GCG

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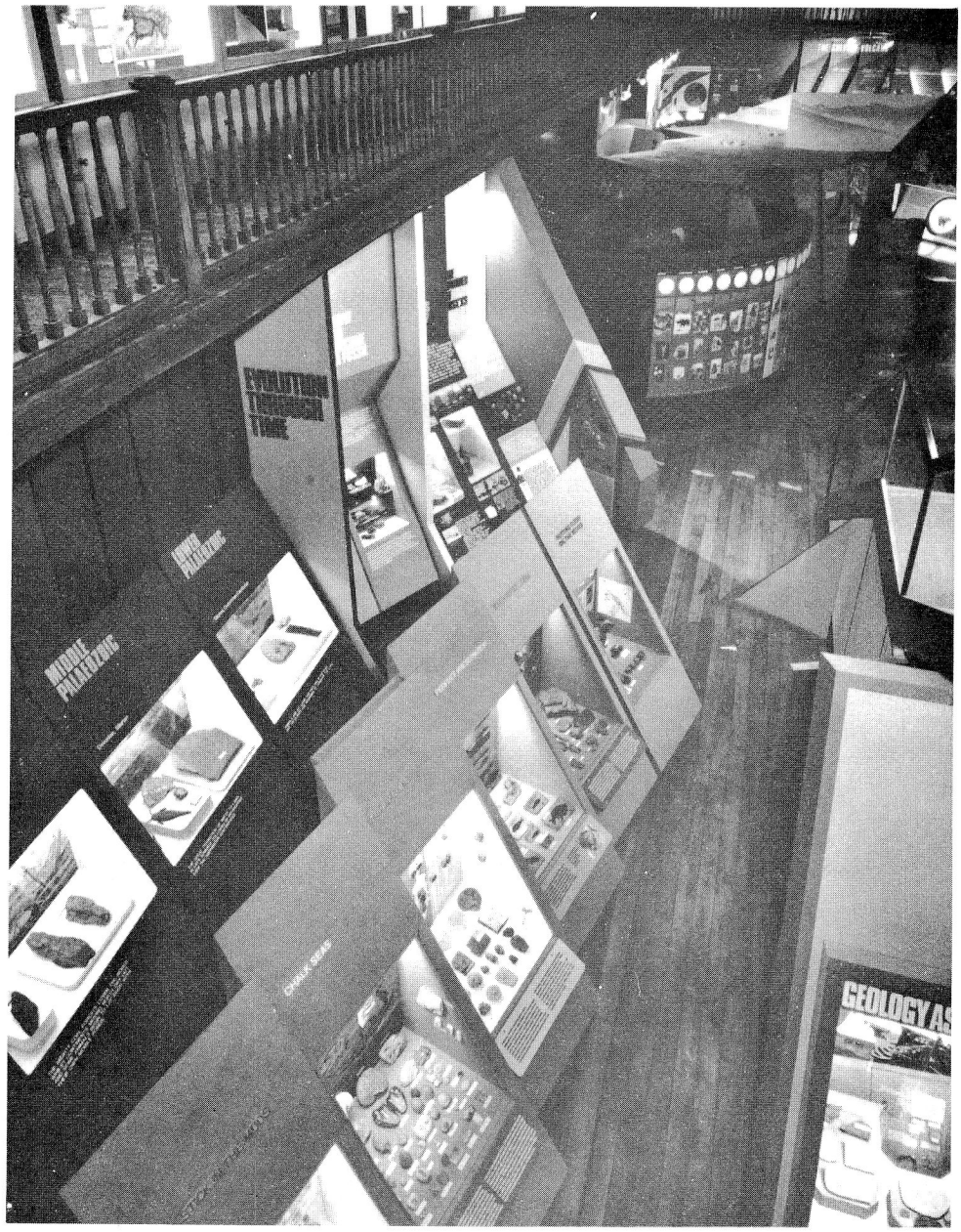

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GEOLOGICAL CURATORS GROUP

(AFFILIATED TO THE GEOLOGICAL SOCIETY OF LONDON)

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IRGMAWOCKY

'Twas gloomig, for the MDA
Diffused and programmed through the land;
All backward-written were the cards,
And sentences were banned.

"Beware the Irgmawock, my Son!
The printinge greene! the concepts grand!
Avoid the keyword/detail: shun
The all-pervasive Ampesand!"

He took his verpose sword in hand
Long time th'computered foe he sought-
Then rested he 'neath the Tebble tree
And stayed awhile in thought.

And as in meandrish thought he sat
The Irgmawock, with complex name
Came indexing through the databank
Crying: Aspect: Keyword: Pain!

One two! One two! And through and through
The verpose blade went Irgmasmash.
He left it dead, and with its head,
He waffling, wandered back.

"And hast thou slain the Irgmawock?
Come to my arms, my Merlish boy!
Tear up your cards and scrawl afresh"
He burbled in his joy.

'Twas gloomig, for the MDA
Diffused and programmed through the land;
All backward-written were the cards,
And sentences were banned.

Janet Swithinbank

74 Edale,
Stoneydelph,
Tamworth,
Staffs.

First published in the Museums Bulletin Vol. 19 No. 5 August 1979.

We wish to thank both the Author and the Editor for permission to publish.

A VERY SCIENTIFIC MEETING

The joint meeting of the Geological Societies of the British Isles held in Sheffield from 20 - 23 September 1979 ostensibly commemorated a Sorby centenary. In 1879, Henry Clifton Sorby, Sheffield's most famous scientist, was elected President of the Geological Society of London. Sorby was the epitome of the Nineteenth Century breed of gentleman scientist, producing a total of some 200 scientific papers in the course of his life. His early interests were in the field of chemistry which he soon abandoned in favour of geology, microscopy, metallurgy and, in later life, marine biology. In many fields he proved a pioneer: if not the first to make thin sections of rocks, he was certainly the first to realise the potential use of thin sections in studying their formation. Indeed in 1907, when the Geological Society celebrated its own centenary which Sorby was too ill to attend, the members sent him an affectionate address headed "To the Father of Microscopical Petrology".

The local organisers of the meeting clearly hoped that the societies taking part would use Sorby's work and its modern applications as a basis for their contributions and it is surely a pity that so few of them did so. The plenary sessions on Sorby's work held on Friday evening were only sparsely attended and many of the delegates must have left Sheffield as little aware of Sorby's contributions to science as they were on their arrival.

Apart from the Min. Soc.'s Applied Mineralogy group (who based their sessions on the fluid inclusions which Sorby was the first to note), the G.C.G. were the only participants who gave prominence to Sorby's work. In the opening paper, Tim Riley outlined Sorby's work as a collector and pointed out that, in the geological field, his main researches were on sedimentary structures, slaty cleavage and the crystallisation of minerals. After Sorby's death, his collections passed into the care of the University of Sheffield and Tim had drawn on this material in producing a commemorative exhibition at the City Museum. Sorby's eminence had ensured that his collections have been carefully preserved but this is not invariably the case where University departments are concerned - hence the choice of 'Curation of University Research Collections' as the overall theme for the G.C.G. session.

Peder Aspen outlined the history of the Grant Institute, Edinburgh where the first geological collections were acquired in the Seventeenth Century. These and many later collections were subsequently disposed of, sometimes to other institutions (in the mid-Nineteenth Century the geological collections were transferred to the Industrial Museum of Scotland, soon to become the Royal Scottish Museum) but all too often lost without trace. It is a chilling thought that, of the 19 departmental museums which existed at Edinburgh University in 1934, only that of the Geology department still survives.

Roy Clements, in the first of two contributions from Leicester Museum, presented a quite different viewpoint. At Leicester, research students are a major source of material since the regulations require all Ph.D students to donate representative suites of the material worked on to the University. One major problem is that the research collections of today may fail to meet the research requirements of tomorrow. Thus while certain categories of material must be kept in perpetuity, others may be valid as research material for only a limited period, perhaps no more than ten years. It is therefore necessary to be increasingly selective over what material is added to the collections.

In the second part of his talk, Dr. Clements considered the specific problems raised by the curation of the Sylvester-Bradley collection of

microfossils. Record cards had been devised to combine the functions of curatorial accession card and palaeontological record card, and the structure and use of these was described.

Brian Page gave a useful nuts-and-bolts description of the curation of the teaching collections at Keele. A combination of key letters and colour coding allowed all speciments to be returned to their correct storage point even by someone with no knowledge of geology. He summarised the roles of the University curator as a) Systematist, b) Liaison officer and c) Store keeper.

Antony Wyatt described the problems of attempting to curate the 100-year backlog of material at the University College of Wales, Aberystwyth. Apart from the sheer volume of material accumulated, problems arose from the architect-designed storage which was neither dust-proof nor designed to carry heavy weights, and from reserve storage open to the elements in what was described as little better than a barn.

Bob King rounded off the session by considering the use of mineral collections for teaching and reference. At Leicester, the first-year teaching collections contained 100 specimens of each mineral on the syllabus, and 2nd-year, 3rd-year and M.Sc. collections were also maintained for teaching purposes. The reference collections, stored separately, were used for display, research and advance physical and chemical work where perfect crystals were required. Surplus material might be given away to schools but nothing was ever thrown away. Dr. King's consummatory sentence might equally well serve as the G.C.G's credo: "Every specimen deserves a place in somebody's heart".

Geoff Tresise

Conference Report: Geological Conservation

This report, of a meeting co-sponsored by G.C.G., by Professor Ken Walton, President of Association of Teachers of Geology, was first published in Geology Teaching 4, 2 pp 45-48 June 1979. It is here reprinted with grateful thanks to both the author and editor.

SPONSORS AND ACRONYMS

The Association was one of the sponsors of a two-day conference on the *Future Development of Geological Conservation in the British Isles.* The meeting, organized by Mr. J.A. Cooper, Leicestershire Museums, and held in the rooms of the Geological Society on the 19-20th March 1979, was supported by an imposing group of bodies as well as our own. One of the first hazards for a participant was to follow discussions abounding in initials, ATG (easy), NCC (Nature Conservancy Council), CGSD (Committee for Geological Site Documentation, not so well known), GCG (Geological Curators Group), and, oh dear, ESEMG (Earth Sciences Educational Methods Group). In addition to these sponsoring bodies there were other contributing organizations - the CLA (County Landowners Association, very professional), the SPNC (Society for the Promotion of Nature Conservation, which is the co-ordinating body for conservation trusts in the counties; these are distinct from the National Trust which was also represented) as well as the familiar IGS. It was also interesting to learn that the beautiful acronym SAGA stood for the rather prosaic Sand and Gravel Association. This long list gives some indication of the wide interest and involvement in the question of geological conservation and the conference provided an unprecedented opportunity to hear a diversity of views.

ONE VOICE FOR EARTH SCIENCE

Dr. Colin Phipps, M.P. and geophysicist, opened the proceedings with a view from the 'House'. He believed that the natural environment and natural resources were going to form one of the most important subjects for politicians over the next two decades. He found it regrettable that earth-scientists in the U.K. were little represented at Whitehall and when consulted were very poorly organized. In order to ensure that their expert opinion was brought to bear with maximum force it was essential that a single body should take on the task of speaking with authority for all British earth-scientists. Only in this way, he believed, was there a chance that politicians could take well informed decisions on vital geological topics.

The programme was organized so that related interests were grouped together, for example we had one session which included papers from educational sectors. It will be more useful to ATG readers, however, to consider the conference in terms of the following subjects, Access, Documentation, Pressure on Sites, Preservation and Conservation.

ACCESS

Mr. J.H. Bradley, a National Parks Officer, gave some data on the enormous and growing number of visitors to be coped with. They comprised two groups - those in parties led by nominally informed leaders, and those who were casual visitors. The 'casuals' placed most pressure on sites which lay within a few metres of car-parks. This meant that important and vulnerable sites could be protected by judicious placing of roads, tracks and parks. Leaders of parties could help by ensuring that they acquaint officials of their needs and plans at an early date.

This theme of party leaders contacting land, quarry and site-owners well in advance was emphasized first by Mr. P.C. Ormrod (CLA) and then by Mr. D.I. Roberts a geologist working with Amey Roadstone Corporation but giving a private view. Both were concerned to explain that their members were not basically hostile to geologists; indeed Mr. Ormrod, in a charming, persuasive address, pointed out that the sure way to enlist the interest and support of land-owners was to keep them fully informed of the geological significance of their property. Their land was their prime pre-occupation, their obsession you might say, and they could never find out enough about it. Mr. Roberts also stressed the need for co-operation and he objected to the image of mineral extractors as tbe opponents of conservation - preservation, perhaps; but conservation, no. Given co-operation between quarry-owners and developers on the one hand and planners and conservationists on the other, the developers would usually go to great lengths to conserve worthwhile phenomena which they themselves had very often un-earthed. Like Mr. Ormrod, he regretted the steps which they felt had to be taken to restrict access to their property. Their liabilities under recent legislation made them feel increasingly vulnerable to exorbitant claims in cases of accident and it was not unnatural that they sought the most obvious means of protection.

In a most lucid talk Mr. R.L. Heather from the Health and Safety Executive explained that owners had always had an obligation to ensure the safety of visitors as well as employees but that two pieces of legislation had changed the situation fundamentally. The 1974 Health and Safety at Work Act had introduced the possibility of criminal instead of civil charges being brought against owners by visitors and the 1977 Unfair Contracts Act had excluded the possibility of owners escaping their liabilities to visitors in the case of death, injury or loss by the previous drawing up of a contract or the displaying of a notice. Even in the case where a contract such as an indemnity form has been signed, an owner might still be sued by an injured party. Naturally owners have been left in a very nervous state, especially when the courts are tending to award higher and higher damages for personal injury. Two suggestions arose. Those organizations involved should seek to arrange a special insurance with a single insurance broker on a national scale in order to get the best possible terms. It was explained that present coverage with local arrangements had proved to be impossible, inadequate or very expensive. Secondly, field workers should consult with the CLA and mineral extractors like SAGA and BQSF (British Quarry and Slag Federation) to seek measures, including modified legislation, to ameliorate the situation. This is one thing in which the ATG could and should take an active part in that it so vitally affects our interests. Professor D. Blundell, Secretary, CHUGD (Committee of Heads of University Geology Depts.) indicated that he had already begun discussions with industry.

SITE DOCUMENTATION

Recording and description of sites is being undertaken by a number of different bodies. Much of the work of the NCC is devoted to this but an additional scheme of national importance was outlined by the Chairman of the Committee for Geological Site Documentation (CGSD), Dr. R. Clements. Aided by a grant from NCC the work was started less than two years ago with the aim of covering the country with local recording centres responsible for 34 separate areas. So far, of the 34 designated record centres only 4 have been adequately staffed. Nevertheless in less than a year some 10,000 site records have been compiled. According to Dr. G.P. Black, Head of Geology and Physiography section NCC has some 2 ,000 sites of special scientific interest (SSSI's) which have international as well as national importance and a review is under way to identify more. He anticipated that in the next decade or so some 5-10 000 more may well be located.

The question of the adequate recording of temporary exposures was taken up by an amateur geologist, Mr. Stinton, from Bournemouth. He pointed to the important work of the Tertiary Research Group in locating and recording in a standard way the often vital information available from short-lived exposures. In addition, some site documentation was carried out by Museum staff and this was obviously important in enlivening their work on collections but Dr. H. Torrens wondered whether this really was their responsibility. He suggested that the manpower and other resources available to museums were often so pitifully small that effort should be devoted to collections which were often very badly curated and some not curated at all. Many small museums were desperately in need of support if valuable collections were not to be lost to research workers and the public.

PRESSURES ON SITES

Apart from being degraded by natural erosive forces, geological sites are under pressure from five different categories of people:- i) Educational groups; ii) Amateur geologists, whether in clubs or acting individually; iii) Professional dealers; iv) Mineral extractors and v) the General Public.

ESEMG and ATG surveys prepared by Dr. R.T.J. Moody and Mr. D. Scott showed that each sector - secondary and tertiary - accounted for a similar number of student-days of field study (about 100,000 in each case) although they differed in that the students averaged about 14 days each year in the field while school pupils spent 4 field-days in preparation for O level examinations and nearly 8 days for A levels. Difficulties arose from the distribution of this work in that certain areas were very popular. Thus sites in Devon, Cornwall, Dorset, South-Wales and Arran are under great pressure and this seemed to be self-perpetuating in that leaders in both sectors tend to take parties to areas to which they themselves were introduced as students. It is perhaps fortunate that in the last decade, while student numbers have quadrupled, field-work days have only doubled. Even so it is not long ago (*GEOLOGY teaching* 3 part 2) that Dr. Black estimated the real number of student field-days per year to be about one million. This gives a much more impressive picture of the real pressure on sites. It came home to me a few years ago when I arrived at the bridge at North Glen Sannox (Arran) - to find half-a-dozen buses already there and had to queue up with my party to have a chance to look at the Arenig black shales and pillow-lavas!

Mr. J.A.D. Cotton, representing lapidarists from southern England estimated that there were some 4000 members of amateur geological societies in the U.K. and they might remove about 15 tons of prime material each year. This is a small figure compared with the deprivations of the occasional professional dealer, who, when attacking a site uses a range of weaponry including explosives and pneumatic drills. Recently, such an attack on the internationally important locality for Silurian fish and arthropods at Lesmahagow near Lanark almost completely destroyed the site. Dr. R.S. Harker, himself a dealer, did not attempt to defend this extreme vandalism but maintained that dealers had a positive role to play in conservation in developing new sites and providing material to individual collections and the general public on an international as well as a national scale; they were he argued, collectors, preservers and disseminators. Mr. D.I. Roberts took a similar line in pointing to the activities of mineral extractors in opening up and making available sites which would otherwise be unknown. He claimed that there was general resentment in his industry at the way in which they were generally cast as the villains, the opponents of conservation. He cited a number of instances where his company had landscaped quarries which were passing into disuse rather than filling them in.

The general public, as visitors, were not too much of a threat to sites, unless they were in places of natural beauty, such as National Parks. The parks of course tended to attract the visitor, perhaps diverting them from other sites and thereby helping conservation. In some areas mines provided a hazardous attraction. The National Trust in acquiring three mines at Alderley Edge faced difficulties of administration and safety. Owners have the choice of closing the mine completely, allowing restricted access or leasing to a caving club who take over responsibility for all visitors.

PRESERVATION, CONSERVATION

A number of speakers urged the importance of making a distinction between preservation, where no change in collections or sites is allowed to take place, and conservation where some change is inevitable from erosion and some use is allowed by collectors and researchers. Museum collections would represent the 'end member' of protection although non-destructive research is of course not only allowed but encouraged.

Mr. A. Jenkinson, Shropshire Conservation Trust, reported the impressive work done in that county in purchasing important sites (for example Comley Quarry), and in leasing and clearing others. The Trust had also worked to preserve or create new exposures such as road cuts in order to relieve classic localities such as the Onny River. Perhaps the most important part of their work is simply liaison. Being based locally and becoming part of the community allows the members of the Trust to develop a dialogue between users and landlords which seems to provide the key to both access and conservation. Clearance of old and used exposures was another of the activities of the Trust; on a larger scale NCC has been involved on a national site-clearance scheme for five years and this will continue.

The development of alternative sites to those currently over-used was suggested by a number of speakers. Mr. Bradley made the point that screes and tips were often more appropriate for some users than classic localities. Along the same lines Dr. C. Eccles directed attention to excessive use of a few field-course areas and the need for leaders to gain knowledge of new areas. David Scott believed that school teachers might find this possible if their LEA's allowed them time to do this within their official duties and gave some financial support. It is noteworthy that his figures showed a great reluctance on the part of leaders to consult with museums. Here is a great store of information which should be explored especially for the development of new sites. An increased number of guide books might also help; at the same time it was pointed out that the better the guides available the greater the pressure on localities and one means of conservation was to inhibit publication of information. Mr. B.J. Taylor, I.G.S., pointed to the enormous reservoir of information held by the Institute and saw its possible role in conservation as the identification of alternative sites.

On the whole however the sheer lack of information and the poor dissemination of information was deplored again and again during the conference. National Parks officers were appalled at the ignorance of visitors. Considering the lack of widespread geological education in schools this ignorance is perhaps excusable (some of them did not even know where they were, let alone what they were looking at) but course leaders ought to know better. It was imperative that leaders themselves obtain all possible information about the site, the conservation hazards and the alternative localities. Amateurs should also take note of these points and organized clubs should do their utmost to breed responsible habits in their members. Indeed, Dr. R.J. King explained that the Sir Arthur Russell Society in the Midlands has a largely amateur membership interested in minerals and mineral-collecting; it also has as one of its main tasks the training of conservators who will look after given sites. Among amateur enthusiasts there does seem to be a reservoir of time and energy which professionals would do well to harness in this work. In spite of the efforts of active conservators, Dr. R.J. King was concerned with the success of rogue vandals and their incomprehensible determination, even to the extent of advocating deliberately burying important, vulnerable sites that they may be preserved for the 'benefit of a more enlightened age'.

Following his account of the Lesmahagow despoilation Dr. I. Rolfe, Hunterian Museum ,Glasgow, stated that he was convinced that legislation was needed to curb such destruction whether it resulted from the activities of commercial operators or mindless vandals. The present system whereby such people can only be prosecuted by the landowner hardly worked because often he was not interested and, as Mr. Ormrod pointed out, even if he were and a successful prosecution followed he might be faced with high costs.

On the question of worthwhile localities, Dr. J.M. Hancock observed that the sites could be categorised to allow a more sophisticated treatment of the subject of conservation than hitherto. He pointed to the following types:-

1. **Sites suitable primarily for demonstration and perhaps occasionally for research. The need here is for easy access and continual clearing of debris.**
2. **Sites of little teaching value but needed for research purposes. These may be vulnerable because of limited materials which might quickly be dispersed, for example the fossil forest at Lulworth. Other sites in this category need protection because their fossil material only becomes available by slow weathering.**
3. **Sites where active weathering erosion and removal is taking place such as cliffs and working quarries. These are virtually 'party-proof' and are places where large parties could visit and collecting instincts could be assuaged.**

There is a strong argument that teaching at the elementary stage and amateur (and dealers') collecting should be confined to sites of the last character. As our past-President Professor Ager has often reminded us, collecting of fossils may have been necessary last century when knowledge of the variety of forms was being painstakingly built up. But we have moved into a period where scientific interest lies not just in a species occurring at a particular horizon but in its numbers, the other species with which it is assembled and the sediment in which it occurs. There is no way in which amateur or professional collectors or school parties can work at this type of site without reducing its scientific value.

THE FUTURE

Under the forceful chairmanship of Dr. Bassett, the conference devoted its last hour to considering necessary moves to safeguard the future. Dissemination of information was considered essential and to this end it was resolved that an attempt be made to interest TV companies in producing appropriate programmes, hopefully of the standard so admirably established by David Attenborough's 'Life on Earth'. In the same vein, it was decided to publish the proceedings of the conference and to disperse short summaries as widely as possible. It was gratifying to hear two Dutch guests express the opinion that conservationists in Europe would welcome a conference publication.

There were mixed feelings about the need for further legislation. Some speakers feared the development of a cumbersome bureaucracy and great difficulties in administration; others recognized the difficulties but felt that it was the only way to counter undesirable activities.

Finally, in response to Dr. Phipp's point in his opening address it was decided to urge the Geological Society to accept the role of spokesman for the Earth Sciences in Britain.

And my concluding feelings? Having considered all this, the long-term prospect for conservation lies in the attitude of every member of the public. The 'buck' really does come back to teachers of geology whether they be in schools, colleges, universities, museums, parks or field centres. It is not unreasonable to expect that the efforts of our Association, directed towards the wider spread of geological teaching in one form or other will be successful in the not-too-distant future. This will lead to a spectacular increase in field work. Increasing leisure will also mean that more and more people will look for enjoyment and satisfaction in out-door pursuits. Pressure on sites, like Topsy, will grow and grow. Whether this leads to the destruction of localities of inestimable value will depend on our success in inculcating in our students a sensible attitude to our natural heritage. The responsibility is ours.

NEW'S' COLUMN

The News Column which we had hoped to include in the September issue has had to be held over to a later issue as Tony Cross received very little material and that from very few sources. Items of interest which do not merit a full article or even a letter to the Editor could well figure in Tony's column.

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PE1 1LF

Tel. 0733 43329

"Take a telegram to the Museum of Natural History."

COLLECTIONS AND COLLECTORS OF NOTE

25 BIRMINGHAM UNIVERSITY GEOLOGICAL MUSEUM

The foundation stone of Mason College was laid in 1875 and the college officially opened on 1st October 1880, the buildings (now demolished) being in Edmund Street in the heart of Birmingham. Geology was provided for in the following year when Charles Lapworth came as Professor of Geology and Mineralogy. In 1900 the University Charter was obtained and the need for expansion on a new site soon became evident. A gift of land at Edgbaston allowed the applied sciences to move there in the first decade of the century but it was not until 1960 that the University was again united on one site.

History of the Museum

The University Museum was started by the purchase of 1650 local Silurian fossils from Charles Ketley in 1880 for £250 by the Trustees of Mason College. At the same time, they appointed Samuel Allport as librarian to the college and curator of the museum, a post which he held until 1887. The collections were supplemented by 20,000 specimens from the Sharp Collection in 1882, again purchased for about £200 and from then on there were numerous additions by gift and purchase, many of the donors being local people. The accession books for this period have only sketchy details of these up to 1900 when the University acquired its charter, and they are not much more helpful up to 1906 when the entries cease until after the Great War. During much of this time there can have been little supervision of the collections since there was apparently no staff assistant after 1890 to undertake it. By 1910, some of the teaching had moved to the new university site at Edgbaston but the buildings there were taken over during the War as a hospital, any teaching being carried out in Mason College in Edmund Street. The post-war claim for recompense includes reference to broken glass on models and missing minerals as well as the missing cap and gown of the professor.

In 1920, the Geology Department finally moved completely from Edmund Street to Edgbaston and took over a whole floor of one of the radial blocks of the main building. This space was to suffice it until 1950. The floor is T-shaped and had laboratories and staff rooms on the stem with the museum occupying the whole of the cross-piece (see fig.1). Some of the cases came from Edmund Street but others appear to have been part of the new furnishing of the department. The accession book was also restarted in 1920 by W. H. Laurie, the departmental steward, and has entries up to 1939 when the more important collections were again packed up, this time for safety. The main acquisition during the gap in the records was the donation of the Holcroft Collection in 1917, complete with its ten glass-topped cases which can be easily seen in the photograph. Some Holcroft specimens had been presented to Mason College in 1898 but the later donation was a major event in the history of the departmental collections. Further details of the collection are given below.

With the consolidation of the department at Edgbaston, there was now opportunity to expand the collections required for teaching as geology became more of an applied subject. Laurie also undertook a catalogue of the type and figured material which was then separated off from the other collections. This practice has been continued so that there are now some 2,500 type and figured specimens locked away. Since about 1940, most of the Birmingham specimens have been referred to as such in publications but it is possible that earlier figured material has still to be found. A number of special acquisitions were made between the wars but perhaps the most interesting was the gift of old material by the Misses Titley in 1936 which included the finest known (not type) specimen of Eophrynus prestvici (Buckland 1837) which was redescribed in 1909 by Pocock from a plaster cast in the B.M.(N.H.), the original being then presumed lost.

Increasing pressure on space for teaching resulted in the two outer parts of the museum being partitioned off as laboratories for palaeontology and petrology, the latter including new showcases and storage cabinets. In 1957, the department took over a second floor in the same block and the museum got back most of the space which it had earlier lost as well as the new cases. This was, however, a comparatively short-lived spaciousness as research spilled over into one end again until that pressure was temporarily relieved in 1969. Now, in 1979, one wing has again been lost to Quaternary studies, this time probably irretrievably as meantime the department had acquired the third level of the block and further expansion now would have to be to a new site. It is unlikely under present U.G.C. rules that a new building would be allowed to have a museum as such. However, plans are in hand for some modernisation of the remaining space and the enforced withdrawal from one end has meant that at last some real storage space has had to be made available elsewhere so that for the first time the museum may become a show area instead of one devoted largely to storage such as it was 30 years ago. Then it was impossible to change any display since there was literally nowhere to put material taken out of any showcase. Now it is planned to re-organise much of the displays into more intelligible units although the emphasis will still remain on undergraduate teaching. The regular visits of school parties also mean that the displays need to cater for beginners as well as advanced students and we hope to achieve this in some measure.

Notes on Collectors and Collections

Charles KETLEY (died circa 1883/4) really deserves an article to himself. He appears in the local street directory for 1883 but the 1884 edition lists the occupant as Mrs. Ketley so I assume that he died in 1883. The Smethwick archives have so far been unhelpful. A consulting mining engineer, he collected assiduously in the Silurian and Coal Measures of the Midlands. Woodward (1904) is mistaken in stating that it was on his death that "his main collection was acquired by Mason College ..." As mentioned earlier, 1750 specimens of Silurian fossils, mainly from Dudley, were purchased from him in 1880 for £250. In 1964 and 1968, his grand-daughters presented the remnants of his collection and a number of papers to the Department. These included the original letter (and envelope) from the Secretary of Mason College Trustees to Charles Ketley enclosing the cheque. Other letters amongst these papers include some from J. W. Salter to Ketley in 1861 about specimens which the Museum of Practical Geology (now I.G.S.) ultimately purchased from him. (It appears that the Survey were anxious to fill in the gaps in their Silurian collections having just acquired the duplicates from the Gray Collection). Other material of his went to Australia in 1862 (G.C.G. 1 (10) p. 49). There are also a series of papers relating to the sinking of the Hamstead Colliery shaft near Birmingham 1879-80 and the specimens included a number of interesting samples from specific mine localities as well as numerous Coal Measure plants which are unfortunately not localised. Several specimens from the original 1880 collection have since been figured in monographs but there has never been a full catalogue of the collection which is still largely mounted on glass tablets dating back to the early days of the museum.

Samuel SHARP (1814-1882). Some details of Sharp are again given by Woodward (1904) who notes that "the rest of the Sharp Collection was acquired by the Mason College, Birmingham, and is now in the museum of the University; in addition to Jurassic fossils, it contains an excellent stratigraphical series, from the Cambrian to Recent." This material, amounting to some 20,000 specimens according to the accession book, was purchased for £200. Although many specimens in the present collection bear labels which include "Sharp Collection" on them, there was apparently no catalogue of the material which is dispersed throughout the museum. It is possible that the 'stratigraphical series' mentioned by Woodward formed the basis for the sequence of stratigraphical specimens which was formerly a unit in the museum, bearing distinctive numbers and for which there is a catalogue. Some of these specimens are clearly Lapworth's but re-labelling has often removed any original details. There are also some packages

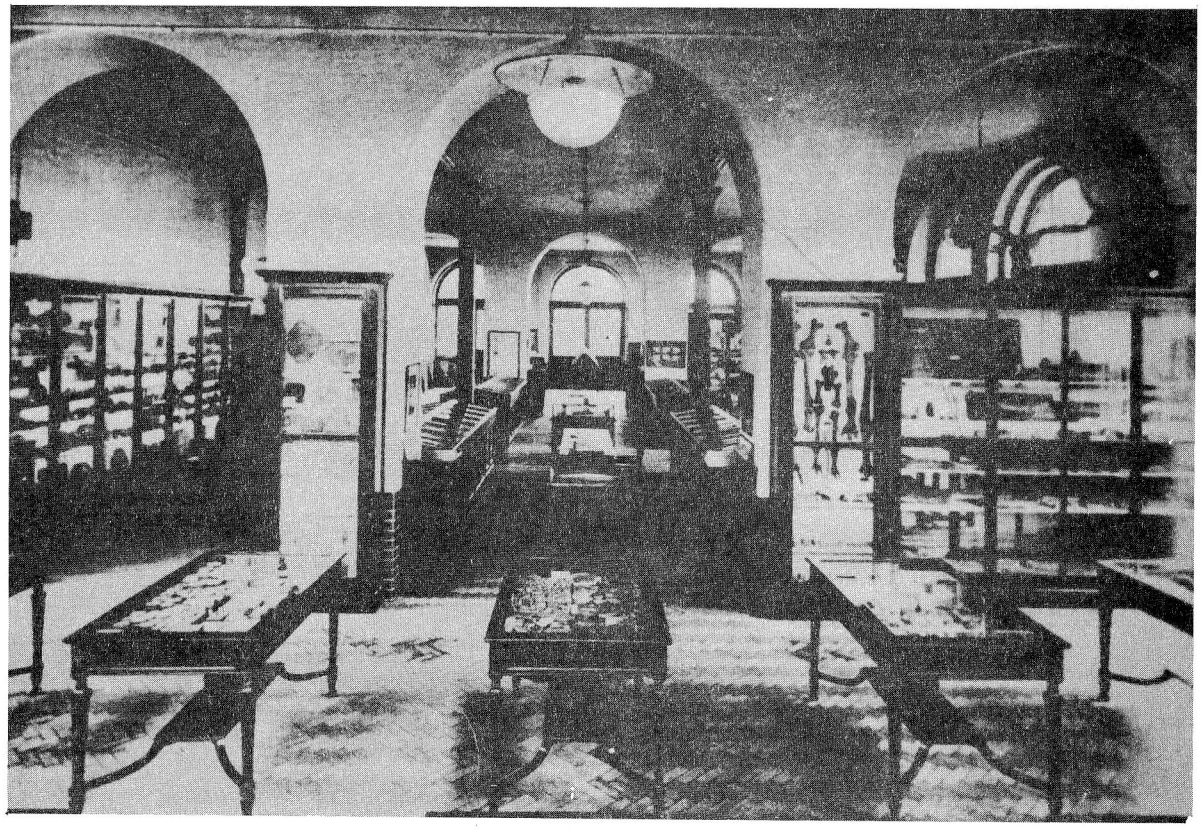


Fig. 1. View of the museum as it was in 1930. The Holcroft case in the middle foreground is full of Coal Measure nodules with plants and the right-hand pillar case has the moa bones from New Zealand.

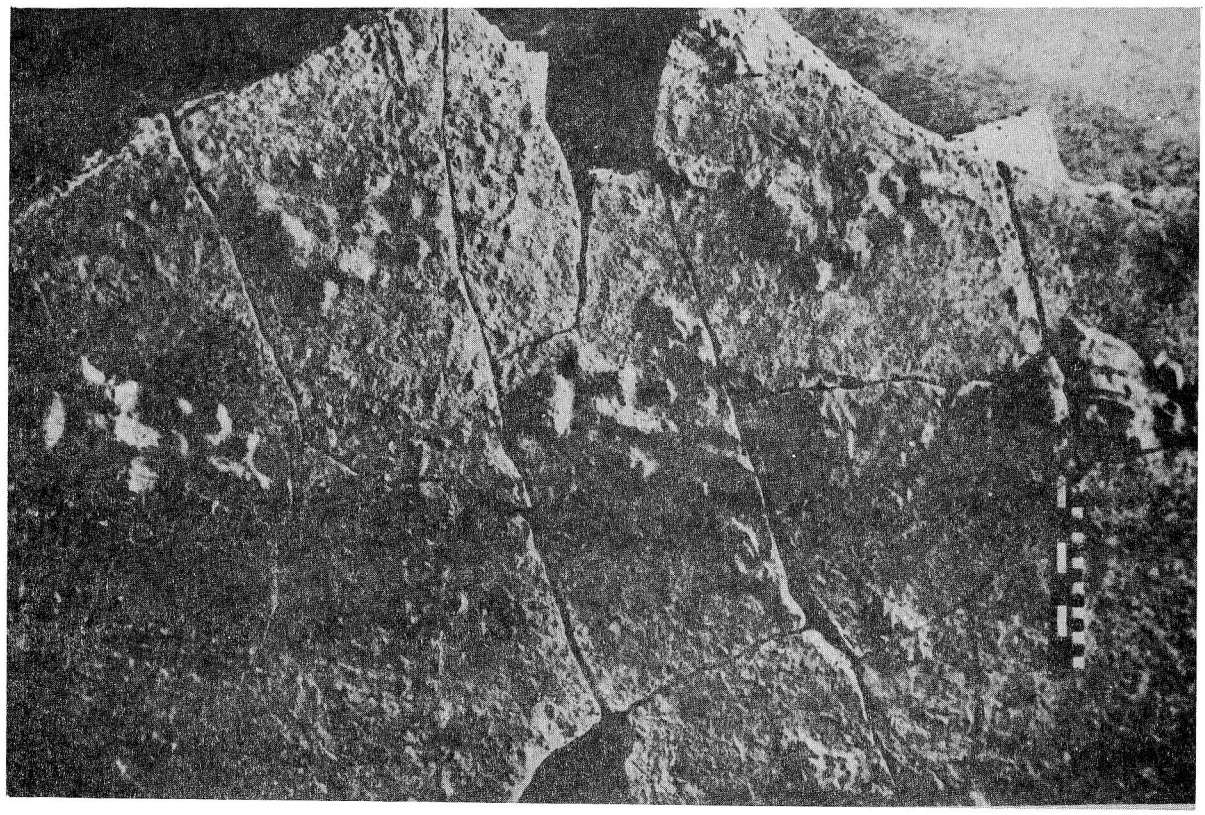
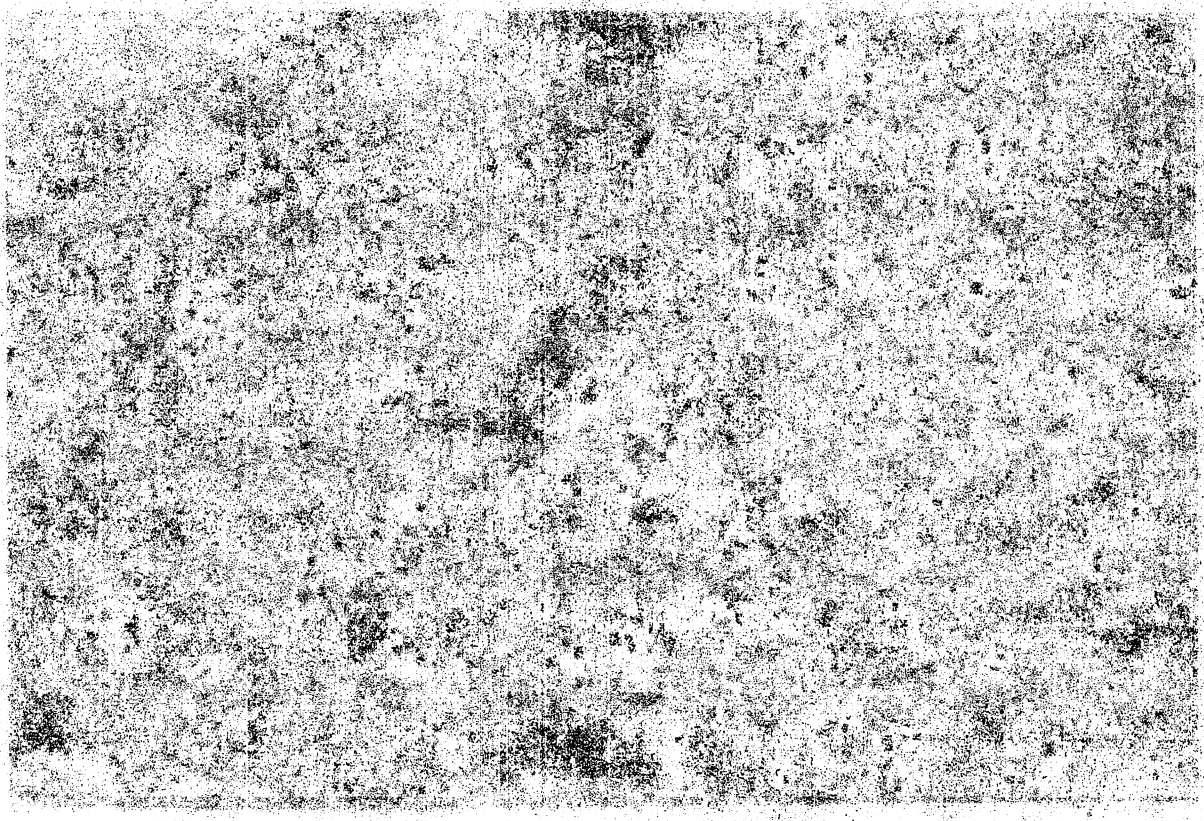


Fig. 2. Footprints of amphibians, Keele Beds, Alveley. 1/6th nat. size. Raw Collection.



of Jurassic fossils which may be Sharp Collection and have only the original writing on the grey paper package as identification. It is also probable that the large collection of Northants Ironstone specimens, again unlabelled, are part of the Sharp Collection, see but also G.C.G. 1 (2), p. 46, 49.

Samuel ALLPORT (1816-1897). Details of Allport's life are available in the obituary (Quart. J. Geol. Soc., vol. 54, p. 1X) but his connection with Mason College was as its first Librarian and curator of the museum. His first collections are in the B.M.(N.H.) but he presented Mason College with numerous specimens from 1881 onwards although as usual the details in the accession book are sketchy - 'minerals and rocks' or 'polished Devonian corals, etc.' The only recognisable material is a large collection of rock chips and thin sections, unfortunately uncatalogued. As the slides are thick by modern standards, it is doubtful how valuable the collection is from a scientific point of view since the slides figured in his publications are probably elsewhere.

Amongst the other very early donations are specimens from the Rev. Harold John UNDERHILL (c.1853-1932) Cambridge graduate, curate of St. Nicholas, Birmingham from 1877 to 1890 who subsequently emigrated to Canada where he eventually became Canon of Christ Church Cathedral, Vancouver in 1929; W. J. HARRISON (1845-1908), who developed an interest in geology when in Leicester as chief Curator of Leicester Corporation Museum and came to Birmingham in 1880 as Chief Science Master to Birmingham School Board; William MATHEWS, (1828-1901) Cambridge graduate and a pioneer of Alpine exploration. He was prominent in municipal affairs in Birmingham. His collection includes Carboniferous fossils from Ireland; Walter CHAMBERLAIN, who presented a suite of extinct birds of New Zealand; and Sir Alfred WILLS (1828-1912) who presented Carboniferous plants from Alps Moed. There are quite a few other names amongst the donors in the period 1880 to 1904 but little detail of the gifts is recorded and very few of the specimens bear labels with a donor's name. Two collections which have been kept more or less intact are the Crosskey and Freer collections.

Rev. H. W. CROSSKEY (1826-1893), born in Sussex, and after some ministerial experience in the Midlands, moved to Glasgow in 1852 where he was associated with local geologists and developed a strong interest in glacial geology. He returned to Birmingham in 1869 and collected a large amount of data on Midland geology. His fossil collections are apparently scattered in various places and the material in Birmingham consists of characteristic pebbles from the Drift of the Midlands which provides critical information on the sources of the boulder clays and other glacial deposits. The specimens are still housed in the original cabinet but there is no catalogue and there have been additions made by successive Professors of Geology, most of whom have had a strong interest in Quaternary studies.

Rev. - FREER. The Freer Collection consists largely of specimens of arthropods and plants from the Coal Measures of Mazon Creek, Illinois and includes some interesting specimens. The accessions book unfortunately simply notes for 1900 "The Rev. - Freer Collection presented by Mr. Charles Dixon" and I have been unable to track down a suitable clergyman who might have had North American connections.

Sir Charles HOLCROFT (1831-1917) was one of the iron and coal masters of South Staffordshire who was keenly interested in fossils and shells. In 1898, Holcroft had presented Mason College with a number of specimens from his extensive collection and these are noted in his catalogue. After his death, his nephew donated the remains of the collection to the University and since then the beautiful Silurian fossils (as well as some good Coal Measure plants in ironstone nodules) have had a prominent place in the displays in the museum. The catalogue lists the prices paid for the various specimens and the dealer from whom Sir Charles acquired them. Some specimens were obtained by exchange with, amongst

others, Charles KETLEY and Frank STRINGER, from whom HOLCROFT acquired a dozen or so Carboniferous crinoids from the U.S.A. in exchange for Silurian species.

Each group of fossils or Recent shells is catalogued separately starting from no. 1 so that there are over 20 numbered sequences and a slab of Wenlock Limestone may bear several numbers, possible from different sequences if, for instance, it bears both a good coral and a good crinoid. It is, however, generally easy to check with the catalogue which specimen is being referred to but it is impossible to store the specimens totally in sequence. Material which has been figured is now transferred to the type collection and given a new number there. Some of the collection was identified by experts such as F. A. Bather (for some of the crinoids) and Mrs. Jane Longstaff (née Donald) (for some gastropods) but many groups have not been critically identified although in recent years the bryozoa, trilobites and brachiopods have provided material for the relevant monographic studies. The collections are now being stored in catalogue sequence so far as possible which will make their study generally easier than when they were half on display and half in store.

Although most of the fossil material is from South Staffs., there are also specimens from the Jurassic and Tertiary of Britain. The catalogue indicates that in addition to presenting specimens to Mason College, Holcroft also gave some to Sydney Museum, West Bromwich museum and some private collectors. Not all of this material has yet been traced. A further part of the Holcroft Collection consists of Recent shells, largely purchased from Sowerby between 1879 and 1909. Some of these are noted in the catalogue as "rare and very fine" but so far as I know this collection has not been examined recently in detail. It numbers over 1600 specimens, mostly gastropods.

Charles LAPWORTH (1842-1920), first Professor of Geology at Mason College. Throughout his 40-year association with the Department, Charles Lapworth presented specimens to the museum and although graptolites form the greater part of his collection, there are also numerous specimens from the Lower Palaeozoic of the Welsh Borders, both rocks and fossils, and other material from Britain and abroad. Virtually none of this is catalogued although I have recently (late 1978) found a catalogue of specimens collected about 1885-1890 from Shelve and Caradoc areas. I have not yet traced all of the specimens but I now know what the code numbers on the specimens mean and can recognise them amongst the general collections. Amongst the historic specimens, there is one of mylonite from the Northern Highlands of Scotland to illustrate Lapworth's original definition of the term in 1885. The Department also has a considerable amount of correspondence to Lapworth (as well as his draft letters in reply) but unfortunately this does not appear to include anything, apart from a few critical notebooks, prior to his arrival in Birmingham in 1881 although there are quite a few of his graptolite specimens collected before then.

Although the accession book was restarted in 1920 and gives more details than the early records, the practice of printing named labels for collections seems to have been dropped. Not all the donations have the donor's name on the label and are thus traceable. One of these collections was that of H. KEEPING which was acquired in 1922 through L. J. Wills. Henry Keeping (1827-1924) had been curator of the Sedgwick Museum for nearly fifty years until he retired in 1911 at the age of 84 and in the privately printed "Reminiscences of my life" he gives a fascinating account of geology in the Victorian age. The collection was of about 200 specimens stratigraphically arranged and is now dispersed throughout the general collections. It is doubtful if it contained anything of great importance.

L. J. WILLS had a strong interest in fossil fish and it is probable that it was again through him that Granville Bantock (1868-1946; Professor of Music in the University 1908-1934) presented the museum in 1926 with a collection of fossil

fish from Brazil as well as fossils from Solenhofen. Further South American fossil fish were added in 1937 from Dr. RATCLIFFE who also donated Scottish Old Red Sandstone fish at various times. As a result, the museum has quite a good collection of fish of various ages since Wills has left his partly worked collections in the care of the Department. He also obtained Norwegian Silurian material in exchange. Some of this material is currently being studied by workers from other universities as it will probably be a long time before Birmingham has a resident vertebrate palaeontologist.

The last 20 years have seen a rapid expansion in Quaternary studies in Birmingham, particularly in the study of fossil insect remains, and the collection of identified and comparative materials is housed in the Quaternary Laboratory which used to be part of the museum. In addition to the microfauna and flora, there are extensive collections of vertebrate remains from the Pleistocene of the Midlands and, since Man appears in the latter part of the period, various stone implements. In 1938, a Mr Henry DEWEY[1] presented a large collection of artefacts from the Thames Valley and other archaeological material has been added at different times. New finds of stone implements in the Midlands are regularly followed up and casts of them made for the museum when the original is to be kept elsewhere.

The interests of the successive Professors find some expression in the museum holdings. Lapworth's contribution has already been mentioned. L. J. Wills' interests in fish have also been noted but he has retained an interest in the Trias since his early (1907) discovery of well-preserved scorpions at Bromsgrove. The bulk of the material from this study is in Cambridge but he made extensive collections from other Midland sites and also had the opportunity of collection in the 1950's and 1960's from boreholes for water in the Trias of Worcestershire. In addition to plants and aquatic animals, the Trias yielded vertebrate tracks, some of which have been described. Somewhat older (?Permian) tracks were collected by Frank RAW in 1917 from a quarry floor near Alveley, Shropshire, and although he prepared a display of some of them for the museum in 1950, he never published any account of them. (see fig. 2)

Amongst the collections made by local geologists which may provide reference material for stratigraphical papers are those by Donald PARKINSON (from Clitheroe, Pendle Hill, etc.) and W. Wickham KING (from the Silurian and Devonian of the West Midlands.). This material is, like most of the museum, as yet uncatalogued but in the current re-organisation of the collections it is hoped that the material can be kept together. There is similar material for H. B. WHITTINGTON's paper (1938) on the Ordovician of the Llansantffraid area but as that publication also includes figured material there is less chance of it being overlooked by later palaeontological workers. Another collection which has been partly figured is that made from 1906-1908 from the Builth area by Miss C. CHAMBERLAIN which provided much of the material for G. L. ELLES's 1940 paper on the Builth inlier. The original lists for this collection survive and the material, apart from the specimens figured by Elles and later by Hughes, is kept together as a unit.

The purely historic materials include a desk belonging to a William MURDOCK, without much doubt the pioneer of gas lighting (1754-1839) (see DNB). The museum acquired it in 1945 and the drawers contained a fairly large collection of rocks and minerals made between 1780 and 1820, for which there is an inventory dated 1826. Many of the minerals are from Cornwall but the rocks included 14 chips from Stonehenge! Unfortunately not all of the specimens in the catalogue can be found since, like the Holcroft Collection, the specimens bear only numbers and each group starts from no. 1, making correct identification sometimes difficult.

The museum has quite a large collection of minerals, some purchased but many donated, and these have been reorganised recently. There are some fine

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1 This is presumably Henry Dewey (c.1877-1965) for obits. see Proc. Geol. Assoc. 77. 163-164. 1966. HST

large specimens from the Shropshire lead mines but the principal collection is the Wm. McLEAN Collection which came to the University in 1915. The specimens seem to have been acquired by purchase from dealers and auctions (if the boxes are original) and the finest ones are listed by drawer in the cabinets. There is some good show material but possibly not of great scientific value. The museum has no details of the collector or dates of purchase of specimens in the collection.

The rock collection includes samples from boreholes in the Midlands, mainly Trias but also the Walsall bore (Butler, 1937) and part of the Batsford (Lower Lemington) bore which has been recently re-examined by the I.G.S. (Williams & Whittaker, 1974). There is a wide range of rocks present in the general collections made by members of staff but there are no catalogues yet although this is one of the objects of our recent re-organisation of collections.

The last major acquisition is that of the J. T. WATTISON collection. A note on him has already appeared (GCG vol. 2, no. 4). Some of his material, particularly Portuguese trilobites, went to London, but the bulk of the collection came to Birmingham, about half of it some years before his death. Unfortunately it coincided with one of our shortages of space and it was not possible to sort out the material properly for cataloguing. When the rest came in 1974, the first lot was barely sorted and although a start was made on cataloguing, the pressure of changing teaching commitments with recent changes of staff as well as the physical reorganisation of the museum space have not allowed completion of the sorting and cataloguing. The material is, however, sufficiently sorted to allow various groups of fossils to be found and studied. It is hoped that a catalogue of the 15,000 to 20,000 specimens can ultimately be made.

As noted in the introduction, type and figured specimens have been segregated since 1935 and most publications which include Birmingham specimens since that date have noted their location, although there have been one or two lapses. Quite a number of earlier papers have also noted specimens from Birmingham but were unable to specify catalogue numbers. The following list includes some of the specimens in the type catalogue which were not noted in the original publications as being in Birmingham, most of which of course have been deposited here long after the publication.

1) Trilobites from Murchison's "Silurian System" and Salter's monograph of British trilobites:-

BU 53. Calymene blumenbachi Brongn. Mathews Collection, ex cabinet of Mrs. Downing. (see p352) Sil. Syst. pl. VII, fig. 6; Salter, pl. VIII, fig. 7.

BU 54. Acaste downingiae Murch. Same source. Sil. Syst. pl. XIV, fig. 3a; Salter, pl. II, fig. 18. (see fig. 4)

BU 55. Encrinurus variolaris (Brongn.) Mathews Collection. Sil. Syst. pl. XIV, fig. 1.

BU 56. Dalmanites caudatus Brunn. Hypostome only. Ketley Collection. Salter, pl. III, fig. 8.

BU 57. D. caudatus Brunn. Mathews Collection. Salter, pl. III, fig. 7.

BU 58. Acaste downingiae var. constrictus Salter. Ketley Collection. Salter, pl. II, fig. 15.

BU 59. Phacops musheni Salter. Ketley Colln. Salter, pl. II, figs. 7-10.

BU 60, 61, 62. Cheirurus bimucronatus Murch. (sic.) Ketley Colln. Salter, pl. VI, figs. 10, 11 and 12. (see Lane 1971 for discussion).

BU 63, 64. Deiphon forbesi Barr. Ketley Colln. Salter, pl. VII, figs. 10, 3.

BU 129. Acaste downingiae Murch. Salter, pl. II, fig. 25.

BU 374. Staurocephalus murchisoni Barr. ex Hollier Colln. Salter, pl. VII, fig. 13.

2) Crinoids from "Silurian System":

BU 72. Taxocrinus tuberculatus Mill. Mathews Collection. Sil. Syst., pl. XVIII, fig. 7.

3) Jurassic fossils from Madagascar, collected by the Rev. J. Richardson of Antanarivo, described by R. B. Newton (1889) who had them from the Rev. Dr. George Deane (1837-1891) of Edgbaston, non-conformist Minister, Professor of Mathematics at Spring Hill College Moseley, near Birmingham from 1869 to 1886, when the college moved to Oxford as Mansfield College; also taught geology at Birmingham and Midland Institute 1870-1874, became F.G.S. in 1867; wrote series of articles on minerals of the Bible. Dr. Deane appears in the accessions book for 1888 but there is no note of what he donated.

BU 161. Stephanoceras herveyi (J. Sow.) Newton, pl. XIV, fig. 1, 2.

BU 162. Sphaera madagascarensis Newton. do. pl. XIV, figs. 6-8.

BU 163. Stomechinus bigranularis Lamarck. do. pl. XIV, figs. 13-15.

4) Coal Measure plants, transfer preparations, described by Lucy Wills (1914) and J. Walton (1925).

BU 328, 329. Neuropteris heterophylla (Brongn.) L. Willis, pl. XXX, fig. 1, and 5.

BU 330, 331, 332. Cyclopteris sp. L. Wills, pl. XXXI, figs. 6, 7 and tfs. 1 and 2 respectively.

BU 333. Alethopteris sp. L. Wills, pl.XXXI, fig. 9.

BU 334. Hepaticites willsi Walton. L. Wills, pl.XXXI, fig. 8; Walton pl. XIII, fig. 8.

BU 335. Hepaticites willsi. Walton, pl. XIII, fig. 10.

5) Turrilepas wrightii Woodward. ex Hollier Collection, per the Misses Titley. Figured Woodward 1865, pl. XIV, fig. 1c. BU 375.

6) Anthrapalaemon dubius Prestwich, figured Salter 1861, p. 532, fig. 6. BU 542. This specimen was rescued by Dr. G. R. Coope from the collections of the Birmingham & Midland Institute. He had been giving evening lectures there for some years before the clearance of the buildings prior to demolition for the Smallbrook Ringway and rescued quite a number of good but poorly labelled specimens when the collection was just being thrown out. Some time later, an American visitor to the museum was searching for Carboniferous crustacea and when this specimen was produced for inspection it was recognised as the one figured by Salter.

7) Leptoplastus salteri (Callaway). ex. Rev. W. K. Wyley (Rev. William Kiteley Wyley (c. 1867-fl.1952), born Admaston Salop, attended Shrewsbury School and Cambridge University - strong Shropshire connections) Collection, figured Raw 1925.

BU 689, 690, 692. Raw, pl. XVI, fig. 1, XVII, fig. 16, XVIII, fig. 22.

8) Tremadocian fossils described by C. Callaway 1877:

BU 691. Leptoplastus salteri Callaway. Pl. XXIV, fig. 5 (fide Raw 1925).

BU 693. Agnostus dux Callaway. Pl. XXIV, fig. 3.

BU 694. Lichapyge cuspidata Callaway. Pl. XXIV, fig. 8.

BU 695a, b. Euloma monile (Salter). ?Pl. XXIV, fig. 4.

BU 409. Macrocystella mariae Callaway. Pl. XXIV, fig. 13.

BU 1920. Lingulella nicholsoni Callaway. ?PL. XXIV, figs. 11, 11a.

BU 1921. Obolella sabrinae Callaway. PL. XXIV, fig. 12.

The other specimens on the plate have not yet been satisfactorily identified from the specimens on the two large tablets.
see also p.352.

9) Eophrynus prestvici (Buckland). Presented by the Misses Titley, figured Woodward 1871, pl. XI, figs. 1 and 2. BU 699. (see fig. 3)

I have discussed the problems and opportunities of university museums elsewhere recently and, in spite of all the difficulties I can see, I remain hopeful that some proper recognition of the value of old collections will come from those in charge of funds so that the vast amount of information hidden away in stores can be released without each individual researcher having to undertake the quarrying again and again. After 30 years here, I know that there is far too much general information stored in the brain, available to personal enquirers of course but not to posterity in general. How best to catalogue the information I am still not sure, since putting it in print entails a very great deal of effort as I know from preparing this short account. I would like to thank Professor L. J. Wills for his comments on the introductory section and Vicki Worthington for preparing the photographs.

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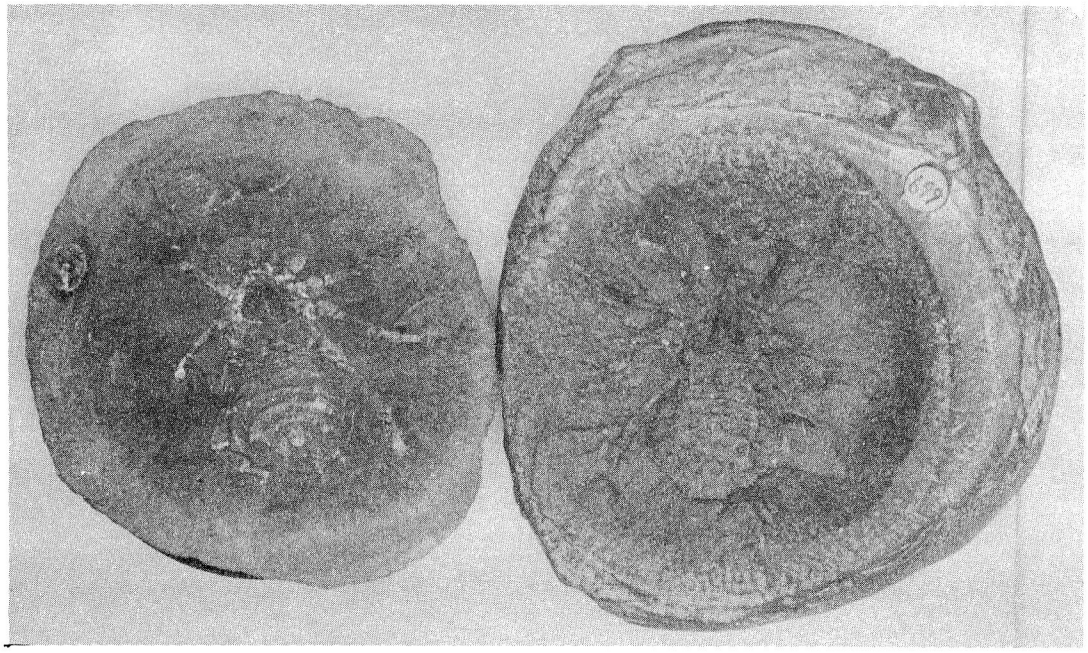

Fig. 3. Ironstone nodule with external moulds of upper and lower surfaces of Eophrynus prestvici. Natural size. Traces of a mineral infilling are visible on the lower surface (left). Black's 'Elements of Palaeontology' has a photograph of a cast of the upper surface.

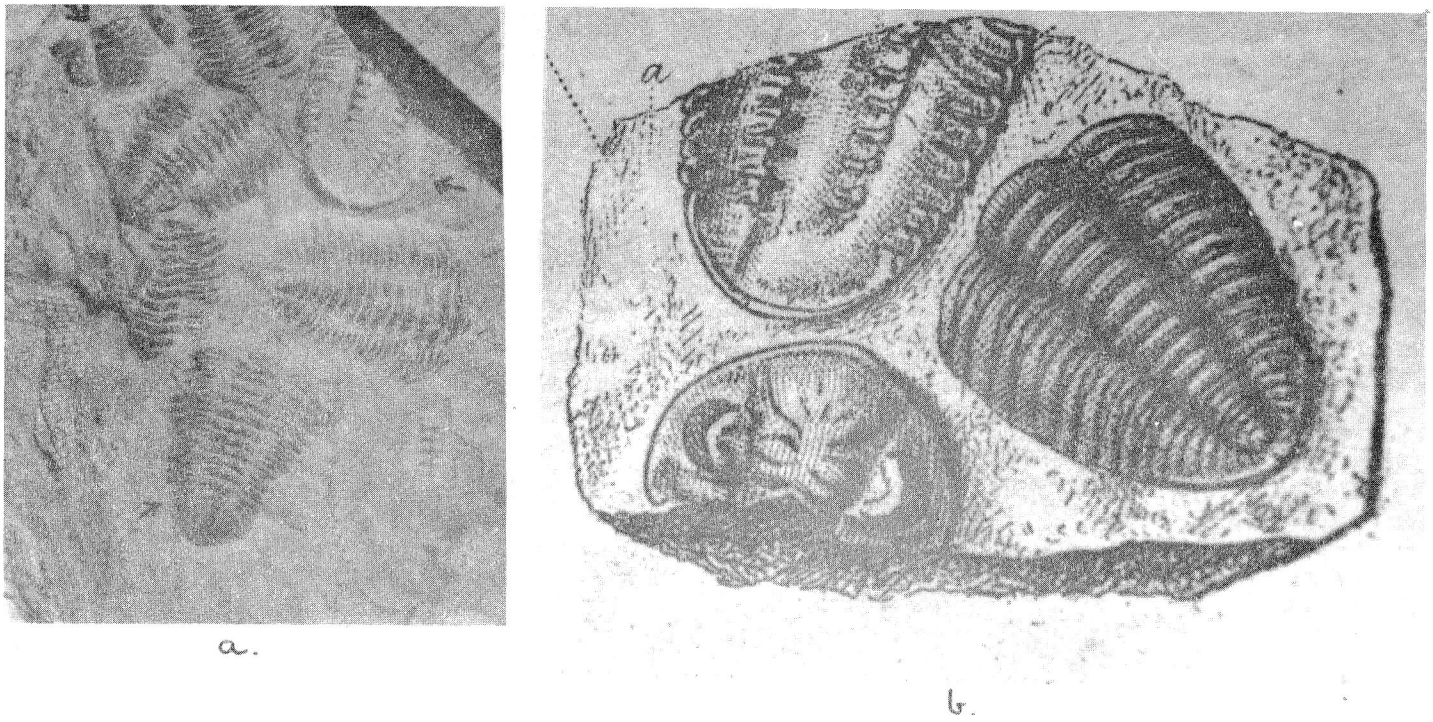

Fig. 4. Acaste downingiae Murch. a. Part of type block showing underside of part of a thorax and pygidium at broken edge of slab. b. Copy of Murchison's plate showing mirror image of this thorax, apparently associated with only one other thorax and a complete cephalon. Salter (1864) recognised that the cephalon had been added but although his own figure shows the various posterior parts reasonably well, it is still not an accurate outline of the slab, an example of the problem of tracing early figured material.

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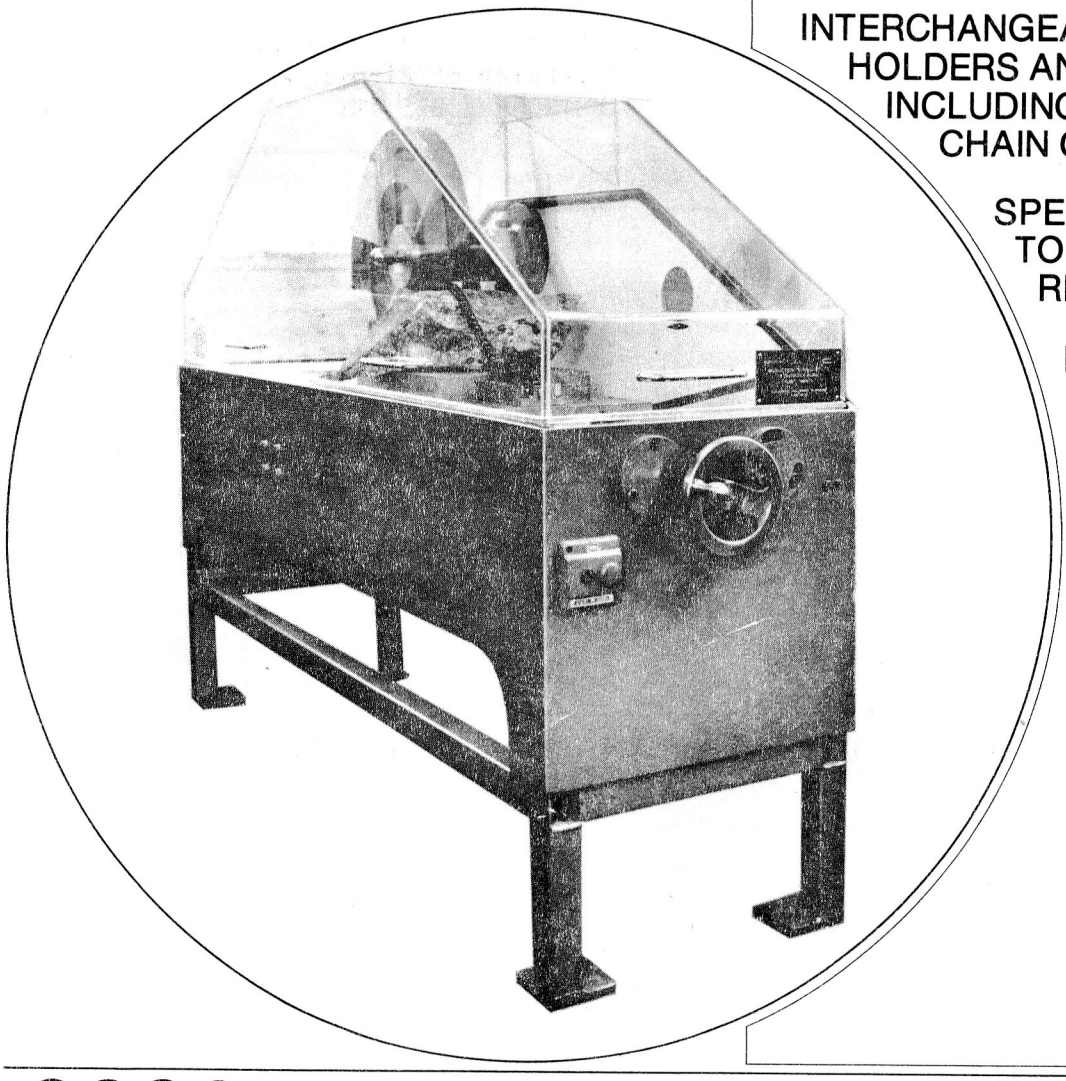

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26 WILLIAM KING 1808 - 1886

i. THE WILLIAM KING AFFAIR

I would like to make a few comments about the William King Collection now housed at Queen's Museum, Galway (G.C.G. 2, 4, p. 173). My colleagues in Galway note that their collection began in 1849 when William King became the first incumbent of the Chair of Geology and Mineralogy, and then state that he had previously been curator at the Museum of Natural History in Newcastle upon Tyne, where he had started work on his monograph on the Permian fossils of Great Britain. And thereby hangs a tale.

William King was appointed curator at what is now the Hancock Museum, in 1840. He was the first salaried curator, receiving the sum of £100 per annum. The museum is the property of the Natural History Society of Newcastle, Durham and Northumberland (now Northumbria), a breakaway group of the Literary and Philosophical Society of Newcastle, formed in 1829, 150 years ago this autumn. At that time the Society Museum was housed at the Lit. and Phil. rooms.

King was a well-known and popular local figure who certainly knew the local Permian, and undoubtedly this was the reason for his appointment, though there was some dissention from within the Committee. The honorary geologists, including William Hutton, were not all satisfied with Mr. King, because he was also a dealer in fossils and minerals. This was to be the bane of their relationship over the next eight years. When appointed he was given a contract which stated that he should not deal in objects of Natural History on his own account.

After giving King several warnings about his continued dealing, Hutton, who was then Secretary of the Society, presented a statement to Committee that King had subsequently sold a few specimens and had in his possession valuable specimens which he had acquired which had not been offered to the Museum.

Report of the Subcommittee of the Natural History Society set up to consider the 'present' management of the Museum and the duties of the paid Curator.

1. Minute of 16th November 1840 "it is expressly stated that Mr. King shall not deal in objects of Natural History, but that he shall be allowed a profit of 25% on all sales of duplicates effected by the Society". That Mr. King has since dealt to a considerable amount for his own profit, and that many specimens of great value have fallen into his hands without their being previously offered to the Society. That this subcommittee consider the fact of a paid curators having a private collection of his own, and especially of his dealing in objects of Natural History to be incompatible with the welfare of the Society, as two opposing interests are thereby created. They therefore recommend that the curator be informed that he cannot be allowed to deal or to collect on his own account so long as he remains an officer of the Society.
2. That as it is in the power of the present committee to allow the Curator leave of absence, in order that he may visit certain localities for the purpose of procuring objects of Natural History, that on all such occasions his expenses shall be defrayed by the Society, and all that he collects shall become the property of the Society.
3. That the paid Curator shall devote at least 7 hours in the day to the Museum and to the affairs of the Society and especially to the speedy completion of the catalogue which has been so long delayed.

Signed

Albany Hancock
W. K. Loftus
Edward Charlton Secretary.

King rejected the report of the Committee and protested that he had only tried to supplement his income to enable him to employ a man to keep the museum warm, and to house his own family. But the Committee were not satisfied. There was evidence that material which King had acquired under the auspices of his job as curator had not in fact been accessioned. They asked King to give up the keys of the Museum. When he refused, they took the drastic step of having the Museum locks changed.

In April 1847, King relented and wrote a 21 page letter dated April 17 in support of himself and his situation during his years as curator. It makes fascinating reading and indicates a complete breakdown of communications between King and his employers. King felt hard done by and reckoned he was never paid enough to cover his expenses. King stated in his letter that when he was appointed in late October 1840 the only stipulation was his salary of £100 a year, and all expenses would be paid except labour for a servant. Mr. William Hutton added that he, as he expected others, would be happy to pay Mr. King "for your assistance at leisure times in my own cabinet".; He outlined what he thought were his hours and duties "from what is usual in other museums", 10 till 4 daily, plus any special duties.

It was November 16th 1840, he says when the committee sent resolutions to discuss the doorkeeper, and restrict his dealing. "I was prepared for it, in as much as a circular to the members ... stated that "a system of exchange of specimens will also be entered upon" para 2 p. 4. But he was not happy with the first resolution because in effect he became curator, doorkeeper and stoker, and he could not afford to pay anyone from his salary. He told the committee he would resign if Murton the doorkeeper was not reinstated; they decided he could hire a boy at 3/- a week to act as doorkeeper and stoker. This still led to complications. The "stout boy", that he procured, left within a very short time and similar boys never stayed for long, and he wasted a lot of time on menial duties. He had no room to work in so he had to acquire a house at £10. per annum, and the Society would not pay for the work which he did at home or the use of a room in his house.

As to dealing Mr. King reckons that in 6½ years he only made a profit of about £18, and as to not offering specimens to the Society, they themselves introduced rigid economy in 1839 and suspended all purchasing. He notes that he always gave <u>spare</u> good specimens from his collecting trips to Redesdale and the Magnesian Limestone, to the museum, even though he lost out on the deal.

In a second letter dated May 12 1847, he declined to accept the condition preventing him collecting on his own account, this is a sad letter in which he finally reminds the committee that he did not offer himself for the job but was solicited to take it, in so doing giving up a business, in the hope of further improving himself.

Newcastle on Tyne May 12th 1847

To The Committee of the Natural History Society of Northumberland, Durham and Newcastle upon Tyne.

Gentlemen,

With reference to the decision you came to at the last Committee meeting, as to my future relation with the Society, I beg most respectfully to decline agreeing to the condition which prevents the collecting on my own account.

I have been led to this resolution, because,
1st. the <u>condition</u> is contrary to the understanding on which I agreed to accept the Curatorship of the Museum.
2nd. such a <u>condition</u> is not in force in other Museums (The understanding is,

that a Curator shall not thwart the Museum, he has charge of, in becoming possessed of any specimens which it is in a condition to purchase or otherwise procure, and that he shall do his utmost to assist in this respect).
3rd. nothing has occurred to induce the enforcing of such a condition in as much as I have not thwarted the Museum in becoming possessed of any specimens but have acted otherwise, to my utmost, further in consideration of the financial difficulties the Society labours under, I have added to the collection, at a pecuniary sacrifice on my part, many local specimens (shells, fossils and local plants), which, as regard value and rarity, cannot be equalled in any other Museum, and which would not have been in the collection had I not possessed the privelege of collecting on my own account.
4th. no additional remuneration is offered for the extra labour that will be required of me to carry out the condition, to the satisfaction of the Society.
5th. the condition unaccompanied by an additional remuneration, will completely prevent me properly discharging my duties, that is, in adding to the Museum, in the way I have hitherto done; inasmuch as I can only procure rare local specimens by the utmost exertion, during extra-official hours.
6th. I am led to believe, that the Society's funds will generally operate, as hitherto, to prevent me acting up to those arrangements, which I have been compelled to adopt, in procuring or collecting rare specimens: this will not only act as an additional preventitive, as regards my adding to the Society's local collection, but it will prevent me obtaining that knowledge of local Natural History which my office requires me to possess and
7th. the condition is an unmerited degradation of my present position, inasmuch as I have not only faithfully discharged my proper duties, but in consequence of the financial difficulties of the Society, I have unhesitatingly performed others, which I did not engage to do, and of so low a nature as no other Curator is required to perform.

Having already made you acquainted with facts bearing out these considerations, in my memorial of last month, I venture to hope, that you will not deem it a liberty my referring you to them, should any doubt prevail on the matter.

To shew that I have been willing to enter into a fair arrangement with the Society, I beg leave to state, that previously to the last Committee meeting, I agreed to a proposition, made to me by Dr. Charlton to the effect that if I were allowed to collect on my own account, I would supply the Society, at cost price, with whatever Museum I procured.

Although I have no idea of another situation, and am pennyless as it were, yet I prefer abiding by the consequences of my refusal, rather than agree to a condition, which I regard as of so harsh and extreme a nature, in my case, that I could not have thought any one would have persisted in enforcing it on me, after I had given the explanations contained in my memorial, and after I had agreed to the proposition just alluded to.

In order, that all arrangements as to dissolving my connexion with the Society, may be fairly and amicably settled, I beg leave to remind you, that I did not offer myself for the situation I hold, that I was solicited to take it, and on accepting it, I relinquished a situation and a business which yielded me an equivalent, in a pecuniary point of view. My reason for accepting the office, as stated to Mr. Hutton, in a written reply to his solicitation, was because it afforded me the means of further improving myself.

I have the honor to be, Gentlemen,

Your very obedient Servant,

Signed Wm. King.

However, his explanation was to no avail. He was asked to leave the premises removing only his personal collection. He was however allowed an extra portion of his salary when he left in July 1847 to help him with his expenses - £141.19sh.6d. He did leave, moving to London where he spent some time preparing his Palaeontographical Society Monograph, and then on to Galway.

I feel sure that King in fact removed nearly all the Permian material he had dealt with in his time as Curator, in addition to what he considered his own. A collection of Permian fossils was purchased by the Museum from Germany, and other items amongst King's collection in Galway bear labels which are not in King's handwriting. In the Hancock Museum we now have only two fishes figured by King in his monograph, which he borrowed and returned through a Mr. Bowerbank[1] of London. King certainly did present local Permian fossils to this museum as there are records of their donation, but these are no longer to be found.

However, this is one affair which is now ended and will no longer be pursued. Galway have now housed and cared for King's collection for 130 years, and therefore have certain rights to it. Recently an agreement was made between the museums that the Hancock may borrow the collection at some future date so that it can seen again in the region where most of it was collected. When our new Geology Gallery is finished this year, we hope to take them up on this kind offer. Then, finally, all past grievances will be forgotten. This is still a salutory lesson for museum curators on the perils of maintaining a private collection of objects of the same kind as that they are employed to curate.

Susan Turner
Hancock Museum,
Newcastle upon Tyne

FOOTNOTE

1 James Scott Bowerbank (1797-1877) first president of the Palaeontographical Society.

ii. WILLIAM KING (?1808-1886) - a biographical note

William King was one time Curator of the Hancock Museum, Newcastle upon Tyne and later became professor of geology, mineralogy and natural history at Queens College (now University College) Galway. Although self taught he became an international authority on Permian palaeontology and his extensive collection of English Permian fossils (mainly from the Sunderland area) formed the basis for the descriptions and figures in the Monograph of the Permian Fossils of England published by the Palaeontographical Society in 1850. For details of his collection, which is now at University College Galway, see Fewtrell and Ryan (1979) and Pattison (1977). The biographies of King in the Dictionary of National Biography (1892) and in his obituary (Nature, 1886, p. 200) are woefully brief and include no information about his early life. It was therefore of considerable interest to discover a detailed but apparently overlooked and forgotten biography by William Brockie (1811-1890; a Sunderland antiquarian) in the Library Circular - a local periodical published by Sunderland Public Library. Additional information was discovered amongst other archival material in Sunderland Museum and Library and this combined with the "official" biographies has been incorporated in the following biographical sketch of King.

According to Brockie (1901) William King was born about the year 1808 in Low Row - a street in Bishopwearmouth, Sunderland. Brockie goes on to give a detailed account of King's early life in Sunderland from which it would seem that the statement in the National Dictionary of Biography (1892 Vol 31, p. 170) that King was born at West Hartlepool is in error. So far I have been unable to find any information linking King with West Hartlepool but the evidence is not totally conclusive as there is no baptismal record for King in either of the registers of Bishopwearmouth or Sunderland Parish Churches.

William's father moved from his native Scotland to Sunderland to take up employment as a "coal caster" on the River Wear (loading and trimming coals on the Colliers). His mother kept a confectioners shop in Sunderland and had been widowed before her marriage to William's father. She was determined that her son should receive a good education and he attended a Mr. Finlay's School in Moor Street. Whilst still at school he started to collect geological specimens, shells and other curiosities in his wanderings around the neighbourhood of Sunderland and these probably formed the nucleus of his geological collection. After leaving school he became apprenticed to a firm of Sunderland ironmongers; Messrs. Swan and Fowles owned by John Swan (father of Joseph Wilson Swan inventor of the electric light). In the Summer of 1826 a strong desire to travel abroad resulted in him walking to Hull with a companion in the vain hope of obtaining a passage to America. In the event, desperately short of money, no ship would take them and they were forced to return on foot to Sunderland.

In 1833 he opened a booksellers and stationers shop at 205 High Street West and this soon became a meeting place for many of the literary and scientific worthies of Sunderland. During these years he was endeavouring to further his scientific education and to this end was given considerable help and encouragement by Sir William Jackson Hooker (Curator of the Royal Botanic Gardens at Kew). At about this time he was appointed secretary and librarian to the Sunderland Literary and Philosophical Society and visitors to the library (then housed in the Athenaeum Building) could often see him perched half way up the step ladder deeply engrossed in one of the books.

On 17th November 1836 the Sunderland Natural History and Antiquarian Society was formed which at once set to work collecting objects for a Museum. King (? in addition to his other duties with the Literary and Philosophical Society) was appointed to be the first Curator, (Bowley, 1896 p. 10). This collection was later to form the nucleus of the Sunderland Corporation Museum in 1846. During a brief holiday in 1838 William went on a geological excursion to the Yorkshire Coast returning with a rich collection of Jurassic fossils. In August of the same year he was a prizewinner at an exhibition organised by the Sunderland and Durham County Polytechnic Society. Significantly his exhibit was entitled "A collection of fossils from the Magnesian Limestone of the County of Durham". It was possibly during the 1830s that he married Jane Nicholson, daughter of William Nicholson a farrier with a shop in Coronation Street, Sunderland.

By now King's abilities were attracting considerable attention in scientific circles and in recognition of this the members of the Literary and Philosophical Society subscribed a sum of money to enable him to undertake a geological study tour of Germany. This was to have an important bearing on his Permian studies as it enabled him to compare the English Permian rocks and fossil assemblages with their continental counterparts.

In November 1840 King was appointed to be Curator of the Hancock Museum Newcastle at an annual salary of £100, (Goddard, 1929 p. 51). However, in 1847 he quarrelled with the Museum Committee by refusing "to abide by certain conditions laid down by the Committee" and his Curatorship was terminated on November 10th 1847, (Goddard 1929 p. 61). He was also involved in a quarrel with Richard Howse.* Both were working independently on catalogues of the local Permian fossils and on August 17 1848 Howse's catalogue was published first but closely followed (on August 19) by that of King. Naturally there was considerable overlap between the two catalogues but King describing many "new" species in his Monograph (1850) ignored Howse's 2 day priority and defended his action in the supplement to the Monograph (1856 p. 260 footnote) by stating "It is well known in Newcastle that this (his own) catalogue although published in 1848 was ready for publication in July 1847". Nevertheless when the supplement to Howse's catalogue was published in 1857 he bitterly attacked King for claiming priority over some of his species.

When King departed from Newcastle he took his beloved collection of Permian fossils with him clearly regarding them as his personal property. After living for a time at Glasgow where he studied at the University he was invited in 1849 to become the first incumbent of the chair of Geology and Mineralogy in the newly founded Queens College Galway. He began the College Museum which became the final resting place for his collection. In 1870 the Queens University of Ireland conferred on him its first honorary degree of D.Sc. and in 1882 the duties of professor of Natural History were assigned to King. An attack of paralysis compelled him to retire in 1883 whereupon he became Professor Emeritus. He died at Glenoir, Taylors Hill Galway on 24 June 1886 and was buried in the Galway New Cemetery.

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* Howse succeeded King as one of the honorary Curators of the Hancock Museum.

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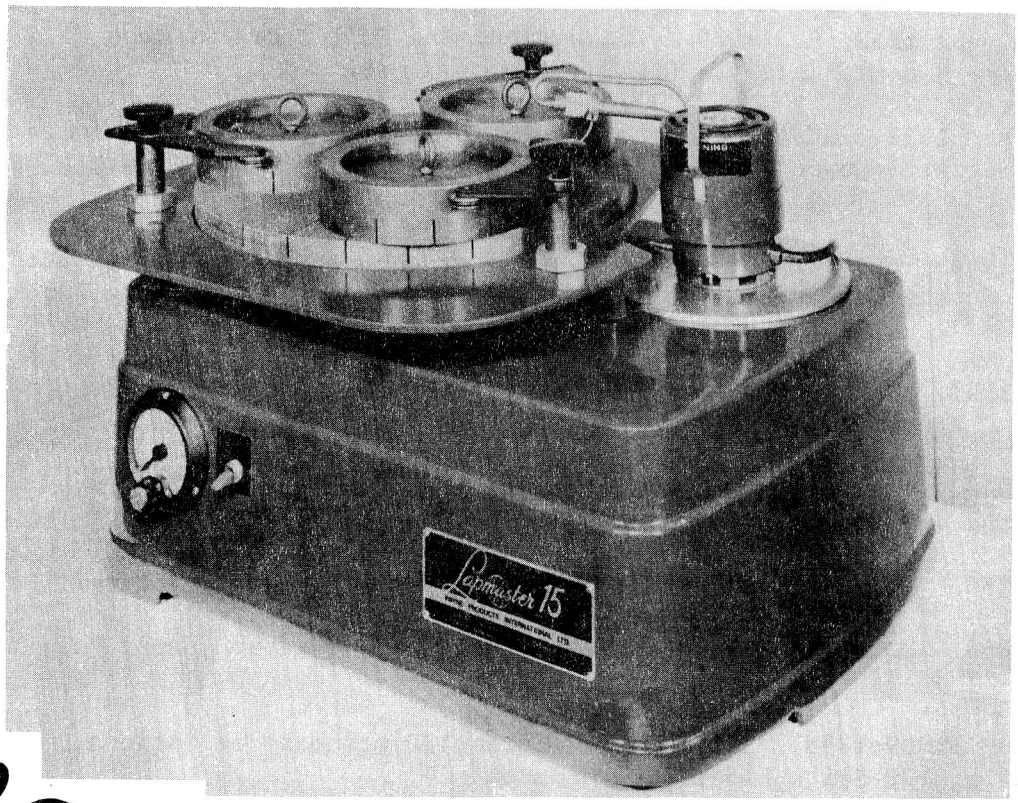
Editor: Also highly relevant is the existence of:-

King (W.). — List of the Published Scientific Writings of William King [privately printed]. In-8°, 7 p. Galway, 1879.
71 art. (Ordre chronologique, 1842-1878).



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27 SMART LETHIEULLIER 1701 - 1760

Biographical and scientific literature has remained almost wholly silent about the 18th century fossil-collector SMART LETHIEULLIER (1701-1760).

A Huguenot family that fled from France at the time of the persecution to settle in England and Holland, the Lethieulliers quickly established themselves as merchants and financiers, becoming, in the 18th century, wealthy, influential, and cultured members of British society. Several members of the family developed antiquarian tastes, donating among other items early archaeological material to the British Museum during the first years of its existence. SMART LETHIEULLIER was one of these benefactors.

Although SMART LETHIEULLIER's name has occasionally been mentioned in association with other contemporary collectors and scholars, only one biographical note devoted entirely to him seems ever to have been published[1]. This was written in 1760 by his friend and contemporary, the Quaker botanist Peter Collinson (1693-1768). Both men were Fellows of the Royal Society.

In a desire to improve the civil and natural history of Britain, and over a period of many years, Lethieullier travelled to all parts of the kingdom, making drawings and taking measurements of everything remarkable that he saw. He rescued numerous antiquities from oblivion, possessed many marbles (especially from Italy) of which he made numerous drawings, maintained a cabinet of medals, and had a notable library of elegant books and manuscripts[2]. But above all Lethieullier was an indefatigable collector of British fossils, which he amassed with a view to investigating their origins. These, which collectively excelled most other contemporary fossil collections, filled two large cabinets, and were, according to Collinson, "... disposed under their proper classes. The most rare are elegantly drawn and described in a folio book, with his observations on them"[3].

These collections were kept in Lethieullier's home at Aldersbrook, near Ilford, Essex. The fossil collection is, of course, of the most immediate interest to us here.

After Lethieullier's death on July 27th, 1760[4], little seems to have been heard of his fossils until 1812 - although a writer in 1768 signing himself simply as J.P.[5] figured a shark's tooth from Malta reportedly acquired from Lethieullier in 1755[6] - when John Nichols published MS notes on 18th century collectors of fossils made over twenty years earlier by Emanuel Da Costa (1717-1791)[7]. Da Costa's notes included an account of Lethieullier's fossils, which Da Costa had evidently seen for himself. The same year (1812), James Sowerby noted that, by that date, the Lethieullier fossils had passed into the Hulse family, who resided near Salisbury[8]. As far as can be traced, this is the last published reference to Lethieullier's palaeontological material.

Recent enquiries by the present writer have confirmed the existence of Lethieullier's MS on fossils in the Hulse family library, but that the actual collection of fossils now appears to be lost. As indicated below, the MS is a mine of interest, and of very considerable scientific importance.

* * * * * * * *

The MS is composed of 528 pages of notes frequently embellished with half or full page illustrations of all kinds of fossils as both monochrome and multi-coloured drawings. Much trouble was obviously spent in duplicating the colours of the actual specimens in many of the paintings. These illustrations do much

to reveal the diversity and richness of the original collection, which contained a wide range of ammonites, echinoderms, brachiopods, lamellibranchs, and other mollusca, as well as trilobites, crabs, lobsters, fish remains, ichthyosaur vertebrae, megalosaur bones, and various other animal and plant fossils.

Assessed as a whole, the MS is seen to be considerably more than a mere catalogue. Indeed, it is more of a draft for some larger or more ambitious work on fossils, for it features a section concerning the different opinions about fossils expressed by earlier British and European students of those bodies. On several occasions, Lethieullier refers to specific pages in the works of others, as well as to the existence of other 18th century fossil collections long since lost or vanished into oblivion. Such references indicate not only his familiarity with much of the then extant literature on the subject, but that he was making serious attempts to determine the real origins of his fossils on as broad a basis as possible. On the evidence of the notes and illustrations constituting this MS, Lethieullier was certainly very much more than just a "collector", as has until now been commonly supposed.

From some points of view the survival of this MS is more important than that of the associated collection of fossils, for many of the entries provide details of who found what, where, and when. Much of this information, which includes references to several hitherto unknown 18th century fossil-collectors, would almost certainly have been excluded from specimen labels. Moreover, as labels on fossils are notoriously susceptible to destruction or deterioration of one kind or another, any that might have been originally attached to individual fossils could by now have become detached or damaged thereby rendering the collection - assuming it still survives somewhere - of vastly diminished importance.

Lethieullier's text also names several celebrated 18th century collectors and naturalists, whom he apparently knew or corresponded with. These included Hans Sloane (1660-1753), Alexander Catcott (1725-1779), Emanuel Da Costa (1717-1791), Joshua Platt (1696-1776), Peter Collinson (1693-1768), Gustav Brander (1720-1787), and Peter Shaw[9]. Such references help to establish the web of communication that existed among the 18th century British naturalists and antiquarians, and, as such, are of particular interest.

* * * * * * * *

In order that Lethieullier's interesting MS is more freely accessible to palaeontologists and historians of science, photographed copies of its text and illustrations have lately been made at the British Museum (Natural History), with the kind permission of the present owner. It is planned that one of the copies will be lodged in the Bodleian Library, Oxford. Meanwhile, the present writer is preparing a more detailed account of the Lethieullier material for publication elsewhere.

References and Notes:

1. Gentleman's magazine, vol. xxx, 1760, p. 443 [but see Dictionary of Nat. Biog.]
2. Ibid.
3. Ibid.
4. Loc. cit., p. 394.
5. Possibly the initials of the Oxford dealer in fossils, Joshua Platt.
6. Gentleman's Magazine, vol. xxxviii, 1768, woodcut on p. 610.
7. Loc. cit., vol. lxxxii, pt. i, 1812, p. 513.
8. James Sowerby. "Mineral Conchology", vol. i, 1812 (London), p. 115.
9. Dr. Peter Shaw: a staunch Jacobite who accompanied King James II into exile at the so-called Glorious Revolution.

J. B. Delair
Wootton, nr. Oxford
September, 1979

DETECTION AT THE SEDGWICK:

An Illustration of the Importance of Data Retention.

Taxonomy is dependent on the application of a set of rules (I.C.Z.N. 1964). Great problems arise either when the original material, on which the taxonomic entities were based, is lost or buried in some museum unrecognised, or when this original material has been misinterpreted.

The case of the definition of the ammonite genus Defossiceras S. S. Buckman erected in 1913 with the type species Ammonites defossus Bean-Simpson is an instructive one as showing the vital need to conserve all available documentation relating to geological material. The now outdated Museums Association booklet of 1941 "Geology in the Museum" (North et al., 1941) discussed the problem of specimen documentation thus

> "If the specimen has the handwritten labels of former owners these should not be thrown away indiscriminately, as often they supply the only definite history of the fossil. The more important of them should be preserved and, when the specimen is exhibited, this can be done by lightly attaching them to the under side of the tablet."

but gave no guidance as to how one should discriminate the more important from the less important. In our article by Phil. Palmer (1977) he was rightly more emphatic (p. 448)
"all data referring to an object should be conserved from loss or decay". In other words if the object itself is worth preserving, all its data is worth preserving too. The story of Ammonites defossus will show why.

Buckman in 1913 had based this species on a single specimen he claimed was the holotype which he recognised and figured (pl. 86) from Whitby Museum (W.M. 103). His use of the word holotype implied that the original description of the species by Simpson in 1843 was based on one specimen only, but it was not. It is clear from this original description that Simpson was publishing a species which had been named previously in manuscript by William Bean (1787-1866), for whom see McMillan and Greenwood 1972, and that Simpson based it on a number of syntypes in his own collection and in Bean's collection none of which could be claimed as the holotype.

Buckman's error was demonstrated in 1973 by Donovan and Forsey who claimed the species was based on at least 3 surviving specimens which could all be regarded as syntypes - i.e. specimens regarded by the original author as belonging to the new species and before him when he described it.

Donovan and Forsey discussed these three syntypes and concluded that the Whitby Museum specimen did not agree with Simpson's written description and should therefore not be chosen as the lectotype. The choice for this had thus to be from one of the other two recognised syntypes preserved in the Sedgwick Museum Cambridge, where they were now mounted together on one block.

Donovan and Forsey (1973, p. 14) considered that of these two remaining syntypes the specimen shown on the right (B.11946) in fig. 1 was closest to Simpson's original description and came from the correct horizon and should thus be selected as Lectotype - in other words as the single original specimen on which the species and ultimately the genus Defossiceras (which had previously been misinterpreted from the "so-called" holotype) is now to be based.

Getty wishing to get this change validated by the International Commission of Zoological Nomenclature applied for this to be officially ratified (Getty, 1974). Colin Forbes, curator of the Sedgwick Museum, by some clever detective

work and relying on happy accident and the splendid policy of the Sedgwick Museum in retaining all old labels was however able to show that the application was based on a misconception since the proposed lectotype could not be shown to have been a syntype.

That part of Dr. Forbes' comment on the I.C.Z.N. application relating to curatorial matters is reprinted here with his kind permission and the permission of Dr. Theo Getty and the International Trust for Zoological Nomenclature. It was first published in the Bulletin for Zoological Nomenclature vol. 32 part 2 June 1975, pages 80-81

COMMENT ON "AMM. DEFOSSUS SIMPSON, 1843 (AMMONOIDEA, JURASSIC), AN APPLICATION TO DESIGNATE AS LECTOTYPE A SPECIMEN OTHER THAN THAT WRONGLY IDENTIFIED AS THE HOLOTYPE". Z.N.(S.) 2039
(see volume 30 : 185-189)

By C. L. Forbes (Sedgwick Museum, Cambridge, England)

As the curator directly responsible for the proposed lectotype B.11946 and one syntype B.11945 in the Sedgwick Museum, it seems necessary to me to recommend that the application be modified. My reasons are:

(1) The proposed lectotype cannot be shown to be a syntype. Specimens B.11945-6 are described in the Application (p. 185, paragraph 2, line 4) as "on the same block" and a similar phrase was used by Donovan and Forsey (1973, p. 14, line 6 of the left-hand column). This block is a paper-c covered wooden tablet to which the specimens were formerly glued, as proved by lumps of glue on the specimens matching scars on the paper. (see fig. 1) This pattern of tablet is a standard article in the Sedgwick Museum and must therefore post-date the purchase of the Leckenby Collection in 1871. It thus constitutes no evidence of association of the two specimens in 1843, the date of Simpson's description. For the earlier history of the specimens we must rely on Leckenby's notes and label:

(a) Leckenby's label, stuck to the tablet "Ammonites defossus Simpson. Marlstone. R[obin] H[oods] Bay" evidently refers to both specimens, otherwise there would have been two labels, (all old labels being preserved by the Sedgwick Museum, as a standard practice). (see fig. 2)

(b) Note on a piece of paper stuck to the tablet "Specimen marked X was Bean's type. Mr. B. first named and distinguished this species - the other specimen must be the same." (see fig. 1)

(c) Note on B.11945 "X Bean's type". (see fig. 1)

(d) Note facing p. 48 of Leckenby's copy of Simpson (1855) now in Sedgwick library identified by Leckenby's signature "John Leckenby Scarbro'" on the fly-leaf. "46 Am. defossus. Beans MSS - I have Bean's type specimen. (sic) which neither agrees with this description nor with the example in the Whitby Museum." (see fig. 3)

The signature noted in (d) (see fig. 4) serves to identify the handwritings as Leckenby's. He was a close associate of Bean (Duncan, 1878) and his work based on Scarborough was contemporaneous with that of Simpson in the neighbouring town of Whitby (Sheppard, 1918) so that his notes are authoritative and imply that there were (only) two syntypes - B.11945 and "the example in the Whitby Museum" - for Amm. defossus Simpson ex Bean ms. The phrase "the other must be the same" in note (c) whilst evidently referring to the proposed lectotype B.11946, need imply no more than Leckenby's opinion that it was conspecific with "Bean's type" B.11945, not that it was in Bean's or Simpson's hands at the times of the original ms. and published descriptions.

Alternatively, Leckenby's notes imply that B.11945 is holotype by monotypy of Amm. defossus Simpson ex Bean ms., wrongly confused by Simpson with "the example in the Whitby Museum" but I prefer to follow

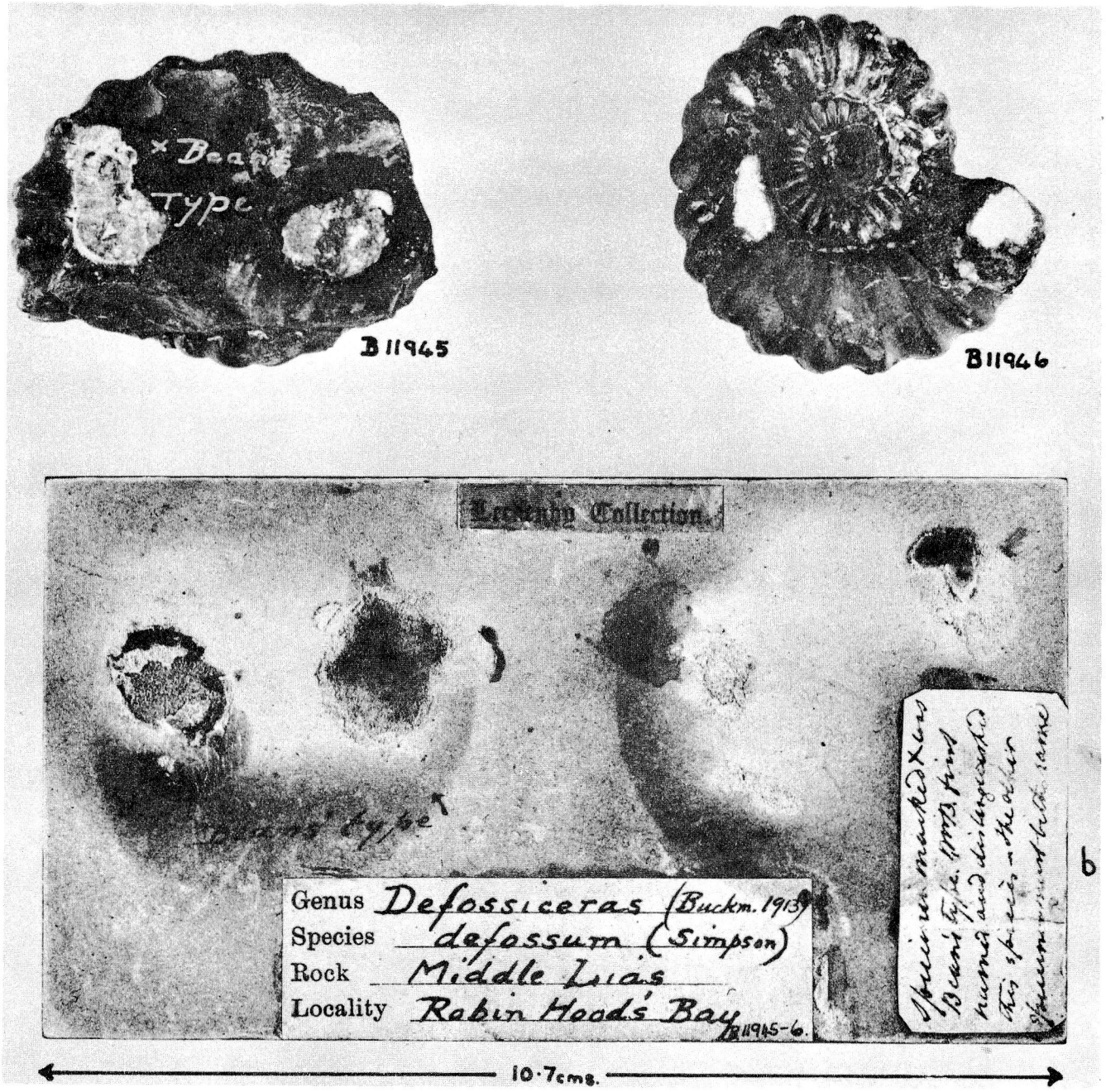

Fig. 1 The front of the wooden tablet and the two specimens B.11945 (left) and B.11946 (right). On the tablet may be seen Leckenby's note ((b) of Forbes' Comment); the current Museum label; a Sedgwick Museum accession label in Gothic writing for the Leckenby purchase; the words "Bean's type" written by the curator or his assistant when the specimens were first stuck down on the tablet concealing the "X Bean's type" on the back of B.11945; and the dirt and glue scars where the specimens have been detached.

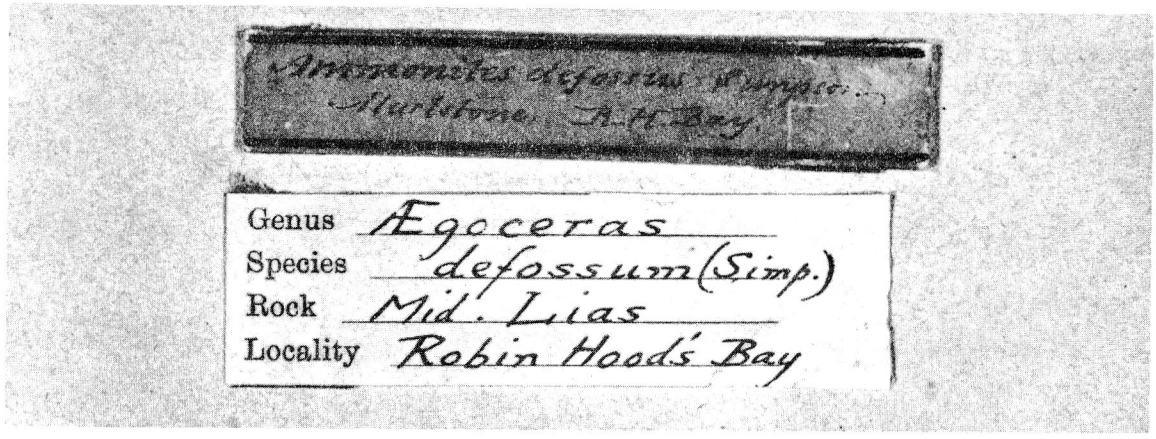

Fig. 2 The back of the wooden tablet with Leckenby's label and an old Museum label.

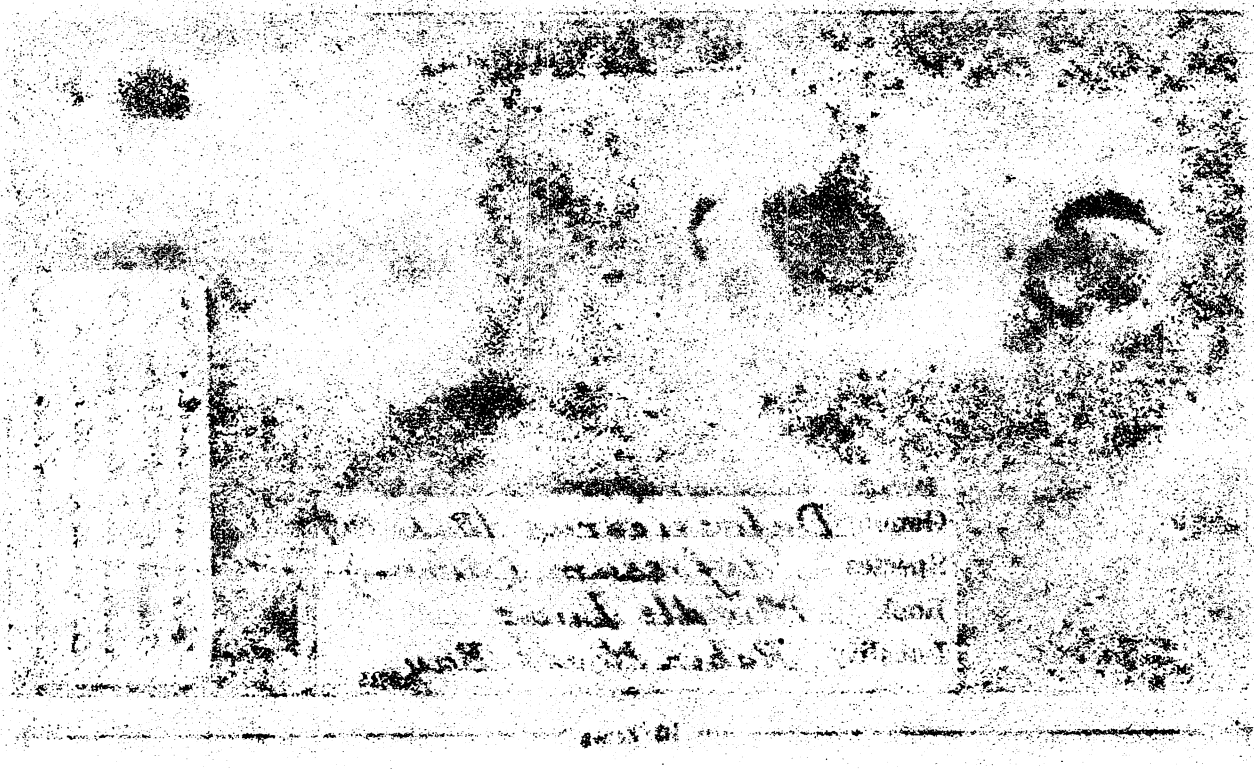

Fig. 1 The front of the wooden tablet and the two specimens B.11954 (Left) and B.12045 (right). (In the tablet may be seen holes made by worms.)

(Museum); the current Museum Journal; a Sedgwick Museum accession label in Dorset; wrapping for the lecturer's purposes; the words "Horn's type" written by the curator or his assistant when the specimens were first stuck down on the tablet; the "X Bean's type" on the back of B.11954; and the dirt and glue stains which the specimens have been mounted.

form two angles on the side of the whorl; it then undulates across the back, where the radii seem as if rubbed up with the finger in a plastic state.

46. A. DEFOSSUS. *Bean's MSS. Simp.*—Volutions 5 or 6, exposed; radii prominent, sharp, straight, suddenly bend towards the aperture in passing over the back, where they are much flatted; intervening spaces flattish; striated; aperture quadrate; diameter $1\frac{3}{4}$ inch.

This has long been confounded with the next, which it much resembles. As it occurs so frequently in this form, there can be little doubt that it is a distinct species. It may readily be distinguished from the last by the flatted back, which in some places is even concave. The whorls are less numerous than in A. arcigerens. M. L.

47. A. MACULATUS, *Y. & B.*—Volutions 6, exposed; radii prominent, annular, obtuse, separated by wide concave furrows, rather flatted on the back; striated; aperture circular; diameter $3\frac{1}{2}$ inch

This shell is obtained from the beds which unite the marlstone series with the lower lias shale, and is often spotted with whitish, a character which it receives from the rock in which it is imbedded.

In some specimens I have observed the outer whorl to be greatly enlarged, but I still consider them as the same species.

There is, in the ironstone bands, an ammonite greatly resembling this, but with sharper ribs and deeper concave spaces; for the present, I suppose, we must reckon it a variety.

48. A JAMESONI. *Sow.*—Volutions 5 or 6, much exposed; outer whorl $\frac{1}{3}$ the diameter; radii annular, rather sharp, slightly flatted on the back, where they turn towards the aperture, not equal to the

16 Amm. defossus. Beans M.S.S. — B.11945
I have Bean's type specimen. which neither agrees with the description nor with the example in the Lobley museum.

Figure 3

Donovan and Forsey (1973, p. 13 last line and p. 14 first line) in regarding WM 103 as a syntype, being presumably "the example in the Whitby Museum".

(2) [Here we omit morphological details of the specimens]

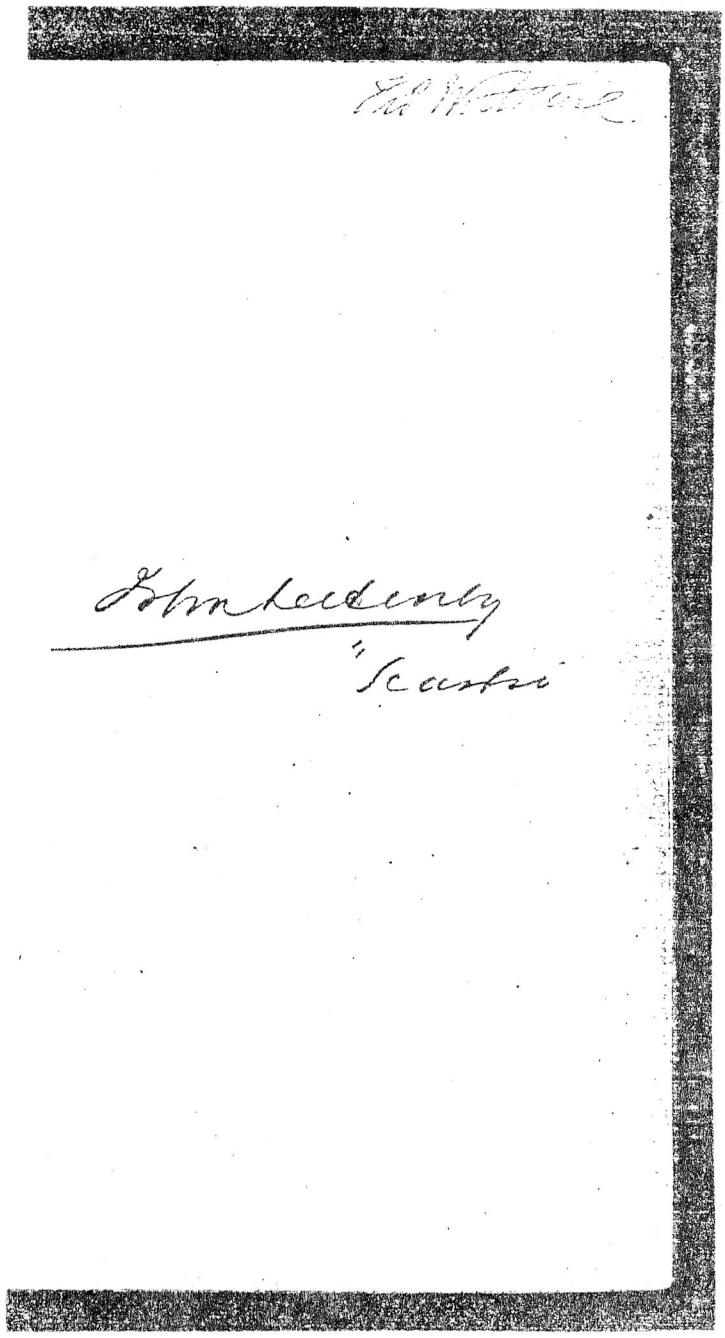

Fig. 4 The flyleaf of Leckenby's copy of Simpson's work, showing John Leckenby's signature. At the top of the page may be seen Thomas Wiltshire's signature, indicating that this volume did not go to the Sedgwick Museum with the Leckenby collection but with Wiltshire's, which included W's library or at least some of it.

This book passed from Leckenby to the Rev. Thomas Wiltshire (1826-1902) long time secretary of the Palaeontographical Society 1863-1899 and a graduate of Cambridge University. It was a happy chance that it reached Cambridge over 1895-1897 with the Wiltshire collection to join the Leckenby collection there previously purchased in 1871.

When the Commission voted on the application in December 1976 they were almost unanimous and Sedgwick specimen B.11945 was formally designated as lectotype (Opinion 1088)

42 *Bulletin of Zoological Nomenclature* 34 (1977-78).

OPINION 1088

DESIGNATION UNDER THE PLENARY POWERS OF A LECTOTYPE FOR *AMMONITES DEFOSSUS* SIMPSON, 1843 (CEPHALOPODA)

RULING.- (1) Under the plenary powers, all designations of type-specimen for the nominal species *Ammonites defossus* Simpson, 1843, are set aside and the specimen numbered B.11945 in the Sedgwick Museum, Cambridge, England, is hereby designated as lectotype of that species.

(2) The specific name *defossus* Simpson, 1843, as published in the binomen *Ammonites defossus*, is hereby placed on the Official List of Specific Names in Zoology with the Name Number 2612.

The application of the rules of Zoological Nomenclature to the solution of the type specimen of Ammonites defossus relied on Bean's syntype surviving through Leckenby's hands into the Sedgwick collection but it equally depended on the documentation surviving with it, namely the writing on the Lectotype and a series of specimen labels all carefully preserved as part of the Sedgwick's standard practice. However in the final analysis the demonstration that B.11946 was not a syntype and therefore not eligible for a lectotype selection, relied on the survival on John Leckenby's personal copy of Simpson's 1855 book. (see fig. 4).

This moral tale has been compiled by H. S. Torrens from the published contributions of Colin Forbes, Theo Getty and the International Commission on Zoological Nomenclature all of which are acknowledged with thanks. In addition Colin Forbes kindly provided all the illustrations.

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A NEW GALLERY AT THE HANCOCK MUSEUM

On July 2nd a new gallery 'Geology - Yesterday's World' was opened by Michael Rodd of B.B.C.'s 'Tomorrow's World.' Following the initial plan made in July 1975 by myself and a former Hancock Museum designer Mr. Ken Dunn, the structural alterations began in January 1976. It was intended to replace the previous Victorian and Edwardian wall and desk cases which were crammed with specimens and little else, with a new approach to the geological story of our region.

The gallery has been financed with an initial grant of £9,000 from the University Development Trust Fund, and grants from the Manpower Services Commission and Area Museums Service, and the support of Community Industry, in all a sum of some £40,000. Most of this was used in the employment of a team of Job Creation joiners (6), design assistants (8) and graduates (2). The latter, John Mennear (Leicester University) and Val Moorhouse, (Hull University) helped particularly with the arrangement of mineral collections and displays.

The basic theme is the Geology of Northumbria, a look at the history of our region from its very beginnings to the present day (the last few thousand years). The visitor is first confronted with a 6' globe showing the earth with the continental masses as they may have appeared 300 million years ago, a crucial time for Northumbria when the Coal was laid down. This is set in a representation of the solar system and the first section deals with the origins, age and workings of our planet. Moving up steps of local sandstone onto a mezzanine deck, the story of local rocks begins and continues in time sequence from the oldest Silurian up to the events of the last 200 million years. Leaving the mezzanine this continues with a look at the effects of the Ice Ages and more recent events. The displays tell the story with the aid of models, a script on 3 levels, i.e. 1. Big Titles for all to read, 2. Subsidiary titles and simple explanations in the present tense which hopefully all will read to grasp the basics of the story, and 3. More detailed text and specimen captions for the patient and/or interested/dedicated few; specimens, photographs and illustrations.

From the start we hoped to aim the level of the gallery at 14-15 year olds, and students of all ages, covering material used in 'O' and 'A' level and even First Year University courses. Essentially it should give the visitor a potted history of the region. It compliments the upper gallery which was aimed as an introduction to geology for the beginner based on the alphabet, which was completed 15 years ago (Tynan and McLauclin 1964).

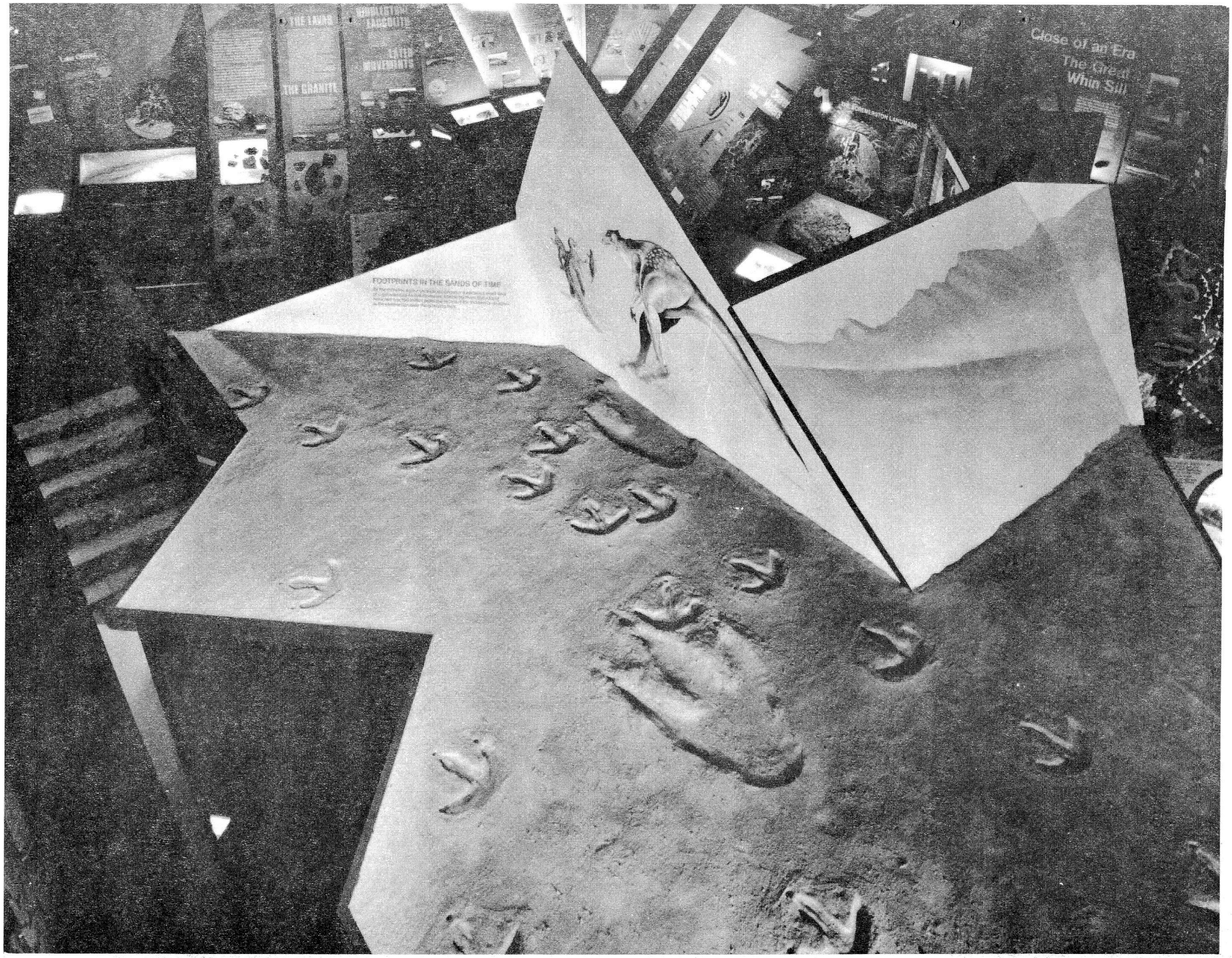
Walking across from the mezzanine there are 2 large Sigillaria trunks on octagonal wooden bases, the last remnants of the old Hancock Museum displays. In this area is the Summary Time Chart based on the 24 hour clock, and a geological map.

The other half of the gallery is devoted to the Mineral and Fossil Kingdoms. There is an introductory area for each, followed by topic cases which we hope to change frequently.

There are 2 Audio-Visual units in the gallery - one at the introduction, which presents an idea of the evolution of our universe and solar system up to the time when plants first evolved, and one with a seating area where we can show different programmes, currently a summary of the ideas of the gallery.

Specimens in most sections of the gallery are on open display. This was

The Introductory area to the Story of Northumbria



Footprints in the sands of time. The story of a dinosaur chase

The Story of Northumbria: Featuring the Ice Ages case

a definite policy based on previous visits from the local blind school but also to add the tactile sensation of rock.

Although unfortunately we have no dinosaurs in Northumberland, we have used the upper mezzanine roof to make a dinosaur trackway, which can be seen from the upper gallery level, based on known footprints from Yorkshire and Australia. However we have made a model of our largest amphibian fossil Eogyrinus, "Atthey's Dawn Wriggler", sitting near the Newsham Lake.

Reference

Tynan, A. M. and LcLauclin, N. P. 1964 - Popular Geology, a New Approach to an Old Problem. Curator VII, 1. 39-50.

List of Exhibits

The earth and solar system
The Age of the earth and Evidence from Space
Volcanoes
Down to Earth
Earthquakes
The Crustal Cycle
The Big Mix Up

Britain's Structure
The British Scene (Precambrian to Silurian)
Hutton's Unconformities
Lake Cheviot

The Cheviot Volcano
Cementstone Shore
Mighty Rivers
The Scremerston Landmass
Carboniferous Seas
The Land Fights Back
Coal Measure Swamps
Close of an Era
Permian Deserts
The Lapse of Time
The Ice Ages
The Cave
Recent Times
Geological Map and Time Chart

Mineral Kingdom

Introduction to Mineralogy
Rocks, Sedimentary, Metamorphic and Igneous
Rock Forming Minerals
Fluorescence
Mineral Treasures
Topics: Minerals through the Microscope
Local Minerals
Oil
Zeolites
Radioactive Minerals
Diamonds
Elements
The Tsar of Russia's Collection
Mineral of the Month

Fossil Kingdom

Introduction to palaeontology
Evolution through time

Topics:
- The Tree of Life
- Drops in the Ocean
- What's the Use of Fossils?
- Trilobites
- Writing Stones
- Ecology in the Past
- Old Stick in the Muds
- Chalk Seas
- Perfect Preservation
- The Reef Builders
- Spiny Skins
- Putting Flesh on the Bones

Living Fossils

Myths and Monsters
Geology as a Hobby
Footsteps in the Sands of Time - dinosaur footprints

Susan Turner - Geologist

A. M. Tynan - Curator

Hancock Museum
NE2 4PX

COLLECTIONS AND INFORMATION LOST AND FOUND

COLLECTIONS AND INFORMATION SOUGHT

77. GRAY John fl. 1839-fl. 1869. (see Found column)

78. H———————— H.L. dates uncertain. (see Found column)

The following letter sent to the curator at Dudley Museum explains the connection between the above two names and shows what the antique shop can still offer!

37, Bealing Close,
Southampton, SO2 3AX.

31st July, 1979.

Dear Sir or Madam,

I have in my possession, an old Geological collection which, being an amateur geologist, I purchased fron an antique dealer. The collection comprises some rocks and minerals, but mainly of fossils from the Dudley area.

Unfortunately there was no catalogue and although a few of the specimens are labelled (some with names which do not appear in "British Palaeozoic Fossils" published by the Brit. Museum (Nat. Hist.)), the vast majority are not labelled and am wondering whether there are any local books or leaflets that I can purchase which may be of some assistance to me.

The collection is especially interesting as it includes a marvellous crinoid with a beautifully inscribed note which reads as follows:- "This specimen was exhibited at the first meeting of the British Association at Dudley and was at that time the finest specimen of its kind that was known -

Cyathocrinus of Miller
Taxocrinus of Phillips
Clathocrinus of Austin from collection of John Gray, Esq. of Hagley."

There are also several other fine crinoids, some corals, sponges, trilobites, bryozoa, brachiopods and plant fossils from the coal measures and a specimen of stromatopora. Several specimens were obtained from railway cuttings when they were made, e.g. "Some portions of a tooth of a fossil elephant, and molar teeth which were dug out of the Railway Cutting at Cobham, nr. Gravesend - January 1860", and some "perfect phacops muskene of Salter - Malvern Tunnel".

The dates (rare) are from 1860 to 1888 and this Mr. John Gray of Hagley is mentioned several times. He appears to have been a well known local collector. The actual owner of my collection of whom I would be very interested to know the name, had from what I can decipher, the initials "H.L.H."

Yours faithfully,

Joyce W. Wedge (signed)

COLLECTIONS AND INFORMATION FOUND

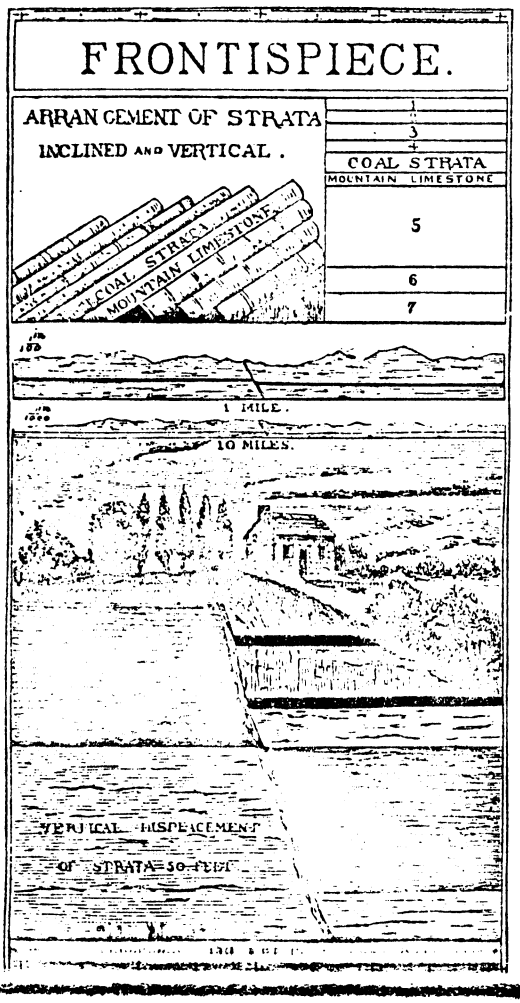
14. CALLAWAY Charles (1838-1915)

It is worth noting in these columns the existence of some important material from this collection at Birmingham University (see p. 318). It will be worth seeking here the type and figured brachiopods from his collections figured by Davidson and sought by Robin Cocks (GCG 1 (6) 299).

55. Eagle-eyed readers of our article (pp. 309-321) by Isles Strachan on the Birmingham University Geological Museum may also have noticed the name of Mrs. Francis DOWNING from whose collection we sought type material in GCG 2 (3) p. 125-6. Isles records that type and figured trilobites now at Birmingham BU 53 and 54, including Acaste downingiae named after the family, came from her collection. They passed into the collection of William Mathews (1828-1901) whence they passed to Birmingham. It will be interesting to learn whether any of the Silurian crinoids we seek figured by Murchison, are to be found at Birmingham.

60. SOPWITH Thomas (1803-1879)

Peder Aspen of the Cockburn Museum, Department of Geology, Edinburgh University, EH9 3JW records that the library has a copy of a late pamphlet (see illustration) describing Sopwith's models. He also reports the existence there of a series of actual models, nos. II, III, IV, VII, VIII, IX which were apparently from a Sopwith set.



DESCRIPTION

OF A

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GEOLOGICAL MODELS

ILLUSTRATING

THE NATURE OF STRATIFICATION;
VALLEYS OF DENUDATION;
THE EFFECTS PRODUCED BY FAULTS OR DISLOCATIONS;
INTERSECTION OF MINERAL VEINS, ETC.

With Notes

ON THE CONSTRUCTION OF LARGE GEOLOGICAL MODELS.

By T. SOPWITH, M.A., F.R.S., F.G.S.,

MEMBER OF THE GEOLOGICAL SOCIETY OF FRANCE,
(FORMERLY COMMISSIONER FOR THE CROWN UNDER THE DEAN FOREST MINING ACT.)

LONDON:
R. J. MITCHELL & SONS, 52, PARLIAMENT STREET, S.W.
JAMES TENNANT, 149, STRAND, W.C.

1875.

66. HARRISON James (1819-1864)

A little of the mystery of the collections of his formerly at Lyme Regis Museum and some of which was sought by John Fowles in our last issue has been cleared up by Paul Ensom of Dorchester Museum.

He discovered the (overleaf) three entries in the accession registers at Dorchester Museum.

Although the casts of fossils from the Lias Acc. no. 1938. 43. 1-8 are still at Dorchester and were not sent to London there is strong evidence here that through Dr. W.D. Lang and with the permission of the then Lyme Regis Museum Committee the Harrison collection was in part dispersed in 1938-1943 but before the publication of Lang's article cited in our last issue (which may well have been delayed in appearance by the war). It will be of interest to discover more of the dispersal and, knowing what is still at Dorchester, to discover what finally went to London either direct from Lyme Regis or, as in 1942, via Dorchester.

77. GRAY John

We can do no better for information on the Gray collection than to reproduce the following from the 1904 publication on the History of the Collections in the British Museum, Geology in vol. 1 p. 293.

Geology. 293

Gray (JOHN)

As an iron-master, John Gray of Hagley, near Stourbridge, owned quarries in the Wenlock Limestone at Dudley, whence the stone was extracted for use as a flux. His workmen saved the fossils for him and he purchased others from elsewhere, and thus thrice amassed a splendid collection. His first was one of those to which Murchison acknowledges his indebtedness in the "Silurian System." In 1861, it contained 2730 specimens, and of these the Museum purchased 2366. The rest, it is said in the documents referring to the transaction, were destined for the Museum of Practical Geology; but just a year later he sold to the Museum a series of trilobites from the Wenlock Shale of Malvern. The first series comprised: 103 trilobites, including many figured by Salter (*Mem. Geol. Surv.* and Palæontogr. Soc.), the type of *Lichas grayi* and other *Lichas* figured by Fletcher; 241 echinoderms, including types of *Lepidaster grayi*, *Pseudocrinus magnificus*, and presumably *Pisocrinus pilula*, also specimens of *Pseudocrinus bifasciatus* and *Apiocystis pentremoides* figured by Forbes; 199 corals, including the type of *Heliolites grayi*; 1823 shells of molluscs and brachiopods, including specimens of *Leptaena* and *Siphonotreta* figured by Davidson; and the types of *Chiton grayanus* and *C. wrightianus*, the latter subsequently referred to *Turrilepas*. A selection from Gray's second collection was bought in two instalments in 1869, and amounted to 775 Wenlock fossils from Dudley, all classes of invertebrates being represented. On Gray's death his whole collection was taken over by the dealer, F. H. Butler, and from him in 1889 the Trustees purchased 337 selected specimens of invertebrates from the Wenlock beds of Dudley and of plants from the Coal Measures. A few other interesting specimens that came to light later on were also purchased. The remainder were dispersed by Mr. Butler in the course of business, and some of these also have ultimately found their way to the Museum, in the Madeley and other collections. Specimens from the Gray collection are readily recognised from being fixed with chalk and gum on a thin wooden tablet covered with a smooth purplish-brown paper, and provided with a label written on white paper.

78. H ———— H.L.

The only collector with these initials who comes to mind is Prof. Herbert Leader HAWKINS (1887-1968) formerly of Reading University. His dates do not fit those given by Joyce Wedge which may however refer to John Gray above. Any further suggestions will be of interest.

1938. 43. Casts of fossils from the Lias; from originals in the Lyme Regis Museum.

1 Pterodactyl. Part of jaw & teeth. (Dimorphodon macronyx Buckland)
Base from a very young specimen of Scelidosaurus Harrisonii, Owen described & figured. Palaeontographical Soc. Monograph. Owen – Fossil Reptilia of the Liassic Formations, Part 2, 1861, p. 5 and Pl. [illegible] Lower Lias. Charmouth

2. Femur (from Pl. [illegible] figs. 5 & 6)

3 Tibia fig 7

4 Portion of Fibia figs 8 & 9

5 Metatarsal bone fig. [illegible]

6 Centrum of dorsal vertebra figs 1, 2, 3 & 4

7 Tarsal bone fig 15.

8 Proximal phalanx figs. 12, [illegible] 14.

British Museum (Natural History)
per Dr. W. E. Swinton, at the request of Dr. La
& Lyme Regis Museum.
Discarded 1.X.58 L.R. COX.
X Sent to Brit. (N.H.) (15,306) Kept by
1. in L. Lias case.
2-8 in Bird Gallery Store room.

1942. 15. 1-5 Five fossils from the collection of [illegible] Harrison of Charmouth
1) Pleurotomaria reticulata, Sowerby, 2) Trigonia [illegible], Lycett, 3) T. clavellata
4) [illegible], Ref. to Buckm., 5) Lebachia, Kinnaird Sandstone Beds.

presented by Trustees of Lyme Museum Discarded 1.X.58 · L.R. COX
Sent to Brit. (N.H.) [15,306]

1943. 18. 2-10. 9 geological specimens from Eggardon Hill and Burton Bradstock presented by the Trustees of the Lyme Museum. (per Dr. Lang)
2) Anellana cassis, 3) Discoidea subuculus, 4) Rhynchonella
5) Ammonites mantelli, 6) Solarium, 7) Quenstedtia oblita
8) Thracia lata, 9) Pleuromya, & 10) Natica, sp.
2-6 Eggardon Hill, 7-10 Burton Bradstock

79. CAPEWELL L.P. of Dudley

Although not a collection previously sought in these pages we did mention in a previous issue GCG 2 no. 3 p. 127 evidence that the Capewell collection had gone to Dudley Museum.

The following 5 brachiopod specimens are for example recorded by Chandler and Hannah 1949, p. 8 as at Dudley and all figured by Davidson.

No.	Name	Davidson Ref.
710	Philhedra grayii	pl. 8 Figs. 23, 24
680	Dinobol us davidsoni	pl. 4 Figs. 36, 37
684	Dinobol us davidsoni	pl. 5 Fig. 4

all these were in Capewell's collection. Capewell was an active member of the Dudley and Midland Geological and Scientific Society and Field Club and in 1863 lived at Abberley House, Dudley (Trans. Dudley ..... Soc. Vol 1, no. 2 p. 61). He provided other material which was figured by Davidson and presumably others which it is hoped Graham Hickman may be able to locate at Dudley.

The Capewell collection was sold to Dudley in 1866 as recorded in the Transactions Vol. 2, no. 8, p. 3 December 1867 reproduced below.

> Mr. Capewell having offered the Committee his valuable collection of Silurian and Carboniferous Fossils, and specimens of Iron Ore, &c., they agreed to purchase the same for the sum of £55. They hoped to have been able to pay this sum out of the year's income; but the heavy arrears still due on the past year's subscriptions have prevented them from accomplishing this. They trust, however, that as a large sum of money will shortly come into the hands of the Society, the balance due to Mr. Capewell will be paid at an early date. Towards this sum, the Museum Trustees have paid £7.

All correspondence relating to these columns should be addressed to Dr. Hugh Torrens, Keele University, Staffs., ST5 5BG.

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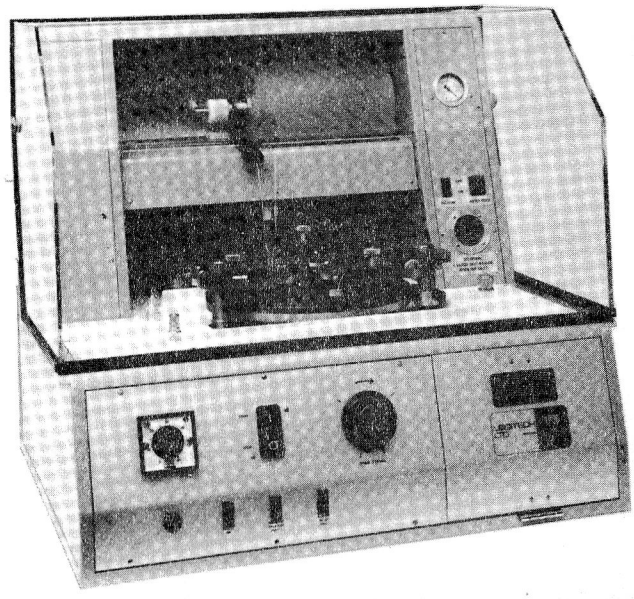

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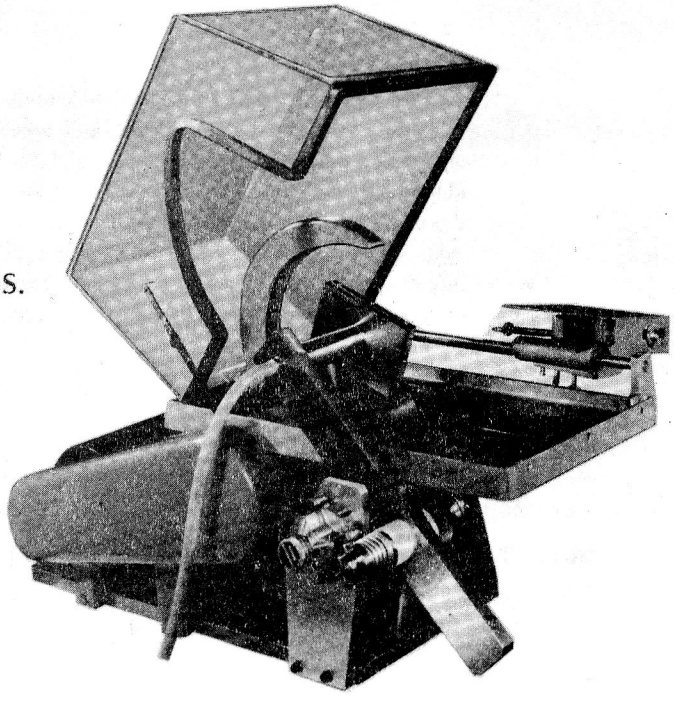

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DONATIONS TO THE SHROPSHIRE AND NORTH WALES NATURAL HISTORY SOCIETY 1835 - 1884

The Shropshire and North Wales Natural History Society was established on 26 June 1835. The first donation consisting of several fine specimens of fossil plants was made by Thomas Du Gard on the day it was established. In November 1835 the inaugural address was delivered by Samuel Butler the "Venerable Archdeacon" who was then Headmaster of Shrewsbury School. A donations book was kept, with varying standards of accuracy, of the many donations which flowed in over the years. In 1876 a Shropshire Archaeological Society was organised and in the following year the first society amalgamated with the latter which still flourishes to this day as the Shropshire Archaeological and Natural History Soc.

Thanks to the kindness of Mr. E. J. Priestley the Curator of Shrewsbury Museum, gratefully acknowledged here, we have been allowed to work through the donations book of the Shropshire & North Wales Natural History Society over 1835 to 1884 to extract the majority of Geological Donations as in the list following. It concludes with a note stating

"The Museum on College Hill [Shrewsbury] was closed in the beginning of November [1884] for the purpose of packing the contents and removing the same to the Old Grammar School Buildings, henceforth to form a Free Public Museum, the property of the Corporation of Shrewsbury [which was opened to the public in April 1885 under the terms of the Free Libraries Act]."

We should add that there is no guarantee that what was donated does still survive at Shrewsbury. This needs a separate study.

1855 Sept. 27	Acton, Mrs. S. Acton Scott	1 Specimen of Caradoc Sandstone
1840 Jan. 28	Albrizzi, Madame Salop	1 Turbinated ramosus millepora from Wenlock. 2 Cystiphyllum cylindricum from ditto. 3 Caryophyllia Turbinata from Wenlock.
1840 Sept. 19	Albrizzi, Countess	1 Fossils Madrepores.
1839 Nov. 1	Albrizzi, Count Shrewsbury	Pectunculi, Turbinellae etc. from the Crag Formation, Walton, Essex. Sulphuret of Iron concreted & crystallized round carbonized Wood. Nautilus Radiatus from the London Clay, Primrose Hill.
1841 Jan. 28	"	1 Leptaena or Orthis dilatata 1 Cypricardia obovata Sowerby 1 Cypricardia impressa Murchison 1 Cypricardia retusa Murchison the above from the Iron Shale, Madeley, Shropshire. 1 Productus Martini Prestw. 1 Leptaena punctata Murchison from the Ironstone, Ketley. 1 Trigonocarpum ovatum 1 Fossil Fruit

1841 Jan. 28	Albrizzi, Count Shrewsbury	1 Conularia oblonga 1 Conularia quadrisulcata from the Pinny ironstone, Madeley
1841 Feb. 26	"	Red Asbestos from Lookwood, North America
1841 Aug. 16	"	Numerous Fossils from the Oolite & Lias in Gloucestershire
1842 March 21	Albrizzi, Count 14 Salisbury Place, New Road, London	Chalk Fossils from the Kent and Sussex Cliffs. viz:- 1 Palatal bone of Ptychodus 2 Scales of Fish 2 Fragments of the hinge of Inoceramus gigas 8 Galerites 1 Spatangus coranguinus 5 Spatangus 1 Section of Cidaris 1 Spines of Cidaris sceptifera 4 Spines of Cidaris 1 Echinus granulosus 1 Echinus variolaris 1 Section of Echinus variolaris 1 Ventriculum 2 Ostrea 2 Terebratula 2 Anachytes 2 Pecten 1 Plagiostoma communis
1835 Oct. 17	Allsop, Mrs. per W. W. How Esq.	6 Fossil Plants
1841 Jan. 28	Anstice, William Esq. Madeley [Wood, Salop]	2 Scales of the Megalicthys discovered in the coal shale, Madeley, Shropshire.
1842 Nov. 12	"	Fossils from the Pinney Ironstone viz: Numerous remains of Megalicthys Portions of Conularia & other small fossils Orbicula reflexa 14 Conularia quadrisulcata [Plus 34 pencilled entries many incomplete & queried.]
1842 Nov. 16	"	Concretions & section of crystallized argillaceous limestone from the "Wenlock Shale" at Rough Park, Madeley, Shropshire.
1837 Feb	Babington, C. C. Cambridge	Fossils from the Chalk, Gault, Green Sand, Gravel and Sand.
1836 July 27	Baly, W. J. S. Leamington	1 Fossil Shell from Lightborne, Warwick [Plagiostoma]
1837 Oct. 6	Bantor, Miss Blanch	Numerous specimens from "the remains of the forest immediately opposite to the Leasowes Light House between Hoylake & New Brighton, Cheshire. Several bones & antlers have at different times been

		discovered which seem to verify an old adage current in that neighbourhood "A Squirrel might leap from tree to tree from Birkenhaven to Kilbree" Kilbree is now an Island about 6 miles from the Leasowes."
1883 January	Barrett Esq., T. B. Welshpool	1 Cast of Pterodactylus longirostris. 1 Cast of Hind leg of a Pterodactyle 1 Cast of Homalonotus Delphinocephalus. 1 Cast of Eophrynus Prestwichi
1883 June 2	"	1 Large cast of fossil Reptile.
1836 May 20	Bather Esq., J. Dinthill	6 Specimens of Coral & Fossils.
1838 Oct. 16	"	7 Fossils from the Upper Oolite at Minchinhampton, "the limpets rare".
1837 Aug. 30	Beck, Mrs. St. Johns Hill	Extensive Collection of Fossils & Minerals made by the late Mr. S. Beck.
1842 Nov. 1	Bickersteth, Rev. Edw Shrewsbury	Favosites Gothlandica from Aymestry Limestone.
1843 Oct. 3	"	1 Cephalaspis from the Old Red Sandstone, Chettin, nr. Bridgnorth. 1 Dolomitic conglomerate, Cardiston Salop. 1 Manganese Ore from Cŵm Bychan, nr. Harlech.
1845 Oct. 7	"	5 Geological specimens from Bridgnorth, Llanymynach, etc.
1840 June 20	Birley Esq., J. Gibson Birmingham	1 Madrepore from Dudley 1 Spatangus Cormarinum [sic] from Sussex 1 Blue Flat Ironstone calcined from West Bromwich 1 Ammonites Lyme Regis, Dorsetshire 1 Spiralis Pectines (Sussex) 1 Tellina rostrata (Sussex)
1841 Jan. 2	Birmingham Philosophical Institution, The [see BM Cat.][1]	1 Cast of a head of Ichthyosaurus communis Conyb. from the Lias of Barrow on Soar, in the Museum of the Birmingham Philosophical Institution.
1835 Sept. 25	Bloxam Esq., Henry Ellesmere	8 Two Vertebrae and six other Bones of Fossil Rhinoceros found in diluvial gravel [—] feet below the surface at Lawford, Warwickshire.
1835 Sept. 25	"	24 Fossils and Minerals from the Mountain Limestone, Derbyshire.
1835 July	Blunt, Mr. Thomas Shrewsbury	14 Minerals & Fossils
1835 Sept. 19	"	8 Minerals & Fossils
1839 April 22	"	1 Slab of Limestone containing specimens of Pentamerus Knightii
1841 Jan. 19	"	1 Bellerophon
1841 Feb. 26	"	1 Trilobite 1 Arsenophosphate of Lead

1. BM Cat. see Lydekker, R. 1889 Catalogue of Fossil Reptilia and Amphibia in the British Museum (Natural History) Part II p. 45, for this original specimen cited in 1839. The BM also have a cast (14593), the whereabouts of the original presumed sold in 1852 are unknown. Any information would be of interest.

		1 Arseniate of Lead 1 Epidote 1 Micaceous Iron Ore 1 American Iron Ore (90 per cent) 1 Sulphate of Antimony 1 Bismuth 1 Blue Carbonate of Lead 1 Hydrocarbonate of Copper 1 Jasperine Wood 2 Mona Marbles 1 Serpentine 1 Labrador Felspar 1 Fossil Fruit from the Chalk at Dover
1841 Oct 21	"	1 Specimen of Kidney Iron ore from Lancashire
1868 Aug. 13	"	Collection of Fossils etc. from the Chalk etc.
1835 Nov. 2	Bodenham Esq., T.	12 Beautiful Fossil Plants from Black Lion Colliery nr. Pulverbatch & Welbatch.
1836 July 26	"	4 Specimens of Fossil Plants from Welbatch Colliery
1837 May 24	"	1 Specimen of Fossil Hippurites? from the Shale at Welbach Colliery, Shropshire
1837 May 30	"	50 specimens of the several measures in a Coal pit at Welbatch with the thicknesses of each
1835 Sept. 8	Bowen, Mr. John Shrewsbury	8 Minerals & Fossils
1859 Feb. 3		1 very fine Septaria or Ammonite from Weymouth
1835 Sept. 17	A Friend to the Society [J. E. Bowman Esq?]	1 Cyathophyllum from Wenlock Edge, Shropshire
	Do.	4 Agates and Obsidian from Cairngorm Mountains
1836 Jan. 23	Bowman Esq., J. E. (Gresford)	6 Specimens of Fossil Plants from the Denbighshire Coalfield
1836 Sept. 26	"	2 Specimens of Fossil Bones from the Barnwell and Bleadon Caves, Somerset-shire
1839 July 19	Bowman Esq., J. E. (Manchester)	1 Specimen of the rock connecting the Old Red Sandstone with the Silurian rocks containing Lingula minima & Agnostus tuberculatus
1835 Nov. 3	Bowman, Miss (Shrewsbury)	3 Minerals & Fossils from Youlgreave, Derbyshire
1836 Oct. 20	"	2 Stalactitic Sulphate of Barytes
1841 Sept. 21	"	18 Partly polished pebbles from Aberystwyth (Flint Cornelian - Agate - Sand Agate - Jasper)
1837 Aug. 25	Brasher Esq. —	1 Ammonite

1870 Oct. 28	Brooke, Rev. J. Haughton, Shifnal	Collection of Fossils - localities unknown.
1835 Sept. 15	Bucknell Esq., James	2 Ornithorhynchus paradoxus
1836 March 22	Bund Esq., H. E.	1 Fossil Plant
1835 Sept. 2	Butler, The Venerable Archdeacon (Shrewsbury)	Specimens of Rocks from Mont Blanc, Switzerland
1835 Oct. 17	"	1 Fossil Wood or Plant, Barbadoes.
1840 Apr. 24	Cameron, The Revd. C.	3 Boxes of Coal Fossils chiefly from the Coal Measures in Shropshire
1866 Aug. 15	Cateswell, Mr. Jas. S. Shrewsbury	1 Moss-like calcareous concretion Wenlock
1835 Sept. 15	Carline, Mr. John (Shrewsbury)	1 Freestone with Dendritic Crystals from Grimshill, Shropshire
1841 Apr. 24	Carline, Mr. J. & Dr. Ward	7 Bones of the Labyrinthodon or Anisopus Scutulatus from Grimshill. 1 Piece of Sandstone containing Posidonomya minuta from the Upper Red Sandstone, Shrewley Common, Warwickshire
1841 June 17	Carline, Mr. John Shrewsbury	2 Pieces of Sandstone from Grimshill Quarries containing Bones of the Labyrinthodon.
1842 March 31	Clement Esq., John	1 Specimen of Jasper from Ffynondrindion, near Fishguard, Pembrokeshire
1849 Sep. 5	Clerke, Mrs.	1 Fossil Shell, Isle of Wight
1836 Sept. 15	Corbet, Sir A. V. Bart	250 Minerals & Fossils collected in Devonshire and various parts Abroad
1836 Oct. 1	"	90 Minerals & Fossils
1845 Dec. 1	"	2 Specimens of Trap Rocks & 1 of Sandstone from Acton Reynold Garden
1843 Nov. 20	Corbet Esq., Richard Aston, nr. Newport Salop	1 Lignite from Allesley, Warwickshire 1 Lignite from Childs Ercall Co. Salop
1835 Nov. 23	Corbett Esq., Richard Adderley, Shropshire	12 Minerals & Fossils from Devonshire 1 Trunk of a Tree found in gravel lying under limestone
1835 Nov. 3	Corbett, Rev. Waties	57 Minerals & Fossils
1838 Aug. 7	Longnor "	1 Fossil Plant Neuropteris [cordata] from Leebotwood
1843 March 7	Corfield, Mr. Thos. Berwick, Salop	1 Fossil Plant from Moat Lane Colliery nr. Stapleton, Shropshire
1843 Dec. 26	"	1 Fossil Fruit?
1835 July 10	Crawford Esq., David (Shrewsbury)	3 cases numerous specimens of minerals from Giants Causeway, Ireland
1840 Sept. 19	Cubet, Mrs. (Housekeeper)	1 Productus & 2 shells from Lias and Mountain Limestone
1835 Oct. 16	Danby Esq., R. S. Coalbrookdale [qu ?Darby]	20 Fragments of Fossil Trees & other Plants from the Sandstone at Coalbrookdale

1835 Nov. 9	Davies, Mr. C.	2 Galena encrusted with Quartz crystals
1839 Nov.	Davies, Miss	4 Specimens of Lime, Barytes etc.
1841 Feb. 1	Day, Mrs. Shrewsbury Received in exchange	1 Septarium containing Turritella for six duplicates of fossils from the Coal Shales.
1842 January	Day , Wm. Esq. Shrewsbury Received in exchange for 6 Duplicate Fossils	6 Specimens of Asaphus from South Wales
1843 March 7	"	1 Ammonite from Dover in exchange for an Actinocrinites
1835 Nov. 13	Dod Esq., J. W. Cloverley	13 Specimens of Shale Lias & their Organic Remains
1836 Jan. 14	"	1 Lava from Ischia 1 Lava of Vesuvius 1 Lava of Vesuvius taken in a fluid state 7 Fossils from the Flintshire Lime-stone nr. St. Asaph 9 Sp. rocks from St. Gothard 1 Black Quartz from ditto 1 Spec. of Asbestos 1 Talc 1 Group of Fossils 1 Haematite from Elba 1 Angular stone of doubt. nat.
1842 Feb. 21	Downward Esq., P. Shrewsbury	1 Ammonites from Wenlock Edge, Salop [sic]
1843 March 27	"	9 Fossils etc. from Shotover Oxfordshire
1843 July	"	Fossils etc. from Shotover Hill Oxfordshire
1840 Sept. 14	Drinkwater Esq., R.	Productid & Petrified Coal from Llangollen
1835 July	Du Gards, Miss (Shrewsbury)	14 Fossils and Minerals
1841 June 24	Du Gard, Mrs.	Numerous specimens of Minerals, Fossils
1835 June 26	Du Gard, M.D., Thomas Shrewsbury	8 Minerals & Fossils
1835 Aug. 10	"	1 Rhomboidal Calc-spa edged with pyramidal Quartz from Snailbeach Lead Mine, Shropshire
1835 Aug. 28	"	1 Calamites superincumbent on Penny Iron stone, Coal pit banks
1835 Aug. 29	"	1 Galena from Snailbeach Mine, Shropshire
1835 Nov. 11	"	1 Rhomboid: Calcar: Spar with Pyramid Quartz 1 Sulphate of Barytes on Carbonate of Barytes
1835 Nov. 19	"	1 Sulphate of Barytes from Snailbeach. 1 Obsidian from Mt. Etna
1836 March	"	2 Specimens of fossil plants

1835 Dec. 1	Dukes Esq., T. F. Shrewsbury	Large collection of fossils and other productions from the Iron Lime works at Donnington Wood, Shropshire, belonging to the Duke of Sutherland
1841 June 21	Dungannon, The Viscount M.P. President	Sopwith's Geological Models illustrating the nature of stratification , valleys of Denudation, Coal Seams in the Newcastle Coal Field, Faults & Dislocations of the Strata & Intersection of Mineral Veins etc. with 12 mo Description
1868 Feb. 4	Egremont, Rev. E. Wroxeter	4 Fossils, Ammonites from ———
1856 April 30	Evans, Mr. J. Mardol	1 Fossil plant in shale
1836 Jan. 29	Evans, Rev. R. W. Llwynygroes	1 Specimen of "Rockes poli" from Mt. St. Bernard. "See de Saussure Vol. IV p. 252"
1835 Aug. 28	Eyton Esq., Thomas Campbell Eyton Park, Shropshire	10 Ores, rocks etc. from Paris Mountain, Anglesea.
1876 Oct	Fleet, Charles Shrewsbury	1 Fragment of fossil plant - Calamite?
1835 June 27	Ford Esq., Richard Shrewsbury	50 Minerals, ores & fossils
1867 Dec	Griffiths, — , Dr. Church Stretton	Silurian Fossils
1836 May 3	Hawkins, Esq., B. Ratlinghope	Specimens of Copper Ore
1856 June	Haycock Esq., Edw. Shrewsbury	2 Fossils - Indian
1857 Apr. 9	Hewitt, Mr. J.	1 Lead ore from Pontesbury
1842 April 26	Hill, The Revd. Francis Ellesmere	15 Specimens of Iron and Copper Pyrites from Wheal Friendship in the Parish of Marytavis Co. Devon.
1835 Aug. 29	How Esq., Wm. Wybergh (Shrewsbury)	1 Copper from Paris Mine, Anglesea 1 Fluorspar with imbedded Galena and distinct concretions of Blende 1 Sulphuret of Zinc 1 Quartz
1870 Sept. 6	Jackson, Mrs. Thurston Rectory, Hereford	Large collection (6 hampers full) of Fossils and Minerals of the District [!!]
1835 June 26	Johnston M.D., Henry Shrewsbury	83 Minerals & Fossils 1 Fossil from Caynham Camp nr. Ludlow 10 Minerals from Highlands Scotland
1839 July 26	"	Specimens of Schist, Grewacke, & co. from Snowdon, Betws & Capel Curig
1877 Aug. 1	"	Small Basaltic Column from near Giants Causeway

1835 Nov. 28	Johnson, Mr. Samuel Belmont, Shrewsbury	1 Fossil bivalve shell
1841 July 14	"	1 Madrepore from the Carboniferous Limestone of Steeraway, Shropshire
1840 June 12	Jones Esq., Grenville Shrewsbury	Cubic Iron Pyrites in slate from Aber Dovey, Merioneth
1841 June 1	Jones Esq., S. Haden Wellington	1 Fossil plant in ironstone
1842 Nov. 16	Kynaston Bart., Sir J.R.	1 Stalactite from Grotto Maddalena 2 Quicksilver ore 2 Cinnabar Fossil fish from near Verona
1836 March 9	"A lady unknown" through Dr. T.W. Wilson (Shrewsbury)	36 Minerals
1840 Sept. 19	Lawrence, Miss (The Bank)	Petrified Moss from Sutton nr. Ludlow
1860 Dec. 20	Leigh Esq. R.N., Edwin C. H.M.Ship Bulldog Shrewsbury	Fossils from a Coal pit Sydney Cape Breton
1835 June 27	Leighton Esq., William Allport Shrewsbury	1 Fossil stem from Nobold, Shropshire[sic]
1840 Feb. 28	"	Numerous Silurian fossils from the sand drifted in Coleham, Shrewsbury on the south bank of river Severn
1876 July 3	Leighton, Rev. W. A. Shrewsbury	4 Specimens from Cader Idris Dendritic Mang.
1879 Feb. 20	"	40 Precious stones (in the rough) collected at Rhyl
1836 Oct. 12	Lewis, Rev. Thos. T. Aymestry W. Leominster	1 Fossil remains of fish [from the newest Beds of the Silurian Rocks. added later]
1835 Sept. 15	Lloyd, Revd. Chas. Arthur Albany Rector of Whittington, Shropshire	69 Limestone and other rocks from Glisseg, Vron, Lount, Craignant, Treflech, Tynydrain, Porthywaen and Bronygarth, N. Wales
1835 Sept. 28	"	24 Minerals and fossils from Snowdon
1836 March	"	1 Peacock coal from Ruabon, Denbighshire
1836 May 3	"	1 Collection of Coals, Shale, Lime & Clay stones in vicinity of Oswestry in glass case
1859 June	Marston, Mr. Richard Shrewsbury	1 Rynchosaurus from Grinsil [Grimshill]
1840 Nov.	Martin, Captn. J. M. (Bombay Horse Artillery)	7 Fossils and minerals from the Lukhee range of the Hala Mountains in Scind
1868 March	Maw Esq., George Benthall Hall, Broseley	10 Fossils from the tertiary Lower Bagshot ("leaf bed") Corfe, Dorset

1870 Dec. 5	Maw Esq., George	1 Cast of head of Labyrinthodon from Broseley Coal Measures
1861 May 11	Morris, Mr. George Shrewsbury	1 Stigmaria (fragment)
1849 Aug. 25	Now Esq., W. W.	3 Sp. of the rocks at Cardington with fossil shells
1838 July 16	Onions, Mr. Shrewsbury	20 Minerals and fossils
1861 Feb. 7	"	2 Meteoric stones 11 Fossils 1 Large Ammonite 3 S.... concretions All from near Swindon
1835 July	Owen, Mr. Owen Davies	53 Minerals and fossils
1835 Nov. 5	"	16 Minerals from different localities in Shropshire
1855 Oct.	Owen, N. N. B.	20 Excellent fossils from Stapleton & Horfield, Glos.
1842 June 15	Parr, Capt. F. (Lythwood Hall)	1 Petrified Tamarind Tree India 1 Petrified Wood from forest in Lybian Desert near Cairo, Egypt discovered 1839 1 Granite from the Pyramid of Geezah 1 Ammonite from Chalk London and Dover Railway near Shakspeare's Cliff 3 Shells from ditto 2 Charred wood from ditto 11 Specimens of Pyrites from ditto 7 Pebbles from the bed of Cauvery river, India
1845 Oct. 26	Parr, Fredk.	Numerous bones, minerals & fossils
1835 Aug. 28	A Party to the Breidden	7 Greenstone from the Breidden Mountains, Montgomeryshire
1835 Oct. 17	Peele Esq., Robt.	1 Garnet in crystals 1 White silver ore
1839 Mar. 26	Perks, Mr. Richard	1 Asaphus from Middleton in the Parish of Chirbury 1 Shell Marl found at Jamesford in the Parish of Montgomery
1835 Oct. 15	Peters, Mrs. [Abbey]	19 Minerals & fossils
1835 Nov. 16	Peters, Miss	1 Mineral 4 Fossils
1838 July 7	Peters, Miss The Abbey	1 Collection of fossils from Mocktree or Mogtree nr. Ludlow chiefly Pentamerius Knightii [sic]
1836 July 8	Phayre, The Rev. Maxwell	Numerous specimens of fossil shells and minerals from Torquay, Devonshire
1835 Oct. 6	Pidgeon, Mr. Henry Shrewsbury	22 Fossils from Benthal Edge and Lightmoor field, Shropshire
1835 Nov. 24	Poole, Mr. T. F.	2 Sulphurate of Zinc, Bog Mines, Salop Tungstate of Iron, locality unknown 3 Fossil bivalve shells, Hay-Cop Iron Pits, Broseley

		2 Impressions of shells in Indurated Clay: Llyn Tigid, Merioneth 1 Specimen of the rock from the Crater, Cader Idris 4 Fossil ferns, Black Lion Colliery, Pulverbatch 2 Fossil Aquatic Plants Pontesford 1 Ditto from Great Orm's Head 2 Sulphuret of Copper, Llanberis Mine 2 Ammonites from Wenlock Edge [sic] 1 Conglomerate (polish'd) 1 Fossil
1839 March 1	Powle, Miss Belmont	9 Fossils from Barrow
1881 Feb. 5	Pritchard & Sons, Messrs. Shrewsbury	Shells found in a Sandpit at base of Severn Hill, Shrewsbury
1842 Feb. 21	Purchased	1 Cranium of the Rhynchosaurus from the Grimshill Quarry, Shropshire
1842 April 26	Purchased	Minerals & c. Fossil wood from Old Red Sandstone Lignite (fossil wood) from the London Clay, Isle of Sheppey
1842 April 26	Purchased	1 Lepidodendron Tungstan of Iron or Wolfram 1 Fusus contrarius Suffolk Crag 1 Chama squamosus Greensand 1 Spirifera cuspidata, Co. Limerick 1 Iniseramis from the Sussex Chalk [sic] 1 Echinus in Flint from Kent 1 Spatangus Cor Maximum [sic] 1 Titanium, Cumberland 1 Ore of Manganese 1 Zeolite with Hornblende from Scotland 1 Amygdaloidal Trap Rock from Norway 1 Pecten from the Greensand, Devon
1837 Aug. 12	Richardson Esq., F.G.S., W. through Rev. B. H. Kennedy D.D.	Numerous fossil shells & sulphates from the London Clay nr. Christ Church Hampshire
1840 Apr. 24	Richardson Esq., Wm. M.A. F.G.S.	Cast of the Cranium of the Hyracotherium and numerous other fossils (bones, cones, fruits and shells/from the London Clay on the north coast of Kent illustrative of his "Observations on the Locality of the Hyracotherium" read before the Society Apr. 24, 1840.
1835 Sept. 28	The Secretaries	22 Fossil plants from the Shale of the Whittington Coal pits.
1884 March 21	Shaw, Mr. H. High St. (conveyed by W. H. Drinkwater)	Tooth of large Shark Carcharodon angustidens from the Antwerp crag.
1841 Jan. 19	Smith, Mr. Samuel Shrewsbury	Minerals collected in Derbyshire

1835 Aug. 11	Stokes, Revd. James	2 Lead ore and matrix from the Grit Mines, Shropshire
1836 Feb. 29	Sutton, Miss	1 Fossil from Flint 1 Fossil plant (Stigmaria)
1864 Aug. 11	Swainson, Rev. Edwd. Wistanstow	Collection of fossils
1868 May 15	"	Extensive collection of minerals etc.
1835 Oct. 17	Taylor, Mrs. Iron Bridge per Mr. T. F. Poole	Madrepora limestone, Polished
1835 Aug. 28	Thompson, Revd. Francis Shrewsbury	1 Sandstone with impressions of shells from the Wrekin, Shropshire
1835 Aug. 29	"	2 Limestone with fossil Organic remains from Wenlock Edge
1835 Sept. 15	"	44 Minerals and fossils
1843 Dec. 26	Thursfield Esq., Geo. Barrow, Salop	1 Calamites approximatus Sternb. in sandstone
1836 Dec. 20	Tisdale, Mr.	1 Specimen of Sulphat of Lead
1835 Sept. 15	Wakefield, Revd. John Mort Shrewsbury	Rock crystal & collection of skeleton plants
1881 June 21	Walker Esq., J. H.	Two fossil Nautilus shells from London Clay nr. Iver Hill, Uxbridge, Bucks. 25 feet deep
1838 Nov. 1	Ward M.D., T. O.	4 Slabs of freestone from Grinsel [Grimshill] containing impressions of the foot of some animal & impressions of drops of rain 3 Lias specimens (Septaria, Nautilus & Pecten/from Moreton Corbet
1840 April 7	"	2 Silurian fossils from Gravel near Shrewsbury
1841 Feb. 28	"	1 Worm cast with the supposed Animal from the Iron Stone near Watling Street, Shropshire
1841 April 29	Purchased T. Ogier Ward M.D.	37 Portions of Serpulites longissimus Cornulites serpularius & of various Orthocerae Cypricardia amygdalina C. impressa C. retusa Orthis lunata Leptaena lata Orthoceras striatum O. ludense
1841 June 28		4 Specimens of Stigmaria ficoides exhibiting the internal structure 5 Specimens of curious formations of Ironstone 5 Specimens of wormcasts all from the coalfield at Watling Street, Salop

1841 July 20	"	2 Slabs containing impressions in relief of the Cheirotherium from the Upper New Red Sandstone measures of Storeton, Cheshire Do. from the same locality of dubious origin.
1841 Oct. 11	"	1 Cast of the Cranium of the Rhynchosaurus found in the Upper New Red Sandstone, Grimshill, Shropshire
1842 Feb. 21	"	1 Section of an extremity of the Rhynchosaurus imbedded with other bones in the Grimshill Quarry.
1840 Dec. 12	Whitney, Mr. George Shrewsbury	1 Trilobite from Dudley, Staffordshire
1835 Nov. 2	Whitney, Mr. J.	1 Cornu Ammonis 1 Ore of Copper 1 Curious Concentric Pebble
1837 May 5	"	2 Nodules of Clay ironstone exhibiting columnar crystallization
1835 July	Willis, Revd. Arthur Shrewsbury	1 Rolled fragment of Red Sandstone
1837 Aug. 5	"	Specimens of Lignite from St. Michaels Church Yard
1838 July 7	Williams Esq., J. Vrownog nr. Llanfyllin	Ores & Minerals
1838 Jan. 2	Williams Esq., Wm. Shrewsbury	Numerous fossils and minerals
1841 April 23	"	32 Specimens of Minerals & Ores (silver, lead, copper & iron/from various localities in Anglesea, Caernarvonshire, Cardiganshire, Denbighshire & Shropshire. 3 Fossils from Oxfordshire
1841 May 10	"	23 Minerals & ores, lead & iron & copper from Anglesea, Caernarvonshire, Staffordshire, Gloucestershire & Shropshire 3 Specimens of copper, silver, zinc & lead ores from unknown localities
1842 July 8	Wood Esq., S. The Infirmary (L.&H. = Lindley & Hutton)	3 Shells (fossil) 1 Calamites 1 Lepidodendron plumarium? L.&H. 1 Lepidodendron lanceolatum? L.&H. 1 Lepidodendron selaginoides? L.&H. (incipient fructification) 2 Fossil buds? 1 Fossil plant?
1858 Apr. 3	Williams, Mr. Wellington	1 Shell limestone from Quarry near Minsterley

Compiled by Brian Page

TECHNICAL

A COMPARISON OF THE FAMULUS AND GOS PACKAGES FOR HANDLING MUSEUM DATA

Introduction

While awaiting the completion of the GOS package, Manchester Museum has been using the FAMULUS package to produce computer-aided catalogues of certain collections. As the results from this FAMULUS work appear satisfactory it has been asked 'why consider changing to GOS?' To answer this query the present paper has been written; it is aimed at non-computer trained Museologists and so the jargon has been kept to a minimum and certain finer technical points have had to be glossed over.

The Packages

The two packages are large but of roughly equal size; although either can be run on a dedicated mini-computer, they require a fairly big machine if they are to handle large files of data in a reasonable time.

FAMULUS is written in standard FORTRAN, and FORTRAN compilers are available for most machines; FAMULUS is already implemented on a wide range of computers and is comparatively easy to transfer to most machines. GOS is written in BCPL, a powerful but comparatively little-used language, originally designed for writing compilers for computers. Although theoretically BCPL is easy to transfer between different computers, few manufacturers yet seem to offer BCPL compilers for their machines, which means the implementation of GOS can involve quite a lot of preliminary work in first implementing a BCPL compiler. However, recently a Cambridge firm have taken on development and support of BCPL and will write a compiler for it on any machine for about £2,500.

Data Input

Both packages require a record to be broken down into its discrete data 'elements'; FAMULUS is limited to 60 elements and to a maximum of 4000 characters per record, although longer records may be accommodated by using duplicate entries. Theoretically the number of GOS elements is unlimited as is the total length of the record, but in practice speed of execution will introduce a space limitation. The breakdown of the data into elements for both packages would normally follow the MDA data standards for the subject of the record. Both require each 'element' to be labelled uniquely within a record. Data prepared for input to FAMULUS can generally be made GOS compatible; the reverse is also possible but may prove more complicated.

Formats

Each package requires a 'formatting statement' to enable it to 'understand' the data input. For FAMULUS this consists merely of a list of the data element labels or 'fields', given in the order of their occurrence within a record; all the fields are of one type and are of equal status.

For GOS the field names are again declared, but fields ('elements') may vary in type depending on the sort of data to be placed in them (e.g. Integer); also one may link fields into a hierarchical structure of several levels.

Thus in FAMULUS the data field DATE '16 MAR 1978' would be treated as one unit for manipulation (although 'MAR' or '1978' can be searched for), but in GOS the 'day', 'month' and 'year' may be treated as sub-elements to the main element 'DATE', if desired.

With both packages fields, although 'declared,' may be null i.e., neither the label nor any data needs to be entered for a record, if none exists.

Handling Data Items (or 'Elements' or 'Fields')

If a FAMULUS field contains more than one item of data it needs considerable juggling with extra "delimiters" to enable individual items to be operated upon independently (e.g.: to produce an index of donors from an ACQUISITION field when that field may also contain date of acquisition and the names of people from whom collections have been purchased). It can be done but it is complicated and time consuming.

With GOS the problem does not arise as all the items within the main field ACQUISITION can be themselves labelled as sub-elements and thus independently accessed and manipulated.

Operation: 'Driving' the Packages

A major difference between the packages lies in the method of operation. FAMULUS consists of 12 sub-programs which cover all the main operations required on a data-file, such as sorting, seaching, editing, printing-out, etc. Each sub-program has a small range of options, e.g. for SORT - one can select the field or fields upon the contents of which the file is to be ordered, for GALLEY (to print-out data) one can select the width of the output, i.e. the number of characters to be printed across the page, etc. These options are chosen by placing 'control cards' in the instructions to the computer, e.g. '/FIELDS/(GLAS,GENR)' or '/WIDTH/(68)'; only rarely are more than 6 such control cards required to drive a FAMULUS sub-program. Thus FAMULUS is very easy to use, but this simplicity carries the penalty of a strictly limited range of, for example, output formats. The FAMULUS sub-programs may be run alone or they may be linked together within one 'job', e.g. to produce a catalogue plus three different indices in one go.

GOS, on the other hand, has far more sub-programs or 'processors', ca. 60 of them, and these can be linked in a great variety of ways, including the ability to act recursively (i.e. a processor may call itself again within the process job it is doing). Again, the processors offer a large range of options, but those required for a given job have to be set by means of "control statements", and these can be quite complex, it is expected that most of the 60 or so processors available will be used but rarely. Thus GOS is very much more complicated to use than FAMULUS, but is considerably more flexible; the user has a virtually unlimited range of output formats available, for example.

Of course, if a limited, preferred, range of option is accepted then the control statements have to be written only once for each set of options, whereafter GOS can be 'driven' in a similar manner to FAMULUS. This is the expected way the GOS package will be used in service, although the operator will retain the advantage of being able readily to produce new option choices as the need arises. MDA expect, in time, to provide GOS with a full library of control statements or specifications; these would allow, inter alia, some hundred or so index specifications.

To a Museum Curator, probably the most important difference between the packages is the ability of GOS to 'layout' its output in almost any format that may be designed. To do this with FAMULUS would require writing a set of FORTRAN programs to 'post-process' the output before printing.

Conclusion

To sum-up, FAMULUS permits a strictly limited range of options but is simple to use, whereas GOS requires considerable expertise to run, but permits

choice from a wide range of options. FAMULUS was originally designed for handling bibliographic information, while GOS is specifically designed to handling the often complex data attaching to museum objects. In basic terms the intending user has the choice between an airbus and Concorde - remembering an airbus at the moment can land at many more airfields!

Note 1

The current FAMULUS package suffers one or two minor constraints in the EDIT and INDEX sub-programs which have been ignored for the purposes of this comparison, as it is intended to eradicate them in the near future.

FAMULUS is currently upper-case only at Manchester and because of the complications involved in upper and lower case implementation, Manchester GOS initially also would be in upper case only.

For both packages, however, it is relatively simple to convert some outputs from the package so they can be printed in upper and lower case, i.e., a "cosmetic" job.

Charles Pettitt
Manchester Museum

MATERIAL AVAILABLE AND NOTICES

PIG OF LEAD (75 x 17 x 6 cm)

Dated 1735, of Derbyshire origin. (Other markings probably giving further information.) Any museum interested in acquiring this should contact Dr. D. H. M. Alderton, 8 Hotham Road, London, SW19 1BS.

INFERIOR OOLITE

Material collected from 61 exposures in the Inferior Oolite over a wide area including Sherborne, Dorset, during the late 60's and representing the majority of strata then accessible is available to a suitable institution. Thin sections both stained and unstained and powdered samples are included plus maps, photographs and a field note-book. Interested persons should contact Brian Page, Geology Department, Keele University, Staffs., ST5 5BG.

COAL BALLS

Alan Howell of Bolton Museum writes:-

Apparently Lancashire County are just about to landscape Rowley Tip, Burnley, which is one of the few remaining sources of coal-balls. N.C.C. are trying to organise a large scale collection of coal balls as the work progresses, which will then be stored in the vicinity of the present tip. Presumably only bona-fide researchers will be allowed to take away coal-balls from the pile which they will establish. I am keeping in contact with the Conservancy and there may well be an appeal for volunteers to go 'coal-ball picking' in the near future.

APPEAL

Mike Taylor of Oxford University Museum, Parks Road, Oxford is working on Functions in the skulls and lower jaws of plesiosaurs and pliosaurs and he would welcome news of specimens he can study including fragmentary material.

AN OFFER

Geologist Trainee Computer Programmer (basic) offers to print out programs. Charge only for postage. S.A.E. with any correspondence. Mrs. Irene King, Etymological Research Unit, 1 Laines Head, Chippenham, Wilts., SN15 1PH

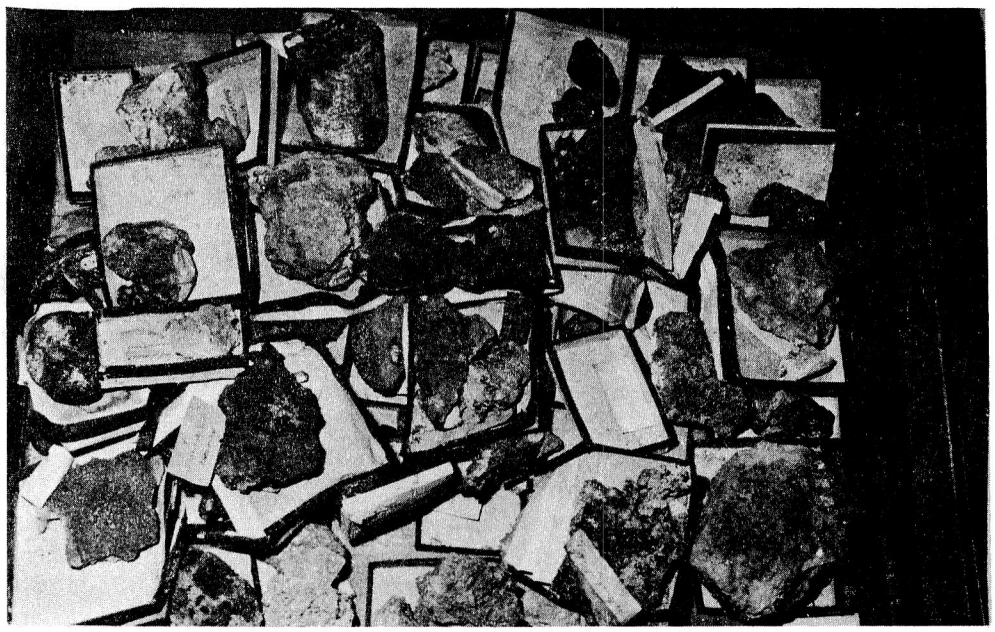
Permanent Home Sought for Geological Collection

A small geological collection which was, until recently, housed in the very damp basement of Richmond (Surrey) Library is now under offer to any museum which can give it a suitable permanent home. There are an estimated thousand specimens.

The collection, which belonged to a Mrs. Grosvenor of Mt. Ararat, Richmond, has a rather incomplete manuscript catalogue dated 1861. It consists mainly of small British and foreign mineral and rock specimens. The collection was originally housed in two handsomely veneered 22 drawer cabinets but at some point the contents of one cabinet appear to have been emptied into the drawers of the other! The specimens are in considerable disorder. The damp conditions of the library basement have affected some specimens and many of the labels. In addition, one cabinet is reduced to an unveneered carcase without doors while the other needs considerable restoration.

Though many of the specimens are useful in their own right, it is arguable that the main value of the collection lies as a social document. It appears that Mrs. Grosvenor was in fact Anne Grosvenor née Wilbraham, second wife of Thomas Grosvenor (1764-1851). The latter gentleman had a distinguished military career and also served as M.P. for Chester. (See D.N.B. xxiii, p. 283). Further researches at Richmond might yield more family details and more importantly, how and when the collection came to be in the Library. The Grosvenors were a notable Cheshire family.

At present the collection is in Bolton Museum and institutions interested in acquiring it should contact Alan Howell at Bolton who is acting for the Geological Curators Group in this matter. Applications will be considered by the Geological Curators Group committee and their decision will be final. Institutions without geological staff cannot be considered as suitable in view of the considerable curatorial work required on the collection.



A typical drawer from the Grosvenor Collection

LETTERS

1. ETHICS AND OBJECTS

On July 9th a Mrs. X deposited three fossils as an enquiry with the Warwick County Museum. The specimens in question had been purchased by her husband a week or so previously during a business trip in a market in Brazil, to bring back for his two children, both under ten years of age. Mrs. X had telephoned earlier, so I was in the fortunate position of being able to receive the specimens personally, and thereby have the opportunity of asking all the relevant questions.

Two of the specimens were slabs from a single calcareous nodule containing a superbly preserved bony fish, presumably one of the Brazilian Cretaceous fish nodules. The third specimen was a fine, complete trilobite, Asaphus sp. preserved in an iron rich nodule in black shales.

Mrs. X, who is estranged from Mr. X, didn't know where her husband had bought them, was certain he didn't know where they came from, and certainly didn't know whether he had obtained an import licence, but presumed not.

At this stage, I gently explained the scientific value of the specimens to her, how that value - though still considerable - had been irretrievably diminished by its unrecorded removal from context. And, stepping onto more treacherous ground, I tried to convey the idea that such material is considered by some, to be the 'cultural property' of a nation. Her response was generally sympathetic and helpful. I asked her to convey these sentiments to her husband and promised to find out what I could about the specimens.

The following few days of enquiries yielded the information I needed concerning the legalities of the situation. The Head of Science and Technology in the Brazilian Embassy was most interested and co-operative, and was eventually able to confirm that Law 3924 was passed in Brazil in 1961 prohibiting the export of archaeological, prehistoric, or any 'natural history objects extracted from the ground' without a special licence. (I eventually established that Mr. X had not obtained such a licence). Moreover, the Embassy gave me an assurance that should the objects be returned to them, they would (1) ensure that they went to an appropriate scientific institution in Brazil, and (2) they would reimburse Mrs. X the price that Mr. X had paid, recognising that he had no doubt purchased and exported the fossils in good faith - i.e. in genuine ignorance of Brazil's laws.

Ethically the way was clear. Our controlling committee adopted in April 1979 the Statement of Aims, Activities and Terms of Reference for the Warwickshire Museum Service, in which this situation had been anticipated. "Officers of the museum shall refuse to give an opinion on an object where the enquirer does not appear to have a title that would satisfy 1. 2. or 1.3 of this policy document" - (these paragraphs concern the contravention of the UNESCO Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property, 1970, and in particular the acquisition of material in contravention of any country's laws). "In addition, where the officer concerned has reasonable cause to suspect that the object brought in as an enquiry has been ... illegally imported ... or retained in contravention of British ... or other law, it shall be the duty of the officer ... to notify the police or other appropriate authority without delay".

I hold the view, - somewhat unfashionable in some quarters - that as a Keeper my fundamental and primary duty is to the objects. This is merely a statement of priorities, and does not negate my duty to the public. Ethically

my course of action would be unequivocal - to rescue these fossils for the scientific community, at least for a time. However, as British law stands at the moment, I could not do this without Mrs. X's consent. If I had done, she could take me and the Authority to court for illegal appropriation of her property. An interesting point arises here: If Her Majesty's Government were to ratify the 1970 UNESCO Convention, we would be legally empowered to do what is ethically right - by the object. But what of Mrs. X, a member of the Museum's supporting public, who brings in objects in good faith to the Museum? What of our ethical duties to her?

However, as the law stands at the moment, the decision was made for me. Mrs. X was duly telephoned, and the full ethical situation explained to her, and her legal rights, together with the Brazilian Embassy's undertakings.

Mrs. X chose to repossess the material. All I could do was to take detailed photographs of the fossils which will be sent to the British Museum (Natural History), and ask her if she would consider allowing the British Museum to borrow them for a finite period of research.

Correspondence with Mr. X revealed that he had purchased the specimens from a stall in an open-air "Hippie Market" held in San Paolo on Sunday mornings. Amongst stalls selling jewellery, paintings, musical instruments, crafts, coins and stamps were about six stalls selling fossils (about 30 specimens per stall, mainly fish nodules). The prices ranged from about £25 for an average fish fossil to £70 for a 'perfect trilobite'. There were other stalls selling minerals and gem stones. He was of the opinion that virtually all the sales were to tourists from abroad, and that, like himself, they were casual purchasers of the fossils, that it only occurred to them to buy the specimens when they were in the market, as they passed the stalls.

The remedy seems obvious, and lies in the hands of the Brazilian Authorities to effect. But is it desirable to legislate against the casual commercial exchange of natural objects? Offensive it may be to the scientific community, but does that community really have the moral right to exercise proprietary claims over what is everyman's heritage (even allowing for the usual arguments of our custodial role on behalf of everyman)? Are we in England in a position to point accusing fingers anyway?

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

2. THE RAPE OF THE FISH BEDS

Sue Turner forwarded the following letter sent originally to Dr. G. P. Black of the N.C.C. by Mr. W. Graham-Smith of Sandy Brae, Whitebarn Drive, Boars Hill, Oxford.

3/6

Dr C. P. Black,
Nature Conservancy Council,
Foxhold House,
Thornford Road,
Crookham Common,
Newbury.

13th June, 1979.

Cruaday Quarry, Orkney.

Dear Dr Black,

Thank you for sending last year a copy of your Report on "Orkney: Localities of Geological and Geomorphological importance". My wife and I have just returned from an interesting two weeks there, and I would like to take advantage of your request for comments related to it. Their main relevance concerns some contact we had with two parties raiding from Germany; however to get things in perspective I would like first to express some thoughts on the situation as seen earlier in relative tranquility.

Through the kindness of the owners, Dr and Mrs Fletcher, we were living at Binglea, which house, very conveniently, is situated only about 200 yards down the road from the entrance to Cruaday quarry. I was pleased to see at the entrance to this quarry the notice on behalf of Orkney Builders Ltd. and Nature Conservancy, in English and German, to the effect that fossils were not to be removed without permission. At the Kirkwall Office of Orkney Builders Mr Thomson kindly gave me written permission, conditions being that not more than two samples were to be removed per person, and that power tools were not to be used. I explained that my principal interest was in obtaining material for measurement of the relative spine-lengths of certain quite small fishes (mesacanthid and diplacanthid acanthodians), and that for this purpose I needed to take more than two specimens per person. This was readily appreciated and granted. I asked what I should do if a party of (say) Germans arrived while I was there, maybe with dynamite. He advised contacting the Police.

I spent a considerable part of the time at this quarry. There were jumbled masses of the remains of the fish bed, with abundant signs of cutting with power saws, these being principally under the places where the two further notices in German are now attached to the quarry face. Some of the rocks in this jumble contained large numbers of the two small acanthodian species that concerned me (they must have played an important part in the ecological food pattern), but most of them were much distorted and also the state of preservation of the spines was usually poor. I worked hard, though with no great success, to try to obtain a few specimens that would be suitable for my purposes. The Germans of course had clearly not been interested in these small and inconspicuous fossils; however it was a pity that in the prevailing general chaos it was impossible to relate the rocks in which they were found to the situation "in situ". Larger units, such as the bones of Osteolepis and Coccosteus, had been preserved more satisfactorily. There were among the jumble a number of bits and pieces of Osteolepis, the more complete ones being represented almost always by impressions only; it would seem that the "Germans" had duly taken the actual fishes, but had not bothered with the impression part of their counterparts. Coccosteus remains, superficially unappetising through having broken through the substance of the bones, were very numerous.

While I was there a few people came along out of general interest, wishing to know what I was doing, what kind of fossils there were, how they had got there etc. They were having a look-see in much the same spirit as they go to Skara Brae and the stone circles. I guess it would be quite easy to prepare a demonstration sector of this quarry, and to give it a status comparable with the Ancient Monument status of Skara Brae, which is so near, and that many of the people who go there would come also to Cruaday. Incidentally one of them commented on the chaos created by people going after fossils, saying he had never seen anything like it; our German friends will not have enhanced his image of palaeontologists.

My personal overall impression, which differs somewhat from that given on p. 14 of the Conservancy Report, is that a primary and overwhelming need is that a fairly small sector of the fish bed should be gone through systematically from top to bottom, the contents of the various layers, and the type of rock etc., being recorded. It is obvious from the debris that considerable differentiation in contents of different strata would be found. There seems no obvious reason

why this should not be done, especially now that quarrying has ceased, though to do so properly would of course require some considerable organisation and effort. Yet if the opportunity is not taken fairly soon it may well pass away. To get information regarding the nature of the fauna and its environment would be the primary purpose, but it would also yield invaluable material, from a precisely known context, for the study of growth and variation in the relevant species. Once we had this basic data we could go on more effectively from there to make optimum use of the assets. Also the mere fact that a disciplined research of this kind had been undertaken would, as with archaeology, add greatly to the public sympathy and appreciation of the relevance of conservation, and accordingly make this task less difficult.

The need for some firm and rapid action was shown dramatically on Friday 1st June, near the end of our visit. My wife and I had spent the day on the coast of Deerness, and after our return I went up about 7 p.m., accompanied by her, for an evening session at Cruaday. We found there were cars around, and much hammering, and obviously a large-scale operation was in progress. There appeared to be two parties, each working, respectively, on a major rock platform some distance below one or other of the two notices fixed to the quarry face. I called up to one of them asking if they had permission. First reply was "Have you?". I said yes. He said they had too. I said, could I see it please? He came down and fetched from a car the same written permission as I had. This of course meant there was little I could do. The other party also had a permit. They said they had first met one another on the boat from Thurso.

A lengthy conversation followed. The spokesman for the first party gave his name Helge Eicken, Jurgunder Str. 51/53, 5 Köln. The other member of his party was an older person and a workman type. The other party was headed by Walter Trinkaus, Sandbergstr. A4, 61 Darmstatt, Germany. In this case there was also another man, and two women, doubtless their respective wives. They had, between the two parties, two cars, two smallish buses or dormobiles and a trailer. Most of this gear was at the north end of the quarry, and there they had got out tents and set up a camp. The back of one of the dormobiles was open, showing that it opened directly onto rows of transverse shelves, each fitted with a series of seed-trays or similar. In other words, one just opened the back of the vehicle and parked the fossils into what amounted to a highly organised cupboard with separate built-in pre-arranged containers.

We spoke initially with Eicken, I saying how upset and disgusted people in U.K. were with the way parties from Germany, using explosives, had made an absolute shambles of the strata at classic sites such as Achanarras. He said he was very sorry that this had happened; there were, as elsewhere, good Germans and bad ones; he of course was a good one who would certainly not do that kind of thing; he had been visiting Saxon at Thurso the day before to find out from whom he could get permission to go to Achenarras, the implication (as I read it) being that this showed that he was "persona grata" with Saxon and therefore doubtless a "goodie". I asked what he wanted to get from Cruaday, and why. He said he was a "private collector" he collected other fossils besides vertebrates, for instance crinoids and trilobites (naming some presumably classic invertebrate sites on Continent). In such localities there were many collectors from many countries including (hesitatingly) England; this was a good thing, for otherwise often the fossils would end up in a crushing machine. He was now "specialising" in the Old Red Sandstone, and on the present trip had been to (?) Clitheroe, to Tain (presumably Ederton Burn), to Achanarras and now to Cruaday, and during all this he had, alas, until me (implied pat on back) not come across any British palaeontologists busy rescuing their fossils from potential crushing machines. As regards Leshmahagow they had (interestingly and much to the point) not been there "because they did not know exactly where to go". And what did they want to get from Cruaday? Principally Osteolepis. We said we objected to such fossils being taken away, dissipated, sold. But they were for his private collection, certainly not for selling; he had a good, well-paid job as illustration re-toucher in a Köln newspaper, and had no need or intention of selling what he got.

At some early stage I left my wife talking with Eicken and slipped back to house for Phil. Trans. reprint and tried to show them (by the time I returned Trinkaus and his party had come down and joined conversation) by means of diagrams and photos that fossils like Osteolepis could and should be put to better use than merely to be collected and/or sold. I also tried to insist that the strata in question should be studied systematically, not casually destroyed. They listened politely and apparently with some genuine interest, but showed no signs of seeing that it had any bearing on themselves. Like water off a duck's back, as also was any attempt to emphasise that their permits were only for two specimens per person. These crucial points were just politely shrugged off. They withstood a considerable and critical cross-examination with suavity and apparent good-humour. Trinkaus insisted on presenting me with some (?) holostean fish in a nodule from Lebach. I said it would be no use to me, but it was supposed to be so especially "for me" that it would have seemed downright rude to refuse it.

So after all this we got back to "the field". I told them I would stand around at the periphery, and look through the rock they were rejecting for my acanthodians. This enabled me to see just what was going on, and the result was, for me, an absolute relevation. I was with the Trinkaus group. This group had crow-bars (at least 3) some six-feet long with which they proceeded to heave great slabs of rock (say 8ft long, 4ft wide and 3 or 4 in. thick) out from where they had been lying "in situ"; they then used sledge hammers so heavy they could hardly lift them to break this up into more manageable proportions. A little desultory chipping with chisels followed, and then, if no Osteolepis were found, the bits were flung in all directions from out of the hole they were creating. The noise and general chaos were impressive. A more crude and vandalistic destruction of important strata could hardly be imagined--just tearing through the rock formation to extract any Osteolepis they could find. Dynamite was not being used, but I doubt if the results would have been any worse if it had been. In a few hours (they said they would be there three days) they would have done more damage to the strata than parties of students, or proper geologists/palaeontologists, would with their humble hammers and chisels have done in ten years. Eicken remarked that compared with the Ferm of Lebach the work here was very hard, so presumably this is the standard type of treatment given to all sites.

The following morning (Saturday) I first 'phoned Saxon (to confirm Eicken's statement) but he was not in. Then went to Orkney Builders Office at Kirkwall where I told Mr Firth (junior) what was going on. He said he would be going round there within an hour or so. So I was very disappointed to see, from afar and out of sight, on Saturday afternoon, and again on Sunday, that the vehicles were still there and themselves still operating. On Monday we left Orkney. So they seem to have got away with it very comfortably, especially camping right on the site and with the long hours of daylight available for them to work. And doubtless therefore further parties will soon follow. I am sorry that I did not make more effort to impress on Mr Firth what highly plausible types they were.

The conclusions that I personally draw from this experience are fairly definite. In the first place I have no doubt whatever that they were, in fact collecting to sell for profit. In this connection (1) I reckon that the cost of transporting their outfit from Thurso to Orkney and back would have been at least £150 (and there is also the crossing from Continent, and petrol for vehicles). They are not spending all this merely to fortify their "private collections". Also (2) their addresses suggest that they live in flats, and here they cannot accumulate endless fossils. And (3), speaking to Saxon on telephone on return to Thurso, he confirmed that Eicken, whom he had not met before, had come to him and had asked him how to obtain permission to go to Achanarras; but, very significantly, Saxon also said that the smaller workman-like type who was with Eicken "comes to Orkney every year"--i.e. has doubtless been coming and assisting (probably as their employee) successive parties of traders in fossils. He would, of course, have known exactly where to go.

It also seems to me that these people are wholly single-minded and completely ruthless in the exploitation of this commercial niche. They are fully equipped and highly organised for large-scale operations, which are designed at any one site to obtain one or a few types of profitable fishes.

and to this end on any one trip to the U.K. they go methodically round those classic sites that meet their needs. It is sad that it is precisely these sites that could, if treated with respect, provide a sufficient wealth of material for interesting environmental/ecological studies to be undertaken, and also for studies in growth and variation and their relation to evolutionary change--and these are the fields towards which (as I see it) palaeontology could well be directing itself now that the basic morphology of most of the known groups has been largely clarified.

Lastly it is clear that the image of themselves which these people seek to present has likewise been considered and disciplined, and that the form which this has taken has arisen in part as a response to the hostile reaction generated in the U.K. by the earlier raiding parties. They try to demonstrate that they are sophisticated types, who save fossils from crushers, who deplore the use of dynatime, who would not dream of dealing commercially in the fossils. They carry with them a stock of fossils as gifts for appropriate occasions. The term "private collector" provides a convenient label with a sufficient aura of respectability.

It is interesting that the image of these German activities that was formed in my mind as a result of correspondence with Saxon some 15 months ago is almost exactly the same as that which has now resulted from my actual experience of the activities in question. If his comments about the economics of these enterprises are equally reliable, then the profits obtainable on the Continent are, to say the least, very considerable indeed.

I am sorry that this letter has been so long, but I think it may perhaps help to define the problems we are up against. There are a number of matters arising that I would like if possible to discuss with you--perhaps I could call on you at Foxhold House at some convenient time? In the meantime I will send copies of this letter to a few people who are in one way or another interested.

Yours sincerely,

W. Graham-Smith.

(W. Graham-Smith).

P.S. Since writing the above a friend has sent an interesting cutting from the "Scotsman", of which I enclose a copy. It would seem that the "workmanlike type" who accompanied Eickman was Dietmar Jordan.

A farmer's wife foils the great fossil raid

By STEPHEN NISBET

Two Germans were admonished by a Scottish court yesterday for stealing fossilised fish in what is thought to be the first prosecution of its kind in Britain. The two took ten pieces of rock containing the 400 million year old fossils from hill farming land near Douglas, Lanarkshire.

The prosecution was welcomed last night by the Nature Conservancy Council (Scotland) who called for new export controls to prevent too many valuable fossils leaving the country.

Helge Rudiger Eicken (25) and Dietmar Jordan (41), both from the Cologne area, pleaded guilty at Lanark Sheriff Court to stealing pieces of fossil-bearing rock which they had dug up with a pneumatic drill.

The Procurator-Fiscal, Mr T. J. Cochrane, told the court the rocks were "invaluable in historic terms" and that much damage had been done to local farmland by fossil collectors in recent months.

HOBBY

Mr Cochrane told the court a farmer's wife had spotted a vehicle of German origin going into a service road near a field. She contacted the police, and when they arrived the two accused were digging.

Defence agent, Mr T. Henry Shanks, said the men had not known they were committing an offence.

"This was by no means a commercial enterprise. This is a hobby pursued by both men. They were very surprised to learn that they were obliged to ask permission before digging. In Germany such sites if protected are marked by signs."

The deputy director of the Nature Conservancy Council (Scotland), Mr Jim McCarthy, said last night Scotland's rich deposits of fossilised fish were increasingly at risk from foreign collectors, mainly from Germany.

The locations of the biggest concentrations of fossils in Caithness, Orkney and Lanarkshire were well known on the Continent thanks to specialist publications, and the last two years had seen increasing activity by commercial collectors.

The collectors, who could earn "substantial" sums from selling the fossils, sometimes used power tools with which they removed slabs of fossil-bearing rock, damaging other fossils in the process.

Mr McCarthy said the Nature Conservancy Council had alerted the geological community throughout Britian to watch out for illegal collectors. One problem was the remote location of many sites which made detection of thieves more difficult.

Mr McCarthy suggested the Government should introduce legislation to control export of fossils where this was being done commercially and not for legitimate museum and educational purposes.

According to Mr McCarthy, Scotland and Norway have some of Europe's richest resouces of fossilised fish. In Scotland this was due to the varied geology which featured Silurian fish beds.

DUDLEY GEOLOGICAL COLLECTION

Readers may be interested in the following correspondence relating to the Black Country Geological Society's efforts to preserve the geological collections of Dudley Museum.

They may be especially concerned by the almost incredible lack of response by those who have the authority to act.

The following letter was addressed to all 64 Dudley Metropolitan Borough Councillors.

Copies were also sent to the following individuals or organisations who have an interest in this subject.

Dr. C. Phipps MP	-	Dudley West
Dr. J. Gilbert MP	-	Dudley East
Mr. J. Stokes MP	-	Halesowen & Stourbridge
Mr. P. Barnes	-	Director, Dept. of Leisure & Recreation Services
Mr. P. Bullock	-	Assistant Director - do -
Mr. C. Hajdemach	-	Fine Art Curator
Mr. G. Barker	-	Nature Conservancy Council
Mr. D. Middleton	-	Chmn. South Staffs. Mineral & Gemstone Society
Committee Members	-	Black Country Geological Society
Mr. B. Poole & Mr. C. Knipe	-	Johnson Poole & Bloomer
Secretary	-	Geological Curators Group

THE BLACK COUNTRY GEOLOGICAL SOCIETY

CHAIRMAN	A. CUTLER, B.Sc., Dip.M., M.Inst.M.
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HON. SECRETARY	J. E. GOLLEDGE, M.A.
HON. TREASURER	M. J. WOODS, B.Sc., M.Sc., F.G.S.

21 Primrose Hill,
Wordsley
Stourbridge.

12th February 1979

Mr J A Cooper
Leicestershire Museums Service
96 New Walk .
Leicester LE1.6TD

Dear Councillor,

Earlier this year Dudley MBC was alerted to the pitiful state of the geological collection housed in Dudley Museum. This once famous and valuabl collection has reached its present sorry state of affairs by a continuous policy of sheer neglect and disinterest.

During the late spring and summer of 1978, members of our society embarked on a rescue operation to help prevent further deterioration of the collection. A systematic sorting operation has removed all specimens beyond hope and returned a degree of order not seen for over fifty years. Specimens likely to suffer most from continued storage in the cellars have been moved 'upstairs' but a considerable part of the collection still remains there purely because there is "no room" elsewhere in the building.

When one considers that the Museum was originally built for the purpose of housing the collection this state of affairs is almost beyond belief.

A happy note is that we have 're-discovered'three type specimens and nine figured specimens (those featured in scientific literature). It is these fossils in particular which make the collection so valuable. Some of them are in need of expert cleaning and repair. Unfortunately a great many other specimens particularly the Trilobites ("Dudley Locusts") have gone missing or otherwise lost over the years.

Unless there is immediate remedial action the collection will only deteriorate further and the important and necessary preparatory work carried out by the society will have been in vain. We may also be faced with pressure from the academic sphere particularly the Museum Curators Association with whom we are associated, to have the type and figured specimens removed to either the British Museum (Natural History) or some other depository.

cont'd ...

But why bother about a load of old dirty rocks? The answer is simple, they form part of our local heritage.

Consider:-

1. Most of the collection was formerly in the possession of the old Dudley Geological Society, a respected academic body. The collection was passed to the local authority when the society wound up during the early part of this century.

2. The specimens were largely donations of local personalities or swaps from other famous societies.

3. The majority of specimens were collected in the Black Country, from Limestone and Coal workings.

4. The Black Country would never have become an industrial power without itsspecial geology.

5. The Museum was built to house the collection.

6. Dudley specimens are still prized by academics and collectors for their fine state of preservation.

7. Thousands of visitors are estimated in coming to Dudley every year to see the geological exposures of the area.

8. Under the auspicies of the B.C.G.S. there is a real prospect of Dudley Museum being designated a National recording Centre for geological exposures provided adequate facilities exist.

There can be no doubt that the collection is worthy of better treatment and can be of lasting value to the community. It may sound cynical but if the fossils were made of glass this letter would never have been necessary.

We need your help. Only through you and other members of the council can something positive be achieved.

We have received support from the present Museum administration without whose blessing our work would not have been possible. However, they are impeded by a general lack of finance and only Council policy can alter the situation. In short we need your help to achieve,

a) Properly designated rooms at the Museum.

b) A qualified geologist as curator

c) New display and storage facilities.

I would welcome the opportunity to expand on our arguments and to give you a guided tour of the collection.

Please help save our heritage - we need action NOW.

Yours sincerely,

Alan Cutler

Alan Cutler

The response to this appeal can be gauged from Alan Cutler's letter to Hugh Torrens:-

Dr. H. Torrens,
University of Keele,
Keele,
Staffordshire.

27th June 1979

Dear Dr. Torrens,

Thank you for your letter of the 23rd February regarding Dudley Museum Geological collection. I deliberately delayed replying in the hope of being able to report a positive response from our mailing to Dudley Councillors. Out of the total of 64 council members, only three responded - one direct (just an acknowledgement) and two via Dept. of Leisure and Recreation (query original purpose of museum building). Apart from these only Colin Phipps MP, John Gilberts MP and yourself have replied. Altogether not a very encouraging result, and making allowance for the elections, local, parliamentary and European I do not now expect any further response.

I intend a follow up exercise on a more selective basis and at the very least expect an official statement on the Council's intentions for the geological collection.

BOOK REVIEWS

Curation of Palaeontological Collections.
M.G. Bassett (ed.) 1979.

Special Papers in Palaeontology, No. 22, 1-280, 53 text-figs.
Price £25 or US $50. Orders to Dr. J.C.W. Cope, University College, Swansea.

This volume presents twenty of the papers read at the joint colloquium of The Palaeontological Association and Geological Curators' Group held in Cardiff in the spring of 1978. The papers cover a variety of topics relating to the curation of fossil material, from a discussion of the role of the curator to a detailed account of the preparation of models for palaeontological exhibits. A concluding summary and discussion sets down half a dozen recommendations drawn from points raised at the meeting.

Among these recommendations is a call for palaeontological collections to be in the care of specialist geological curators and for the establishment of training courses in this field. Concern about the state of this country's geological heritage is not unfounded: in his paper, a summary of the recent GCG survey, Phil Doughty says that "... the general geological curatorial situation in United Kingdom museums is horrific." The proper maintenance of geological collections requires suitably trained staff; of 281 museums with geological collections, 237 have no staff with a specifically geological responsibility, and only one-third of museums with fossil type specimens have geological staff. It would be interesting to know how many have staff with formal museum qualifications such as the Museums Diploma or the Leicester Museum Studies Certificate. The situation is exacerbated by the failure of the Museums Association to recognise geology as a separate specialist subject in its Diploma syllabus, distinct from botany and zoology. The current syllabus is far too broadly based to allow adequate training in any one of these sciences.

One must accept, however, that in the meantime much geological material will remain in the care of staff with no geological training. A possible interim measure would be the provision of a manual of geological curation, as most of the useful papers on practical methods of palaeontological and geological curating are scattered throughout a number of different journals and books, and much information is unpublished. The Museums Association Education Committee is currently preparing a general manual of curatorship (see Museums Bulletin 17(10), 138-40), but the problems of geological collections require a specialist handbook. The need for published systems of classification of geological material, brought out by Doughty's paper, and for a standardised IRGMA vocabulary suggests two possible subjects for inclusion in such a manual.

Another aspect of training is brought out in this volume - the lack of curatorial tuition in university geology courses. The importance of the specimen, accurate documentation, and the role of museums, particularly in relation to type specimens, should be explained to every geology student. As the conservation of geological sites steadily assumes greater importance, perhaps collecting restrictions may encourage such tuition. The problems of collecting and site conservation are discussed in a paper by Keith Duff, and a number of the points which he raised were expanded at the GCG meeting in March of this year.

Much attention has been focused recently on the conservation of geological specimens, largely as a result of the work of F.M.P. Howie of the BM(NH). Howie's contribution to this publication describes the results of his experiments and is a useful review of the subject, but his recent paper in GCG Newsletter 2(5)

has a more practical approach. The study of pyrite decay in particular has been put on a more objective basis than before, and it is now apparent that only suitable storage conditions will preserve unstable pyrite. There is no point in treating affected specimens with ammonia (dry or otherwise) only to return them to a damp store. The surprising permeability to water vapour of plastic coatings such as polyvinyl acetate shows that these can offer no protection from dampness and can serve only as consolidants. A detailed survey of variations in environmental conditions in storage and exhibition areas should be undertaken by every museum with pyrite material.

The subject of exhibition is covered by three papers - two on illustration techniques and palaeontological models by Terry Chase, and one on the new approach to exhibits by R.S. Miles and A.F. Tout. Miles and Tout outline a "museum technology" based on educational technology and observations of visitor behaviour, and describes its application to the planning and preparation of displays. However, I find some parts of their paper contradictory. For example, in their abstract, they state that "attraction and holding are valuable measures of exhibit effectiveness", but later go on to argue that "attraction and holding do not measure the power of an exhibit to increase the visitor's knowledge or change his attitude and beliefs." This apart, the paper does contain a useful set of principles for the design of effective exhibits.

Chase's papers describe in considerable detail the range of techniques available for the production of exhibit illustrations and models. A list of suppliers has, unfortunately, a strong American bias, but an editorial note directs European readers to a similar list in Rixon's "Fossil Animal Remains".

The problems of documentation of collections are now such that some museums are turning to computers to provide a solution. The ability of the computer to generate a number of indexes from one input will certainly make it a valuable museum tool, but first much basic groundwork remains to be done in most museums: e.g. the compilation of manual records of a high standard, and the provision of safe storage for the collections. (Why spend time and money to document a collection while it quietly rots away in damp stores?) For those whose house is in order, the documentation system of the MDA and its GOS computer program is described, along with two existing computer systems - those of the BM(NH) and the University of Alberta, Of considerable interest are the details of the economics of publishing computer-generated catalogues, indicating that, while microfiche would be a more economical format than line-printer, a new technique could allow the cheap production of type-set catalogues directly from magnetic tape.

The joint sponsorship of the Cardiff colloquium by the GCG and the Palaeontological Association and the publication of the proceedings as a Special Paper in Palaeontology is to be welcomed, as the professional societies have an important role to play in safeguarding our geological collections. This volume deserves the widest circulation so that attention can be drawn to its valuable recommendations.

Tom Sharpe
National Museum of Wales.

Publications by Shropshire County Museum

No.2 Geology of the Ludlow area of the Shropshire-Herefordshire border. John Norton.

No.3 Old Red Sandstone Fishes of South Shropshire. John Norton.

The GCG quite rightly concerns itself most urgently with the responsibilities of institutions and curators to their geological collections. From a less academic point of view however the work of a curator, at least in provincial museums, includes much that is devoted to the fulfilment of responsibilities to the public - general or specific.

These responsibilities are much the same for any department of a museum whether it be geology or fine art and problems encountered are essentially multidisciplinary. Hence there is a paucity of articles in the GCG Newsletter concerning display techniques, services to schools, publications etc.

It is a pleasure for me therefore to bring to the attention of readers two publications of a type which I feel many museums would do well to emulate. Both handbooks have been produced cheaply, have less than 20 pages and devote themselves to a wide audience, amateurs and professionals alike.

The Geology of the Ludlow Area is essentially an updated version of a paper which appeared in the Transactions of the Woolhope Naturalists' Field Club for 1967 and the Old Red Sandstone Fishes of South Shropshire is practically identical to a 1971 publication produced under a different administration. These facts are not stated to belittle the publications but to demonstrate the ease with which publications for re-sale can be produced, if appropriate material is to hand. I will not aim to review these handbooks in the usual way since I am no authority on Old Red Sandstone Fishes or Ludlow geology, but one thing did catch my eye. Surely any publication, especially a museum one, if reproducing drawings of museum specimens ought to record the registration numbers of those specimens.

John Cooper

Catalogue of Type and Figured Fossils in The Yorkshire Museum: Part 4

Pisces, Aves, Mammalia and Plantae.

We bring the above catalogue to readers attention. Compiled by Barbara Pyrah, it is published in the Proceedings of the Yorkshire Geological Society Vol. 42, Part , No. 24, 11th May 1979, and is available from Barbara at the Yorkshire Museum.

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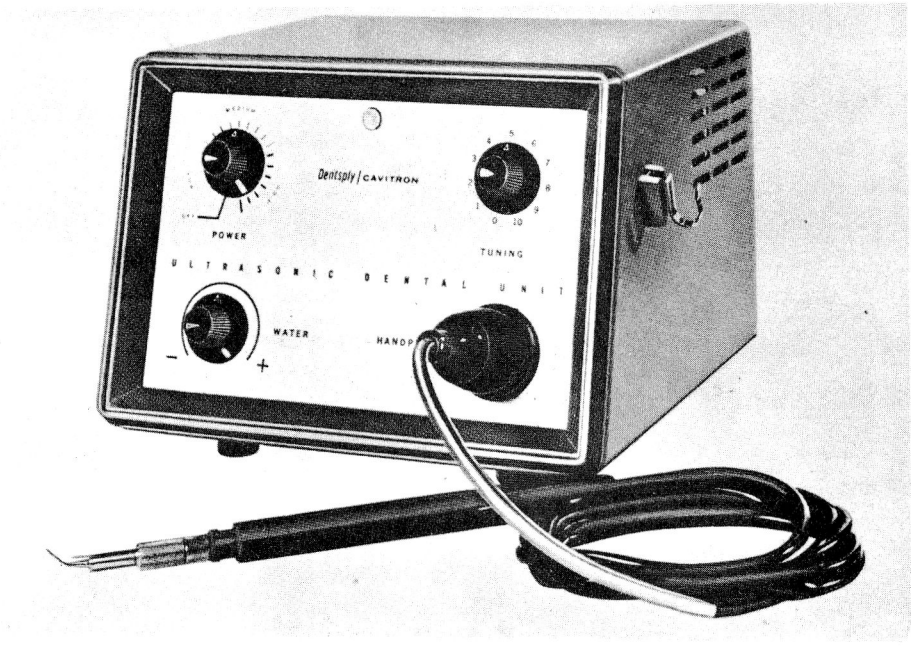

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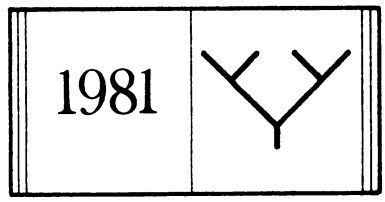

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