

GCGG

THE GEOLOGICAL CURATOR

VOLUME 4 No. 6

Issue 3 for 1985



**MARY ANNING ON THE BEACH AT LYME REGIS:
A WATERCOLOUR SKETCH BY THOMAS DE LA BECHE**

GEOLOGICAL CURATORS' GROUP

The Group is affiliated to the Geological Society of London. It was founded in 1974 to improve the status of geology in museums and similar institutions, and to improve the standard of geological curation in general by:

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

1986 COMMITTEE

Chairman	Philip S. Doughty, Keeper of Geology, The Ulster Museum, Botanic Gardens, Belfast BT9 5AB (Tel. 0232 668251).
Secretary	Geoffrey Tresise, Keeper of Geology, Liverpool Museum, William Brown Street, Liverpool L3 8EN (Tel. 051 207 0001/5451).
Treasurer	Tom Sharpe, Department of Geology, National Museum of Wales, Cathays Park, Cardiff CF1 3NP (Tel. 0222 397951).
Editor	Peter R. Crowther, Curator of Geology, City of Bristol Museum and Art Gallery, Queen's Road, Bristol BS8 1RL (Tel. 0272 299771).
Recorder	Donald I. Steward, Assistant Keeper, Department of Natural History, City Museum and Art Gallery, Hanley, Stoke-on-Trent ST1 3DW (Tel. 0782 273173).
Minutes Sec.	Diana M. Smith, Curator, Bath Geological Museum, 18 Queen Square, Bath BA1 2HP (Tel. 0225 28144).
Committee	Michael J. Benton, Department of Geology, The Queen's University of Belfast, Belfast BT7 1NN. Christopher J. Collins, Earth Sciences Technician, Leicestershire Museums Service, 96 New Walk, Leicester LE1 6TD (Tel. 0533 554100). Wendy Kirk, Department of Geology, University College London, Gower Street, London WC1E 6BT (Tel. 01 387 7050). David Price, Sedgwick Museum, Department of Earth Sciences, Downing Street, Cambridge CB2 3EQ (Tel. 0223 333400). Michael F. Stanley, Deputy County Museums Officer, Derbyshire Museums Service, John Turner House, Parkway, Darley Dale, Matlock, Derbyshire DE4 2FW (Tel. 0629 733226). Michael A. Taylor, Geological Conservator-Preparator, Area Museum Council for the South-West, City of Bristol Museum & Art Gallery, Queen's Road, Bristol BS8 1RL (Tel. 0272 299771).
Public Relations	Hugh Torrens, Department of Geology, Keele University, Keele, Staffordshire ST5 5BG (Tel. 0782 621111).

The views expressed by authors in the Geological Curator are entirely their own and do not represent those of either the Geological Curators' Group or the Geological Society of London unless otherwise stated.

Typed by Mrs Judy Marvin, Leicestershire Museums Service.

Printed by Leicestershire County Council's Reprographics Unit, County Hall, Glenfield, Leicester

THE GEOLOGICAL CURATOR

VOLUME 4, NO.6

CONTENTS

CONTENTS	307
EDITORIAL	308
COLLECTIONS, COLLECTORS AND MUSEUMS OF NOTE. NO.50, THE LYME REGIS (PHILPOT) MUSEUM: THE HISTORY, PROBLEMS AND PROSPECTS OF A SMALL MUSEUM AND ITS GEOLOGICAL COLLECTION by M.A. Taylor	309
FORTHCOMING MEETINGS	318
MARY ANNING SPECIMENS IN THE SEDGWICK MUSEUM, CAMBRIDGE by D. Price	319
FOSSIL COLLECTING AND CONSERVATION IN WEST DORSET: A PERSONAL VIEW by J. Fowles	325
LETTERS TO THE EDITOR	329
THE GEOLOGICAL COLLECTIONS OF SOMERSET COUNTY MUSEUM, TAUNTON: THEIR IMPORTANCE AND FUTURE by M.A. Taylor	331
EXHIBITION REVIEW	334
NOW AND THEN. NO.2, COPLOW QUARRY, CLITHEROE, LANCASHIRE by N. Turner	337
CONSERVATION FORUM compiled by C.J. Collins	341
LOST AND FOUND compiled by D.I. Steward and H.S. Torrens	343
'THUMBS UP' CAMPAIGN: PROGRESS REPORT by P.R. Crowther	348
COLLECTIONS INFORMATION NETWORK: GEOLOGY compiled by D.I. Steward	349
NOTES AND NEWS	353
BOOK REVIEWS	357
GCG 12th ANNUAL GENERAL MEETING	368

GEOLOGICAL CURATORS' GROUP

July 1986

EDITORIAL

The BM(NH)'s Corporate Plan 1986-1991 (published in February) makes for depressing reading. It is still, nevertheless, worth the effort - like most products of the BM(NH) it is clearly written and well presented. The Plan sets out to provide 'a framework for the Museum's Trustees and management to review and clarify their policies and plans for the next five or more years and aims also to satisfy the requirements of the Department of Education and Science (DES) and the Advisory Board for the Research Councils (ABRC)' (my emphasis) then devotes itself, without a protest, to the implementation of what are effectively, via the ABRC and DES, government inspired cuts. The Summary on p.7 explains what corporate planning means in BM(NH) terms: the unprotesting ('there is no alternative?') acceptance of a growing shortfall in public funds required just to maintain present services, a shortfall rising from £1.2m this year to over £2.5m by 1991, and the offsetting of this shortfall by reducing staff (including redundancies if necessary) and by the introduction of charges for both scientific services and public admission.

No doubt the Trustees and senior BM(NH) staff fought (and lost) many long battles with the ABRC and DES over the bald figures of the Corporate Plan, but little hint of any such defence of basic services survives in its published form. Sadly, what does shine through is a depressingly fatalistic acceptance of a radical and long term reduction in support from the Science Budget. Simple realism, I hear you cry! But surely, if the Plan provides 'a framework ... for the next five or more years', here was an opportunity for the Trustees not only to take account of today's realities but also to make a strong case for, at the very least, maintaining services and current funding, in the event of more realistic support levels becoming available? Government policies (and even governments) do change over such a time scale, and an alternative scenario to the relentless decline envisaged could surely have been usefully argued for? Section 1.6 Growth in demand contains much raw data from which just such a vigorous defence of current funding can be made: comparing the period 1963-1965 with 1981-1983, the numbers of staff publications, outward loans, visits from scientists, involvements with outside bodies, and specimens acquired, all just about doubled - while scientific staff numbers grew only from 335 to 372 (and have since fallen back to 1963 levels). During the same period visitors to the public galleries trebled to 2.66m (and rose to 3.3m in 1985). Whatever comparative measure of 'value for money' or 'efficiency' is chosen - scientific output, curatorial endeavour, or public popularity - BM(NH) performance has therefore 'improved' by about 100%. All to no avail apparently. Stemming ultimately from central government's relentless pressure on the Science Budget, the ABRC and DES remain unimpressed and, from the dead pan

attitude struck by their Corporate Plan, even the museum's Trustees appear unwilling to beat the drum on behalf of their staff.

So admission charges are to be introduced by the Trustees next year. At what cost? Experience elsewhere suggests visitor figures will be halved (but I guess that still leaves the accountants looking at 1.6m to pay, say, £1 or £2 each). I am told that a mere £350,000 should cover the installation of turnstiles! Then there are the staff costs involved in collecting the money. And finally there is the cost of dismantling the whole silly system at the next change of government policy. 'Market forces' cannot be invoked selectively on the consumer without affecting the 'supply' side of the process. If visitors are to be charged for using their own national collections (built up over two centuries by donors who gave freely, trusting that their material would remain freely available to others) then future potential donors must consider charging the museum for the costs of collecting, preparing and identifying their material - or take their collections elsewhere; authors will become reluctant to give copies of their publications to the Museum; and the Museum must now expect to pay for the opinions of outside specialists (oil field consultancy rates can be £300 per day).

Where does all this leave the Geological Museum, recently absorbed by the BM(NH) following the British Geological Survey's move to Keyworth? I suppose anything is better than NERC but, in the present circumstances, this newcomer to an administrative structure which ranks it alongside the nine existing curatorial/research and service departments of the BM(NH), must view its own independent future with some trepidation. The Corporate Plan does little to dispel the suspicion that its days as a true geological museum - as defined by GCG's 'Thumbs Up' Campaign criteria (e.g. reference collections and qualified geologists) - are numbered. Taken together, Section 1.1.5 and Fig.1 indicate that within the BM(NH) the GM is now considered to be an 'exhibition and education' department, distinct from the five 'curatorial and research' departments next door.

I would be delighted to hear from anyone directly involved with the Corporate Plan's implementation that my misgivings are uninformed, misdirected or otherwise out of place.

Peter R. Crowther
Editor, Geological Curators' Group

23 June 1986

THE LYME REGIS (PHILPOT) MUSEUM: THE HISTORY, PROBLEMS AND PROSPECTS OF A SMALL MUSEUM AND ITS GEOLOGICAL COLLECTION

BY MICHAEL A. TAYLOR

INTRODUCTION

The Lyme Regis (Philpot) Museum (Fig.1) is an independent trust museum run entirely by volunteers under the Honorary Curator, John Fowles - no mean achievement in a town as small as Lyme (permanent population 3,300). The Museum has become a valuable centre for the display of local geology and geomorphology, and for the display of and research into local history (including the history of geology). The Museum is open only from April to September (inclusive) and admission is by a moderate charge (30p, 10p for children in 1985); in 1984 there were 22,000 visitors, including holiday makers for whom the Museum is partly geared to cater.

This article stems from a survey of the geological collections and the ensuing conservation and advisory work as part of the geological service of the Area Museum Council for the South West. Lyme Regis is the first small museum to obtain a substantial range of services under this scheme and has thus become something of a test case. I will therefore discuss how far the AMCSW service has been able to make good the deficiencies in the Museum's own resources, and the wider implications for schemes of this kind.

ORIGIN AND HISTORY OF THE MUSEUM

Lyme Regis has a long and continuing tradition of fossil shops, which have sometimes had small paying exhibitions of fossils in a back room. The first hint of what we would call a museum, however, was the Working Men's Institute on Broad Street during mid-Victorian times, when Joseph Anning (Mary's brother) was Secretary. The Institute had a fossil collection which it apparently displayed, and so perhaps counts as Lyme's first museum (J. Fowles, pers. comm. 1985), but otherwise the town had no museum until the Philpot Museum was founded in the twentieth century.

The Philpot Museum's history is not well known. The original suggestion that Lyme should have a museum may well have originated in a letter to the local newspaper, the Lyme Regis News, of 15 August, 1891. Active in local affairs at this time was one Thomas E.D. Philpot, a great-nephew of the Misses Philpot (see below) and builder of the Museum in 1900-1901. He was '...a bachelor who had no children to speak of but a number of illegitimate sons, [and] lived in Lyme Regis for many years. He was rich, he gambled on the Stock Exchange, he lived at Gatesfield - a large house on the outskirts of the town; he



Fig.1 Lyme Regis Museum, landward side. It was built about 1901 on what is very probably the site of Mary Anning's first fossil shop, but did not open until 1921, under Dr V.H. Wyatt Wingrave.

was unpopular and it is alleged that, in order to establish a friendly image, built the museum as a gesture of his public spirit. In private, his spirit was an unhealthy appetite for whisky. He employed a Dorset architect (George B. Vials) to design a building which was ready in 1901 to become a museum and art gallery although there was nothing to put in it. Three or four old cottages were demolished on a site adjacent to the Town Hall in a superb position overlooking Gun Cliff and the sea' (Gilbert 1980). It has recently come to light that one of these cottages, formerly on the very site of the museum, was in 1824 a 'fossil shop'; it seems very likely that this was the Annings' shop, and Mary's birthplace (Fowles 1986a, p.10).

The Museum is one of the most impressively located in Britain and its strategic

position, right on the sea-wall at the foot of the town centre, is almost perfect for the capture of visitors. Almost as if the Museum were a visitor centre in a country park, it overlooks the intertidal exposures of the local Lias and has fine views to the west and east. Indeed, the Museum is itself intertidal or at least is in the splash zone, for the winter sea breaks against the walls and over the roof, saturating the building with salt and moisture. The prints, drawings, and other material sensitive to humidity and mildew are consequently taken out and stored elsewhere during the winter closed season. This constant inundation has had deleterious effects on the fabric of the building, which was not soundly constructed in the first place. These structural and environmental problems remain among the major ones facing the museum authorities, and would be insuperable were it not for West Dorset District Council, who are now responsible for the maintenance of the building. The Council's recent work on the cellar has turned it into a much drier store.

The Museum building was finished in 1901 but remained partly empty (except for use as a Red Cross depot during the Great War) until 1920 when Miss Caroline Philpot, one of Thomas's nieces, donated it to the town. It is not clear what if anything Thomas Philpot had intended to put in the Museum, nor is there any record that he ever took an interest in fossils or had a collection. The collection of his great-aunts had long since gone to the University Museum, Oxford, in 1880 (Edmonds 1978). Lang (1939) asserted that Philpot had built the Museum to house 'miscellaneous collections he had made during his travels' but that it was never put to such use.

It seems that the Museum opened in part of the present building in March 1921 only because a retired doctor, V.H. Wyatt Wingrave, loaned his private geological collection and acted as unofficial curator. Anon. (1921a) stated:

'We are glad to learn that Lyme Regis, a town classic in geology, is now provided with a public collection of local fossils. Three years ago a small museum building was bequeathed to the corporation by the late Mr Philpot, and it is now occupied by the geological collection and library of Dr Wyatt Wingrave, who has lately become a resident of the town, and has devoted much labour to making the museum of educational value. The fossils are arranged in stratigraphical order, with appropriate labels and diagrams, and Dr Wingrave gives a weekly demonstration which is well attended and much appreciated.' Muriel Arber (pers. comm. 1985) recalls one such lecture, in which Wingrave discussed the dextral and sinistral coiling of gastropods and the way in which the newel stairs of medieval castles were sinistrally coiled to permit the defender, but not the attacker, to use his sword-arm freely! At the opening ceremony (Anon. 1921b) Wingrave expressed his hope that the Museum would be important to visitors, as they could see specimens of local fossils, as well as

maps and plans showing where they could be found. At that time Wingrave claimed that there were no local collectors and hoped the Museum would encourage local people to take up an interest in local geology. The weekly demonstrations were intended to explain 'where specimens could be found and how they should be arranged'.

In 1923 The Lyme Regis Museum of Geology and Archaeology Guide and Report was published. This 22 page illustrated booklet (Anon. 1923) was presumably written by Wingrave because, together with lists of exhibits in each gallery and notes on the most interesting specimens therein, much space was taken up by bald lists of the chief local fossils and the geological zonation of the local rocks. The reader was also told where to find specimens and how to collect them, and provided with a list of 'Useful Works' on palaeontology and geology available for reference at the Museum. It would be a bold museum today which referred the general reader to Palaeontographical Society Monographs!

The Philpot Museum was set up as a Trust on 10 October 1927. The founder Trustees included Wingrave, who then became the first official Curator from 1927 (pace Lang 1939, who says 1920) to his resignation on the grounds of ill-health in 1935. In 1937 he gave to the Trustees all the material which he had previously loaned. Wingrave was the only official Curator to have any geological experience until John Fowles (1978 onwards). In November 1935 J.F. Jackson (Honorary Curator of the Isle of Wight Museum of Geology) rearranged, sorted and labelled the geological collections for £10. W.D. Lang became a Trustee in September 1937 and seems to have acted very much as visiting unofficial curator for geology. Lang also did much other work, especially when the building was taken over by the Borough offices during the 1939-1945 war and the ground floor turned into an A.R.P. control centre in 1942. The collections were apparently shifted to the upper floor. After the war the Museum fell into a decline and Lang resigned in 1948.

There was apparently no curator from 1946 to 1960. The Trustees' minutes have a gap for 1946 to 1957 and then resume to record that the museum building and collections were in very poor condition, and that the Museum might have to be closed if it did not move to another building. However, the Museum eventually revived, to reopen in 1960, and was considerably helped in 1971 by a grant from the Carnegie United Kingdom Trust for renovation of the collections and displays. After a succession of other curators who did good work but did not have a specific interest in geology, John Fowles, the present Honorary Curator and a member of GCG, took up his post in 1979 after one year as joint Curator. He is a keen amateur botanist and local historian with a strong interest in the history of local geology. However, the Museum (which became the Lyme Regis (Philpot) Museum in 1979) suffers from the lack of a locally available geologically trained person and has here to rely on periodic advice and

help from larger museums and now the Area Museum Council for the South West.

Today the Museum is flourishing despite its tiny budget and has even published several booklets and guides on local history, including the history of geology, as well as its own postcard of the Fossil Depot (Fig.2). The Friends of the Lyme Regis Museum provide much of the volunteer labour and purchase funds needed to keep the Museum an active entity. The annual Curator's Report (Fowles 1979 *et seq.*) doubles as a vehicle to keep the Friends informed of recent discoveries and research as well as new acquisitions; thus recent issues have featured Hugh Torrens' findings of some Mary Anning letters, the new ostracod species Cytherelloidea anningi Lord, and new specimens found by Robert and Peter Langham and David Costain, as well as more routine museum matters. This sort of annual publication could well be copied elsewhere and is all the more impressive as the Friends' annual subscription is only £1.50 (life £15).

THE GEOLOGICAL COLLECTION

The specimens

The Museum's collection comprises about one thousand specimens, nearly all of which come from the coastal outcrops and hinterland of Lyme. About half originate from the Rhaetian and Lower Jurassic, and the rest from the Middle and Upper Jurassic and Cretaceous. About a fifth are rocks and minerals, a quarter vertebrates, and the rest are invertebrates with a few plants. The collection has many good specimens but is more a general collection of local fossils, with some historically important specimens, rather than an outstanding display collection. The new, select specimens previously on loan from Robert and Peter Langham and David Costain therefore complemented the Museum's own specimens well.

There are few Rhaetian specimens. The Liassic material, much of which was determined by Lang, L.F. Spath and L.R. Cox, is almost all from the local Lower Lias with a little Middle Lias from Eype. Much of it (mainly that collected by W.D. Lang) bears detailed locality and horizon data, which often includes the numbers assigned by Lang in his published papers to every individual bed along the coast. The Middle Jurassic material is almost all 'Inferior Oolite'. Inferior Oolite localities include Burton Bradstock, Shipton Gorge, Chinnock, Sherborne, and Vinney Cross. 'Great Oolite' and Upper Jurassic material includes specimens from Bothenhampton and Powerstock. The Cretaceous material is from the local Gault, Upper Greensand and Chalk, but mainly from the Upper Greensand. The small mineral collection is almost entirely of chalcedony and other local sedimentary minerals.

About a quarter of the collection comprises a fairly representative collection of local Lias vertebrates. On display is a large but poorly preserved ichthyosaur some 5m long, as

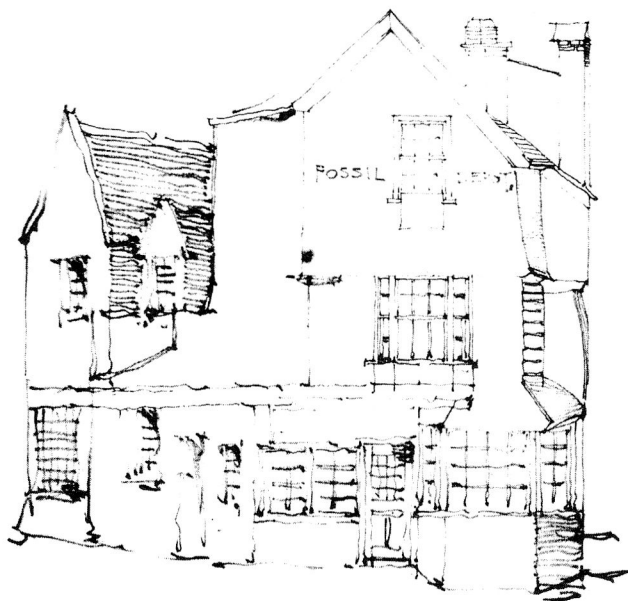


Fig.2 The Fossil Depot, begun soon after Mary Anning's death in 1847. This fossil shop was demolished in 1913 to broaden Bridge Street. A Lyme Regis Museum postcard is taken from this 1895 pencil drawing by Charles Rennie Mackintosh. Reproduced by kind permission of the Hunterian Art Gallery, University of Glasgow (copyright holders) and Lyme Regis (Philpot) Museum.

well as some incomplete ichthyosaurs. The most interesting specimens are Harrison's own partial skeleton of the juvenile dinosaur Scelidosaurus harrisoni figured by Owen (1860-1862) (Fig.3) and his specimen of an upper jaw of the pterosaur Dimorphodon macronyx, recently filmed by the BBC on the beach with David Attenborough, who pulled it out of his pocket with the aplomb of someone who finds such rarities every day! The Philpot sisters (q.v.) are represented by a donation from the

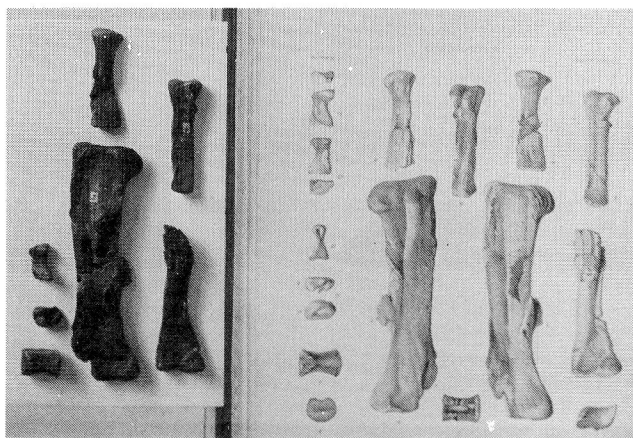


Fig.3 James Harrison's juvenile specimen of the Lyme Regis dinosaur Scelidosaurus (found about 1858) beside its illustration in the copy of Sir Richard Owen's original paper of 1860-1862 inscribed by him to Harrison. Scelidosaurus remains a very rare fossil locally.

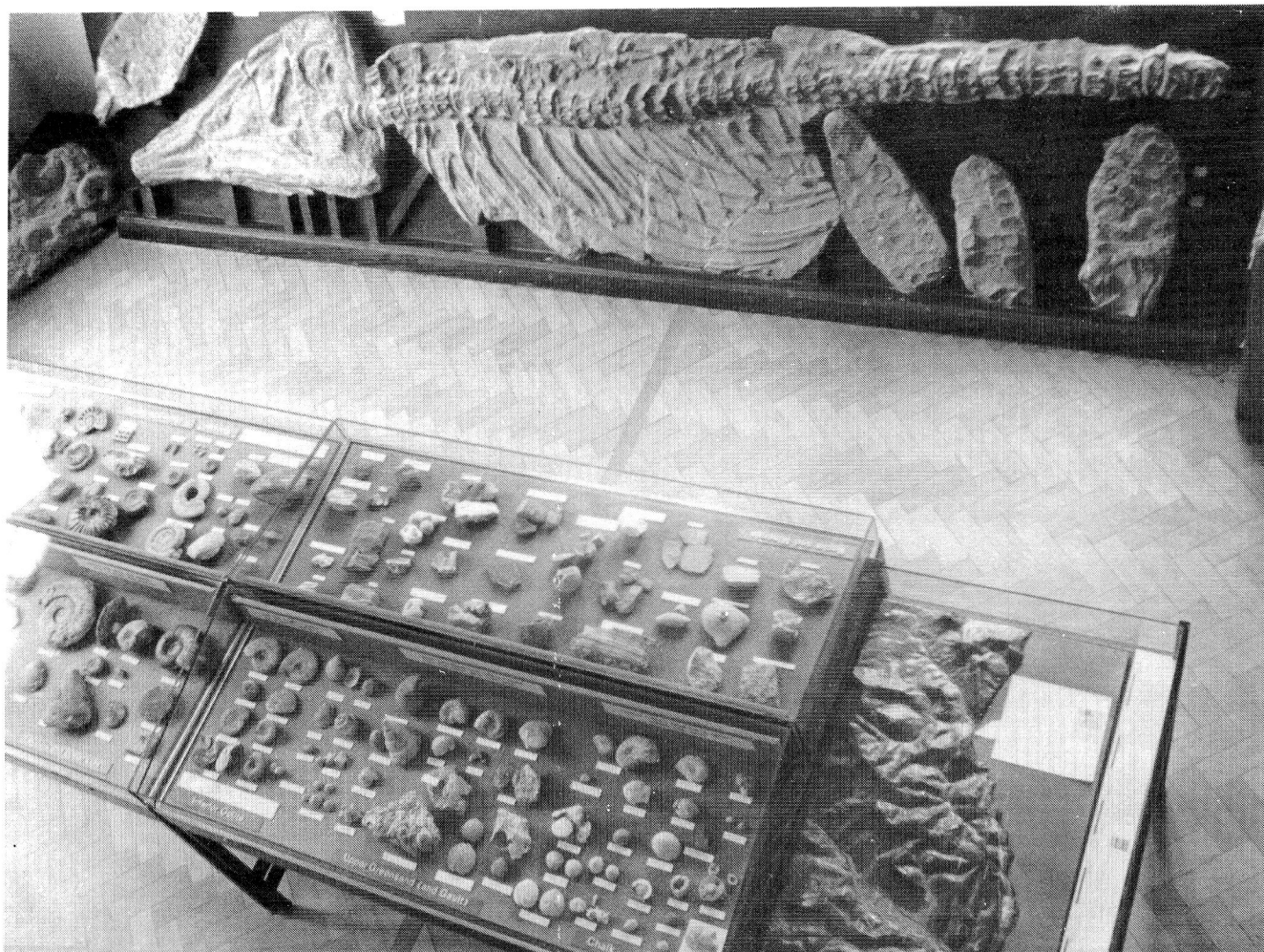


Fig.4 The Fossil Gallery today. The large ichthyosaur, unique in having two large eyes inside the lower jaw, was very poorly prepared in the 1920s.

Oxford University Museum of three of their specimens, including a Dimorphodon ulna, Dapedium head and Belemnoteuthis. Another comparative rarity (at least locally) is a partial ichthyosaur from Charton Bay labelled 'Upper Greensand' but apparently from the lowermost Lias, well below the usual reptile-bearing beds of the local Lias.

The invertebrate collection includes some good and useful material, especially of Liassic species, with a few rarities such as specimens of the dibranchiates Loligosepia and Phragmoteuthis, and a set of plaster casts of Liassic type ammonites obtained by Wingrave. However, it cannot be considered a fully comprehensive set of Liassic material.

The Museum also has seventeen core samples from the Lyme Regis Borehole of 1901 (Jukes-Browne 1902), donated in 1973 by Bristol City Museum. This material had been overlooked by Warrington and Scrivener (1980) and an inquiry to them revealed that three of the Lyme specimens were unique and will be valuable in future palynological research: a direct result and a happy illustration of Pettigrew's (1981) remarks on the value of saving old borehole cores, not least because he cited that very borehole as an example.

Documentation and conservation

The original documentation of the collection was little more than the specimen labels. Many specimens, however, bear detailed provenance information (mainly material collected by Lang) citing bed numbers from Lang's detailed stratigraphic work on the Lower Lias. The Museum's records are unfortunately very poor and it has been difficult to trace specimens coming into the Museum or going out from the Museum to other institutions. Lang did compile a catalogue about 1946. It is clear from specimen labels that major donors include Wingrave, Lang, Mary Harrison (James Harrison's material), and H.B. Ellis. In 1971-1973 M.L.K. Curtis and T.R. Fry of Bristol City Museum curated about two thirds of the collection, registering and labelling the specimens and preparing a stratigraphic and taxonomic card index. The remaining unregistered material was mostly small specimens in matchboxes, which had generally been well labelled by Lang.

Almost all the material is either on display or stored in drawers under showcases; it is generally clean and in good condition apart from a few dozen instances of pyrite oxidation (hardly surprising in view of the high humidities prevailing in the museum).



Fig.5 A plate from Conybeare and Buckland's Memoir (1840) on the Dowlands Landslip of 1839-1840, showing the famous slipped wheatfield. Ladies attending the harvest received a silver sickle ornament as memento.

When these specimens are conserved they will have to be stored above conditioned silica gel. Doubtless there were more pyrite-containing specimens but their numbers have been depleted by decay and subsequent disposal of the remains. Several specimens are suffering from efflorescences whose causes are as yet unclear; they are probably related to chlorine contamination of the specimens, with or without the attack of organic acid vapour emitted by materials used in the fabrication of the cases.

DISPLAYS

The present displays include a general display of fossils (Fig.4), a simple systematic display of rocks, fossils and minerals, and smaller displays devoted to individual palaeontologists and specimens. There is a wall display on the local landslips (Fig.5) ranging in age from early lithographs (and the title page of the piece of music The Landslip Quadrille) to recent research by the British Geological Survey. The biggest problem with display work is that there is no locally available person with the specialised knowledge or time needed to plan scientifically accurate displays such as, say, a systematic display of the fossils from each bed of the Lias.

PERSONALIA

Apart from the actual fossils, the Museum has a small but interesting and growing collection of original books, letters and other items associated with historically important geologists who have worked in the Lyme area. There are two bound sets of classic early papers on local geology and palaeontology from the Transactions of the Geological Society of London, one inscribed by their authors (Conybeare, De la Beche and Buckland) to the Philpot sisters. The other set appears once to have belonged to the Marders (see below). Buckland himself is appropriately represented - given his research interests and somewhat coarse sense of humour - by a table top inlaid with sliced and polished coprolites presented by his grandson, Mr Frank Gordon, in 1938. The Museum has Conybeare's letter to the poet

Southey concerning the epitaph for a monument to be erected in Bristol Cathedral over the grave of Bishop John Butler (1692-1752). A delightful watercolour of the Lyme Regis Dragon as a 'noctivagous' beast was painted by the Rev. G. Howman when the Lyme pterosaur was discovered in 1829. It has somewhat batlike wings and a long, curly tail with the regulation sting of any self-respecting dragon (and is reminiscent of J.R.R. Tolkien's Smaug the Dragon!). Unfortunately the Museum has no fossils from Mary Anning but it does possess her digging trowel, and has on loan her inscribed bound copy of the Theological Magazine for 1801. The Museum also at one time possessed a copy of Miller's (1821) The Natural History of Crinoids inscribed to 'Miss Mary Anning' but this strayed and was last sighted in a Bristol book-dealer's catalogue in 1983 (A.R. Heath's Catalogue No.49, item 196, price £250!; Hugh Torrens, pers. comm. 1985). Mary's one surviving brother Joseph is represented by a sketch of the holotype Dimorphodon head, reputedly done by him, and by his set square.

There is an oil painting, c.1830, of Mrs Anne Marder (1793-1872), mother of Henry and James Wood Marder, the two major fossil collectors of mid-Victorian Lyme. Henry was a surgeon by profession, James a chemist. A watercolour records the Fossil Depot about the turn of the century. Wingrave is represented by two bound volumes of letters (dated c.1913-1923) to him from various palaeontologists and collectors, including S.S. Buckman, G.C. Crick, H.L. Hawkins, W.D. Lang, L. Richardson, W.J. Sollas, and L.F. Spath. There is also a set of his photographs of various pathological specimens of fossils, such as broken and healed, or abnormal, cephalopods and reptiles. Some of these specimens were in the Museum of the Royal College of Surgeons of London before the Second World War (Wingrave 1929).

LOAN COLLECTION OF MESSRS LANGHAM, LANGHAM AND COSTAIN

Robert and Peter Langham and David Costain are professional collectors active today in the area of Lyme Regis and elsewhere in Dorset and Somerset. They loaned to the

museum a fine collection of splendid new vertebrates and invertebrates, mainly from the Lias of Lyme Regis and the north Somerset coast, which filled almost a whole gallery. The specimens were chosen mainly for their quality and attractiveness (see Fowles 1986b, fig.2, herein) but they included some very rare material, such as the tiny paddle from what must have been an embryo ichthyosaur, a phragmoteuthid cephalopod with uncrushed phragmocone, soft parts, and hooklet-armed tentacles, and (on show until recently) the only substantial plesiosaur skeleton with head to be recovered from Lyme this century. This collection is now being removed to Peter Langham's new museum, 'Dinosaur World', in the converted Coombe Street chapel (Fowles 1986a, pp.3-5).

GEOLOGICAL COLLECTORS AND COLLECTIONS IN THE MUSEUM

See the main text and Cleevely (1983) for further information.

Ellis, H.B. A Mayor of Lyme Regis and an amateur radiologist; donated material, including the large ichthyosaur.

Fowles, John. Honorary curator 1979-; has donated a few specimens, mostly Cretaceous.

Harding, W.J. Donated 'fossils' (Anon. 1923); became interested in local history after retiring to Lyme just before the First World War (M. Arber, pers. comm. 1985).

Harrison, James (1819-1864). Harrison was one of the most important local amateur collectors of the mid-nineteenth century. He lived at Charmouth (c.1850-1864), collected the local fossils, corresponded with palaeontologists such as Sir Richard Owen and Sir Philip Egerton, and was the discoverer of the eponymous dinosaur Scelidosaurus harrisoni Owen. Much of his collection was bought by the dealer Robert Damon (and presumably further dispersed) but other material was sold to the British Museum (Natural History) and the Geological Survey (Cleevely 1983). A small amount of material, including a jaw of the pterosaur Dimorphodon and the juvenile Scelidosaurus figured by Owen (1860-1862), signed presentation copies of Owen's Scelidosaurus papers, and Harrison's correspondence were all kept in the family and eventually donated to the museum in 1937 by his younger daughter Mary Harrison. Lang (1947) summarised this correspondence (now in the Dorset County Records Office; Taylor and Fowles 1985) and gave a brief biography.

Lang, William Dickson FRS, FGS (1878-1966); Department of Geology, BM(NH) 1902-1938 (Keeper 1928-1938). Lang did much important work on the stratigraphical succession of the Lower Lias in Dorset, not least because his future wife (whom he met in 1898 and married in 1908) lived at Charmouth. He holidayed at Charmouth and eventually moved there on his retirement in 1938 to live at 'Lias Lea' (now 'Honeywood') and devoted his time to local geology and natural history, and the history of local natural history. He was President of the Dorset Natural History

and Archaeological Society, 1938-1940, and on its council thereafter, and published many articles in the Society's Proceedings. Most of his collections went to the BM(NH) but some specimens are at the Dorset County Museum and at the Lyme Regis (Philpot) Museum. His field notebooks and many other personalia remain in the possession of his daughter, Brenda Lang, still resident in Charmouth. Cleevely (1983) gives obituary references; see also Arber (1967) and Stearn's (1983) potted biography.

Philpot, Miss Elizabeth (?1780-1857),

Philpot, Miss Mary (?1777-1838), and

Philpot, Miss Margaret (died 1845).

The well-known fossil collectors of early nineteenth century Lyme, of whom the keenest seems to have been Elizabeth. Their collection went to the Oxford University Museum in 1880 (Edmonds 1978) but the University Museum donated three specimens to the Lyme Regis (Philpot) Museum in the 1970s.

Slater, Mrs. 'Fossils' (Anon. 1923).

Wingrave, Vitruvius Harold Wyatt, MD MRCS LSA etc. (1858 - 1 June 1938). Born 1858 in Coventry, and granted its Freedom in 1935 and that of Lyme in 1937. Hugh Torrens (pers. comm. 1985) believes that he was the grandson of James Wyatt FGS (1816-1878) (see Burke's Landed Gentry, 1937, p.2507). He was a throat and ear specialist at the Central London Throat and Ear Hospital for some thirty years, during which time he caught diphtheria, was totally deafened and partly paralysed, and had to become a pathologist, lecturer and consultant. He was a lecturer in physiology at the same hospital and at the School of Anatomy, London, Medical Graduates' College, and Polytechnic. President of the British Laryngological Society, he wrote numerous medical publications including Adenoids.

Wingrave had been a keen sportsman and a member of the Honourable Artillery Company but after his disablement had to retire to Burton Bradstock and then to Morecombelake, where he became intensely interested in fossils. In due course he moved to Lyme and lived in a house called the Cobbe near the harbour. Lang records that he pressed into service 'collectors of all sorts to supply him with such local geological specimens as his physical disabilities prevented him from collecting for himself'.

He was in contact with the specialists of his time, and particularly interested in ammonites and palaeopathology. Spath (1924) was 'indebted to Dr Wyatt Wingrave for permission to use his extensive collection and for his ever-ready help'. Wingrave (1916) himself described the new ammonite subspecies Coeloceras davoei var. rectiradiatum, now Productylioceras rectiradiatum (holotype BM(NH) C36730; D.T. Donovan, pers. comm. 1984). Spath named Oxynoticeras wingravei after him (holotype BM(NH) C2226). He also took

some interest in and wrote on local history. He donated his collections, as far as is known, to the Lyme Regis Museum, except for: the 'earliest known specimens of Saurian Rheumatoid Disease' and the healed ammonites, which all went to the Museum of the Royal College of Surgeons in 1928; and material sold to the BM(NH) in 1935.

The Museum holds two photographs of him.

Much of the above information is taken from an article in the Pulman's Weekly News for 11 June 1935 on the occasion of the conferment of the Freedom of Coventry, his obituary by Lang (1939), and his entry in Who was who 1929-1940, pp.1475-1476.

THE FUTURE OF THE MUSEUM AND ITS GEOLOGICAL COLLECTION

The Lyme Regis (Philpot) Museum has an interesting geological collection containing scientifically and historically important material. It is actively used as much as possible for display and research. The Curator is keen to do the best he can and is predisposed towards geology and natural history, himself researching actively in the local history of the natural sciences. It is no coincidence that this is the first article published about a museum surveyed as part of the AMCSW service, for it incorporates much research on John Fowles's part. But for the foreseeable future the Museum will not be able to afford a full-time professional curator, let alone a permanent geological curator, and it would be futile to suggest otherwise (as is true for so many small local museums). There is no geologically trained person locally available and the Museum therefore finds it difficult to deal with matters relating to local geology: for example, setting up new displays or, for that matter, selectively expanding the collections to give a more comprehensive and systematic coverage of the local fossils. So, even when the Curator shows goodwill and an informed interest considerably above the average amongst non-geological museum curators, the Museum alone cannot quite cope with its geological collection, at least as well as the Geological Curators' Group might like.

Many of the Museum's problems - above all the building and the general lack of money and manpower - are of course endemic to small museums and to all the subjects which they cover. Even problems specific to geological collections revert to questions of money and its use for one thing rather than another. One option is the transfer of the collections to another museum. This would be a great pity, I believe, for Lyme needs a geological (and historical) museum. After all, the Museum had 22,000 visitors last year, in a town with a resident population one sixth of that. At least at present, the Museum is viable. An alternative is to appoint a professional geological curator locally - if not for the Museum alone then at least for a group of small museums. This is attractive but difficult when the museums come under

different governing bodies, and I should stress that this is not presently under consideration at Lyme.

Another alternative is for the Area Museum Council to provide advice, help and information, as is happening. The Museum has received advice on the nature and importance of its collections, their curation and conservation. Some specimens are being prepared or conserved in the AMCSW laboratory in Bristol. Photocopies have been provided of useful papers on museums and geology. Although trivial at first sight this service is no small thing when the nearest large scientific library is at Exeter University (and is in any case not open to all and sundry). This highlights the fact that anyone providing advice to small museums must either write completely self-contained pieces without the need for further references, at least for their immediate purposes, or else provide copies of these references. I identified or arranged for the identification of specimens, and provided information for display scripts, sometimes after suggesting new displays. All this has been very well received in the most positive way and I have been given a great deal of information in return. Except for the conservation work, this was all done without charge to the Museum.

Nevertheless two substantial tasks remain to be done before the Museum's collections are curated and displayed to as high a standard as one can reasonably expect for such a museum. They are worth discussing as concrete examples of the abstract concept 'financial constraints', showing how expensive curation is when costed at hourly rates.

1. Three or four hundred specimens still remain unregistered. Even simple labelling, registration and minor repair and consolidation (as necessary) - without checking the identifications - might be at a guess at least a week's work. At the full hourly rate of £5.80 the AMCSW would charge a sum perhaps rather more than £200 for this work, including travel; reidentification would push the charge up considerably. The AMCSW would routinely consider remitting some of this charge by way of subsidy: but it does have to pay its own way, and cannot usually remit the entire charge. And this is a very favourable case, with the collection largely already curated by professionals, and the unregistered material well labelled and in good order. I stress this example because it illustrates the vast amount of work and ensuing cost that even a 'once over lightly' approach to an uncurated collection requires. At the moment we have left the specimens alone for now, as they are in good order and well labelled, but they still ought to be registered and numbered. Perhaps a volunteer will do the clerical work after briefing; but there are so many other jobs to be done in the Museum. At least Brunton *et al.* (1985) have now provided some guidance on just how the registration of such a collection should be approached.



Fig.6. First floor interior of the Lyme Regis (Philpot) Museum in May 1985, with the Honorary Curator, John Fowles. Note the charming cast-iron staircase from the Fossil Gallery up to the second floor.

2. The present display of the distribution of fossils amongst the different strata of the local Lias and Cretaceous badly needs revision. For this to be done, someone must first draw up a draft schedule of fossils and strata, then go down to Lyme and pick out suitable display specimens and arrange for the collection of new specimens as necessary. Again, even when a suitable person has been found, the cost in time, travel and expenses is likely to be comparable to the previous example.

So the museum needs to find up to several hundred pounds to complete its cataloguing and displays - a substantial sum for such a small museum (but before subsidy and voluntary help are taken into account). Yet this is a museum which is already largely in excellent order, with two-thirds of the specimens professionally documented. Imagine the costs for one of the many museums whose geological collections are in chaos; and of course those collections needing help most will entail the highest bills. The moral is that it is not sufficient for an area museum council (or other body) to offer a geological service; the museum must also have the money to pay for work to be done on its behalf, and the money and time for its own implementation of free advice. The lack of money to pay for services is of course a universal problem of pastoral services in any subject, as was discovered by at least one other experiment (Chaplin 1978).

Another important demonstration from our work at Lyme is that the local curator and

pastoral specialist have complementary skills and resources, which in combination give much better care of the collections and service to the public compared to each working alone. Local knowledge and contacts, research, acquisition, and displays are very much the province of the curator, while the specialist takes care of the more abstruse aspects such as storage and documentation, and draws upon library and laboratory resources unavailable locally. This is of course precisely the division of labour recommended by other authors weighing conclusions from their own pastoral experiments (Chaplin 1978; Norgate 1980). Indeed, 'storage and documentation do not attract the enthusiastic involvement of the amateur' (if only because of the specialised museological knowledge required), '...while display does' (Denford *et al.* 1984).

The Museum also has ideas for other projects. John Fowles would like to see improvements to the displays on historical geologists and palaeontologists, together with a historically accurate popular publication on Mary Anning and her times, building on the work of Lang, Torrens, and their associates, for what is presently available is 'nine parts romantic rubbish'. (Present plans offer the hope of one before long: see *Geol. Curator*, 4, 296). Meanwhile he and the Museum (Fig.6) will continue their involvement with conserving the local geology and presenting it to the public (Fowles 1982, 1986b), whether schoolchild, student or casual visitor.

ACKNOWLEDGEMENTS

This article was prepared as part of my geological work for the Area Museum Council for the South West. I am grateful to both John Fowles, Honorary Curator, Lyme Regis (Philpot) Museum, and Stephen Locke, AMCSW, for facilities for the survey and permission to publish. I thank John Fowles, Muriel Arber and Hugh Torrens for much essential information and constructive criticism, and Professor Desmond Donovan for examining the invertebrate material. I thank the Lyme Regis (Philpot) Museum for Figs.1, 3-6, and the Hunterian Art Gallery, University of Glasgow, for Fig.2.

REFERENCES

Much of the information relating to the Museum and its history is taken from the Minutes and scrapbooks preserved in the Museum.

- Anon. 1921a. *Nature*, Lond. 107, 598.
- Anon. 1921b. Geological gallery and library opened. Dr W. Wingrave on geological study. *Pulman's Weekly News*, 29 March 1921.
- Anon. 1923. Lyme Regis Museum of Geology and Archaeology Guide and Report. Lyme Regis Printing and Publishing Company, Lyme Regis, 22pp.
- Arber, M.A. 1967. [Obituary of W.D. Lang.] *Proc. Geol. Ass.* 78, 387-389.
- Brunton, C.H.C., Besterman, T.P. and Cooper, J.A. 1985. Guidelines for the curation of geological material. *Misc. Pap. geol. Soc.* 17.
- Chaplin, R.E. 1978. The travelling curator service in Scotland. *Museums J.* 78, 177-180.
- Cleavelly, R.J. 1983. World palaeontological collections. British Museum (Natural History) and Mansell Publishing, London, 365pp.
- Denford, G.T., Lewis, E.R. and Viner, D.J. 1984. Small museums. pp.91-97. In Thompson, J.M.A. (ed.). The manual of curatorship. Museums Association and Butterworths, London, 553pp.
- Edmonds, J.M. 1978. The fossil collection of the Misses Philpot of Lyme Regis. *Proc. Dorset nat. Hist. archaeol. Soc.* 98, 43-48.
- Fowles, J. 1979. Lyme Regis Museum. Curator's Report, with notes on recent discoveries and new acquisitions, for 1979. Lyme Regis (Philpot) Museum, 11pp.
- Fowles, J. 1982. Geology at Lyme Regis - a museum curator's view. *Circ. Geol. Ass.* 829, 23-24.
- 1986a. Lyme Regis Museum. Curator's Report, with notes on recent discoveries, research and new acquisitions, for 1985. Lyme Regis (Philpot) Museum, 27pp.
- 1986b. Collecting and conservation in West Dorset: a personal view. *Geol. Curator*, 4,
- Gilbert, T. 1980. Lyme Regis (Philpot) Museum. *Mus. News*, 17, 10-11.
- Jukes-Browne, A.J. 1902. On a deep boring at Lyme Regis. *Q. Jl geol. Soc. Lond.* 58, 279-289.
- Lang, W.D. 1939. [Obituary of Vitruvius Harold Wyatt Wingrave]. *Proc. Geol. Ass.* 50, 133-134.
- Lang, W.D. 1947. James Harrison of Charmouth, geologist (1819-1864). *Proc. Dorset nat. Hist. archaeol. Soc.* 68, 103-118.
- Norgate, M. 1980. Pastoral care of museums. *Museums J.* 80, 104-106.
- Owen, R. 1860-1862. A monograph of the fossil Reptilia of the Liassic Formations. Pts.I and II, *Scelidosaurus harrisonii* Owen. *Palaeontogr. Soc. (Monogr.)*, Part I, 14pp., 6 pls. Part II, 26pp, 11 pls.
- Pettigrew, T. 1981. Cores for concern? *Geol. Curator*, 3, 67.
- Spath, L.F. 1924. The ammonites of the Blue Lias. *Proc. Geol. Ass.* 35, 186-211.
- Stearn, W.T. 1983. The Natural History Museum at South Kensington. Heinemann, London, 414pp.
- Taylor, M.A. and Fowles, J. 1985. [Note on James Harrison's correspondence and juvenile specimen of *Scelidosaurus*] In Crane, M.D. and Torrens, H.S. (compilers). *Lost and found*, nos.35, 66. *Geol. Curator*, 4, 174.
- Warrington, G. and Scrivener, R.C. 1980. The Lyme Regis (1901) Borehole succession and its relationship to the Triassic sequence of the East Devon coast. *Proc. Ussher Soc.* 5, 24-32.
- Wingrave, V.H.W. 1916. A new variety of the ammonite *Coeloceras davoei*, from the Lower Lias, Dorset. *Geol. Mag.* 53, 196-198.
- 1929. Palaeopathology - list of fossils presented by Annual Report of the Conservator of the Museum of the Royal College of Surgeons, 1929, 13-16.

Michael A. Taylor

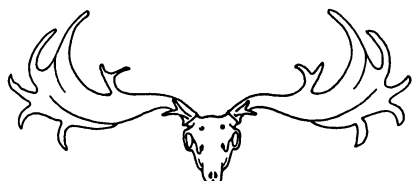
Area Museum Council for the South West
City of Bristol Museum and Art Gallery
Queens Road, Bristol BS8 1RL

Typescript received 2 October 1985

Revised typescript received 9 January 1986

FORTHCOMING MEETINGS

Tues.-Thurs. 16-18 September 1986
Vertebrate Palaeontology
Queen's University of Belfast.



This 34th Annual Symposium on Vertebrate Palaeontology and Comparative Anatomy will consist of papers and exhibits on all aspects of the palaeontology, relationships and comparative anatomy of fish, amphibians, reptiles, birds and mammals. A field trip to the Giant's Causeway and Bushmills Distillery is one of the many attractions. The meeting is informal, and a special invitation is extended to younger palaeontologists and students. Bursaries are available to defray some of the expenses of unfunded and unwaged conference delegates, courtesy of Mr Wood's Fossils.

Contact Robin Reid or Mike Benton, Department of Geology, The Queen's University of Belfast, Belfast BT7 1NN.

Fri. 3 October 1986
GCG Bath Meeting
Geology Museum, Bath

Programme enclosed with this issue of Geol. Curator.

Contact: Di Smith, Geology Museum, Queen Square, Bath BA1 2HP (Tel. 0225 28144).

Sat. 18 October 1986
Mineralogy Open Day
British Museum (Natural History), London

90 min. guided tour, including: Mineral Gallery, with history of collection; a selection from the Russell Collection; cataloguing; lapidary workshop; X-ray laboratory; and electron microprobe laboratory. Entrance by timed ticket only (starting 10.10, 11.55 and 14.55). Two free lectures by Dr R.F. Symes

- 10.25 Minerals of the Mendips
- 15.10 Aspects of the mineralization of Central and North Wales

Contact: John P. Fuller, Dept. of Mineralogy, British Museum (Natural History), Cromwell Road, London SW7 5BD (Tel. 01-589-6323 ext.259). Give preferred and alternative tour times, and enclose s.a.e. for free entrance tickets.

Fri. 24 October 1986
Society for the History of Natural History, North American Meeting 'Fieldwork, collecting and observation in natural history'
Pittsburgh, Pennsylvania, USA

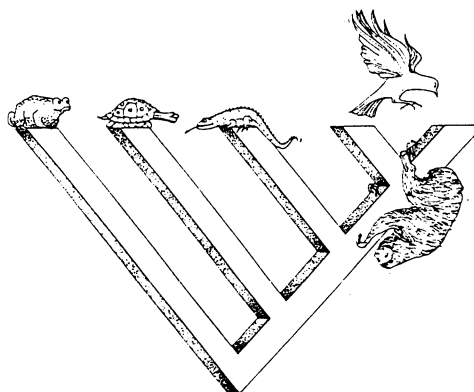
Contact: William A Deiss, North American Representative, Society for the History of Natural History, Smithsonian Institution Archives, Washington DC 20560.

Fri. 5 December 1986
GCG/ATG Joint Meeting - Geology and the Media, and AGM
The Manchester Museum

Manchester Museum and its collections
Geology and the Media - speakers to include Dr Beverley Halstead (University of Reading) and Dr Matthew Ridley (Scientific Editor of the Economist).
Annual General Meeting

Contact: Richard Porter, Museum Education Service, Manchester University (Tel.061-273-2892).

Thurs.-Fri. 26-27 March, 1987
The Phylogeny and classification of the Tetrapods
Linnean Society, Burlington House, Piccadilly, London.



This international meeting, sponsored by the Systematics Association, the Linnean Society, and the Palaeontological Association, aims to review the classification and phylogeny of the tetrapods. The nineteen papers will cover broad aspects, such as the relationships of early amphibians, and of the Amniota, as well as particularly important current topics, such as the origin of living amphibians, the relationships of lepidosaurs, the origin of birds, the origin and major groupings within Mammalia, primate phylogeny, and the contribution of molecular phylogeny. Papers presented at the meeting will be published by the Systematics Association as a special volume.

Contact Mike Benton, Department of Geology, The Queen's University of Belfast, Belfast BT7 1NN.

MARY ANNING SPECIMENS IN THE SEDGWICK MUSEUM, CAMBRIDGE

BY DAVID PRICE

INTRODUCTION

During the summer of 1984, in one of the final operations relating to the 'computerisation' of the Sedgwick Museum catalogue, I was busy generating a computer listing of all known collectors, donors and vendors of Museum specimens (Price 1985) and selectively cross-checking it with manual catalogue entries and old specimen labels. One name which did not appear on this computer-generated list was that of the celebrated Lyme Regis collector Mary Anning (1799-1847). At the time this was something of a disappointment. My attention had only just been drawn to the existence of several letters written from Anning to Adam Sedgwick in the 1830s and early 1840s which both offered some specimens for sale and indicated that others had, indeed, already been purchased. These specimens I had hoped to identify. The absence of Anning's name was not, moreover, a feature merely of the computer list. Subsequent checking showed that there was no reference at all to Mary Anning either in the manual catalogue or on any Sedgwick specimen labels.

I did soon discover one reference, not in any current document but in Sedgwick's preface to H.G. Seeley's Index to the fossil remains of Aves, Ornithosauria and Reptilia... of 1869. Sedgwick wrote (p.iv): 'In the year 1819 I procured a few specimens of the Ichthyosaurus from the Lias of Somersetshire, which now appear in our arranged collection: and in the year following some additions were made to the Reptiles of the Lias, during an excursion along the coast of Dorsetshire. In several subsequent years valuable specimens were purchased from Mary Anneing [sic] of Lyme Regis, a collector of early celebrity. Among them were two very good specimens of the Ichthyosaurus; and a very beautiful Pentacrinite, showing the animal structures in great perfection. All these are now mounted in the Museum.' This did at least confirm that there were Anning specimens in the Sedgwick collections, but it provided little evidence on which to attempt positive identifications. The Anning - Sedgwick letters thus became of great importance.

Muriel Arber first told me of these letters. They had been 'discovered' by Hugh Torrens (Keele University) who had sent photocopies of them to John Fowles at Lyme Regis. It was these photocopies which Miss Arber had seen; she subsequently also drew my attention to John Fowles's comments on these letters in his 1983 Curator's Report for the Lyme Regis (Philpot) Museum. Until then I had not realised that the Anning letters were sitting almost under my nose in the Archives of the University Library in Cambridge (where they

had been transferred from my own museum archives!). Once this became apparent, however, it was possible to organise a thorough search of the archives. Most of this searching was done with great persistence and ingenuity by Philip Dunn (a history graduate working as a volunteer at the Sedgwick). His searches uncovered not only the eight letters already known to Hugh Torrens and John Fowles but three further letters, a number of entries relating to the purchase of Anning specimens in Sedgwick's 'rough' account book of the period, and similar entries and vouchers in the Woodwardian accounts. [The Chair of Geology at Cambridge is the Woodwardian Chair and the geological collections formed the 'Woodwardian Museum' prior to 1904.] All of this information forms the basis of the following chronological account.

THE SEDGWICK - ANNING TRANSACTIONS

The first evidence of any transaction between Sedgwick and Anning occurs in Sedgwick's field journal (Journal No.5) (Sedgwick Museum Archive) for September 1820, a period when he was undertaking a geological tour of the Dorset coast. The first entry for 20 September reads 'After breakfast purchase fossils of Miss Anning'. This is almost certainly the transaction also evidenced by a Woodwardian voucher for 1821 (i.e. the financial year 1820-1821): it is in the form of a receipt signed by Anning which reads:

Mr. Sedgwick to M. Anning	£	s	d
various fossils -----	0	12	0
part of Ichthyosaurus -----	2	10	0
Settled	3	2	0
Mary Anning			

These fossils are not further characterised and cannot be identified amongst the large amount of material from Lyme Regis now in the Sedgwick collections.

The next contact for which there is evidence took place nearly ten years later; on 11 February 1831 Anning wrote to Sedgwick at Athenaeum Club House, London. She had received a letter from Mrs Murchison indicating that Sedgwick wished to purchase a Plesiosaurus she had. She was sorry to say that Lord Cole had already purchased it [reputedly for 200 guineas] but went on to describe an Ichthyosaurus head she had, 'about 15 inches in length with six cervical vertebrae attached set in a box and very good specimen price two pound ten'. She had also discovered the skeleton of an Ichthyosaurus with most of the head missing: 'Vertebrae paddles Sternum and ribs in good order and on the bones of the pelvis is the Coprolite

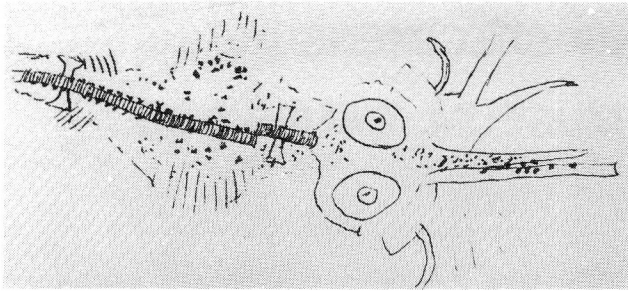


Fig.1. A chimaera skeleton (subsequently designated the type specimen of Squaloraja polysspondylus Agassiz) illustrated by Mary Anning in a letter to Sedgwick dated 11 February 1831.

price 3£'. She then described a new fossil in her possession: 'it is a skeleton with a head like a pair of scissors Vertebrae like an encrinete thin as a thread of which there are two 100 & 52 and the tail wanting the greater portions of six claws or felers and winged like fins sternum simple composed but of two bones also the pelvis the vertebrae skin and snout covered with tubercles like those of the ray tribe which it strongly resembles in some parts and wholly differs in others the teeth are like the tubercles on the body except that they are larger and crooked it is quite unique analogous to nothing yet approaching to fishes insects birds and animals about a foot and half in length of which the underneath scratch is a faint resemblance, and being the only one in Europe price 50£'. Her 'scratch' is reproduced here (Fig.1) for the sake of completeness though the specimen was not purchased by Sedgwick and is not in the Sedgwick Museum. It has been recognised by Michael Taylor as the type specimen of the chimaera Squaloraja polysspondyla Agassiz, 1843 (Taylor intends to detail its history elsewhere).

Anning's subsequent letter of 9 May acknowledged the receipt of £5 from Sedgwick but noted that this was ten shillings less than what was due to her. The entry 'To Mary

Anning - £5. 0. 0.' appears in Sedgwick's rough account book for 20 March 1831, though in the 1831 Woodwardian accounts the corresponding entry is 'Mary Anning for fossils - £5. 10. 0!' It seems reasonable to infer from this that Sedgwick purchased the first two specimens described in Mary's letter of 11 February. Of these the first, the ichthyosaur head with six cervical vertebrae attached, can almost certainly be recognised in the present collections. Specimen J.59645 (Fig.2) corresponds in size and all other particulars with Anning's description; it is set (in mortar) in a distinctive shallow tray of rough wood with black painted sides. The specimen was listed in Seeley's Index (1869, p.138): 'C 17 skull and cervical vertebrae of Ichthyosaurus' from the Lias, but not ascribed to any locality or collector. The second specimen may also be present in the collections. J.59642 is the almost entirely post-cranial skeleton of a Liassic Ichth_yosaurus with the posterior dorsal vertebrae rather displaced; one might reasonably describe it as in 'good order'. Interestingly too the skeleton is set in mortar in a tray of exactly similar style and materials to that used for J.59645. The only major discrepancy with the Anning description is the absence of anything resembling the coprolite which she noted. It may, of course, have become detached and probably at Cambridge its significance would not have been realised prior to Buckland (1835). At any rate it seems that no ichthyosaur skeleton with an associated coprolite was known to Seeley (1869, p.131) who stated 'These coprolites have been referred to Ichthyosaurus, but there is no evidence in the Woodwardian Museum to substantiate this view' In view of the absence of the coprolite and the lack of any dimensions in the Anning description, the identification of J.59642 as an Anning specimen must, strictly, remain uncertain although the general circumstantial evidence makes it highly probable.

The next letter from Anning to Sedgwick, dated Sunday 20 May 1832, acknowledged his letter of 17 May. She told him that 'the



Fig.2 SM J.59645. This is almost certainly the ichthyosaur head 'about 15 inches in length with six cervical vertebrae attached' described in a letter from Anning to Sedgwick dated 11 February 1831.

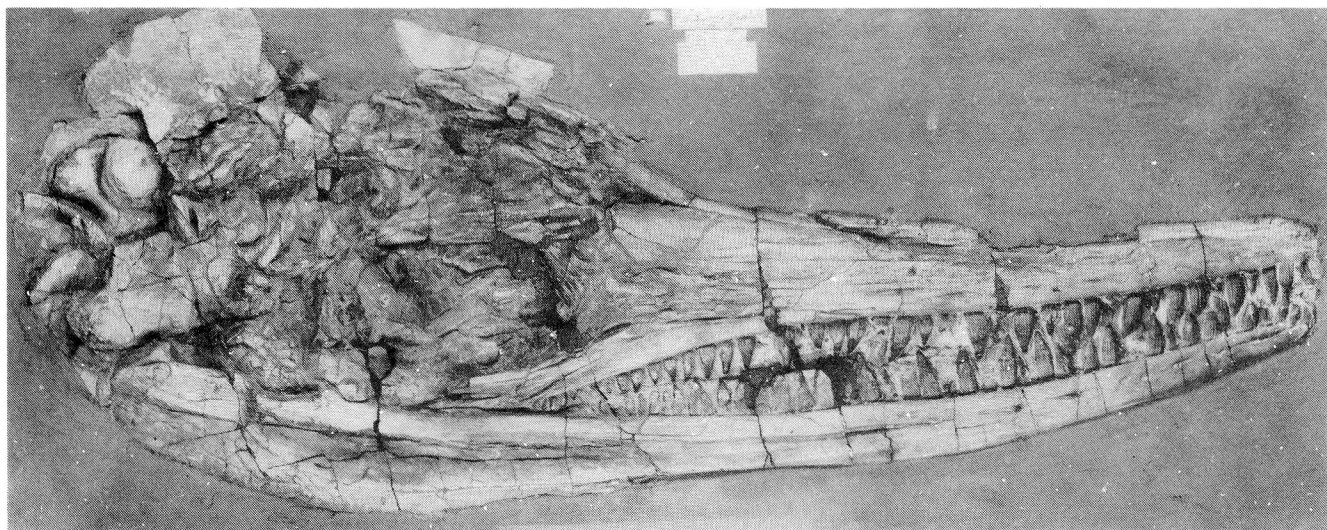


Fig.3 SM J.68446. This skull Temnodontosaurus risor McGowan is probably the 'platyodon head' described in a letter from Anning to Sedgwick dated 4 May 1843.

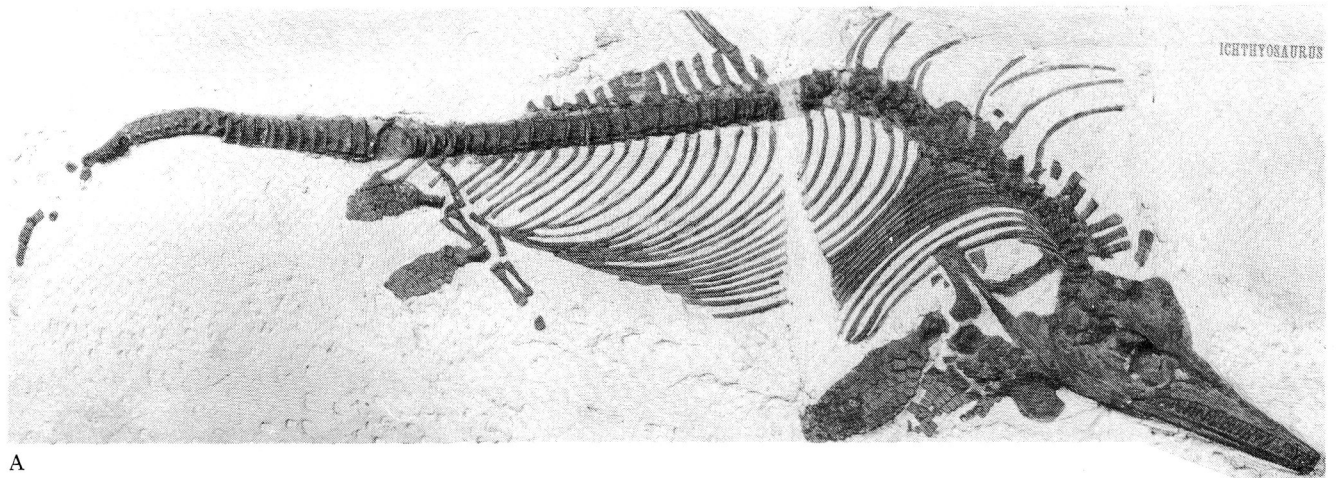
Ichthyosaurus communis, now in my possession, is the best yet discovered, it is about 5 feet long head Vertebrae, ribs, sternum and paddles, good the posterior paddles and pelvis remarkably fine, its the only specimen yet discovered having the pelvis clearly developed - price thirty five pounds'. She then wrote on 12 June that 'the skeleton, is on board of one of our London Traders which will sail monday or Tuesday next wind and weather permitting.' In this case Sedgwick's purchase of the specimen is also confirmed by the presence among the Woodwardian vouchers of his original cheque for £35 which was cashed at Lyme on 23 June. The specimen concerned is very probably that illustrated in Fig.4A. Although prominently displayed in the Sedgwick, this specimen is apparently uncatalogued and there is no indication of its provenance. The mode of preservation, however, is identical to that of specimens known to come from Lyme. The specimen is a little over five feet long, measured along the curvature of the spine; one of the most striking features of the skeleton is the way in which the bones of the pelvic girdle are disarticulated and, together with the rear paddles, 'spread out' so that each element is clearly visible. On both these counts it is the only Sedgwick Museum specimen which accords well with the Anning description.

Anning did not write to Sedgwick again until 29 June 1835 when she took advantage of a visit to Cambridge by the Lyme clergyman Hodges and sent by his hand a letter detailing her recent discoveries. There was first 'a perfect Ichthyosaurus about four feet and half long, the head Vertebral column, (excepting 3 of the caudal Vertebrae) in the most perfect order, the sternum as perfect as if just skinned ribs and intercostal ribs in the most perfect order bones of the pelvis good but the posterior paddle is not quite perfect else it is a picture'. She had another 'nearly as perfect except the intercostal ribs and only a side view of the sternum. About three feet in length from the tip of the nose to the tip of the tail'. She then mentioned a very large Ichthyosaurus she

was extracting which she thought would be about thirty five feet long: 'I have already got 80 of the Vertebrae which makes about 14 feet the Occipital Magnificent Corracoid 13 inches across Scapula a foot and a half in length ribs exceeding a yard in length'. Finally she had 'within the last week or two discovered a new pentacrenite in the Oolitic sandstone bearing a general resemblance to the pentacrinites Briarus, excepting that after the arms set off from the pelvis being five they divide exactly into ten arms and no more - the largest head not exceeding a crown piece when spread open ...'. Shrewdly she did not mention any prices in this letter.

Sedgwick apparently replied on 24 July and on 27 July Anning wrote back that the price of the four and a half foot specimen was £50 and that of the three and half foot specimen £20. They were 'the most perfect yet discovered'. She went on to mention a twelve foot ichthyosaur she was then extracting - slowly, as the tide 'would not allow of our working above one hour in a day'; and another which was 'the smallest I have yet seen about 1 foot 9 inches in length ...' Of this she was sorry to say that 'the body part is enveloped with pyrites but as to general form good as to the head and tail they are exquisite ...'. She then referred again to the new 'pentacrenite' from the Oolitic sandstone.

The next known letter is dated 9 September, when she told Sedgwick, 'I sent off the Ichts on tuesday 2nd of Sept on board the Unity, Pearce Mastr which I hope er'r this arrived safe and I trust you will not be dissapointed when you Sir see it, whilst packing it I had the pleasure to discover the greater portion of the second posterior paddle, which previously was the defect I mentioned in the skeleton'. From this it appears that Sedgwick purchased the four and a half foot ichthyosaur and confirmation is given in Anning's letter of 23 September in which she acknowledged receipt of an order for £50. This specimen is almost certainly J.35187



A



B

Fig.4. A, SM unregistered. This ichthyosaur corresponds closely with the 'Ichthyosaurus communis' described in a letter from Anning to Sedgwick dated 20 May 1832. B, SM J.35187. This corresponds closely with 'a perfect Ichthyosaurus about four feet and half long' described by Anning in a letter to Sedgwick dated 29 June 1835.

(Fig.4B) which is 4 feet 5 inches long and shows very clearly developed gastralia and three slightly displaced caudal vertebrae, exactly as detailed in the letter of 29 June. In this case there are no entries in Sedgwick's rough account book nor any vouchers in the Woodwardian accounts. This fits well with the idea that Sedgwick purchased the specimen personally and then, as indicated by the lettering on the mounting, presented it to his museum.

The next gap in the known correspondence is a long one. Not until 4 May 1843 did Anning write again to Sedgwick, when she thanked him for a letter of 2 May and replied that 'the platyodon Head is 4 feet and 3 inches long general contour good but the eyes are a little crushed otherwise an illustrative specimen and worthy a place in a Museum Price £4 - Next I have a picture of an Ichts 4 feet 3 inches lying on its back the sternum as perfect as if just taken from a dissecting room and although the dorsal vertebrae are dislocated it is an advantage as showing the intestinal skin Sir I just send you a rough scratch of it price £20'. She went on to detail another 7 foot ichthyosaur (£10), small slabs of crinoids (£1.10.0 and £1.5.0), portions of fishes and ichthyosaurs, small ammonites, sectioned or uncut, a section through ichthyosaur vertebrae and ribs, and a variety of other common specimens. As referees of the quality of these smaller

specimens she gave Sedgwick the names of Osmond Fisher and of 'Mr Conyber [Conybeare] who is quite in raptures with them.'

Anning's penultimate letter is dated 20 May and told Sedgwick 'I have sent off the platyodon head for waggon railroad to London', adding that 'there are three pieces of the Vertebra with a part of the Corocoid bones belonging to the same animal price of the packing case 7 shillings'. Her final letter of 26 May 1843 acknowledged Sedgwick's cheque for £4.7.0. This payment too is recorded both in Sedgwick's rough account book and in the Woodwardian accounts for 1843-1844: 'Mary Anning (Head of Ichthyosaurus) - £4-7-0'. The specimen in question is likely to be J.68446 (Fig.3). This specimen is known to come from Lyme and fits well with the general description of her 4 May letter, especially in the crushed orbital region; it also shows some post-cranial elements which may be those referred to in her letter of 20 May. The specimen is a skull of the extremely rare longipinnate Temnodontosaurus risor McGowan (see McGowan 1974, p.19, fig.8B) which would fit in well with its original identification as the closely related T. platyodon. The difficulty lies in its size: it is only 32 inches long. One possibility is that the 4 feet 3 inches quoted in the 4 May letter was a slip of the pen, especially since the figure is exactly repeated in the length given later

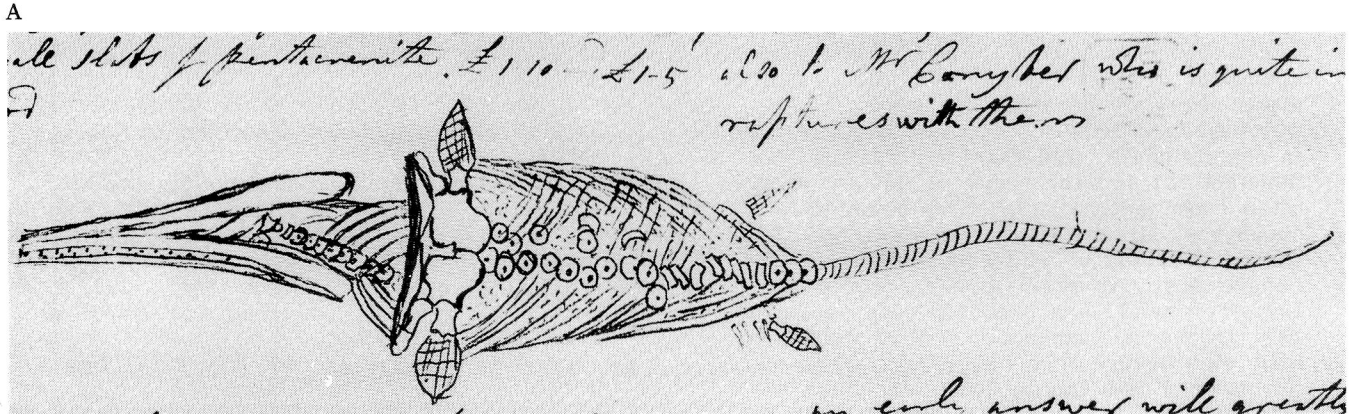
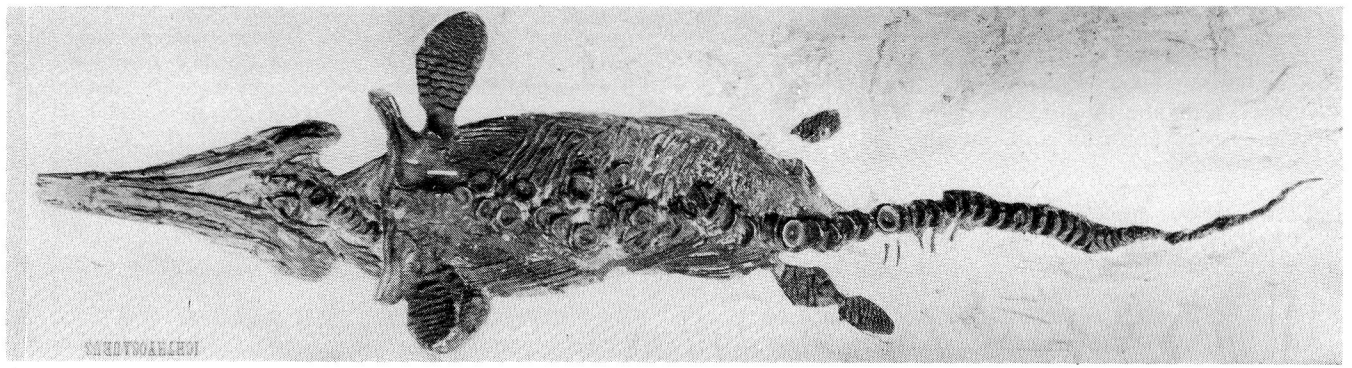


Fig.5 SM J.35189. A, this ichthyosaur skeleton may be compared detail-for-detail with B, the specimen sketched by Anning in her letter to Sedgwick dated 4 May 1843.

for the complete ichthyosaur skeleton. Moreover, the dimension given for this whole skeleton is known to be correct (see below) so that Anning may well have had its length in mind as she was writing the earlier figure. There is no ichthyosaur head from Lyme in the Sedgwick Museum even approaching four feet in length. In spite of the discrepancy in size I am inclined to regard J.68446 as probably being the Anning specimen

With only one Sedgwick specimen can there be absolutely no doubt of its originating from Mary Anning: the skeleton referred to in her letter of 4 May was not only described but drawn (Fig.5B). Anning's sketch compares exactly, detail for detail, with J.35189 (Fig.5A), even to the position and orientation of each of the displaced dorsal vertebrae. The specimen compares exactly in length too with the dimension she gives. It is ironic that in the very case where there is most certainty over the identity of the specimen there is no evidence at all, either from the Anning letters or from any of the archival account books, for its actual purchase; the details of acquisition are completely unknown.

That the known correspondence does not give a complete account of the Sedgwick-Anning transactions is also witnessed by an unexplained entry in Sedgwick's rough account book for 1836: 'Octr.29. Mary Anning ---- £7-0-0.' The corresponding entry in the Woodwardian accounts notes in parenthesis that the payment was 'for fossils' and states 'Voucher mislaid' (this is initialled by Sedgwick) but in this case, as in the case of

the very first transaction of 1820, it is what was actually purchased that remains unknown. There is perhaps a temptation to think here of the crinoid material referred to by Sedgwick in his preface to Seeley's Index (see above). This is almost certainly one of two spectacular crinoid-bearing slabs from Lyme mounted in Bay 17 of the present museum in individual glass-fronted cases of Woodwardian Museum style. (There are actually three such slabs but one has been ascribed to another donor.) One of these slabs may have been the purchase of 1836 but there is no actual evidence - neither, for instance, bears specimens which resemble the 'new pentacrenite' described by Anning in her letters of both 29 June and 27 July 1835.

CONCLUDING COMMENTS

For students of Mary Anning the letters she wrote to Adam Sedgwick are of obvious interest. They show her as a competent and astute business-woman, well able to cope with the 'sales and distribution side of her fossil dealing. The letters, in effect, are sales catalogues of her recent discoveries and she could perhaps be compared with any modern 'ad-man' in describing her specimens in the best possible light:- 'an illustrative specimen', 'the best yet discovered', 'worthy a place in a museum', 'Mr Conyber is quite in raptures with them' etc. Not that this is just 'sales-talk'; her genuine enthusiasm for and involvement with her material comes over very strongly in the letters. This is particularly so in her striking metaphors and similies - 'I have a picture of an Ichts',

'as perfect as if just skinned' or 'as if just taken from a dissecting room'. She clearly had no difficulty either in describing her specimens in more scientific terms and shows a good general knowledge of vertebrate anatomy and osteological nomenclature.

Throughout his tenure of the Woodwardian Chair at Cambridge, Sedgwick was very actively working to build up his geological museum. Given this and his frequent contacts through the Geological Society with figures like Buckland, Conybeare and De la Beche, it is not surprising that he acquired many Mary Anning specimens. What is at first sight more surprising is that the origin of these specimens was not formally recorded. This is almost certainly because they were purchased. Sedgwick was always very careful in acknowledging and thanking museum benefactors, and the names of donors were often prominently displayed on mounted specimens, all of which, of course, had the obvious merit of encouraging further benefactors. An acquisition by purchase, on the other hand, was probably regarded simply as a commercial transaction and of very little significance once completed. The purchase of the Thomas Image collection in 1856 provides an example. Sedgwick enthusiastically extolled the value of the Image Collection in launching a subscription for its purchase and later published the list of subscribers but, once acquired, the specimens were rapidly assimilated into the general museum collections with no distinguishing mark or label whatsoever. It is possible that similar differences in treatment between 'purchased' and 'donated' material existed in other museums at the time.

Another point of interest in the transactions between Anning and Sedgwick is the light they shed on the commercial value of fossils in the early to mid nineteenth century. It is instructive here to compare the prices Anning asked for her specimens with figures given by Gideon Mantell (1846). It is clear from the latter's figures that around 1820, when large marine reptiles were only just becoming widely known and their affinities were still much debated, their novelty and curiosity value generally allowed whole skeletons to fetch prices of £100 to £150. Possibly by the 1830s and 1840s, when many more specimens were known and described and their affinities better established, the commercial demand for such specimens had slackened, but even then (as is again clear from Mantell's figures) a good well-preserved ichthyosaur skeleton could still be valued at up to £100, and a really large ichthyosaur or a good plesiosaur skeleton up to £200 or more. Against the background of such figures, the ichthyosaur skeletons purchased by Sedgwick from Anning for between £20 and £50 seem to represent remarkably good value - a rough present-day equivalent of perhaps £2,000 to £5,000. [It is notoriously difficult to translate such figures into modern terms. Rudwick (1985, pp.460-461) briefly discussed such difficulties and suggested a conversion factor of 40 as being the 'least misleading' when relating prices and incomes of the 1830s

to those of the 1980s. To many this will seem a very conservative figure. In recent correspondence with me John Fowles adduced evidence from Dorset house prices and labour wages for a factor of at least 200.]

LIST OF SPECIMENS

The following Mary Anning specimens are thus considered (in one case known) to be recognisable in the Sedgwick collections:

- SM J.59645 (Fig.2). Almost certainly the ichthyosaur head and cervical vertebrae described 11 February 1831.
- SM J.59642 (not figured). Very probably the post-cranial ichthyosaur skeleton described 11 February 1831.
- SM unregistered (Fig.4A). Very probably the 5ft ichthyosaur skeleton described 20 May 1832.
- SM J.35187 (Fig.4B). Almost certainly the 4ft ichthyosaur skeleton described 29 June 1835.
- SM J.68446 (Fig.3). Probably the head of 'I. platyodon' described 4 May and 20 May 1843.
- SM J.35189 (Fig.5A). Certainly the ichthyosaur skeleton described and drawn in letter of 4 May 1843.
- SM unregistered, Bay 17 (not figured). One of two mounted specimens is almost certainly the 'Pentacrinite' referred to by Sedgwick in Preface to Seeley (1869).

REFERENCES

- Buckland, W. 1835. On the discovery of coprolites, or fossil faeces, in the Lias at Lyme Regis, and in other formations. Trans. geol. Soc. Lond. 3, 223-236.
- Fowles, J. 1984. Lyme Regis (Philpot) Museum: Curator's Report with notes on recent research and new acquisitions, 1983. Lyme Regis (Philpot) Museum, Lyme Regis, 28pp.
- McGowan, C. 1974. A revision of the longipinnate ichthyosaurs of the lower Jurassic of England with descriptions of two new species (Reptilia: Ichthyosauria). Contr. Life Sci. Div. R. Ont. Mus. 97, 1-37.
- Mantell, G.A. 1846. A few notes on the prices of fossils. London geol. J. 1, 13-17.
- Price, D. 1985. A computer-generated list of collectors, donors and vendors of specimens in the Sedgwick Museum. Geol. Curator, 4, 199-208.
- Rudwick, M.J.S. 1985. The great Devonian controversy. University of Chicago Press, xxxiii + 494 pp.
- Seeley, H.G. 1869. Index to the fossil remains of Aves, Ornithosauria, and Reptilia from the Secondary System of strata arranged in the Woodwardian Museum of the University of Cambridge. Deighton Bell, Cambridge, xxiv + 143pp.

David Price
Sedgwick Museum
Department of Earth Sciences
University of Cambridge
Downing Street
Cambridge CB2 3EQ

Typescript received 2 October 1985
Revised typescript received 6 December 1985

FOSSIL COLLECTING AND CONSERVATION IN WEST DORSET: A PERSONAL VIEW

BY JOHN FOWLES

This article is based on a talk given to the Geology Section of the British Association for the Advancement of Science at their Liverpool meeting in 1982 (see also Fowles 1982).

I will preface these few words about the situation of geological conservation in West Dorset today by one general remark on conservation principle. I think an assumption - not only in geology - is too much with us. It is that some universal principle can be arrived at, and then bureaucratically applied to the whole country, without regard to local circumstance, to history and nature of site, to other values, or indeed to anything but the sacred cow of grand principle itself. I am suspicious of such blanket solutions. Severe restrictions of access may be absolutely right for one site; and quite wrong for another. What is excellent for Lesmahagow in Scotland may be very mistaken for Lyme Regis in Dorset.

There are surely on occasion other values in the balance besides the acquisition of new knowledge, or university research. Public education is one. Another, if you will excuse me using such an unscientific word, is what I would call poetic - imparting a sense, however small, of the age and complexity of existence, both animate and inanimate, on this planet. Everyone who comes to Lyme becomes aware of fossils. A very great many would be hard put to it to tell a belemnite from an ammonite, at least by name. But what they do all pick up, and take home, and perhaps think about from time to time, is a little bit of the poetry of evolution - however one interprets that word. I believe that this admittedly vague function of a site may sometimes be as important as the maintaining of some ideal scientific principle, let us say that of securing and preserving all material for its qualified students alone. I think this must be the more so when, as is certainly the case with the Lower Jurassic of West Dorset, we are dealing with one of the most thoroughly explored and studied fossil and rock series in Britain.

Conservation was very much in the news with us in West Dorset in 1982. In April there was a public inquiry at Bridport, locally baptized the Fossil Inquiry. The West Dorset District Council proposed to control, by means of licence, all fossil-collecting within the parish of Charmouth, whose village council initiated the legislation. That represents about four miles of famous coastal and cliff exposures. The Lyme Regis Council were invited, but refused, to extend this

scheme to their parish. This was partly on my advice, and I should like to explain briefly why an ardent conservationist in most things was not so in this case. I should add that far weightier opposition at the Inquiry came from Ian West (Southampton University), Paul Ensom (Assistant Curator, Dorset County Museum) and others.

The background to this inquiry is revealing. The 'anti-fossilist' agitation in Charmouth came not in the least from conservationists, but from house-owners in a road threatened by slipping. Unfortunately there is a good exposure of Birchi Bed nodules and their ammonites just below this place - sought after by skilled amateurs and commercial collectors alike. The move to control arose in a very unsavoury climate of rumours about drilling and dynamiting. Not a single piece of hard evidence for such activities was produced at the inquiry. The only known drilling was done by the Institute of Geological Sciences (now the British Geological Survey), in pursuit of cores during a soil-mechanics study of Black Ven; the dynamiting rumours came, I strongly suspect, from a frequent local phenomenon - rocket and depth-charge practice far out at sea by the Royal Navy, which can heavily shake local houses. I think it is fair to say that the District Council backed the scheme far more out of fear of incurring eventual liability than anything else. In our part of the world public liability for damage done by slipping or marine erosion is a very vexed and ancient issue. None of us who opposed would be against a future conservation policy study in our area; but this legislation, with its licence-ticket machines, its fussing over hammer-weight, its dependence on self-appointed vigilante fossil-wardens and the rest, was not a proper context for it.

Later in the year the Inspector, and his minister, declared against the scheme; and it is now dead. For reports on the background to the Inquiry, and on its result, see Nature Conservancy Council (1982, 1983). If the scheme had become law it not only could, but would have been flouted at every turn - and not only through devilry. The problems of letting collectors know they were on controlled ground would have been formidable in themselves, as anyone who knows the overgrown nature of much of our ten miles or so of Lower Jurassic coast will realise.

We have three broad categories of collectors to cope with in West Dorset. The first and far and away the smallest group is that of the so-called commercial men, to whom I will come.



Fig.1. Stuart Bagnole, a partner of Peter Langham, in the crowded workshop of their firm, 'Jurassic Fossils', at Lyme Regis. Produced by permission of A. Brown, Lyme Regis.

The second, considerably larger, I will loosely call the expert: by which I mean trained geologists and geological parties, and skilled amateurs. There is hardly a day of the year now in which such individuals or parties cannot be seen somewhere on our cliffs or shores. We are also an increasingly popular field-trip for school-children, though many of these are not led by qualified geologists.

The last, and hugely the largest, category is the casual visitor and summer tourist. In Lyme alone we have some eight to ten thousand extra visitors per week in high summer - say a hundred thousand per year. Almost all peregrinate to our beaches, and very few do not to some degree catch the 'fossil bug'. Many soon realise that with us a hammer is as essential a piece of beach equipment as a shrimping-net elsewhere.

But of course the main loss here is of ex situ and beach-worn specimens that the sea is going to destroy in any case. Depredation is also heavily reduced by ignorance. Evidence of savage rape and assault on innocent virgin rocks (or non-fossil-bearing ones) can be found everywhere in the tourists' trail. One result of this - and I speak from some fifteen years' experience - is certainly that nowadays our beaches have lost most of their conspicuous and portable fossils by the end of each summer. It is only in winter, after cliff-collapse and churning by storms, that replenishment takes place.

This kind of collecting is so much in evidence that the proposers of the licensing scheme maintained that it had become a factor in cliff erosion and beach loss. Dr West, in his submission to the Bridport Inquiry, attempted to calculate annual natural land-loss as against loss by collecting in all categories. This was over one stretch, about a kilometre long, of the Charmouth parish coast. He arrived at over 17,000 cubic metres for natural loss in terms of slipping and erosion, and 2 cubic metres from collection. Dr West admitted that these figures were highly speculative, but could not put his error margin below a 4,000 to 1 ratio in terms of loss by nature and loss by human agency. This argument against collecting is, in short, nonsensical.

My experience, at our little museum in Lyme Regis, is that many people who start by idly picking up bits and pieces end up wanting to know more both about palaeontology and our rather complex local geology and geomorphology. We get them through our doors very much because their curiosity has first been aroused by the unlabelled living museum of our cliffs and shores. My feeling is therefore very strongly that the coastal Lower Jurassic of West Dorset should be treated, and left, as an educational and free-access site, or series of them. The only bans should be common-sense ones, where property is endangered.

I should like finally to say a word about the statistically infinitesimal group in all this

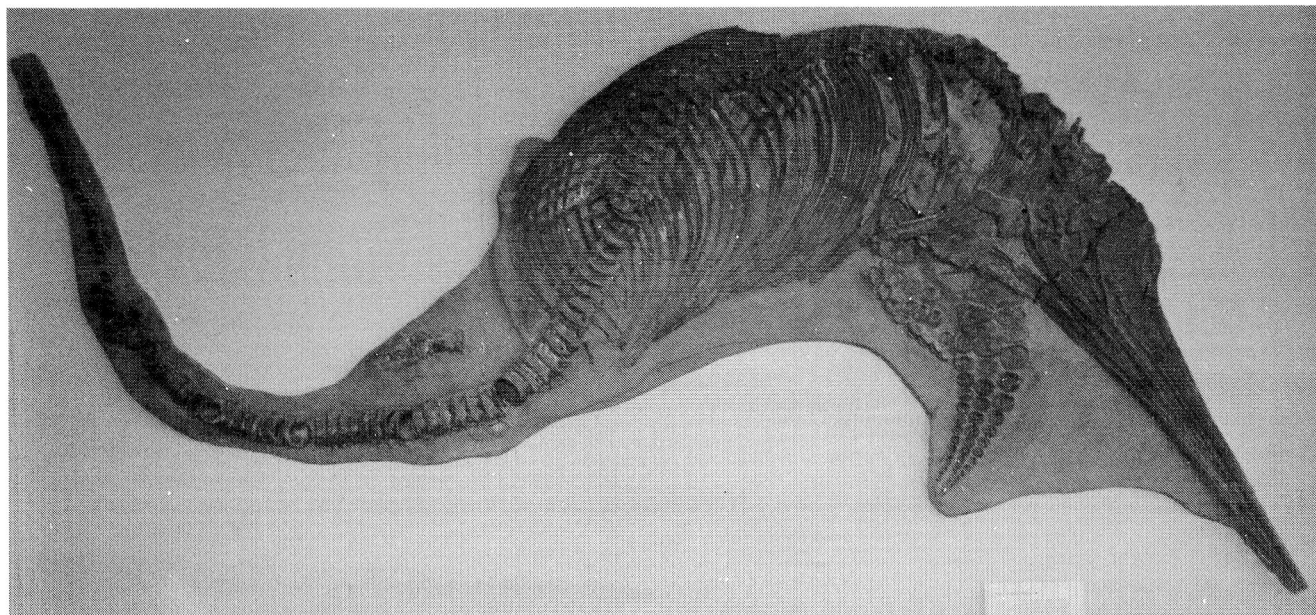


Fig.2. A 'Leaping' ichthyosaur, recently discovered at Lyme and prepared by Peter Langham. The specimen was on display at Lyme Regis (Philpot) Museum for a time.

who get the most blame - the professional or commercial collectors. To the best of my knowledge there are in our area three fossil suppliers (all selling non-local stock as well and also exhibiting fine or rare specimens not for sale), one paying privately owned exhibition, and about half a dozen more or less resident and quasi-professional collectors. The borderline between amateur and professional is often very vague. Some men do not bother to collect in summer, and follow other kinds of work. Most will sell common ammonites and shells such as Plagiostoma but not rare vertebrates - they are too proud of their own private collections for that. (I should add, in 1985, that some vertebrates are now being sold at prices well above those which any British museum can afford in these hard times. None the less if foreign institutions and dealers will pay such prices - one recent ichthyosaur went for £10,000 - I feel the fault is surely with current legislation, or government financing policy, rather than with the collectors quite fairly accepting such offers from abroad. They too have wives and children to support, whatever ideal principle may be at stake for those on university salaries.) The exhibition of fine fossils has an ancient history in West Dorset, at least two centuries old; and my personal policy as museum curator has been to encourage this, not jealously to regard every such display as a deprivation of our own collection.

The results over recent years of the most active team in Lyme itself - Mr Robert Langham, his son Peter, and Mr David Costain - may be seen in their Broad Street workshop (Fig.1) and in the splendid collection they have loaned to us at the Museum (Fig.2), and need no comment from me. They have in the last decade or so brought about a considerable renaissance of serious collecting not only at Lyme, but also at

Kimmeridge and in the Lower Jurassic of the North Somerset coast, where they have virtually rediscovered localities lost since Victorian times. I know of no find they have had of scientific importance that has not gone straight to the experts for study; and this is also true of the other local men I know. Robert Langham has recently had a new plesiosaur, Kimmerosaurus langhami, named after him (Brown 1981, p.301); the holotype and now a second specimen are at the British Museum (Natural History). In Lyme they have come on specimens of the very rare dinosaur, Scelidosaurus, almost unrecorded since the Charmouth geologist Harrison's first discovery of it over a century ago; and a whole host of new marine reptile specimens. Almost all their finest specimens are either at Reading University or on loan to us at the Lyme Regis Museum.

Their preparing skills speak for themselves, but other ones should not be forgotten. You do not get the consistently good results they have had on the Jurassic by occasional trips and keeping your fingers crossed. You do it by day after day in the field (often fruitless days); by developing close search techniques; by knowing when and where to look; in effect, you do it as Mary Anning did, by patiently acquiring minutely detailed local knowledge. You are also, on our tidal vertebrate beds, fighting infinitely the worst destroyer of all - the sea. Once weakened or broken, these beds seldom last long; sometimes not a week, in really bad weather.

Visiting academics have told me that the finding and retrieving of such specimens should be saved for university departments and their field teams. That may be so, in an ideal world (though even idealists can slip - I am told of one university team who collected a whole plesiosaur from the Whitby Jurassic, but somehow forgot to record its

exact site and stratum). The practical choice, as I tell them, is really between constantly present resident collectors or losing virtually all of it to the waves. Even in the worst case, let us say when a whole ichthyosaur disappears across the Atlantic to be sold there as wall-ornament - even that seems to me preferable to disintegration into countless fragments.

What we lack today is that excellent and mutually understanding relationship between the early field workers like Mary Anning and the scientists. To an outsider like myself the present hostility seems frequently absurd. I have had some of the backwash of it. I have been told that commercial collectors should be physically banned from Dorset for life - under what legislation was not vouchsafed. I have been told that I should hand a fiver and few pickaxe handles to our nearest gang of Hell's Angels and tell them to look out for anyone with a heavy rucksack and a hammer in the hand. I have been told I am personally responsible for keeping local collectors in check - though quite how the university gentleman concerned imagined I was to do this, short of a small army of bailiffs and gamekeepers, he did not deign to explain.

All this has produced one very bad result. I have to confess I do not know, no one knows, what is being collected locally and what science may be missing. I have tried, with little success, to persuade local collectors at least to label and keep some kind of catalogue - and explained why academic palaeontologists justifiably regard this complete absence of record with suspicion. But lay brokers like me cut very little ice, and I am afraid nothing will be done until some of the old trust and cooperation is restored.

Most of these collectors lead very independent, sometimes rather 'outsider' existences. Many are suspicious of academic relationships, and alas, not without reason; finding themselves cosseted and encouraged one year, forgotten and dropped the next; their findings used, the finders themselves regarded as no more than a necessary evil. But all I have met are also clear monomaniacs, far less driven by greed for money than a passion for fossils and for finding them. In that sense they remain amateurs at heart. I doubt if they are going to be tamed by being outlawed, and they are quite certainly not going to be tamed by being treated en bloc as unscrupulous cowboys. Of course some such collectors exist (and we had one in West Dorset until recently), but to tar all who make money from fossils with that brush seems to me more than a shade paranoiac. It is all very well for august London committees to declare noble principles - such as the Nature Conservancy Council's 'Fossils should not be disposed of for personal gain' - but some accommodation with reality must be made. Many collectors, like the Langhams, acquire very remarkable field and workshop skills and knowledge. They do not pretend to specialist knowledge

of taxonomy or anatomy, but on the other hand they very often have very sharp eyes indeed for the anomalous feature, the specimen that does deserve the expert's attention. I think some better relationship between academic geology and them can be found; and must be found.

POSTSCRIPT 1986

I am happy to say that the rather unhappy period of recent years, certainly in terms both of suspicious local and hostile academic attitudes to collecting has calmed down. The sympathetic liaison work of Michael Taylor (Geological Conservator-Preparator, Area Museum Council for the South West of England) has certainly helped greatly in the latter problem. We hope in Lyme Regis this year to see an important new venture, the opening of a commercial exhibition by Peter Langham and his friends. Though they will sell common fossils, it will be very much centred round their splendid private collection of rare and exceptional vertebrates from the Jurassic of North Somerset and Dorset. Such exhibitions are an old feature of Lyme life, and go back to those of Mary Anning and the Marder brothers in Victorian times (see Taylor 1986). We shall suffer in terms of exhibits currently loaned to us at the Lyme Regis Museum, but I am determined to continue our policy of good liaison with the collectors. As to the broader policy issues of collecting, the picture is not so happy. If it does come to legislation over ownership, and the expert collectors like our present group in Lyme are ever obliged to relinquish it against some system of recompense fixed by major museum or committee (cf. Wild 1986), I am afraid that our present men are categorical: they will give up rather than continue in such adverse conditions. Peter Langham himself has just discovered a remarkably well preserved and very unusual Liassic shark. I might cite also a magnificent 25-foot longipinnate ichthyosaur - species still awaiting determination, but no less an authority than Christopher McGowan is anxious to tackle it - recently discovered near Hawkins's old stamping-grounds here at Church Cliffs. Never seeing such creatures will be the cost, I fear, if we oblige these gifted 'loners' (and obsessively hard-working field men) to conform willy-nilly to our rules.

REFERENCES

- Brown, D.S. 1981. The English Upper Jurassic Plesiosauroidea (Reptilia) and a review of the phylogeny and classification of the Plesiosauria. Bull. Br. Mus. nat. Hist. (Geol.), 35, 253-347.
- Fowles, J. 1982. Geology at Lyme Regis - a museum curator's view. Circ. Geol. Ass. 829, 23-24.
- Nature Conservancy Council. 1982. Public enquiries. Fossil collecting licences at Charmouth, Dorset. Earth Sci. Conserv. 19, 19.
- _____ 1983. Ibid. 20, 40-42.

Taylor, M.A. 1986. The Lyme Regis (Philpot) Museum: the history, problems and prospects of a small museum and its geological collection. Geol. Curator, 4,

Wild, R. 1986. The protection of fossils as cultural monuments in West Germany. Ibid. 4, 275-280.

John Fowles
Honorary Curator
Lyme Regis (Philpot) Museum
Bridge Street, Lyme Regis
Dorset DT1 1XA

Typescript received 6 September 1985
Revised typescript received 12 February 1986

LETTERS TO THE EDITOR

Dear Editor

THUMBS UP?

GCG's 'Thumbs Up' campaign leaflet Rocks, Fossils and Minerals really does not show young enthusiasts how to make the best of their collections - only how to look after them. It does not demonstrate how specimens provide evidence for past life and environments or for other aspects of geological history. Unfortunately, this reflects much of the pre-occupation of GCG with conserving collections. Is it not time we developed a strategy for putting our collections and other resources to best use?

Members of GCG must be very much aware of the problems of geological site conservation brought on by over-collecting. Yet this leaflet does not tackle the problem. Sadly it does not emphasize that museums recommend suitable sites, instead it refers to Geological Association guides and Geological Survey memoirs which give details of many sites that are quite inappropriate and where much damage could be done.

Many geology teachers now discourage specimen collecting by their students and concentrate instead on collecting and recording data on various features. Surely we should follow their example and publish leaflets which encourage young enthusiasts to interpret geology in the field by sketching, photographing and measuring, instead of just collecting specimens.

Yours faithfully,

Andrew Mathieson
Museum & Art Gallery Education Service
Organiser
Bristol Museum and Art Gallery
Queen's Road
Bristol BS8 1RL

Dear Editor,

I attended the GCG conference on the 'Conservation of geological materials' at the BM(NH), 23-24 January 1986, with interest

[see p.341]. It became clear that there is an urgent need for trained geological conservators. For example, the Friday afternoon discussion on reversibility left me amazed; there seemed to be a total lack of understanding as to what conservators mean by reversibility.

I do not believe that conservators can be trained through one day or one week courses or through videos. These can provide a supplement to existing knowledge, but they are not a substitute for a full course. One gives you amateurs who 'do it this way cos it worked OK for Joe', while the other gives you a professional who can assess treatments and make a choice. The idea put forward of involving archaeological conservators is getting closer to what is needed but still misses one essential requirement: a conservator needs to know about the technology of the materials he is working with. Archaeological conservators are trained to treat artifacts not rocks, fossils and minerals.

If geologists want their material conserved properly they need to press for a training course. If I were working for it I would probably try and persuade the Institute of Archaeology to take it on. I believe they are about to merge with University College (they are both London University) and this could leave them free to expand beyond the confines of archaeological conservation. The Institute of Archaeology Conservation Department is long established and in a position to teach conservation science. Obviously it does not have the staff or facilities to teach methods specific to geological conservation, and these would have to be added before a course became viable. I suggest that such a course needs to be a minimum of two years in length. It could be post-graduate or undergraduate and probably, at this stage, result in the award of a Diploma not a degree. If at the undergraduate level, the course would have to include more basic geology. I am personally against setting very high academic requirements for conservators; they spend a lot of their time on practical work and this aspect must not be lost sight of in the

search for academic excellence. I would also not separate preparation from conservation.

Geology will not benefit from the levels of expertise that are available from archaeological or picture conservators for some time. Geological conservation has progressed little beyond the 'dip it and see' stage and has decades to catch up with other disciplines. However, if an effort is made to get something started now, I believe that in fifteen years you will be looking back on the 1970s as the bad old days. Also, once real trained conservators exist and curators see what they can do, I believe that ways will be found to create posts for them.

Yours faithfully,

Theodore Sturge
Assistant Keeper, Antiquities Conservation
Leicestershire Museums Service
96 New Walk
Leicester LE1 6TD

Dear Editor,

In a recent Notes and News [Geol. Curator 4, 233] piece on Leicestershire Museums' Rutland Cetiosaurus there are a number of misleading comments. The Rutland cetiosaur is far from being the most complete British dinosaur - Iguanodon and Hypsilophodon from the Cretaceous are probably the most complete, while in the Jurassic a Camptosaurus from the Kimmeridge Clay and Eustreptospondylus from the Middle Oxford Clay are almost complete skeletons. The importance of the Rutland Cetiosaurus is that it is the most complete sauropod axial skeleton (and especially the neck). Because of the poor preservation of some of its limb and girdle elements it can only be considered a partial skeleton and, as such, is

comparable with a splendid sauropod from the Lower Oxford Clay, Cetiosauriscus stewarti. The latter was described by Woodward in 1905 (Proc. zool. Soc.) and received as much press coverage as the Rutland cetiosaur, even appearing in what is now the country life section of Punch!. Woodward's specimen includes the sacral vertebrae, most of the tail vertebrae, a hind limb, a fore limb, part of the pelvic girdle, and two and a half teeth.

Yours faithfully,

David Martill
Field Museum of Natural History
Roosevelt Road at Lake Shore Drive
Chicago, Illinois 60605, USA

Dear Editor,

Beware of the wolf in our mineralogical midst. He has a canine appetite for rare minerals and visits the unsuspecting sheep in the guise of a plausible advisor. His prey are the non-mineralogical curators responsible for the 'lost' collections. His theme is to offer to remove the 'rubbish' in exchange for the more 'useful' material. His eye is good and the outcome of the raid on the fold is the enhancement of his own private collection and the degradation of the fold. Please, please check with a professional mineralogical curator before unlatching the door of the fold.

Utopia seems to be receding in the museum world and what a rotten shepherd.

Yours faithfully,

Dr R.J. King
National Museum of Wales
Cathays Park
Cardiff CF1 3NP



Stan Wood with his daughter Emma hold a 340m year old palaeoniscid fish Nematoptychius, collected by Stan from Carboniferous Oil Shales beneath the Forth Bridge, Scotland (Royal Museum of Scotland specimen). The reconstruction (right) shows a subtropical marine scene, some 330m years ago at what is now Bearsden, Glasgow. Palaeoniscid fish surround a Stethacanthus shark, Acanthodes (bottom left), 'Rhizodus' (background) and the shrimp Anthracopausia.

THE GEOLOGICAL COLLECTIONS OF SOMERSET COUNTY MUSEUM, TAUNTON: THEIR IMPORTANCE AND FUTURE

BY MICHAEL A. TAYLOR

INTRODUCTION

The Somerset County Museum holds the important geological collections of the Somerset Archaeological and Natural History Society. This article reports the main findings of my recent survey of the collections, and the County Museum Service's plans for them, although it is very much a brief, interim report and in no way replaces a full account such as those in the 'Collections, collectors and museums of note' series. Meanwhile, anyone who has information or wishes to find out more about the collections should contact the Museum.

The Somerset Archaeological and Natural History Society was founded in 1849 and its accumulated collections, including geological material, have been housed in Taunton Castle since 1872 (Simms 1967). In 1958 the Somerset County Museums Service took over the running of the Museum, which still has close links with the Society. The library of the Society is housed as a distinct part of the County Library Service's Local History Library. The pre-1958 collections remain the Society's property, but are in the care of the Museums Service.

In October 1985 David Dawson, the newly appointed County Museums Officer, asked Charles Copp (City of Bristol Museum and Art Gallery) and me to carry out a survey of the natural sciences collections to assess their importance, condition and staffing requirements. The post of Curator of Natural History (covering biology and geology) has been vacant since the retirement of Mr John Fleetwood in 1984.

ROCKS AND MINERALS

There are some 300 specimens of rocks and 900 minerals in the collections, which have been curated recently by A.E. Pollard, a volunteer. Mr Pollard (now deceased) found 71 of the original 168 specimens in the important Spencer George Perceval collection of minerals from the Brendon and Quantock Hills; the rest are, sadly, missing (Pollard MS 1977; Thackray 1981; Torrens 1977). Perceval's original MS catalogue (later published with acid comments on the then state of curation: Perceval 1909), remains at the Museum. There is a straightforward commercial set of minerals from the dealer James Tennant, but only remnants of the Jervoise and Portman collections survive (little is known about these two collectors). Rocks are represented mainly by Somerset building stones and borehole cores

from Lyme Regis (1901: Jukes-Browne 1902), and Puriton (1909-1910: McMurtrie 1912); both cores were recently reused for palynological work (Warrington and Scrivener 1980; Warrington 1984).

FOSSILS

In the 1930s A.D. Hallam curated the fossil collection, cataloguing some 8,500 specimens and storing or discarding 'valueless' material which was incomplete or lacked data (Hallam 1937). One hopes that important material was not discarded! Cleevely (1983) and Hallam listed the named collections of E. Bower, D. Williams, H. Franklin Parsons, C.H. Fox, C. Tomkins, Canon R.J. Meade and Charles Moore, almost all collected from Somerset and the immediate vicinity.

Surprisingly, Hallam left some of the Moore collection still packed in its original boxes. This material was untraceable when Charles Copp and Hugh Torrens visited the collection some years ago, and was presumed to have been unwrapped or discarded (Copp 1975). In fact a year or so ago it was brought in from a shed in the grounds and Charles and I found it still wrapped in The Times of 1878 and old Australian emigration bills! It is still packed in fifteen or so small boxes - and will remain so until it can be properly curated - but it includes what may be the missing fossil insects from the Upper Lias of Ilminster and a selection of other material including brachiopods (some probably Davidson's), gastropods from the Lias of Normandy, and a good collection of ammonite aptychi from Ilminster. When curated and combined with the 750-odd other 'curated' Moore specimens, which include the micromorphic brachiopods redescribed by Baker and Copp (1975), this will form a considerable asset. It offers hope that many of the published specimens missing from the main portion of the Moore Collection at Bath can be traced here.

The rest of the fossil collection also appears to contain excellent and irreplaceable material from Somerset quarries before 1914 or so. Three ichthyosaurs and a plesiosaur (its head, sadly, stolen from open display on the wall) come from the Lower Lias of Street, while the Bower collection includes fine specimens of the sexually dimorphic Middle Jurassic ammonites of the Yeovil district used by Mangold (1970) (including the holotype and paratype of Procerites (Planisphinctites) torrensi J. Stephanov!). Other important specimens include the collection of Blackdown Greensand

molluscs used by Downes (1882) and again by Taylor et al. (1983). Figured specimens include the Liassic fish Lepidotus elvensis (Woodward 1929) and the bivalve Lima (Acesta) clypeiformis from the Upper Greensand of Chard (Woods 1904; Jukes-Browne 1904). No doubt only the relative obscurity and unavailability of the collections have prevented other specimens receiving comparable attention with new ideas and techniques.

A tiny ichthyosaur with fragments of skin and soft tissues is some consolation for the fact that the two dinosaurs Avalonia and Picrodon from the Rhaetic of Somerset were sent to the British Museum (Natural History) (Sarford 1894; Seeley 1898), leaving only the cast of at least one bone.

PLEISTOCENE COLLECTION

The Museum has a large and important collection of vertebrate remains from the Quaternary of Somerset (especially the bone caves of the Mendips), largely made by the Rev. David Williams (whose MSS are in the Society's Library) and William Beard. The precise number of specimens is unknown, but is at least several thousand. William Ayshford Sanford intended a complete catalogue raisonn e of the Quaternary collection but only got as far as the Introduction and the Felidae (cave lions, etc.) (Sanford 1867, 1869a, 1869b; Boyd Dawkins and Sanford 1868-1872). Elephant, cave lion and ground squirrel material was used by Falconer (1868). Boyd Dawkins (1869) reviewed the postglacial mammals, and Sanford (1869c, 1870) and Hinton (1926) described rodents, including a new species of collared lemming (Dicronostyx gulielmi Sanford). Reynolds (1902-1919) used cave hyaena, bear and glutton material in his Palaeontographical Society Monograph.

To this day the Pleistocene material has remained largely uncurated although some has been roughly sorted into museum-type cardboard boxes.

THE COLLECTIONS NOW AND THEIR FUTURE

Little effort has been devoted to the collections over the past few decades other than whatever time Mark Davis (Keeper of Conservation) can spare from his main duties. The former geological displays have been largely dismantled in anticipation of the opening of a new geology gallery, the construction of which was substantially complete before ceasing on Mr Fleetwood's retirement. (This project will be reviewed and resumed on the appointment of the new curator.) Most of the pre-Pleistocene fossils and minerals are fairly accessible in store, but the Pleistocene material is in disorder and is not conveniently accessible, while the newly found Moore material needs to be unpacked. Environmental control is as yet non-existent (except for one mummified cat, to keep away evil spirits). Information and enquiries covering the collections will be welcomed by the Museum but it is clearly not possible to provide access to all the

collections until they have been curated.

The survey report by Charles Copp and the author strongly emphasised the importance of the natural science collections, including both the geological and natural history material (the latter contains important voucher material of Somerset flora and fauna, particularly herbaria and lepidoptera). It recommended the appointment of at least one natural science curator (preferably two, a geologist and a biologist) and urged the Museum Service to concentrate at first on securing the curation, documentation and physical security of the collections. This would provide a firm basis for the future expansion of the Service's work in display, education and fieldwork, which should include active collecting to bring the collections up to date with changes in Somerset geology over the past few years (through the advance of geological knowledge, and changes in the availability of exposures).

The County Libraries, Museums and Records Committee has decided in its recent staff review to appoint a Keeper of Natural Sciences and to reconsider the curatorial requirements of the Museum Service as soon as the relevant information needed to make a reasoned review can be assembled. This new member of staff will be assigned as a priority the task of improving the accessibility of the collection by modernising both the standard of its documentation and its physical care.

Acknowledgements. I thank the Executive Director, Area Museum Council for the South West, and Mr David Dawson (Somerset County Museums Officer) for facilities to carry out the survey and permission to publish, and Mr Mark Davis (Keeper of Conservation) for help with the survey.

REFERENCES

- Baker, P.G. and Copp, C.J.T. 1975. Terebratulide affinity of the brachiopod Spirifera minima Moore. Palaeontology, 18, 879-882.
- Boyd Dawkins, W. 1869. On the distribution of the British post-glacial mammals. Q. Jl geol. Soc. Lond. 25, 192-217.
- _____ and Sandford, W.A. 1866-1872. The British Pleistocene Mammalia. 1. The British Pleistocene Felidae. Palaeontogr. Soc. (Monogr.),
- Cleavelly, R.J. 1983. World palaeontological collections. British Museum (Natural History) and Mansell, London, 365pp.
- Copp, C.J.T. 1975. The Charles Moore Geological Collection. Newsl. Geol. Cur. Gp, 1, 109-116.
- Downes, W. 1882. The zones of the Blackdown Beds, and their correlation with those at Haldon, with a list of the fossils. Q. Jl geol. Soc. Lond. 38, 75-94.
- Falconer, H. 1868. (ed. H. Strickland). Palaeontological memoirs and notes of the late Hugh Falconer ... Vol.2. Mastodon, elephant, rhinoceros, ossiferous caves, primeval man and his contemporaries. Hardwicke, London, 675pp.

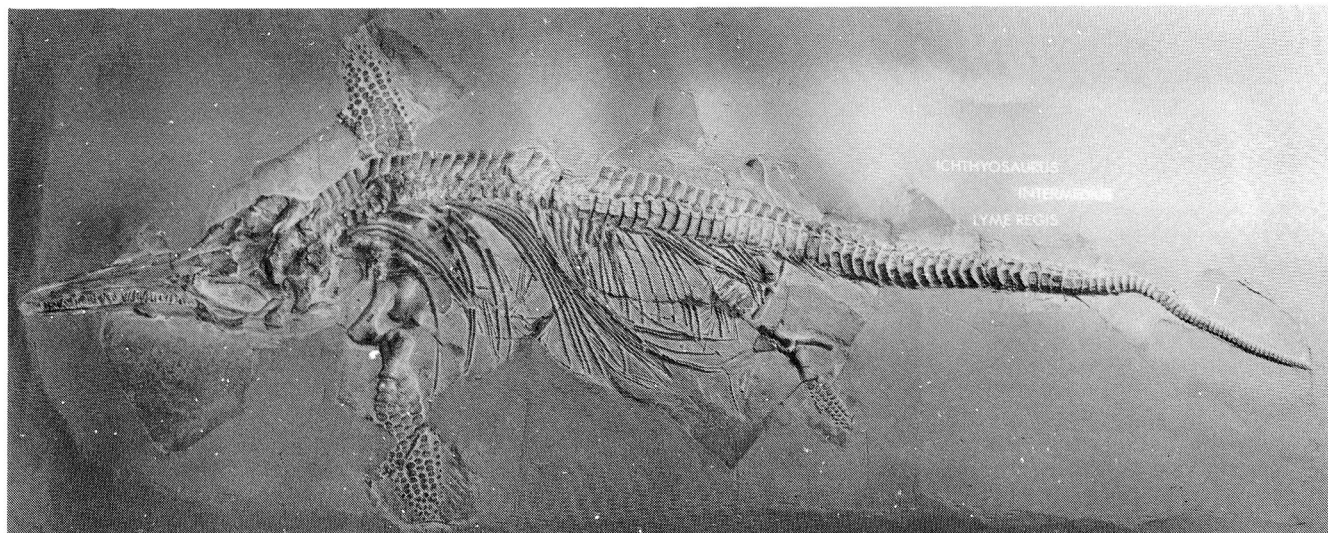


Fig.1. 'Ichthyosaurus intermedius' from Lyme Regis. Somerset County Museum, Taunton.

- Hallam, A.D. 1937. Report on the geological collections in the Somerset County Museum. Proc. Somerset arch. nat. hist. Soc. 82, 62-66.
- Jukes-Browne, A.J. 1902. On a deep boring at Lyme Regis. Q. Jl geol. Soc. Lond. 58, 279-289.
- 1904. The geology of the country around Chard. Proc. Somerset arch. nat. hist. Soc. 49 (2), 12-22.
- McMurtrie, J. 1912. On a boring at Puriton, near Bridgwater, in search of coal south of the Mendip Hills. Proc. Somerset arch. nat. hist. Soc. 57 (2), 25-53.
- Mangold, C. 1970. Morphoceratidae (Ammonitina - Perisphinctaceae) Bathonien du Jura meridional, de la Nièvre et du Portugal. Geobios, 3 (1), 43-103.
- Perceval, S.G. 1909. Catalogue, with preface, of a collection of minerals in the Taunton Museum from the Brendon Hills and other localities in West Somerset. The author, Bristol, 36pp.
- Pollard, A.E. 1975 MS. A study of the minerals and rocks housed in the Somerset County Museum. Original in the Somerset County Museum.
- Reynolds, S.H. 1902-1912. The British Pleistocene Mammalia. 2. The British Pleistocene Hyaenidae, Ursidae, Canidae and Mustelidae. Palaeontogr. Soc. (Monogr.).
- Sanford, W.A. 1867. Introduction to catalogue of the Pleistocene Mammalia in the Taunton Museum. Proc. Somerset arch. nat. hist. Soc. 13, 245-260.
- 1869a. Catalogue of the feline fossils in the Taunton Museum. Ibid. 24, 103-160.
- 1869b. On the Pleistocene Mammalia of Somerset. Catalogue of bones in the Museum of the Archaeological and Natural History Society at Taunton. No.1 - Felis. Somerset Archaeological and Natural History Society, Taunton, 60pp, 26 pls. Quarto reprint of the original octavo of Sanford (1869a), with plates reprinted from Boyd Dawkins and Sanford (1864-1871).
- 1869c. On the Rodentia of the Somerset Caves. [Abstract.] Q. Jl geol. Soc. Lond. 25, 444.
- 1870. On the Rodentia of the Somerset Caves. Proc. Somerset arch. nat. hist. Soc. 15 (2), 51-57.
- 1894. On bones of an animal resembling the Megalosaur, found in the Rhaetic formation at Wedmore. Ibid. 40 (2), 227-235.
- Taylor, J.D., Cleevely, R.J. and Morris, N.J. 1982. Predatory gastropods and their activities in the Blackdown Greensand (Albian) of England. Palaeontology, 26, 521-553.
- Thackray, J. 1981. S.G. Perceval, a crusader for museums. Geol. Curator, 3, 120-125.
- Torrens, H.S. 1977. Lost and Found 25. Spencer George Perceval (1838-1902). Newsl. Geol. Cur. Gp.1, 453 and 455.
- Warrington, G. 1984. Late Triassic palynomorph records from Somerset. Proc. Ussher Soc. 6, 29-34.
- and Scrivener, R.C. 1980. The Lyme Regis (1901) Borehole succession and its relationship to the Triassic sequence of the east Devon coast. Ibid. 5, 24-32.
- Woods, H. 1904-1913. The Cretaceous Lamellibranchiata. Palaeontogr. Soc. (Monogr.).
- Woodward, A. Smith. 1930. Note on a specimen of the ganoid fish, Lepidotus elvensis (Blainville), from the Upper Lias, near Ilminster. Proc. Somerset arch. nat. hist. Soc. 75 (2), 91-93, pl.11.

Michael A. Taylor
Area Museum Council for the South West
City of Bristol Museum and Art Gallery
Queen's Road, Bristol BS8 1RL

Typescript received 10 February 1986
Revised typescript received 13 March 1986

EXHIBITION REVIEW

TREASURES OF THE EARTH AT THE GEOLOGICAL MUSEUM

The opening of 'The Story of the Earth' in 1972 marked the beginning of a complete transformation of the exhibitions at the Geological Museum, with 'Britain before Man' in 1977, 'British Fossils' in 1980, and finally in 1985 'Treasures of the Earth'. From Gardner's idiosyncratic and rather extravagant approach in 'The Story of the Earth', involving sophisticated, complex and often confusing audio-visuals and the simulated earthquake, there has been a marked change in style to the more conventional exhibits designed mainly in-house by Giles Velarde and his team. (An interesting appreciation of Gardner by Giles Velarde appeared in a recent issue of Designers and Interpreters Newsletter, Autumn 1985).

'Treasures of the Earth' is different again and is difficult to place in any classification of recent museum exhibitions. It is certainly a high technology exhibit with the distinction of making use of more inter-active video terminals than any other museum exhibition of which I am aware. The push buttons in the 'house' section are reminiscent of the Science Museum, but the neon lighting, which is a dominant feature, makes it look like an advertisement more appropriate to Piccadilly Circus.

The entrance to the gallery, adjacent to the spectacular rock face entrance to 'Story of the Earth', is marked by a large illuminated neon sign. Inside and to the right, a bank of six TV monitors relays a two minute programme showing graphically a representation of the geological evolution of the earth and the ever increasing demand for raw materials by man. For most of the programme, all six screens show the same image, enabling some twenty to thirty individuals, including small children to see the programme comfortably. The graphics are imaginative and exciting but the music, attractive at the first hearing, palls after being heard again and again as one progresses round the exhibition. On my first visit, I noted with pleasure the absence of a spoken commentary which allows the viewer to use his own imagination in following the sequences and interpreting the message. On a second visit I found that alternate programmes are shown with and without the commentary and I was assured that this was not a malfunction. On a third visit there was no commentary. At the end of the programme, each screen in turn introduces a suite of 'Treasures' or minerals, each being shown in a different colour: blue for water; red for oil, gas, coal, and nuclear fuels; yellow for limestone, magnesia, clay, aggregates, industrial sand, and building stone; green for lead, zinc, fluorspar, barytes, salt, potash, sulphur, gypsum, anhydrite, and phosphate; white for gold, silver, platinum, diamond, and gems; and purple for iron,

cobalt, tungsten, molybdenum, vanadium, manganese, nickel, aluminium, tin, and copper. From each screen, neon lighting strips of the same colour lead up the wall and along the ceiling to link up with those parts of the exhibition which show the origins and properties of each suite of minerals. The whole gallery is elaborately colour coded, extending from the TV monitors, via the neon tubes to the illuminated buttons, coloured text on the video terminals, and coloured type showing the constituents of the various objects.

To the left of the entrance an introductory label explains that the exhibition is in three sections:

'You are entering the central section. After seeing the introductory film, walk in through the Cut-Away house to discover what minerals are extracted for everyday use. See beyond the house where minerals exist in the Earth's crust. Through to the left is a section devoted to Fuels and Water. Through the House, to the right find out about all of the minerals in the film titles. Follow the colours from the film to find out about each group of Treasures.'

The cut-away house is made up of a cut-away garage (with cut-away car) (Fig.1), living room, kitchen (Fig.2), conservatory and bathroom (Fig.1). In front of each room is a panel of colour coded illuminated buttons, each labelled with the name of one of the 'treasures' to be found in the room. Pressing the button activates small lights by means of fibre-optics within the various objects and furnishings which contain, or are made from, the substance shown on the button. I found it confusing to determine whether only traces of the substances were present or whether they were made largely of the substance. Like many visitors, I found myself more fascinated by the technology which could slice a car in two and by seeing the insides of familiar objects than I was at the presence of minerals. Mural backdrops to the cases showing where minerals occur in the Earth's crust were not very meaningful.

Situated to the left of the entrance are eleven 'exhibits', five relating to water and six to fuel, each mounted in a floor to ceiling cylinder intended to simulate 'the trunks of coal measure trees'. Most are animated in some way (one out of order). Turning a wheel opens a valve which allows water to circulate to illustrate the generating of hydro-electric power, while the power generated operates the light in the exhibit. The Water-Cycle exhibit is in the form of a children's computer game with familiar joy-stick and controls. Some of the exhibits revolve within the cylinder when the button is pressed to give three exhibits in the space of one; others utilise the animated poster technique in which triangular sections rotate to give three different

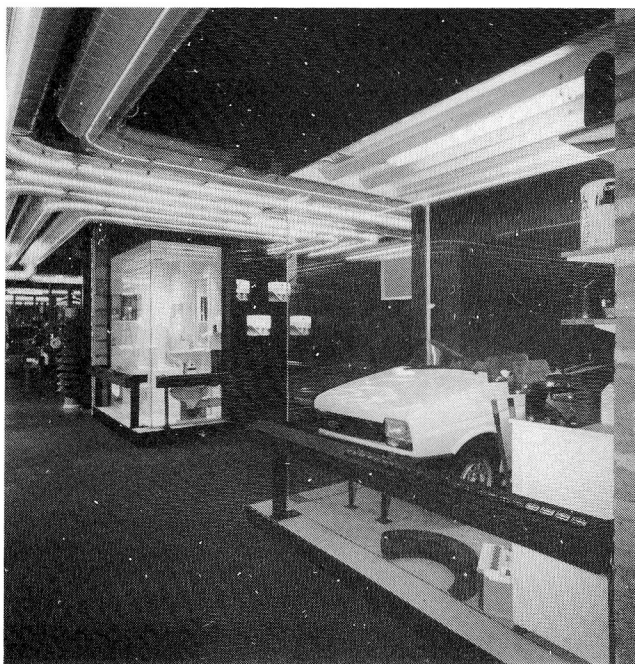


Fig.1. The cut-away house: garage and bath-room either side of main entrance to 'Treasures of the Earth'.



Fig.2. The cut-away house: living room, kitchen and conservatory.

images. In the coal-mining exhibit the whole section rises and falls in the cylinder to show the mining plant on the surface and the workings below ground. Three of the exhibits take the form of interactive video-terminals: the water programme, oil and gas programme and coal programme - part of a series of nineteen such terminals in the gallery described in more detail below.

To the right of the entrance, one long wall of the gallery is made up of floor to ceiling display cases divided into four sections (yellow, green, white and purple), each of which contains a bewildering array of objects associated with one of the six suites of minerals (Fig.3); the objects include ore samples, fine crystal specimens, and 'historic, precious, delicate and high technology objects', each labelled and giving details of its constituent minerals. Although there are some excellent geological specimens and fascinating artifacts I found it difficult to perceive any pattern to the selection of specimens and it took me some time to link the four sections to the colour coding. This run of cases is broken by two exhibits, one of which shows the action of hot water in making many of the Earth's minerals deposits while the second illustrates the complexities of the modern Navan mine in Ireland. In the centre of the gallery an open display of 100 specimens allows the visitor to handle 'ores, metals, crystals, and parts of car, railway, plane, furnace, church, ship and motorway' (Fig.4).

The second wall is taken up with sixteen interactive terminals, grouped, labelled and colour-coded to correspond with the four suites of minerals. The approach of a visitor to one of the terminals triggers the presentation of a short summary of the

origins, extraction and uses of the mineral, with captions and text appearing on the left hand screen and colour images on the right hand screen. When the programme starts a spotlight illuminates a revolving specimen of the mineral within a case. At the end of the summary, on the first screen appears an invitation to find out more. The options offered are to see the summary again, or to choose from one of three subject areas - Geology, Extraction or Uses. A selection is made by touching one of a series of illuminated buttons below the screen. By pressing 'G' for Geology, another menu appears on the left hand screen giving numbered choices, any one of which may be selected by touching the appropriate numbered button (1 to 6), in response to which more textual information appears on screen one, with pictures or graphics on screen two. Additional information may be obtained by pressing an 'X' (extra) button. The system utilises micro-computers and a master videodisc which includes the animated film and all the pictures and diagrams in the exhibition.

A key to the nineteen programmes is provided at the entrance to the gallery in the form of an index with an illuminated sign:

'The numbered pages will be found under the wall of titles (round the corner and to your left) and in the Water and Fuel programme beyond the House to your right.'

The index consists of an alphabetical index of subjects which may be scrolled using one button (start) and stopped using a second (stop). Using the index, the visitor can locate a topic of interest and then find the appropriate terminal to get the information he or she requires.

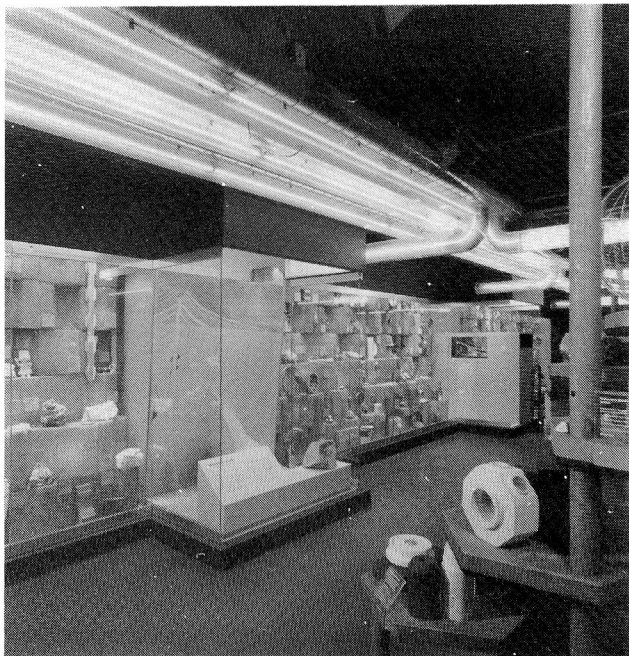


Fig.3. The long wall with its bewildering array of objects, broken by the hydrothermal exhibit.

If the above description is confusing, this gives an accurate picture of the exhibition. I had to work hard and make repeat visits to unravel the complexities of the colour-coding system and to fully understand how to use the index and the terminals.

The question which the reviewer has to ask is whether the exhibit is effective in showing the 'Treasures' derived from the earth and their utilisation by man. Without a full scale evaluation it is impossible to answer this question but my personal feeling is that it is only partly successful and that the techniques used are over-elaborate and unnecessarily complex. Some things I looked for in an exhibition of this kind are missing. I would have expected to see some account of the main mineral producing areas of Britain and perhaps the world. I would also like to have seen some quantification of production and consumption. The scale of the mineral working in some parts of the world does not come across. It would also have been appropriate to tell some of the stories associated with such mines as the Devon Great Consols Mine and the Parys Mine in Anglesey. Lastly there are some favourite minerals which are missing. Where are the magnificent

Geoff Stansfield
 Department of Museum Studies
 University of Leicester
 105 Princess Road East
 Leicester LE1 7LG

27 January 1986

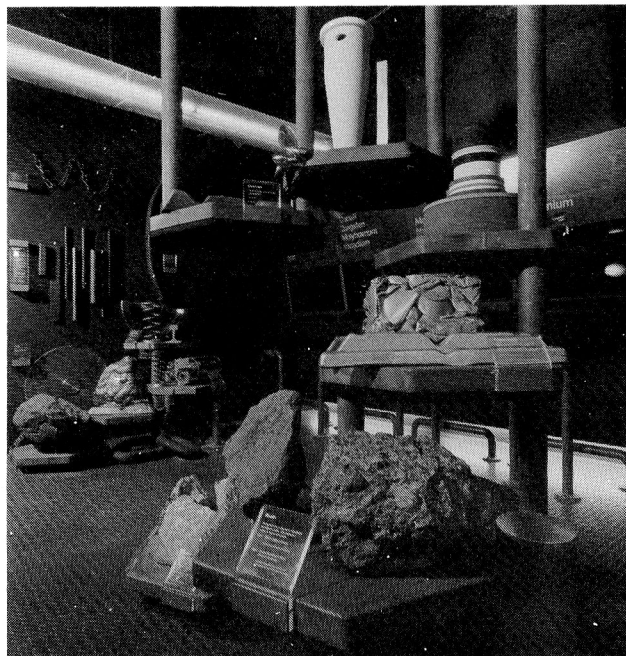


Fig.4. Part of the open display in front of of the interactive computer terminals.

fluorspars from Weardale and the iron stained calcites from Cumbria?

As far as the public reaction is concerned, in my several visits the gallery has never been full and I have had no difficulty in getting access to the terminals. Why is 'Human Biology' next door apparently so much more popular? One factor might well be the fact that 'Treasures' has not been widely publicised.

The new gallery gives much food for thought. The cost must have been astronomical and probably represents as much as is spent on the rest of geological exhibitions throughout the country in one year. I am sure that we have to try new types of exhibits but to get value for money such exhibits have to be carefully evaluated and the results made widely known.

ACKNOWLEDGEMENTS

I am most grateful to Giles Velarde for supplying additional information, answering my enquiries, and supplying the photographs with which this review is illustrated (reproduced with permission).

COPLOW QUARRY, CLITHEROE, LANCASHIRE

BY NEIL S. TURNER

HISTORY OF THE LOCALITY

Coplow Quarry is situated in a Lower Carboniferous 'reef-knoll' on the northern outskirts of Clitheroe, Lancashire (NGR SD751432); it was formerly a wooded limestone knoll rising to 350ft above sea level. Small-scale quarrying was already taking place by the middle of the seventeenth century. The knoll was then owned by Clitheroe Corporation who made an order in 1651 prohibiting people from quarrying there without a licence. By the middle of the nineteenth century, the first Ordnance Survey maps showed quarries on the east and west sides of the knoll, with the central portion as yet undisturbed. By the 1930s, Coplow Knoll had become Coplow Quarry and quarrying of limestone to make lime (Figs.1 and 5) had become extensive.

In April 1951 Ribblesdale Cement Ltd. stopped quarrying limestone at Coplow and flooded the quarry to a depth of around 20ft to create an auxiliary water supply reservoir for their cement works. That same year the quarry was designated a Site of Special Scientific Interest by the Nature Conservancy Council

(Fig.2). The flooding made the base of the quarry inaccessible to geologists and access to the quarry faces above water level was very difficult.

In 1979 Ribblesdale Cement was granted planning permission to drain the quarry and infill the area up to the old water level with alkali inert residue from their works. This operation is now slowly being carried out (Fig.3) and should be completed by about 1995. Access to all parts of the quarry is much improved and, although the quarry floor will soon be lost, it is hoped that access to the faces will remain as good as it is today.

THE FORMATION OF COPLOW KNOLL

Although the origin of 'reef-knolls' has been controversial, it is now thought that they formed as limey mud-banks on the bed of a warm sea (Lees 1964). The Coplow limestones are placed in the Chadian Stage of the Lower Carboniferous (George et al. 1976 pp.35-36) and research is currently being carried out at Edinburgh University on their diagenesis (Miller, in press).



Fig.1. Coplow Quarry, Clitheroe, showing the extent of quarrying operations in 1938.

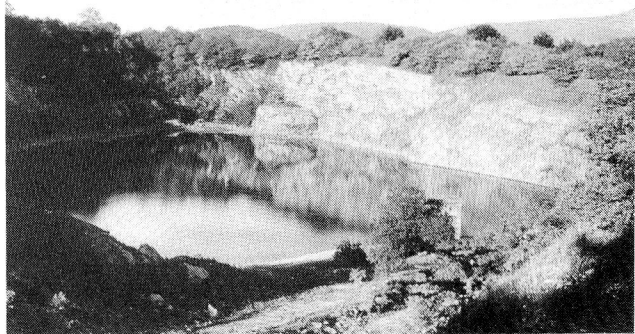


Fig.2. Looking into the south-east corner of a flooded Coplow Quarry in the early 1960s.

FOSSIL COLLECTING AT COPLLOW QUARRY

Clitheroe Castle Museum has invertebrate fossils collected at Coplow in the 1860s. The first publication referring to fossils found at Coplow was the original Geological Survey Memoir of the Clitheroe area which mentions the abundance of the coral Amplexus coralloides and the occurrence of the echinoid Melonechinus multipora (Hull *et al.* 1875, p.15).

Coplow Quarry is probably best known for its well-preserved crinoid fauna (Fig.4); many calyces have been found in an excellent state of preservation, although complete crinoids

have never been common. Attracted by this rich crinoid fauna, the Scottish crinoid collector James Wright collected at Coplow from the mid 1920s to the early 1950s. Because of his work (see Bibliography), a larger variety of Carboniferous crinoids has been found at Coplow Quarry than at any other site in England - twenty-five genera and fifty-five species have been recorded. Several fossils have been named after Coplow Quarry, including the flexible crinoid Taxocrinus coplowensis Wright, 1946, the camerate crinoid Pimlicocrinus Wright, 1943 (Coplow Quarry is located in the Pimlico area of Clitheroe) and the brachiopod Spirifer coplowensis Parkinson, 1926.

Today, echinoderms and many other invertebrate fossils (including corals, brachiopods, trilobites, gastropods, sponges, bryozoa and cephalopods) can still be collected. The following museums have Coplow material in their collections: The Royal Scottish Museum, Edinburgh; Merseyside County Museum, Liverpool; Birmingham University Museum; The Manchester Museum; British Geological Survey, Keyworth, Nottingham; and probably the British Museum (Natural History).

BIBLIOGRAPHY

- 1875 Hull, E., Dakyns, J.R., Tiddeman, R.H., Ward, J.C., Gunn, W. and De Rance, C.E. Geology of the Burnley Coalfield and of the country around Clitheroe, Blackburn, Preston, Chorley, Haslingden and Todmorden. Mem. geol. Surv. U.K.



Fig.3. Coplow Quarry at the start of infilling work, photographed 11 February 1986. The terrace marks the top of the old water-level.



Fig.4. The crinoid Cyathocrinites patulosus (Wright) collected by James Wright from Coplow Quarry and now in the collections of the Royal Museum of Scotland, no. GY 1958.1.1331. (from Wright 1935, pl.8).

- 1916 Vaughan, A. The Knoll Region of Clitheroe, Bowland and Craven. Proc. Yorks. Geol.Soc. 19, 41-59, pl.7.
- 1924 Kendall, P.F. and Wroot, H.E. The Geology of Yorkshire. Pp.956-958. Published by the authors, 995pp.
- 1926 Parkinson, D. The faunal succession in the Carboniferous Limestone and Bowland Shales at Clitheroe and Pendle Hill (Lancashire), Q. Jl geol. Soc. Lond. 82, 188-249.
- 1928 Wright, J.A. A rare Euryocrinus from the Carboniferous Limestone of Coplow Knoll, Clitheroe. Geol. Mag. 65, 246-254.
- 1935 Wright, J. New crinoids from Coplow Knoll, Clitheroe with lists of Carboniferous Limestone crinoid species. Geol. Mag. 72, 193-213.
- 1938 Wright, J. Some British Platycrinidae and descriptions of new species. Geol. Mag. 75, 266-287, pls.8-11.
- 1942 Wright, J. New British Carboniferous crinoids. Geol. Mag. 79, 269-283, pls.9-12.
- 1943 Wright, J. Pimlicocrinus gen. nov. and two new species of Amphoracrinus from the Carboniferous Limestone. Geol. Mag. 80, 81-94, pls.3-6.
- 1946 Wright, J. New species of Taxocrinus and Synbathocrinus and other rare crinoids from the Carboniferous Limestone of Coplow Knoll, Clitheroe. Geol. Mag. 83, 121-128, pls.7-9.

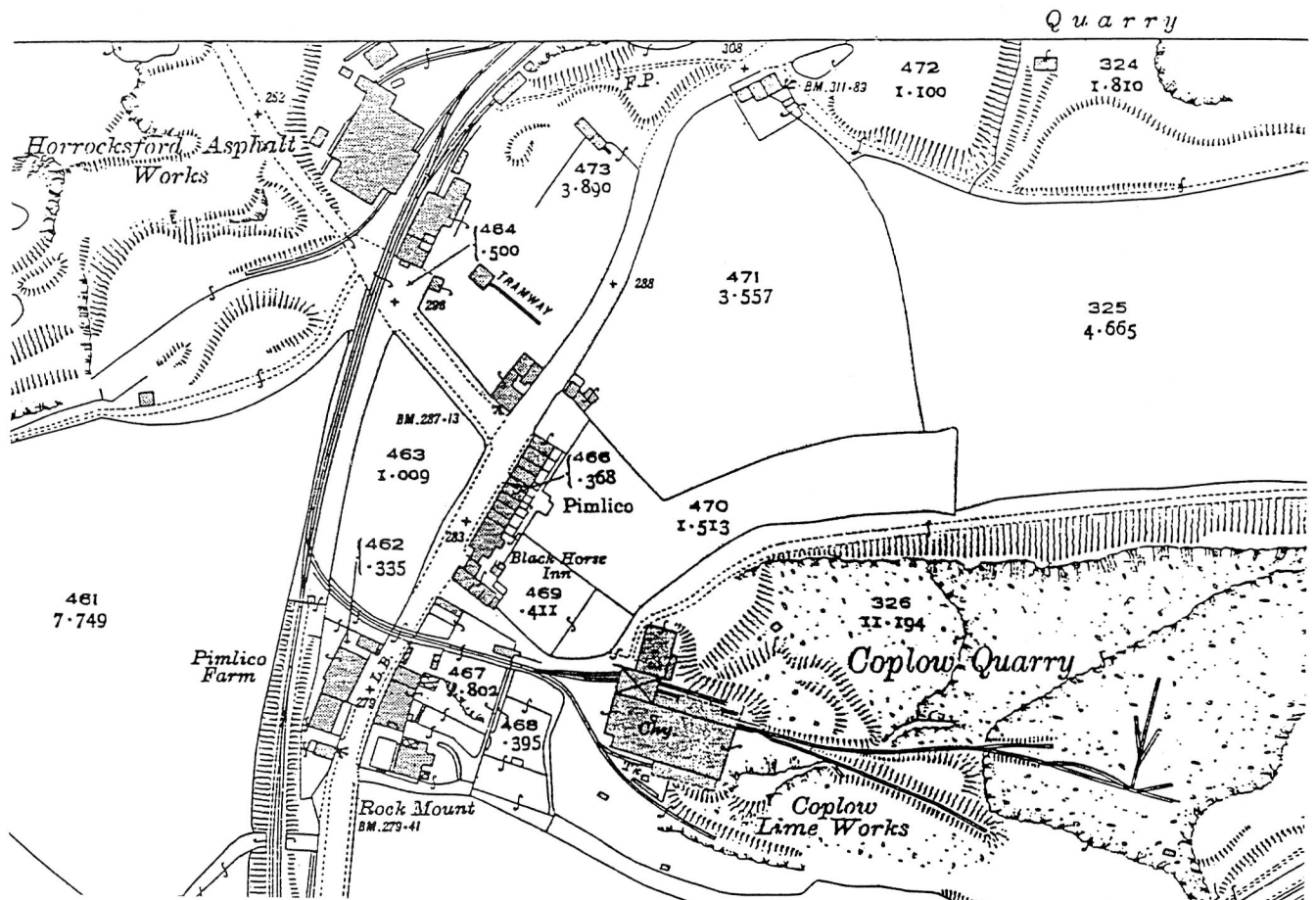


Fig.5. Coplow Quarry, Clitheroe. Reproduced from the 1932 1:2500 Lancashire Sheet No.XLVII.10 Ordnance Survey Map.

WEST.

EAST.

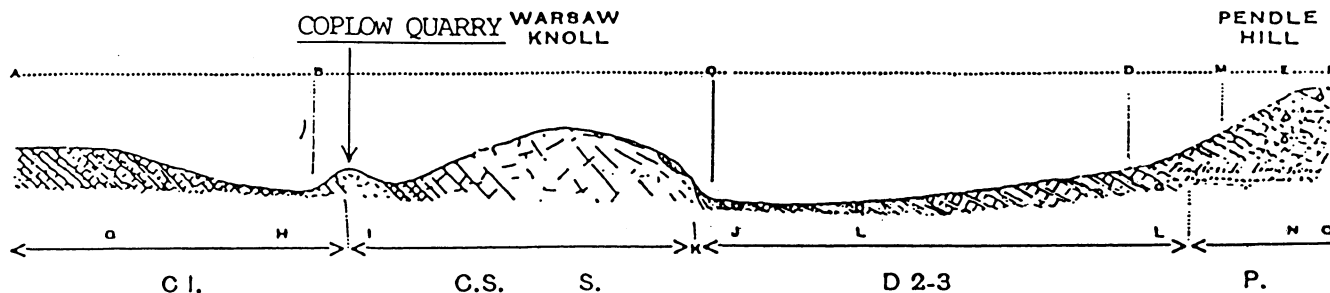


Fig.6. Section of the Lower Carboniferous at Clitheroe (from Vaughan 1916, pl.7).

- 1947 Wright, J. Steganoocrinus westheadi n sp. and note on a rare crinoid and a blastoid from the Carboniferous Limestone of Coplow Knoll, Clitheroe. Geol. Mag. 84, 101-105, pl.3.
- 1950 Parkinson, D. Some features of the Lower Carboniferous Reef Limestone of Clitheroe, Lancashire. Geol. Mag. 87, 337-350, pl.16.
- 1950 - 1960 Wright, J. A monograph on the Carboniferous Crinoidea. Palaeontogr. Soc. (Monogr.), 347pp., 83pls.
- 1957 Parkinson, D. Lower Carboniferous reefs of Northern England. Bull. Am. Ass. Petrol. Geol. 41, 511-537.
- 1961 Earp, J.R., Magraw, D., Poole, E.G., Land, D.H. and Whiteman, A.J. Geology of the country around Clitheroe and Nelson. Mem. Geol. Surv. U.K. 68, ix + 346 pp., 12 pls.
- 1972 Miller, J. and Grayson, R.F. Origin and structure of the Lower Visean 'Reef' Limestones near Clitheroe, Lancashire. Proc. Yorks. Geol. Soc. 38, 607-638, pls.50, 51.
- 1982 Miller, J. and Grayson, R.F. 1982. The regional context of Waulsortian facies in northern England. Pp.17-32. In Symposium on the palaeoenvironmental setting and distribution of the Waulsortian Facies. El Paso Geological Society and the University of Texas at El Paso.
1985. Lees, A. and Miller, J. Facies variations in Waulsortian buildups, part 2; mid-Dinantian buildups from Europe and North America. Geol. J. 20, 159-180.

Acknowledgement. Mr. Stanley Westhead has greatly assisted in the preparation of this article.

REFERENCES

- George, T.N., Johnson, G.A.L., Mitchell, M., Prentice, J.E., Ramsbottom, W.H.C., Sevastopulo, G.D. and Wilson, R.B. 1976. A correlation of Dinantian rocks in the British Isles. Spec. Rep. geol. Soc. Lond. 7, 87pp.
- Lees, A. 1964. The structure and origin of the Waulsortian (Lower Carboniferous) 'reefs' of west-central Eire. Phil. Trans. R. Soc. Lond. B247, 483-531.
- Miller, J. (in press). Lateral facies relationships and diagenesis in Waulsortian mud-mounds from the Lower Carboniferous of Ireland and northern England. In Schröder and Purser (eds.). Reef Diagenesis. Springer-Verlag, Amsterdam.

Neil S. Turner
Clitheroe Castle Museum
Lancashire County Museum Service
Castle House, Clitheroe
Lancashire BB7 1BA

Typescript received 4 March 1986

CONSERVATION FORUM

CONFERENCE REPORT

The Conservation of Geological Material British Museum (Natural History) 23-24 January 1986

Concerned by current attitudes towards geological specimen conservation, the Geological Curators' Group, jointly with the Palaeontology Department of the British Museum (Natural History), organised an international conference with the aim of improving the state and status of geological conservation within the UK.

Many geological curators and technicians still think that geological material needs little conservation. Current opinions vary, but a 'slap on some PVA, shove the specimen back in the drawer, and forget it' attitude is all too common. This is, of course, completely misguided, and many important geological collections are suffering in consequence. Geological specimen conservation requires as much skill and knowledge of materials and techniques as archaeological and fine art conservation - yet there are neither trained geological conservators, nor training courses to produce them, in Britain today.

Public interest in geological material is self-evident. A good geology display attracts the public in large numbers to a museum (the 'shop-window' of the geological world), yet much important geological material of wide potential appeal lies uncared for in the basements of Britain's museums. Much of this 'buried treasure' requires urgent rescue conservation now, yet its very existence is often ignored by those responsible for its care.

The conservation of geological material should be a cornerstone of modern museum geology. Yet geological conservation (in terms of attitudes, status and research) lags some forty years behind archaeological conservation, and even further behind fine and decorative arts conservation.

Such was the background to the GCG's conference, which attracted over 100 delegates from Britain, Canada, USA, Austria, Switzerland, West Germany, Norway and Australia. Two days of tightly-packed lectures and practical sessions covered all major aspects of geological conservation. The conference aimed not only to promote discussion about geological specimen conservation but also to enhance awareness of this much neglected field, and thereby to begin to change attitudes.

Day 1, 23 January 1986

After a welcome by Dr H.W. Ball, Keeper of Palaeontology at the British Museum (Natural History), Phil Doughty (GCG Chairman) set out the aims of the conference and why the GCG thought this conference was so important.

The conference began with lectures on health and safety, (Frank Howie, BMNH), and on the neglected topic of conservation documentation - something which many curators forget (John Cooper, Booth Museum, Brighton). Mike Taylor (Area Museum Council for the South West) related the important role being played by the growing band of peripatetic curators employed by the Area Museum Councils. On conservation proper J. Ashley-Smith (Victoria and Albert Museum) talked about environmental control and pointed out the many problems which geology shares with the arts in this field.

After lunch the use of two different techniques to conserve sub-fossil bone were described. The first, from Germany (Martin Walders, Bottrop) used PEG and epoxy-resins, while the second (Adrian Doyle, BMNH) involved PVA. Following this a video was shown on the collection of the 'Ockley Dinosaur' by BMNH staff. The first day concluded with practical sessions in the superb Palaeontology Laboratory at the BMNH, where the techniques discussed earlier were demonstrated.

Day 2, 24 January 1986

Ethical considerations and mineral falsification were topics of concern to Robert Waller (National Museum of Natural Sciences, Ottawa, Canada). His lecture provoked plenty of discussion about the state of various delegates' mineral collections. Margaret Collinson (King's College, London) demonstrated the absence of any original research in the conservation of palaeobotanical material. Lorraine Cornish discussed the newly developed ethanolamine thioglycollate method for treatment of pyrites decay. Three lectures by archaeological conservators discussed archaeological methods (Richard Jaeschke, University College, London) and materials (Sue Bradley, British Museum, and Suzanne Keene, Museum of London) and their relevance to geological conservation; they proved that geologists have a lot to learn! Fossil preparation by chemical (William Lindsay, BMNH) and mechanical (John Wilson, Ulster Museum, Belfast) methods preceded the second practical demonstration in the Palaeontology Laboratories.

Discussion session

The serious need for trained geological conservators was recognised. It is worrying that there are no trained geological conservators, no conservation training courses and no real conservation posts established. The conference then recognised the need to create such positions before geological conservation could become a fully accepted part of geological museum work. The ideal position appeared to be for Area Museum Councils to set up regional geological conservation posts allied to properly equipped conservation laboratories and filled

by suitably trained personnel (i.e. Geology degree plus 'conservation diploma').

Two ideas were suggested for training courses:

1. Institute of Archaeology Conservation Diploma for Geology

To be run along the lines of the present Archaeology Diploma but adapted for geology. Entry qualifications for this would be a geology degree plus some chemistry experience (at least to 'A' level).

2. Training period at the BMNH Palaeontology Laboratories

Again a position for a graduate geologist, candidates could be taken on for fixed periods of training.

Such ideas will obviously cost money and some curators could never see the time when enough would be made available to create the posts and finance the training periods. The same group questioned the need for specialist geological conservators at all, feeling instead that a 'cook-book' of geological conservation for use by curators would be a realistic way forward. This attitude was seen by others as being short-sighted, and it provoked severe criticism from the archaeologists who pointed out that geological conservation is at the crossroads reached by archaeology some forty years ago. The message was to press on improving the state of our collections, to press for better financial support, and to improve the image of geology. Only then will geological conservation achieve the well-financed, well-patronised status that archaeological conservation now enjoys. Stand still, and we may inadvertently encourage the gradual decline or at least stagnation of our subject.

North American delegates pointed out that in the USA and Canada public interest in geology is on the increase and large sums of money are being invested in geology museums and research institutions. The conservation of existing geological material is being seen there as a corner-stone of this development and is also attracting substantial funding.

Finally, the idea of a representative body for geological conservation was proposed, to

Christopher J. Collins
Leicestershire Museums Service
96 New Walk
Leicester LE1 6TD

25 February 1986

be formed under the auspices of either GCG or UK Institute for Conservation. Most delegates agreed that, due to the small number of people currently involved, the GCG would be the best umbrella organisation for the moment - especially as the GCG has, since its formation in 1974, seen the care and status of geological material as a primary responsibility. There is, however, a need to form tangible links with other conservation bodies, such as UKIC, International Institute For Conservation (IIC), Verbandes Deutscher Preparatoren, Institute of Archaeology etc., and GCG should investigate these as soon as possible. These and other main points arising from the conference are summarised below:

1. Links with other conservation bodies must be formalized.
2. Guidelines for training geological conservators should be drawn up.
3. Attitudes towards the care of geological material must be improved.
4. The need for geological conservators should be more widely recognized.
5. Regional posts of geological conservator should be set up around the UK by the Area Museum Councils.
6. Improved funding is an urgent requirement.
7. GCG should act, at least initially, as the representative body for geological conservators.
8. A data base to collate information on geological conservation (international in scope, thereby promoting international links and exchange of information) should be established.
9. GCG should make itself a more international body, by improving contacts with international groups such as VDP (Germany), and similar groups in Canada and the USA.
10. A second conference in 1988 should be organised.

The GCG would like to thank ICCROM and the Geological Society of London for their sponsorship, and of course all at the BMNH who were involved in hosting the conference and laid on the laboratory demonstrations, without which the crucial, practical side of many techniques would have been lost. Papers from the conference will be published in a special issue of the Geological Curator (Vol.4, No.7) in the autumn.

LOST AND FOUND

COMPILED BY DONALD I. STEWARD AND HUGH S. TORRENS

Abbreviations

CLEEVELY - Cleevely, R.J. 1983. World palaeontological collections. British Museum (Natural History) and Mansell Publishing Company, London,

GCG - Newsletter of the Geological Curators' Group, continued as The Geological Curator.

LF - 'Lost and Found' reference number in GCG.

47 F. HOLT

GCG, 2(2), 81

H.S.T. and D.I.S. write:

'The request for information concerning the whereabouts of the holotype of the Carboniferous scorpion Eobuthus holti Pocock (1911) by Dr Erik Kjellesvig-Waering has been answered by a recent article in the Newsletter of the British Arachnological Society. Presumed lost, this specimen from Sparth Bottoms, Rochdale (see Howell 1985) has been rediscovered in a shoe-box at Rochdale Museum. F. Holt was in fact not the collector (it was Mr H. Howard, an amateur geologist) but merely the person who sent it off to be identified - and a curator who basked in a local collector's glory!'

Howell, A.C. 1985. Now and then, no.1: Sparth Bottoms, Rochdale. Geol. Curator, 4(4), 211-214.

Selden, P.A. 1985. A shoe-box in a cellar in Rochdale (British fossil scorpions). Newsl. Br. arachnol. Soc. 44, 6-7.

152 Museum of HASLAR Hospital, Gosport

GCG, 4(3), 177; 4(4), 222

In December 1985 Michael Barker and Polly Vergo (Portsmouth Polytechnic) with Theo Getty (Portsmouth Museum) visited Haslar Museum in Gosport, but with limited success. They report:

'The whole of the geological collection was, during the last war, in the basement of a building which suffered a direct hit from German bombs. Apparently the building collapsed on top of the basement and everything was sealed in it. It is all still there but buried under rubble and with a new building on top of it! All the Museum has left in geological terms are a few vertebrate remains - ox, probable Indian elephant tooth (juvenile), and small lemur-like primates. These are in a display case but with no identification or catalogue numbers. There are also a few specimens in cardboard boxes that we did not see - they had been found in the footings for a recent extension on the 'bombed' site. No catalogue of the

collection remains and the only documentation is a few hand-written notes (which could not be found at the time of our visit!) by the recently left curator - who has not been replaced at present.'

D.I.S. and H.S.T. write:

'The above note was accompanied by an article concerning Haslar Hospital which appeared in the Journal of the Royal Naval Medical Service, 1985. The whole article, which includes a photograph of the Museum in its heyday, is of great interest and is recommended to anyone who wishes to know more about the Museum; we paraphrase it here:

The keys to the Museum were handed over on 18 June 1827; specimens were then housed there from cupboards in various wards of the hospital. Initially material consisted of botanical, zoological, geological, veterinary and human pathology interest, and miscellaneous items included Captain Cook's hearing-trumpet and a chest which had belonged to Florence Nightingale. The collection grew rapidly with material received from other naval hospitals - Malta (1828), Chatham (1835), Greenwich (1846) and Plymouth (1911). Other donations included the marine fossils of P.C. Sutherland; the Challenger collection of Dr A. Grosbie; 5000 diatoms of Deputy Inspector General J. Rae; and from the East India Company, a collection of coloured casts of fossil remains of veretebrata from the Sewalik Hills of India.

Extra rooms were added to the Museum in 1840, 1850 and 1903 to cope with the growth of the collection, although many specimens were left uncurated until the appointment of Fleet Surgeon Bassett-Smith as curator in 1900. Mention is made of several of the surgeon naturalists serving in the Royal Navy, some of whom deposited their collections at the Museum. A museum visitors' book was kept during the early years, although the article notes that some anomalies in it could be attributed to the 'lunatics' who were employed to clean the Museum.

The general section of the Museum was bombed on 10 January 1941, with the loss of 14,000 specimens (including the hearing-trumpet and chest noted above) and resulted in the transfer of the better pathological specimens which had survived to the Hunterian Museum of the Royal College of Surgeons for 'safe-keeping'.

The article then continues at length about the post-war changes that have occurred and details how reorganisation of the associated library has affected the Museum. It finishes on an optimistic note reporting that 'if the plans in the pipeline are approved, then the future of the Museum will not be in doubt, and the Navy's oldest Museum, at 158 years,

should collect once again all those individual collections in departments and establishments so that it is truly the Museum of the R.N. Medical Service.'

Parsons, C.T. 1985. Haslar Museum. J. roy. nav. med. Serv. 71, 117-120.

156 A well-travelled plesiosaur femur

GCG, 4(4), 223

Gordon Chancellor (City Museum and Art Gallery, Priestgate, Peterborough PE1 1LF) writes:

'On flicking through Geol. Curator 4(4) my eye caught the photograph of the 'well travelled plesiosaur femur' - the reason being that only days before I had been wondering what had become of a Muraenosaurus humerus, missing from the Peterborough collections (catalogue no. R91). Could the 'Australian' femur be connected with our humerus I wondered?

I immediately wrote to Robert Jones and told him about R91, and he kindly returned a long reply, enclosing better photographs of the 'Australian' bone, and confirming that it was a femur picked up by an Australian tourist at Loch Ness. It now turns out that the bone was misplaced by a scientist named Gordon Williamson from Inverness, who used plesiosaur bones on guided tours to help demonstrate what the Loch Ness monster might look like. Apparently Dr Williamson is supplied with such bones by the manager of a claypit in the south of England, although Mr Jones has still not been able to establish exactly which pit the femur came from, and there remain some inconsistencies in this otherwise plausible story. For the time being Mr Jones has the bone in safe keeping but has not yet accessioned it.

Subsequent to my writing to Mr Jones, I checked all our records here in Peterborough and found that J.B. Delair in 1970 had described R91 as being 'fractured in two pieces'. Apart from the fact that it is catalogued as a humerus and not a femur, this crucial point about the fracture effectively rules out the possibility of the Australian bone being R91, and I have written again to Mr Jones to tell him this.

Although this still leaves us here in Peterborough with the mystery of what has become of our bone R91, it seems that the Australian bone is more or less accounted for! If anyone has come across a broken femur as described above, I would be interested to know about it.'

165 British fossil Arthropoda

(see also LF 47)

D.I.S. writes:

'As the Newsletter of the British Arachnological Society may not be amongst the

usual reading of most geological curators, it is worth mentioning two articles that have recently appeared regarding fossil arthropods. The author of both articles - Paul A. Selden, Dept. of Extra-Mural Studies, The University, Manchester M13 9PL - lists all the specimens of fossil spiders (seven species) and fossil scorpions (thirty-eight species) known to him. I am sure that he would be pleased to receive details of other fossil arthropod material in museum collections.'

Selden, P.A. 1984. British fossil spiders. Newsl. Br. arachnol. Soc. 40, 4-5
----- 1985. A shoe-box in a cellar in Rochdale (British fossil scorpions). Ibid. 44, 6-7.

166 EARWAKER collection

Dr Michael Eagar (The Manchester Museum, The University, Manchester M13 9PL) writes:

'In 1915 we received from 'Hy. Boddington' a considerable collection of fossils described as the 'Earwaker collection'. In the normal course of events I can trace such acquisitions by means of the details given in the Museum Reports. However, this acquisition arrived during war-time and the usual details were not provided. I suspect that my predecessor, the late J. Wilfred Jackson, knew just what was involved in the Earwaker collection, but this was one of the matters he did not mention to me and subsequently searches at this end have failed to reveal the name Earwaker and the date of the collection. I should be deeply grateful if you could suggest any line which I could pursue.'

H.S.T. writes:

'It seems almost certain that this is the collection made by a young man who later became famous as an antiquary and historian, namely John Parsons Earwaker (1847-1895). His eminence as an antiquary secured his inclusion in the Dictionary of national biography Suppl. Vol.22, 597-598 (1901). This notice records that Earwaker 'studied at Owens College, Manchester where he took prizes in natural sciences' and that he then obtained a scholarship at Oxford where he matriculated in 1868 and graduated BA in 1872 and MA in 1876. He remained at Oxford until 1874 and the D.N.B. notes that 'his early studies were in the direction of zoology and geology', and we may add astronomy (Nature, Lond. 5, 322-324, 1872). He was also a deputy Keeper at the Ashmolean Museum.

It seems likely that the Manchester Earwaker collection dates from this period, since it is mainly of Jurassic and Cretaceous fossils which would be better generated at Oxford than in the north-west of England. Henry Boddington (c.1850-1925) was a generous 'patron and collector of art and literature' in the Manchester area (Trans. Lancs. Cheshire antiq. Soc. 42, 144, 1927). He seems likely to have purchased the collection at Earwaker's death for later presentation to the Manchester Museum'.

CLEEVELY, p.96 (Darell collection); p.275
(Stephens collection)

Colin Prosser (Dept. of Geology, University
College, Swansea SA2 8PP) writes:

'Can you please provide any information about
the D.S. Darell collection, particularly if
it could contain French material? S.S.
Buckman refers to it on page 288 of 'The
Brachiopoda of the Namyau Beds, Northern Shan
States, Burma' Mem. geol. Surv. India
Palaeont. indica (NS), 3, memoir no.2, 1918.'

H.S.T. writes:

'Since there is so much confusion about the
major fossil collection made by Darell it
seems worth trying to sort out some of its
history here.

S.S. Buckman (1860-1929), in the above
reference, often refers to material figured
or used in this work as in 'Authors
collection ex. Mr D.S. Darell collection' and
this gives a clue to part of the history of
the collection.

Robert Darell Smythe Stephens - the sole
originator of the collection - was born at
Plymouth on 12 May 1851, the son of Robert
Stephens (1811-1890) of Trewornan in
Cornwall. As a member of the landed gentry
'it was unnecessary for him to follow a
profession' (Richardson 1938) so he devoted
himself to the study of natural history. In
his only recorded scientific paper (on
botany) Stephens records his residence in the
village of Bradford Abbas in Dorset during
1875-1876 (Stephens 1900). It may be that he
was then a pupil of Prof. James Buckman
(1814-1884), the father of S.S. Buckman, who
ran a model farm there and taught the
principles of agriculture to selected pupils
(Sherborne Journal, 1 December 1884).

At any rate, during this residence in Dorset
Stephens built up a marvellous collection of
fossils especially from the Inferior Oolite,
but also from other horizons - like his
holotype of Steneosaurus stephani J.W. Hulke,
1878 from the Cornbrash of Closeworth,
Dorset, which was sold to the BM(NH) in
1878. In the same year the Geological Survey
also purchased Inferior Oolite material from
him (Cleevely, p.275). On 20 January 1885
S.S. Buckman wrote to ask Stephens for his
help in providing 'only the very best
specimens to show as many species with
terminations as possible' for Buckman's
planned Monograph of Inferior Oolite
ammonites (Buckman 1887-1907; transcript in
Buckman archives letter book 1884-1896,
p.28). More specific requests for specimens
were made by Buckman on 27 January 1885 (op.
cit. p.49). By May 1889 negotiations were in
progress for Buckman to purchase the whole
collection (letter of 6 May 1889) with
Buckman to retain part and arrange the sale
of the remainder (op. cit. p.569). All
relevant material would be labelled as 'the
Stephens collection' and kept separate from
Buckman's own material. By 24 May 1889 the

Oxlynch,

STONEHOUSE, Glos.

DEAR SIR,

In connection with my scientific Work I
have lately purchased a very large collection of about
20,000 Specimens of Inferior Oolite and other Fossils.
As I am only interested in Ammonites, I have the
whole of the Gasteropoda, Brachiopoda, Lamellibranchiata,
&c., to dispose of, without any exception. The same
applies to all Cephalopoda, except Ammonites. Of
these a few have been placed in my own collection;
but the remainder, about 2000 excellent specimens, are
for disposal with the others. As I do not expect to
find a purchaser for the whole collection, I am dis-
posing of any species required. I am willing to
send them on approval, carriage paid one way. The
specimens are in excellent condition, and suitable for
Museums or Private Collections.

Yours truly,

S. S. BUCKMAN.

Fig.1. First page of a four-page notice
issued by S.S. Buckman (c.1889) which
almost certainly advertizes the Stephens
Collection.

suggested sale was to be on a commission
basis if an outright sum could not be agreed
(op. cit. p.573). Much of the deal was
concluded by the end of August 1889 as
Buckman then wrote to the Great Western
Railway station master at Stonehouse in
Gloucestershire asking for quotations for the
carriage of stones or fossils to London or
distances between 50-200 miles! Buckman
ended by recording he would have about two
tons to send off in parcels of various sizes
to various places at various times (op. cit.
p.582); clear testimony to the size of the
Stephens collection!

A Buckman letter to an unnamed correspondent
of 4 December 1889, then offering ammonites
for sale, spoke of the collection as very
extensive (op. cit. p.585). A final
surviving letter of 20 September 1890 to
Stephens seems to relate to only the
concluding part of the collection. It reads
(op. cit. p.597):-

'I will give you £50 for everything. Fossils
generally are very unsaleable articles and
the market for them is extremely restricted.
I have disposed of those which were the most

readily saleable and may say that I have exhausted the home market. To sell the others I should have to look abroad and so far my efforts in that direction have only met with disappointment. I should probably not see my money again for a very long time, I should be paying interest all the while and I should have to incur much additional expense. I shall have to borrow the money but can pay you by October 30th, if you accept this offer.

The acquisition of the collection by Buckman was announced in print in 1892 (Buckman 1887-1907, p.292).

In about 1889 S.S. Buckman had issued a printed four page notice of which the first page is reproduced here (Fig.1) - the remaining three pages are an 'approximate list of species in Collection'. It seems certain this advertises the Stephens collection though it may also have included material from James Buckman's collection which had also passed to his son on the former's death in 1884. It was the gastropods only of the Stephens collection which W.H. Hudleston (1828-1909) then acquired; see plate explanations in Hudleston 1887-1896, pls. 18-27, issued February 1892 as Part 5. The Geological Survey monograph (1887-1896). The Geological Survey also acquired Stephens material through S.S. Buckman in November 1889 and November 1890 (Cleaveley, p.275). Another accession of 110 specimens of brachiopods, gastropods and ammonites also purchased by Leicester Museum in November 1890, and including some S.S. Buckman material, probably forms another section of the disposal of the Stephens collection by Buckman, especially since it includes an *Avonothyris* (LEICS G387.1890) from the Boueti Bed (Forest Marble) of 'nr. Weymouth' mislabelled as 'Cornbrash'. This was an early mis-identification of the horizon of this bed made by the early collectors amongst whom Stephens was prominent (Woodward 1894, pp.257, 341).

The reasons for Stephens's sale of his collection are obscure but it may be connected with his then impending succession to the Trewornan estates in Cornwall. His father died in March 1890 (Burke 1952, pp.606-607).

Just to confuse things Stephens then changed his name by royal licence on 23 November 1901, becoming R.D.S. Darell instead of R.D.S. Stephens! This was announced in 1904 in the palaeontological literature (Buckman 1887-1907, p.cxii). Buckman also recorded that Stephens material was accurately localised geographically (op. cit. p.237), which is confirmed by the well-labelled Leicester material. Darell/Stephens was FGS from 1875 (see Richardson 1937), FLS, and FZS. He died on 26 September 1936 at Torquay, latterly living at Hillfield House near Dartmouth, leaving the legacy of his fine palaeontological collection - the product of one man not two as often claimed. It seems unlikely, to answer Colin's initial query, to contain any French material!

Buckman, S.S. 1887-1907. A monograph of the Inferior Oolite ammonites of the British Islands. Palaeontogr. Soc. (Monogr.), cclxii + 456pp.

Burke, B. 1952. Burke's genealogical and heraldic history of the landed gentry (17th edition). Burke, London.

Hudleston, W.H. 1887-1896. A monograph of the British Jurassic Gastropoda, part 1. Palaeontogr. Soc. (Monogr.)

Richardson, L. 1937. Obituary of R.D.S. Darell. Q. Jl geol. Soc. Lond. 93, Proceedings, pp.c-ci.

————— 1938. Obituary of R.D.S. Darell. Proc. Geol. Ass. 49, 102.

Stephens, R.D.S. 1900. A list of plants found in the parishes of S. Minver, Cornwall and Bradford Abbas, Dorset. Proc. Dorset nat. Hist. antiq. Fld. Club. 21, 125-136.

Woodward, H.B. 1894. The Jurassic rocks of Britain, vol.4. HMSO, London.

168 Henry Hill HICKMAN (1800-1830) of Ludlow and his Museum (fl. 1821-1824)

Hickman - a pioneer in anaesthesia - was based in Ludlow from about 1821. In the Shrewsbury Chronicle of February and March 1821 the following notice appeared five times and seems certain to have been inserted by Hickman in search of an apprentice. It reads:

'Medical Profession

ANY Gentleman wishing to bring up his Son to the Medical Profession, may place him in a Situation where he may be treated in a manner highly respectable, and have the different branches of his profession (with their connections) carefully pointed out, and Annual Demonstrations in Anatomy, as regular as in London, a Knowledge of which is the only sound basis to philosophical researches, and on which his success in practice alone will depend. Besides this he will have for his use a Museum, explanatory of Ornithology, Botany, Mineralogy, Conchology, Entymology &c. For further particulars address letters post paid, to Mr. Wm. FELTON, Bookseller, Ludlow.'

The same paper of 7 November 1823 confirms 'that Dr Hickman of Ludlow, in this county, has in his museum an extraordinary pig', details of which are given.

The date of this provincial private museum, as well as its connection with Hickman, makes it of considerable interest - yet little is known of it. Further details of its sale are given in a probably unique handbill (Fig.2) owned by John Norton (Ludlow Museum)

Denis Smith (11 Moorland Drive, Leeds, West Yorkshire LS17 6JP) is the author of an article in the British Journal of Anaesthesia, 50, 623-625 (1978), from which the above is reproduced. He seeks any further information about this early private museum of Hickman. In particular where did the collection originate and who gave material to it? To whom was it sold and does any material recognisable from Hickman's collection still survive? Information would be welcomed.

LUDLOW.

The Publisher is respectfully informed that the valuable Modern Furniture, Bedding, &c. with a very curious Collection of

STUFFED BIRDS & ANIMALS,

The Property of Mr. HENRY HICKMAN, (who is leaving Ludlow,) will be submitted to

PUBLISHED
AUCTION,

AT HIS RESIDENCE IN COURT STREET
BY J. BACH,

On Monday, Tuesday, and Wednesday, the 24th 25th and 26th days of May, 1824.

THE
FURNITURE,

(NEWLY VENTURED & SHORTLY VENTURED.)

Is of Choice and elegant designs, and comprises Mahogany and Rose-wood Dining and Drawing-room Tables, Chairs, Secretaire and Book-case, Elegant Side-board on Cast Pillars, ditto Sofa with Grey Moreen and Chintz Covers and Window Curtains & Match, hung on Gilt Pole, with French Rings, Scarlet Printed ditto on Green Pole, Rose-wood Teapoy neatly fitted, Chimney Glass with Gilt Enamelled Frame, Brussels and other Carpets and Hearth Rugs, Handsome Fenders on Brass Mouths and Claw Feet, Sliding Fire Irons, &c. &c.

The Up-stairs Furniture is very superior, Beds of fine Goose Feathers, upon lofty carved 4-Post Bedsteads, with Faux Moreen Furniture handsome Ornamented Canopy top, full trimmed with Ball Fringe; Tent, Bureau, and other Bedsteads and Bunks, Mattresses, Dressing Tables, Case painted enclosed Dressing Cases, Pier and Swing Glasses, Mahogany Washbasin with sliding Trays, pair of three height Mahogany Bedsteads completely fitted, new Oak Chest with Drawers, 8-day Clock in new Oak Case, Hall Chairs, and Hat Stand, and a general assortment of Kitchen Requisites, Sewing Utensils and Casks.

**The Rare Collection of Stuffed
BIRDS & ANIMALS,**

Including nearly TWO HUNDRED different Subjects, will afford a high Treat to Connoisseurs having been pronounced Master Pieces in the Art.

Catalogues will be published five days previous to the Sale, and may be had at the Printers Ludlow, the Principal Inn, and of the Auctioneer, and the whole may be Viewed five days previous to the Sale.

All Persons who having demand against Mr. HENRY HICKMAN, are desired to send their Accounts to Messrs. ACHESON and CO. at Ludlow, who will examine and charge, and all Persons who should withhold the same, are requested to pay the same, upon the said Messrs. ACHESON and CO. who are authorized to receive the same.

April 28, 1824.—T. Griffiths, Printer, Bull-Ring, Ludlow.

Fig. 2. Handbill advertising the auction of the contents of H.H. Hickman's museum on 24-26 May 1824. Reproduced by kind permission of John Norton.

169 Figured specimens from 'The Silurian System' (Murchison 1839)

J.D.D. Smith (International Commission on Zoological Nomenclature, c/o British Museum (Natural History), Cromwell Road, London SW7 5BD writes:

'I am preparing a catalogue of the specimens figured by R.I. Murchison (1839) in The Silurian System. Many of the figured specimens are in the collections of the British Geological Survey, having been transferred from the Geological Society in 1911. Several other specimens are in the collection of the BM(NH), the University of Birmingham and the Museum of Natural History of Neuchâtel, Switzerland. I am also aware of single figured specimens in the collections of the City Museum, Bristol (gastropod), the National Museum of Wales (tracks), the Central Museum, Northampton (crinoid) and the Royal Scottish Museum (fish).

The purpose of this note is twofold: to say that I would be pleased to give details of the whereabouts of those specimens which have been traced to any person interested; and to seek information on the whereabouts of specimens in collections other than those listed above. If anybody is aware of any other specimens, or has any suggestions on

where they could be found, would they please contact me.'

170 Joseph Barclay PENTLAND (1797-1873)

The following notice appeared in The Linnean, 1(5) (1985) and is included here because of the obvious relevance to geology:

'The life and correspondence with William Buckland of the Irish naturalist and palaeontologist Joseph Barclay Pentland were featured in an article in Bull. Br. Mus. nat. hist. (Historical Series), 6(7), 245-319 (1980) [on which see GCG, 2(9/10), 561]. Pentland's correspondence with other scientists, including Joseph Dalton Hooker, James D. Forbes and Gideon Mantell, is being transcribed and edited for future publication by its authors, William A.S. Sarjeant and Justin B. Delair.

They would welcome any information concerning Pentland and, in particular, would like to locate a portrait of him. Please send any information to Professor W.A.S. Sarjeant, Room 108/2 (Geological Sciences), General Purpose Building, University of Saskatchewan, Saskatoon, Saskatchewan S7N 0W0, Canada.'

171 Arctic Clay bivalves from Errol, Perthshire

Michael A. Taylor (Keeper of Natural Sciences, Perth Museum and Art Gallery, George Street, Perth PH1 5LB) writes:

'A paper by Charles F. Davidson (1933) entitled 'On Microvoldia regularis Verrill from Errol, Perthshire' (Trans. Proc. Perthsh. Soc. nat. Sci. 9) records the donation of 'over 100 specimens' of this minute bivalve to the Museum in Perth and the University Museum, Oxford. Neither institution has any record of these specimens or of their donation. I would be most grateful for any information at all about their whereabouts.'

172 Rock samples from SUDAN

Jacqueline Bannon (Robertson Research International Ltd., Llandudno, Gwynedd LL30 1SA) writes on behalf of her company:

'Robertson Research International Ltd. is presently engaged in a petroleum evaluation of the Sudan sponsored by the World Bank on behalf of the Sudanese government. We are interested in locating any rock samples, preferably sediments, which form part of collections or have been brought back from Sudan as part of research work. If you have any information and would allow access to see such samples we would be most grateful.'

H.S.T. adds: In view of Robertson Research's long standing support of GCG (their latest involvement being to sponsor printing of the first 'Thumbs Up' Campaign leaflet), this may give us an opportunity to repay their generosity in a small way.

173 Glossograptus hincksii (Hopkinson, 1872) and the HOPKINSON collection

Philip Collins (Keeper of Natural History, St. Albans City Museum, Hatfield Road, St. Albans, Hertfordshire AL1 3RR) writes:

'I have recently had a request from Dr John Riva of Université Laval, Quebec, regarding the whereabouts of the type specimen of the graptolite Glossograptus hincksii (Hopkinson,

1872) (Geol. Mag. 9, p.9, pl.12).

The majority of John Hopkinson's material is in the Sedgwick Museum, Cambridge, with just a few specimens here at St. Albans. Unfortunately no specimen of G. hincksii has been found. I would be very grateful for information regarding this type and any further Hopkinson material other than that held here or in the Sedgwick which may come to light.'

'THUMBS UP' CAMPAIGN: PROGRESS REPORT

The origins and aims of GCG's 'Thumbs Up' Campaign have been described by Besterman (1985). Here I summarize only the results of the Campaign's media launch and subsequent developments.

On 13 February 1986, 8.5 million viewers of BBC TV's 'Blue Peter' programme were told about 'Thumbs Up', launched nationwide that week. By that time most of the GCG accredited museums listed on the back of the first campaign leaflet 'Rocks, fossils and minerals - how to make the best of your collection' had received their copies, ready for distribution, while those eligible (museums employing a qualified geologist) had purchased their colourful window sticker with its distinctive running Iguanodon motif. All knew in advance of the 'Blue Peter' feature and had been encouraged to tie in their own, self-generated, local media coverage with this event.

Additional national TV coverage came from an unexpected quarter. BBC's 'John Craven's 'Newsround' on Tuesday 11 February included an interview with Di Smith (then Norfolk Museums, currently Bath Geological Museum) about the Campaign, as recorded earlier in the launch week for the regional news programme 'Look East'. I had hoped to get some idea of the relative success of regional and local media coverage by requesting all geological curators participating to forward copies of locally generated articles, and details of interviews with local radio. The response I fear was far from complete but I can report that the seventeen museums heard from generated thirty-one newspaper articles and ten local radio interviews about the Campaign. All major national daily and Sunday newspapers received a press release but I know of no coverage given.

Peter R. Crowther
'Thumbs Up' Campaign Coordinator
City of Bristol Museum and Art Gallery
Queen's Road, Bristol BS8 1RL

Memorable headlines included 'Dig this! It's a fossil campaign' (Brighton Evening Argus), 'Rocks and crocs bid' (Peterborough Evening Telegraph), 'Geology: much yet to learn' (!) (Western Gazette), 'Dem bones aren't so dry' (Eastern Daily Press), 'Helping solve rock puzzles' (West Briton), several variants on 'It's thumbs up for fossil collectors' (South Wales Echo), the breathtakingly obvious 'Geology is fun' (Coventry Evening Telegraph), and my favourite 'Saur Valley?' (Loughborough and Coalville Trader, covering the Soar Valley north of Leicester).

Short articles describing what the Campaign is all about are appearing in the Museums Bulletin (May 1986), British Geologist (Summer), Geology Today (July or September) and the Pal. Ass. Newsletter (July) - while even Good Housekeeping are including 'Thumbs Up' as part of a 'what the kids can collect during the school holidays' summer feature!

What next? The first 10,000 leaflets, produced by courtesy of Robertson Research International Ltd. have long since been distributed. A second batch of 10,000 has just been printed, again at no cost to GCG through the generosity of Robertson Research, bearing an updated museum listing on the back. These are now available to any museum who wishes to make them available to the public (not only those listed), for postage costs only. But of course 'Rocks, fossils and minerals' is only the first of a proposed series of 'Thumbs Up' Campaign leaflets - so if you have any bright ideas on subject matter for further leaflets, let me know.

Finally, if anyone has a good 'find story' which can be tied in with the Campaign - a spectacular fossil, say, brought in as a result of local publicity - it may be possible to interest the BBC in a follow up feature. Again, let me know.

COLLECTIONS INFORMATION NETWORK. GEOLOGY

COMPILED BY DONALD I. STEWARD

CING 1. THE GEORGE MAW COLLECTION, IRONBRIDGE GORGE MUSEUM

The arrival at Ironbridge of the George Maw collection in the spring of 1985 was the first step in a major and exciting scheme to introduce geological and mining material into the Museum's collections and displays. With his own keen interest in geology, the Director, Stuart Smith, fully recognises the important role that the unique geology of the Shropshire Basin played in the industrial development of Ironbridge, birthplace of the Industrial Revolution. During 1985 he set up a Mining and Geology Group to advise the Museum on promoting these 'new' collections. Eight potential geological display areas at Ironbridge are now being investigated and valuable assistance in tracing collections associated with the areas has been given by Dr Hugh Torrens (who was also instrumental in the transfer of the Maw collection as a gift from the British Geological Survey).

The collection (at present being curated by myself via a WMAMS short term contract) consists of 5,000 specimens, mainly British rocks of a wide stratigraphical range, collected in the 1860s by George Maw (1832-1912), the local and world famous ornamental tile manufacturer. Maw was a remarkably interesting, energetic and exceptionally talented man, with a wide range of pursuits. Today, both his industrial and artistic talents are displayed at the Museum's Jackfield site; in future the site will be expanded to show the merit of his scientific studies and the relationship between economic geology and industrial development.

Ironbridge's ambitious project offers enormous future geological potential. Around 300,000 people visit the Museum each year, so their interest is bound to raise the public profile of geology. Starting from scratch, the Museum has been fortunate to acquire such an interesting and historic collection as a nucleus for geological material. However, with such a major project ahead, Stuart Smith would be extremely grateful to receive any material, especially from the Ironbridge area.

Rosemary Roden
West Midlands Area Museum Service Geological Conservator

CING 2. THE FRASER COLLECTION WOLVERHAMPTON MUSEUM

The final phase of the current Fraser collection Rescue Project (started autumn 1984) is now going ahead with the planned opening of a Fraser Geological Gallery at Wolverhampton Museum and Art Gallery.

In March 1984 there was much rejoicing in the Art Gallery when the go-ahead was given for

the new museum extension. Work started early in December 1985 and the alterations of the old red Polytechnic building into the new galleries is expected to take a year. The plans include a small separate gallery for the Fraser collection, which links thematically with the adjoining local history displays; so after an absence of fifty years, these fine fossils will be on view to the public again, probably in 1987. Further good news is that Peter Vigurs, Arts and Museum Officer at Wolverhampton, has obtained sponsorship from Tarmac for myself to continue with the rescue project work until 1987; so the vital work of curating and conserving the Fraser material can continue alongside the exciting work of planning a new gallery. With Tarmac's involvement there is a great future potential for the Wolverhampton collection and display work.

Rosemary Roden
West Midlands Area Museum Service Geological Conservator

CING 3. ROYAL INSTITUTION OF SOUTH WALES, SWANSEA

The Royal Institution of South Wales (RISW), one of the oldest scientific societies in Wales, was founded in 1835 and established the first museum in Wales - the Swansea Museum. The collections comprise geology, natural history, archaeology, and fine and applied arts. Associated with the RISW in its early years were Henry De la Beche, William E. Logan, and Lewis Weston Dillwyn; the Swansea Museum, being the only museum in Swansea that covers natural sciences and archaeology, thus has scientific as well as local significance.

The building and collections are owned by the RISW, but for the past ten years the running of the Museum has been financed by the University College of Swansea. The University authorities have now given notice of their intention to withdraw financial support and, unless alternative monies can be found, the Museum will close.

The University has extended the original closure date of January 1986 by six months whilst negotiations continue with the National Museum of Wales, the local authority and other local museum bodies. Should the Museum be closed and sold, the NMW has offered to house the collections.

Tom Sharpe
National Museum of Wales

CING 4. BARNEY HANSFORD'S COLLECTION

In a brief note in *Geol. Ass. Circ.* 852, Hugh Prudden noted that, due to bereavement and illness, the collections of Barney Hansford

(the owner of a fossil shop in Charmouth, Dorset) were to be sold off. Both Hugh Torrens (Keele University) and Paul Ensom (Dorset County Museum) recollect that although the Liassic specimens contained some good material, the documentation was 'somewhat lacking'. It is understood from Steve Howe (National Museum of Wales) that the geological specimens are in fact not to be sold, but that the agricultural implements from the collection are.

CING 5-22. SOME LITTLE KNOWN COLLECTIONS IN THE SOUTH EAST

Geological collections in museums with specialist curation rarely make the pages of the Geological Curator, and then only when there is a major scandal (e.g. Bath, Northampton etc.). Listed below are some collections visited by Simon Knell (Travelling Geology Curator, Area Museum Service for South Eastern England) over the last few months. All these collections are without easy access to a geologist and all have curatorial or conservation problems requiring specialist help.

CING 5. Abingdon Museum still has a fair amount of geological material even though specimens have been disposed of on a number of occasions (Taylor 1983). Much of what is left is unprovenanced but local. The most interesting items are a number of ammonites figured and cited by Arkell in his Palaeontographical Society monograph on the Corallian ammonites. This material should include the holotype of Goliathiceras rhodesi Arkell named after the then curator, although it is possible that it was removed for safe keeping by a visiting academic - this seems to be a common practice in the south-east. Other figured specimens are also missing although we think one may have been relocated. It is hoped that these specimens will be transferred to Oxford University Museum where the majority of Arkell's material is housed. Other interesting specimens discovered by Justin Delair in these collections include a Stonesfield Slate mammal jaw and some exceptionally large pliosaur vertebrae.

CING 6. Bexhill Museum is probably the museum most in need of help in the region. The geological collections have been wrapped in newspaper, nailed-up in crates, and stored in a cellar prone to flooding since the 1930s. A curator is soon to be appointed and the collections are slowly being recovered. I have not been able to examine much of the material in detail but in some of the boxes of Folkestone Gault fossils many of the specimens had been transformed, through the crystallisation of salts and pyrite decay, into a muddy slurry. The crates contain individual named collections including Lady Anne Brassey, E.A. Butler, J.A. Pepys, F.J. Richards, Lt Col R.B. Unwin, Rev J.C. Thompson, Henry Eliot Walton, and E.A. Chapman (information from John Cooper, Booth Museum, Brighton). In addition there are K.H. Ladd, W.S. Gresley, and Mrs Berdinner collections. As would be expected the museum

contains a good collection of Iguanodon bones and footprints.

CING 7. Bexley Museum has little in the way of geology but does have some material from F.C.J. Spurrell.

CING 8. Broxbourne Museum has a fairly small geological collection, much of which is not particularly exciting, but it does include some quite good examples of Pleistocene mammals from the Lee Valley (most unfortunately without data).

CING 9. Buckinghamshire County Museum have over 10,000 specimens, including at least nine types. These latter have associated with them the names and correspondence of a number of notable palaeontologists including S.S. Buckman who named several. In addition there are some twelve named collections, most of which have been well publicised (Cleevely 1983; Delair 1984). Of additional interest is the Pitstone/Marsworth collection, comprising a great many outstanding Pleistocene mammal specimens and briefly described by Green *et al.* (1984) as probably representing a not previously established interglacial. Material for the future Milton Keynes Museum is also held here.

CING 10. Croydon Natural History and Scientific Society Museum has built up representative collections of fossils from a 'regional survey area' of some 200 square miles. In addition there is the W.H. Bennett collection of well over 10,000 specimens of international provenance. This latter collection belonged to a former member and was rescued from dispersal by the Society on his death. It is hoped that the collection may be acquired by the Horniman in the near future. The Society was established in 1870 and has had associated with it the names of many well known London based geologists.

CING 11. Dartford Borough Museum has also built up collections of over 10,000 specimens. It has no geological staff but over 25 years of voluntary work by John Carreck have made this one of the best organised and documented collections in the region. Its strengths lie in local Kentish material and especially Pleistocene mammals from Swanscombe. The collections held have not been well publicised but include E.E.S. Brown, A.L. Leach, J.N. Carreck, R.H. Chandler, Simeon Priest, F.J. Epps, A.G. Wrigley, C.W. Wright, A.G. Davis, A.T. Marston, G.E. Dibley, John Griffiths, and W. Furner.

CING 12. Epping Forest Museum, Chingford has an educational collection of some twenty geological specimens. These include a small almost complete ichthyosaur in a yellow ?marl and a card containing lemming jaws and bones from the Lee Valley 'Arctic Bed' - the only small mammal I have come across. Apparently these specimens were left over when the Passmore Edwards was established.

CING 13. Farnham Museum contains a mixed bag of fairly good to very unexceptional geological material, all very poorly



Fig.1. Plaster model of Iguanodon at the Wisbech and Fenland Museum. Scale block is 75mm.

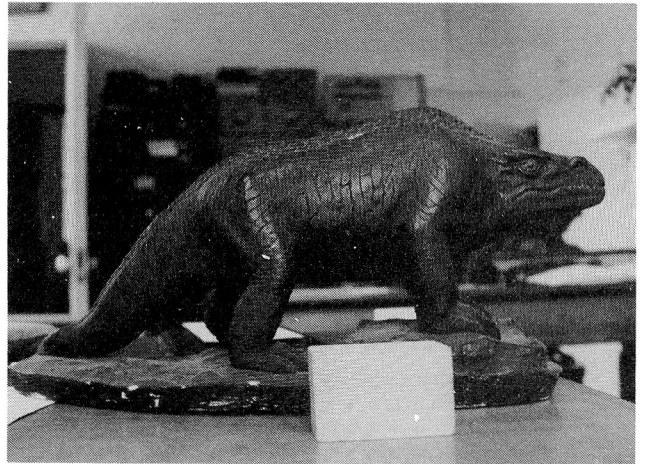


Fig.2. Plaster model of Megalosaurus at the Wisbech and Fenland Museum. Scale block is 75mm.

documented. A label found loose in one box of tusk fragments makes one think that there may be more of importance here than is otherwise apparent. In addition the museum proudly boasts the 'Farnham Fish' - an almost complete, apparently undescribed, ray found locally.

CING 14. Godalming Museum has a tiny collection, most of which is not identified beyond 'a fossil'. It includes some interesting Wealden reptile specimens and may well be part of a much older collection.

CING 15. Haslemere Educational Museum is likely to hold the largest geological collection of any museum in Surrey, but even so may not be all that big. I have not been able to examine the collection in detail but it appears that much was collected by Archibald Geikie who was instrumental in the development of the collections. Much of the material is of good quality and other donors include George Abbot, Rev J. Fowler, J.F. Kirkaldy and James Parkinson (material was acquired at the Parkinson auction). The museum has a very large and widespread membership and practically any geologist living in the south-east over the last 100 years could be associated with the collections. Documentation is poor and the collections remain unresearched.

CING 16. Horsham Museum has over 1,000 specimens which include much of very good quality. Documentation exists elsewhere in the museum which could be used in the future to establish which collections came from where. Documentation and storage are currently being improved.

CING 17. Horniman Museum has a fairly small geological collection when compared with its other natural science collections. The material is diverse but does include some interesting specimens. It also has many weak areas and, for many reasons too numerous to mention here, it is hoped that this museum will acquire the Bennett collection from Croydon Natural History and Scientific Society (see CING 10). Collections already

present include R. Bates, E.N. and W.H. Dalton, Joy and a box of material associated with Charles Moore. Justin Delair also located material from W.B. Strugnell and Capt. Fookes.

CING 18. Maidstone Museum holds a wide range of interesting material much of which is currently being used for research. It includes the Charles collection of Cretaceous reptiles figured by Richard Owen and London Clay turtles which could include type or figured material. Other named collections are likely to exist.

CING 19 Plumstead Museum's geological collections have suffered from years of neglect - they have only recently been removed from the tea chests in which they were heaped. Fortunately things are now improving. Collections present should include Simeon Priest, F.J. Epps, Royal Artillery Institution Museum, Busbridge, and Lessness (Abbey Woods) mammal material. Over the years a great deal seems to have been disposed of, and records are poor.

CING 20. Saffron Walden Museum holds a potentially very interesting collection, although there may be problems in identifying where material has come from. Named collections include John Brown, Edward Charlesworth, J.S. Henslow, Richard Cornwallis Neville, Sir John St Aubyn, and E. Westlake. G.S. Gibson is a major donor and some of his Red Crag material was figured by S.V. Wood in the first Palaeontographical Society Monograph. - these specimens could now be in this museum. The Rogers and Alexander collections are also present in part and were also known to Wood. There appears to have been many important Red Crag collections in the region at the time and these are definitely worthy of further research. Charlesworth produced the handwritten catalogue to the collections, and handwriting samples of R.C. Neville, Joseph Clarke, A. Midgley and Richard Owen are also present. There is some British Natural History Society material here, along with plates and also some letters (bills!) from

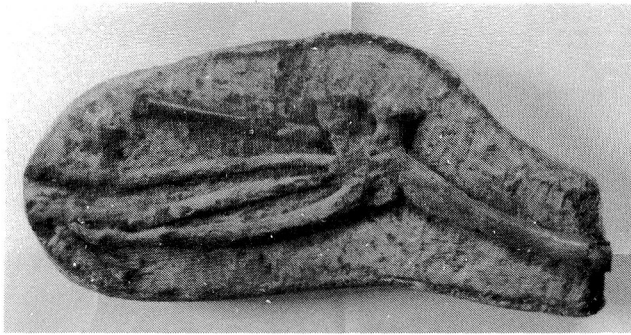


Fig.3. Crocodile limb, known as 'the Hand' at the Wisbech and Fenland Museum.

Charlesworth. A recent note with an elephant tooth suggests that it was figured by Falconer. A crinoid specimen was purchased from Mary Anning in 1839 by W.G. Gibson and should be somewhere in the collections. There is also a White Watson tablet here.

CING 21. Surrey Heath Museum has very little geological material of note and no real documentation. A few old labels show that some specimens come from W.H. Curtis (of Alton Museum fame). The museum's most interesting specimen is a massive fossil tree trunk from the Isle of Wight found in the borough - an erratic?!

CING 22. Wisbech and Fenland Museum holds much of interest. The collection includes a great many plaster and lead dinosaur and mammal models. The plaster dinosaur models are apparently exact replicas of those reconstructed by Waterhouse Hawkins at Crystal Palace, under the direction of Richard Owen, in 1852-1854. They range in size up to about 40cm long (Figs. 1, 2) and are constructed in plaster, probably from moulds, with crests inset in lead. In addition there are some lead mammals and marine reptiles of various sizes - the ichthyosaurs also appear to be replicas of the Crystal Palace models and bear the same type of label. If anyone knows anything about these models I would be pleased to hear from them. There are many named collections here, most of which have been listed by Cleevely (1983). They include some fragments of Iguanodon from Tilgate from Mantell, and a fine collection of British Natural History Society material. Much of the material held at this museum is of high quality and named collections remain intact. The missing crocodile limb illustrated by Sarah Moore, and reproduced by Duffin (1979) in his article on the Charles Moore crocodiles, does indeed reside at this museum (see Pickford 1985) where it was apparently known as 'the Hand' (Fig.3). Cleevely (1983) mentions that Clarence Rutter, one time vicar at Wisbech, acquired some of Moore's material and that his collection went to this museum.

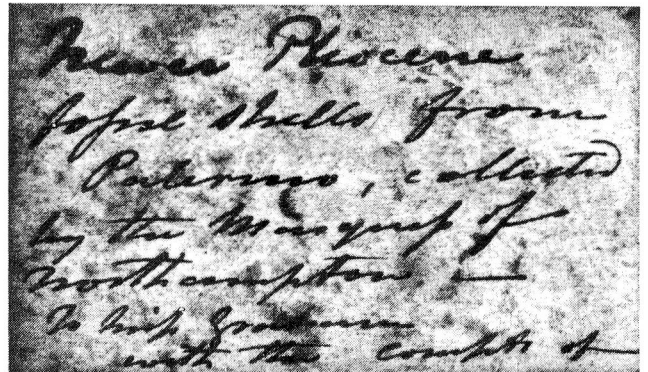


Fig.4. Label by G.A. Mantell in Farnham Museum, describing shells collected from Palermo, Italy by the Marquis of Northampton.

There are other vertebrate specimens here which are also likely to have come from Moore's collections.

REFERENCES

- Cleevely, R.J. 1983. World palaeontological collections. British Museum (Natural History) and Mansell, London.
- Delair, J.B. 1984. The fossil collection of Dr John Lee (1783-1866) of Hartwell. Geol. Curator, 4, 69-84.
- Duffin, C.J. 1979. The Moore Collection of Upper Liassic crocodiles: a history. Ibid. 2, 235-252.
- Green, C.P. 1984. Nature, Lond. 309, 778.
- Pickford, R. 1985. Upper liassic crocodiles from the Charles Moore Collection. Geol. Curator, 4, 222-223.
- Taylor, M.A. 1983. Abingdon fossil material transferred to Oxford University Museum. Ibid. 3, 538-540.

Simon Knell
Travelling Geology Curator
Area Museum Service for South Eastern England
c/o Geological Museum
London SW7 2DE

NOTES AND NEWS

MR WOOD'S FOSSILS COME TO LIFE

W.D. Ian Rolfe and Graham P. Durant
(Hunterian Museum, Glasgow University,
Glasgow G12 8QQ) report:

Since 1971 Stan Wood has been making remarkable discoveries of Carboniferous fossils in Scotland. (The publication list given at the end of this account gives some idea of the importance of these finds.) The story of Stan's search for early fish and amphibians in Scotland is the topic of a travelling exhibition, 'Mr Wood's Fossils', sponsored by the Royal Bank of Scotland. Additional financial support comes from the Nature Conservancy Council and the Scottish Museums Council as well as the Carnegie Trust for the Universities of Scotland, Clyde Petroleum and Modern Geology. The exhibition features some of the important fossil discoveries made by Stan Wood. The highlights include:

- the world's oldest complete fully land-going amphibian from near Bathgate.
- the world's oldest harvestman spider - the amphibian's food?
- one of the world's finest complete Carboniferous fossil sharks from Bearsden.
- beautifully preserved fish and shrimps from various localities in Scotland, including many new species.
- the first reconstruction of the two and a half metres long 'amphibian-crocodile' found near Cowdenbeath.

The fossils and their life environments have been vividly reconstructed by scientists and artists to reveal new animals from around 340 million years ago.

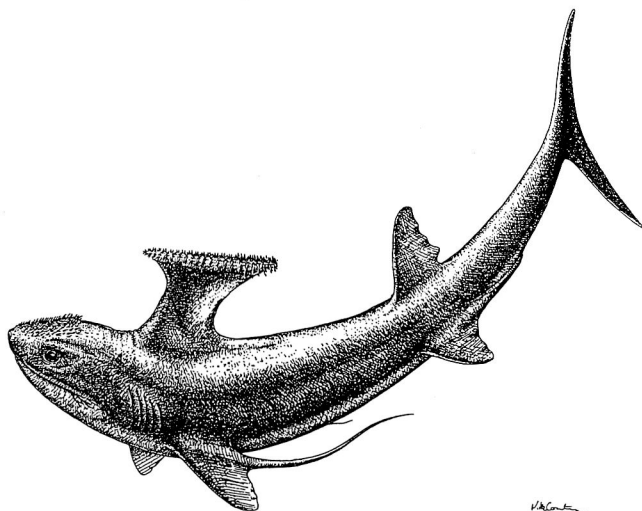


Fig.1. Male shark Stethacanthus from the Carboniferous (330m) of Bearsden. Reconstruction of 62cm long fossil skeleton collected by Stan Wood in 1981. Reproduced with permission from the Hunterian Museum's touring exhibition 'Mr Wood's Fossils'.

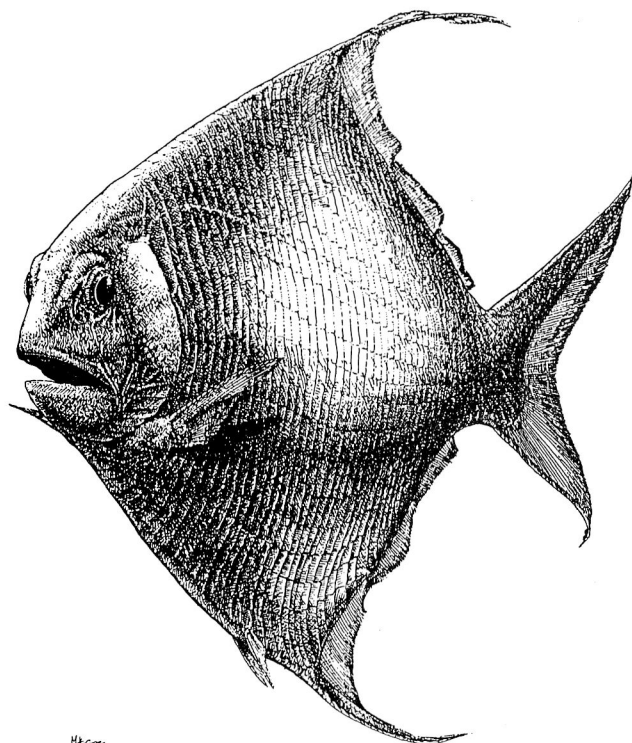


Fig.2. Reconstruction of Chirodus crassus, a 31cm long palaeoniscoid fish from Bearsden, Glasgow. Previously unknown at this large size, the fossil also reveals the pelvic fins for the first time. Reproduced with permission from the Hunterian Museum's touring exhibition 'Mr Wood's Fossils'.

When Stan Wood began collecting it was only a hobby, but he is now a professional collector. Commercial fossil collecting can pose a conservation problem highlighted by a cartoon audiovisual show in the exhibition. A BBC video programme shows Stan excavating at Bearsden in 1982 and preparing fossil material in the laboratory.

The exhibition will be opened in Glasgow by Sir David Attenborough on 29 April, 1986 before embarking upon a nationwide tour.

The tour schedule is:

- Hunterian Museum, Glasgow: 30 April - 10 June 1986
- British Museum (Natural History), London: 19 June - 3 Aug. 1986
- Yorkshire Museum, York: 12 Aug. - 5 Oct. 1986
- The Manchester Museum, Manchester: 14 Oct - 30 Nov. 1986
- National Museum of Wales, Cardiff: 9 Dec - 1 Feb. 1987
- Leicestershire Museum, Leicester: 10 Feb - 29 March 1987
- The Hancock Museum, Newcastle-upon-Tyne: 7 April - 24 May 1987
- City Museum, Sheffield: 2 June - 19 July 1987

It will be on show in Scotland during 1987-1988 probably at these museums:

Royal Museum of Scotland, Edinburgh (July - Aug. 1987); Perth (Aug. - Sept. 1987); Inverness; Aberdeen; Paisley; Dundee; Glasgow City Museum.

Publications about Stan Wood's fossil discoveries include:

- Andrews, S.M., Browne, M.A.E., Panchen, A.L. and Wood, S.P. 1977. Discovery of amphibians in the Namurian (Upper Carboniferous) of Fife. Nature, Lond. 265, 529-532.
- Dick, J.R.F. 1978. On the Carboniferous shark Tristychius arcuatus from Scotland. Trans. Roy. Soc. Edinb. 70, 63-109.
- Dick, J.R.F. 1981. Diploselache woodi gen. et sp. nov., an early Carboniferous shark from the Midland Valley of Scotland. Trans. Roy. Soc. Edinb. Earth Sci., 72, 99-113.
- Dick, J.R.F., Coates, M.I. and Rolfe, W.D.I. 1986. Fossil sharks. Geology Today (in press).
- Dick, J.R.F. and Maisey, J. 1980. The Scottish Lower Carboniferous shark Onychoselache traquairii. Palaeontology, 23, 363-374.
- Milner, A.R., Smithson, T.R., Milner, A.C., Coates, M. and Rolfe, W.D.I. 1986. The search for early tetrapods. Modern Geology, 10, 1-28.
- Panchen, A.L. 1985. On the amphibian Crassigyrinus scoticus Watson from the Carboniferous of Scotland. Phil. Trans. R. Soc. Lond. B309, 505-568.
- Smithson, T.R. 1980. A new labyrinthodont amphibian from the Carboniferous of Scotland. Palaeontology, 23, 915-923.
- Smithson, T.R. 1981. An early tetrapod fauna from the Namurian of Scotland. In Panchen, A.L. (ed.). The terrestrial environment and the origin of land vertebrates. Systematics Association Special Volume, London, Academic Press. pp.407-438.
- Smithson, T.R. 1985. On the morphology and relationships of the Carboniferous amphibian Eoherpeton watsoni. Zool. J. Linn. Soc. 85, 317-410.
- Wood, S.P. 1975. Recent discoveries of Carboniferous fishes in Edinburgh. Scot. J. Geol. 11, 251-258.
- Wood, S.P. 1982. New basal Namurian (Upper Carboniferous) fishes and crustaceans found near Glasgow. Nature, Lond. 297, 574-577.
- Wood, S.P. et al. 1985. Palaeontology of the Dinantian of Foulden, Berwickshire, Scotland. Trans. Soc. Edinb. Earth Sci. 76, 1-100.
- Wood, S.P., Panchen, A.L. and Smithson, T.R. 1985. A terrestrial fauna from the Scottish Lower Carboniferous. Nature, Lond. 314, 355-356.

NEWS FROM THE SOUTH-EAST

Simon Knell (Travelling Geology Curator, Area Museums Service for South Eastern England c/o the Geological Museum, London SW7 2DE) writes:

'The AMSSEE Travelling Geology Curator project is now about half-way through its allotted time. My role in the post has primarily been that of 'Geological Adviser', which is an alternative title, providing information and help on any aspect of geology in museums. Contrary to popular belief I am not an Area Museum geological conservator, although identifying conservation problems and proposing solutions are fundamental parts of my work.

Having initially only a year at my disposal and well over one hundred 'uncurated' collections of various sizes in the area, my priorities have been firstly to give advisory cover to those who need it, and secondly, practical help where it is essential. So far I have visited more than twenty-two museums (see CING 5-22 herein) and supplied them with reports, letters and other information. The range of work is extremely varied and depends on particular museum needs or preferences. Examples include: interpretation at the Horniman and Wisbech; storage at Horsham and Plumstead; transfer of collections at Abingdon and Croydon; MSC schemes at Worthing; collecting at Harrow; identification at Broxbourne; importance of collections at Saffron Walden and Dartford. Some of these museums are getting practical help, and all get additional information on curation and conservation problems as a matter of course.

In addition I am trying to gather information on the curation of collections in the region. I have a fairly good knowledge of the situation in local authority and private museums but would like more information on the situation in academic institutions in the region - response to a recent postal survey has been slow. Any information I can gather on this subject would certainly be useful in trying to assess the scale of the problem and how things can be improved - universities have been successful in obtaining Area Museum Service grants in the past, for example. I am also involved in the initial assessment of grant applications for geological projects so as much information as possible is necessary to assess priorities.

What problems do we have in the south-east? Well, I have not come across a Moore or Northampton collection as yet, although the Murchison Museum at Imperial College may soon come into this category. Collections which are partly or wholly in disarray, dirty or falling apart, undocumented, badly identified, inappropriately stored, poorly interpreted, unresearched, or unused are the norm not the exception. Thankfully the publicity that geology has received within the profession in recent years is leading to improvements. This is not only through the

establishment of peripatetic posts but more significantly through the actions of non-specialist curators who are now aware that geological collections are important and require curation. It is this latter group who actively seek specialist advice. There are, however, many others depressed by local circumstances who need to be convinced that something can be done to improve the situation.

The future of this post is currently under discussion; those involved agree that it should be extended for at least another two years but there is a problem of funding. At the moment this comes totally by way of a Museums and Galleries Commission conservation grant; whether such a grant would be forthcoming for a continuation of the project is not known. An alternative strategy is to seek the support of industry, with the job title changing to something like 'Geological Collections Consultant'. In addition we are currently discussing the establishment of a much needed centralised regional geological conservation/preparation service.

As regards peripatetic posts, in the long-term these can only give full curatorial support if they are established on a county or sub-regional scale. Imagine trying to organise an exhibit when the gallery, the collections, and the audience are over one hundred miles away! One way to achieve local cover is to involve geologists isolated in borough museums. It is likely that Area Museum Services will grant-aid such involvement i.e. in helping a smaller museum to buy the time of a specialist. There is of course the problem of time - most geologists do not have enough time to even curate their own collections fully, but this is one way of getting experts, aware of local material, to visit neighbouring 'uncurated' collections. Whether local authorities will be willing or able to establish shared peripatetic posts by establishing a quarter of a post each, say, is open to question. The problem of how to curate these scattered geological collections in the long-term still exists but the need for the involvement of specialist geological curators in the solution has been proved in the area services'.

SALVAGE IN MUSEUMS

In view of why the Geological Curators' Group was set up in 1974, a Times leader which appeared under the above heading on Tuesday 9 September, 1952 will cause a wry grin or two amongst members. Hugh Torrens (Keele University) came across the article and quoted from it at the Group's meeting in Dudley on 6 December, 1985. It is reproduced in full below:

'Since they are both curious and significant of a general principle, the circumstances in which certain geological specimens, not showy, perhaps, but of much scientific value as documents, have lately reached the Natural History Museum at South Kensington are worth consideration. In the thirties and forties of the past century, when the eminent Swiss

naturalist Louis Agassiz was publishing his classic books on fossil fishes, books which marked the beginning of the scientific palaeontology of the lower vertebrates, he illustrated, and based his species upon, many specimens from English collections. Some of these collections were large, such as those of Lord Eniskillen and Sir Philip Egerton; others were smaller, like those of Dr T.R. Traill, an Orcadian who practised medicine for twenty years in Liverpool, where he was one of the founders of the Liverpool Literary and Philosophical Society, to which he gave some of the specimens.

In time, however, the society sold its fossils to the Bootle Corporation for their museum. In 1895 Arthur Smith Woodward visited Bootle with the object of tracing the specimens, but was able to identify only two of them. A suggestion that they should then be acquired for the national collection came to nothing. In 1934 Dr E.I. White of the Department of Geology of the Natural History Museum, was unable to trace any of Agassiz's type specimens at Bootle, in spite of helpful cooperation from the then director of the Bootle Museum. Last November, however, Dr White made another attempt to visit Bootle, where, with the help of the present director, Mr C.L. Hardman, he instituted a thorough search, and was able to discover the specimens which Smith Woodward had seen - one of them in a box of miscellaneous material found in a cellar which had been used during the war as a gas cleansing station. They have now - generously and very wisely - been given to the Natural History Museum by Bootle Corporation.

The incident thus sensibly brought to a conclusion draws attention to a problem of some general importance. Specimens of various kinds are housed in local museums all over the country. These institutions are liable to fluctuations of fortune and to great changes in the interests of those who frequent or control them. To be able to recognize the importance of any one type of object often requires highly specialized knowledge which it would be unreasonable to expect in the staff of a small local institution. The significance of a special collection easily slips out of mind in a generation or two, especially if there has been in the course of time a change in the general character of the museum or other institution concerned. For example, the director of an art gallery in a northern town not long ago came across a reference to the gift, in the middle of the past century, of an interesting collection of old prints to the Mechanics' Institute in the town. Where, he wondered, were those prints - and where was the Mechanics' Institute? The answer was that the institute had become merged in a technical college, and he was just in time to save a part of the collection of prints from the charwoman, who was using them to kneel upon as she scrubbed the floors.

It cannot be too strongly urged that public bodies, or private societies, finding themselves possessed of collections should take advice before either throwing them away

as rubbish or - as more often happens - consigning them to a cellar to decay unseen. Moreover, they will be wise to avoid the temptation to think of such things in terms of money. The suspicion, hard to eradicate, that because a national, or large provincial, museum shows interest in the semi-derelict collections of a small town, it is hoping to acquire "priceless" possessions on the cheap, has bedevilled many such transactions and resulted in many interesting objects going back to gradual disintegration in a dusty cupboard or a damp basement. Energetically and intelligently directed, a small museum may be a most valuable asset, but its value depends comparatively little upon its possession of specialized collections or specimens. And when the life has gone out of such a museum, or out of some section of it, the most public-spirited thing which its trustees or owners can do is, having taken counsel, to see that anything of value is transferred as quickly as possible into the willing and skilful keeping of a larger institution.

THE OLDEST PROFESSION?

Bob King (National Museum of Wales, Cardiff) writes:

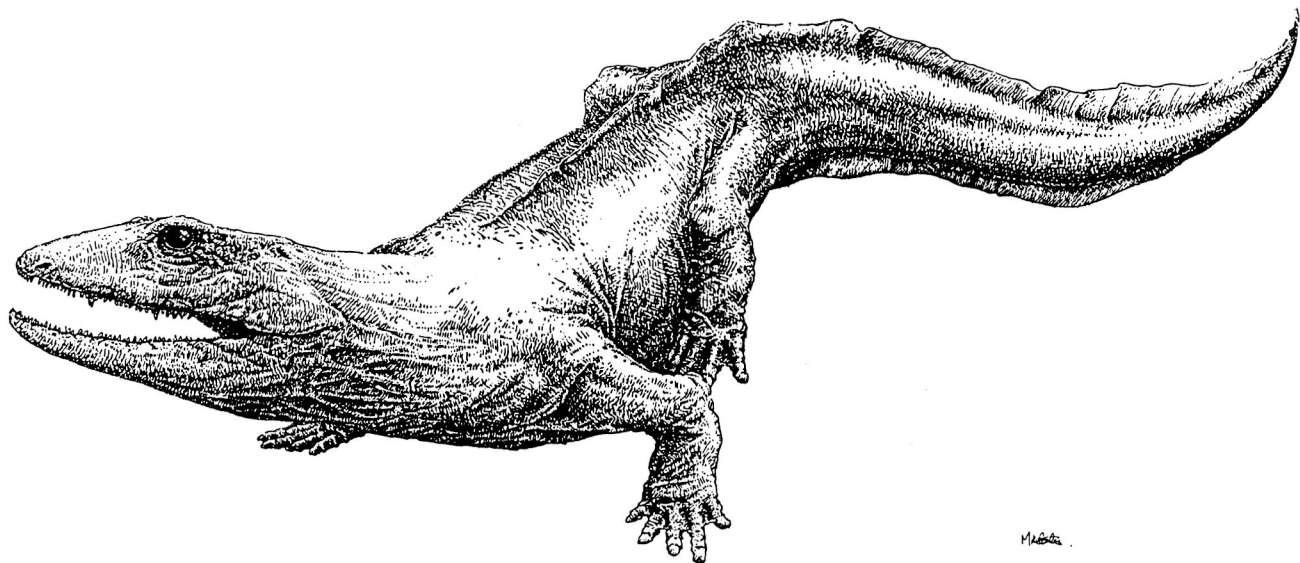
Was the princess Bel-Shalti-Nannar, who lived 2400 years ago, the first of an illustrious line of lady curators? Certainly it would appear that she has the distinction of causing the first known museum label to be written. Nabonidus, King of Ur of the Chaldees, in Iraq, in the way that fathers bend to the whims of their daughters, built the princess a museum within his palace in which to house local antiquities.

Her dedication to curating in the production of written labels, not only satisfied her newly born instinct, but provided Sir Leonard Woolley with vital historical evidence (Woolley, 1929, 108).

BARSTOW MINERAL COLLECTION SAVED!

At the eleventh hour Plymouth City Museums clinched a deal with Mrs Yvonne Barstow, the widow of Richard Barstow and the vendor of her husband's unique collection of Devon and Cornwall minerals. The Museum had until 24 April 1986 to raise £70,000, the agreed purchase price of the collection. The City Council's Finance Committee met on 23 April and received a report from the Curator, Tristram Besterman, stating that £28,500 had been raised. By a unanimous decision, the Committee made the unprecedented step of voting the balance of £41,500 to enable the City to secure the collection. The Appeal had been thrown into sharper focus in the final weeks because of an offer by a consortium to purchase the collection at a sum considerably greater than £70,000.

Tristram Besterman is particularly indebted for the help and support of staff at the Museum, to the public who contributed nearly £3,000 in individual donations, and to the following organisations who made major contributions: National Heritage Memorial Fund, Science Museum Grant-in-Aid Fund, the Duchy of Cornwall, J. Paul Getty (Jr), Devon County Council, Tarmac PLC, and the Friends of Plymouth City Museums and Art Gallery. It is intended to display the collection in about twelve months' time after it has been properly curated.



The early amphibian Proterogyrinus pancheni. This 1.5m long amphibian was only found as separate bones in the Carboniferous bone bed at Cowdenbeath, so the restoration is based on complete skeletons from West Virginia. Reproduced with permission from the Hunterian Museum's touring exhibition 'Mr Wood's Fossils' and Modern Geology, 10 (1986).

BOOK REVIEWS

Brunton, C.H.C., Besterman, T.P. and Cooper, J.A. 1985. Guidelines for the curation of geological material. *Geol. Soc. Misc. Pap.* 17, approx 200pp. With binder - ISBN 0 903317 30 3; Price £11.00 to GCG members (£19.50 otherwise). Without binder - ISBN 0 903317 31 1; Price £8.50 to GCG members (£17.00 otherwise).

Publication of the Guidelines is an event to which members have been looking forward since the founding of GCG in 1974. As Howard Brunton reminds us in his Foreword, the 'preparation of a code of practice for curation and development of collections' was one of the Group's initial aims. The need for such a code was amply demonstrated by Doughty (1981). The Guidelines, if followed, will do much to encourage improvement in the curation of geological material. Although well printed and clearly illustrated, the editors stress that the present publication is 'an imperfect first edition' and its appearance in loose-leaf form, with a smart ring-binder as an optional extra, emphasises this tentative approach. Discussion may lead to detailed improvements but no apology is needed for the Guidelines in their present form. They should be required reading both for the qualified geological curator and for those in single curator museums seeking help in the care of geological specimens.

In The Manual of Curatorship (1984) Doughty and Howie gave us a curtain-raiser in their chapters on 'Research: geological collections' and 'Conservation and storage; geological material', and much else of relevance to the geologist could be gleaned from the other sections of the work. It was concerned with the whole field of museum practice, however, and the geological contributions were necessarily condensed.

After a general introduction the Guidelines are divided into five subjects, Acquisition (A, 12pp), Documentation (B, 66pp), Preservation (C, 36pp), Occupational Hazards (D, 8pp) and Uses of Collections (E, 21pp), followed by References and Appendices (39pp). These are separated by colour-coded card dividers for ease of finding. Each subject has its own list of contents, summary, and recommendations. Many distinguished GCG members have contributed scripts and made constructive criticisms but the various parts of the text remain unattributed. Different subjects have required different treatments but the editors have given the publication an overall unity by dividing the text into short numbered paragraphs. I find this treatment more acceptable in a work of reference than the formal prose of the Manual. Some repetition is inevitable but frequent cross-referencing cuts this to a minimum. Only in sections E1 and E2 did I think matter was substantially repeated from section B, albeit in a different form.

The Acquisition section is shortly written but contains a wealth of wisdom while the long section on Documentation is a masterly summary of the practice of such daily museum tasks as specimen marking, labelling, cataloguing, numbering and categorising. After full statements on the taxonomic classification of vertebrate and invertebrate fossils (B4.4.1.1) the author lets the side down in palaeobotany with the statement 'it is probably sufficient for a fossil plant to be classified simply as just that.!' With such an abundance of Carboniferous plants in our museums most curators could do better with such works as Kidston (1923-1925) and Crookall (1955-1966) to hand. Only a brief statement is made about the computerisation of geological specimen data and we are rightly advised to look elsewhere for detailed guidance. In the Preservation section specimen conservation has had to be very condensed - although more extensive than in the Manual - since it is not possible to write a text book on conservation within guidelines. The abundant literature references which it contains, however, are most valuable for those concerned with any particular problem. The section stresses the 'Do not's' since it is in ill-informed action that danger arises, either for the specimens or for the worker. I am not as happy about replication as the author (C2.3) and feel that, even in cases where it is thought safe, this should be done only once and repeat casts made from a master mould. The excellent statements on environmental control and storage requirements will provide valuable ammunition for curators who have to deal with funding bodies whose spending horizons reach no further than public exhibition. The section on occupational hazards takes us through a minefield of relevant legislation and offers sensible advice. I found the section on Uses of Collections less satisfactory since its objective appeared to be less well-defined but it too contains much wisdom especially, I thought, in the subsection dealing with Exhibition and Design (E3). One of the most useful parts of the Guidelines will be the References and Appendices. The latter include a full statement of the properties of adhesives with manufacturers' addresses; a most useful list of apparatus, equipment and materials with addresses of manufacturers and suppliers; and a statement concerning the National Scheme for Geological Site Documentation with a list of the recording centres.

After reading such counsels of perfection it is a relief to report that our colleagues share with us frailties common to all humanity. There are frequent uncorrected misprints and sometimes the English is rather peculiar, e.g. 'Bottles or vials should be kept in trays with the labelling, the containers being marked as if the specimens.' Commas are also in rather short

supply. Such pettifoggery is out of place, however, in a review, the main purpose of which is to welcome a significant work which has placed our profession in the debt of the editors, authors and all who have brought the Guidelines into print.

These Guidelines are indeed guidelines to good curation and not rules to be applied unthinkingly. Nothing can replace the initiative and experience of the curator who must interpret this work according to the needs of his or her own circumstances. What is appropriate to some may not suit others. I like the way that authors have indicated a number of options for the solution of particular problems. These vary from the type of classification to be adopted, to points of detail such as how to number multi-part specimens. Again, a range of indices which has been found useful in dealing with geological material is indicated but it is left to the curator to choose which would be worthwhile for his own museum, having regard to the size and nature of its collection. On the other hand, where the curator has a legal or quasi-legal obligation to act in a certain way this is clearly stated; for example, in his fiduciary responsibilities or in the way that type specimens should be dealt with. It should be noted that the statement in B6.2.2.3(1) lines 11 and 12 does not apply in Scotland where Charity Commissioners do not exist. There, a simple application to the Court of Session, the supreme court of Scotland, to authorise an alternative destination for the property, held in trust in similar circumstances, would be required.

Few curators will command sufficient resources to do all that they feel should be done according to the Guidelines. Priorities will therefore have to be decided between competing and desirable activities. Should acquisition be curtailed if appropriate storage is not available? Does thorough curatorial treatment of one part of the collection mean that the rest suffers? Does a zealous concern to answer public enquiries so interrupt essential curatorial activities as to lead to failure of public duty in the care of the collections? Does a concern for the public image of a museum lead to failure in curation or vice-versa? Such questions belong to the real world of museums and curators frequently have to make these judgements. Questions concerning museums in the real world can be of an even more fundamental nature. 'Why should this academic department devote resources to the upkeep of a geological museum when we need more apparatus to determine the data of modern earth science?' 'Yes we use specimens but once they have given the required data why keep them?' 'The real needs of the electorate are proper housing, adequate refuse disposal and care through the social services; why should I support the museum and why stones in a museum?' The more challenging the questions - and we have all heard them asked - the greater the need for a firm philosophical basis from which to

construct the required apologia. 'Why curate geological materials?' may be outside the scope of guidelines for their curation but I believe the publication would be strengthened, in its second edition, by the addition of a short section at the beginning addressing some of these more philosophical points. Doughty (1984) introduced his piece in this way. I think it necessary because I know that many curators, who are convinced of the value and need of what they are doing, find it difficult to marshal their case when asked to convince others of that need. Non-geologists, who find themselves responsible for the care of geological material, also require this background. Lack of it has resulted in the loss of many valuable small geological collections to give place to local knick-knacks whose *raison d'être* may have been better understood.

On reading the Guidelines the only action a curator may feel able to take is to smile wryly while saying amen! This was my own reaction when, like many others using a Victorian building and leading a troglodyte existence in crypt storage, I read:

'Flood damage is best avoided by locating stores away from water and waste pipes and not in basements. In areas known to be at risk, raise the cabinets on suitable plinths to give a margin of safety. Effective building maintenance, especially of gutters, drainpipes and damp-proof courses is a necessity.'

How very true - yes, I did raise the cabinets on plinths - but that was all I could do. To achieve the spirit of recommendation would have cost tens of millions of pounds in my case. Is such advice useless? Certainly not. It is most valuable to have it printed in a professionally approved publication since it will come into its own when new buildings are planned or when the curator next complains to the officer of works. A British example which should give us hope is the palaeontological collection of the British Museum (Natural History) which at last has escaped from its awful basement to a magnificent new working extension.

The Guidelines are a distillation of curatorial experience leading to wise counsel and practical advice. Time and again, as I read, I was reminded of just such problems arising in my own experience and, had I been able to refer to the Guidelines, many a mistake might have been avoided. 'I didna ken' pleaded the guilty man before Lord Braxfield. 'Weel ye ken noo' was his lordship's reply. With the Guidelines in our hands ignorance is a plea that will no longer carry - we a' ken noo!

Crookall, R. 1955-1966. Fossil plants of the Carboniferous rocks of Great Britain. Mem. geol. Surv. U.K. Palaeontology, 4, 1004pp.

Doughty, P.S. 1981. The state and status of geology in U.K. Museums. Misc. Pap. geol. Soc. Lond. 13, 118pp.

Doughty, P.S. 1984. In Thompson, J.M.A.

Kidston, R. 1923-1925. Fossil plants of the Carboniferous rocks of Great Britain. Mem. geol. Surv. U.K. Palaeontology, 2, 670pp.

Thompson, J.M.A. (Ed.). 1984. Manual of curatorship: a guide to museum practice. Museums Association, London and Sevenoaks.

Charles D. Waterston
(formerly Keeper of Geology, Royal Scottish Museum)
30 Boswall Road
Edinburgh EH5 3RN

28 January 1986

I have been asked to review the Guidelines from the point of view of the generalist museum curator and to comment on their value as a manual for the small museum. The authority and comprehensiveness of the Guidelines I take to be beyond doubt - the authors alone would ensure that - and all of us who are responsible for collating and providing advice know how much trouble is involved even in the deceptively simple task of getting a list of suppliers, names and addresses together. I must say I find it difficult to criticise something which is so urgently needed and to which the expert authors have clearly dedicated so much time and care, and it is important that readers realise I do so from the one point of view.

The generalist curator with responsibility for substantial geological collections is, as we know, likely either to be a natural scientist with little formal geological education or indeed a curator with a quite different specialist background. A small museum might well be staffed only by a part-time volunteer. Can these people understand the Guidelines, and do they have the ability to implement them? My chief reservation about the Guidelines is that they are not (to use a phrase of jargon) very 'user friendly'. The authors will be surprised at this reaction, I'm sure, and I'm prepared to find my reaction is aberrant. The organisation of the Guidelines is ruthlessly logical and systematic and it's easy to look something up - but one is hardly encouraged to do so. Partly this is simply due to the way the Guidelines are sectioned and numbered, which emphasises (to the point of terror) the sheer weight of the contents. The crucial section on documentation provides a good example. Three pages of contents with over a hundred numbered paragraphs escalating to 6.2.2.3(2) are followed by three pages of summary and recommendations, also lettered and numbered, eg. B4.4.7.3, followed in turn by the main text, the first section of which is a general introduction. When, one wonders, will they just get on and tell us what to do? What a trivial criticism this seems - and yet we do know that the problem of (the lack of) geological curation is partly lack of motivation, and these Guidelines don't motivate me - they fill me with awe. Curation can be fun, bringing order out of chaos, the enjoyment of gazing upon a neatly ordered assemblage. This is

the spirit shown by Sir Arthur Drew who once told me he enjoyed washing up, the satisfaction of transforming a jumble of dirty dishes on one's right hand to a stack of clean and shining ones on one's left. We can imagine GCG's Guidelines for this:

- C Washing domestic utensils
- 1. Summary and Recommendations
- 1.1. General Introduction
- 1.2. Initial Cleaning
- 1.2.1. Water Supply
- 1.2.1.1 Water Temperature
- 1.2.1.1(1) The Use of the Hot Tap

A more relaxed narrative style might not appear so disciplined and systematic, but it might well communicate better, above all by allowing real priorities to be more clearly emphasised and by demystifying the whole thing. A little less Brunton, Besterman and Cooper, and a little more Beeton. Or, should I say, in the light of the statement in the Introduction 'Conceived and edited within a carefully planned framework, they comprise a compilation of edited essays by a number of authors ...', less of the framework and editing, more of the authors' essays.

A non-geologist will require more obvious guidance than these Guidelines seem to convey. Their very comprehensiveness makes it difficult for the generalist to identify the really essential steps he can take to improve the curation of the collection in his or her care. Given the very poor standards of curation, some elementary advice upon documentation, cleanliness and storage should be clearly emphasised and distinguishable from more specialised procedures. Giving this advice necessitates a conscious ability to compromise. One needs to feel the authors are people who recognise and share your problems, standing by your shoulder, ruefully surveying your collection but able to offer some ideas for improvement even in the worst of circumstances. Let us take the section on Permanent Storage. The Preamble rightly says '... most curators are saddled with the buildings, rooms and furniture in their museums with few opportunities to improve existing arrangements.' Quite so, and while I fully accept that the proper standards should be specified (e.g. 'Buildings .. should be accessible to all, from independent wheel-chair users and the blind, to pregnant mothers and the old.'). I do think that advice on more attainable improvements, within the circumstances more commonly encountered, would not only be helpful but more encouraging. Thus, in relation to storage, the vulnerability of much geological material to dirt, damp and abrasion should be emphasised and simple advice given that a dryer space, and some kind of boxing and protection, is an improvement. The lay curator needs to be told that if he can move the geological collections from a cellar to the floor above, from a glory-hole to a dedicated space (however inadequate it might be in other respects), from bags to boxes, from the floor onto racking, separate individual specimens and render them visible and accessible (however crudely) without loss of existing data, he or she is making

important and worthwhile advances - and treading a path where others have gone before. Many curators will be able to improvise local solutions if the really fundamental objectives are clarified.

I think it could well be argued that the non-geological curator, or at least the non-scientific curator, should seek to achieve the best possible fundamental physical well-being of the collection in terms of security, protection, cleanliness and environmental control, and seek specialist assistance with everything else. Leave well alone can be a necessary conservation measure in the case of collections where all sorts of apparently extraneous things provide easily-lost evidence about the provenance of a collection. This is not a criticism of the Guidelines, but a comment on the nature of advice we should offer to non-geologists.

My overall reaction is, then, that all the information needed is in the Guidelines, but that they do not sufficiently highlight the really fundamental problems commonly facing the lay curator, reduce his or her sense of isolation and inadequacy, and motivate him or her to improve geological curation by ameliorating the worst kinds of physical neglect. The great achievement of the authors is to provide a definitive manual for geological curators, and provide a quarry from which a more basic, proselytising and personal guide for the non-geological curator can be extracted.

Stephen Locke
Executive Director
Area Museum Council for the South West
Hestercombe House
Cheddon Fitzpaine
Taunton, Somerset TA2 8LQ

7 February 1986

Norman, D. 1985. The illustrated encyclopedia of dinosaurs. Salamander Books, London. ISBN 0 86101 225 9. Price £9.95.

This is the best dinosaur book on the market, and it will probably retain this distinction for some time. David Norman has written a very large book (208 pages, c. 80,000 words) on all aspects of dinosaurs, their life and their times. The colour paintings by John Sibbick are some of the best I have seen, and the whole book has been excellently designed and presented. Author, artist, designers and editors are all to be congratulated on an excellent production.

The main part of the book (132 pages) is devoted to the diversity of dinosaur groups. Each family is described in a six-page block. The text tells the story of the discovery and study of the important genera, and the functional anatomy of one genus is described in some detail. Information on other aspects of biology and relationships is also given. The illustrations consist of

colour restorations of the key genera; diagrams of their distribution in time and space, and their relationships; detailed sketches of skeletons, individual bones, and muscle restorations; and photographs of mounted skeletons, teeth, and so on. The visual impact of some of the large double spreads is stunning.

The remainder of the text includes a few old chestnuts (history of dinosaur collecting; where dinosaurs are found; the history of the Earth and plate tectonics; how fossils are formed; techniques of excavation and preparation; classification and evolution of the reptiles), but also a great deal that is original and new. There is an excellent ten-page section entitled 'To study a dinosaur'. In this, Norman has effectively summarized his own research of Iguanodon in a way that illustrates the methods and aims of palaeontological research. This is, in my opinion, the best bit of the book: it transports the reader through a large and important research project, and gives details of the methods, assumptions, and conclusions of scientists of the past and the present - and it allows the author to include a self-portrait on p.27!

There is a sixteen-page section near the end which covers a rag-bag of living and extinct reptiles: pterosaurs, crocodiles, marine reptiles, lizards, snakes, mammal-like reptiles and the origin of mammals.

This book presents information that is current. Of course, Norman lists all the recently-described dinosaurs from China, Australia, North America, and so on (as did David Lambert in the Collins Guide to Dinosaurs, Collins, 1983), but the job is done critically in the present work. Quite unashamedly, and correctly, dozens of dinosaur names are listed which should never have been invented - they are either synonyms, or based on scrappy material.

In addition, Norman describes very recent (1985-1986) conclusions on the relationships of the dinosaurs - that they form a monophyletic group, probably closely related to the pterosaurs. Within each subgroup of the Dinosauria, Norman presents a cladogram of relationships - quite a novelty when compared with all the other books on the market. A number of other current controversies are described: the ecology of the origin of the dinosaurs, their 'warm' or 'luke-warm'-bloodedness, the relationships of dinosaurs and birds, and the extinction of the dinosaurs.

The book is hyped on the dust jacket 'for the magnificence of its illustrations and the lucidity of its text' and it 'seems certain to establish itself as a reference book without rival, fit to grace the shelves of young enthusiast and professional scientist alike'. I would suggest that this assessment is, unusually for a book jacket, close to the mark. I can't see how any publisher could contemplate producing a rival to this book,

and Salamander Books (London) are to be congratulated on their product, and for pricing it so sensibly.

Michael J. Benton
Department of Geology
The Queen's University of Belfast
Belfast BT7 1NN

30 December 1985

Whitaker, J.H. McD. and Smith, P.J. (eds.).
1985. Geology Today, vol.1, nos.1-6.
Blackwell Scientific Publications, Oxford.
ISSN 0266 6979. Personal subscription £12
(U.K.), £14.50 (overseas); institutional
subscription £36 (U.K.), £43 (overseas).

In a somewhat jaundiced outburst published with characteristic candour in the second issue of Geology Today (p.37), Professor B.E. Leake points out that 'within the Earth Sciences alone, the number of journals currently published is measured in thousands'. The implied question is do we really need yet another? The answer, so far as I am concerned, is a resounding and unequivocal yes. Like all good ideas, the inception and production of Geology Today is so manifestly excellent that one can only wonder why on earth it hasn't been done before.

Part of the need for Geology Today lies in Professor Leake's choice of words, by which he refers to 'Earth sciences' - a plurality of disciplines, each served by its own specialist press - as opposed to the monolithic and unfashionable singularity of 'geology'. What Geology Today recognises is, quite simply, that a lot of people are interested in the theme of geology in its broadest sense, and that such people had no readily accessible source of such information in magazine form. To quote Professor A.J. Smith (Chairman of the new magazine's Management Committee) from his introduction to the first issue, Geology Today is conceived as: '... a magazine which encourages specialists to interpret for, and communicate with, the non-specialist. That 'non-specialist' may be defined on the one hand, as somebody learning geology for the first time, be it at school, evening class or by general reading, and, on the other, as a specialist who wishes to learn more of advances in fields outside that of his own specialisation. Geology Today will also seek to bring the subject of geology to those who have yet to discover its pleasures.'

Now this should sound chords for all museum geologists for at least two reasons. For starters, Geology Today is in the same game as we are, in terms of communicating geological information to a similar target audience. And by no means secondary to that, I declare myself unashamedly as one kind of non-specialist excluded from Professor Leake's definition - a professional geological generalist who does not have the time to read a representative section of the

geological press (as well as the museological, which other geologists are mercifully spared).

How, then, does Geology Today measure up to its declared aims after the first year's six, bi-monthly offerings? The first thing I would say is that it is a friendly and eminently readable magazine. One of the very, very few that I actually read - from cover to cover. It's informative, it doesn't talk down to me, it's short enough to be digestible but not so short as to make me feel that I'm not getting my money's worth (and if you're a member of the Geological Society or the Geologists' Association that's very good value indeed, as it is discounted). The accuracy of the information is as good as you'll find in any scientific publication - as you'd expect with an editorial board that reads like a 'Who's Who' of geology, drawn from the ranks of the Geol. Soc. and G.A. and headed by John H. McD. Whitaker.

The presentation inside is first class: a model of clarity in layout and design. The editors have established a carefully conceived structure of editorial pigeonholes into which a range of geological topics are neatly slotted and signposted. This is vital, for without such an approach, a magazine which, in a single issue, addresses itself to subjects as diverse as women in offshore geology, a potted geo-biography of Adam Sedgwick, and the latest buzz on mantle plumes could otherwise have an alarmingly disorientating effect on the reader. The easily digested quality of Geology Today rests to some extent on the 'sandwich principle' a well tried and tested formula (c.f. New Scientist and Geological Curator) by which a meaty layer in the centre - in Geology Today consisting of three feature articles - is enclosed between two chunks of 'quickies'. The latter I shall examine in due course. Comprehension is further aided by thoughtful touches such as a wide margin for short explanatory notes of technical terms immediately adjacent to the relevant passage in the text. This margin also accommodates references and figure captions, as well as - a nice thought this - on an early page in every issue, a very basic geological column.

If I have a major reservation about Geology Today it is an unease about a lack of consistency in the level at which it is pitched. And here the Editors have my heartfelt sympathy, for, as every curator who ever wrote a display label knows, getting technical information over clearly, simply, accurately and at a consistent level of intelligibility is the hardest thing in the world. And, of course, the Editors have their problem compounded by a variety of different authors with all that implies stylistically. But I feel that the Editors could improve the magazine by devoting more attention to this aspect. One particular article (No.3, p.90 et seq.) on the geology of Jersey and Guernsey, should have been

ideal to bring to the attention of some friends there. But the writing was so opaque and densely packed with unexplained terms like loess Variscan, 'early andesitic assemblage of agglomerates', rhyolitic ignimbrites, molasse and the like, that I felt the article was unlikely to kindle any latent spark of geological interest in my Jersey friends. I'm not asking the Editors to explain every term not in common English usage. That is clearly unreasonable - but I am not convinced that they have agreed the information cut-off point, the level of knowledge their reader is expected to possess, as a basis for a consistent use and level of interpretative techniques. Why else, when a knowledge of so many esoteric terms is taken for granted, does the same Jersey/Guernsey excursion guide decide that a hornfels merits a crisp marginal explanation as 'a fine-grained metamorphic rock produced by heat from an adjacent rock' (spot on) whilst in a piece on the 'Geology of the Pyrennees' (No.6, p.188) a hornfels is defined less helpfully as 'a type of metamorphic rock'.

I don't wish to give undue emphasis to this critical gripe, but I'm sure that the Editors themselves would agree that, in terms of communicating with the non-specialist, and bringing 'the subject of geology to those who have yet to discover its pleasures', a consistent level of intelligibility is of fundamental importance to the success of Geology Today. For me, this aspect certainly did not detract from the value of the contents, among whose features I number as favourites a study of ecclesiastical petrology of a Northamptonshire church (No.3, pp.80-84), mountain-building without continental collision (No.4, pp.116-121), and genocide in the Achanarras Fish Bed of Caithness (No.2, pp.45-49).

The 'quickies' referred to earlier sadly lack the personal and stylistic continuity of an Editorial, but do include a News and Comment opening section, which for some not wholly clear reason is separated from Opinion and Counterpoint in which inter alia the proponents of exploitation and the exponents of conservation have been getting across to each other on the subject of fossiliferous sites. Geodigest gives a clear resumé of selected, recently published work from the specialist periodicals. A History section has given us Adam Sedgwick (No.2, p.54), John MacCulloch (No.4, p.124) and the first 150 years of the British Geological Survey (No.6, p.183).

At the hind end comes, amongst a number of excellent pigeonholes, the Museum File, which so far has featured the Ulster, Hancock, Hunterian, Yorkshire and Sedgwick Museum collections. This is a valuable shopwindow for museum geological departments, and offers an opportunity for promoting our work which should be grasped enthusiastically, I would have thought. The absence of a Museum File in the third issue I can only attribute to the failure of curatorial copy to be delivered on time. There is also a regular section on Book Reviews, a Diary of Events

and an irregular spot on field sites under the somewhat contrived title of 'Tailor-made geology'.

No.1 led me to believe that Geology Today was going to give its readers two really outstanding regular spots under the title 'Fossils Explained' and 'Minerals Explained'. We got off to a splendid start with Brachiopods and Fluorite but thereafter I was doomed to intermittent and frustratingly irregular disappointment. No.2 lacked either a Fossil or a Mineral., No.3 gave us Trilobites, No.4 Quartz, No.5 Sea Urchins and No.6 Galena. Please, Editors, give us Fossils Explained and Minerals Explained in every issue - there really are enough to keep you going for quite a few years yet! These subjects alone probably account for awakening the interest in 99% of your readers - so neglect them at your peril! And why not, of all things to be left out, a 'Rocks Explained' series?

The cover for each issue of Geology Today, whilst not exactly snappy by contemporary design standards, is none the less eye-catching with a full-colour, high quality photograph that will enable this publication to compete visually on the retail and library magazine rack. It is a magazine that should be found on the shelves of every geological curator's office. It deserves to thrive, and despite a few teething problems inevitable in the first year, it has already proved itself as an invaluable source of information, and one which geological curators can recommend to their public. To Geology Today: congratulations on your first birthday - and here's to many happy returns.

Tristram Besterman
Plymouth City Museums and Art Gallery
Drake Circus, Plymouth PL4 8AJ

3 January 1986

Roberts, D.A. 1985. Planning the documentation of museum collections. Museum Documentation Association, Duxford, Cambridgeshire, vi + 568pp. ISBN 0 905963 539. Price £35.00 (£25.00 for MDA and Area Museum Council Members).

'In order to be able to interpret and communicate knowledge effectively, a museum must first have detailed and accurate information about the objects in its collection. Museums can provide an efficient service only if their information resources are readily available and if their records are revised as a continuing process. Accurate and well documented information also has a vital part to play as a means of collection control: in addition to making it easier to determine collecting patterns and supervise conservation treatment, it simplifies the mundane tasks of stock-taking and audit.' This statement, as pertinent now as when it was included in the Wright Report (1973), introduces Andrew Roberts' excellently produced and learned discourse on the present and future development of documentation in museums: 'it has been

designed to help all types of museum formulate a long-term policy for the documentation of their collections'.

The discourse, a personal view, is actually a report of a project funded by a research grant from the Office of Arts and Libraries carried out over an eighteen-month period from September 1981 to March 1983. During that time over fifty museums and related institutions in the UK, Canada and the USA were visited and their documentation practices studied both by questionnaire (prior to the visits) and interview. As one of the interviewees I can vouch for the thoroughness and well-structured approach adopted and can also note that the exercise materially helped to crystallize our thoughts and ideas at a time when we were drastically revising our documentation procedures. When asked to review this book, I decided to read it over my Christmas break, last year almost two weeks, but in reality it took much longer. Why? - because it needed time to fully digest the content of each section to be able to assess, as one naturally does, how one's own system stands or falls against the standards set. The report is divided into two sections: main text plus Appendices A, B, C and Di (288 pages); and Appendices Dii and Diii (280 pages). The latter are the surveys of documentation practice in UK museums (Dii) and Canadian and USA museums (Diii) and are the results of the questionnaires and interviews. The surveys in Appendix Dii make quite fascinating reading as they include 'current' (1982) and 'updated' (1985) practices for a range of UK national, local authority and university museums whose numbers of objects vary from as few as 2,000 to a staggering 65,000,000. They give a detailed account of the passage of objects (be they loans, purchases or donations) and other data through each museum's documentation procedures. While the basics are similar, the differences in detail of recording can be great. This is to some extent disturbing to one who fervently hopes for union catalogues. The technology is almost there but not yet the terminology, nor it would seem the desire.

Di is an extremely well organised precis version of Dii, with fourteen tables producing a visual comparison of the fifteen national, eighteen local authority and three university museums. Curiously, Leicestershire Museums Service figures prominently in the text and tables of Di but is not reviewed in Dii. Appendix C gives in eighteen pages a succinct account of the technical aspects of automated systems, i.e. hardware and software, while Appendix A defines the terms used for museum activities and documentation sources. Appendix B is a very detailed self-contained guide which should be used as the basis for assessing and revising a documentation system. The ten sections of the main text provide a general background to museum documentation, give applications for the principles enumerated, recommend standards which should be attained, consider methods to assess practice, future requirements, and automated systems, and give advice on a revised system.

Geological curators should certainly look carefully at Appendix B with a view to ensuring that their documentation practice is sound, and at least peruse the rest of the book. I would not be quite so bold as a certain Area Museum Service Director who claims that it is 'a must' for their shelves, but it should, without a doubt, be in their museum's reference collection.

Michael F. Stanley
Derbyshire Museums Service
John Turner House
Parkway, Darley Dale
Matlock, Derbyshire DE4 2FW

20 February 1986

Duff, K.L. (ed.). 1985. The story of Swanscombe Man. Kent County Council and Nature Conservancy Council, 40pp. ISBN 0 86139 310 4. Price 50p.

One Saturday afternoon, on 29 June 1935, a Clapham dentist Alvan Marston, while pursuing his hobby of collecting flint implements in Barnfield Pit, Swanscombe, discovered in situ a fragment of human skull; so began one of the most interesting investigations into man's origins in Britain. Fifty years later, on 29 June 1985, a special Open Weekend was held on site when commemorative stones were unveiled marking the locations of the first and subsequent two other skull fragments discovered. A booklet was accordingly produced in conjunction with this fiftieth anniversary thanks to Kent County Council and the Nature Conservancy Council, summarising fifty years of research.

Five of the best brains on the subject are responsible for the text: Bernard Conway, who has spent many years on and off site tackling its geological intricacies, writes on the site's research history and geology; Chris Stringer describes the skull fragments themselves, and discusses the possible evolutionary position of Swanscombe Man (actually woman); John Wymer, who discovered the third skull fragment in 1955, writes on the flint tools recovered from the different levels in the Barnfield Pit sequence; Mark Newcomer, flint knapper par excellence, discusses the flint working technology; and finally Keith Duff, the editor of the booklet, rounds things off with a short piece on the problems of managing the site. To illustrate the text are ten photographs - the one of Mark Newcomer making a hand-axe hidden amongst the bushes leads one to wonder whether the 'chink chink' echoing across Barnfield Pit was employed to instill spirit in the excavators'. There is also a map and nine figures of sections, artefacts etc. Appended in the final pages is a summarised chronology of the site's history, a list of major museum holdings, and a list of references for further reading.

This very modestly priced booklet has been written with the non-specialist in mind, but has something to offer a wide readership, from the casual visitor to Swanscombe, to amateurs and students of geology and

archaeology, and, yes, even to museum curators with responsibility for collections of Lower Palaeolithic material. In the space of forty pages you get something on the historical perspective of discoveries of undisputed national and international importance; a lesson in the complexities of Quaternary stratigraphy and environments; an insight into the problems of anthropology and human evolution; an examination of the nature and relationships of different stone tool industries to one another, and how such artefacts were made; and a discussion of the problems involved in preserving a site of geological, archaeological and biological importance under a strategy which at the same time allows future investigation and access to the public.

Fortunately this publication, in its broad view, avoids getting bogged down with some of the more controversial aspects of the interpretation of this site, in particular the detailed lithostratigraphic evidence and the evidence from new dating techniques, which those buffs amongst us shall continue to argue about in the specialist Quaternary literature. In appropriate cases the contributors point out those areas where our knowledge and interpretation is lacking or inconclusive. Thus in the unavoidable area of absolute chronology John Wymer suggests that Swanscombe Man lies somewhere within the broad range of 350,000 to 250,000 years ago - some recent analytical work suggests some even younger dates!

It is rather unfortunate that the front cover of the booklet is a disaster in design - a black and white photograph featuring tents, caravans and conveniences, appears on a cover in a dubious shade of green with the title in heavy black type. The effect is reminiscent of one's 1959 camping and caravanning guide for the Dartford area. A more sympathetic colour scheme and illustration would have been kinder to the eye and would have done justice to the well-printed contents. As a totally biased reviewer, what a pity there wasn't a small contribution on the mammalian remains, which constitute one of the very few Hoxnian faunas in Britain. Such quibbles seem superfluous however in a publication of this type selling for only 50p!

Michael J. Bishop
Buxton Museum
Terrace Road, Buxton
Derbyshire SK17 6DJ

27 January 1986

Duff, K.L., McKirdy, A.P. and Harley, M.J. (eds.). 1985. New Sites for old. A student's guide to the geology of the East Mendips. Nature Conservancy Council, Peterborough, 192pp. ISBN 0 86139 319 8. Price £8.50.

The publication of a field guide to the East Mendips by the NCC is a welcome and valuable addition to the literature on geological fieldwork. According to Earth Science

Conservation (the magazine of the Geological Conservation Review Unit of the NCC), the aims of the guide include (Anon. 1985): reduction of 'overuse' and consequent potential risk to the small number of sites currently popular with field parties; the promotion of an increased awareness of geological conservation principles and the encouragement of active participation by fieldwork parties (through small-scale site clearance operations and the adoption of responsible attitudes to the collection of samples); and to provide suggestions for primarily observation- and measurement-based fieldwork exercises, thereby protecting the localities from inadvertent vandalism, and maximising educational benefit from the sites visited.

The East Mendips display a wide variety of geological phenomena in a very small area. The thrustled en echelon Palaeozoic periclinal are overlain unconformably by transgressive Lower Mesozoic sediments which now form an area of geomorphological interest due to its karstic nature. The area provides a good opportunity to study Palaeozoic volcanics outside the more classic regions of North Wales, the Lake District and Scotland. Quarries (abandoned and working) and natural exposures provide sections of Upper Triassic through to Lower Jurassic rocks, including historically classic localities. Some of the exposures detailed are Type localities for certain fossils.

As one should expect from the NCC, the book is a responsible attempt to encourage maximum educational and research utilisation of the West Country's geological resources by advertising the sections, while at the same time minimising the risk to important research fossil collecting and stratigraphically significant localities. Certainly the NCC has provided an invaluable opportunity for access to otherwise unavailable localities through its site clearance programme.

The book itself is divided into three sections. Part 1 consists of a general introduction to Mendip geology. Broad palaeogeographical and stratigraphical sketches of the Silurian, Devonian, Carboniferous, Triassic and Jurassic rocks of the Mendips are given, together with a brief explanation of the structural geology and mineralisation of the area. These are accompanied by good, clear diagrams and tables. This part of the text holds familiar information for those who have a moderate working knowledge of stratigraphy, but provides a good basic introduction for the amateur geologist, student beginner or professional who has long since suppressed all thoughts of stratigraphy! This section is by no means superfluous, however, since it explains such broad principles with specific reference to the localities detailed later in the book. The section on the mineralisation of Mendip is applied rigorously to cited localities, in keeping with the rather discrete integrity and specific problems of the Mendip orefields.

Part II consists of the site descriptions. The localities are grouped variously according to stratigraphic level or depositional mode (i.e. Palaeozoic, Triassic, Lower Jurassic, Fissure deposits, 'Fossil' rocky seafloors, and Karst, Speleology and Pleistocene). Each locality group is introduced by a suitably detailed review of the local stratigraphy. The site information itself has a twofold presentation. The bulk of the text comprises moderately detailed descriptions of the localities, followed by a series of fieldwork exercises related to the outcrop. The outer part of the page presents a strip of reference information (with coloured background for boldness) clearly divided into headings. This strip is designed for rapid reference to such essential information as grid reference, recommended educational level suitability, restrictions (if any) on sample collection, detailed location description, a note on access and parking, the condition of the exposure, and a summary of the interest value of the section. A standardised visit request form is provided on p.10 of the book for use in seeking permission to visit the localities.

Part III comprises the index (keywords only) and bibliography. The book size is 21 x 15cm; too large for a jacket pocket, but it may fit pockets in fieldwork gear. It has universal binding reinforced with thread, and my copy stood up well to fairly rough treatment.

Although under multiple authorship, the style of the text is clear and easily read. References to primary literature, including original descriptions of the localities, are present throughout. It was good to see an historical perspective of the localities presented. I was particularly pleased to see full reference to the work of the Victorian geologist, Charles Moore, who elucidated much of the Mesozoic stratigraphy and palaeontology of the Mendips.

The figures accompanying the text are of high quality. The reconstructions of fossil communities are, on the whole, very good, although I found that the placodont in Fig.5 looked more like an aetosaur, and Saurichthys and Birgeria rather better endowed with scales than their fossil record suggests. Horizontal scales are missing from certain of the maps (Figs.8, 9, 31).

Thirty-nine localities are described, ten of which are concerned with Palaeozoic rocks, five with Upper Triassic, seven with Lower Jurassic, three with Upper Triassic and Lower Jurassic fissure deposits, two with Mesozoic rockgrounds, and thirteen with karst and Pleistocene deposits and features. Thus quite a good balance is drawn with respect to available stratigraphic interest, and a good introduction is made to Mendip geology.

Kilmersdon tip is indicated as in the process of being landscaped; it is now completely reclaimed (Jarzembowski 1985), although it is to be hoped that the mound of material cited in the text (p.62) is still available. Additional information on the Carboniferous

sequences cut by Mesozoic fissures and forming rockground surfaces for stratified Mesozoic sediments would have been useful, adding to itinerary convenience.

I would prefer to have seen a little more detail on some of the localities, although I accept that drawing a balance over a wide range of geological interest is very much a matter of personal taste. The karstic features are described from a primarily geomorphological point of view, with emphasis on depression morphology and origins, relationship of cave passage cross-section to vadose or phreatic origin etc. Details of clastic and chemical cave deposits may have been deliberately omitted in order to discourage unauthorised or unsupervised entrance to the sinks and potholes. In such cases as Swildon's Hole, however, it may have been of benefit to include such details.

Not all of the site information in the book derives from previously published work. I was particularly pleased to see much previously unpublished research information on the Mesozoic localities. Charles Copp has written an excellent introduction to Mendip fissure deposits, together with a much more rigorous classification of fissure types than has so far appeared in the literature. He has produced an equally good study and description of the fossil rocky seafloors of the area. The introductory section on Mendip karst phenomena is also very useful, correcting and updating the textbook interpretations of the area in the light of more recent work. Some background information on Pleistocene chronology would also have been useful.

Representative fossils of various stratigraphic levels are illustrated. Identifications are mostly to generic level only. I found this surprising in the case of the Rhaetian fish remains in Fig.26, where Hybodus cloacinus, one of the most uncommon Rhaetian fish, is identified by species, whilst the remainder, more common fossils, are unspecified. The fish remains figured are characteristic and easily distinguished, and since some of the suggested exercises involve identification of fish remains from bone bed residues, it would have been useful and instructive to have included species names.

Publication errors in the book are minimal. Small spelling mistakes occur, such as 'geothite' (for goethite, p.31), 'placodont' (for placodonta, p.20), 'Saurichthys' (for Saurichthys, p.20), 'Sagodon' (for Sargodon, p.115), and 'Mesozoic' (p.123); Zaphrentis is not italicised (p.51). Also, chronostratigraphy (p.67) is wrongly indicated as being the use of fossils for correlation; this is biostratigraphy (Holland *et al.* 1978).

References

- Anon. 1985. A geological guide to alternative localities in the East Mendips. Earth Sci. Conserv. 22, 27-28.

Holland, C.H. et al. 1978. A guide to stratigraphical procedure. Spec. Rep. geol. Soc. Lond. 10, 18pp.

Jarzemkowski, E. 1985. Last chance to collect on Lower Writhlington Tip. Earth Sci. Conserv. 22, 39-40.

Christopher Duffin
Morden, Surrey

22 February 1986.

Stanley, S.M., 1986. Earth and life through time. W.H. Freeman & Co., New York, 690pp. ISBN 0 7167 1677 1. Price £39.95.

Steven Stanley could have called his new book Life, the universe and everything, were that title not preoccupied. It may be sketchy as far as the bit about the universe is concerned, but everything else you've always wanted to know about palaeobiology or geology, but have been too embarrassed to ask, is here for the reading: plate tectonics, evolution, sedimentology, ecology, as well as a complete survey of organic life from the Precambrian up.

Like most of us do, when I first received the book I turned to the part that I thought I knew something about - the Late Permian of South Africa - and was rather disappointed (or was I secretly comforted?) to find several mistakes within a few centimetres of each other in the captions of one of Gregory Paul's lovely reconstructions. More of this later; all I need say here is that once I got down to reading the book properly I began to consider such slips entirely forgivable because the scope of the book is so wide and it is written in such a stimulating manner. As a palaeozoologist (with the accent on the zoologist) I will also always be indebted to the book for explaining in simple terms one of the great mysteries of the universe to me: when to use Late and when to use Lower in describing periods of geological time (see p.132 if you too need enlightening). This sensitivity in realising that there actually are people who have managed to embark on geological/palaeontological careers without acquiring such bits of information is typical of the book, and makes it useful to both first year undergraduates and seasoned workers alike.

The book is arranged in two sections. The first introduces principles (like ecology, sedimentology, rock-dating, evolution, and plate tectonics) to enable the reader to make most use of the second section which is a chronological treatment of the earth's biota. There are also useful appendices: different types of minerals and rocks; deformation structures; a survey of the animal and plant kingdoms (with cross-references to the main body of the book); and a summary of stratigraphic stages.

It is a beautifully readable book with some of the most helpful and well-explained illustrations I have ever seen. It seems that in Stanley's quest to make the material fully comprehensible to his readers no effort

has been too much - even at one stage illustrating what happens to a ping-pong ball when you push your thumb into it, as an explanation of why deep sea trenches tend to be curved in map view and why volcanoes form island arcs! This accent on why a thing should be so, as well as what it is like, is another major feature of the book which makes it such a delight to read. The second section is as beautifully illustrated as the first with both photographs and Gregory Paul's line drawings. The latter are usually reconstructions of environments with fossils doing exciting things in them; a pelycosaur threatening an amphibian; a dinocephalian seeing off a gorgonopsid; a thecodont intimidating an early mammal; Riojasuchus struggling with Pseudohesperosuchus; a mosasaur chasing Hesperornis; Tyrannosaurus confronting a horned dinosaur. There was obviously a lot of violence in times gone by.

My favourite chapter, I think, is the one on Plate Tectonics. The first part of it, a historical treatment of the ideas, reads a little bit like an intellectual detective story. It explains the observations which made certain workers think that something like continental drift must have taken place, and also tries to work out why they were not believed for a long time. In doing so, it makes some salutary comments about the contributions of physicists (remember Lord Kelvin's estimate of the age of the earth?) as opposed to the so-called circumstantial evidence of geologists. One can't help also drawing a comparison between the current differing explanations of mass extinctions put forward by physicists and geologists.

The references after each chapter are short and to the point. Stanley also includes chapter summaries (which are real summaries of the main points, not simply half the chapter regurgitated) and exercises. Personally, I did not find the exercises particularly helpful since they are specifically geared to material in the book and one hopes that one's students will not rely too heavily on any one text. If they are going to concentrate their efforts on just one body of knowledge, however, I cannot imagine a better one than Earth and life through time.

I have a few very minor gripes which I almost loathe to mention since they do not really detract from the book at all. There was the occasional diagram (for example Fig.7.32 explaining transform faults) which I did not really understand because the usually full and clear caption was not up to standard. Also, as I mentioned earlier Fig.14.29, a reconstruction of a Late Permian scene disappointed me a little. I was surprised, for example to see that widespread glaciation was still prevalent so late on, and two animals which were never contemporaneous (Dicynodon and Jonkeria) are reconstructed living together (I admit, though, that considerable research into the somewhat esoteric literature on mammal-like reptiles would have been necessary to find this out). The caption also confuses a dicynodont with a gorgonopsid - a practical rather than a conceptual error, hopefully.

I would recommend the book to first year students reading geology or environmental science and to biology students who need to know about palaeobiology and palaeontology, or who need a grounding in the geological principles relevant to biology. But it is also a stimulating introduction for the trained biologist who wants a geological perspective, or conversely for the geologist who needs a biological background.

Gillian M. King
Zoological Collections
University Museum
Parks Road
Oxford OX1 3PW

17 February 1986

Jones, S.G. and Roberts, D.A. (eds.). 1985. The Data Protection Act and museums: implications for collections documentation. MDA Occasional Paper 8, 32pp. ISBN 0 905963 55 5. Price £5.00 (£3.50 to MDA members).

It is not widely appreciated that the Data Protection Act has been with us since 12 September 1984. It is only with the impending date for final registration of 11 May 1986 that the subject has become current. To its credit, the MDA took up the subject very early and has consulted Museums and liaised with the Data Protection Registrar, influencing the content of the registration forms and ensuring that our problems have been considered.

This booklet is both a concise summary of the Act and a discussion of how a 'typical' museum should fill out its registration forms. Unfortunately the 'typical' museum turns out to be the MDA itself! Thus, computerised collections, catalogues, libraries and locality records, plus the non-collections related -press contacts are covered, but not shop sales/purchases, room bookings, small society mailing lists,

personnel records, equipment suppliers or the host of other purposes which museums employ computers for.

The big issues of what purposes, data subjects and data classes to include are extensively discussed. Particularly helpful is their understanding with the DP Registrar that we can employ a 'form of words' in situations such as the collections catalogue where we might store information on any person on any subject. Here we are advised, to register our main and known data categories and add a footnote to the effect that 'we might store other information but can't predict what at the moment'

I do not feel that the booklet helps with my greatest problem of what to say to societies using my computer for their mailing lists. Nor does it address the problem of ad hoc societies attached to museums, such as the Collections Research Units and Museums Computer Group etc., which have neither formal officers nor formal membership. A few errors should also be mentioned: p.17, data class C002 should read C011; p.21, last paragraph, purpose PO13 should read PO17. I found the book hard to consult quickly owing to a lack of attention to layout and section/paragraph emphasis.

My main conclusion though, is to warmly recommend this book as essential reading for all museum personnel controlling computer use. I hope that after the Act has become better established, with museum case histories and perhaps a few test cases in the courts, the MDA will produce a fuller and less rushed version.

Dr Anthony Fletcher
Keeper, Documentation and Information
Retrieval
Leicestershire Museums Service
96 New Walk
Leicester LE1 6TD

7 April 1986



Restoration of the amphibian 'crocodile' Crassigyrinus scoticus found by Stan Wood and Alec Panchen in a 340m year old Carboniferous bone bed at Cowdenbeath, Scotland. Note the large eyes which would have improved its sight in murky coal-swamp lakes. It resembles the living eel-like salamander Amphiuma, and may have burrowed in lake floors and through entangled vegetation. Reproduced with permission from the Hunterian Museum's touring exhibition 'Mr Wood's Fossils' and Modern Geology. See 'Notes and News'.

GEOLOGICAL CURATORS' GROUP

12TH ANNUAL GENERAL MEETING

Friday 6 December 1985 at the Town Hall,
Dudley

1. Apologies for absence

Tristram Besterman, Howard Brunton, Mike Bishop, John Cooper, Tony Cross, Paul Ensom, Hugh Torrens and Mrs Haslock.

2. Minutes of 1984 AGM

They were approved and signed

3. Matters arising

There were no matters arising.

4. Chairman's Report - from Phil Doughty

This has been another busy year for the Committee with a considerable amount of activity which will be reported on by the various officers. From the many issues handled by the Committee I select only four for special mention here but each is typical of an area of the Group's work and an indication of its dedication to its stated objectives.

The first is the publication of the Guidelines for the curation of geological materials which is No 17 in the Geological Society of London's Miscellaneous Papers. On behalf of all members of the Group I offer our congratulations to all who made a contribution to the volume in any way but particularly to the editorial team of Howard Brunton, John Cooper and Tristram Besterman who had the onerous task of merging fifteen contributions with considerable overlap and then circulating drafts for comment which arose in plenty. The final result is a delight to the eye, in the ideal format for revision and insertion, but most valuable of all, it is full of first rate and fully thought through practical curatorial advice and has already found a place to hand for those who have a copy. Our 4th constitutional objective is substantially met with the appearance of this important work.

A major point discussed in my paper 'The next Ten Years' (Geol. Curator, 4, pp.5-9) and one almost all members consider important, is the public image of geology. A discussion paper on this subject was placed before the Committee at its last meeting with firm proposals for a programme of work. Among the recommendations accepted was the addition of a new officer to the Group Committee with the responsibility to publicise geology in its widest form along lines indicated in the paper. This officer would chair a working party of variable composition to share the work involved. Constitutionally the post cannot be created until next year but we are hoping to persuade a member into the role of acting Publicity Officer until that time so that work can commence very soon.

Following the Brighton meeting, at which it was agreed that we should strive towards a standard procedure for the documentation of geological specimens and sites with standard terminologies, a research proposal was written and, following revision at the October Committee meeting, is now in its final form. The proposal is for a two year project to examine existing procedures, to develop and publish authoritative agreed guidelines for specimen and site documentation, to examine the creation and role of national co-operative catalogues and indexes, and the feasibility of developing them. The fully costed proposal is about to be circulated to a number of funding bodies and we expect success in this venture. It is hoped that the project will commence in 1986. If we can carry this project through it will be an achievement to equal the Guidelines and another first in the field of curatorial development.

My final comment relates to collections and our watchdog role. This is properly the domain of the Recorder but I am sure he will excuse me for mentioning specifically the case of the British Geological Survey collections and move to Keyworth. Some of you may have seen very recent comment on the collections (Ager, New Scientist, 21 November 1985) and I have a statement from the Survey to present on this subject. What is causing us most extreme concern, but not mentioned, is the decline in the number of macro-palaeontologists on the staff to the point that each now nominally curates about one million specimens, and I understand that the situation may now be further worsened because the curatorial functions of the entire Survey may become the responsibility of a single Curator. In these circumstances we reserve the right to comment and we will undoubtedly intervene as the situation clarifies. [Phil Doughty then read a statement from Bernard Owens (Manager, BGS Biostratigraphy Research Group), an expanded and updated version of which appeared in Geol. Curator, 4, 290-291. The statement finished with an invitation to hold a future GCG meeting at Keyworth upon completion of the arrangements for the transfer there of the BGS collections.]

The last comment was congratulations to Peter Crowther, editor of Geological Curator, for the improved appearance and regularity of the journal.

5. Secretary's Report - from Geoff Tresise

Group meetings held in 1985 were on the themes 'A conservation strategy for geological material' at the Hampshire County Museum on 19 April; 'Specimen documentation and data standards' at the Booth Museum of Natural History, Brighton on 7-8 June; 'Palaeobotanical collections' at Bolton Museum on 18 September; and the Annual

General Meeting was held at Dudley on 6 December under the title 'The Dudley experience'.

The meetings programme for 1986 will be 'The conservation of geological materials' at the British Museum (Natural History) on 23-24 January; a Cornish meeting based at the Camborne School of Mines on 30 May - 1 June; a joint meeting with BCG at Cardiff in September; and the AGM (a joint meeting with the Association of Teachers of Geology) to be held at Manchester Museum on 5 December.

Following the Chairman's paper on 'The Next Ten Years', delivered at the Ludlow meeting in June 1984 and published in Geol. Curator, 4, pp.5-9, discussion in committee has identified three areas in which the group has failed to meet the objectives set out in the Constitution.

These areas will be the subject of three meetings in 1985-1986. The problems of uncurated collections are to be discussed at the 1985 AGM, while the Group's claim to represent geological technicians and conservators in museums will be boosted by the meeting in January 1986. Chris Collins (Leicestershire Museums) has been asked to act as the Group's technical representative and also to represent GCG on the ICOM.

The theme of the 1986 AGM will be 'Geology and the media' to debate what the Group can do to help improve the public image of the science. A discussion paper has been prepared by the Chairman and Mike Benton and it is hoped that next year a co-optee to the committee will take on a public relations role. A future AGM may be asked to amend the Constitution to include a Public Relations post among the Group's officers.

1985 has seen the publication by the Geological Society of Guidelines for the curation of geological materials compiled by Howard Brunton, Tristram Besterman and John Cooper on the Group's behalf. 15,000 copies of a brochure advertising the Guidelines were also printed and these will be distributed by the Geological Society and the Group.

The year also saw the launching of the Group's 'Thumbs Up' leaflet for young collectors with its list of museums offering geological services. This has been compiled by Tristram Besterman and Peter Crowther, and a sticker with the 'Thumbs Up' logo has been produced for issue to approved museums.

Mick Stanley and Don Steward produced a display screen unit to publicise the Group's activities and publications. This was shown at the joint meeting of Geological Societies of the British Isles at Birmingham in September. It was subsequently taken to the Geologists Association Conversazione and the Geological Society's students day. It is to be stored at University College, London and packs into travelling boxes to facilitate transport to meetings.

The Chairman, in conjunction with Andrew Roberts of the Museums Documentation

Association, has produced a draft report on 'The development of geological documentation practice in UK museums'. Once the report has been finalised and approved, a steering committee will be set up to seek sources of finance to implement its recommendations.

The appointment of a part-time Natural History Curator at the Grosvenor Museum, Chester is likely to provide a satisfactory solution to the long-standing problems at this museum. In addition, AMSSEE have now followed the example of other Area Museums Services in appointing a peripatetic geological conservator to prepare a report on local geological collections. The Group's advice was sought prior to the appointment, which is for an initial period of twelve months. Simon Knell took up the post, which is based at the Geological Museum, in the late summer.

Other developments in the field of collection care have been less welcome. In Swansea, the future of the Royal Institution Museum is in doubt following the withdrawal of financial support by the University of Swansea.

In the East Midlands, the post of Geological Conservator attached to the Area Service became vacant following the resignation of Brian Meloy. The vacancy was advertised and interviews held before it was belatedly decided that the post would not be filled. To try to avoid such a situation arising in the future, the committee have asked Mike Taylor to draw up a set of guidelines on the qualifications needed for such posts for circulation to Area Services.

Finally my thanks are again due to the Group's officers and committee for their support throughout the year. GCG has made a practice of delegating special responsibilities to its committee members and in 1985 the practice has been extended to our three co-opted members, Mike Benton, Chris Collins and Wendy Kirk. The Group's growing reputation means that we are involved in more and more fields of work and the burden of secretarial duties would be far greater if the Committee's support was not so readily and unfailingly forthcoming.

6. Treasurer's Report - from Tom Sharpe

- (i) Membership. In the last twelve months 42 new members joined the Group (27 UK Personal Members; 4 UK Institutions; 5 Overseas Personal Members; and 6 Overseas Institutions) compared with 73 in 1984. 21 members resigned (including 5 institutions) and 12 members were removed for non-payment of subscriptions. The net increase is therefore 9, giving a total membership of 404 (including 1 Honorary Member) as follows:

Personal members 265 including 31 overseas
Institutional subscribers 139 including 46 overseas

A list of members was included in Geol. Curator, 4 (4).

(ii) The accounts for the period 16.11.84 - 18.11.85 are attached.

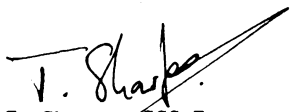
Income: Subscription income is slightly up on last year (£2319.26) but, as the number of new members is appreciably down this year, income from the sale of backnumbers has dropped compared with last year (£789.15). Advertisement income was also down on 1984 (£105.30). Other income was derived from the sale of reprints to authors, and there was also a contribution to the costs of preparing the Guidelines. Total income for the year was £3110.24 compared with £3451.41 in 1984.

Expenditure: This year has been an active and expensive one for the Group. Printing and postage expenditure is considerably higher than last year as more issues of the

journal were published. Expenditure on the preparation of the Guidelines came to £58.50 and the production of the 'Thumbs Up' stickers and typesetting of the leaflet came to £281.75. Printing of the leaflet was generously undertaken by Robertson Research International. Display panels to advertise the Group's activities and encourage new members cost £175.34.

Corporation tax for 1984 was greater than that for 1983 (£24.06) and an approach was made to the Inland Revenue for exemption on the basis of our affiliation to the Geological Society of London, which is a charity. This was unsuccessful and it now seems clear that the only recourse for the Group is charity registration which will involve a number of changes to our

<u>Income</u>		<u>Expenditure</u>	
<u>Current Account</u>			
Subscriptions	2351.23	Printing 4(1),(2),(3), leaflets	1558.00
Sale of backnumbers	270.30	Postage 4(1),(2),(3),(4)	728.72
Advertisements	85.00	Stationery	118.08
Author's Reprints	69.69	Guidelines	58.50
Contributions to Guidelines	38.00	Thumbs-up	281.75
	<u>2814.22</u>	Display panels	175.34
Transfers from Deposit Acc.	1000.00	Corporation Tax 1984	35.70
	<u>3814.22</u>	Returned cheque	7.00
Balance 15.11.84	314.74	Transfers to Deposit Acc.	1000.00
	<u>£4128.96</u>		<u>3963.09</u>
		Editor's cash in hand	26.45
		Balance 18.11.85	<u>139.42</u>
			<u>£4128.96</u>
<u>Deposit Account</u>			
Transfers from Current Acc.	1000.00	Transfers to Current Acc.	1000.00
Interest (estimate)	<u>210.32</u>	Transfer to H.I. Acc.	3000.00
	<u>1210.32</u>		<u>4000.00</u>
Balance 15.11.84	2885.30	Balance 18.11.85	95.62
	<u>£4095.62</u>		<u>£4095.62</u>
<u>High Interest Account</u>			
Transfer from Deposit Acc.	3000.00	nil	0000.00
Interest (estimate)	<u>85.70</u>	Balance 18.11.85	3085.70
	<u>£3085.70</u>		<u>£3085.70</u>
<u>Income due</u>			
Unpaid subs. (31 members)	223.00	<u>Committed expenditure</u>	
Outstanding invoices	85.00	<u>Geological Curator</u>	
	<u>308.00</u>	4(4),(5),(6)	c.1650.00
Stocks of <u>Geological Curator</u>	c.4500.00	Postage	c. 320.00
		Guidelines	c. 140.00
			<u>2110.00</u>
		Advance subscriptions	<u>109.00</u>
	<u>£4808.00</u>		c.£2219.00


T. Sharpe, GCG Treasurer
18.11.85

Auditors:  S.R. Howe, R.M. Owens

constitution. Unfortunately, a reply was received from the Inland Revenue too late for any constitutional changes to be brought to this AGM. These will be discussed at the next GCG Committee Meeting.

Total expenditure for 1985 is £2963.09 compared with £1225.44 last year. The surplus of income over expenditure for 1985 is therefore £147.15.

At present, the total cash in the bank (including editor's cash-in-hand) to be carried forward into 1986 is £3347.19. However, once our committed expenditure (about £2110) and the amount owed to us (£308) are taken into account, about £1545 (including £109 of advance subscriptions) will be carried forward.

(iii) 1986 Subscriptions: Having established this surplus of about £1500, it should, I feel, be maintained and a reserve account built up to give the Group a financial security which it has never had before.

Our only steady source of income is, of course, subscriptions: the amounts brought in by the sale of backnumbers, reprints, and advertisements have varied widely over the last few years. Subscription income alone ought to be able to cover the costs of printing, postage and stationery as the payment is a subscription to the journal and not a membership fee. This it does at present - but only just: of the £5 subscription paid by a UK Personal Member, the printing of the journal takes £3.66 and its postage about £1.17, leaving only 17p to cover the costs of stationery and the activities of the Group. This year these activities have comprised the publication of the Guidelines (by the Geological Society), the launch of the 'Thumbs Up' campaign, the production of display panels to advertise the Group, and the new, improved journal. A small rise in printing or postage costs would mean that production of the journal would have to be partly funded by income derived from sources other than subscriptions. However, the amount raised from other sources is unpredictable and the level of expenditure on our activities is often difficult to anticipate; we ought to be able to survive on subscription income alone.

It is for this reason that I would propose that subscriptions for 1986 be raised by £1 across the board, i.e. UK Personal Subscribers £6, Overseas Personal Subscribers and UK Institutions £8, Overseas Institutions £10. Subscriptions were last raised (by £1) at the AGM in Birmingham in 1981. This would therefore be the first increase in four years. Approval of this proposal would strengthen the Group's financial base and would I hope prevent another, perhaps larger, increase in the near future.

This proposal was discussed once it had been formally proposed and seconded. A sliding scale was suggested with possibly £5 for students and unemployed. Tom agreed to consider this for the future. Di Smith

suggested that subscriptions should increase by £2 to cover costs of the proposed publicity officer. This was proposed and seconded. Tom pointed out that many members may resign on a £2 increase and we ought to limit the increase to £1. He also added that the £1 increase has taken into account costs for the publicity officer. The proposal for a £2 increase in subscription was put to the vote and lost. The proposal for a £1 increase in subscription was put to the vote and carried.

Thanks are due to Bob Owens and Steve Howe who audited the accounts.

7. Editor's Report - from Peter Crowther

(i) 1985

Four issues of the Geological Curator (totalling 246 pages) were published in 1985 as follows:

- Vol.4, No.1 (Issue 1 for 1984), pp.1-62, published 1.2.1985
- Vol.4, No.2 (Issue 2 for 1984), pp.63-118, published 16.4.1985
- Vol.4, No.3 (Issue 3 for 1984), pp.119-186, published 10.7.1985
- Vol.4, No.4 (Issue 1 for 1985), pp.187-246, published 7.11.1985

Volume 4 sees the introduction of double column format based (from No.2) on reduction (to 80% of original size) of word-processor print-out, enabling the Group to publish more. The improved presentation of the journal, with its redesigned cover, standardised internal arrangement, and improved quality of illustration should enhance its general appeal to the readership and potential authors - thereby I hope giving its content greater authority within the Group's sphere of interest.

Although many of the articles published this year involve clearing a backlog of submissions, it has proved possible to introduce a new series 'Then and Now' and to expand the 'Book Reviews' section.

(ii) 1986

A further four issues of the Geological Curator are planned for 1986:

- Vol.4, No.5 (Issue 2 for 1985): expected publication date Feb 1986
- Vol.4, No.6 (Issue 3 for 1985): expected publication date May 1986
- Vol.4, No.7 (Issue 1 for 1986): expected publication date Aug 1986
- Vol.4, No.8 (Issue 2 for 1986): expected publication date Nov 1986

No.5 sees a major contribution from Hugh Torrens and John Cooper on George Fleming Richardson (Gideon Mantell's curator), which launches another new series. No.7 will be a double-size issue devoted to the proceedings of the Group's forthcoming international conference on 'The conservation of geological materials' (BMNH, 23-24.1.1986, contact Chris Collins, Leicestershire Museums for

details). Other highlights for 1986 include an article on German law relating to geological site conservation, by Rupert Wild with an introduction by Bill Wimbleton (NCC's GCR); updated versions of papers given at the June 1985 Brighton meeting on documentation by David Price and Andrew Roberts; Tom Sheppard (in the 'Uncurated Curators' series) by Mick Stanley; Mary Anning specimens in the Sedgwick Museum by David Price; and Lyme Regis, both its Museum by Mike Taylor and aspects of site conservation by John Fowles.

(iii) Backstock

All backstocks of the Newsletter of the Geological Curators' Group and its successor, the Geological Curator, have been transferred from Ken Sedman's care in Middlesbrough to New Walk Museum, Leicester. A detailed stock check revealed that the Group has some 2200 back parts in stock, with a current cover price value of approximately £5000. All parts are still in print although some are down to single figures.

(iv) Thanks

First, many thanks again to my predecessor Tim Pettigrew for his five years as editor, and to Ken Sedman for distribution: the February issue (Vol.4, No.1) represents the final product from this northern duo. In Leicester I thank Dr Patrick Boylan (Director, Leicestershire Museums Service) for enabling me to take up the editorship; John Martin, Chris Collins, Gill Weightman, Simon Knell and Bryan Meloy, permanent and temporary members of the Earth Sciences Section for help in distribution; Alan Birdsall (Graphic Designer) for the new front cover design; Leicestershire County Council's Reprographics Unit for taking great care over printing and sticking scrupulously to promised deadlines; and most of all to Judy Marvin who types almost everything that appears in the journal. Thanks also to Mike Crane (Bristol) for compiling 'Lost and Found' with Hugh Torrens (Keele University) until recently, and to Don Steward (Stoke; GCG Recorder) for partnering Hugh from Vol.4, No.5. Tony Cross (Hampshire) continues to make 'Notes and News' a happy blend of amusing anecdotes and serious topical comment.

I thank everyone who has contributed articles over the year - keep them coming!

(v) From submission to publication

Members (particularly those considering submitting articles for publication) may like to know how the revised procedures for the publication of our journal from Leicester work. The various stages can be summarised as follows:

1. Authors submit two copies of the article (typed, double-spaced on A4 paper), including all illustrations.
2. Receipt by the editor is acknowledged; one copy is reviewed by a GCG Committee member while the other goes to a specialist referee (normally a member of GCG).

3. On the strength of the two reports and the editor's opinion, the article is accepted, rejected or returned to the author(s) for minor or major revision. Assuming the author(s) amends the article as requested, it is accepted on its return to the editor, when it joins the queue awaiting publication.
4. After editing, the article is typed into a Wang word-processor by Mrs Judy Marvin (LMAGRS Natural Sciences Clerk-typist). Printout is photocopied and sent to authors for proof reading while the editor proofs the master copy. After correcting any errors a final print is taken ready for paste up.
5. Text-figures are sent to Leicestershire County Council's Reprographics Unit for half-tones to be made to sizes specified by the editor. Headings are provided by David Price and Mike Dorling at the Sedgwick Museum, Cambridge.
6. Text, half-tones, line illustrations and headings are cut and pasted up into A3-size pages by the editor, to a standard format agreed with Reprographics.
7. At Reprographics, printing plates for offset lithography are produced by photo-reduction from the A3-size page originals. Print run is currently 450. Printing takes 4 weeks.
8. Journal and inserts are enveloped and distributed from Leicester, using computer-produced address labels, courtesy of GCG Treasurer, Tom Sharpe.
9. Authors receive 50 reprints only, at approximately cost price (2p per page) plus postage. Authors retain copyright and may make further copies themselves if required.

8. Recorder's Report - from Don Steward

Over the year the role of Recorder has been more clearly defined. To the oft asked question 'What does the Recorder do?', a much simplified reply would now be 'the Recorder acts as the link between the membership and the committee on all aspects of geological collections data'. To amplify this, the role can be divided into three major categories: State and Status; Collections Information Network - Geology (CING); and Lost and Found.

(i) 'State and Status' is responsible for the updating of information, collected for the Doughty report on the State and Status of Geology in Museums, and thus keeping abreast of current developments throughout museums with geological collections. It also includes liaison with the Federation for Natural Sciences Collection Research (FENSCORE).

The long term task of the Recorder is to assimilate all the current information about museums with geology collections into the records produced for the Doughty Report. It is envisaged that the information will be presented to area museum services highlighting the collections within their area that do not have geologists looking after them; it could provide the impetus for them to consider a peripatetic curator scheme - which would be particularly useful to smaller museums. Existing geological

conservation officers at AMSSEE, WMAMS and AMCSW will hopefully be able to provide relevant data for the files in the course of their present work.

FENSCORE: only one meeting has occurred this year (14 March); it was unfortunately crucially marred by the fact that Charles (Bill) Pettitt, the database manager at Manchester Museum, had suffered a minor heart-attack the previous week and was therefore unable to attend. This unhappy event served to highlight the dependence of the scheme on one person and his availability to work for it. The ensuing discussion centred on the possible role of MDA as a co-ordinating body that, in the long run, may be able to provide cross-reference links with other collection research units covering other museum topics. At the time of the meeting the Scottish, and the Yorkshire and Humberside CRU's were both in the final stages of data preparation; publications of the results were said to be imminently forthcoming.

(ii) 'CING' is a more informal exchange of information about activities that may be affecting geological collections - ranging from the closure of museums to the activities of dubious museum visitors. The success of the scheme depends on 'grass-root' information being passed on to the committee via the Recorder, and it is therefore up to the membership to actively participate.

It will have come to the attention of most members that on 6 February 1985, Mr John Whitehouse was convicted of stealing geological specimens from several museums throughout the country. A brief report appeared in Geol. Curator 4(2), p.105 about the theft of forty-three items, and a more comprehensive report is being prepared by the Recorder and Gordon Chancellor (Peterborough Museum). To this end all the museum curators involved have been contacted asking for their personal opinions, and it is hoped that the resultant article will give some indication of how security can be improved.

Swansea Museum - Royal Institution of South Wales collections: Tom Sharpe (National Museum of Wales) has been acting as the CING representative in the discussions of the future of the RISW collections due to the withdrawal of financial support from Swansea Museum by Swansea University.

(iii) 'Lost and Found' is, and always has been, an integral part of the columns of the Geol. Curator. With the retirement of Michael Crane, it was deemed opportune to assimilate the compilation function with that of the role of Recorder.

As always, special mention of the key role of Hugh Torrens in the research of material presented must be made. It should be noted that, due to the pressure of his university work, his significant contributions are compiled as one of his many hobby activities. Thanks must also go to Michael Crane, whose all too brief involvement

produced the currently published format which, hopefully, simplifies the cross-reference facilities of the column. Issues of Geol. Curator published in 1985 - vol.4 (1-4) - have yielded eighteen items new to the columns along with nineteen items commenting on previously mentioned material.

These three functions more or less complete the overseeing capacity of the Recorder in keeping GCG Committee aware of the broad base of information available about geological collections.

9. National Scheme for Geological Site Documentation Report - from Mick Stanley

This part of the report only includes the important happenings for 1985; the holdings and uses of site records for the period 1 January 1984 - 31 December 1985 will be noted in the full report when the questionnaires have been returned.

(i) Records. All Record Centres should now have received the questionnaire and a prompt reply would be welcome so that collection of records and statistics can commence.

(ii) New Record Centres. Three Record Centres have been recruited to the National Scheme since the 1984 Annual Report appeared in Geol. Curator, 4 (2):

Isle of Skye - Isle of Skye Field Centre,
Beul-na-Mara, Broadford, Isle of Skye
IV49 9AQ (P. Yoxon).

South Humberside, North Lincs. - Scunthorpe
Museum and Art Gallery, Oswald Road,
Scunthorpe DN15 7BD (D. Parsons).

West Kent - Dept. of Earth Sciences,
Goldsmith's College, Creek Road,
Deptford, London SE8 3BU (O. Green).

Goldsmith's College have taken over West Kent from Queen Mary College, University of London, as the Geology Department there closed during 1983. Two current enquiries from Hereford Museum and Cambridgeshire College of Art and Technology may result in new centres for these areas.

(iii) 'Record of the Rocks'. This leaflet has been published and all centres should have received at least one if not two copies. 20,000 have been printed and will be sent to amateur and professional geologists via the many local and national geological societies. Should there be leaflets over from the postings then a supply could be made available for centres. If there are any corrections of the text or address list please write to Mick Stanley.

(iv) Conservation Committee, Geological Society. The Committee met twice in 1985 (May and November). The main topics for discussion were: a) the Institute of Geologists 'Code of Practice on Access to Quarries and Mines'. This has now been published and compliments the G.A. Code; b) the status of geology within the NCC - a continuing saga which has been reported fully in Geol. Curator.

During the year both the Chairman, Dr Ian Rolfe, and Secretary, Dr Peter Toghil, expressed a wish to resign their positions after a period of five years in their chairs. The new Chairman is Prof. John Knill and the Secretary is Dr Roy Clements.

10. 'Thumbs Up' Report - from Peter Crowther

10,000 leaflets have been printed by Robertsons Research International at no cost to the Group. Each museum named on the leaflet will be entitled to 200 which must be ordered. Stickers are also available at £1 each to those museums which employ a qualified geologist on the permanent staff. For further details see Geol. Curator, 4, 189-192. A national launch for the 'Thumbs Up' campaign will hopefully be given by the BBC TV programme 'Blue Peter'.

11. Election of Officers

No other nominations had been received so all the Officers were re-elected. The two

vacancies for Ordinary Committee Members were taken by the Committee's nominations - Chris Collins (Leicestershire Museums) and Wendy Kirk (Dept. of Geology, University College London). David Price (Sedgwick Museum) and Mike Taylor (AMCSW) stay on the Committee for another year.

12. Any Other Business

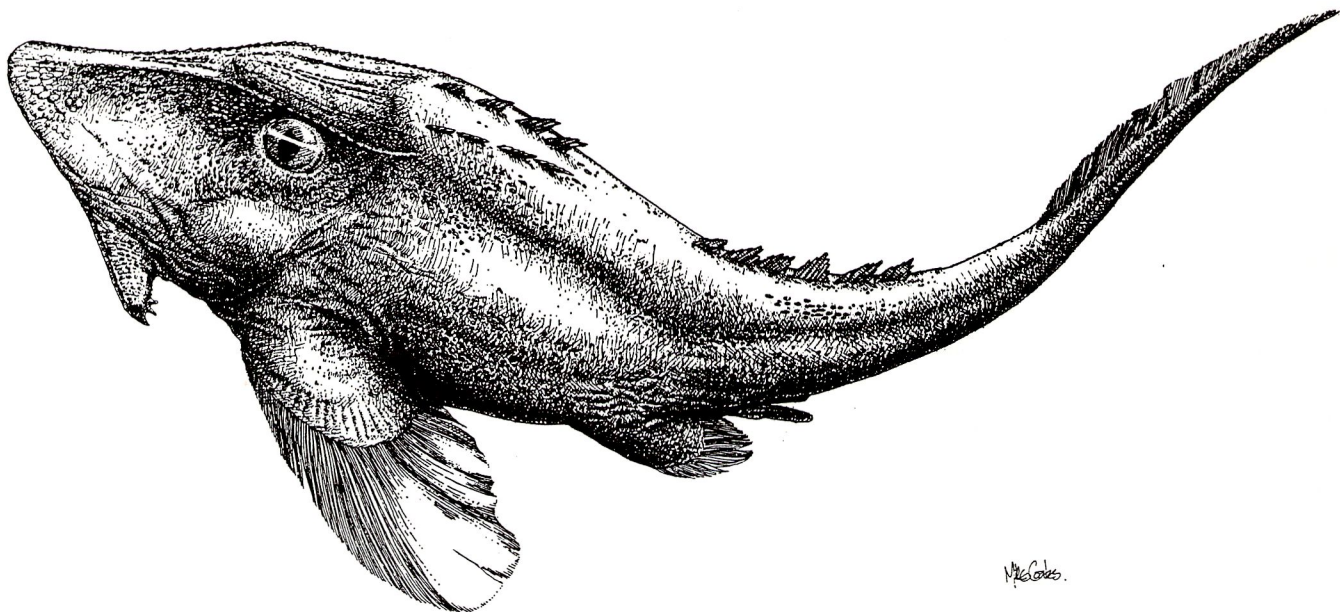
Bob Owens and Steve Howe have agreed to act as auditors for 1986.

A vote of thanks was given to Alan Cutler for organising the day's programme and thanks were also extended to Dudley Council for their hospitality. John Crossling (Warwickshire Museums) suggested that the Group write to Dudley Council following up some of the suggestions which had come out of the day's discussion.

The 1986 AGM will be on 5 December at the Manchester Museum.

The meeting closed at 5.05pm.

Diana Smith
GCG Minutes Secretary



Reconstruction of the first complete bradyodont ratfish found in the UK, the 45cm long shell-crusher Deltoptychius. Reproduced with permission from the Hunterian Museum's touring exhibition 'Mr Wood's Fossils'. See 'Notes and News'.

THE GEOLOGICAL CURATOR

PUBLICATION SCHEME

Three issues of The Geological Curator are published each year; a complete volume consists of nine issues (covering three years) and an index. Because of recent delays in publishing, four issues will be published in both 1985 and 1986 to make up the deficit to members. The following timetable should be noted by those wishing to submit material for publication:

Vol.4, No.7 (for 1986) 'Conservation of Geological Materials' Conference Proceedings
(publication Autumn 1986)
Vol.4, No.8 (for 1986) copy date 15th Aug. 1986 for publication Dec. 1986
Vol.4, No.9 (for 1986) copy date 14th Nov. 1986 for publication Feb. 1987

NOTES TO AUTHORS

Articles should be submitted typed on good quality paper (A4 size) double spaced, with wide margin. Two copies should be sent to the Editor, Peter Crowther, City of Bristol Museum and Art Gallery, Queen's Road, Bristol BS8 1RL (Tel. 0272 299771). Line drawings should be prepared in black ink at twice desired publication size. Photographs for halftone reproduction should be printed on glossy paper and submitted at approximately final size. Both drawings and photographs should be proportioned to utilise either the full width of one column (85mm) or two (175mm). References in the text follow the Harvard system i.e. name and date '(Jones 1980)' or 'Jones (1980)'. All references are listed alphabetically at the end of the article and journal abbreviations should follow the World List of Scientific Periodicals where appropriate. Authors will normally receive proofs of text for correction. 50 reprints can be purchased at cost (details from the Editor). Major articles are refereed. Copyright is retained by authors.

REGULAR FEATURES

LOST AND FOUND enables requests for information concerning collections and collectors to reach a wide audience. It also contains any responses to such requests from the readership, and thereby provides an invaluable medium for information exchange. All items relating to this column should be sent to Don Steward, Department of Natural History, City Museum and Art Gallery, Hanley, Stoke-on-Trent ST1 3DW (Tel. 0782 273173).

NOTES AND NEWS contains short pieces of topical interest. Please send contributions to Michael Taylor, Area Museum Council for the South-West, City of Bristol Museum and Art Gallery, Queen's Road, Bristol BS8 1RL (Tel. 0272 299771).

BOOK REVIEWS contains informed opinion on recently published books of particular relevance to geology in museums. The Editor welcomes suggestions of suitable titles for review, and unsolicited reviews can be accepted at his discretion. Publishers should submit books for review to the Editor.

INFORMATION SERIES ON GEOLOGICAL COLLECTION LABELS consists of loose A4 size sheets, issued irregularly, which carry reproductions of specimen labels usually written by a collector of historic importance. The aim of the series is to aid recognition of specimens originating from historically important collections. Contact Ron Cleevly, Department of Palaeontology, British Museum (Natural History), London SW7 5BD.

ADVERTISEMENT CHARGES

Full A4 page £40 per issue)
Half A4 page £25 per issue) Discounts for space bought in three or more issues
Quarter A4 page £15 per issue)

Further details from Diana Smith, Curator, Bath Geological Museum, 18 Queen Square, Bath BA1 2HP (Tel. 0225 28144).

Inserts such as publishers' 'flyers' can be mailed with issues of the Geological Curator for a fee of £35. 500 copies of any insert should be sent to the Editor by the required copy date shown above.

SUBSCRIPTION CHARGES

UK Personal Membership £6 per year
Overseas Personal Membership £8 per year
UK Institutional Membership £8 per year
Overseas Institutional Membership £10 per year

All enquiries to the Treasurer/Membership Secretary, Tom Sharpe, Department of Geology, National Museum of Wales, Cathays Park, Cardiff CF1 3NP (Tel. 0222 397951).

BACKNUMBERS

Backnumbers of the Geological Curator (and its predecessor, the Newsletter of the Geological Curators' Group) are available at £2.50 each (or £5.25 for the double-issues Vol.2, Nos.9/10 and Vol.3, Nos.2/3, including postage. Orders should include payment and be sent to the Treasurer (address above).