which is Crystals of Smoky Quartz
71.)and Mica and a larger Crystal of Do. from Wolost Brusianskaya in the
72.)District of Ekatherinburgskoy.
73. and 74. Amazon stone from Miaskoy Sawod.
75. Do. with Crystals of Tiaschelowies from the same place.
76. Azure or Sky Blue Felspar with Quartz and Glimmer from Do.
77. and 78. Amianthus in Serpentine stone from Orenburgischen Gouvernment.
79.)Compact Asbestos) from Miaskoy Sawod.
80.)Wood formed Do.)
81. and 82. Jasper) from Kolywan.
83. Jasper porphory)
84. Serpentine Stone from Slatoustowskoy Sawod.
85. Hornstone with Dendrite from Do.
86. Schiller Hornblende from Do.

87.)
88.)Black Schorl from the Village Schaytanka in the District Werchoturscoy.
89.)
90. Chlorite Slate mixed with Hornblende from Slatoustowskoy.
91. A Mixture of Garnets with Chlorite from Do.
92. Twin Crystal of Garnet with Chlorite in leaves from Do.
93. Garnets in Quartz from Ononski Priiski beyond the Baikal.
94. Massive Arendatite from Serdobol in Finland.
95. Indurated Jale from the Country of Slatoustowskoy Sawod.
96. Strontianitewith Amianth from Do.
97. Pitchstone from Kolywan.
98. Gypsum from Nertschinsk.
99. Hornblende from the Country of Slatoustowsky Sawod.
100. Tremolite with Copper Blue from Miaskoy Sawod.
101. Swimming Quartz from the Beresowski Soloti Promisla.

81. CHATHAM & ROCHESTER PHILOSOPHICAL AND LITERARY INSTITUTION

Phil Phillips (Merseyside County Museums) has suggested you might be able to help with the present location of the Museum of the Chatham and Rochester Philosophical and Literary Institution whose "chalk fossils are particularly curious and costly" (Wrights Topography, 1838). The Institution was disbanded some time after 1841, leaving apparently no trace of its records or collections.

Barbara Greenwood (Mrs),
Keeper of Botany,
Merseyside County Museums,
William Brown Street,
Liverpool, L3 8EN

see also Found column (p. 433)

82. CARRINGTON, Samuel (1798-1870)

I am writing to you at the suggestion of Mr. A. P. Harvey of the British Museum (Natural History).

I had gone to the Museum Library in the hope of finding a copy of a book written by my great-great-grandfather, Samuel Carrington (1798-1870) on the geology of Wetton and neighbourhood. I learned of the existence of this book from a History of Wetton, Thor's Cave and Ecton Mines in the Neighbourhood of Dovedale, Manifold Valley and Beresford Dale by James Roberts, published in 1900, which I found in the Leek Public Library. Mr. Harvey was able to produce two pieces of writing by Samuel Carrington (a classified list of Carboniferous fossils and an article on 'Some interesting discoveries in a cleft in the mountain limestone at Narrowdale') but neither of these could be described as a book.

If you have no knowledge of such a book yourself, I wonder whether you might be able to suggest another possible source of enquiry. I have already written to the William Salt Library in Stafford early last month but have not yet heard from them. I should perhaps add that I am not a geologist and my interest is purely personal as a matter of family history. I do apologise for troubling you but would be exceedingly grateful for any help you can give.

Mrs. Heda Zoeteweij,
8 Kitchers Close,
SWAY, near Lymington, SO4 ODS

(Editors Note)

The following extract is from Geology explained in the Peak District by F. Wolverson Cope: David & Charles 1976

> The village of Wetton forms a good alternative route into the valley. The church is worthy of a visit; geologists might be interested to see the grave, near the east window, of Samuel Carrington, for many years the village schoolmaster, famous for his collections of local Carboniferous Limestone fossils, many of them now in museums. The tombstone is decorated with carvings of fossils such as *Productus* and *Nautilus*, somewhat stylised (Figure 74).

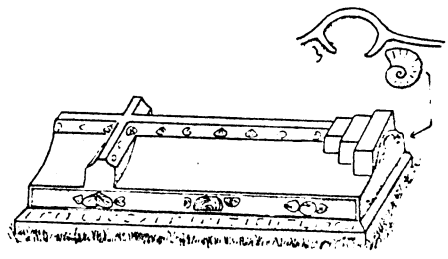


Fig 74 Tombstone on the grave of Samuel Carrington in the churchyard at Wetton, Staffordshire

83. JORDAN

May I ask your advice on another matter? We have some ammonites labelled E. Coll. Jordan, and I am sorry I know very little indeed about Jordan, other than that the collection came to us in 1897 and that it appears that Jordan had associations with Edward Forbes.(1815-1854)

Michael Eagar,
The Manchester Museum,
The University,
Manchester

84. CLARKE, Reverend William Branwhite (1798-1878)

I am writing to you at the suggestion of Mr. Paul Ensom of Dorset County Museum, Dorchester, made when I was in England recently to carry out research for a biography of William Branwhite Clarke (1798-1878), "father of Australian Geology", under a Special Purposes Grant from the Australian Literature Board.

Clarke graduated at Jesus College, Cambridge, in 1824 (M.A.) and subsequently became a clergyman. The College has no record of the subjects he studied, but geology under Professor Adam Sedgwick and Dr. Edward Clarke (no relation) was one of them. He went on many geological excursions in Great Britain and the Continent publishing his account of them in the journal of the Geological Society of London of which he became a Fellow in 1826.

His residence in Australia for forty years was of great value to geologists in Great Britain and America as he corresponded with leading scientists in both countries and continued to send his papers for publication. Clarke sent many barrels of specimens to Professor Sedgwick in particular and I saw some of these in the Sedgwick Museum during my recent visit. I feel there must be others with the Geological Society but on contacting the Society by letter before leaving for England a reply from the Secretary informed me that only Fellows are permitted to use their material. I have not yet written to Yale University but feel that as Clarke met James Dana of the American Exploring Expedition shortly after he had settled at Parramatta and the two men exchanged letters for the rest of their lives, Clarke must have sent specimens to America also.

Clarke's last home in England before emigrating to New South Wales in 1839 was in Dorset and it was while I was in Dorchester recently that I met Mr. Paul Ensom who suggested I write to you in the hope that you could insert a paragraph in your Newsletter sent to museums with the object of finding out what museums have Clarke specimens.

Mrs. Elena Grainger,
23 Ourimbah Road,
Mosman, New South Wales,
Australia 2088

see also Found column (p. 434)

85. BEATTY, A. Chester

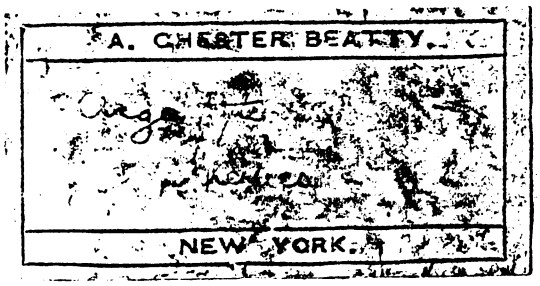
I am seeking help in tracing an old mineral collection, and Mr. R. Anderson of the Royal Museum, Canterbury, suggested I should write to you.

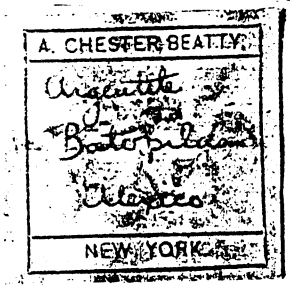
The Court Hall at Milton near Sittingbourne is a small 15th century building which is now the headquarters of the local Archaeological Society and houses their exhibits. Some time ago I was asked to look at a cupboard-full of old mineral specimens, together with some 50 loose labels. Unfortunately, the specimens carried no stuck-on labels or even numbers, and it was not possible to match more than a few to the loose labels with any certainty. However, both the specimens (many, alas, damaged through careless storage!) and the labels suggest that these remains are part of a sizeable collection of good quality specimens from classic localities.

Most of the loose labels had the printed name "A. Chester Beatty. New York" - presumably a mineral dealer, though not one I have heard of. I enclose a xerox of some typical examples (see below). The handwriting on the labels may suggest a date to an expert; another clue is the reference on a label for native silver to "Prince Arthurs Landing, Ontario" (an early name of what is now Port Arthur), but I have not followed this up.

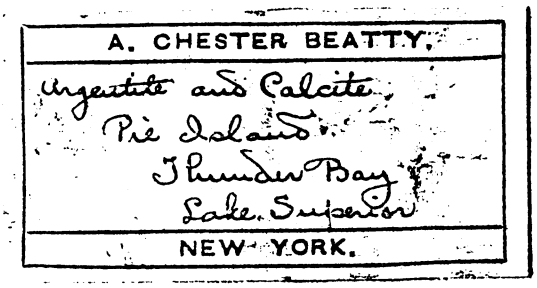
An interesting feature is that the loose labels relate mainly to specimens of native elements and sulphides, with a few fluorites and quartzes, and nothing else. It seems that we have here some of the first few drawers of a large collection arranged chemically, i.e. elements, sulphides, halides, oxides, carbonates, silicates, etc. (a system that dates from 1854). It would be very interesting to know where the rest of this collection is.

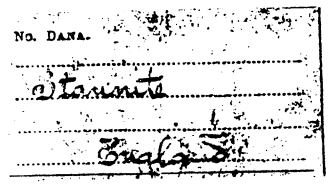
So far I have not been able to find out anything about the origin of these specimens nor the possible fate of the rest of the collection, though admittedly my enquiries have not been very extensive. I would be most grateful for any suggestions you may have in this connection.

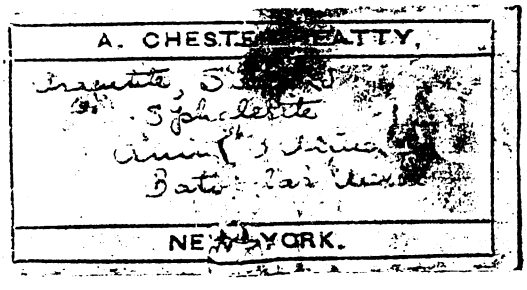


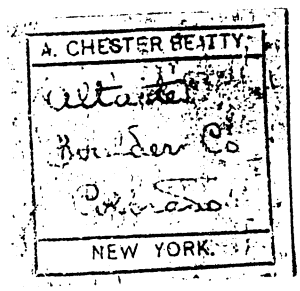


George Ryback,
42 Bell Road,
Sittingbourne,
Kent, ME10 4EB









COLLECTIONS AND INFORMATION FOUND

60. SOPWITH MODELS

As a result of the request in Geology Curators' Newsletter vol. 2 (4), p. 186-7, 1979 for news of the whereabouts of Thomas Sopwith's Geological Models David Thompson (Department of Education, University of Keele) took steps to ask teachers connected with the Keele Science and Technology Teachers Centre for information regarding this matter.

Mr. Terry S. Jones (Head of Science, Moorland High School, Burslem, Stoke-on-Trent) revealed that he had used a set of the models for teaching CSE and O level geology in the last few years. The models were received by him as a result of the settling of the will of Thomas Wattison (1884-1974) a well known and respected more-than-amateur geologist in the Potteries (see GCG 2 (4), p. 182 for an obituary). The bequest consisted of twelve models and a set of type written notes which may in part be a copy of the original booklet which accompanied the models. It is believed that the models were originally the property of either Dr. Wheelton Hind (renowned for his study of the non-marine lamellibranchs) or J. T. Stobbs (known for his work on the Carboniferous Succession) or Thomas Ward (author of workson the Coal Measures and Fossil fishes of North Staffordshire). Steps are being taken to ascertain the ownership of the models prior to Mr. Wattison's day.

The set of 12 models of 4" type on scale 100' to 1", except model II , and designed in 1841 were displayed by D.B.T. and commented upon by Dr. H. S. Torrens at a joint meeting of the North Staffordshire Group of the Geologists Association of London and the Keele Geological Society held on 15th November 1979.

D. B. Thompson
T. S. Jones

The following qualify if not as collections found as information found.

81. CHATHAM & ROCHESTER PHILOSOPHICAL and LITERARY INSTITUTION

The following extract from the British Museum Catalogue of Printed Books shows that the entire property of this Institution was sold at auction in 1844. Study of the original may reveal if it is annotated. This catalogue is not one listed by J. M. Chalmers-Hunt 1976, Natural History Auctions 1700-1972, a Register of Sales in the British Isles.

—— To Literary and Scientific Institutions, Naturalists, Collectors, &c. A Catalogue of the entire property of the Rochester and Chatham Literary and Philosophical Institution . . . To be sold by auction . . . on Wednesday July 17th, 1844, *etc.* pp. 30. *Caddel & Son: Rochester*, 1844. 8°. 10368. e. 4. (6.)

84. CLARKE, Rev. William Branwhite

The following broadsheet dated Stanley Green near Poole, Dorset 28 May 1838 reveals the scope of Clarke's rather comprehensive geological collection and, more important, that it was intended for sale as one lot at the (considerable) all in price of £420. Which, if any "Philosophical Society or Manager of a Museum" purchased the collection we hope to discover through these columns.

TO BE SOLD,

Considerably under their value,

AN EXTENSIVE AND INSTRUCTIVE COLLECTION OF

GEOLOGICAL AND MINERALOGICAL CABINET SPECIMENS,

BELONGING TO AND FORMED WITH GREAT CARE BY A FELLOW OF THE GEOLOGICAL SOCIETY OF LONDON,

ILLUSTRATION OF DIFFERENT MEMOIRS PUBLISHED IN ENGLAND AND ON THE CONTINENT.

TOGETHER WITH

CASES AND CABINETS.

1.—A Series of Cabinet Specimens of Minerals, crystalized and compact, embracing, with but a very few exceptions, every variety comprehended in William Phillips' elementary Introduction to Mineralogy, as far as the Metals, and containing upwards of 70 in number; together with 303 Specimens of Metals and Metalliferous and Combustible Minerals, and several of those in the Appendix to the Work alluded to.

2.—A Collection of Volcanic Specimens from Vesuvius, Ischia, Etna, &c., 36 in number.

3.—A Suite of 115 Volcanic, primary and tertiary Rocks, and Minerals from the different extinct Volcanos of central France.

3.—A small number of Volcanic Specimens from Madeira and the West Indies.

4.—About 40 small Specimens of Rocks, Fossils, and Minerals from the Polar Regions, collected during the expeditions of Capt. Sir Edward Parry, R.N.

5.—A Collection of Volcanic Rocks from the Rhine, about 70 in number.

6.—A Suite of Rocks and Minerals illustrating the Geology of Belgium, and the neighbouring frontier of Rhenish Prussia, about 240 in number.

7.—A Collection of 115 Rocks from the Neighbourhood of Cherbourg, the Bas Boulonnais and Cassell.

8.—A miscellaneous Collection of 80 small Specimens from the neighbourhood of the Rhine, Egypt, Switzerland, India, Spain, &c.

9.—A general Geological series of large-sized European Specimens, 310 in number, extremely instructive.

10.—A Case of Fossils, Shells, &c., from the Sub-appennine and other formations, containing 240 Specimens, all labelled and in beautiful preservation.

11.—A Set of 44 large Casts, and Natural Specimens of Ornithichnites and Sauroidichnites, or fossil foot-steps of Birds and Saurians, from the Valley of Connecticut, in the United States, extremely rare and curious, embracing many more than those described in Dr. Buckland's Bridgewater Treatise.

12.—A very extensive and interesting Collection of English Geological Specimens, nearly 2000 in number, containing the Rocks of every formation, together with Fossils, and on the whole as perfect as any series in the country.

13.—A Series of Rocks from Scotland, 112 in number.

14.—A small Collection from Ireland, the Isle of Man, Guernsey, &c.

13.—A handsome Case, 12 feet long, 8 feet high, and 21 inches deep, painted in imitation of Rosewood, with glass doors above, and 48 tray-drawers below, hidden by doors covered with blue damask, and fitted up with sloping and stair-shelves for Minerals.

16.—A smaller Case exactly one-third of the size, and fitted up in the same way.

17.—A Cabinet containing 30 drawers, each internally 18 inches by 18½, and 3 inches deep, painted in Wainscoat colour.

18.—A Wainscoat Cabinet of 22 drawers, each 17 inches by 17.

19.—A Case two-thirds the size of No. 15, partly fitted.

The whole of the above are to be Sold as one Lot, and are well worth the attention of any Philosophical Society or Manager of a Museum. There are in the different Series, some Specimens very curious, both with respect to locality as well as intrinsic character; and having been collected in the course of study and practical travel, they are admirably adapted for the purpose of instruction.

The Works and Memoirs which they principally illustrate, are those of Mr. Poulett Scrope, Dr. Daubeny, Mr. Horner, M. Bouillet, Mr. De La Beche, Dr. Buckland, Professor Sedgwick, Mr. Murchison, Dr. Fitton, W. B. Clarke, &c. They are all in excellent preservation, numbered to correspond with Catalogues, and many of them labelled.

The Price is £420.

*** *Applications, post paid, will be attended to, if directed to*

The Rev. W. B. CLARKE,
STANLEY GREEN,
Near POOLE,
DORSET.
Where they may be seen.

Stanley Green,
28th May, 1838.

Lankester, Printer, Poole.

WHERE IS IT NOW?

Faked or fraudulent fossils are not particularly common in museum collections but are often highly instructive: Peter Dance's book "Animal Fakes and Frauds" 1976 Sampson Low has an interesting chapter on fossils (chapter 10, pp. 103-106) and includes ammonites with heads carved on, trilobites with different heads and tails cobbled together, and "the echinoid with false teeth". In an attempt to inspire the uncovering of further examples of forged fossils we reproduce the sheet and overlay opposite which come from the S. S. Buckman (1860-1929 the noted Jurassic palaeontologist) archive held by his descendants.

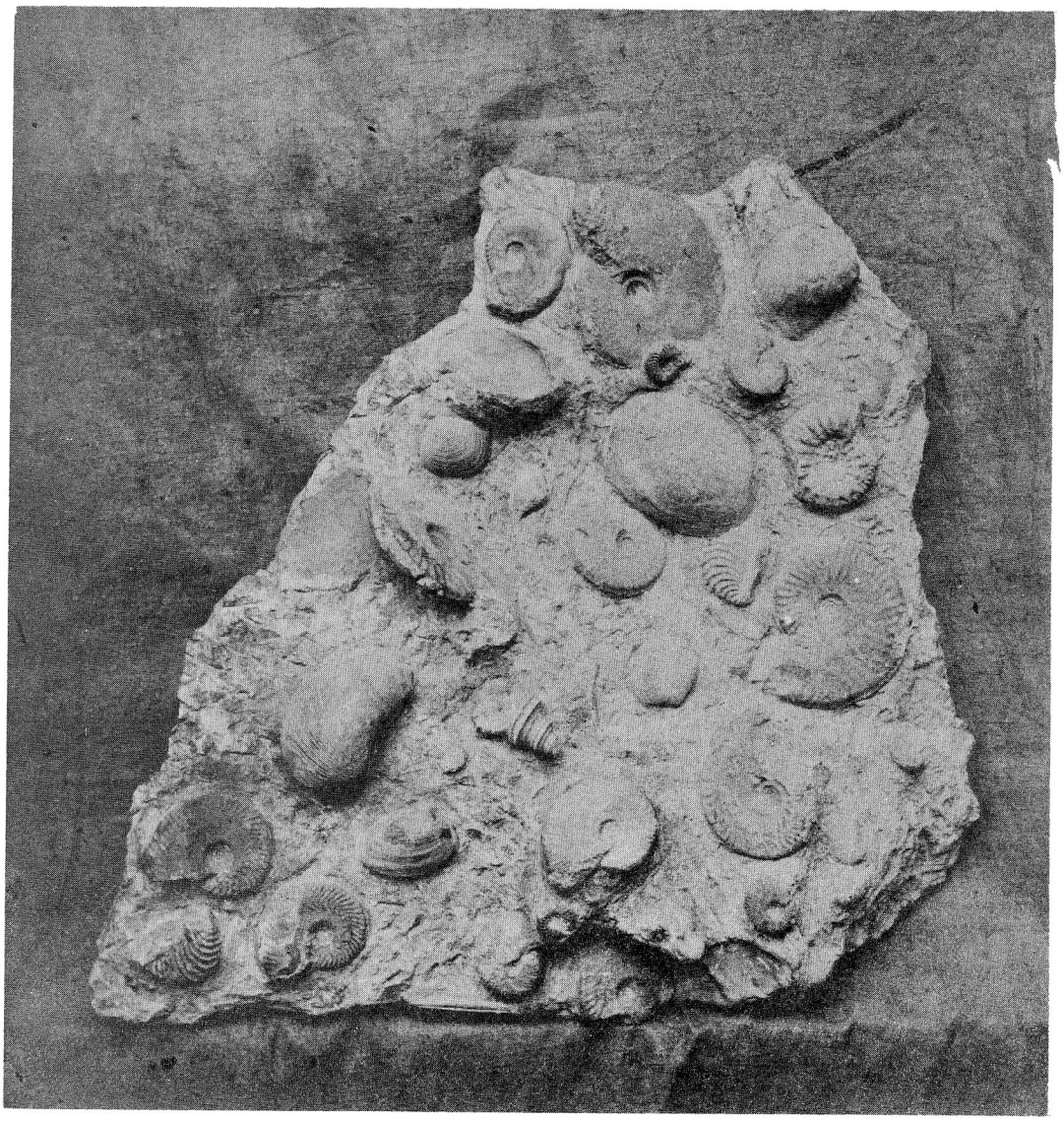
It is a photograph of a slab of the Middle Jurassic Inferior Oolite of Bradford Abbas, Dorset. Buckman's original comments, save the remarks inside square brackets, are given on the overlay sheet. They probably date from about 1890-1900.

The block originally came from Bed 7 of the section by Buckman reproduced here from his paper in Quart. Journ. Geol. Soc. London vol. 49 p. 485, 1893. The beds of this rock are incredibly fossiliferous in the Bradford Abbas area where S. S. Buckman spent his childhood. Obviously some Victorian dealer has increased that fossiliferousness and presumably the monetary value of specimens of this sort by inserting fossils from other horizons onto the slabs of Bed 7. Some have certainly been inserted from Bed 10 below.

It would be of interest to know where this specimen now is and to learn of any other similarly "improved" geological specimens. There are certainly a number of similar specimens in the vaults of the Dorset County Museum.

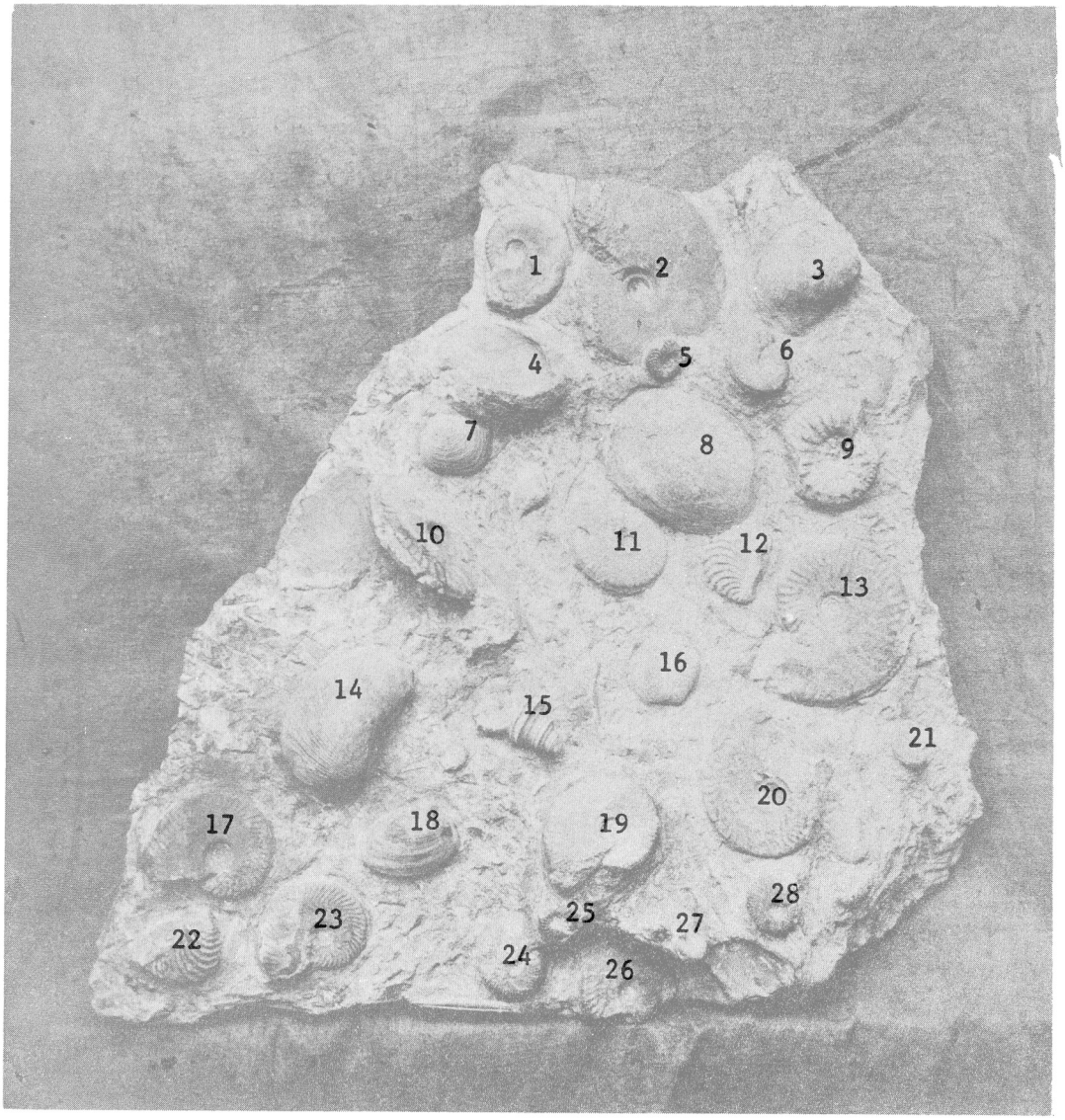
SECTION II.—*Bradford Abbas; East Hill Quarry.* (From Sherborne Abbey 3 miles 1 furlong west by south.)

				Feet.	Inches.
Fuscæ & Zigzag.	A (*pars*) & B.	1.	White limestone, and distorted stone at top. *Oppelia* cf. *fusca*, *Ecotraustes conjungens* (May.), *Oppelia*, various sp.	6	6
	C.	2.	Yellow, sandy stone		5
Truellii.	D.	3.	Soft, whitish limestone, with *Parkinsonia Parkinsoni*, &c.		3
Garantianæ.	F.	4.	The 'DIRT BED,' the 'Marl Bed.'—Soft earthy parting. The horizon of *Rhynchonella parvula*, Desl.; *Dictyothyris Morieri* (Dav.); *Aulacothyris carinata* (Lam.); *Astarte subquadrata*, S. Buckm.; *Ostrea Knorri*; '*Oppelia* sp.,' etc.		2
		5.	Soft, bluish-white limestone, irregularly and indistinctly separated from the bed above. *Astarte obliqua*, Desh.; *Ast. Manseli*, S. Buckm.		4
Sauzei.	J.	6.	The 'IRONY BED.'—Bluish limestone with large iron grains, which fall out, leaving holes. *Sonninia mesacanthus* (Waag.); *Sowm.* sp.; *Witchellia* sp.; *Astarte excavata*, Sow.		4
Discitæ.	L.	7.	Yellowish-blue ironshot limestone, darker coloured than the bed below. *Sonninia* and *Hyperlioceras*		7
Concavi.	M.	8.	Yellow and bluish ironshot limestone. *Lioceras concavum*-forms abundant; *Ludwigia cornu*, S. Buckm.[1]	1	4
Bradfordensis.	N.	9.	Soft yellow marl: *Lioceras bradfordense*, *L. v-scriptum*		1
Murchisonæ.	O.	10.	The 'PAVING BED.'—Yellow and blue shelly limestone. *Ludwigia Murchisonæ* (Sow.).		5
		11.	Soft, yellow parting		1
		12.	Yellow and blue shelly limestone. (The hard blue sandy limestone of the bed below runs up into it unevenly, in some places as much as one-half.)		10
	R.	13.	The 'DEW BED.'—Hard, blue-centred, sandy, shelly stone. *Dumortieria Moorei* (Lyc.); '*Rhynchonella Beneckei* (Haas)'		11
		14.	Yellow sands		...



A faked slab of Bradford Abbas Fossil Bed (discites)

Many specimens inserted, some from the Paving Bed.



1. Lucya cavata [ammonite]
2. Lucya cavata
3. Isocardia (inserted) [bivalve]
4. Coelastarte excavata [bivalve]
5. ? Platygraphoceras latum [ammonite]
6. _____ [left blank by S.S.B.]
7. Astarte elegans var. finer ribbed [bivalve]
8. = 4 [see above]
9. Hammatoceras nov. sp. [ammonite]
10. ? Graphoceras stigmosum [ammonite]
11. _____ [left blank by S.S.B.]
12. Trigonia striata [bivalve]
13. Ludwigella concava (inserted?) [ammonite]
14. Pholadomya (inserted) [bivalve]
15. Amberleya abbas [gastropod]
16. cf. 7 [see above]
17. Graphoceras stigmosum [as 10]
18. _____ [left blank by S.S.B.]
19. Graphoceras decorum [ammonite]
20. Graphoceras undulatum [ammonite]
21. [Ammonite unlisted by S.S.B.]
22. [Myophorellid bivalve unlisted by S.S.B.]
23. [Graphoceratid (probably inserted) unlisted by S.S.B.]
24. Graphoceras decorum [ammonite]
25. = 5 [see above]
26. Graphoceras stigmosum [see 10, 17]
27. _____ [left blank by S.S.B.]
28. ? Lucya [ammonite]

SOME NEW APPROACHES TO MICROVERTEBRATE COLLECTING AND PROCESSING.

ABSTRACT

Methods for processing microvertebrates are demonstrated that enable a small work force to process efficiently large amounts of concentrate containing microvertebrate fossils. The methods demonstrated provide for a high rate of recovery.

INTRODUCTION

Successful processing of sediments for microvertebrates was known as early as the 1890's (Hatcher, 1896). Various workers have discussed the processing of large amounts of matrix through wet screening (Hibbard, 1949), (McKenna, 1962), (Guilday et al, 1964), (Novacek & Clemens, 1977). In nearly every case their operations have involved relatively large field crews and a minimum of some 20 wooden-sided screen boxes. In most cases window screen with openings of 1.0-1.5 mm has been used (Guilday et al, 1964), (Novacek & Clemens, 1977). These operations have enabled the processing of amounts in the tens of tons.

At the Smithsonian, our field crews are generally 1-3 staff members and occasionally 1-2 additional volunteers. Usually one vehicle suffices to carry all equipment and supplies. This made screening operations of the above magnitude infeasible. Early efforts using ten screen boxes of the above-mentioned variety on quarry samples from certain White River Oligocene sites provided mixed results. A few very significant specimens were recovered, though it was felt that there was loss through two causes. The size of the screen openings about 1.5 mm was too large and loss through less than careful matrix picking seemed likely.

MATERIALS, METHODS & RESULTS

During the summer field operation of 1975 under the direction of Dr. Robert Emery, several damaged screen boxes had the wire screen replaced with knotted nylon mosquito netting with openings of about 0.8 mm. These screens demonstrated a significant increase in the amount of concentrate collected and were found to be as durable as wire screens if not more so. The idea then evolved to screen matrix in bags made of nylon mosquito netting and 10 bags 75 x 25 cm were made. The following year 20 more screen bags were produced.

The bags could handle 2-4 kg of matrix and were augmented by four wooden box screens with nylon netting. The loaded bags were knotted at the top and allowed to soak in a modestly flowing river. About ten bags per person was determined to be the most that could be handled efficiently. When the clayey matrix was thoroughly saturated, the bags were agitated, washing out most of the clay. They were then turned inside out in one of the screen boxes, depositing the nearly cleaned concentrate there for further soaking, and then refilled with fresh matrix. This proceeded until the day's load of 400-600 kg was concentrated in the four screen boxes. It has been estimated that some bags have been refilled one hundred times so far and are still usable. None have spontaneously split and what few abrasions have occurred seem due to hard lumps of matrix in the bag contacting sharp rocks in the river, pinching the bag between, rarely causing small tears. We easily repaired minor abrasions with a needle and thread. Usually a second screening and occasionally a third were necessary to remove residual clays.

The dried concentrate was carefully sized using screens of 3 mm and 1.5 mm. This resulted in three fractions, the coarsest and finest each being somewhat

greater in volume than the middle one. The total concentrate per 400 kg of original matrix was 8-12 kg. Virtually all picking was done indoors to avoid accidents. In contrast to most of the previously cited operations, only two matrix pickers were usually available and often just one.

The coarsest fraction could be picked quickly with the unaided eye. The middle fraction could also be picked this way, though a 2x illuminated magnifier was useful where teeth and matrix were of similar color. The final fraction was just too fine for accurate picking even with the magnifier, and a binocular microscope proved to be extremely slow. The low ratio of 5-10 identifiable teeth per kg meant it was a long time between teeth and a low ratio of teeth to man-hour. The problem was to get rid of some of the matrix without losing valuable teeth. Formic acid (5% strength) was found to be of benefit in some of the samples, removing as much as 20% of the matrix and leaving teeth undamaged. This wasn't a complete solution to the problem and the heavy liquid approach was initiated.

Some years previously I had successfully reduced some small samples of Wood Mountain, Saskatchewan, Miocene concentrate using bromoform and acetone. The mixture was highly volatile and tended to change in specific gravity rapidly. Our initial experiments at the Smithsonian using bromoform and acetone demonstrated this as well. Having heard that the Southern Methodist University staff had been successfully using a combination of tetrabromoethane and dibromoethane, we procured these reagents (Murry and Lezak, 1977).

The apparatus used consisted of a large beaker (1,000 ml) to hold the heavy liquids and a small strainer to remove float. General procedures and use of the liquids were similar to those of Murry and Lezak, though the reference wasn't available until we had our project well underway. All operations except picking the final concentrate were done under a fume hood. Two pairs of rubber gloves were used and a respirator with filters for organic fumes was added as an extra precaution.

Instead of directly measuring the specific gravity of the liquids, they were merely mixed together until a sample of bone and tooth fragments from the quarry sample sank rapidly. Each time the liquids were used, a few sample bone and tooth fragments were dropped in - a very slow descent meant the need for a little more dibromoethane. In the paragraphs below I list quantity measurements of concentrate that represent the quarry from which we have collected the most. With others, differing amounts may be used and the separation may or may not be as pronounced.

A 400 gm sample was processed, 50 grams at a time, in a solution of about 600 ml combined tetra and dibromoethane. Each 50 grams was thoroughly stirred up and when the heavy fraction had settled, the floating fraction was carefully skimmed off with the strainer, allowing most of the liquid clinging to the floating fraction to drain through the screen openings. The floating fraction was then put in a filter-paper lined funnel with a beaker underneath and set aside for several hours to allow further heavy liquids to drip from the float.

When the entire 400 gm sample was processed and the float all removed, most of the liquid was poured back into the storage vessel using the tea strainer to catch isolated float particles. The last 20-30 ml of liquids with the heavy fraction were poured into a separate paper-lined funnel with a beaker beneath. The main beaker was then washed with acetone. The acetone was poured off into a 250 ml beaker along with any heavy fraction that didn't pour off with the last 20-30 ml of liquids. The filter paper containing the major part of the sink is added to the same 250 ml beaker. The paper is removed and the acetone poured off and about four more washings of the heavy fraction are

done with acetone. The concentrate is dried on a paper towel and the washing is repeated twice more for a total of fifteen washings and three dryings using a total of about 500 ml acetone. Each sample is allowed to dry under the hood at least two full days.

The float is washed once in the same acetone used to wash the heavy fraction, filtered and dried. The acetone is evaporated leaving some 30-50 ml of heavy liquids that can be reused. The dried float is checked for bone and discarded, sealed in plastic bags. The heavy liquids are completely filtered periodically and always before a different matrix is to be processed.

The heavy fraction concentrate from 400 grams totals as little as 4 grams. This is easily picked a few grams at a time under a binocular microscope. All recognizable teeth and bone fragments are saved. The average number of identifiable mammal teeth is about two per sample, varying from 0-5. The teeth recovered included many small mammals not previously recovered from these quarry samples and their small size thoroughly justifies the use of the mosquito netting screen. The total effort per day at the heavy liquid operation is about 1 hour, including processing one 400 gram batch and picking a previously processed sample. The color of the teeth from our main quarry sample is quite light so I use a picking tray painted with black ink. Concentrates with black teeth conversely are best picked with a white picking tray.

The above-mentioned techniques demonstrate that small parties can process large quantities of matrix for microvertebrates. The need for trailers to transport screens and buildings to store them is eliminated. Availability of high quality knotted mosquito netting is a current problem that is being worked on. I advise trying a small sample of matrix in one net bag, suspended in a bucket of water, to find out if a given brand of netting will hold up. The heavy liquid process as outlined here and elsewhere involves extremely toxic reagents. (Murry & Lezak, 1977) and (Rixon, 1976). Hopefully, a high density liquid or combination of liquids can be found that is less objectionable from a health standpoint.

ACKNOWLEDGMENTS

Dr. Robert Emry and Jennifer Emry contributed many of the innovations outlined in this paper.

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COMPUTER CONTROLLED DATA BANK SYSTEM AT THE HANCOCK MUSEUM.

Abstract:

In July 1977 a pilot scheme began for the transfer of a small part of the Hancock Museum's geological data onto a computer data-bank. This data was geological site information, collected by a Job Creation team employed by the Northumberland Wildlife Trust. Computer facilities were made available at the University of Newcastle upon Tyne, using specifically the Stanford Public Information and Retrieval System - SPIRES. This new process has been successfully applied to several other aspects of the museum's collections.

There can be little doubt of the very considerable advantages to be gained by handling large amounts of data using a computer system. Large organisations with excessive information have been operating such systems for several years. In the case of the Hancock Museum the existing geological data has already increased in size beyond the capability of a card index system to handle it, and of course the accumulation of further data serves only to intensify the problem.

The changeover to a computer-based data bank from the running catalogues which already exist has not only attractions in improving the efficiency of storing existing data, but also allows for more peripheral information to be filed which might otherwise be rejected. Exhaustive cross-referencing to published literature is easily accomplished. Comments of local geologists can be incorporated, a source of valuable information which can so often be lost to all but the immediate geological community.

In July 1977 there was a meeting of the Geological Curators Group on storage of data for the National Site recording scheme, at which several museums discussed plans for using a computer system. Following this, the authors decided to implement the use of the computer to store and retrieve their geological data at the Hancock Museum. Peter Robson had previously decided this would be the best way to handle the Northumbrian site records, collected by permanent and J.C.P. geologists, which are the basis for the development of a National Site Records Centre for Northumberland at the Hancock Museum.

Up to 1976 Museum data had been stored in running catalogues only. A mineral card file was begun by J.C.P. geologist John Mennear, after a decision not to use IRGMA cards because of the lack of clerical staff. If the Museum was to use a computer system it had to be flexible enough to feed in data almost directly from the current catalogues. When we began to consider the system we were not too certain of the outside demands that might be put on it initially, but we wanted to make internal indexes for sites, fossils, minerals, rocks and bibliography, and eventually to publish an up to date type and figured specimen list of fossils.

Mr. A. M. Tynan the Curator of the Hancock Museum, and Mr. R. Norman, Assistant Secretary of the Northumberland Wildlife Trust gave their permission for a test study to go ahead and Mr. Tynan obtained permission from the Director of the Computer Unit of the University of Newcastle upon Tyne to use the facilities of NUMAC. With this go-ahead we contacted Dr. Nick Rossiter of NUMAC who was to act as our liaison officer.

After discussions on the means of transferring our data, Dr. Rossiter informed us of the arrival in Newcastle of the package called SPIRES (Stanford

Public Information and Retrieval System) from Stanford University which had been used successfully in North America for a wide variety of uses. Our data was then structured in a manner to be accepted onto SPIRES and test samples of data were drawn up. Dr. Rossiter then wrote the initial file definition and the data was compiled onto SPIRES.

By September 1977, the tests having been successful, Mr. Tynan received acceptance for the proposal of a Job Creation team to handle the computerisation under the supervision of the authors. It was to comprise one geology graduate and two clerical assistants for 52 weeks. Paul Bootes, a Lancaster graduate, was employed and began to familiarise himself with procedures. Peter Robson continued to deal with site records and Paul Bootes dealt with Museum data and the two main sub-files were made to interconnect, so that one operator can read all records at one time. By October two clerical assistants had begun to put data onto cards and submit it overnight in batch. Paul Bootes then checked data and altered or added to it and compiled it onto SPIRES. To date approximately 4,300 museum and 220 site records are on file.

During the first few months of use, the file definitions were constantly being improved little by little. A major alteration was effected in April 1978 which has markedly simplified the file structures, making data easier to put on and easier to retrieve.

In January 1979 a further grant from Manpower Services allowed for the employment of two further graduates, Ian Webster and Michael Daly and four punch card operators who have become Computer Assistants. The museum acquired a card punching machine and by May/June 1979 a print-out terminal TTY43 model was installed with University aid at a cost of around £700.

The Hancock Museum Database now comprises the Geological collection data, fossil, mineral and rock catalogues (about 18,000 to date); the geological site information from Northumberland (220 sites), a slide catalogue, the collections of bird and mammal skins, lepidoptera and palaeobotany. Following a meeting of the Natural History Panel of the North-East Federation earlier this year we have also set up a North-east Collector Data-bank to store information on the major collectors of the region, on the lines of the N.W. Data-bank.

Of the collections on file the fossil list is the largest, over 10,000 records. Updating of information is undertaken as and when needed e.g. the position of each specimen in the museum is being added.

The Spires information has already proved very useful in obtaining lists of sites or subjects to answer enquiries, and even for locating specimens in the museum collection. Lists of collectors can be obtained as a source for the collector file, and specialists in various fields can be given an output of relevant data either before or when they visit the museum.

In the near future the Herbarium and ethnographic collections will possibly be added.

The example of the collation of data from several museums being undertaken for the collector survey could become a more widespread phenomenon as other museums become capable of creating compatible databases using a system such as Spires or the Goss package of M.D.A.

To prove a point the Hancock Museum has become one of the main computer users in the University of Newcastle upon Tyne in under two years, and hopefully this will continue. This will mean all permanent museum staff having computer training in the future.

The future of the scheme is still uncertain once the Job Creation Scheme ends. The University will continue to allow its Museum free computer time and space. If the bulk of records are stored, then the permanent geologist should be able to add data to the system as easily as normal cataloguing and updating. The Museum should be able to afford the back up disc space and tape duplicates. In time we hope to have all our records stored on computer. Cataloguing of the geological collections is almost up to date thanks to J.C.P. graduate assistance. The Museum could then extend the use to the ethnographic, zoological and botanical collections. This would necessarily entail all future Hancock curatorial and possibly technical staff learning the basics of the M.T.S. and SPIRES computer system as part of their initial training.

Acknowledgements:

We would like to acknowledge the help and encouragement of Dr. N. Rossiter and other members of the Computer Unit of N.U.M.A.C., Mr. A. M. Tynan and Mr. R. Norman of the Hancock Museum and Northumberland Wildlife Trust, and thank all our J.C.P. colleagues for their hard work over the past two years.

Ref: 1979 S. Turner in discussion to paper by B. Jones, in Pal. Ass. volume "Curation of Palaeontological Collections" Ed. M. G. Bassett. Special Papers in Palaeontology No. 22 p.187.

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Hancock Museum,
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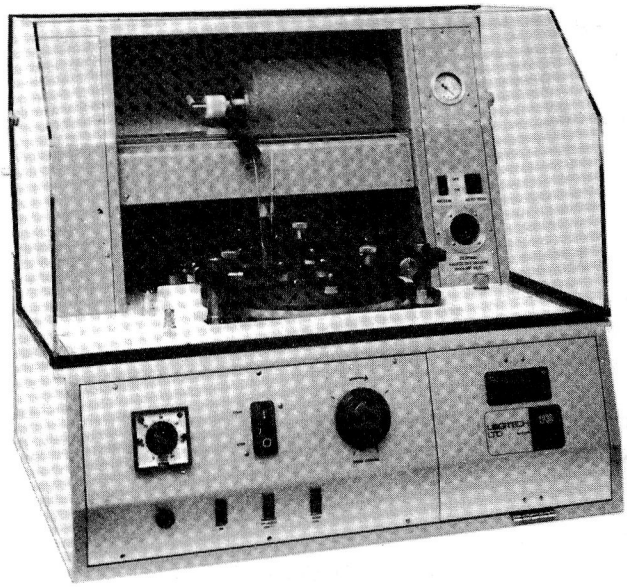

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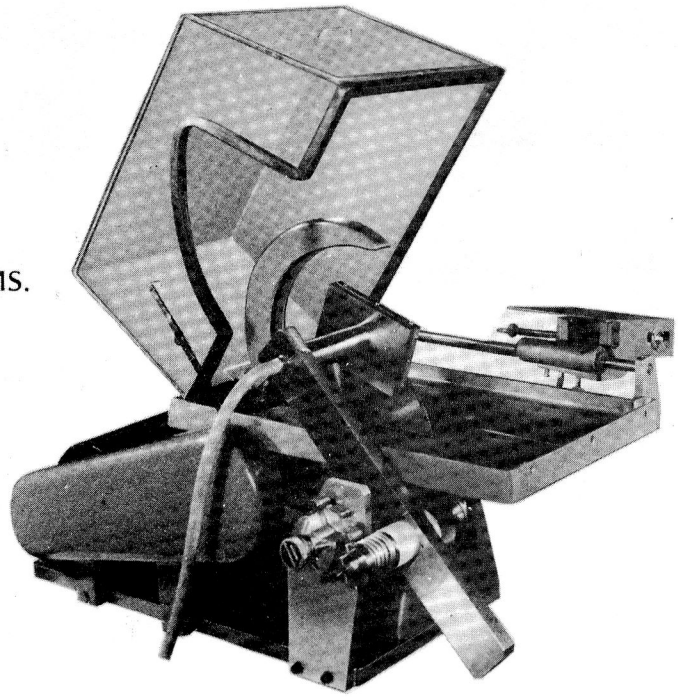

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NOTES AND NEWS

Rosemary Preece (Manchester Museum)

We congratulate Rosemary and her husband on the birth of their son in December.

Mike Jones

People may not be aware of the resignation of Mike Jones as Keeper of Earth Sciences at Leicester effective from 3rd November 1978 after a total of 10 years sterling service. He achieved considerable success at Leicester and within the profession generally, and was one of the promulgators of the G.C.G. He is now a Director of Interviron Ltd., a team of people responsible for the Conwy Visitor Centre, opened in June last year and now running very successfully.

John G. Martin (Leicester Museum)

As a result John G. Martin (previously Assistant Keeper) was promoted to Keeper and John Cooper to Assistant Keeper (previously Senior Technician) as from 1.1.1979.

Monica Price

Monica Price took up the position of Assistant to the Curator of Mineralogy at the University Museum, Oxford on 1st October 1979. The post has been created for a three year period in an effort to relieve the tremendous backlog of curatorial work that has built up.

John Lavender

John Lavender retired from his post of Keeper of Geology in the Hampshire County Museum Service at the end of September 1979 after almost thirty years at the Red House Museum in Christchurch. Although a Botany graduate, John developed an interest in the broader aspects of Natural History and was well known for his work in the New Forest. The post has been filled by the appointment of the writer of this column. [It was John Lavender's kindness to your chairman as a schoolboy n years ago which introduced him to the fascination of Museums!]

Leicester

The long programme of re-construction of the basement at the New Walk Museum following extensive building alterations, is now drawing to a close. Substantial improvements have been made to the storage, laboratory and office facilities in the Earth Science Section as a result. As a matter of information and help for anyone else was in the early stages of planning improved facilities in their museum, John Cooper would have liked to contribute an article to the G.C.G. Newsletter outlining the processes that were involved in this re-construction, with handy hints re gas, water, electricity, compressed air, suspended ceilings, mobile stores, fume cupboards, etc. etc. etc. Unfortunately, time and pressure of work has made this impossible. Here though is a brief synopsis of what these facilities comprise:-
Two new stores requiring a complete removal of all our collections.
a. Palaeontology and Mineralogy - roller racking bases, winch transport using pre-existing cabinets. Bases supplied by Bruynzeal, Aylesbury.

b. Petrology Store - roller racking units, hand moved, entire cabinets supplied by Remploy.
New office/workroom for Assistant Keeper and Senior Technician with up to four others (temporary staff, visitors under supervision etc.)
Two new laboratories:-
a. "Dirty room" with cutting and grinding facilities including Airbrasive equipment (S. S. White Airbrasive unit and Spencer and Halstead Dust extractors).
b. Clean room with chemical, conservation and minor carpentry facilities, includes Fume Cupboard.
The Earth Science Section would be pleased to receive any enquiries about these facilities if we can be of any help to others.

Far from the Madding Crowd

The appeal of Dorset in geological circles is well known as is the wealth of material in museums all over the country which has originated from within the old county boundary.

Until now however little has been recorded about the collections in the local museum. Paul Ensor who has been Assistant Curator at the Dorset County Museum in Dorchester for the past eighteen months is hoping to rectify this situation and work is currently in hand which, hopefully, will provide a paper for the Newsletter which will unlock the mystery of these potentially interesting, but not well known, collections.

Anyone lost a platinum nugget?

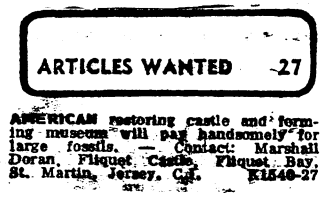
Phil Doughty has reported the recent acquisition of one weighing 48 gms by the Ulster Museum. An X-ray fluorescence analysis revealed that it also contains iron, copper, rhodium and palladium, all commonly associated metals, and it is thought to represent a natural occurrence of native platinum. The circumstances surrounding its discovery make a good story. It was thought to have been found in County Antrim, however, as nuggets of the mineral are derived normally from ultra basic rocks or their alteration products - and as there are no suitable sources in the region it's all a bit of a mystery. Glaciation could have brought it in from Scotland although it has been suggested that some human agency might have been responsible.

"Somebody, somewhere ..... "

Does your Museum contain collections from Yorkshire or Humberside? If so then Yorkshire and Humberside Collections Research Unit would like to hear from you. Further details will be given in the next issue, but please contact the Secretary, Colin Simms at the Yorkshire Museum if you think you have something of particular interest to the Unit.

Storage problems solved?

Apparently not satisfied with advertisements in the Museums Bulletin requesting de-accessioned museum material, one American is now being a little more specific in his requirements as the accompanying advertisement from the Poole and Dorset Herald (22.12.1979) shows:-



ARTICLES WANTED -27

AMERICAN restoring castle and forming museum will pay handsomely for large fossils. — Contact: Marshall Doran, Fliquet Castle, Fliquet Bay, St. Martin, Jersey, C.I. K1540-27

It will be most interesting to visit the new museum and to see whence the geological material originated. Should we ban any contributing Museums from the Group? unless they split the proceeds with us.....!

More than one way to skin a cat....

The application of accession numbers to specimens has always been a time consuming and potentially messy job as the little blobs of white paint take ages to dry. Then after the number has been written on, a blob of varnish is needed to seal it. Reports have been received which indicate that this method is now a thing of the past!

'Snopake', the familiar typing correction fluid, appears to work just as well in providing the white patch on which the number can be written in Indian Ink, and it can all be sealed by varnish. Apparently some varnishes tend to soften the white base, but Alan Howell at Bolton suggests that Butvar D512 in alcohol/diacetone works well. Does anyone else use this method?

There must be alternative techniques relating to other processes that we all carry out that could save time or effort. If you have discovered one please let me know and I will pass it on.

Shock, Horror, Probe!

Readers of 'Public Service', the Nalgo newspaper, will have seen numerous references to the fact that a sub-committee has been formed to investigate the Health and Safety aspects of Visual Display Units, radiation from which, it is feared, could affect the operators!

It occurs to me that Curators working with mineral collections which include high concentrations of radioactive material would also appear to be at risk and it would be interesting to know what special precautions are being taken at our Museums. I gather that the curator of one particular institution resolved the problem by keeping such minerals in his office!"

How are your radioactive minerals stored and what special precautions are in effect?

On a similar line, what precautions are taken for such material which is on public display?

Geology in Miniature

The fact that our Editor is a philatelist may not have escaped readers attention following the cover of last April's Newsletter. However you may be interested to know that a recent letter from him bore the postmark "Collect British Stamps - World's Greatest Hobby" and contained details of a new issue of stamps by the Isle of Man Postal Authorities to commemorate 150 years of the Royal Geographical Society.

The Isle of Man has figured in the literature of the Society and has been the subject of study by some of its most eminent Fellows, including G. W. Lamplugh who spent five years compiling the geological Memoir of the Island. The variety of geological features there has provided subjects which have been used on three of the five stamps which were issued on 5th February 1980.

7p At Langness, in the south of the Island, there is an overlap of the Carboniferous Basal Conglomerate upon the Manx Slates which have been stained a dark red colour in parts.

13p The view from the Stack over Scarlett Point showing the overthrust of volcanic rocks upon the lower limestone.

15p The imposing grandeur of Spanish Head highlighted by Sugar-Loaf Rock. The composition of flaggy grits and slates is clearly visible.

Details of the issue are obtainable from:-

The I.O.M. Postal Authority,
P.O.Box 10.M,
Philatelic Bureau,
Douglas,
I.O.M.

Havy any other stamp collectors come across other issues of geological interest?

The Plain mans guide to Rock Bands

Following the items in recent issues of the Newsletter regarding rock xylophones, correspondence has been received from Tristram Besterman of the Warwickshire Museum, informing us that 'xylophone' means, literally, "wood voice". Tristram kindly offered the etymologically more appropriate term 'lithophone', already used by the Horniman Museum in a publication entitled Musical Instruments (1958), together with crystallophone and metalophone.

The publication also mentions that the earliest known lithophones are two instruments from the Neolithic of Vietnam which can be seen in the Musée de l'Homme in Paris. Of the three nineteenth century examples in the Horniman Collection, two are Chinese whilst the other, from Cumberland, belonged to Martin Farquhar Tupper, the Victorial philosopher and author of "Proverbial Philosophy".

Correspondence for "Notes and News" should be sent to:

Tony Cross,
Curtis Museum,
High St.,
Alton,
Hants.

or telephone Alton 82802

Books on Dinosaurs

I am searching for unusual and interesting books on the history of paleontology. I've been collecting books, mostly on dinosaurs, for thirty years now, and have more than 300 on prehistoric animals. I am not so much interested in the study of evolution per se as in man's extreme fascination with monsters of the past. My collection centers on popularizations, autobiographies and children's books, and includes museum pamphlets, postcards and postage stamps.

There is no bibliography that I know of which deals with prehistoric animals in literature or any of the other areas in which I collect. It is only by sheer luck that I've found such curiosities as Cuming's Wonder's in Monsterland (a pre-historic version of Alice in Wonderland) for example, or Francis Rolt-Wheeler's The Monster-Hunters, in which a turn-of-the-century lad gets to go fossil hunting in Egypt and out West with his rich uncle from the American Museum of Natural History.

If you share an interest in this aspect of paleontology, perhaps you would be willing to give me information about:

1) other interesting titles, authors or illustrators;
2) book dealers who specialize in paleontology;
3) material in your possession you might sell or trade.

I would be glad to send you my list of duplicates, or my current want list. Ultimately I hope to prepare a bibliography that may spare future hobbyists some time and effort.

Dean Hannotte,
236 East 6th Street,
New York, New York 10003

3C or not 3C? - A Plea for Better Communication

The 3C's of curating are said to be:

- collecting
- conserving
- communicating

So far the Geological Curators Group has concentrated on the first two of these roles but it is surely time that we tried to communicate more effectively. Now that we have a clearer idea of the amount of damage that geological collections have suffered nationally, we must convince the public that the situation has to be radically improved. Much of the cause of neglected collections must be the ignorance of many people in authority, who did not, and still do not, appreciate the importance of geological collections. While most people know so little about geology, how can we expect any improvement in people's attitudes? Surely we must communicate an interest and understanding of geology and the need to curate collections properly.

Displays are our most obvious means of communication, but I wonder how effective they are. Museum designers have certainly changed the style of displays, but have they done more than just a cosmetic improvement? Do we as curators liaise sufficiently with designers, do we even know what we should try to communicate through displays? Through the Newsletter and our meetings we could find out which (if any) displays succeed in interesting and educating, and how they succeed.

We use a variety of other means of communication, partly to reinforce displays. Information sheets, postcards and booklets are available in most museums. However do museum shops contain the most suitable items? Identification and information services can be time-consuming but they can also be a most successful means of communication. The personal contact is much appreciated by our visitors. Lectures, conducted fieldtrips, local geological societies and adult education classes all help to develop the knowledge and interest of the public. Most of us become involved in these activities, but should we do more? Has anyone found any of these means of communication particularly effective?

In many ways it is far easier to improve the general lack of geological knowledge in the long term rather than in the short. It is relatively simple to encourage schools to teach geology and to use the museum's resources and facilities. A special feature in "GEOLOGY teaching" (vol. 3, no. 2, June 1978) the journal of the Association of Teachers of Geology, described ways in which museums can help schools. Articles by Ann Dawson (Manchester Museum), Mike Jones (Leicestershire Museum), Alun Thomas (National Museum of Wales) and Ron Roberts (The Geological Museum) described such resources as displays, loans, teaching and information services. It also contained a catalogue of museums that offer help to teachers. "GEOLOGY teaching" has included notes and articles about museum displays and services and it is a most useful way of liaising with teachers of geology. However on a local level we can also develop links with teachers, local ATG groups, wardens of teachers centres, staff in colleges of education and education advisers.

Such educational work with schools not only helps to improve the geological knowledge of pupils (and teachers) but it also demonstrates one of the functions of a museum to parents and the public at large.

In order to communicate with the general public, we need to communicate between ourselves. Notes and articles about any activities or display methods would be most welcome in the Newsletter, as would any conclusions about their effectiveness. Although curators are not necessarily designers or educationalists, we do need to know about the means of communication that will work most effectively in our own museums. If we do not succeed then we may never improve the status of geology in museums and save our national heritage of collections.

Andrew Mathieson,
Schools Department,
Bristol City Museum

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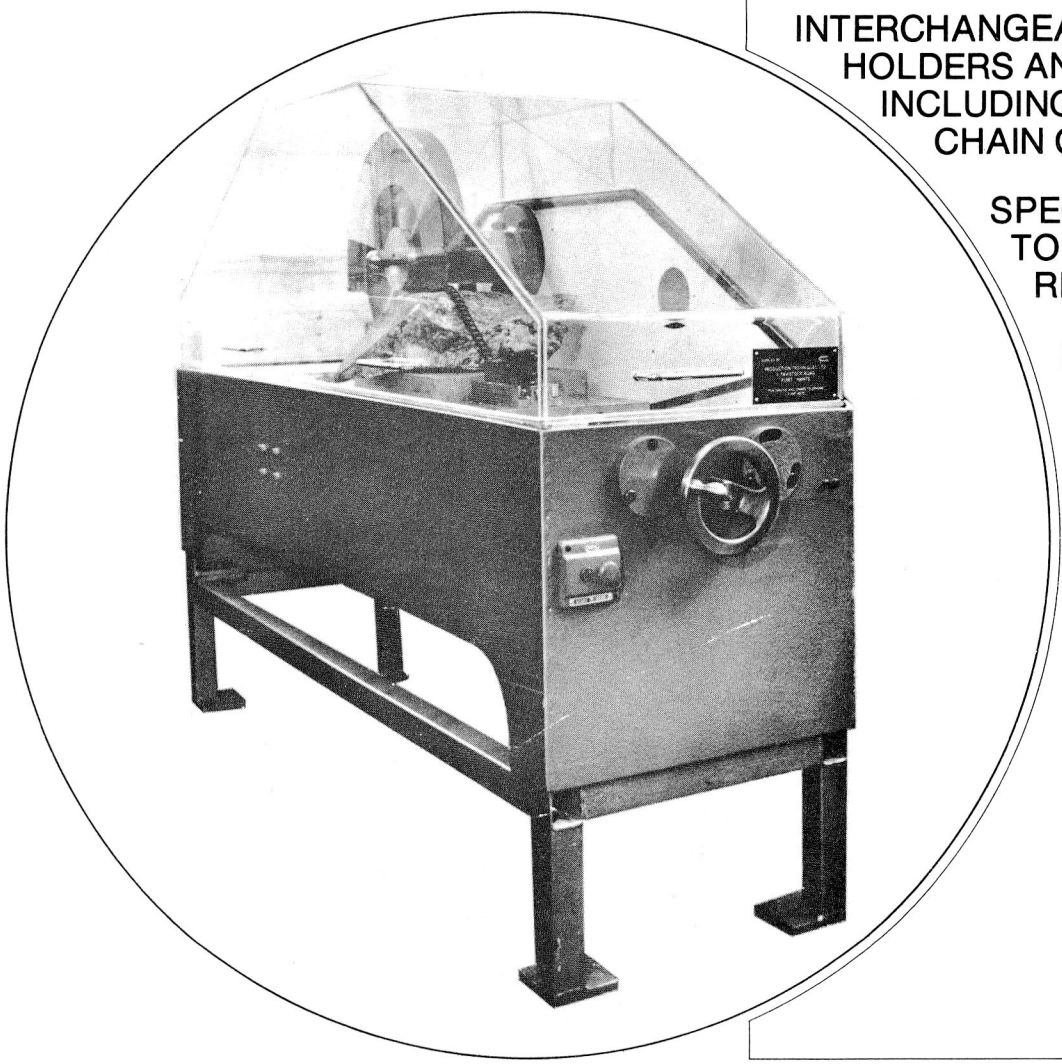

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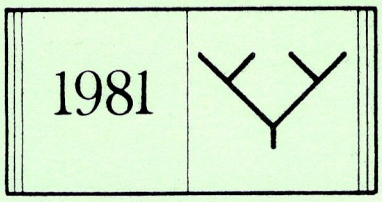

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