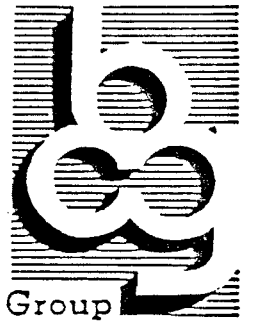


NEWSLETTER

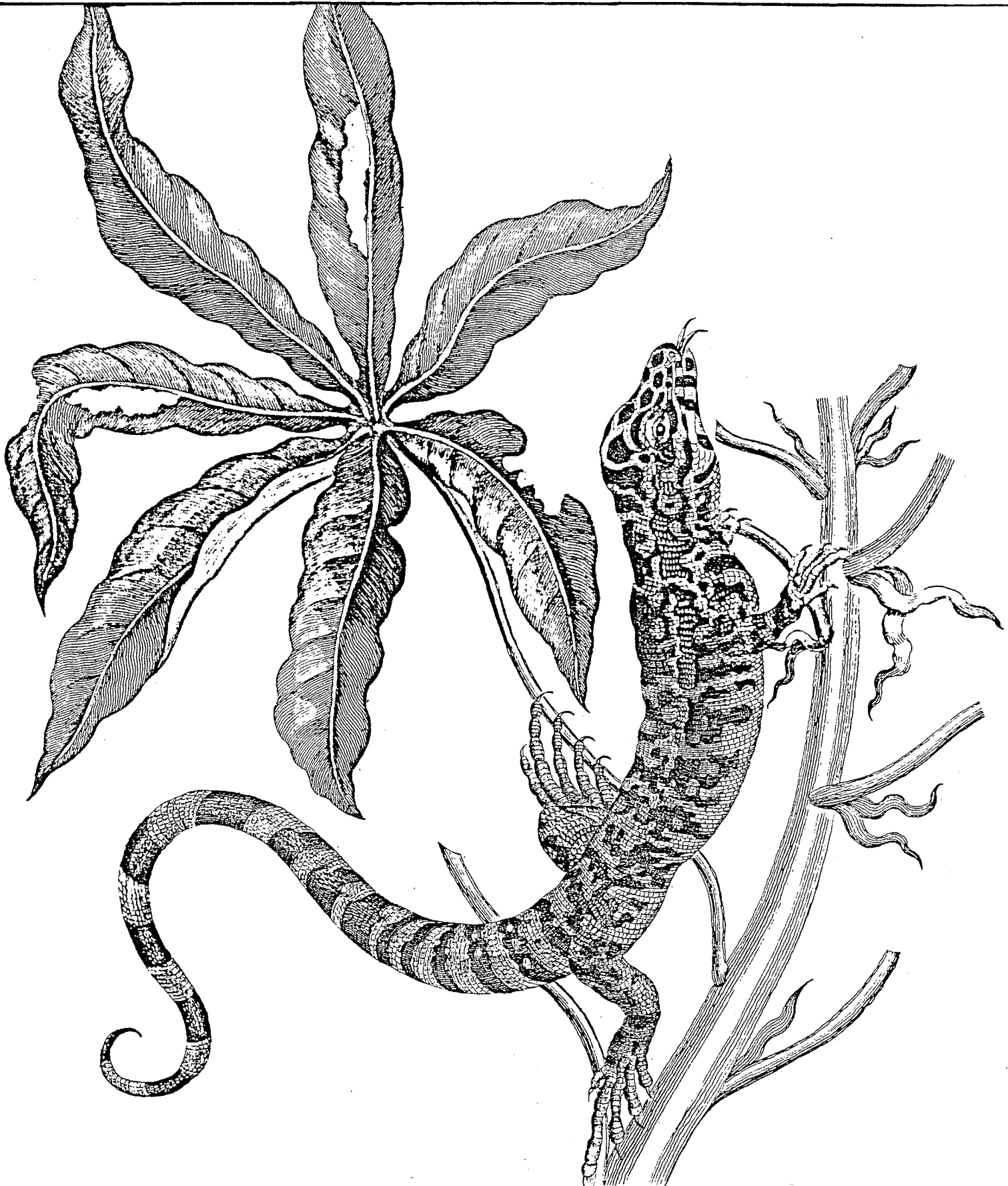
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Biology Curators' Group



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ANNUAL GENERAL MEETING 1985

The A.G.M. of the Biology Curators' Group was held on 19th April 1985, at the Museum of Zoology and Comparative Anatomy of University College, London.

1. Apologies were received from John Bainbridge, Martin Brendell and Steve Garland.
2. Minutes of the previous A.G.M. held at the Booth Museum, Brighton and confirmed on 15th September 1984, were approved. (Previously circulated in Newsletter, Vol. 3, Part 9).
3. Secretary's Report. Penny Wheatcroft (Secretary) read her report (to be circulated). She noted that the Chairman's Report had inadvertently been omitted from the agenda, but this would be included as item 5a.
4. Treasurer's Report. John Mathias presented the Treasurer's Report, which was circulated at the meeting. The report was acceptable.
5. Editor's Report. The Editor was unable to be present, due to financial problems. However, Geoff Hancock, the outgoing Production Editor, expressed the hope that a volunteer be found to take his place.
- 5a. Chairman's Report. Eric Greenwood (Chairman) gave his report (to be circulated).
6. Election of Officers and Committee. (see separate sheet for details, Officers returned unopposed).

The new Chairman, Peter Morgan, thanked the outgoing Chairman, Eric Greenwood, and outgoing members, Peter Davis and Peter Lambley. It was decided that co-options to the committee would be made at the first meeting of the new committee.

7. Date and place of next A.G.M. The meeting was only just quorate and it was felt that the juxtaposition of the 'Biological Recording Forum' had proved unfortunate, since few members could afford a three day stay in London. The next A.G.M. might be combined with the proposed Cardiff Conference on Collections Resources, if the dates were appropriate. Otherwise the A.G.M. would take place at a central venue, possibly combined with the planned Historical Taxidermy seminar. Glasgow was once again suggested as a future venue.

* * * * *

After the meeting closed, there was some general discussion regarding threatened collections, Wildlife Link and relationships with the Museums and Galleries Commission. It was noted that BCG hoped to endorse a Natural History candidate for the MA Council.

Report of the Treasurer and Membership Secretary

The trading account for the 1984-5 financial year shows a slight excess of income/expenditure of £51.93, and the Group's assets have increased to £1383.34. This position can be viewed with qualified satisfaction: satisfaction in that we successfully ran the first of the Biological Recording Conferences (in Leicester) and produced our most substantial special publication (Report no.3) within our annual budget; qualified because there is a certain buffering effect caused by income for the second Recording Conference (in Chelsea) and this money will leave the accounts within the next two months or so. However, by that time the sales revenue from Report no.3 should have accounted for much of its production costs.

Membership is slightly down on last year, standing at 231 (178 Personal and 53 Institutional) which represents a theoretical subscription revenue of £1083.00. Much of this remains outstanding and it should finance the calculated cost of Newsletters during the coming year. However, the time is coming for a review of membership rates, which have remained constant since January 1st 1982, and I will be reporting to Committee on this later in the year.

John Mathias

15.4.1985

Recording Critical Groups in the Flora of
the British Isles

A conference to be held at Liverpool on 12, 13 and 14th September, 1985.

Details of this conference were circulated to the members with the last issue of the B.C.G. Newsletter. The conference is being organised by the Botanical Society of the British Isles in association with the B.C.G. but so far few B.C.G. members had booked a place.

The final date for residential bookings is 22nd July (12th August for non-residents) and a non-returnable deposit of £7 should accompany all bookings.

Cheques made payable to "B.S.B.I. (Conference)" together with completed booking form should be sent to Mr. E.F. Greenwood, B.S.B.I., c/o Merseyside County Museums, William Brown Street, Liverpool L3 8EN.

A 'POTTED' HISTORY OF THE MUSEUM OF ZOOLOGY AND COMPARATIVE ANATOMY,
UNIVERSITY COLLEGE LONDON.

Given to the 1985 AGM of the BCG.

In June 1827 Robert Edmund Grant was appointed, as one of the 23 founding Professors, to the Chair of Comparative Anatomy in the new University of London then one month old.

It was the first Chair in the subject in England, Kings College London did not follow until 1836 and Cambridge in 1866. It was an unendowed Chair and an unprotected subject, Grant's only fees coming from the medical students he taught. £5 each was paid by "gentlemen desirous of obtaining a superior as opposed to a statutory medical education". In the 1830s he averaged £117 per annum, half of what was earned over £100 having to be paid back to the University, a penalty of teaching in a "joint-stock" institution.

It was not until 1852 when he received a stipend of £100 over and above his fees and inherited some money from his brother that poverty ceased to be a problem.

On his appointment Grant found no teaching material, Museum or Library and set about building up the teaching collections and dissections which formed the basis of the Museum. He eventually persuaded the College to finance a 'boy' to assist in the 'Zootomical' Museum at the princely sum of £13.13 per annum. Grant was an Edinburgh graduate, whose M.D. thesis was on foetal circulation. He had spent much time studying the fauna of the Scottish sea coast accompanied amongst others by Charles Darwin. He carried out some fundamental research on the structure and function of sponges by which their animal nature was first properly understood. He coined the word Porifera and the sponge *Grantia* was named for him by John Flemming in 1828.

The third term of his initial lectures were devoted to palaeontology and in 1833 he introduced a fossil zoology course described in an 1835 *Lancet* as "almost the only comprehensive and accessible source of information in this subject in the English language". He was elected to the Councils of the Linnean, Geological and Zoological Societies in quick succession and made a Fellow of the Royal Society in 1836. He delivered one of the first major lecture series to the Fellows of the Zoological Society on the "Classification and Structure of Animals" in 1833, and in 1834 ten lectures on Fossil Zoology.

Unfortunately his Lamarkism and generally liberal views fell foul of Richard Owen who managed to persuade the Society to oust Grant at the 1835 elections. His ability to research and publish effectively was dealt a tremendous blow by this move because he lost access to valuable dissection material. However he was obviously held in high regard by the College as the inscription on the Beck microscope presented to him in 1853 by his friends and former pupils reads "As a testimony of their sense of his eminent services in the cause of science".

In spite of his problems Grant remained Professor for 45 years and on his death bed bequeathed his extensive book collection to the College.

He was succeeded by Sir William Henry Allchin from 1874 to 1875. Allchin was later to become a distinguished physician and medical administrator who played a large part in the discussions which led to the University of London Acts of 1898 and 1905.

Allchin was followed by Sir Edwin Ray Lankester in February 1875 who after graduating from Oxford was one of Huxley's three assistants in a Government financed short summer school in practical laboratory biology for school masters.

In 1879 the collections were partly moved from the lecture room which had been shared with Medicine and Physiology to a room the Fine Arts department had vacated. The move was not finally completed until three years later because of the delay in fitting cases.

At the time of the move E. Ray requested the sum of £150 for the purchase of specimens to fill in important gaps in the collections. He felt that after this further growth could safely be left to donations of friends and students.

The introduction of practical and research work courses, the first in England, necessitated the appointment of an assistant Curator, A.G. Bourne, who later became Professor of Biology in the Presiding College, Madras and H. Jessop the first Laboratory Technician who held the post for half a century.

In 1883 preparations of dissected Nautilus were put into the Museum, one of which was a male purchased from Hamburg Museum in 1877, only three or four males having previously been known.

By 1886 the Cephalopod collection was one of the best in Britain "containing several cuttle fish, which did not exist in any other collection in the Country". (E. Ray could have been biased of course!)

The move to new premises was not without its problems, in 1884 several specimens were destroyed when a large portion of the ceiling fell in. By 1889 space was again a problem and the two new cases necessitated the rearrangement of the collections which by now included some of the first Challenger material. In 1890 the microscope slide collection was begun and E. Ray complained bitterly to the College Council that the ceiling had fallen in again caused by flooding from the Physiology department - six times in two years. The printed label catalogue started in 1886 was finally finished. It contained what he hoped eventually to have not what was necessarily there.

E. Ray moved to Oxford taking with him many specimens which belonged to the Museum and 370 of the most valuable diagrams from the teaching collection.

During his time the department was considered the most active school in Britain and he trained and influenced many Zoologists who later became famous at home and abroad - among them Willey, Weiss, Michin, Fowler and Weldon. His assistant at UCL and Oxford Goodrich (a former Slade Art School student) eventually held the Chair at Oxford and ultimately taught Medawar and Michael Abercrombie who subsequently became Jodrell Professors of Zoology at UCL. Lankester's mode of running a Zoology department became the model for departments in all the British Universities until well into the 20th century. Lankester's work ranged wide from Protozoa through to Dipnoi and Holocephali. He was the first to recognise the relationship of Limulus to the Arachnida - his Limulus specimens are still in the collection.

His 1877 "contribution notes on Embryology and Classification" resulted in a major reclassification of the entire animal kingdom. Lankester was responsible for founding the Marine Biological Laboratory at Plymouth and from Oxford went on to be Director of the BM(NH) for ten years.

He was a larger than life character and apart from Darwin and possibly T.H. Huxley was probably the greatest British Zoologist of the 19th century.

Under Walter Weldon who followed E. Ray the collection continued to grow and now included the fourth specimen of *Lepidosiren paradoxa* ever seen by Zoologists and the extremely rare, newly discovered *Notorhynchus*. The Museum was revised and rearranged, with Fowler as the Assistant Curator.

In 1893 a request for a "small truck, as at the British Museum, with india rubber tyres for conveyance on the flat and a hoist from Museum to laboratory level to reduce wear and tear on the specimens" and presumably staff, since some of the specimens weighed as much as half a hundredweight "from being carried up and downstairs", was put to the College Council. The request was repeated in the reports of the next two years. There is no record of when, if ever, these were obtained! 1897 saw a new departure - the illustration of lectures by lantern slides taking up much of the Assistant Curator's and laboratory attendants' time in photography.

Weldon, together with Francis Galton and Karl Pearson, founded the science of Biometry and followed E. Ray to Oxford in 1899. He was succeeded by Edward Alfred Minchin who worked on Protozoa and the lower Metazoa. During his time these collections, and the slide collection expanded and BM(NH) duplicates were added to the Arachnids and Reptiles.

A card catalogue was introduced in 1901. Minchin was followed in 1906 by J.P. Hill who was distinguished for his work on mammalian embryology especially of Marsupials and Monotremes. He quickly remedied the collections' deficiencies in embryological material from his own valuable collection. The, by now obsolete, system of classification rendered rearrangement necessary once again, as usual hampered by lack of space. In 1909 parts were rehoused in new cases but the following year the state of congestion was worsened by the receipt on permanent loan from the South Kensington University of seventy nine skulls and skeletons mostly disarticulated of which the Rhinoceros, Bear, Seal and Zebra skeletons were mounted at a total cost of £14. The donation of three Marsupial skeletons and three spirit mounted specimens from J.P. Hill and seven Primate skeletons from Professor Elliot Smith could not have helped the situation.

1911 saw the donation of the Finzi collection of British Lepidoptera housed in two large cabinets. The war interfered with plans for a collection illustrating the marine fauna of the Scilly Isles - Mr Swithinbank and his yacht being in the service of the Admiralty. Zeppelin raids caused the removal of the spirit specimens to the damp basement and a room at the Slade which had a concrete roof. They had to be transported back and forth for teaching which resulted in a certain amount of damage. During this time G.E. Bullen, Honorary Assistant Curator presented valuable collections of Fish and Molluscs including those of Dr L.G.Higgins of Harpenden.

J.P. Hill was appointed Professor of Embryology in 1921 and was succeeded by D.M.S. Watson the famous Palaeontologist distinguished for his work on fossil Fish, Amphibia and Mammal-like Reptiles. The space problem was alleviated for a while by moving into rooms vacated by the Anatomy Department.

In 1923 the Zoological Society deposited on permanent loan a very large series of bird skeletons which had formed part of the foundation of many important works on Avian taxonomy.

1929 saw the addition of many Corals from the Great Barrier Reef expedition in which two members of staff, T.A. Stephenson and E.A. Frazer "affectionately known as Auntie" took part. "Auntie" also contributed to the Embryology collections.

The space problems were not really solved until the department's move to the present building in 1933 when the collections were housed in a proper Museum.

Upheaval again took place when a large part of the collection was evacuated with most of the department to Bangor during the second world war.

J.P. Hill's vision of 1921 for "a trained Zoologist who is also a good technician" as Curator was finally realised in 1948 when D.M.S. Watson relinquished the Curatorship and appointed Reg Harris.

Reg needs no introduction to members of the group. His pioneering work on preservation and freeze drying is well known. He was followed by Roy Mahoney whose book on Zoology techniques is every Zoology Museum's curator's and technician's bible. Between them they probably had as much influence on the course of Zoology Museum work as E. Ray Lankester had made on teaching methods. The teaching collections continued to grow but unfortunately D.M.S. Watson's Palaeontology collections went to Cambridge for reasons I won't go into here (we now have some of them back on loan).

D.M.S. Watson was followed as Professor by Sir Peter Medawar who received the Nobel Prize for his work on transplantation immunology, Michael Abercrombie formerly UCL Professor of Embryology who was also a Cell Biologist and finally in 1971 by Avrion Mitchison an Immunologist and nephew of J.B.S. Haldane, the Geneticist who was a member of the department for many years.

The growing importance of Cell Biology, the Curator's responsibility for the new electron microscope unit and the departure of

the deputy Curator to become Curator at Imperial College in 1964 led to a decline in the Museum's fortunes. It declined further with the arrival of Professor Mitchison who subscribed to the erroneous theory that Classical Zoology was dead and the Museum was taking up valuable research space.

The threat to its existence mercifully retreated but the building of a new animal house caused the ceiling to be lowered and pressure of departmental space meant that the seminar room took about a third of its original space.

When I arrived in 1971 the roof was off and the collection once again in store and having to be moved from the basement of the D.M.S. Watson library for classwork demonstrations. The reduction of space and replacement of the vertebrate half of the 1851 cases has meant that it has become a storage museum although it is still growing as the needs of teaching change and new courses are devised. One good thing came out of the upheaval, there was no longer case room for both the skeletons labelled Zebra. Before one of them was disarticulated and boxed it was decided to ask the BM(NH) to identify the specimen that was rumoured to be Quagga. Alan Gentry verified that it was indeed one of the only five known skeletons unfortunately minus one leg and that the other 'Zebra' was in fact Donkey.

The MDA system of recording has been introduced with the view of eventual computerisation.

The next phase of the Museum's life will be an attempt to redisplay much of the material, which is used to an increasing extent by other departments, colleges, artists, television and film companies. Not a great deal has changed in the last 158 years. We are still short of money and increasingly short of space, the collections have spread out of the Museum and store into the surrounding labs. Weldon's complaint of 1895 that "owing to the large amount of work entailed by heavy classes in the laboratory it has not been found possible to do quite as much in the Museum as was achieved in the earlier years" still applies. The majority of the collections need reclassifying and recataloguing and we are flooded fairly regularly from above by the Animal House although the ceiling has not fallen in yet!

A full history of the Museum will be published, hopefully within the next decade, if the Curator ever has the time to do the necessary research!

The afternoon session of the AGM took the form of an informal talk on the general problems of preservation given by Reg Harris with ample opportunity for audience participation and discussion.

In a very stimulating talk Reg reminded us of the fundamentals of preservation and gave a review of methods together with the problems they produce. He emphasized that fixed material dissociates over the years and many of our major collections are undergoing changes. When some of the sludge found at the bottom of museum jars was investigated it was found to contain perfect cells.

Fixation must be followed by preservation. As both alcohol and formalin dilute with age we were advised to replace preservatives in museum jars completely not to just top them up!

New methods of fixation were discussed. Although comparatively little work has been done on it, Dowicil, a byproduct of naphthalene, which acts as a formalin releaser is proving very useful particularly for whole animal fixation.

Keeping agents were also discussed. We were advised not to use Nascoguard (ethyl glycol) as it is dangerous.

Clinosol (8-hydroxyquinolin sulphate) in powder form, from Hamburg was useful. Biochemical analysis can be carried out on specimens up to three weeks after they had been put into Clinosol.

Seraquin in liquid form, the English equivalent of Clinosol is very acid. As it corrodes metal preparation should be carried out in enamel dishes. It was interesting to hear that embedding specimens in plastic blocks is not now recommended. Time has shown that the blocks can blow up and craze due to oxidation, UV radiation from strip lights and acid from handling.

The attachment of specimens to backing plates, prevention of pest attack in freeze dried specimens and the reclaiming of dried up specimens were discussed.

It was an interesting afternoon which left the participants with much to think about, not least that a group should be set up to deal with preservation and conservation problems in the Biological Sciences linking up with more general biodeterioration.

If anyone is interested in forming such a group please contact me :- Mrs Rosina Down, Department of Zoology, University College, Gower Street, London WC1E 6BT.

LICENCE TO POSSESS AN ILLEGALLY KILLED BIRD - the position in
Scotland

The publication of Derek Whiteby's note (BCG, 3(10)) on the recent issue of a licence by the D O E in respect of an illegally killed lapwing raised two issues in my mind. Firstly, not having had to go through the licensing procedure, I wondered whether this would be the same in Scotland where the legal system has traditionally been administered in different ways to that of England and Wales. If this was the case, my intention was to clearly define that procedure before a case actually arose and pass that information to BCG for publication.

Secondly, I was rather concerned about condition 'b' on the Sheffield licence : "The bird must not be moved from the premises of the City of Sheffield Museum without the authority of the Secretary of State for the Environment". I gather that in the case of this particular specimen, it is highly unlikely that it would be moved as it was required specifically for a display but what if it had been preserved as a skin in a study collection ? If requests by researchers for loans of material were subsequently received, they would either have to be turned down or special application made to the D O E for 'authority' to move them.

In order to clarify both of these issues, I contacted the D O E in Bristol in December and again in January when my letters were kindly answered by a Mr Kuhl.

1. Licencing. Despite my assumption that the Scottish Home and Health Department was responsible for licencing in Scotland it seems that all enquiries regarding the issue of licences should initially be referred to the D O E in Bristol. Scottish curators please take note !
2. "No movement". This condition is of concern to all curators in Britain. My original query produced the following response:
"The reason it is necessary to include a condition on the licence prohibiting the movement of illegally killed specimens from the premises without the consent of the Secretary of State, is to prevent such specimens being sold (my emphasis). 'Sale' includes hire, barter and exchange."

Following receipt of this letter, I contacted D O E again to ask for clarification. Why was the condition not simply "The specimen shall not be sold" ? The relevant paragraph of the reply are as follows :

The reasoning behind the wording of the condition is twofold. First the bird was illegally killed and the above named Act specifically states in Section 1 (1) that if anyone intentionally kills any wild bird he shall be guilty of an offence and Section 2(a) then states that if any person has in his possession or control any live or dead bird - he shall be guilty of an offence. It is for this reason that the condition controlling movement of any illegally killed bird was put in operation, as the licence only allows the individual to which it was issued, to retain the illegally killed bird. If it was moved then it would be an illegal act under Section 2 (a) of the Act for the subsequent keeper to be in possession of the said birds.

Secondly the reasoning behind the sale condition follows above advice in that the sale covers hire, barter and exchange which would render any seller or purchaser of an illegally killed bird, guilty of an offence.

Clearer now ? If you are presented with the carcasse of an illegally killed bird, would you accept it given such conditions ? I am sure the Editor would welcome your views.

Michael A Taylor
Keeper of Natural Sciences
Perth Museum & Art Gallery

YOU'LL JUST HAVE TO TAKE MY WORD (OR A VOUCHER)

"There is a possible conflict between conservation and recording, with voucher material. Those species for which voucher material is often most valuable may well be species regarded as rare. Often such species are local, not rare, and the taking of a few voucher specimens will not affect the population. Species that are genuinely rare are usually large or longer-lived, so that there is more opportunity for a taxonomist to see the living specimen, or to examine a photograph of it."

This statement was part of a pre-print about Validation of Records issued to participants in the recent Biological Recording Forum (London, April 1985). The idea of the pre-prints was to elicit discussion about the problems of biological recording, such as that of conservation vs voucher-collecting. Some discussion on this subject did arise, but I feel that a fuller explanation of my statement might prove helpful to anyone who has doubts about taking a voucher specimen of a 'rare' species.

For many species, voucher specimens are not necessary. Bird records, for instance, are usually accepted on the basis of descriptions. Most British butterflies can be identified from good-quality photographs, and plants are often best left growing so that experts have the opportunity to examine them in the living state. However circumstances often do not permit satisfactory validation by these means, and a recorder will have to decide whether or not to take a voucher specimen. Before going any further, it must be stressed that many plants and animals are protected under the Wildlife and Countryside Act 1981, so that collection of voucher material is not permitted except under licence. Of course there are many more species which are locally or nationally 'rare', but do not have protection under the Act. It is the discovery of these which presents the recorder with a problem.

The important question to ask (and answer) is "Will the collection of voucher material upset the population structure, so that the future of the colony is jeopardised?" To answer this question, it is necessary to understand the biology of the species and its status. Many species produce an excess of offspring because high mortality of immatures normally results in a tiny proportion surviving to reproduce. Where conditions permit, such species can build up large populations very quickly. Collecting voucher material from such populations will not threaten these species. Voucher collection is a relatively unimportant mortality factor.

Alternatively some species produce relatively few offspring, but low mortality ensures that sufficient individuals will mature to continue the population. Such species tend to be long-lived and the low mortality is often due to their large size. Collection of these species represents a comparatively large mortality factor and might well cause the population to fall below a critical level. Some species with a high reproductive potential may have small adult populations. Collection of mature individuals would be inadvisable, but collection of seeds or larvae may be appropriate.

It is important to assess the actual status of a species in a particular area. Some may be very local but extremely abundant. Others may be widespread but very scarce. Often it is the former that are called 'rare', yet they would suffer much less at the hands of collectors. 'Rare' is not only abused as a term to describe distribution. It is also employed to indicate difficulty in finding a species. In this sense, it has little value in understanding the biology of a species or the conservation implications of voucher collection.

On the other hand a species which is easily seen or collected may delude the recorder into thinking it to be 'not rare'. For instance in certain butterfly species all the individuals in a population may be on the wing on a single day. The collection of just a few specimens might reduce the population to a critical level.

Clearly, common sense must be the guiding principle in all of this, but beware the enemy within. Sometimes filling a gap in the collections can seem like common sense! If in doubt, collect a second opinion before the voucher specimen.

Tony Irwin
Castle Museum
Norwich

A response to Geoff Hancock's note (BCG Newsletter 4 (1) p. 29)
on the preservation of insects in alcohol.

In the course of taxonomic work over the last year I have had to examine a large number of caddis larvae which have been fixed and preserved in 70 - 80% industrial methylated spirits in tap water i.e. 'alcohol', for between 0 and 15 years. It is impossible to be precise but the following has been observed.

There is almost immediate loss of any green or yellow colours in the fat body and haemolymph but then up to about five years there is usually little further change. After that time the normally pale straw-coloured unpigmented parts of sclerites become darker and orange while the brown pigment patterns on those sclerites become paler. The overall result is that subtle shading characteristics may be difficult to see in larvae over ten years old. It must be emphasised that chaetotaxy is unaltered and basic patterning shapes are usually discernible. The deterioration may stabilise for I have seen sixty year old caddis larvae which had quite adequate patterning. Two other factors can cause early deterioration of specimens. If the alcohol is too weak at fixation or becomes weak by evaporation specimens tend to rapidly darken and their bodies become very soft and fragile. Caddis larvae stored on open shelves in light airy laboratories can bleach badly in as short a period as four months.

There is a general tendency for caddis larval bodies in alcohol to become soft in the short term then stiffen up after a few years. I have used Pampel's Fluid for fixation and preservation. It is an aqueous solution of alcohol, formaldehyde and acetic acid and though it gives nice firm bodies it causes serious colour changes when used for storage. The propylene phenoxetol system used as instructed seems to produce very poor quality material after only a year or so.

Ian Wallace
Merseyside County Museums,
Liverpool.

Natural History - The Cinderella Subject in Museums

Recent correspondence in the 'Museums Bulletin' (James, T. (1984), 24(9), p169 and Hancock, E. G. (1985), 24(11), p204) points out that the natural sciences are the cinderella subject of museums. They receive far less in the way of staffing, accommodation and funding and far less publicity within the museum profession, when compared with the 'humanities' such as social and industrial history or fine and applied art.

The reasons for this neglect are complex but we, the natural sciences curators, bear some responsibility for this state of affairs and we can, if we wish, take steps to reverse this trend. In the process we may have to compromise some of our ideals.

The recent upsurge of interest in local and industrial history has had a beneficial impact on museums. The enthusiasts have associated museum collections very closely with their interests and consider them to be relevant and important to their activities. The results of work undertaken by local amateurs, both historical research and practical restoration, have come into museums, and this in turn has prompted more interest by enthusiast and general public alike, eager to view or study the exhibits. This popular interest has, therefore, translated itself into support for museum projects and many new museums have been created as well as the enlargement and improvement of many existing institutions. During the 1970's there was the beginnings of an even greater interest in natural history but, in marked contrast to the situation just outlined, this has not resulted in greater support for natural history in museums. It seems fairly clear that an interest in natural history means an interest in living animals and plants whereas museums are still regarded as being haunted by necrophiliacs interested only in dead material. This is exemplified by the car sticker "Preserve wildlife. Pickle a squirrel." We have managed to miss the boat almost completely and most naturalists do not regard museum natural history as being relevant to their interests.

Part of my responsibilities in operating a biological records centre at Rotherham Museum has been to assist groups or individuals who wish to manage their property in a way which is sympathetic to wildlife. In some cases (e.g. Naturalist Trust reserves) the wildlife interest is paramount, but in other cases (e.g. golf club and fishing club) it is peripheral to the main activity. The initial reaction to my involvement is one of surprise that museums are indeed interested in wildlife before it pegs out as well as afterwards, but once this barrier has been overcome and our interest in the living animals and plants of the locality has been explained then our relevance to local natural history has been understood.

Country Parks have been one of the few growth areas in recent years and the ones in South Yorkshire have initiated ambitious programmes of guided walks for the public, often on natural history topics. They have begun to satisfy the public demand for help in studying our wildlife and their staff are becoming regarded as expert naturalists by their public. We are in danger of being outflanked by these country parks and there is a danger that they, not museums, will be seen in the public eye as the fountain of all knowledge and wisdom. That public includes our political paymasters. I know that many museum-based naturalists are involved with the public education organised by these country parks but our involvement is usually minor, and we may be helping to reinforce the belief that the parks are the organisations which are responsible for studying the local wildlife. If we are to re-establish museums as the local research centres then we need to adopt a much higher profile and spend much more time in leading guided walks, preparing articles for the local press, appearing on local radio and television and giving lectures.

The snag is obvious. The upsurge in interest in displays and education work in the 1970's led to curators neglecting their collections, and there has been a backlash against this recently. We all hoped (and expected) that we would attract additional funding as a result of this demonstration of our value to society, but the results have been very disappointing. A concentration on our educational role in field natural history would cause a similar neglect of our curatorial functions in the short term and the long term benefits would be equally uncertain. However, it may be the only way in which we can compete against other natural history organisations to assert our position within British natural history.

A second reason why the natural sciences are under-resourced relates to monetary values, and in this respect we have lagged far behind our colleagues in other disciplines. The classic dichotomy is between natural history and fine art. If you visit an art and craft shop and wish to purchase a very ordinary picture by a local artist with no reputation you would expect to pay at least £30-£50. A particularly good example would cost ten times that amount, and a painting by a "known" artist would command even more. I maintain that the skill, knowledge and experience involved in putting together a small collection of shells, insects or even birds' eggs (!) is at least as great as that required to arrange a few grammes of pigment on a piece of canvas or paper and yet we, as natural history curators, do not consider them to be of equivalent monetary value. We expect to acquire the life's work of an expert whose skill and knowledge in his own subject far exceeds our own for the equivalent of a few days of our salary. Our fine art colleagues have no such inhibitions. They are willing to pay the equivalent of several years of their own salary to acquire one reasonably interesting object, and when it comes to the product of a master of the craft then the sky is the limit. During the 1984 the following appeals have appeared in the 'Museums Bulletin':-

Earl of Southampton Armour	Tower of London	£367,950
'Crucifixion' ascribed to Duccio	Manchester City Art Galleries	£1,789,800
C18th Silver Travelling Canteen by Ebenezer Oliphant	National Museum of Antiquities of Scotland	£145,000

Not to mention £500,000 for security, maintenance and restoration of Dulwich Picture Gallery and £3,000,000 to move the Courtauld Institute and Galleries to Somerset House.

Can you imagine a natural history curator asking his committee to spend $\frac{1}{4}$ million on a collection of insects, mounted birds, pressed plants or field notebooks? In one of the earlier BCG Newsletters (Taylor, M.A. (1977) 7,p.33) Mike Taylor drew our attention to an antique dealer in Castleton, Derbyshire, who was selling British shells from last century with full data at £1 to £3 apiece, and the general reaction was one of amazement that such prices could be asked. This attitude on our part undervalues our collections. We may consider their scientific value to be all-important and we may positively shun the monetary value they embody. This is an attitude that is unlikely to be understood by our governing committees or even by senior professionals who come from other disciplines. An object or collection that costs £50 is worth £50, whether it be a mediocre painting or a nationally important collection of insects.

The monetary value of our comparatively miniscule collection in Rotherham was brought home to me several years ago when I had to give an insurance valuation. We have a policy of collecting local material, and it is almost impossible to buy a collection of insects, mammal skins, shells, etc. from a specific locality or from a specific county/district. The only way I could expect to re-establish a local collection in a few years' time was to employ a team to collect, identify, mount and catalogue one from scratch. Immediately the collection becomes worth tens of thousands of pounds. If you have an important collection from New Zealand, Sri Lanka or Hawaii then the replacement cost would be somewhat higher.

At a time of financial restraint it is unrealistic to suggest that we should all insist on paying a commercial rate for our natural history specimens, but we can appraise our committees of their value. A note which tells them that the small collection of butterflies donated by a local naturalist is worth £25,000 will have a much greater impact than one which merely records it as a free gift. If a collection is offered for sale we should not try to beat the vendor down to a ridiculously low figure. If our long-term strategy is to persuade our masters (both political and professional) to rank natural history alongside fine art then we must begin the process of education soon. A request for a small fortune to buy an important collection will probably be turned down, so we must do it gradually by agreeing to pay a fair price. I believe that the only way to increase our purchase funds is to spend them and to prove that we have had to forgo some purchases. An increase in these funds and an increasing appreciation of the monetary value of our collections is the only way to prove that we need additional staff, storage space and equipment.

Bill Ely,
Clifton Park Museum,
Rotherham.

PEST CONTROL IN MUSEUMS : SURVEY

Martyn Linnie has contacted the Editor concerning his post-graduate research project on pest control in museums. Many of you will already have received the questionnaires and I hope that you can find time to complete and return them. If you have not received one write to: M. Linnie, Dept of Zoology, Trinity College, Dublin 2, Ireland, for a free copy(ies).

Perhaps a good response may help us to take a step further towards a pest control strategy which is both effective and acceptable on health and safety grounds.

BOOK NEWS
AND REVIEWS



The Spiders of Great Britain and Ireland
by Michael J. Roberts. Published by Harley Books.
3 volumes. Size A4 (290 x 212 mm)

This is the book on spiders we have been waiting for! Published in 3 volumes; the first two are text volumes dealing with all the British species. Vol. 1 includes an introduction, sections on morphology, behaviour, collection, preservation, literature, classification and keys to families, and genera of large families. Each genus and species is described, paying special attention to distinguishing closely related species. Vol. 1 covers Atypidae - Theridiosomatidae. Vol. 2 continues with this treatment, covering the large family of 'money spiders' Linyphiidae. The text is condensed and written principally to assist the identification of the species. Each volume also has over 100 pages of text figures providing comparative line-drawings of critical features e.g. genitalia - palps and epigynes.

The author's aim is to make the identification of British spiders easier for established arachnologists, for beginners and also for those 'occasional arachnologists' who may need to identify these animals during the course of other zoological or ecological studies. It supplements and complements the previous main work of reference 'British Spiders' by Locket and Millidge.

As one of those "occasional arachnologists" at whom the book is aimed, I put it to the test! Using a combination of colour plates, and general keys it was possible to run down the names of a few preserved specimens without too much difficulty. Species descriptions provide a ready check on important characters, and those of closely related species. Text also gives additional information on the status, distribution and habitat preferences. It really does work!

The colour plates, all 237 of them in Volume 3 are superb! They cover a total of 307 species, each one greatly enlarged with legs outstretched; they are accurate down to the last hair. In all cases the actual size of each species is indicated by a life-size line drawing. It all makes identification easier; but the colour plates themselves are a pleasure to browse and enjoy. Michael Roberts has been painting them in his spare time, since 1968.

The price, Vol. 1 £45, Vol. 3 £55 (Vols. 1+3 together £85; Volume 2 will appear in 1986), is going to bite hard into the book budget of the average provincial biology curator, but do not let this be offputting. This book combines high quality scientific artwork with an up-to-date text and keys. In no previous work in the arachnid literature have illustrations of this standard been published.

Despite the fact that Mike Roberts lives and works in Sheffield, this is no biased review. I sincerely believe that this book would be an indispensable asset to the library of all museum natural history departments. It should revolutionise the study of British spiders, and help to put them on the map!

D.W.

SOUTH-WEST NATURAL SCIENCES COLLECTIONS RESEARCH UNIT NEWSLETTER

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Entomological collections in the City of Bristol Museum and Art Gallery.

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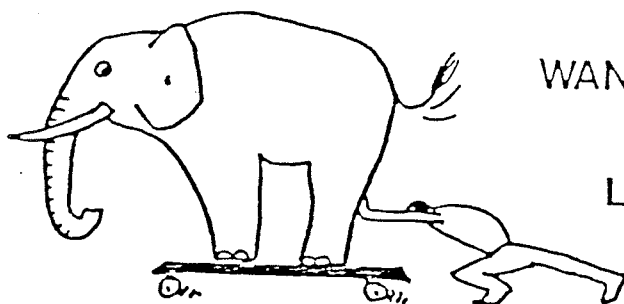
Publications on south western geology and natural history in 1984.

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EDITOR:

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



WANTS, EXCHANGES,

LOST & FOUND

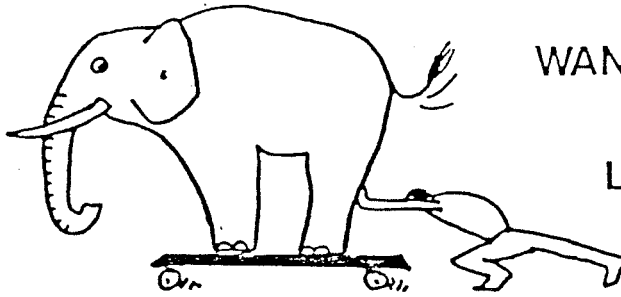
I have had an enquiry from a Philip Hall from Maine U.S.A. who is attempting to locate sources of primary data regarding the career of ROBERT SWINHOE(1836-77), British Consul in China, who did much to contribute to the scientific knowledge of the fauna of China between 1854 and 1874 and sporadically until his death. Any information relating to correspondence , his manuscripts and journals and the whereabouts of his collections and the 3500 or so stuffed specimens he brought to England should be sent to

Philip B. Hall
P.O.Box 61
Surrey
Maine
USA 04684.

Rosina Down
Curator
Museum of Zoology & Comparative Anatomy.
University College, London.

TUSKS MAMMOTH (MAMMUTHUS PRIMIGENIUS) right and left.
Proof of authenticity available. Only genuine buyers entertained.

Anyone interested should contact the editor, who will pass names on to the vendor.



WANTS, EXCHANGES,

LOST & FOUND

FLEAS

In 1974 the Biological Records Centre, Monks Wood Experimental Station published my Provisional Atlas of the Insects of the British Isles, pt 4, Siphonaptera. Fairly recently thoughts have been expressed about the possibility of an up-dated edition but I feel that insufficient new records and confirmations of old records, have come in to make the effort worth-while. However the idea is tempting and I am, therefore, appealing for more information concerning flea distribution within the British Isles. The best information would come with the sight of unrecorded specimens, particularly recent collections.

Mapping the British Isles on the basis of the 10 km. squares of the national grid and the Irish Grid involves approximately 3500 squares. The following figures illustrate the paucity of flea records : in my 1974 paper the best (!) recorded bird flea, Ceratophyllus gallinae (Schrank) was known from 416 squares, the best recorded mammal fleas, Spilopsyllus cuniculi (Dale) from 559 squares and the aggregate Ctenophthalmus nobilis (Rothschild) s. lat. from 614 squares. The last ten years have produced a less than 10% improvement!

Fleas can be obtained from the bodies and the nests of their hosts, they should be preserved in 70% alcohol and full data, i.e. host identity and sex, locality, date, collector's name, grid reference should be provided whenever possible. Of course due regard to the law concerning some species of hosts must be observed.

I would be happy to identify specimens of any British fleas - even those from such mundane hosts as dog or cat or humans - and will return specimens if so desired (I must admit that return postage would be appreciated).

R.S.George, C.I.Biol., M.I.Biol., F.L.S., F.R.E.S.
8 Saint Peter's Street
Duxford
Cambridge
CE2 4RP

FAIRY FLIES.

This is the rather romantic name given to a Family of small Chalcid wasps known scientifically as Mymaridae. About 70-80 British species are known and the World List has about 1300 names on it. Almost certainly thousands of species are yet to be found and described.

In my retirement I have taken up an interest in this group and I would appreciate it if Curators would be so good as to inform me, at least in broad terms, i.e. areas of the world involved, approx. numbers, degree of identification, slides and/or card mounted, of the holdings in their Museums (B.M.(N.H.) excepted of course - I spend a moderate amount of time on the collections there). At the moment I cannot offer identifications - maybe, hopefully one day.

R.S.George...address as on the 'Flea' note.

New occupational exposure limit for formaldehyde: significance for museums.

A new control limit for occupational exposure to formaldehyde has been adopted by the Health and Safety Commission (HSE) and ^{comes into} effect from 1st January 1986 (1). The new limit, based on a recommendation by the HSC's Advisory Committee on Toxic Substances, has been set at 2 parts per million (ppm) of formaldehyde vapour (2.5 mgs per cubic metre) in air averaged over any 10 minute period (this is the Short Term Exposure Limit or STEL). For longer exposures, up to 8 hours (the Time Weighted Average or TWA) exposure is identical at 2 ppm or 2.5 mgs per cubic metre in air.

The new control limits will replace the current recommended limits (set at limits identical to the new control limits). Since 1980 concern has been voiced on the possible carcinogenic risk attached to exposure to formaldehyde and, although it was demonstrated that rats exposed to high levels of formaldehyde developed nasal cancers, epidemiological studies to date have not indicated that there is any carcinogenic risk from human exposure to formaldehyde. The overall evidence however is equivocal and HSE regards it prudent to judge formaldehyde as a potential human carcinogen.

Formaldehyde vapour is highly irritating to the eyes and mucous membranes at levels above the existing limits and has been shown to cause dermatitis, and a form of occupational asthma in susceptible individuals (2).

To comply with HSE policy, exposure of staff to formaldehyde should be reduced as far below 2 ppm (STEL and TWA) as is reasonably practicable. Health and Safety Executive Guidance Note EH42 describes the monitoring strategies required to gauge staff exposure to toxic substances and gives details of how to go about assessing exposure levels (3). It is however advisable to consult a qualified Occupational Hygienist on all aspects of monitoring and assessment of staff exposure to toxic substances in the workplace. Extant and impending legislation dictates the requirement for the employment of 'competent' persons to carry out such assessments.

The new control limit for formaldehyde exposure should not be construed as excluding formaldehyde from use as a primary fixative for biological specimens. However, wherever use of formalin solution is likely to result in staff exposure at levels near or above the new control limit

it would be advisable to apply standard chemical laboratory operating procedures for toxic substances, namely the use of an effective fume cupboard or fume hood whilst (a) fixing specimens, (b) transferring specimens from formalin to a longer term preservative and (c) examining or dissecting formalin fixed specimens for prolonged periods.

Short term or casual examination of material preserved in dilute formalin should, so long as carried out under controlled conditions, not present any hazards, however, advice should be sought where doubtful from a competent Occupational Hygienist or Safety Officer trained in the monitoring and assessment of exposure to toxic substances.

Simple methods are now available for distinguishing formalin solution from other preservatives, therefore reliance on the use of smell should be discouraged. Waller (4) has devised a colourimetric paper strip indicator which distinguishes solutions of formaldehyde from other preservatives.

References

1. Health and Safety Executive, Guidance Note E H 40/85 Occupational Exposure Limits, 1985, ISBN 0 11 883516 5
2. Health and Safety Executive, Formaldehyde, Toxicity Review 2, 1981, ISBN 0 11 883453 3
3. Health and Safety Executive, Monitoring Strategies for toxic substances Guidance Note EH42, 1984, ISBN 0 11 883600 5
4. Waller, R and McAllister D. A spot test for distinguishing formalin from alcohol solutions. Abstracts of 2nd Workshop on the Care and Maintenance of Natural History Collections May 21-22, 1985, Royal Ontario Museum, Toronto, Canada.

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