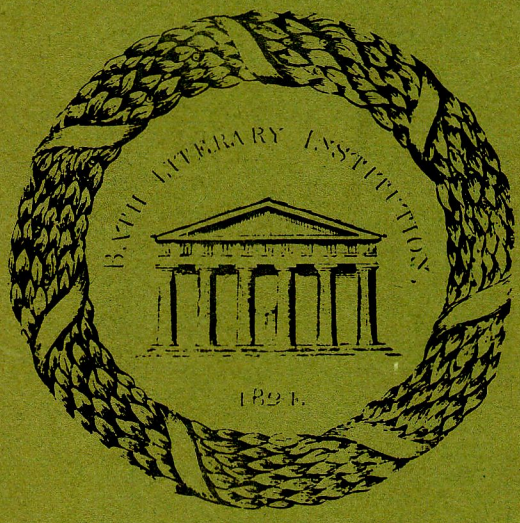
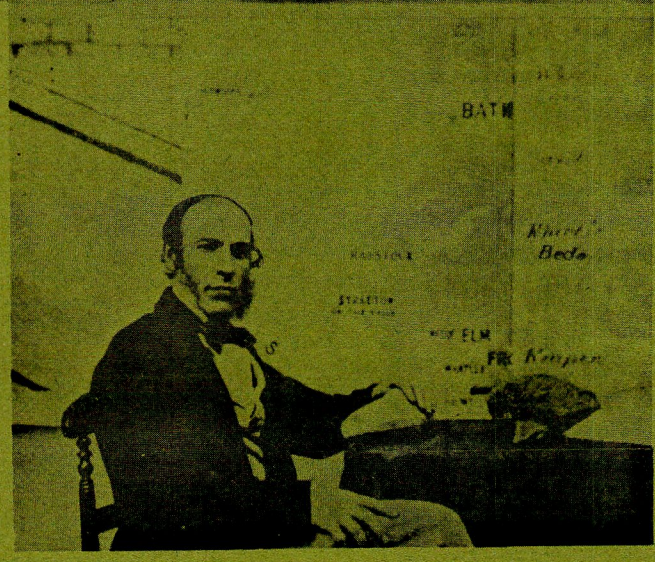
GCG

NEWSLETTER OF THE GEOLOGICAL CURATORS GROUP

NUMBER 3 APRIL 1975





This issue concentrates on the geological museum in Bath - the cradle of English Geology. It was started before 1824 by the Bath Literary Institution (whose bookplate showing the portico of its original building appears on the front cover - BOTTOM LEFT). It was greatly added to and its interest polarised to geology and palaeontology by Charles Moore (1814-1881) - BOTTOM RIGHT. He is shown standing amidst his own collections in the ground floor Moore Room of the Museum some time between 1853-1876 in the UPPER picture on our front cover. Articles in this issue describe the history of the collections up to recent times (BACK COVER) and the present day.

Back numbers of Newsletters

Newsletters 1 and 2 are still available at 50p. each (including postage). Money must accompany all orders, which should be sent to Tim Riley, Sheffield City Museums, Weston Park, Sheffield S10 2TP.

Submission of MSS

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

c Published by the Geological Curators Group. Printed at Keele University.

For further details please contact either the Editor or the Secretary.

CHAIRMAN

Dr. R. G. Clements,
Geology Department,
University of Leicester,
Leicester LE1 7RA. Tel: 50000

TREASURER

Mrs. P. A. Pennington-George,
Doncaster Museum,
Chequer Road,
Doncaster, DN1 2AE.
Tel: 62095 and 60814

EDITOR

Mr. B. W. Page,
Geology Department,
University of Keele,
Keele, Staffs. ST5 5BG.
Tel: Keele Park 371

GENERAL SECRETARY

Mr. M. D. Jones,
Leicester Museum,
New Walk,
Leicester LE1 6TD. Tel: 539111, Ext. 280

ASSISTANT SECRETARY

Mr. T. Riley,
Sheffield Museum,
Weston Park,
Sheffield S10 2TP. Tel: 0742 27226

CONTENTS:

The Editor wishes to apologize for the delay in publication of this issue, and hopes that the quality of the contents will more than compensate for their tardy publication.

GROUP SEMINAR ON ACCESSIONING PROCEDURES: 13th December 1974

Exhibits illustrating methods of accessioning, cataloguing and storing specimens were provided by the following:

Brighton Museum
Derby Museum
Doncaster Museum
University of Keele
Leicester Museum
Department of Geology, Leicester University
Merseyside County Museum, Liverpool
Department of Mineralogy, British Museum (Natural History)
Passmore Edwards Museum
Hancock Museum, Newcastle
Sheffield Museum

There were 5 contributors to the morning seminar.

ALAN SMOUT described Brighton's computer-based system of accessioning. He pointed out that University computer systems are normally based on the Flexywriter system, whereas the terminals at most computer bureaux cannot handle data in this form. Thus the IRGMA programmes test run by the Sedgwick Bureau could not be duplicated on the Brighton Corporation computer and a new system had therefore to be devised.

This system was then outlined as a model which other museums might adopt (Dr. Smout's view) or, alternatively, as a hideous example of what the profession ought to avoid at all costs (my own reaction). Information which could have been comfortably fitted onto a playing card sprawled over several square feet of computer print-out. This, plus the fact that, when a new report is produced each month, the previous month's voluminous report becomes so much waste paper (as, each year, do the previous annual reports) makes the system as wasteful as it is cumbersome.

ANDREW ROBERTS (Sedgwick Museum, Cambridge), the next speaker, did a skilful salvage job on behalf of computer-based systems in general and the IRGMA set-up in particular.

The history of IRGMA since its foundation at Sheffield in 1968 was briefly traced. To date the group had concentrated on establishing data standards and carrying out a number of special projects and, in recent years, this work had been centralised at Cambridge and Liverpool.

Major projects initiated in 1974 were:

1. Survey of documentation practice in museums

The aims were: to show the size and range of collections on a national scale; to show the present range of documentation practices in museums and other bodies; to discover what staff were available and their expertise; to determine the costs involved; to discover what facilities for information retrieval were currently available; to sound out ideas for improving procedures in the future.

A combination of structured interviews and circular letters would be used to collect information.

2. Proposed formats and standards for recording information

Recording cards were now being produced for particular subjects, including Geology. Core information (on identity, accession number etc.) would be common to all cards, with additional information headings to cover the requirements of the particular subjects.

Test batches of cards for 10 disciplines would be printed early in January, and it was hoped that the formats of these could be amended and finalised by Easter. The final version would then be circulated to curators in the hope that they would be prepared to make use of them for their own collections.

In the discussion that followed, Mr. Roberts emphasised that the cards had been designed so that they could be filled in manually and used in a traditional form of card index system where computer facilities were not available. Indeed it was envisaged that, in this century at least, the majority of the cards would be used in this way.

It was at this point that the possibility of an IRGMA workshop in March to discuss the final format of the geology cards was first raised. Later, in the course of the A.G.M., it was agreed that the next meeting of the Group should be held at Cambridge in conjunction with this workshop.

Three shorter contributions from members completed the morning session. ANN PENNINGTON-GEORGE described the accessioning system at Doncaster, her account being complicated by the fact that the system operating when she prepared her talk had subsequently been drastically changed.

PETER EMBREY (British Museum Nat. Hist.)) concentrated on the problems of classifying a mineral collection. The British Museum system had been devised 120 years before and was being continually updated. He stressed the point that Hey's Chemical Index was intended to allow any particular mineral species to be accurately located within a collection, not to provide a basis on which the collection itself would be arranged.

MICHAEL BASSETT (National Museum of Wales) spoke on the particular problems of type specimens, noting that curators themselves were often unaware of the types included in their collections. An index of catalogues of type specimens was now being prepared for publication by the Palaeontographical Association; while the G.C.G. Newsletter provided a medium through which museums with only a few type specimens could publicise their holdings.

During the afternoon session, the Group's proposed working party on Accessioning Procedures was discussed. The CHAIRMAN pointed out that the preparation of codes of practice was one of the Group's constitutional aims and that working parties had seemed to the Committee to be the logical way to do this.

The aims of the working party might be:

1) To produce a code of minimum practice (aimed particularly at curators without geological expertise but in charge of geological collections);

2) To carry out a comparative study of procedures actually used;

3) To liaise with IRGMA.

Such a working party could be drawn wholly or largely from non-committee members, although co-option of a representative onto the main committee might then be necessary. It should include representatives from the British Museum and/or the Institute of Geological Sciences; the provincial national museums; the larger provincial museums; the smaller provincial museums (possibly represented by a non-geologist); IRGMA; non-curatorial geologists; University curatorial personnel.

The party should aim to produce its report for consideration at the next A.G.M.

After discussion from the floor, M. Bassett proposed that such a working party should be set up, with 2 sub-groups to deal with: (a) mineralogy and petrology; (b) palaeontology. This proposal was carried but, due to pressure of time, the formation of the working party was deferred until a future meeting.

Geoffrey Tresise
8th January, 1975.

4. THE BATH GEOLOGICAL COLLECTIONS

Part a) Introduction

The city of Bath (Somerset - now Avon) has long been intimately associated with the history and development of geological science in England. Of the early geologists associated with the city, pride of place must go to William Smith (1769-1839) of whom Thomas Webster, who himself lectured on Geology in Bath in these days, said (1825, p. 39) "He has the strongest claims on our gratitude and who is indeed (I had almost said) the father of modern English geology".

William Smith settled in Somerset in 1791 and for 8 years worked there and was closely connected with the construction of the Somerset Coal Canal; during these years he lived in the area round Bath, discovered the laws of Stratigraphy for which he is justly remembered and encouraged many others to take up the study of geology. His association with the city of Bath led Joseph Hunter in 1827 to say 'Bath may justly be regarded as the cradle of English Geology. This new science, indeed may be said to have had it's birth in this place within our own time'. William Smith's associations with the Bath area are described by Cox (1942).

Smith although a great pioneer was not the first to be struck by the geological aspects of the Bath area and he was certainly influenced by some of those who preceeded him. Apart from the hot springs and mineral waters which very early on attracted attention, the basically simple layering of the rocks and abundant wealth of fossils were also well known.

An interesting account of early geological activities in the Bristol area is by V. A. Eyles (1955) who mentions mainly those more directly connected with Bristol. In addition some more associated with Bath include the following:

The two John Woods, father and son, who did so much architecturally to make Bath the beautiful city it still is today produced a Bath guide "A description of Bath" the second edition of which at least (1765) contained a chapter (vol. 1, chapter 7) on 'the Soil of Bath and the Fossils peculiar to it'. This contained rudimentary stratigraphic information about the neighbourhood and the statement that 'This soil abounds with fossils of various kinds; but mostly with such as are of a SPIRAL FIGURE' (i.e. ammonites), he mentions also 'multitudes of CONICAL STONES or THUNDERBOLTS' (i.e. belemnites); the gravels abounding with 'thin ROUND FOSSILS' (i.e. flint echinoids) and ' the many other little miracles of Nature abounding in the soil of Bath to excite a Man's curiosity to examine into them; and an age may be spent in a pursuit of this kind; so abundant are the fossils wherever the ground is penetrated.'

Some famous geological visitors visited Bath soon after this, Jean Andre de Luc (1727-1817) in 1773 in his first year in England and James Hutton (1726-1797) the 'father of modern geology' in 1774 but little seems available to tell of their activities here. The first, whose curiosity for Bath fossils was properly excited was Irish born John Walcott (1754 or 55-1831) who published in 1779 a splendidly illustrated book on the local fossils. In the same year the first Bath Philosophical Society was formed, with Edmund Rack as its Secretary. Fossils and their origins seem to have been the subject of some discussion at Society meetings although records of this Society are very limited, and it published nothing.

In 1781 Caleb Hillier Parry, Cirencester born doctor and friend of Edward Jenner of vaccination fame, with whom he shared a keen interest in fossils published 'Proposals for a history of the fossils of Gloucestershire'. These proposals for a never published book do not seem to have survived although they were certainly printed. One must assume that Parry who settled in Bath in 1779 was influenced by Walcott and the Bath Philosophical Society's activities in issuing his proposals (see p. 102). The first Bath Phil. Soc. does not seem to have survived the death of its first secretary in 1787. Two other attempts were made one in 1799 and again in 1815 to form later Bath Philosophical Societies but again details are limited but the third under the inspiration of Charles Hunnings Wilkinson (1763 or 64 - 1850) a friend and disciple of William Smith concerned itself with local geology and building up collections of local geological interest (see p.106).

In 1819 plans were put forward to organising a fourth Society concerned with Natural and Physical Science to which would be attached a Library and Reading Room and a Museum of Natural History. The history of this which became the Bath Literary and Scientific Institution in 1825 and later used the prefix Royal is well known and has been described by Joseph Hunter (1853) who was much involved in the early stages of its organisation and V. J. Kite (1966) among others. On 19th January 1825 the buildings in Terrace Walks were opened to the public and in 1826 the first Annual Report of the Committee of the Institution for 1825 was published. In this the Secretary is named as Mr. Woods (Henry Woods F.L.S., mainly remembered as a zoologist although he published three palaeontological papers on Bath fossils between 1822 and 1839) and the Curator as Mr. Lonsdale (William Lonsdale 1794-1871 - geologist).

Woods continued in office for an unknown period and was then replaced by J. C. Spender. But in 1838 Henry Woods was reappointed and remained in office at least two years. His date of death is unknown. William Lonsdale is a much more important figure for our purposes. Accounts vary as to when he took up his curatorship. The Institution was not finally opened to subscribers until 1825 but had been

mooted for some years previously and Lonsdale seems to have been involved in building up the early contents of the Institution's Museum from c. 1823. He did this to great effect as can be seen from perusing part b of this series of articles on the Bath Museum and his dedication to the work of the Bath Museum between 1823-1828 was often quoted and is undeniable. Today his work in setting up the Museum is almost forgotten. Sherborn for instance (1940, p. 87) mentions Lonsdale's own collections only as follows: "MS list of fossil corals ? Was in P. M. Duncan's hands. If so now in Sladen Collection in Exeter Museum. The Corals were 'a heap' in the Geol. Soc. London in 1897". No mention of Bath appears at all and it was not until Davey's remarks (1905, p. 41) about the zeal with which Lonsdale worked on the curating of the embryo Bath Museum,were read that I realised it would be worth enquiring to see what had survived. Davey mentioned that "a collection arranged stratigraphically by Lonsdale remained undisturbed until 1890 when it was unfortunately removed to the vaults" and that his beautifully written manuscript Museum catalogues had also survived till then.

These statements seemed at variance with most other published comments about the Bath geological collections which suggested the Charles Moore collection was all that the Bath Museum contained of geological importance.

John Kite, now Area Librarian for Bath to whom I must pay tribute for his kind assistance at all times, allowed me to search first for Lonsdale's MSS catalogues which if they had survived would be in store. They very soon appeared along with a very large proportion of the Institution's minute books and printed annual reports. The Bath reference library had nothing like a complete set of these latter and a previous librarian had even gone on record as saying in 1967 "part of our difficulty /in organising rescue of the geological collections/ is the very scarcity of original letters and documents which were apparently never filed by the institution officers in the 19th century". This is now untrue and one can at least gain a very good idea of what geological treasures the Institution collections may have contained at one time, and help the "busy preservation of objects of rubbish" (see back cover).

The annual reports I have seen run from No. 1 for 1825 to No. 74 for 1898 and contain a list of donations and deposits of both books, maps and museum material. Many very famous names appear as donors and although undoubtedly a lot of material is lost it seems worth while listing the donors names (see Part b).

In February 1829 Lonsdale read a fine paper to the London Geological Society based on several years work "On the Oolitic District of Bath". This pioneer paper dealt with the stratigraphy of the area ranging from the Lias to the Chalk, and describes these in sequence upwards with lists of fossils from each. This paper published in 1832 in the Transactions of the Geol. Soc. 2nd series, vol. 3, pp. 241-276, is an abridged version of a larger paper of which the original MSS in

Lonsdale's beautiful handwriting was discovered in the remains of the Institution's library.

This MSS is both a longer version of this paper on the Geology of Bath and also a numbered stratigraphic catalogue of the geological contents of the Institute's Museum up to 1829. It is entitled "Catalogue raisonee of Rocks from the neighbourhood of Bath". With the discovery of this, it was possible to identify the earliest Bath geological collections and discover that the great majority of these are the actual specimens cited by Lonsdale in his paper published in 1832, and thus of great historic interest. Other MSS Catalogues cover other collections in the Museum at this date.

Up till 1890 the earliest contents of geological interest were kept in a room at the Institution, separate from the Moore collection, known as the Lonsdale room. This room was however required for other purposes, and as a writer in 1898 (W.T ——, 1898, p. 77) says "its geological contents were thrust into a cellar and have practically disappeared from view". E. C. Davey (1905, p. 417) adds that it was removed without "attention to the order of sequence".

This historic collection can now be re-identified and curated since much of it still bears Lonsdale's original labels intact and faded but still just legible, and a start has been made on this work. When these have been identified the material without any labels may be identifiable in part by reference to the original catalogue. For material donated before 1829 a catalogue thus exists and rescue is possible, and essential.

Some of the material apart from its historic interest including some of the Rev. Benjamin Richardson's (p. 98) collection which has been in part located, is interesting scientifically. For example Lonsdale's 1832 paper (p. 274) contains a reference to an ammonite from the Bathonian Great Oolite Formation of Huddock's Hill, near Bath. The occurrence of ammonites in these beds is extremely unusual and very few have been found. The MSS catalogue repeats this reference (p. 95) but adds the registration number N 12. This specimen thus registered was found and can now be re-registered as a specimen cited nearly 150 years ago. Ron Pickford's article (Part d) on the recent history of the Bath collections shows what state these had been allowed to reach. As one of the visitors whom he helped some ten or more years ago to examine the collection then lying in crates, I must pay tribute to the way in which he has, unasked and often obstructed, preserved the collections since their transfer to the care of the City Corporation. I have memories when seeking permission to look at the collections then of dealing with people who had no idea what they were in charge of or their importance, but also resistant to their moving to a better (even temporary) home. If the City of Bath wishes these collections to remain in Bath, it should accept this responsibility

and seek qualified specialist help with them to aid Ron Pickford's valiant efforts. There are also other treasures such as the Jenyns herbarium and library which need rescue as well as these geological collections.

H. S. Torrens

REPORT of MR. DAVIES, F.G.S., on MR. C. MOORE'S COLLECTION in the BATH MUSEUM.

With regard to the disposal of the Moore Collection, I trust it will not be thought an impertinence on my part, if I remark that it will be a matter of regret to all who know it, if the Collection is allowed to leave Bath, where it has been for many years associated with Mr. Moore's name; and also from the fact, as regards the more valuable objects, of its being essentially a local one, having been derived from Geological deposits in the district, and whose Palæontology it illustrates.

Among the more valuable objects I would first direct special attention to the unique series of teeth of the MICROLESTES, the earliest remains of a Mammal yet discovered, and of which remains, besides those found by Mr. Moore, there are but three other Specimens known, viz., one in the Oxford Museum, the other two in a Collection at Stuttgardt. The Bath Specimens have been figured and described by Professor Owen, in a Monograph on Mesozoic Mammals, published by the Palæontographical Society.

Again, there are the fine series of Crocodilian remains (*Teleosauri*), found embedded in nodules in a Liassic Bed at Ilminster. These, if not unique, are exceedingly fine, and very rare; as are also the associated Ichthyosauri, Fishes and Invertebrate Remains. The value of these Lias Fossils has been greatly enhanced by the time and labour, rare skill and care bestowed upon their development from the stone in which they were found embedded by Mr. Moore.

There is also the series of Invertebrate remains which have been described and figured in the "Proceedings of the Somersetshire Archæological and Natural History Society," and in the "Quarterly Journal of the Geological Society," both Memoirs written by Mr. Moore. Most of the objects figured in the above-named Memoirs have a special scientific value, as being the type specimens of their respective species, and they also have a local value as illustrations of the Geology of the Country around Bath.

In addition to the above, many of the original Specimens of Fossil Corals, figured and described by Professor Martin Duncan in the Palæontographical Society's Monographs, are in the Collection, which also contains a large number of Specimens of remarkably fine plant remains from the Somersetshire Coal Beds. Finally, the characteristic Fossils of most of the Geological periods are very fairly represented.

The valuation, which I believe to be a truly fair one, is based on the Fossils alone, taking no account of the time and labour that has been expended on naming, arranging, and classifying; an important consideration pecuniarily, should the Collection remain where it is now located. And I may state that it is scarcely possible that so interesting a series of local Fossils can ever be made again. The Collection forms a fine Museum of itself, and should, if possible, be secured and preserved in the place where it has been formed and has acquired fame.

(Signed) *WILLIAM DAVIES.*

British Museum, London, Feb. 9th, 1882.

b) ALPHABETICAL LISTING OF THE MAJOR GEOLOGICAL DONATIONS TO THE BATH MUSEUM, (except for the Charles Moore collection for which see Part c).

These are derived from the following sources:

i) List of contributors in front of Wm. Lonsdale's MS Catalogue of 1829, an asterisk indicates that a particular name appears in this list.

ii) An incomplete set of the Printed annual reports of the Institution. These run from No. 1 for 1825 to No. 74 for the year 1898. An ammonite donated by Miss Smith in 1825 and recorded in Annual Report No. 1 will be noted as "Miss Smith Ammonite 1". The year of donation can thus be easily ascertained by adding the year 1824 to the number of the annual report, e.g. something in annual report 22 was donated in 1846. The annual reports were issued annually except for Nos 6 and 7 for 1830 and 1831 which were issued together in 1832. The annual reports were issued at least up till 1938. The British Museum (Natural History) library has a run from 1925 to 1938 and the Bath Reference Library has a very incomplete series which ends with No. 114 for 1938 so that one can only assume the war must have caused the issue of annual reports to cease.

The set I have used does not continue after 1898. Thereafter a mss list (iii) has been used which contains a list of donations from 1899 to 1934. This was made by a former assistant in the Museum and is derived from a continuation of the printed annual reports up till 1914, when the Institution minute books instead are used up till 1934. These minute books survive in store and anyone seeking further information about the Bath collections or particular collectors is advised to study these as well as the printed annual reports. One hopes the Institutions archives will not long remain in store.

The list which follows is alphabetical by name of donor with, where appropriate and where known, some biographical information and some idea of the individuals interest geologically. It must be emphasised that the list includes only geological and palaeontological material. Minerals are not included (the Frank Field collections are the major one in this category) and some donations of wholly foreign material are not noted. Many of the names listed will undoubtedly be donors of material of no, or very little, scientific interest but sufficient of the names are associated with the Cradle of English Geology for the list to be made and to allow rescue to be attempted. It must be also emphasised that it is not known how much of these collections survive, or how much has been mistakenly incorporated in the Charles Moore collection (part c), which although the most important collection at Bath is not the only collection there.

Abbreviations:

DNB = Dictionary of National Biography

L & Q = Lambrecht & Quenstedt
see GCG 1, p. 15 for ref.

QJGS = Quarterly Journal of Geological Society of London

* mentioned in list of contributors to W. Lonsdale 1829 MSS Catalogue Raisonee of Rocks from the neighbourhood of Bath.

B & B = J. Britten & G. S. Boulger. A Biographical Index of deceased British and Irish Botanists. 2nd ed. by A. B. Rendle, 1931.

W. Adye, Esq., of Bradford (-on-Avon)
Remarkably fine Dudley Encrinite 11

Lt-Col. Aldons
Quantity of fossils, minerals and shells 31

Bath and West of England Agricultural Society*
Minerals and fossils (well over 150 specimens - including 29 fossils from the Bath area). 1

This donation may have included some very historic material as the Society was founded in 1777 and is the oldest surviving agricultural society in the British Isles. It was at a meeting of this Society that William Smith who was elected a member in December, 1796, was introduced to fellow members Rev. Benjamin Richardson (q.v.) and Rev. Joseph Townsend, who thereafter encouraged him in his geological pursuits (Cox 1942, p. 31, 36 and A. G. Davis 1943). Several early geologists apart from these were members and may have given material included in this donation. Apart from agriculture the Society concerned itself with chemical analyses of rocks, minerals and soils (see K. Hudson, 1972, p. 36). The first secretary was Edmund Rack who was also Secretary of the first Bath Philosophical Society (see p. 89) and Rack is known to have been much interested in fossils.

Chas. Bayly, Esq.
Pentacrinites from Lyme Regis, Dorset. 47

Miss Beminster* (or Beaminster) who sent fossils to the Sowerby's for description in their Mineral Conchology (1812-1846) from Hordle, Hants.

Series of 102 species of Hampshire fossils 3 (some may be figured, see above).

Dr. Bliss*
Stonesfield and Greensand specimens 1
Hampstead Heath specimens 4

John Barnard, Esq.
2 Liassic /Plagiostoma/ 54

Miss Blows*

30 Arctic geological specimens 4

/Capt./ W. H. Breton (R.N.)

Fossils etc. 33

Rev. P/eter/ B/ellinger/ Brodie (1815-1897)

Vicar of Rowington, Warwickshire. Palaeontologist, especially student of fossil insecta. Made vast collections mainly divided between Brit. Mus. (Nat. Hist.) and Vienna University (see A. S. Woodward, 1904, p. 272 also obituary notices:

Quart. J. Geol. Soc. 54 lxvii-lxxii and
Geol. Mag. 1897, 481-485, 576).

2 Archaeoniscus from M. Purbeck Series of Wiltshire also "some Tertiary insects, one the only British Insect known". 70

Thomas Bunn* of Frome

4 geological specimens from Frome 2

(probably including specimens described by W. Lonsdale in 1827, Phil. Mag (2) 2, 234-5 ("On Galena in the Inf. Ool.") see also Lonsdale MS Cat. p. 77, where these are cited).

3 fossil crinoids, 5 echinoids from Vallis (Vale), Frome 16

Mrs. Calverley of Southstoke

Minerals and fossils 50

Mr. Carpenter

Fine Coal plant Camerton 6/7

J. R. Cockburn (* gives initial W.J.)

Series of specimens illustrative of Derbyshire (see under Kent) 4

Thomas Collett* Esq.

Devon Marble 3

Mrs. Cotterell

Large I.O.W. ammonite 10

Rev. G/eorge/ Crabbe* (1754-1832) The Poet.

Rector of Trowbridge 1813-1832, Wilts though born at Aldborough, Suffolk. (see DNB) He became interested in botany at an early age (see B & B, p. 75). After his move to Trowbridge he became more interested in fossils (see his Life by his son first pub. 1834. In the 1947 edition pp. 225, 267-271). In 1825 he was a guest of honour at the opening ceremony of the Institution.

45 Suffolk fossils 3

Rev. E. T. Crawley*

Fossils and Minerals 1

George Cumberland (1754-1848) of Bristol

see Keynes, 1970 and Q.J.G.S. 5, xx-xxi, 1849, and
A. S. Woodward, 1904, p. 281.

He published a book in 1826 on Fossil Crinoids in which he described the nave encrinite under the name Mitra. The "two specimens of the Nave Encrinite" donated to Bath in 1834 10 may thus be type or figured specimens. The majority of Cumberland's collection was purchased for the Manchester Museum but Jackson (1952, p. 30) lists those specimens of Mitra "lost" there. Some may be these Bath specimens.

Dr. /John Ford/ Davis (1773-1864)

see DNB and B & B, p. 86, also his letter in London Geol. J. 1, p. 96, 1847.

Fossils and Minerals (deposited)	1
French fossils	2
Tertiary freshwater specimens I.O.W.	3
Bath fossils	3

W. E. Davis

Elephants tooth, Bath Gravels	48

Rev. C. R. Davy

Timsbury Coal specimens	30

John Shute Duncan* (1769-1844) and his brother
Philip Bury Duncan* (1772-1863)

(see DNB, B & B, p. 98 also Murch, 1893.)

of Bath 1801 → , the brothers were much involved with the Lit. Sci. Inst. J.S. in 1823 and P.B. in 1826 in succession were appointed Keepers of the Ashmolean Museum, Oxford where their activities were "beyond all praise". Gunther, R.T. 1937, pp. 141-142.

Fossils and Minerals	1
Cotham ?Marble	2
London clay fossils	2
Jurassic and Cretaceous fossils	2
Mammoth (with F. Page q.v.)	2
Bath Lias Ammonite	3
Fossils	4
Trilobite	10
Elephants Molar	15

Capt. Dundas* R.N.

Mediterranean geol. specimens	4

Mr. Eastwick*

Saurian and other fossils	1

Mr. Edwards

Ichthyosaur in 1930

C. Elwes

Sundry Ichthyosaur bones, Kelston 9

H/astings/ Elwin* Esq. FGS 1813

one of the founders of the Lit. and Sci. Inst. see Hunter, 1853.

100 Rocks - Mont Blanc area 2

Lias Fossils from Charmouth 2

C. Fox, Esq. of Martock

Somerset geological specimens 68

This may be C.H.Fox of Wellington, Somerset who presented a fine collection of Greensand Fossils to the Taunton Castle Museum in 1880 (see Proc. Somerset. Arch. Nat. Hist. Soc. 82 p. 63, 1937).

Lord Halford and British Association for the Advancement of Science.

40 Kents Cavern, Torquay specimens 58

Rev. /William/ Verton Harcourt (1789-1871) of York

see DNB.

Lias fossils from Cleveland Hills, Yorks 28

J. Hill* of Paulton

1 Coal Plant 2

Lias Nautiloid from Paulton 32

Rev. /Robert/Hoblyn*

I.O.W. and Bath fossils 3

/T./ Sterry Hunt of Montreal, Canada (1826-1892)

see L. & Q. for biographical notices.

"Eozoon Canadense" from S. Pierre, Canada. 60

/Rev./ H/enry/ /or Harry/ Jelly* of Bath, 1801 -

near relative of Benjamin Richardson (q.v.) and author of papers on Bath fossils 1833, 1839. A cleric moving to Penzance in 1839.

John Phillips, William Smith's nephew and later Professor of Geology at Oxford mentions his cabinet as by inference one of the best in the Bath and Bristol area in 1829 (1836, p. xiii) and later again mentions him (1871, p. 6, 411) as one of his earliest friends and a student in the school of Richardson and Smith. This must be a reference to the year which Phillips spent at Farleigh Castle near Bath with Benjamin Richardson on his leaving school in 1815: (Quart. J. Geol. Soc. 31 p. xxxix 1875). Jelly and Phillips who were almost contemporary would both have been about 15.

H. Jelly (contd.)

In 1828 Jelly matriculated at St. Alban Hall, Oxford and was the first to discover, while still an undergraduate, fossils in the Shotover Sands (Wealden), near Oxford. Before this he had collected around Bath.

His donations to the Bath Institution were:

60 Chalk fossils, Wilts.	2
18 Transition Beds (Silurian), Glos.	2
Fossil bones and shells	8

(donated by — Jelly, Esq. so may be this Henry (Harry) or John Gresley Jelly q.v. next).

Mr. Jolly (NB. changed in MSS in Museum reference copy to Mrs. Jelly)
"Cabinet of Fossils, originally collected and arranged by Mr. W. Smith" 36

This donation must thus have been made by Mrs. John Gresley Jelly, whose husband lived at 8 Caroline Buildings, Bath and died in 1859 the year previous to this donation. In 1857 J.G. Jelly had presented to the Bath Institution some geological manuscripts which had previously belonged to Benjamin Richardson who died in 1832. The Jelly and Richardson families were closely related and it seems that Richardson's geological collections also passed to J.G. Jelly on his death. Study of Richardson's will would confirm this.

In which case this cabinet is presumed to be Benjamin Richardson's (q.v.) himself who had previously made donations himself to the Bath Institution. Of this cabinet John Phillips, who knew Richardson well, wrote (1844, p. 27)

"The Rev. Benjamin Richardson was at this time living in Bath, and possessed a choice collection of local fossils, mostly gathered by his own diligent hands. Extensively versed in natural history, and generally well acquainted with the progress of science, he was perfectly enthusiastic in following out, and liberal in enabling others to prosecute, new and ingenious researches, especially if they tended to practical and public good. He knew accurately the country in which Mr. Smith had principally worked, and was acquainted with the views entertained on the subject of fossils, which had been recorded in books, or were adopted by the collectors, who were even then celebrated in the vicinity of Bath. He had no knowledge of the laws of stratification and the connexion between the forms of organic life and the order of superposition of the strata; while, on the other hand, his new friend had very little knowledge of the true nature of these organic

Mr. Jolly (contd.)

forms, and their exact relation to analogous living types. The result of a meeting between two such reciprocally adjusted minds was an electric combination; the fossils which the one possessed were marshalled in the order of strata by the other, until all found their appropriate places, and the arrangement of the cabinet became a true copy of nature."

Henry Jelly (q.v.), (1832) cousin of John Gresley Jelly, said of him "although he was to the last a zealous collector, yet his cabinet was at the time of his lamented death, almost empty". This was because of his generosity in parting with specimens. R.I. Murchison, president of the Geological Society, says in his presidential address (A. G. Davis, 1943, p. 134) that he gave material to the Society's Museum and those of many local institutions, including as we have seen Bath. Wm. Smith (see Sheppard, 1920, pp. 216-217) mentions Richardson probably giving some collections to Oxford University.

C. S. Kensington

Minerals and fossils 12

S. Luck Kent* Esq.

"Series of Geological Specimens: illustrative of Derbyshire, with descriptive catalogue" 4

This may be a historic collection. In the former Lit. Sci. Inst. Lib. and still preserved is a MSS dated Bakewell, 1814 written by White Watson F.L.S. entitled "Catalogue of a collection of Fossils. The produce of Derbyshire arranged according to the order of the Respective Strata in which they are found as described in a Delineation of the Strata of Derbyshire which accompanies the collection." The Delineation mentioned was a published work Sheffield 1811 (reprinted 1973) with a list of subscribers but this does not contain Kent's name.

White Watson lived 1760-1835 in Derbyshire and built up many collections of local fossils for sale (see Ford, 1973) which were accompanied by printed or manuscript (as here?) catalogues. These he advertised in 1813 as "Collections of Derbyshire Fossils with Descriptive Catalogues" (Ford 1962). Such wording suggests that the manuscript list now located must have accompanied such a collection and the donation listed above as given by S. Luck Kent is the only one recorded in the early annual reports which fits the description. There is however another Derbyshire collection given by one Cockburn (q.v.). Presumably Kent (or someone) purchased a White Watson collection and later donated it in 1828 to the Bath Institution. Since the MSS catalogue survives and records the numbers written

S. Luck Kent (contd.)

on the collection, it may be possible to identify the remnants of this historic collection if any survive.

Mrs. Kenyon*

20 /Gault?/ fossils Folkestone 2

Mr. Lary

Carb. Limestone and Lias Fossils 14

/George Henry Law, 1761-1845/

Lord Bishop of Bath and Wells* from 1824 to 1845 (see DNB)

Specimens from Banwell Cave, Mendips 1

Law became Bishop of Bath and Wells in 1824 and DNB records "his favourite retreat was Banwell Cottage", and Banwell Cave belonged to him at this time. John Skinner (q.v.) (see Coombs & Bax 1930, p. 188-9) records a visit there in 1828.

Dr. Lemann. per Miss Lemann.

1 Sackful of geological specimens in 1926 ("expert" opinion in June 1927 of "no special value").

Miss Lockey of Swainswick

Sundry Minerals and fossils 50

WILLIAM LONSDALE - FIRST CURATOR (1794-1871)

William Lonsdale was born in Bath on 9 September 1794. After service in the Peninsular war he returned to live in Batheaston in 1816 in a house "just past the new /congregational/ chapel" in the High Street which can still be seen and which bears the faded name "Lonsdale" on each gatepost.

Lonsdale's attention turned to geology accidentally but with great effect. In 1825 he was officially appointed the first curator of the newly formed Roy. Lit. Sci. Inst. and remained in this position until 1829 when he was appointed curator and librarian (and also later editor and secretary) of the London Geological Society. He resigned this post in 1842 owing to ill-health and thereafter lived in comparative seclusion in Devon, then Melksham and later Bristol where he died in 1871 on November 11.

For details of his career and important geological work the following should be consulted:

Dictionary of Scientific Biography

DNB

Obituary notice in Q.J.G.S. 28, xxxv-xxxvi, 1872

W. S. Mitchell, 1872, pp. 332-342

J. Murch, 1893, pp. 384-5, 434-437

W. Lonsdale (contd.)

H. B. Woodward, 1907
W.-T————, 1898
P. Tasch, 1950
E. C. Davey, 1905

800 Geological specimens from the neighbourhood of Bath 1
69 species of land and freshwater shells 1
290 Fossils 1
Very fine specimen of palatal teeth from Bath Lias (presented jointly with J. F. Davis (q.v.) and J. C. Spender (then Hon. Sec.) 4

Lt. & Adjutant Lonsdale*
4th Kings Own Regiment, nephew of William Lonsdale (q.v.)
(see Mitchell, 1872 p. 333, Murch, 1893 p. 435)

Agatised fossils and 2 from Antiqua 2

P. E. Martineau
Geological specimens (valuable) deposited in 1927

Mrs. May
Collection of fossils in 1909

Capt. McNair
Head, femur, vertebrae and scutes of Teleosaurus and various other fossil saurians, and a fossil tree from Oxford Clay, Lacock area, Wilts. 25

Canon /Richard John/ Meade (1794-1880)
A series of Palaeozoic and Mesozoic fossils from his collection 67

He was vicar of Castle Cary, Somerset from 1845-1880 and also gave a collection to the Taunton Castle Museum in 1876 (Proc. Somerset Arch. Nat. Hist. Soc. 24(1), p. 63, 1879). It is not known what, if any, his relation was to Thomas Meade of Chatley (q.v.).

T/homas/ Meade (died aged 90 in 1845) of Chatley, Nr. Bath.
One of the original honorary members of the Geological Society of London in 1807 (Woodward, 1907, p. 269). A collector who supplied fossil material to many early palaeontological writers, e.g. James Parkinson (1804-1811), Joseph Townsend (1813) and the Sowerbys in their Mineral Conchology 1812-1846, from the Bath district.

6 fossils (these may be figured specimens?) 2

Archdeacon Moysey*
friend of Rev. J. J. Conybeare. (see Bath Chron. Feb. 22, 1872, p.5)

8 Fossils 3
74 Miscellaneous geological specimens 3

/Sir/ R/oderick/ I/mpey/ Murchison (1792-1871)

Eminent geologist see DNB and L. & Q. also Geikie (1875) for biographical details.

Took up geology in 1824 and in 1825 on a geological field trip met Wm. Lonsdale (q.v.) "a tall, grave man with a huge hammer on his shoulder" in a Bath quarry and found him so full of information that Murchison stayed some days at Bath under Lonsdale's guidance (Geikie, 1875, vol. 1, p. 128).

Presented:

(i) Series of specimens illustrative of parts of Sussex, Hampshire and Surrey 3

this was the subject of Murchison's first published paper in 1825. Trans. Geol. Soc. (2nd series) 2, 97-

(ii) Series of specimens illustrative of the Brora coal field 3

this was the subject of his second paper, 1827. Trans. Geol. Soc. (2) 2, 293-

Some may thus be cited.

Capt. Newenham

Several fossils and minerals 32

Sundry fossils 39

Lord James O'Brien*

A valuable collection of Bones from a Cave at Torquay 4

Major (14) Olivier

Lt. Col (38) Olivier

specimen of Cidaris (Corallian) Calne 14

Cephalopods and 4 pieces of Ichthyosauri 38

F/rederick/ Page* (1769-1834)

see DNB and Bath Chron. Feb. 22, 1872, p. 5 "Colonel Page, the chairman of the Kennet and Avon Canal Co., deserved to be remembered for to the early geologists he was very much what Sir W. Watson was to the early (Bath) astronomers; at his death he left /Wm./ Lonsdale (q.v.) £1000".

Fossils and specimens from the Paris basin 1

431 rocks from the Rhine 2

Mammoth (jointly with J.S. Duncan q.v.) 2

Dr. /Charles Henry/ Parry (1779-1860) of Bath

see DNB, March 1893 for biographical details.

Doctor like his father Caleb Hillier Parry (1755-1822) who took an active interest in geology. Caleb had proposed publishing a book on Gloucestershire fossils in 1781 (see p. 89 and Glos. Notes

Dr. Parry (contd.)

& Queries, 1890 4, 507-508). He continued collecting and in 1810 on the death of William Cunnington of Heytesbury, Wilts. purchased his famous collection (see J. Britton, 1814, p. 313-4, R. Cleevely, 1974, p. 421).

In 1811 Warner (1811, p. 180) mentions "the superb and extensive collection" of fossils Caleb had accumulated and his specimens were mentioned by Joseph Townsend and James Sowerby in his Mineral Conchology.

On his death in 1822 Caleb's collections are assumed to have passed to his son Charles. He donated to the Bath Institution.

Silurian fossils 26
Quantity of fossils and minerals (this donation was given by C. H. Purry - assumed to be a typographic error) 33

Jas. Pearse* Esq.

2 Portland fossils Swindon 4

/Joseph/ Channing Pearce (1811-1847) of Bradford-on-Avon

see L. & Q. for biographical notices.

His fine collection (see H. B. Woodward 1886) went eventually to Bristol City Museum in 1915 (Sherborn, 1940, p. 105).

Several specimens of the Bradford Apiocrinite (crinoid) (these actual specimens are cited by H.B. Woodward et al. 1893, p. 133). 11

Rev. F/rancis/ J/ohn/ Poynton of Kelston

Genealogist and historian.

Fossil Wood Lias, Kelston 69
Slab of Fossiliferous Lias 71
Local fossils in 1930 (this latter by his executors?)

S/amuel/ P/earce/ Pratt* (1789-1863) F.R.S.

For biographical information see L. & Q.

A. S. Woodward, 1904, p. 319, obituary notice in Quart. J. Geol. Soc. 20, xxxvii-xxxviii, 1864.

Turned to geology in 1812 and came to reside at Bath in 1823 where he was an active member of Lit. Sci. Inst. He left Bath in 1839. He published several papers some on local geology some on foreign geology, some published abroad.

Pratt collections were divided according to Sherborn (1940, p. 109) between the Brit. Museum (Nat. Hist.)., Geol. Surv. Mus. and the

S. P. Pratt (contd.)

Geological Society Museum for which latter he also did considerable curatorial work. Some figured ammonites went to Bristol and other figured specimens went to the Museum of the Royal College of Surgeons. His Bath donations (noticed by W. D. Conybeare 1835, p. 100) comprised:

(i) Fossils 1, 10

(ii) Fossils (mostly foreign) 2, 3, 4, 5, 9

(iii) One new species of Encrinite from Bath 3

This must refer to a specimen or specimens of the crinoid Millericrinus pratti described by J. E. Gray in 1828 but not figured until the original drawings were re-issued in 1924 with descriptions by F. A. Bather in Spicilegia Zoologica, part 3, 1924 (see also Bather, 1926). S. P. Pratt supplied J. E. Gray with the original material.

(iv) Fossil Ox from Gravel of Twerton 14

Prof. /Sidney H./ Reynolds, 1867-1949

On staff of Bristol University, 1894 onwards.
Professor of Geology 1910-1933. Emeritus Professor thereafter.
(see Quart. J. Geol. Soc. 106, lxix-lxxi, 1951).

Mendip Silurian fossils in 1906

- Reynolds, Esq. & Master F. Miller

Christian Malford (Oxford clay) cephalopods 37

Rev. B/enjamin/ Richardson* (c 1759-1832) of Farleigh Hungerford.
see Mitchell, 1872.

Famous for his part in the Bath Geological Triumvirate (Davis, 1943); it was he who first wrote down in June 1799, the order of the Bath strata at Wm. Smith's dictation at the house of the third member of this triumvirate Joseph Townsend at 29 Pulteney Street, Bath, where it is recorded by a tablet.

see also under Jolly (recte J. G. Jelly) for further details.

Donations:

Fossils 1

30 Forest Marble fossils from Farley 4

Mr. G. H. Rogers

Bath Great Oolite fossils 71

Hon. Archdeacon St. Leger*

Irish deer cranium and antlers 3

Miss Selwyn

Purbeck Fossil Fish 34

Dr. Shoolbred*

3 London clay specimens 2

Miss Shute

West Indian Fossils 6/7

Rev. John Skinner* (1770-1839) of Camerton

Best known as an antiquary see DNB and H. J. Hunter, 1872. His MSS are preserved in the British Museum library and extracts are reproduced by H. Coombs and A. N. Bax (1930) covering the years 1822-1832.

25 Carboniferous plants, Camerton 2

ditto (locality not stated) 5

J. Soden, Esq. (see Murch 1893, p. 141, 369)

Sundry Fossils and Minerals 39

J. H. Spry*

2 London clay fossils 2

Mr. Steart

70 mainly Warminster Greensand fossils 3

S/amuel/ Stutchbury (1798-1859)

see obit. Q.J.G.S. 16, xxix. 1860

at this time curator of the Bristol Philosophical and Literary Institution.

Greensand Aptychus 22

J. Templeman, Esq.

Fine specimens of Ichthyosaurus communis 4

Daepaedium politum 4

Lias of Lyme Regis

Fossil Wood Charmouth 12

Unique specimen of Pentacrinites briareus from Lyme Regis, p.10 13

14 (p. 20) records the donation of "an etching of the Pentacrinites briareus printed in fossil sepia " by J. Murray, Esq. which must refer to the specimen, which is thus a figured specimen.

Mr. Thring

Mounted remains of Ichthyosaur from Castle Cary, Somerset, in 1906

Lady Frances Trail* (relative? of next)

8 chalk fossils 3

Rev. Mr. Trail

Irish specimens and fossils 2

inc. Irish elk 2

Lady Tuite

Sundry Fossil shells 6/7

T. B. Vowles

Midford fossils 52

Mrs. Walker

Collection of fossils in 1909

Melmoth Walters Esq. (1793-1868) of Batheaston

(see Dobbie, 1969, p. 82)

Fossils 44

Rev. R/ichard/ Warner (1763-1857) of Bath

Bath Historian and author (see DNB) and also a friend of the father of English Geology William Smith. Cox (1942, pp. 31-34, 98) discusses Warner's connection with Smith and the geological information derived from Smith which Warner published including the "Fossilogical map of country 5 miles round Bath" which appears in Warner (1811). Smith himself recorded in 1818 (in Sheppard, 1920, p. 215) that Warner was one of the first five "scientific gentlemen in the West"of England who became acquainted with Smith's view on stratigraphy and fossils.

Chesil Bank, Weymouth, Dorset pebbles 14 & 30

" " Portland, " " 18

Budleigh Salterton, Devon " 24

See also below.

Mrs. Sarah Warner

"By bequest a collection of British and other shells, minerals and fossils". 25

This donation in 1849 was made eight years before Rev. Richard Warner died. It is known that his wife outlived him and died in 1865 and that her name was Anne, so she cannot be the donor. DNB also speaks of only one daughter Ellen Rebecca Warner who died in 1833 so again she cannot be the donor. Richard Warner himself spoke of his "large and fine collection of organised fossils" in 1830 (p. 206) as one he no longer then possessed, so presumably he disposed of it sometime before his death, and the present donation has no connection with him.

Miss West

Camerton coal fossils in 1912

Mrs. Wilkinson

"A quantity of fossils, minerals and shells 32

It is thought this donation in 1856 is the collections of Charles Hunnings Wilkinson (1763 or 64 - 1850) a pioneer in

Mrs. Wilkinson (contd.)

medical electricity who moved to Bath in c. 1810 and there lectured regularly on "experimental philosophy, chemistry and mineralogy". He was also instrumental in founding the third Bath Philosophical Society in 1815. An interesting biographical notice is by J. L. Thornton (1967).

In his book "Analytical Researches into the Properties of the Bath Waters" published 1811, he displays considerable knowledge of geology and stratification, mentions his "ingenious friend" Mr. Wm. Smith and a geological map of the area supplied by another friend Henry Wansey, better known as an antiquary and traveller (see DNB).

On p. 144 he mentions his "having for some time directed his attention to an arrangement of fossils and minerals"and that he proposes to adopt the plan recommended by his friend W. Smith "of placing in their respective order those fossils which are peculiar to certain strata" and appeals for further specimens.

He died in 1850 leaving all his property to his wife Elizabeth. A donation by Mrs. Wilkinson in 1856 would thus fit with it being C.H. Wilkinson's historic collection.

Wilkinson was elected an ordinary member of the Geological Society in 1813 (Woodward, 1907, p. 274 and published a geological paper in 1815 "On Septaria from Bath" in Ann. Phil. vol. 6, p. 409.) Joseph Townsend was a geological friend of his (as also of Jacob Wilkinson below).

Rev. E. F. Wilkinson

Flints and Agates containing fossils 6/7

Jacob Wilkinson of Springfield, near Bath

"whose collection of fossil bones is, perhaps, the finest private one in England; and whose liberality is ever ready to gratify reasonable curiosity with a sight of them" (Warner 1811, p. 177). Presented some to Geological Society Museum.

Friend of Joseph Townsend, another famous Bath geological pioneer who records and figures some of Wilkinson's specimens in his book 1813 "The Veracity of Moses" (see GCG 2, p. 67), e.g. pp. 229, 275, 423, 447, pl 19.

Donations:

(i) Important collections of Saurians, Fish and Crinoids from the Lias, one, presumably of this donation, that figured by 2

Jacob Wilkinson (contd.)

H. Woods (q.v.) 1839, pp. 282-3, an Hybodus spine? from the Lias of Weston.

(ii) Palatal teeth and radius of "Balistes", Lias near Bath 4

(iii) 7 select fossils 6/7

(Jacob Wilkinson may be the same as the original honorary member of the Geological Society in 1807 mentioned by H. B. Woodward (1907, p. 269) as Joseph Wilkinson, Bath.)

Rev. Mr. /David?/ Williams; (1792-1850)

see DNB

Marston Magna Ammonite marble specimens 9

Edward Wilson (1848-1898)

Curator of the Bristol Museum (see L. & Q. for biographical notices).

Collection of Dundry Inferior Oolite fossils 72

Rev. H. H. Winwood (1830-1920)

see p.112 Honorary curator to Bath Institution

For collections see Cox & Arkell, 1948-52, p. xxiii

Elephas from Victoria Gravel pits 70

/Henry/ Woods of Bath, see p.

First Hon. Sec. of Bath Institution

Zoologist but wrote also on palaeontology. Wm. Lonsdale's published paper of 1832 (see p. 90) includes a list of fossils from the local Gravels from "his friend H. Woods, Esq. F.Z.S."

Saurians and other fossils (many alluvial) presumably those cited above 1

Saurian vertebrae and other fossils 2

Alluvial fossils 3

Matthew Wright* of Bristol

a fine specimen of Astraea basaltiformis 1

see GCG 1 14 and

Sherborn, 1940, p. 147 and

Bristol Inst. Report 5 p. 21, 34. 1828 when he is recorded as then of London.

Miss Yates

3 Fossil Corals Transition Limestone, Westmoreland 14

c) THE CHARLES MOORE GEOLOGICAL COLLECTION

Charles Moore (1814-1881) was the epitome of the leisured Victorian scientific amateur and true to 'type' indulged a passion for collecting. Born in Ilminster he moved to Bath when he was 23 (1837) and seems to have developed his interest in Geology at about the age of 25. His attention was directed to Geology at this time by an incident which he recorded in the Proceedings of the Somerset Archaeological and Natural History Society for 1852. "An old school house was being renovated, and two boys were amusing themselves with a pebble or nodule they had found in the rubbish. This in rolling from one to the other separated, and by a lucky chance the pieces were looked at and preserved. In the centre and naturally at the point of separation was a beautiful fish of the extinct genus Pachycormus". In later visits to Ilminster, Moore found the bed from which this fish had come and over the years found many more beautiful specimens of fish and reptiles which became the nucleus of his growing collection. This story he repeated to the British Association for Advancement of Science meeting held in Bath in 1864. He then said that the school was the one where as a youth he had had his ears boxed and he was whipped!! He thought this a lowly introduction to Geology but one of which he was very proud, a sentiment that brought him loud cheers from the assembled meeting.

During these early years he was working as a book seller and when his father died in 1844, Charles moved back to Ilminster to run the family book and priting business in which he continued until he was 37 or 38 years old. During this time he built up a large and representative collection of fossils from the Liassic strata around Ilminster and became a member of the Somerset Archaeological and Natural History Society at whose annual meeting in 1849 he displayed a wide range of his finest specimens. It was during the latter part of his time at Ilminster (his early thirties) that he made contact with many important geologists and the value of his collection became known. One of the most influential of his early friends was Thomas Davidson the Brachiopod specialist who made much use of the Moore collection and gave Moore useful advice and help for many years.

In 1853 Moore moved back to Bath again and married Eliza Deare with whom he settled at 6 Cambridge Place. This was a fortunate marriage which henceforth enabled him to apply most of his time to Geology. This was the beginning of Moore's most active period. He was elected a fellow of the Geological Society in 1854, was a founder member of the Bath Natural History and Antiquarian Field Club in 1855, elected a member of the British Association in 1859. He was also an honorary member of the Geologists Association (1871). In 1853 he also became a member of the Bath Royal Literary and Scientific Institution and was offered the use of their large rooms as a base for his geological collection which he proposed to turn into a free

museum. From then on the collection grew rapidly as Moore looked in new areas. His attention became directed to the Mendip Hills, Dundry, South Wales, and the coastal outcrops of Rhaetic strata. From all of these places he collected vast amounts of material for hand sorting at his home. In this way Moore was able to add many new species to those known from the Rhaetic and Liassic and was able to recognize the affinities of some of the 'abnormal' sediments found around the Mendips with European sediments of the same age.

His attention to bulk collecting and careful hand sorting paid off time and again. In 1858 he purchased 3 tons of greenish clay dug from a fissure at Holwell near Frome, which after nearly 3 years careful sorting yielded him a total of 27 mesozoic mammal teeth. The rest of the fauna indicated that the fissure was of Rhaetic age and hitherto only one poorly preserved mammal tooth had ever been found from sediments so old. The clay also yielded about one million other specimens including around seventy thousand Shark (Acrodus) teeth and from Moore's papers it is clear that this was no singular occurrence but a collecting technique which he frequently used! Charles Moore also had a great interest in larger vertebrate remains and by 1856 he had at least 23 Icthyosaurs mounted on the walls of his museum. By 1879 the collection had grown to at least 43, more or less perfect examples of Icthyosaur, Plesiosaur and Teleosaur many of which are unrivalled outside of the British Museum and Cambridge. Over only 1 specimen, that of a Rhynchosaur, did he admit defeat in its preparation.

In addition to his own collections, his museum came to contain many specimens donated by other geologists as well as several purchased specimens. A typical example was a piece of Jet measuring 18 inches by 12 inches purchased in Whitby in 1866. for Five Guineas, the specimen like so many others is now unfortunately missing. Donations included a fine series of fossils from the Solenhofen lithographic stone amongst which were a series of ammonite aptychi on which Moore partly based papers in 1851 and 1879. There were brachiopods from the Jurassic of Normandy and Coal Measure fish from Staffordshire. The age of the specimens in his collection ranged from remains found in a Roman coffin and mammals from the Bath glacial drift down to the Silurian. In his later years he even took part in the search for Precambrian life examining many sections of the so-called Eozoon canadense which are still preserved. The majority of his collection was however Jurassic in which he specialized and from which his important specimens came.

Moore was publishing papers for thirty years, his first in 1851 at the age of 37 and the last shortly before he died in 1881. In these papers he described many new species or figured many continental species for the first time in this country. In addition to his own new species many of Moore's finds were described by experts in individual fields. Richard Owen described Moore's mammal teeth and some reptile remains, Davidson described many of Moore's brachiopods in his monumental monograph

on British Brachiopoda. Duncan described the Liassic corals in a Palaeontographical Society monograph, Jones described the Estheriae, Woodward described Moore's Crustacea, Brady the Foraminifera and Phillips his Belemnites.

Moore himself concentrated mainly on the gastropods and Bivalves of which he described very many species. It is only fair to note that several later workers such as E. Wilson considered Moore to be sometimes rash in his creation of new species and many of the figures to his papers are of poor quality, making it sometimes difficult to reach precise conclusions on species assignment, especially in those cases where the original Type specimens are now missing or damaged. His other speciality was among the Brachiopods with the micromorphic groups which he first discovered at Dundry and of which he described many new types. The Moore collection therefore became famous as a store of new and figured specimens and also as a collection containing perfect examples of many rare species. Perhaps just as important, it was a thoroughly representative geological collection especially of the rocks to be seen in Somerset and was on free access to the public.

Moore was the first person to recognize the Rhaetic in this country as an attenuated equivalent of the continental Rhaetian and to apply that name to the British formation. He was the discoverer of British early mesozoic mammals and was the first to recognize the value of 'abnormal' stratigraphy by studying fissure deposits in the Mendips and elsewhere. He became one of the first people to make extensive use of micropalaeontology and develop micropalaeontological techniques. When, after moving to Bath in 1853, he became agent for emigration to Queensland, he obtained many samples of Australian fossils and this enabled him to recognize the existence of Mesozoic rocks on that continent. He went further than this in attempting to correlate Australian rocks with British, an idea that was far too radical for most of his contemporaries. His intimate knowledge of local strata and faunas enabled him to correctly place the age of disputed formations such as the White Lias, Southerndown and Sutton Stones of South Wales. There had been much debate about the ages of these rocks which caused him bitter rivalry from professional geologists, even to the extent of having his papers delayed in publication, that the 'professionals' might get in first. Moore's collections from all these places filled his museum and it was mainly these that were the key to his major contributions to geology.

By 1874, the collection had grown very large and a gallery to take further specimens was proposed. This was eventually added in 1875 from a donation of £500 by Handel Cosham, another local amateur geologist. Moore rearranged the collection and the gallery seems to have taken the more recent geological specimens; however he still complained of lack of space. Most of the important Jurassic material remained in glass-topped table cases where they were arranged in stratigraphic and

zoological order. A guide to the collection was published for the 1864 British Association meeting held at Bath to which Moore was a local secretary. This guide was reprinted several times over the years but unfortunately there is no itemised catalogue to the collection, so we cannot know its full contents and can only guess by reconstruction from these old guides and Moore's papers. There are also just a few old photographs of the museum room taken some time prior to 1876 which are of some use.

After Moore's death on December 7th, 1881, an appeal was set up to purchase the collection for the city. W. Davis from the British Museum was asked to value the collection, which he considered to be worth around £1,100. The appeal raised £1,207. 4. 6d. and the balance was used to pay various parties for rearranging the collection and for the erection of a brass plaque, commemorating Charles Moore. Moore's friend the Rev. H. H. Winwood was put in charge of the newly acquired collection and was appointed honorary curator in 1883. There is also mention in the annual reports of the Bath Literary and Scientific Institute that certain members of the British Museum were invited to Bath to help arrange the collection. Probably not all of Moore's material was in the museum at that time as he apparently did most of his preparatory work in the cellar of his house. It seems that some at least of the material left with Moore's widow was eventually given to Winwood and was later dispersed to various individuals and establishments. It was probably between the years 1881 and 1887 that certain 'Type' material seems to have gone astray. Reports for 1884 and 1886 record "The lack of use of the scientific collections" and also "Turning to the Scientific department, little more can be said than that the various collections in the museum are cared for from time to time". However they mention that Winwood had arranged the geology admirably.

Edward Wilson checked the Moore collection gastropods, some time around 1887 whilst preparing a book on Jurassic gastropoda with W. H. Hudleston. Many of his name corrections and synonyms are preserved today, written on Moore's old labels. Even by that date, however, several specimens were missing and are recorded as "not in Bath Museum" in Wilson's book. They have also been omitted from a list of Types in the Bath Museum that Wilson prepared at this time. Among the important specimens missing were a series of gastropods from a Liassic limestone fissure at Holwell including new species and ones that correlated the sediments to European deposits.

When the old Literary and Scientific Institution amalgamated with the Bath Atheneum in 1899, Moore's museum was moved to a new room upstairs but the large wall mounted reptiles remained downstairs. Winwood rewrote the old museum guide according to the new layout of the collection which had apparently also been enlarged by various donations from later geologists. Most of the specimens remained in their original cases although the case numbers were changed. Some of the more recent

material was mixed up in cases on the landing outside the new Moore Room. Most of Winwood's museum guide produced in 1900 is a straight repeat of Moore's 1864 guide but this is useful in that it helps to indicate the continued presence of many specimens. Of these a series of Upper Jurassic mammals including Purbeck examples from Swindon are recorded from cabinet six. These specimens have since 'disappeared' a fact much regretted by recent vertebrate palaeontologists.

After Winwood died on Christmas Day, 1920, the geological collection fell into further decay and probably some material became damaged or lost at this time. Some of the old annual reports of the Bath Literary and Scientific Institution record vandalism and the attempted removal of objects from the building. C. D. Sherborn (1940, p. 97) records that in 1923 the collection was "in bad condition". He also says the collection was cared for from 1925 by Winwood, not an easy task for a man dead 4 years. In 1925 Dr. F. S. Wallis started to relabel the collection in the Moore Room for a small honorarium but this job initially could only be done in the summer months. He was able to start cataloguing the Moore Collection a task never previously properly undertaken. About this time R. B. Newton of the British Museum (Nat. Hist.) was also helping according to Sherborn, but Newton, too, died in 1926. Conditions in the centenary year of the Bath Royal Literary and Scientific Institute in 1925 had become so bad that "centenary celebrations could not be held because the Museum was not in a fit state" (Kite, 1966, p. 281).

Wallis continued his cataloguing task until 1932 when the majority of the collection had been processed. However there was still some material preserved in old drawer cabinets probably much as it was when Moore last handled it. In 1932 the institution moved to new premises in Queen Square, Bath as a new road scheme meant the demolition of their old building, so Wallis had to pack up all the collection and lay it out again in new rooms provided for the purpose.

Early during the second world war, the Queen Square building was requisitioned and once again Wallis had to pack up the collection. This time he was given only two days to do it in. The collection was sent to Bristol Museum for the duration where despite the extensive air raid damage to the building it escaped harm, stored in the cellar in its wooden packing crates.

Following the war, the Moore Collection remained in its crates, according to Wallis almost untouched for many years. Meanwhile the Bath Royal Literary and Scientific Institution had become defunct in 1958 and the custody of their library and collections (including the Moore Collection) passed to the Bath Corporation. The Queen Square building was taken over as the present reference library and display rooms. The Moore Collection, still in its crates eventually came back to Bath in 1959 to rejoin the large Icthyosaurs and Plesiosaurs which had remained on the walls in Queen Square. The story from there on is best told by Mr. R. Pickford who amongst other duties looked after the Moore specimens and was formally appointed

to their curation in 1968. From then on he undertook the unpacking, cleaning and remounting of the specimens, a task which continues today although most of the important recognized material is now safely stored in special racks with the Type and figured specimens in their own locked cabinet. There are now also limited facilities for the study of the collection both in Bath and for the borrowing of material by research workers.

This, however, is not the end of the story. During the 94 years since Moore's death the collection has had a chequered career of care and neglect with occasional crises of whether it would be sold, given away or even remain in Bath. In this time specimens have degenerated, been damaged, lost or simply been mixed up. The most obvious errors have been rectified by Mr. Pickford, especially with the aid of Wallis' manuscript catalogue and numbering. There is also a published list of Types and figured specimens produced by Wilson in 1892 although this is no longer completely correct. Many specimens have been remounted or treated for damage and decay, including a whole series of Icthyosaurs which were sent to Cardiff in 1963 for treatment by Dr. R. M. Appleby to arrest the growth of Pyrites Mould.

Careful checking of specimens against the catalogues and with Moore's original descriptions, shows that some of the material recorded as 'Type' is not. In some cases specimens are damaged, in others not the full number of individuals in the original description are present and in a few there are too many! Most of the groups are in need of taxonomic revision and study. Various workers have in fact studied parts of the collection in recent years. In 1963 Dr. L. R. Cox redescribed Moore's Rhaetic Bivalve genus Pteromya and designated Lectotypes and Paralectotypes but this remains to be done for most of the collection. Dr. P. Baker of Derby has been studying the micromorphic brachiopods and Madame Beauvais (Paris) has been borrowing the Liassic corals which work she has now finished. The Microlestes teeth (mesozoic mammal) have been studied by several vertebrate palaeontologists in recent years. Work of this kind indicates what has happened to the collection. Of the original mesozoic mammal specimens, only 15 teeth now remain and even one of these has been replaced with a fish tooth! Similarly Dr. Baker has found that several of the Thecidean Brachiopods had been transposed between boxes. The present author has since been working through the gastropods and Bivalves and has found a similar tale. There seems to be at least 13 Type and figured gastropods missing from the Holwell and Charterhouse alone. Of the specimens recorded in the catalogue as present, some seem now to be only represented by pieces of matrix and others are damaged.

A task to be undertaken is to look at the Moore Collection and arrange the Types in terms of modern taxonomic practice. For instance where Moore described only a single specimen of a species, we can recognize that specimen as the holotype

but where as more often he described a range of specimens, we must identify all the members of the type series. These specimens have not in all cases been kept together and some will not be labelled as 'Type'. It is then necessary to designate a lectotype nearest to the original description and label the rest of the type series as can be identified as paralectotypes. Further material subsequently collected by the author of a Species from the same horizon and locality is also of use and can be called metatype. This could certainly be the case with many specimens in the Moore Collection. In some cases where the type series is now missing the metatype material is all that we have to go on to know the author's original intentions. In the Moore Collection, some of the later collected metatype material is better preserved than the originally described Type series. This is the case with the oyster "Ostrea" fimbriata the holotype of which is but a fragment of the shell margin.

The future needs of the collection are, firstly the relocation of lost or dispersed material and secondly the publication of an up-to-date catalogue of Types, figured and important specimens. At least some of the dispersed material has been traced but there is more that it yet to be found. Moore's Australian types and probably other Australian material are in the British Museum (Nat. Hist.). In recent years the Institute of Geological Sciences have had two boxes of Upper Lias specimens in their care. Manchester Museum possess some ammonite material from the collection of S. S. Buckman who had been given it by Winwood from the Moore collection. A large amount of important material has recently been relocated at the Somerset County Museum, Taunton to whom it was given in 1905 by H. H. Winwood as duplicate material! (who received it from Moore's widow). Other material given by Moore himself went to the Museum of the Royal College of Surgeons London, the Frome Literary and Philosophical Institution Museum, the Geological Society of London Museum and the British Museum (Nat. Hist.). Another collection of fossils made by Charles Moore ominously found its way to the Bournemouth Natural Science Society in 1911 as a donation from Dr. Norman of Bath and other parts of Moore's collection may have suffered a similar but as yet unknown fate.

The material which found its way to Taunton was recently looked over and amongst other important material yielded various specimens of figured micromorphic brachiopods, and rare duplicate material. One find was a pill box full of Spiriferina' minima no other specimens of which have been seen and the affinities of which had proved a problem to brachiopod workers for many years.

Meanwhile the uncatalogued specimens at Bath are being sorted and this has already turned up some very interesting material, including members of the type series of 3 species of gastropod of which no other specimens remain. In one set of small glass tubes were several beautifully preserved teeth of a shark Dalatias barnstonensis which was only first described by Sykes in 1971 and is a

a very rare find.

Not only Moore's specimens have to be traced but also his manuscripts, which may contain a catalogue of specimens in the collection or draft papers never published. One paper promised by Moore but never published was on the Geology of the Holwell area (from where the mesozoic mammals came). Another important manuscript would be that of a monograph on British Liassic Gastropoda written by Moore and Ralph Tate some time in the 'Seventies'. It was seen by Wilson when compiling his catalogue of Types in 1892 but I have seen no later reference to it.

Most of the gastropods and bivalves have been borrowed by the present author for description and refiguring and it is hoped that a new catalogue of types will soon be available. Such a catalogue is desirable as even as recent as 1968 one of Moore's species was redescribed without reference to the Type, possibly because the author did not know of its location or continued existence.

The Moore Collection seems at least for the present to have been brought back from the brink over which so many other collections have disappeared to be lost or dispersed. By reading Moore's own accounts of what was in the collection it is clear that a great deal of material has been lost over the years but what remains is of inestimable value particularly for those interested in the Geology of Somerset or the faunas of the Lias. The collection of vertebrate remains alone not only scientifically irreplaceable (some are unique and others very scarce) but at a material level must have a commercial value of many thousands of pounds. Perhaps, just as important as this is that the Moore Collection is once again capable of becoming an important "living" study and display collection. Much has already been done towards this end by the present curatorial assistant but too much through his own efforts and against the resistance of those who control the fate of the collection. There is however now a special display area in the reference library at Queen Square, Bath, given over to display of some of the more attractive specimens of which there are very many. However the struggle to maintain the Moore Collection was and still is an uphill one, perhaps partly because it is in the hands of a civic body and not a scientific body with experience and knowledge of scientific specimens. In some ways it has fared better than many other collections because a series of people over the years have been willing to work on it. There are many collections around the country which are still in need of the 'first aid' that the Moore Collection is receiving, but perhaps this is a job that the formation of the Geological Curator's Group will in some future cases alleviate.

C. J. T. Copp,
Keele University.

d) THE BATH COLLECTIONS FROM 1959-1975 AND THEIR FUTURE?

The Charles Moore Collection entered yet another phase of its long, and sometimes unfortunate history, when, in 1959, the assets of the Royal Literary and Scientific Institution passed into the care of Bath City Corporation.

The Collection had been in store at Bristol Museum since 1940 and in 1957 the then Director of that Museum made a plea for its removal as it occupied valuable storage space. The following year a trustee of the Royal Literary and Scientific Institution was in touch with a local Public School with a view to housing the Collection with them. The Headmaster was only too willing, and expressed his "... strong hopes that the Collection would not be allowed to go to Bristol". Sometime later the same trustee expressed his concern at suggestions that the whole of the Geological Collections be passed to Bristol University, and wanted assurance that the Moore Collection "... be retained in the building which was built for the purpose". (The "Moore Room" had been built at the rear of 18 Queen Square when the Institution vacated their premises at Terrace Walk.)

The Moore Collection, contained in 58 wooden boxes, was eventually returned to Bath in 1959 and stacked in the Moore Room, which already contained most of the museum collections of the former Institution. Fixed to the walls of this room were 34 large frames containing Ichthyosaur and Plesiosaur remains (3 were plaster casts), and in addition there were some fine Coal Measures plants from Radstock. Six large storage cabinets with drawers at either end were also found, containing a catastrophic mix-up of specimens, large and very small!

In various parts of the building, and even in the cellars under the road, more valuable geological material was discovered, and in the yard, amongst a heap of masonry, and supporting a thriving colony of moss, were some fine specimens of petrified wood from the Portland Dirt Beds.

In the basement was a collection of minerals, each specimen on wooden tablets, with data, and each layer of minerals separated from the other by newspapers.

The building at 18 Queen Square was principally used as a Reference Library and the sole reason for the author's presence there was that of "general factotum", to move material from place to place as the builders went about the alterations. The fact that he had a general knowledge of Geology, and an immediate grasp of the importance of the Moore Collection, was incidental. As no official backing was given to see that the Geology came to no further harm, it became a personal matter which resulted in numerous tussles with the builders, especially when

some 12 inches were broken off from the end of a very large mammoth tusk by one of them who claimed that he had been told by someone that it was of no use and could be used as hardcore!

Sometime after this the Mineral Collection had to be moved to give the builders access to a wall which was to be removed. A suitably "qualified person" was called in to deal with these specimens and the method used was simple and effective. A packing case was placed at one end of the shelves, the "qualified person" then went to the other end and pushed! The author's comments are not for publication but can be well imagined by the reader ..! It is sad to relate that bitter complaints fell on deaf ears. It was fortunate that when a student was employed to check through cases containing museum material the Geology was left alone!

In 1960, Dr. Appleby, Cardiff University, recorded all the vertebrates and in 1963 these were removed from the walls of the Moore Room, crated and transferred to Cardiff, on loan, where all still remain except one which is on display again at 18 Queen Square.

During these early days requests were received from scientists for loans or for permission to examine the Moore Collection, and many were disappointed when informed that the Collection was inaccessible. Some, however, did manage to surmount the difficulties and the author was very pleased to help whenever possible. Due to the fact that no policy had been formed as to the future of the Moore Collection a state of uncertainty existed during which time the Collection took on the role of "Political Prisoner" with all the interested parties voicing their opinions on this sorry state of affairs, and during the course of a lecture on Charles Moore, Bath was openly "told off" for its lack of interest, and the speaker raised the question of what had happened to all the important Types, and why researchers were not allowed access to them. When the author rose to explain that all requests had been met, he was firmly put in his place by the retort that he was "just a pawn in the game!" How right that remark was. However, as time went on requests for loans increased and as there was no-one employed as Curator, it fell on the author to find the specimens and gradually it became an accepted part of the job - albeit, still in an unofficial capacity. This position continued long after the Reference Library had opened its doors to the public, and the Moore Collection still remained packed in its boxes, although by this time the Minerals had been placed on racks awaiting re-classification and the specimens contained in the large storage cabinets had been carefully put into cardboard trays together with all loose labels. All the other geological material was put on storage racks and in boxes. Meanwhile the apparent disregard of the Moore

Collection was becoming a major issue, and unfortunately during this time, false impressions as to the contents, etc., of the Collection were being given, and believed, which did not help matters.

In March 1967 a report appeared in the local press under the headlines "Move to sell fossils opposed at City Council", which stated that "... further thought should be given to the future of a Collection of Geological Specimens which, it had been suggested, should be sold". It was further stated that Bristol "... had put out a feeler as to whether or not the Corporation would be prepared to let it (Bristol) take over some of the Collection. The Library and Art Gallery Committee reported to the City Council that it would be prepared in principle to recommend a sale". This suggestion met with opposition and the minute was taken back for future consideration. Later that month a reporter and photographer from the local press paid a visit to the Queen Square building. The result was an article under the headlines "Do we really want to keep these fossils?" Illustrated by a somewhat dismal picture of boxes containing the Moore Collection with a conglomeration of sundry items covering them. The reporter in his article wrote that it looked "... like a crack-brained collector's glory hole". He also expressed his view that some items "like the mammoth's thigh bone and the mammoth tusk, and other picturesque (!) discoveries might form the basis of a small local museum purely of passing interest", (see back cover).

This article resulted in a number of letters being written to and published in the local press, from people who were obviously very indignant at this article, in fact one writer suggested that the Roman Remains could be sold to some other city to effect yet another additional saving, as it was his opinion that the Moore Collection would provide a greater attraction than the Roman Remains. So the controversy raged on; even in 1972 the Deputy Director of Libraries and Art Gallery was quoted in print as saying that a great part of the Collection was not suitable for display as there were micro-fossils and a wide range of material which does not appeal to the general public. This and other such ill-founded reports and announcements continued to be printed and bandied about.

Due, no doubt, to the raised and angry voices, various "Geological Advisors", and, "Honorary Curators" were appointed, apparently with a disregard as to their motives. In fact one was allowed to take all the Trilobites from the Moore Collection to use as teaching material at a local college, and it was a very difficult job to get these returned two years later. When possession was regained the specimens had been detached from their tablets and some of the labels recording the relevant data were missing. As these specimens had no identifying mark on them the results are obvious. Even this, like the mishandling of the

minerals caused no-one (but the author) to be unduly worried, and the trend continued; any-one calling himself a "bona fide" student of Geology was allowed to delve into the Moore Collection, and this malpractice prompted the author to take it upon himself to go through each box in turn and record each specimen on a catalogue card. As he was not officially in charge of the Collection this was done in his own time. These efforts to do something practical went unnoticed but were a great help in locating specimens.

In 1968 the author was "raised up" in view of the work being carried out on the Geology, and designated "Curatorial Assistant and Technician". This gave a somewhat greater control over the handling of the Collection and eventually a room was furnished with heating and lighting, two storage racks with wooden trays were purchased, and Charles Moore's Collection was back in business! After all the indecisions and delay it was somewhat of a shock to read in the local press that the Moore Collection would be out of its boxes and into display cabinets and storage drawers "within two or three months" ! On querying this rather startling announcement, the author was further amazed to learn that it was presumed that all one needed to do was to unpack the specimens and place them with no further to-do, into storage drawers. Needless to say, this instruction, (which would have been fatal, as none of the specimens had any identifying marks on them and many were detached from their tablets), was not taken seriously, and the specimens were dealt with individually - it took much longer than two to three months!

The Type specimens were dealt with first of all and these were duly card indexed and a green spot attached to the specimen bearing its catalogue number. A suitable cabinet of drawers was repaired, locks fitted, and in this cabinet the Types were stored - safe and, at last, easily accessible. The same process was applied to the other specimens but in this case a yellow spot was used to distinguish these from the Types.

A room was also made available as a display area and the original cases used by Charles Moore were cut down to more modest dimensions by the author, reglazed with plate glass and used to mount a display of fossils and minerals. Geological maps were displayed on the walls, a model of the world showing the interior was made by the author, as well as panels displaying nine stages of the British Isles throughout Geological time. Schools started to use the display room as part of their teaching programme and in time the display area increased. (It is disappointing that the rooms used did not include the "Moore" Room for which purpose it was intended.)

As scientists and researchers began to discover that the Collection was now being cared for and specimens were readily available some of the general alarm for so long expressed began to fade away. (BUT NOT ALL. H.S.T.)

When time became available to take a closer look at the large amount of specimens that had not been dealt with for a great many years quite a few interesting items were discovered, such as most of Lonsdale's Collection, (identified as such by Hugh Torrens), and the Australian specimens from the Rocky River, Queensland, that were discovered in a packing case alongside stuffed fish, broken glass and the remains of a couple of grass skirts! Names such as Canon Meade, Wilson and Winwood cropped up and some specimens could be definitely coupled with these names, but there are many specimens that may have once belonged to them, but now are almost impossible to place.

It has been possible with the help of various specialists that have visited Queen Square to create a little order out of this chaos, but there must be others who may just possibly find the very thing they have been looking for, and the formation of the Geological Curators Group is a ray of hope for Collections such as this. Some researchers have turned their attention to items in the Moore Collection that have not previously been worked on and the most recent of these visitors was Dr. McGowan, Royal Ontario Museum, Canada, who examined the Ichthyosaur remains from Ilminster and discovered certain features that he had not encountered before. He is now working on some of these specimens under laboratory conditions.

Visitors from overseas have consulted the Collection and been very impressed with its contents. All this activity, and the prospect of the publication in the near future of an up-to-date catalogue of the Type Specimens which Charles Copp is working on, may make it appear that the future of a Geology Department in Bath is assured, but, under Local Government Reorganisation this is by no means a certainty and at the present moment all one can do is to "wait and see".

It would be a great pity if Bath, with its past association with William Smith and Lonsdale allowed its Geological heritage to once more slip away. Unfortunately not enough of the right publicity was given to the Geology in the recent past and it is only due to the efforts of a few enlightened people in the locality that the Collections occupy the position they do today.

As a foot-note to this article it is strange to think that it was the Moore Collection which the author remembers seeing in the Royal Literary and Scientific Institution's premises at Terrace Walk during the early 1930's which aroused in

him the great interest in geology which led, eventually, to him being able to play a part in its re-establishment. A mere coincidence, but a happy one for the author!

R. F. Pickford,
Curatorial Assistant, Geology,
18 Queen Square, Bath, Avon.

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GEOLOGICAL COLLECTIONS AND COLLECTORS OF NOTE

5. HENRY CLIFTON SORBY - SHEFFIELD'S GEOLOGIST EXTRAORDINARY

Henry Clifton Sorby was born at Woodbourn, in Attercliffe, Sheffield, in 1826. His father was a prosperous manufacturer, a member of a wealthy middle-class family which for over three hundred years had been concerned only with the making of cutlery and tools, and had taken little part in local affairs generally. Henry broke this tradition by showing no interest at all in the family business. When he left the Sheffield Collegiate School at the age of fifteen, he was determined to be a scientist, and a private tutor was engaged for four years to train him. He had no university or other academic education.

In 1847, when he was twenty-one, his father died, and Henry Clifton Sorby invested the whole of a considerable inheritance to equip and maintain a scientific workshop and laboratory at his new home in Broomhill, Sheffield, and to finance, on a scale almost without parallel at that period, what was to be a lifetime of scientific research. He never married, and never subsequently lived elsewhere than at Broomhill. For stubbornly choosing to remain in Sheffield, isolated from the main world of scientific thought, in spite of repeated invitations, recommendations and exhortations to move to London, he was often criticised. It is interesting to speculate on what differences such a move might have made to his career.

At the age of twenty he had joined the Sheffield Literary and Philosophical Society, the only local meeting-ground for scientists. He remained a member, and a regular attender and speaker, for the next sixty years, notwithstanding the number of national societies with which he later became involved. He gave his first paper to the 'Lit & Phil' within a year of joining - a study of the alluvium of the Don Valley, under the title "The Functions of the Valleys, River Action and Alluvial Deposits of this Neighbourhood". The first national learned society which he joined was the Chemical Society, in 1846, and in his first year he presented a paper on "The Sulphur and Phosphorus content of Agricultural Vegetables".

In 1849, aged twenty-three, he pioneered a branch of geological study which had scarcely been attempted before - the microscopic examination of rocks in thin sections. He first worked on the rock structures of the Malvern Hills and then on the grits of the Yorkshire coast. He made sections 1/1000 inch thick and examined them in both normal and polarised light; he measured the sizes of rock particles to 1/2000 inch. In 1850 the Geological Society published a paper of his on this work, although he did not join the Society until the following year. In those early days he was frequently ridiculed for "looking at mountains through a microscope"; but, by the publication of another two dozen papers on this subject, he laid the

foundations of micro-petrology.

In 1853, aged twenty-seven, after a tremendous volume of experimental work in his laboratory, Sorby published a paper which established his reputation and which, all through his life, was regarded as the most significant of his many contributions to geology. He applied his micro-techniques to the examination of slates, and convincingly explained for the first time the peculiar phenomenon of their cleavage in directions unrelated to their original deposition. This made him many friends, and many enemies. Amongst the friends was John Ruskin, who had recently been studying rock structures in Switzerland. Amongst the enemies was the formidable Sir Henry de la Beche, Director General of the Geological Society, who, when Sorby joined the Geological Society and told him (the immediate Past-President) what he was working on, said "You have no business to do that; the question of cleavage in slate has been settled by my Department; you have no right to go into it again". However, four years later, when Sorby was thirty-one, he was elected a Fellow of the Royal Society for his work on slaty cleavage.

In 1856 we find Sorby studying, through his microscope, the minute fluid cavities in mineral crystals. He was seeking evidence for the conditions of pressure and temperature under which they were formed, and published papers on this new approach to the origin of rocks in 1856, 1857 and 1858. This led him to further studies of the effects of pressure on chemical change, particularly during crystallisation, and, in 1862, to investigations of the structure of meteorites. A year later, in search of comparisons, he transferred his attention to the microscopic examination of artificial irons and steels. This opened up another completely new field of study - microscopic metallurgy. He was now taking micro-photographs of etched surfaces of irons and steels, and also examining them spectroscopically. He published many papers on this but, because he was so far ahead of his time, found few people with whom to argue and discuss them.

In 1864, at the age of thirty-eight, he turned his spectroscope to the examination of blood, and endeavoured to determine what was the smallest trace of blood which his instrument could detect. "Detect" was the important word, for he saw and developed the forensic implications of this work, and extended it to estimating the age of blood stains. In 1865 he published papers which formed the basis of criminal investigation work for many years afterwards. During the famous Eltham murder trial in 1871, controversy raged over the conclusiveness of Sorby's microspectroscopic evidence, the Lancet and the British Medical Journal taking opposite views. In 1865 Sorby also published papers on the structure of limestones, on meteorites, on fossil shells and on the spectrum analysis of pigments from leaves, fungi, birds' eggs and hair. In 1868 he started the spectrum analysis

of precious stones, in a search for new elements; but without success.

In 1869 Sorby was awarded the gold Wollaston Medal, the Geological Society's only award at that time for merit in geology. In 1872 the Dutch Society of Sciences awarded him its gold Boerhaave Medal, which had only been instituted in 1870 (to be awarded every two years), for his work in geology and mineralogy. In 1874 he received the Gold Medal of the Royal Society. These three tributes to his abilities are to-day prized possessions of the Sheffield City Museum. Also in 1874, his mother died; this meant that he no longer had any family ties in Sheffield, and that his financial resources were greater than ever. Nevertheless, he still resisted those who sought to persuade him to leave Sheffield and move to London. With his additional wealth, he proposed the establishment of a research station for marine zoology and botany, which would have no teaching responsibility, but it received little support. He was much concerned with the value of divorcing research work from teaching, and made a will in which he left £15,000 to the Royal Society for the endowment of a non-teaching professorship of experimental physical research.

In 1875, aged forty-nine, Sorby achieved his first national Presidency; that of the Royal Microscopical Society. In the same year he financed an expedition to the caves of Borneo, to seek evidence of the antiquity of man; but the expedition made no significant finds. In 1876 the Mineralogical Society was founded, with Sorby as its first President. In 1878 and 1879 he was President of the Geological Society. Also in 1879 he was awarded an Honorary Degree of Doctor of Laws by the University of Cambridge, his first academic honour.

He was still hard at work though. In 1877 he had turned his microscope on to the sands and clays brought back from the Antarctic by the Challenger expedition, and it may have been this which revived his latent interest in marine biology. In 1878 he purchased a yacht, the "Glympse", which he equipped as a floating laboratory and, for the next twenty years, sailed up and down the east coast of England during the summer months, studying the geology, botany and marine biology of the estuaries, and venturing ashore to study the archaeology and architecture of the coastal settlements in his patient, meticulous fashion - sampling, analysing and recording in the fullest detail. It was typical of him that, before purchasing the "Glympse", he studied boat construction, sail rigs, etc., and thereafter used to lecture on the history of ship-building. Another thing which he studied on his East Anglian trips was the form and size of Roman bricks. He measured them and recorded them, and later lectured on "The Character of Bricks made at Various Periods as a Means of Dating the Erection and Repair of Buildings". In his diary for the 13th October 1886 he noted "On returning to Sheffield, went

immediately to the museum to gain more information about early bricks and tiles". Still in the collections there, are the only two examples which the museum was then able to show Dr. Sorby when he called that day. On the 15th October he "Made notes of 64 Derbyshire churches", with more measurements of bricks; and also notes on mediaeval art, which led him later to the study of illuminated manuscripts and, at the age of nearly seventy, to learn Latin and Greek in order to compare European and Byzantine documents.

Sorby's main interest at this time, however, was still marine biology. He undertook an investigation of the living organisms of the Thames estuary, and the detection of contaminants, for a Royal Commission on Thames Pollution. Following this work, he developed in 1889 a technique for the mounting of specimens of marine animals directly on to lantern slides, and seven years later extended this technique to marine plants. These elegant examples of his work are still in the Sheffield Museum's collections, and his superb techniques have defied improvement, or even reasonable repetition, by later practitioners. The delicate specimens are arranged with a fantastic precision which is typical of Sorby's skill; his inventiveness is also shown by the originality of his choice of stains for much of this material - elderberry juice, port wine, hogweed extract, etc.

In 1897, he was elected President of the Sheffield Literary & Philosophical Society for the seventh (and last) time, fifty years after first joining it. In 1902 he became lame, and thereafter rarely left his home. In 1903 a further accident left him partially paralysed, but he was still publishing papers on marine biology and was also working over his geological notes, summarising his conclusions. In 1906 he had a bad bout of influenza and, later in the year, he fell and broke his thigh. He was then eighty. He recovered, and in the following year published papers on the formation of coral reefs. In 1907 the Geological Society celebrated its centenary and, regretting his absence, sent him a letter of regard and affection. Early in 1908 he published a paper on the colouring matter of flowers; and another, the culmination of his revision of sixty years of geological notes, on "The application of Quantitative Methods to the Study of the Structure and History of Rocks".

On the 10th March 1908, after two weeks of inactivity due to another attack of influenza, Sorby died. In his will he requested that the £15,000 which he had bequeathed to the Royal Society should be used to endow a Fellowship for the promotion of original research, tenable at the University of Sheffield; he also left the University a further £10,000 for the endowment of a Professorship of Geology. These wishes were duly implemented, the latter by the foundation of the Sorby Chair of Geology in 1913.

Henry Clifton Sorby was probably the most gifted scientist that Sheffield has ever produced, a man whose penetrating observations of the world around him, whose precise recording of detail and brilliant presentation of his conclusions marked him as a sort of modern Leonardo, applying his special genius to whatever happened to catch his attention. He would have made a wonderful museum curator.

H. Raymond Singleton.

(Based on a paper read by the author to the Sorby Natural History Society, Sheffield, in November 1965). We thank the Society for their kindness in permitting us to reproduce this article.

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Mineralogical Magazine (various dates)
Proceedings, Royal Society (various dates)
Quarterly Journal, Geological Society (various dates)
Sorby, personal correspondence, Sheffield Public Libraries.

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APPENDIX

GEOLOGICAL AND OTHER COLLECTIONS OF HENRY CLIFTON SORBY

This note sets out the present locations of the collections and related material of Henry Clifton Sorby, which are known to the author. It is also by way of a request for any additional information regarding further collections of H. C. Sorby which may exist in other institutions or with private individuals.

Sheffield City Museums

The Museum received many and varied items from Sorby during his lifetime and also by bequest. Specimens associated with Sorby's scientific work include several hundred marine animals and plants, many of them prepared as slides and a series of water colour paintings.

The geological material consists of 2554 fossils received in 1880 (Accession nos. H. 27.11.80.175-1046), and donations of single specimens in 1888 and 1898. The fossils are a representative collection from British Ordovician to Pleistocene strata. Apart from the holotype of '*Dentalium sorbii*' King 1850, it is not known whether the collection contains cited specimens.

The Museum also has the gold medals award to Sorby by the Royal Society (Royal Medal 1874), the Geological Society of London (Wollaston Medal 1869) and the Dutch Society of Sciences (Boerhaave Medal 1872).

Sheffield City Libraries

Over one thousand letters to Sorby from scientists and others are housed in the Library (Higham 1963). They are part of the Sheffield Literary and Philosophical Society Collection.

Sheffield University, Department of Geology

The Department has an estimated 200-300 of Sorby's rock and mineral specimens, including some thin sections on slides. Most of these items are metamorphic rocks, some of which illustrate his second Presidential Address to the Geological Society in 1880, and perhaps earlier papers. Also present are examples of fused Mount Sorrel 'syenite', which Sorby investigated in his studies of igneous rocks.

Sheffield University, Department of Metallurgy

The Department has about 100 of Sorby's polished metal samples, and some specimens relating to crystallisation from solutions. (A.R.Entwistle, personal communication, 1975).

Sheffield University Library

Sorby's personal diaries from 1859 to 1908 with one major and one minor gap, and some of his books are in the Library (Higham op.cit.).

Royal Society, London

There are 5 letters from Sorby in the manuscript collections (Higham op.cit.).

Royal Botanic Gardens, Kew

The Library has several letters from Sorby in the J. D. Hooker Collection (Higham op.cit.).

Acknowledgements

The author acknowledges with thanks assistance given by Peter Atkinson of the Department of Geology, and Dr. A. R. Entwistle of the Department of Metallurgy, University of Sheffield.

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T. H. Riley,
Sheffield City Museums,
Weston Park,
Sheffield S10 2TP.

Henry Clifton SORBY.

Sorby's many sided contributions to science are outlined in the following contributions:-

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EDWARDS, W.N. 1951. William Nicol and Henry Clifton Sorby. Nature, 168: 566-567.

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This list is by no means complete.

H. S. Torrens

6. THE PLYMOUTH CITY MUSEUM MINERAL COLLECTION

The Museums collection of minerals is composed of some eight thousand specimens representing over four hundred species.

The bulk of the collection comprises two major collections: the Sir John St. Aubyn Collection and the Col. Sir William Serjeant Collection. The remainder is of miscellaneous donations made during the past fifty years.

Despite their importance the museum possesses very little historical information on either collections or the collectors and what information we do have seems to be contradictory.

Sir John St. Aubyn Collection

On the death of Richard Greene in 1793, his son continued the administration of the Lichfield Museum until 1800. However, the Greene Collection of fossils and minerals were sold to Sir John St. Aubyn for £100 in 1799.

St. Aubyn (1758-1839) had amassed a fine collection of minerals, the nucleus of which consisted of specimens purchased from Dr. William Babington in 1799, and

which are described by Babington in his catalogue 'New System of Mineralogy in the Form of a Catalogue'. These specimens had previously been the property of Lord Bute.

To the nucleus formed by Babington's collection St. Aubyn made large additions from Cornwall and some mines in Germany and Hungary.

In May 1804 St. Aubyn joined with a Mr. Grenville in a proposition to raise £4,000 for a mineralogical collection at the Royal Institution. Around 1806, or a little earlier, the London-based collections of St. Aubyn and Grenville were placed in the charge of the Count de Bournon (1751-1825) a refugee from the French Revolution and an expert mineralogist, to put them in order and arrange them. De Bournon conceived the project of raising in England a monument to mineralogy but unfortunately St. Aubyn called the project off well before completion and removed his collecti-n to his country seat at Crowan in Cornwall. (St. Aubyn was a major subscriber to de Bournon's monograph on Carbonates of lime and also a member of the Geological Society of London, which was formed in 1807, from 1808.)

As for the collection itself, it is an extensive one with only a comparatively small proportion of the specimens of local origin. The bulk of St. Aubyn's collection was donated to the Civil and Military Library at Devonport in 1834 as a gift to the Town of Devonport. A collection of duplicate specimens was also donated to the Museum at Saffron Walden near which he resided for many years.

In 1876 the main collection was transferred to the Mechanics Institute of Devonport and subsequently to the Devonport Museum in 1881. After the Amalgamation of the Three Towns, Stonehouse, Devonport and Plymouth an attempt was made to restore the collection to its original condition and it was transferred to the Plymouth City Museum in 1924.

It can only be expected that several specimens must have perished in the course of time and many have been lost. When the collection arrived in Plymouth Museum it was arranged in 158 drawers with glass lids. Every specimen had its number corresponding with a label on the drawer and often a loose memorandum of origin was with it. The paper on which these memoranda were written has in a large number of instances perished; others have been separated from the specimen. Specimen labels were also pasted onto the sides of the drawers to which they belonged and for obvious reasons could not be removed.

Some sixty or seventy years ago a Dr. Steele was paid by the Devonport Library Committee to extract from the collection certain showy specimens for exhibition and he was provided with six glass cases. These he crammed full and the remainder of the collection did not receive any particular care. In consequence the pasted labels on the sides of the cases no longer bear any relevance to their

contents. The glass lids had also been removed and never replaced, thus exposing the contents to dust etc.

Of the original catalogues none survive. In 1924 there existed five volumes and there should have been as many more. Three volumes were written in French and formed a very elaborate mineralogical treatise on the collection. It was evidently prepared with the object of having it printed. Judging by the scale adopted there should have been two or three more such volumes. As an illustration of the condition of our knowledge of a hundred and fifty years ago it would have been extremely interesting.

One of the original volumes was a list of the specimens but apparently only dealt with about half the collection. There should have been another.

Another volume was an index to the whole collection and was only in a preliminary condition. Most of these volumes were compiled subsequent to 1845 and at least five volumes were in existence in 1925 or thereabouts. Now none survive except for a catalogue written sometime in the late 1920's and representing only half the collection.

The classification of the collection is based on chemical composition, the unusual feature being that each species is classified by an Order Number then a Species Number accompanied by the name of the mineral and a quantitative analysis. For example CALCITE is clasified thus:

Order: III

Species: 15 Calcspar

Carbonate of Lime	Lime 56 Carbonic Acid 44
Calcareous spar	Iceland crystal
Nailhead spar	

This is followed by a numbered list describing each specimen and giving the locality. Unfortunately only the general locality is given for each specimen, e.g. Derbyshire, Harz, Norway, etc. Each specimen bears a glued paper label printed thus:

Or:

Sp:

Some of the specimens also bear a supplementary label with another number which cannot be traced in any catalogue reference. Judging by the paper this supplementary label is contemporary to the main label but we shall never know its significance.

Col. Sir William Serjeant Collection

Very little is known of the Serjeant Collection. Col. Sir William Serjeant was born in May 1857 and lived in St. Benets Abbey, near Bodmin, Cornwall. He died March 1930 and during his lifetime collected oil paintings, pewter, ethnographical material, pre-historic implements and minerals.

It is a fine collection of approximately two thousand specimens representing nearly two hundred species. The basis of the collection, which was made during the latter half of the 19th and early 20th centuries, is Cornish but there are also specimens from all parts of the world.

For most part the specimens are small and below the average museum standard size, but they are nonetheless important for that. Although there is no catalogue every specimen is fully and completely labelled - local minerals having a blue label, foreign specimens a red label. Each label measures 20mm by 15mm and is very securely glued to the specimen. On each label is recorded the mineral name, chemical composition and the precise locality from which the specimen was collected. During the past fifty years no specimens have lost their labels nor has the ink faded!

Of special note is the collection of Cornish Cassiterite. The value here lies not in the quality of the specimen but in the locality from which it was taken. Nearly two hundred Cornish mines are represented; each specimen bearing a label indicating the mine locality and sometimes details of the lode or level from which it was collected.

It is interesting to read the report which someone prepared for the Museums Committee in December 1924:

".... Sir William tells me that the collection has cost him something like £5,000 in all, and from what he said, I should imagine he has paid some rather long prices for certain items on account of their great rarity.

I do not think we could offer less than £500 for the collection, but knowing as I do the financial position of this Institution and the demands that have to be met, that is the utmost limit to which we could go, and entails some sacrifice ..." (The financial position doesn't seemed to have changed much in the last 50 years!!)

We did in fact purchase the collection for £425!

As I indicated earlier we know very little about Sir William and his mineral collecting exploits, or for that matter who identified the specimens. If any members know of any references to Sir William or the collection I would be pleased to hear from them.

* * * *

Work started on the collections in 1972 and as each specimen was accompanied by a distinctive label the two collections were amalgamated and a comprehensive catalogue prepared.

The collection was classified according to Hey's Chemical Index of Minerals and housed in specially-made cardboard boxes. Unfortunately Plymouth City Museum is still awaiting its new extension which was promised ten years ago and in consequence we do not have a permanent housing for the collection.

The boxes are labelled with Dymo Tape and placed in numerical order on two by one timber slats. For a temporary measure this is the most economic and safe method - taking into consideration the weight problem etc. There are in fact 480 boxes containing mineral specimens.

Each mineral species is represented by an 8 x 5 inch index card on which is recorded the name and chemical index number along the top margin followed by a list of the localities from which the specimens were collected. The cards are arranged in numerical order in a metal cabinet.

There has been continual public demand for a mineral catalogue of some description. Sixty-five per cent of the Departments enquiries are mineral specimens and there is also a large well-established mineral society in Plymouth who take a keen interest in the collection.

Printing costs being what they are, we had to be satisfied with an Off-set Litho publication. The catalogue was printed on an A4 format and a plastic spring binder was used. This made the publication a loose-leaf catalogue in which pages could be added or removed as required.

The Mineral Index was printed in alphabetical order with synonyms or variety names included. The species name is followed by the Chemical Index number and a list of the regions in which the species was collected e.g. Cornwall, Derbyshire, Africa, Arizona, U.S.A., etc. The card index could be consulted for more detailed locality information.

Following the Index is the Serjeant Cassiterite Collection catalogue giving each district in Cornwall followed by a list of the mines represented in that district.

The whole amounts to eighteen single-sided pages plus two card covers and is sold to the public for 25p. We were charged £80+ for 300 copies.

D. A. Currey,
Department of Natural History.

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References to St. Aubyn on pages iii and xix of the 'Discours preliminaire.'

NOTE: The catalogue was reprinted with minor alterations in 1817, after de Bournon had given his collection to the King. The new title is 'Catalogue de la collection Mineralogique particuliere du Roi'. (as given in Dana's System, 7th Edition, Vol. 1, p. 67).

For Louis Jacques, Comte de Bournon see:

(i) CAMPBELL SMITH, W. 1969. A history of the first hundred years of the Mineral Collection in the British Museum. Bull. B.M. (Nat. Hist.) Historical 3, No. 8. pp. 237-259.

(ii) LACROIX, A. 1932. Figures des Savants. Paris. Vol. 1, pp. 169-176.

(iii) MEM. ACAD. SCI. INST. FRANCE 60, 1931. pp. vii-xiii and lxxxiii-lxxxvi.

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For Sir John St. Aubyn (1758-1839) see:

(i) Biographical notes in Rep. Royal. Cornwall Polytechnic. Soc. 4, 1921-22, p. 130.

(ii) BUCKLAND, Wm. 1840. Obituary in Anniversary address to the Geological Society 21.2.1840, pp. 57-58 pub London 1840. Reprinted from Proc. Geol. Soc. Lond.

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WORKSHOP ON GEOLOGICAL CATALOGUING

G.C.G. meeting at the Sedgwick Museum of Geology, Cambridge, 20th-21st March 1975

Following discussions between IRGMA (Information Retrieval Group of the Museums Association) and the G.C.G., a two-day workshop on geological cataloguing was organised for the 20th and 21st March, at Cambridge, primarily to consider a proposed format for recording geological data. The meeting, which was attended by 25 delegates from a variety of museum backgrounds, was presided over by Andrew Roberts and John Cutbill of the Segwick Museum. The following account is a summary of the proceedings and conclusions of the meeting.

John Cutbill opened proceedings by giving an account of the background to the Cambridge and IRGMA data processing projects. He emphasised that the two were independently conceived and financed, the former being grant aided by OSTI and more recently the British Library, the latter by the Museums Association. The Cambridge project, begun in 1967, was empowered to investigate computer applications in cataloguing, particularly with regard to the Sedgwick Museum collections. These were currently being put onto computer. IRGMA on the other hand was concerned with developing documentation standards for the recording and retrieval of museum data in this country.

Andrew Roberts then outlined the work and aims of IRGMA. The IRGMA Steering Committee was established in 1967 following a colloquium held at Sheffield. Its aims were stated in 1973 to be:-

1. To promote the improvement of documentation in museums and art galleries.
2. To establish and maintain documentation standards.
3. To promote the development of museum information - handling systems.
4. To promote the establishment of an advisory service and to provide for IRGMA information systems maintenance.

The work of the Committee has centred around a number of projects including:

1. Museum cataloguing standards

This, the most important aspect of its work is co-ordinated by a Standards Subcommittee and a Technical Subcommittee.

Early activity concentrated on producing a Museum Documentation Standard. This is a set of rules by which data can be stored and manipulated in a computer and is sufficiently comprehensive to allow all possible information about any museum object to be recorded. It also allows for manual recording on a standard basis, while retaining the eventual facility for computer processing. Initially, the recording demands of nine subject areas were analysed to produce data standards for each subject. These were then combined into a unified data standard of which

the contributing subject areas were: archaeology, fine art, paintings and drawings, geology, history artefacts, militaria, natural history (botany and zoology), photography and scientific instruments.

Additional subject areas now being examined are localities, bibliography, biography, conservation and decorative arts.

From the data standard it has been possible to select those aspects which are most commonly recorded and to construct an A5 size record card to accommodate these.

These recording cards can be used in a manual filing system and their contents can later be transcribed into a computer. While most users will find that the record cards fulfill their needs, it will be possible for individual museums to develop formats to meet particular requirements. Provided the rules of the Documentation and Data Standards are obeyed these internal formats will be compatible with the IRGMA system.

Parallel with this work, programs are being developed by the Technical Subcommittee which will be able to manipulate the recorded information after transcription into a computer. These developments are based on the Cambridge Geological Data System produced by Dr. J. L. Cutbill and colleagues.

This work will be tested and verified during 1975 culminating in the production of a finalised set of record cards and standards for general use by late Summer.

2. Survey of Museum Documentation

Survey objectives are to identify key facts:-

1. The size, growth-rate and range of records.
2. Present documentation procedures.
3. Staff available for cataloguing.
4. Cost of cataloguing.
5. Uses of documentation.
6. Future prospects for change.

Use of this information will include:

1. Assessment of the scale of the cataloguing problem.
2. Provision of staff and cost data on traditional cataloguing practice.
3. Assessment of staff requirements and cost of improved manual or mechanised cataloguing.
4. Analysis of information storage and retrieval requirements.
5. Comparison of the results of specific tests with the natural situation.
6. Assessment of the requirements of any documentation advisory unit which may serve museums.

After considerable discussion of all aspects of the sample card it became apparent that requirements for the various aspects of geology were not wholly compatible. Three working groups were therefore formed to draw up specifications for the three main subdivisions of mineralogy, petrology and palaeontology. Results indicated that a single recording format would suffice for both palaeontology and petrology but that a separate format should be adopted for mineralogical recording. It was agreed that samples of these two formats would be tested at each of the institutions represented at the workshop and returned to Cambridge by 21st April for computer evaluation. Once general agreement on the format of the cards has been achieved, the major task of writing instructions for their use will begin. Finalised, printed cards will hopefully be available, together with instructions for use, by late summer of this year.

Further discussion centred on the problems of introducing IRGMA record cards into general use and the apparent lack of planning in this respect. It would appear that in the absence of appropriate publicity and directives at a national level the onus will be on individuals to press for the introduction of such record cards, a point of which we hope all GCG members will take note.

M. D. Jones,
Hon. Sec. (G.C.G.)
Leicestershire Museums Service.

* * * * *

The good old days before the computer

The neighbourhood of Much Wenlock and Buildwas is famous for Silurian fossils. It was from this district that George Maw procured such a large series for Thomas Davidson. The latter described to me how Maw used to work. He washed something like 11 tons of the shale, and the debris, sorted out by sieves, was spread on tables for women to look over, so that they might pick out the fossils. By this means thousands of specimens were obtained, and all the Brachiopods were sent to Davidson for the purposes of his monograph. There were as many as 10,000 specimens of Orthis biloba. I asked Davidson how he accomplished the labour of sorting, and with a chuckle he replied that he engaged the services of some Brighton parsons for the rough sorting of the species, "because they had nothing to do six days in the week."

S. S. Buckman, 1898.

INSTRUCTIONS FOR USE OF MINERAL SPECIMEN AND GEOLOGY SPECIMEN RECORD CARDS

The following instructions are a condensed version of those which will accompany the record cards

General Instructions

1. The cards are divided up into a number of data groups (e.g. Identification, Acquisition etc.) whose meaning is usually self-explanatory. They are listed in the left-hand margin.

2. A record to a specimen with single identity number may be composed of any number of record cards.

3. There is no obligation to fill every box on the card, but the identity number should be completed on every card.

4. Enter data on the card as presented on existing records (e.g. use upper and lower case; record dates in any form etc.)

5. Where possible, split data into Keywords and detail. The purpose of this distinction is to identify single words (Keywords) which may be used when searching an alphabetically ordered file. A single box is provided in which the curator must add his own separatore (/) e.g.

   Place names and detail

   i.e. Shap Quarry/left side; Westmorland

   In this example 'Shap Quarry' and 'Westmorland' are Keywords while 'left side' is detail relating to one of these Keywords. Separate Keywords by a clear sign such as a semicolen.

6. A cross-reference is a pointer to a unique record which holds additional information about the specimen being considered. The form of a cross-reference is an institution name, and unique identity number.

7. On the first line of the front of the card, sheet ..... of ..... is used to note the number of this card in the complete record e.g. 3 of 5.

8. Continuation cards may be necessary for two reasons:-

   (a) Overflow information from one box. Continue on a second card and tick the cont. box in the left-hand margin of the first card.

   (b) Additional information referring to the group. Use a second card, but do not tick the cont. box.

FRONT

Sheet	File	Institution & Identity number	
IDENTIFICATION	Group	Status	Store
	Names		
Cont		Identifier	Date
COLLECTION LOCALITY	Place names / detail		
		Locality Nº.	
	LAT LONG / GRID REF	ALTITUDE / DEPTH	
	Locality detail		
STRATIGRAPHY	COMPLEX / ROCK — ZONE / AGE		
	COMPLEX / ROCK — ZONE / AGE		
	COMPLEX / ROCK — ZONE / AGE		
	Stratigraphy detail		
Cont	Collection Method	Collector	Collectors Nº. / Collection date

GEOLOGY (GENERAL) RECORD CARD IRGMA/GEOLSR/TEST 24-3-75

BACK

RECORDING	Recorder	Date	Identity Nº.		
Cont	Acquisition Method	Acquired from	Price	Condition	Acquisition date
ACQUISITION PROCESS	What process				
Cont					
	What process				
Cont					
DOCUMENTATION	Link to group	Class of documentation; Author; Date; Title; Imprint; Pagination; Page & plate detail.			
Cont					
DESCRIPTION	Count	Form keyword / detail	Condition keyword / detail		
	Part				
Cont					
NOTES	Futher description notes				

FRONT

Sheet	File		Institution & identity N°.		
IDENTIFICATION	Species		Other identity N°.s		
			Status	Store	
	Cross reference to associated minerals & matrix				
Cont					
COLLECTION LOCALITY	Place names / detail				
			Locality N°.		
	LAT LONG / GRID REF	Other co-ordinate	Value & Units	ALTITUDE / DEPTH	Other relative position	Value & Units
Cont	Collection method	Collector	Collector's N°.	Collection date	
ACQUISITION	Acquisition method	Acquired from			
Cont	Conditions	Acquisition price	Acquisition date	Valuation	Valuation date
DESCRIPTION	Part	Description keyword / detail			
Cont					
	Process / Conservation Tests	Doc	Group detail	Record detail	Recorder	Record date

GEOLOGY (MINERALOGY) RECORD CARD IRGMA/MINSR/TEST 24-3-75

BACK

PROCESS DOCUMENTATION GROUP DETAIL RECORD DETAIL	PROCESS GUIDELINES: Operation; Method keyword / detail; Cross reference to result; Operator; Date
	DOCUMENTATION GUIDELINES: Link; Class; Author; Date; Title; Vol x Pagination; Page detail; type of doc.

Box instructions

Not all the boxes appear on both cards, but where they do the instructions apply to both.

File - the category under which the card is filed e.g. identity number, species, locality etc.

Institution and Identity number - the unique code for the institution and the unique identity number for the specimens.

Identification Group

Group - e.g. Ammonite, belemnite etc.

Species - the name of the principal mineral species. For compound specimens a box to allow cross-reference to assicated minerals and/or matrix is included.

Names - the binomial in the case of fossils. Use one line per identification or a list of Keywords/detail.

Status - can be type, figured etc.

Identifier and date - the name of the identifier and the date on which the identification was made.

Store - storage location of specimens.

Collection locality Group

Place names/detail - record locality names and detail in a string from smallest to largest e.g. Wrens Nest, Dudley, Worcestershire, England.

Lat. Long/Grid Ref. - circle whichever applies, if neither fill in other co-ordinate box if appropriate. Enter relevant details in 'value and units' box.

Altitude/Depth - procedure as above.

Collection method - e.g. sample, in situ find etc.

Collector - name.

Collectors number - temporary number given by collector.

Collection date - date specimen was collected.

Locality detail - any additional information to that above.

Stratigraphy Group

Complex/Zone/Rock/Age - circle whichever applies and use one line per concept (Keyword/detail) or overflow as necessary.

e.g.

Complex	Zone	Marlstone/Transition Bed
Rock	Age	
Complex	Zone	Tenuicostatum Zone
Rock	Age	
Complex	Zone	
Rock	Age	Liar/Upper

Stratigraphy detail - bed number etc.

Acquisition Group

Acquisition method - donation, purchase etc.

Conditions - any conditions relating to the purchase, donation etc.
On the Geology Card, Yes or No should be ringed as appropriate.

Acquired from - self explanatory.

Acquisition price - self explanatory.

Acquisition date - " "

Valuation - self explanatory.

Valuation date - self explanatory.

Recording Group

Recorder - name.

Date - date record card prepared.

Identity number - the unique specimen number repeated on back of card for "reverse" use of manual index.

Process Group

Although only the geology card has a structured Process Group the following instructions apply equally to both formats. The minerology card has a box on the front which should be circled if any Process data exists. Enter this data on the reverse of the card.

Process or operation - this may be conservation, reproduction, research etc.

Method Keyword/detail - e.g. photography/electron scan.

Operator/date - the name of the technician, photographer, researcher etc. and the date the operation was carried out.

Cross-reference to result - cross-reference to any records relating to the operation e.g. laboratory reports, photo negatives, research notes etc.

Documentation - on the mineral card, again add data to the reverse of the card. A reference may exist to any of the groups on the card. Because of space limitations there is only one opportunity to record such references.

Link - is used to connect the reference to the relevant group. Enter the group name in this box. For example enter 'Identification' if a reference was used in the Identification of the specimen.

Class - e.g. figured, cited etc.

Imprint - is used for the type of document (manuscript, map, etc.).

Description Group

Count - the number of specimens grouped as a single cataloguable item.

Form - thin section, slide, etc.

Condition - physical condition of the specimen.

Part - the part to which the following description refers (leave blank if this is 'whole').

Description Keyword/detail - other descriptive terms.

Notes - on the Geology Card either circle

(a) Further description: continue with descriptive data

(b) Notes: any notes referring to the whole record.

Detail - on the Mineral card enter any detail on the reverse.

D. A. Roberts
and M. D. Jones.

COMMENT ON IRGMA WORKSHOP

During my undergraduate years at Cambridge I came into contact with the various Sedgwick Museum recording forms, and came to realise their value in recording specimen data in a logical way, that should facilitate its comparison. The IRGMA geology test card in its original form seemed to me to be something of a backward step compared to the Sedgwick forms. This was due to layout rather than content, as was brought out at the meeting. In its present form it seems to serve a purpose, though I felt that the nature of this purpose was somewhat obscure.

In this I was a little disappointed with the meeting as so much time was spent discussing the exact layout rather than the purpose of the card. I think that most people agreed that the important details should be on the front of the card, e.g. (for palaeo and rock samples) specimen name, locality and stratigraphy details, specimen number and storage location, and there was little disagreement on what constituted important details. That so much time was spent on exact format to the exclusion (almost) of use was unfortunate, but perhaps inevitable. The discussion towards the end of the meeting seemed to show that many people were assuming that use of the cards means, of necessity, expenditure on computers, and vice versa. In my opinion the major justification for the cards is that they should improve specimen data, and this is surely a prime objective of any curator. Getting the collector to record more when the specimen is collected gives (at least in many cases) the specimen greater value.

It seems to me that the cards are really useful for this primary recording phase only. Cross indexing does not require their complexity in each index, and I think that it would be expensive to try to achieve it. In a computerised system, the computer prints out selected parts of the card in its various indices (if done on the Sedgwick pattern). Why should a manual system attempt to do any more?

I think that the meeting served a useful purpose in acquainting many people with the work of IRGMA, and in getting some census of opinion as to what needs recording for geological specimens. I await the results of the testing of the cards with some interest, but I wonder if more would be learnt if they were tested over a period of months, so that the testers could become familiar with, and more critical of, the various legal and illegal ways of filling in the card, and also how convenient the present layout is if the cards are used as a cross index. Perhaps stratigraphy should come before locality after all!

Despite the groans of my colleagues here at the mere sight of the test cards I think that they will be easy to learn to use, and in their revised form will be a step forward, at least as far as specimen documentation in this department (for most of its existence) is concerned.

Antony Wyatt,
U.C.W.
Aberystwyth.

SOME THOUGHTS ON 'MACHINE CATALOGUING'

I was outspoken on the subject of machine cataloguing, I fear almost to the point of rudeness, at the GCG meeting on 13th December last year. So much so, in fact, that my relative (for me, that is) restraint at the IRGMA workshop at Cambridge last month led to questions whether I had 'gone over to the enemy'!

My interest in 'machine cataloguing' is not a recent development, and goes back to my first contact with Hollerith punched cards at Oxford in 1954. When I joined the staff of the BM(NH) in 1956, I was exposed for the first time to the reality of a large collection and catalogue and very soon realised that the sheer labour of coding information for punching cards (and of course the subsequent decoding) was far too great for any worthwhile return - certainly in a situation where a workable manual catalogue was already in existence. Since then, I have kept a watchful ear and eye open for developments in the field, and saw the start of the BRGM (France) scheme in 1965/6 to commit all the mineral collections in France to a central machine catalogue.

Several publications were produced in the course of this project, dealing with such problems as the encoding of locality information, and the last that I received was a massive alphabetical index of mineralogical nomenclature (around 16000 entries on 386 pages) in 1968, reducing all varieties and synonyms to their relevant species - which were each allotted a 6-letter code. This, of course, marked considerable progress because the alphabetical coding was just about intelligible and quite unlike the totally unintelligible numerical code. I regret that I have had no further information on the progress of this project.

At about the same time staff of the American Museum of Natural History (in New York) were experimenting with optical coincidence methods of information retrieval. For all I know, the biological departments may have continued with these methods but the mineral department at the AMNH was very soon making use of the full 'alphanumeric recall' that was becoming available, and Dr. Manson was applying it to current accessions and to the meteorite collection. 1967 also saw Vol. 52 of the American Mineralogist appear with a machine-generated 'KWIC' index, and I was certainly far from the only reader to mouth horrible blasphemies about its devastating illiteracy.

Now, I know things have come quite a long way in the last few years; electronic calculators have come down in price to levels unbelievable only a year or so ago, and even I am happy to use them now that their logic is similar to the way that I think and I no longer have to mentally "madly squeeze a right-hand foot into a left-hand shoe" (Lewis Carroll). In the same sort of way, computer programmers and languages are closing the hitherto immense gap between the

ordinary mortal and the input/output of the machine - I hasten to add that some of my best friends are programmers .... But this does not really alter the fact that, broadly speaking, people can be divided into the few who are machine-oriented and the many - such as myself - who are not. I suppose I could, if I had to, buckle down and acquire a modest sort of competence in the art of programming - but while I have colleagues who are dab-hands at the game I would far rather press on with the other things that a curator has to do - and in saying this I am very mindful of the majority of my fellow curators around the country who are less fortunately placed than I and who have to deal with mixed collections single-handed without the benefit of excellent manual catalogues developed by industrious predecessors.

So I have come full-circle to my objections to machine cataloguing, and the first is this: before becoming involved, I would require cast-iron guarantees that the system would be easy to use and would not change radically within a few years. I have seen the prolonged agonies of colleagues who have painstakingly developed computer programmes for complex calculations, only to find in a short time that the machine-minders have made changes in equipment and procedures that render the programmes totally unusuable - so they have to start again from scratch. The easy-to-use bit not only covers intelligibility, but also staffing complements: what is the use of a system that lands you with a requirement for a lot more clerical staff, when what you really want is more professional help? A pilot project at the Smithsonian Institution in Washington D.C., a year or so ago, on the Bosch collection of minerals, involved a lot of part-trained student help and a heck of a lot more grief for the curator. My second requirement would be that the new system be compatible with the old, and in this respect the IRGMA project seems to be on the right lines in developing cards that can be used for manually-kept records which can later be transcribed with a minimum of effort. I declare my own bias towards the simplest possible layout of card, with as few boxes as possible and an absolute minimum of essential information on the back; needless to say, I almost like the mineral record card that emerged from the Cambridge workshop! My last objection of any consequence concerns the nature of the print-out from the machine, and my detestation of all-capital-letters illiteracy. I am delighted that this Museum, and the Sedgwick project, have invested in semi-literate line-printers (they still can't cope with different type-faces, nor with chemical subscripts), and I feel very sympathetic towards those who will have to make do with what is currently available at the local town hall.

We were told, at the Cambridge workshop, that records are to be kept on magnetic tape and that the tapes need to be copied every six months or so; I confess that my curatorial mind, accustomed to thinking of much more stable recording, baulks a little at the thought of accidental 'wiping' of tapes.

More daunting, though, is the prospect of a new set of updated printouts each year, in contrast to our present system of simply adding new information to the old. I hate throwing old records away, even the thought of doing it, so the prospect of a new large pile of printout each year is horrifying - the more so since 99% or so will be the same as last year's. I have been tempted to think, on several occasions, that the current paper shortage is directly related to the miles and miles of high-quality paper spewed forth weekly by the world's computers. I hope that the IRGMA project will give some thought to the problem and come up with a solution that does NOT involve a complete new set of indexes each year.

My cup will be full - well, almost full - if those in charge of the IRGMA project continue to extend to us, the users or potential users of their schemes, the courtesy of consultation in their further development. The notes for users will have to be edited by users, to keep the instructions simple - and, of course, thought still has to be given to the production of labels. And back to my cup, it will overflow when I can store and revise the Chemical Index of Minerals on the machine - proof-checking at each stage of copying is one of the most soul-destroying jobs I know. The machine will have to deal with large and small caps, as well as lower case, in roman, bold, and italic faces in the latin alphabet; it will also print in greek and cyrillic, and handle the most complex chemical formulae with both subscripts and superscripts. Ideally, it will spew out a tape that the printer can feed straight into his Monotype or other typesetting machine and so save all the trouble of proof reading and effort by the compositor. Unless things change considerably, however, we will be condemned to microfiche at best.

Peter G. Embrey,
Department of Mineralogy,
British Museum (Natural History).

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The Paleontologist

The Paleontol a fine fossil has found
And soon he will spread the glad tidings around.
He'd have done it already, if he only could tell,
Is the fossil a tree-trunk, a tooth or a shell.

James Furnam Kempt in a letter to Bashford Dean, May 28, 1918.

COLLECTIONS AND INFORMATION LOST AND FOUND

A. COLLECTIONS AND INFORMATION PREVIOUSLY SOUGHT

8./9. Portraits of J. E. Portlock and R. J. Griffith (see GCG 2, p.69).

Portraits of both appear in R. L. Praeger (1949) Portlock from a bust and Griffith from a photograph taken in his later years. An engraving from a different photograph by Maull appears in A. Geikie's Life of Murchison (1875), vol. 2. Professor Gordon Davies of Trinity College, Dublin is collecting biographical information about Griffith.

Sale catalogue of Edward Donovan's "London Museum and Institute of Natural History" (see GCG 1, p.14).

This important sale catalogue is mentioned in E. G. Allingham's interesting book (1924, p. 23-24). It was a complete natural history museum, with a particularly good collection of birds. The sale was held over April 30th - May 6th, 1818 by Mr. King and the copy referred by Allingham as having been preserved must be presumed lost (see Russell, 1952, p. 398). Thanks to the help of Dr. K. A. Joysey the copy bequeathed to the Cambridge University Museum of Zoology by Professor Alfred Newton has been located. The museum contained much material of geological interest and the sale catalogue allows one to see why James Parkinson was so enthusiastic about the Museum's fossil collections. Extracts from the fossils sold at the sale are given by Allingham (1924, pp. 42). It included material figured in the 18th Century Philosophical Transactions of the Royal Society, some early saurian remains and material purchased at some time from the Lichfield Museum described in GCG 1.

B. COLLECTIONS CURRENTLY SOUGHT

10. FRANK PETCH. died 1929.

Obituary notices of Petch who died at a sadly early age appeared in the Transactions of the Leeds Geological Association 20, pp. 3-4, 1929, and the Proceedings of the Yorkshire Geol. Soc. 21, p. 345, 1931. He was an assistant lecturer in Education at Leeds University at his death and this was where his scientific work was carried out, mainly on sedimentary petrology. During this work he collected Callovian ammonites from the Kellaways Rock of South Cave, Yorkshire. These according to a letter from Petch dated Nov. 21, 1921 from 6 Trentham Street, Leeds were sent to S. S. Buckman (also the letter's recipient) by Dr. /A. Morley/ Davies.

Three ammonites were later figured by S. S. Buckman in his work "Type Ammonites" 1909-1930, these were:-

1922 pl 283 Holotype of Catacephalites durus sp. nov. /= Cadoceras/

1922 pl 329 Holotype of Anaplanulites difficilis sp. nov. /= Choffatia/

1923 pl 417 Holotype of Catasigaloceras planicerclus sp. nov. /= Sigaloceras/

All three were recorded as in "Mr. Frank Petch's collection" and were returned to him in Leeds, as L. F. Spath of the B.M. (N.H.) subsequently borrowed at least one of them from Petch.

Professor H. C. Versey, a close friend of Petch's who was present when some of the material was collected, has been most helpful in trying to trace this material at Leeds University but without success. The Dept. of Geology at Leeds has moved twice since Petch's day with obvious implications. The City Museum at Leeds is believed to have been hit during the 2nd world war.

Any information about the fate or whereabouts of these type specimens would be gratefully received.

H. S. Torrens.

NORTHAMPTON MUSEUM COLLECTORS (see GCG 2, p. 50)

7. Thomas Jesson

His collections were dispersed and have been further so. Ian Rolfe of the Hunterian Museum, Glasgow writes to say that they acquired in 1918 B.M. (N.H.) duplicate material collected by Jesson, and that it is exclusively Cambridge Greensand reptiles.

8. Rev. A. W. Griesbach

One account said his collections (though as we now know not all) were acquired by W. H. Hudleston. Ian Rolfe again provides the useful information that the Hunterian Museum "as about 3200 of Hudleston's specimens, purchased in 1921 through Dr. Catherine A. Raisin. 2,700 specimens are catalogued in an MS of Hudleston's with the collection. It contains largely Mesozoic bivalves but also incorporating material from the remainder of the geological column, including a Plio-Pleistocene collection from classic localities (e.g. St. Erth, Lough Larne)".

YORKSHIRE MUSEUM COLLECTORS (see GCG 2, p. 56)

Some supplementary information is available which seems worth recording to correct errors etc.

1. John Phillips

Howard Brunton of the Brit. Mus. (Nat. Hist.) writes to say that he believes "Sherborn was in error when he wrote that Phillips' collection was lost in the Thames . In fact much of the material collected by Phillips is in the Oxford Univ. Museum whilst most of the Gilbertson collection /William Gilbertson of Preston - see A. S. Woodward, 1904 pp. 291-2/, from which Phillips illustrated specimens for his 1836 publication (Illustrations of the Geology of Yorkshire, Part II) is in the B.M. (N.H.)". J. M. Edmonds of the O.U.M. is currently preparing a note on the claimed loss of Phillips collection which will be awaited with interest.

Sherborn was obviously wrong not to record the date of the 'loss' of the collection in the Thames but in his own annotated copy of his book in the B.M. (N.H.) library he has added the date lost c. 1831 and "no trace /of Blackfriars Bridge fossils/ in Engineers books up to 1940", suggesting he looked carefully into the matter. If this date is correct it would mean the fossils Phillips collected to illustrate the Mesozoic in his part I, 1829 of "Illustrations of the Geology of Yorkshire" were lost in the Thames. Of these Cox and Arkell (1948-1950, p. xxii) wrote "mostly lost, except those from Bean coll, but a few in York Museum".

Collections in transit seem to have been at much risk in the 19th Century. Phillips collection in boxes was thought to have contained plate which thieves then threw into the Thames in disgust, as Sherborn claims. Exactly the same happened to the Earl of Enniskillen's fine collection in 1882 on route to the British Museum. Thieves seeing these two names assumed the crates were valuable and broke one open. The enclosed fossils, mainly fish, were thrown into the River Dee near Chester, luckily to be rescued in large part from the river bed, so that only 17 specimens were eventually lost (see Gardiner and Mason, 1974).

2. Henry Heuland (1778-1856)

Peter Embrey of the Brit. Mus. (Nat. Hist.) points out that Sir Arthur Russell (1952) has provided full biographical information of Heuland and his sales of minerals.

4. William Bean II

Apart from York, Bean's collections were thought to have been divided between the B.M. (N.H.) and Sedgwick Museums. Chapman (1942, p. 160) records that a third portion also went to Melbourne, Australia and was "a fine series". Chapman incidentally records several other English collections which went to Australia,

most important "the larger part of the Morris and Lycett collection of Jurassic fossils, including several types", a fact not known to the last revisers of Morris and Lycett's work, and worthy of further investigation.

compiled by H. S. Torrens.

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GEOLOGICAL COLLECTIONS AT U.C.W. ABERYSTWYTH

The Editor extends his apologies to Antony Wyatt of U.C.W. Aberystwyth for the omission from his list in G.C.G. 2, p.65 of the following:-

In addition to material that was stated in the original publication to be stored in the University College of Wales, Aberystwyth, there are some of the thin sections of corals figured by H. P. Lewis in The Avonian Succession in the South of the Isle of Man. Q.J.G.S. vol. 86, pp. 234-290 pls. xx-xxv. There are also a few other thin sections of corals that were collected by Lewis, and used by him in the course of this work. Unfortunately any solid material to go with these sections has not been located. N.B. These are not the sections that he sent to the British Museum.

If anyone would like a complete list of the Lewis sections that are present (including those that are parts of figured collections that were stated to be stored in Aberystwyth) I will be happy to supply them with one.

Antony Wyatt (Curator).

WORLD DIRECTORY OF MINERAL COLLECTIONS

The Commission on Museums of the International Mineralogical Association has published a World Directory of Mineral Collections (1974), copies of which are available from Dr. O. V. Petersen, Mineralogical Museum, Øster Voldgade 5-7, DK - 1350 Copenhagen, Denmark (price U.S. $4.00).

Unfortunately, the questionnaires for this edition did not reach our national representative in time, and only a last-minute effort resulted in there being any entries at all for the United Kingdom: the Royal Scottish Museum; the Institute of Geological Sciences; and the British Museum (Natural History).

The Commission is preparing a second edition, and I have been given the job of collecting entries (closing date 31st October 1975). Please write to me for a questionnaire if you consider your mineral collection should be included in the Directory, and let me know (with address and name of curator or owner) of any other collection of minerals that you would recommend for inclusion. ACT NOW !!

Peter G. Embrey,
Department of Mineralogy,
British Museum (Natural History),
Cromwell Road, London SW7 5BD.

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National Museum of Wales, Cardiff

A colloquium on palaeobiological curating, 1977

This will be a residential workshop/master class (sponsored jointly by the Palaeontological Association and the Geological Curators Group) concerned with the whole spectrum of curatorial problems and techniques in palaeobiology.

Those who hope to attend should write to Dr. D. A. Bassett, Geology Department, National Museum of Wales, Cardiff, before August 31st, 1975.

THE ABRC REVIEW OF TAXONOMY

A Review Group has been established under the auspices of the Advisory Board for the Research Councils (ABRC) to carry out a wide ranging review of taxonomy in all its aspects.

The Review Group, under the chairmanship of Dr. J. E. Smith, CBE, FRS, contains 15 members representing among them the Department of Education and Science, the Overseas Development Administration, the Science, Agricultural, Medical and Natural Environment Research Councils, the British Museum (Natural History), the Royal Society, the Royal Botanic Gardens, Kew, and the Commonwealth Mycological Institute. There are members from the Universities of Aberdeen, Birmingham, Leicester, London and Newcastle and from research institutes such as the Marine Biological Association, the Institute of Geological Sciences, the Freshwater Biological Association and Rothamsted Experimental Station.

This is the first overall review of taxonomy in the UK since that by the Royal Society in 1963. Concurrently the role of taxonomy in ecological research is being examined by a Working Party of the Natural Environment Research Council under the chairmanship of Professor R. B. Clark, himself a member of the ABRC Review Group.

The Review Group is surveying the people and institutions undertaking taxonomic research and identification services in the UK, and the user needs for taxonomic research and services both in the UK and in overseas countries. All aspects of the training of taxonomists are being studied, together with the staffing problems of curation and of the indexing and retrieval of taxonomic information. The Review Group is also examining problems of preparing and publishing manuals, handbooks and research monographs.

The Review Group has already held two meetings and is expected to report by the end of 1975. The Secretariat is being provided by the Natural Environment Research Council from whom further information is available.

GUIDE TO THE NATURAL HISTORY MANUSCRIPT RESOURCES OF THE BRITISH ISLES

A guide to the natural history manuscript resources of the British Isles is being prepared by Gavin Bridson (Librarian, Linnean Society of London, Burlington House, Piccadilly, London W1V OLQ) and Anthony P. Harvey (Librarian Department of Palaeontology, British Museum (Natural History), Cromwell Road, London SW7 5BD). Relevant libraries, museums and other organisations are being surveyed by means of questionnaire. A particular problem of this survey is the wide scatter of material as shown by its presence in some unlikely locations and many individuals will, through their own researches, have come into contact with such items. They may also know of undocumented items in public and private collections and might be able to contribute valuable information. The compilers will be grateful for, and readily acknowledge, any such information. The results of this survey are to be published by the Bowker Publishing Co. Ltd. in 1975.

YORKSHIRE MUSEUM, YORK

The Geology Department of the Yorkshire Museum will be 'open' to G.C.G. members on Friday, 20th June, to look at and discuss problems of storage, cataloguing and display, staff working conditions etc.

If you hope to come please can you let me know AS SOON AS POSSIBLE, so that I can arrange lunch, etc.

The Collections are, of course, available at any time to research workers; we appreciate a fortnight's notice of an intended visit.

Barbara J. Pyrah,
Yorkshire Museum,
York.

NOTICE

One of our members, S. A. Baldwin, is selling part of his private library on Anatomy, Archaeology, Caving, Geology, Natural History, Osteology, Palaeontology, Pre-History, and Zoology. There are some 500 items including several collectors items. If you would like a copy of the list, please send a S.A.E. to S. A. Baldwin, 32 Highfields Road, Purley, Surrey CR2 2JG.

TECHNICAL

INFORMATION REQUIRED:

Wanted - Any useful hints on constructing a model to demonstrate the movement of plates (? perspex) around a sphere. We would particularly be interested in a method (magnetic?) of holding the plates on to the sphere.

Dr. R. G. Park,
Geology Department, University of Keele.

In the mounting of thin sections on glass slides Lakeside frequently lacks sufficient adhesion particularly with micaceous specimens. Araldite of the correct R.I. can only be purchased in bulk and even then "smearing" effects are usually present. Has anyone managed to find a suitable adhesive with both grip and correct R.I.?

Mr. P. Greatbatch,
Geology Department, University of Keele.

INFORMATION GAINED:

R. G. Clements had the following replies to his queries in the last issue of the Newsletter:

1. Needles for use in a hand-held Eclipse pin-chuck

Dr. W. D. I. Rolfe (Hunterian Museum) reports that he has used headless steel pins obtainable in two lengths from:

Armstrong Cork Co. Ltd.,
Armstrong House,
Chequers Square,
Uxbridge, Middlesex.

These pins are made for fixing cork tiles to concrete, etc. subfloors. He reports they were relatively cheap, and lasted well. They were seemingly made of a less brittle steel than the old gramophone needles.

Mr. C. A. Sizer (Wellcome Institute) sent a cutting from a popular journal giving a source of the old-fashioned gramophone needles:

Fagin's Antiques,
189 Blackstock Road,
Highbury, London, N.5.

The price quoted was 32½p for a tin of 200, and postage is 20p for all orders up to £5.

2. Ageing of ballpoint pen inks

Dr. Rolfe reports the following, and I quote: "By coincidence today I noted how badly some (ballpoint writing) had faded on "On loan" labels we have in spaces for removed specimens. They are only a few years old and not brilliantly lit."

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● This biscuit-shaped fossil is an "ammonite"—a kind of shell. It measures about a foot across.

Do we really want to keep these fossils?

AN ELEPHANT'S FOOT, an Irish elk's skull and a mammoth's thigh-bone . . . the cellar room under the reference library in which Bath's museum pieces are stacked looks like a crack-brained collector's glory-hole.

Rows of shelves are loaded with dusty pieces of rock, pairs of antlers and cases of stuffed birds. The shelves climb up to the ceiling and spill over on to the floor in a profusion of fossils.

And in the middle of the floor stand the 60 or so boxes containing the Moore Collection, the boxes themselves acting as stands for a host of other oddments.

The Moore Collection? Many Bathonians are sadly unaware of this monument to a 19th century geologist's work.

They are all the items which Charles Moore, who lived in Bath and died in 1881, collected during a life-time's study of geology and the fossilised remains of prehistoric life.

It is all very sad and stimulating.

Sad, because it was all once proudly on display: though for 30 years it has been relegated to cellars.

March 22 1967

Steven Marcos, which looks into the pornography of Victorian times.

Coun H. Bradley (vice-chairman) said, "I suggest we quietly put them in because we have

member, said, "I would have thought if the Victorians passed the stuff the third book is about, 100 years later we ought to be able to let it through."

Moore collection will stay in city

July 12 1967

THE internationally known Moore geological collection is to remain in Bath.

Bath Library and Art Gallery Committee last night decided to do nothing.

"There has been only slight deterioration in the collection's condition, and it looks worse than it is."

Mr Pagan said the whole collection and additional material needed looking through and sorting out. "We might be busily preserving objects of rubbish."

○ The collection was made by a 19th century geologist, and was owned by the Royal Literary and Scientific Institution. It was put into trust when the Institution handed over its collection to Bath in 1959.