

INSTITUTIONAL RESPONSIBILITY FOR PALAEOLOGICAL COLLECTIONS

by MICHAEL G. BASSETT

ABSTRACT. Although fossil collections are housed in various institutions, they should be regarded as the property of science as a whole, and thus over and above the personal responsibility of individual curators there is a collective responsibility among a wide spectrum of people and organizations for their care and management. The roles of museum administrators, universities and other training organizations, professional societies, publications, and national funding agencies are discussed in relation to this collective responsibility. Many of the guide-lines for collection management were outlined in the nineteenth century, and the museum profession has either ignored, or been slow in recognizing the need for collective action to implement those policies required to safeguard an important part of our evolutionary heritage.

... A Museum without intelligent, progressive, and well-trained curators is as ineffective as a school without teachers, a library without librarians, or a learned society without a working membership of learned men (Goode 1895, p. 86).

... we note that to maintain natural history collections adequately is expensive; to neglect them is too costly to contemplate. The compromise of funding them inadequately is coming increasingly nearer the latter alternative (Cohen and Lachner 1969, p. 762).

IN 1895 Dr. G. Brown Goode, Assistant Secretary of the Smithsonian Institution in charge of the U.S. National Museum, visited Great Britain to address The Museums Association at its sixth annual general meeting held at Newcastle upon Tyne. Goode was an enlightened and influential museum administrator, and his paper on 'The principles of museum administration' made a considerable impact, particularly since he later ensured that every member of the Association received a reprint copy! (see *Proc. Mus. Assoc.* for 1896, p. 155.) One of Goode's stated objectives (1895, p. 71) was 'to set forth the aims and ambitions of modern Museum practice, in such a manner that they shall be intelligible to the persons who are responsible for the establishment of Museums, and the conduct of other public institutions founded for similar purposes, in order to evoke more fully their sympathy and co-operation'. In doing this he dealt with virtually every aspect of museum work and organization, and spelled out in clear detail the interdependence of various functions and personnel required to implement progressive and professional policies.

At the following annual meeting (1896) of The Museums Association, the palaeontologist F. A. Bather, who was also a leading figure in setting museum standards, developed particular themes from Goode's paper, and in a pungent and satirical critique drew attention to many regressive curatorial practices by asking 'How may museums best retard the advance of science?' It is disturbing to realize that these two articles, which between them cover almost all the guide-lines that curators today would consider as essential for the proper management of collections, are aimed directly at the museum profession, yet over eighty years later we still find it necessary to meet in order to discuss these very problems; the policies and standards embodied

in these papers have clearly not been implemented in the way that they should. I consider that if every museum curator were to read and act on the recommendations made by Goode and Bather then standards would improve dramatically, and many of the curatorial problems under discussion at this colloquium could be removed. To some extent this could be construed as 'preaching to the converted', since in theory it is the curators themselves who should be most aware of problems within their own museums, yet how many curators can say that the collections in their charge are all in perfect order? There is a great deal to be learned from the past experience of others.

But it is too simplistic to suggest that problems could be solved simply by making curators alone aware of recommended practices. Curators are charged with the day-to-day management of collections, but many other people are also involved in the over-all responsibility for their permanent well-being, either directly or indirectly. The personal responsibility of individual curators is only part of an institutional responsibility, used here in its broadest sense as implying collective responsibility. This paper is intended to draw attention to the collective role that various groups can play with particular regard to palaeontological specimens, and to suggest possible practices in relation to some specific issues. My examples to illustrate various points are drawn mainly from Britain, since this is the area in which I have greatest experience, but the over-all theme of the paper is intended to apply to any collections and organizations world-wide.

Museum authorities and collection management

Museums and other repositories of fossil collections are increasingly faced with the problems of shortage of space and suitable accommodation, which in the long run will affect the arrangement and proper care of material, whether it be for research, exhibition, or general educational purposes. Too often, however, such matters are regarded as those of the curator alone, who is diverted from his main task of curating and cataloguing by having to spend time in justifying demands for increased financial and logistical support to authorities who do not understand the nature of the problem. Fossil collections are too often regarded by non-scientists as indestructible, so that requests for additional facilities for their storage and protection tend to be given low priority by administrators when compared, for example, with works of art. But such administrators must be convinced that they have an equal responsibility towards palaeontological specimens, and that fossils are a non-replaceable resource in our scientific heritage. Interplay and understanding between curators, administrators, and all other staff responsible for running museums is essential if this heritage is to be given lasting protection. Goode (1895, p. 88) again summed up the issue over eighty years ago in stating 'that the administrative officers of a Museum should be men who comprehend the meaning of Museum work and are in sympathy with its highest aims'.

In Britain, recent local government reorganization, coupled with a slight expansion of museum services in the 1970s, has tended to accentuate this curatorial/administrative dichotomy, particularly in the smaller local authority museums. Many museums with geological collections are now linked either with libraries or with leisure services under a common administrative head, and lack any direct scientific control. This

situation is a cause of concern, particularly since this is also the very group of museums with an acute shortage of trained curatorial staff. It can be no accident that the many cases of severe neglect of important geological material, as detailed so vividly in issues of the *Newsletter of the Geological Curators' Group* over the past five years, refer almost exclusively to the smaller local museums. Administrators and the community at large must be urged to accept their part of the collective responsibility for collections, and priority must be given to the appointment of qualified geological staff to care for geological material. If this essential criterion cannot be met, then those in charge of collections should be urged either to seek specialist advice or to transfer material to an institution where it will be given curatorial care. The GCG has an active 'rescue' scheme for geological collections at risk, and where requested will provide specialist advice to those museums with no qualified staff; the scheme is as yet in its infancy but promises a great deal in identifying and hopefully rectifying some areas of neglect. This idea of 'peripatetic curators' could well be the answer to shortages of specialist staff in the immediate future, though as with so many other solutions there is nothing new in it (Petrie 1896). Groups of museums, and particularly those in the new, larger local authorities, could benefit from pooling their resources to employ a specialist geological curator. The Area Museum Services are an obvious and immediate vehicle for launching such a scheme.

It should not be assumed from the above discussion that curatorial problems are confined to smaller museums. In almost all institutions staff are required to be involved in a wide variety of exercises ranging from research, through arranging exhibitions, to dealing with public enquiries, all of which make their own special demands and can easily lead to neglect of the curating of the collections themselves. For example, the National Museums in particular have a strong tradition and brief to carry out scientific research, and the professional staff involved are then generally also expected to be responsible for the curating; yet both exercises can be full-time jobs. Of course back-up staff are employed to carry out the day-to-day curatorial functions, but I know of only one large institution in which curatorial responsibility has been recognized in itself as justifying a separate post on a level with that of research scientists. That is the U.S. National Museum of Natural History, where the Department of Paleobiology employs a full-time professional Collections Manager with the specific brief of administering the fossil collections and thus relieving research (and other) staff of some of this responsibility. Such appointments are welcome and could well be adopted by other large institutions with a multi-purpose role.

Given that collections are adequately housed and curated by qualified staff, institutional responsibility is then further required in making material available for exhibition or study. All museums face similar problems in the arrangement of fossil collections, and there is no uniform system that can be applied since each institution will have to assess its role within the community at large. Some flexibility of arrangement is desirable to allow not only for internal curatorial convenience, but also for the convenience of, and usage by the general or scientific public, as appropriate.

Because of their taxonomic status in biology, type fossil specimens are an especially important part of museum holdings, placing additional demands on institutions that house them. The particular problems and requirements attached to the storage and

conservation of types have been dealt with by a number of authors (e.g. Swinton 1955; Owen 1964). Institutional responsibility for such material is best summarized by Recommendation 72D of the *International Code of Zoological Nomenclature*, which states that:

Every institution in which types are deposited should

- (1) ensure that all are clearly marked so that they will be unmistakably recognized;
- (2) take all necessary steps for their safe preservation;
- (3) make them accessible for study;
- (4) publish lists of type-material in its possession or custody; and
- (5) so far as is possible, communicate information concerning types when requested by zoologists.

The *International Code of Botanical Nomenclature* is less specific in this regard, but in its Recommendation 7A makes an equally important point in relation to the housing and curating of type material:

It is strongly recommended that the material on which the name of a taxon is based, especially the holotype, be deposited in a permanent, responsible institution and that it be scrupulously conserved.

Although these various recommendations refer directly to type specimens, they can equally be applied to fossil collections in general as guide-lines for good curatorial practice.

In its Article 72 (f) the *ICZN* makes a further fundamental point, again in direct relation to types, but again one which should be regarded as applicable to all fossil collections:

Holotypes, syntypes, lectotypes, and neotypes are to be regarded as the property of science by all zoologists and by persons responsible for their safe-keeping.

This philosophy of collective ownership, coupled with the *ICZN* recommendations of accessibility, raises the issue of loans of material from museums for study purposes. Fortunately, most institutions today accept their responsibility for making specimens available, and provided that the safety of the material is given prime consideration by both curators and borrowers, there is no reason why such policies should be restricted. A few museums, however, continue to remain jealously possessive of type material, but the majority of such cases are again probably those in which the specimens are in the care of untrained staff who do not appreciate their obligations to science; even more so than with general palaeontological collections, these museum authorities should consider transferring their types to more suitable institutions at which they will be made available.

Universities and other training organizations

Universities have a special responsibility towards palaeontological collections in that they are the main training ground for geologists who will form the future generations of curators, and are also leading users of collections both in the laboratory and field for teaching and research purposes. However, few, if any, university programmes include even basic courses dealing with the principles of curating. Appreciation of such principles, including the first steps of accurate field recording, cataloguing, and storage should be regarded as much as a part of palaeontological training as taxonomy and morphological investigation. At a research level both students and staff should ensure that collections are curated to a certain minimum standard and that research

material, together with all the necessary documentation, is eventually housed in a reputable institution.

Some universities have large and well-curated museums in which to deposit palaeontological research material, represented in Britain, for example, by museums such as those at the universities of Glasgow (Hunterian Museum), Cambridge (Sedgwick Museum), Oxford, and Manchester. In many cases, however, university museums are little more than an extension of geology departmental teaching collections, and there are no staff with special responsibility for curating. Numerous instances are known in which important research material, including types, has become mixed in with teaching collections; university staff have a responsibility to clearly separate the functions of both these kinds of specimens. Universities with no specialist curators, and with inadequate facilities for specimen storage, fall in the same category as those museums discussed above which lack geologically trained staff, and should similarly consider passing on non-teaching collections to more appropriate repositories.

Other formal curatorial training in palaeontology is almost equally limited. The Museums Association runs a postgraduate professional course (under certain conditions non-graduates may also enrol) leading to the award, through examination, of a Diploma in museum studies; however, in this course geology and palaeontology are included within Natural Sciences in general rather than recognized as a separate discipline. The Diploma covers all aspects of museum work and is designed for candidates in full-time museum employment. A similar, one-year postgraduate course is offered by the Department of Museum Studies at the University of Leicester, again with palaeontology under the umbrella of Natural Sciences. Although valuable in giving a general curatorial background, both these training schemes thus do not necessarily tackle specific curatorial problems in the field of palaeontology. Training is also offered in Conservation and Natural History Technology for those engaged in the preservation and restoration of specimens.

It must be said that none of these courses attract the full range of the museum profession, particularly those with other postgraduate qualifications and/or in larger museums, mainly because it is felt that they offer little that will not be taught better by first-hand practical experience of specific problems. There is undoubtedly a need for the training organizations to review the nature and content of their courses in order to attract a wider range of curators and make them valuable as a professional qualification, but there is equally a responsibility among those palaeontologically qualified professionals in our larger museums, who have both the curatorial experience and technical expertise available, to take an interest in the training courses, to offer their services as tutors, and in general to seek to improve curatorial standards and teaching in this way. A great pool of experience is currently being wasted because there is insufficient interplay between established museum specialists and the training schemes.

The result of these various limitations in both university and other forms of training is that most palaeontological curators are largely self-taught through practical acquaintance with particular problems. Few museums themselves attempt to introduce new staff to their curatorial systems and techniques, but rather let them pick up the general principles, and meet the pitfalls, as they go along. Such guidance that

is given is generally passed on by word of mouth and relies heavily on the time and experience of established staff to relay information to new generations. Of course such personal guidance is invaluable, but it is often tenuous, and few museums have permanently available, written guide-lines in the form of curating manuals for consultation. In Britain there are notable exceptions to this generalization in the palaeontological departments of the British Museum (Natural History) and the Institute of Geological Sciences, both of which have written manuals or notes for internal use, giving clear and specific details of the ways in which various types of fossil collections are to be dealt with. Such manuals enable new staff to become immediately familiar with the various curatorial systems, reduce the risk of mistakes through 'practising' on the collections themselves, and lead to a uniformity of curating standards throughout the institution. All museums should be urged to give similar written guidance to new staff as part of their initial curatorial training.

The value of internal manuals in particular museums serves only to emphasize the lack of, and need for, a general curating manual applicable to palaeontological collections. In the process of self-teaching most curators become familiar with various publications dealing with different aspects of collecting, preparing, and storing fossils, and many of these have long been regarded as standard works of reference (e.g. Knowlton 1891; Schuchert 1895; Evans 1914; Swinton 1941; Yochelson 1969). There are also publications covering the more technical aspects of preparation and conservation (e.g. Kummel and Raup 1965; Rixon 1976), and general background guides to the principles of museum and collection management (e.g. Allan *et al.* 1960; Lewis 1976), but nowhere is there a widely available, concise guide embracing the principles of specimen collecting, storage, labelling, cataloguing, etc. that could be used as a specific training manual for palaeontological curators. The national and larger provincial museums, with their large pool of expertise, and especially those that currently have internal manuals, could perform a valuable service if they were to combine their resources and produce such a handbook that could be used as a basis for training in courses and as guidance for any curators dealing with fossil collections; there is a collective responsibility on the larger museums to pass on their expertise in such a way as a contribution towards curatorial training and improvement of standards.

Professional societies

The membership of learned and professional societies has considerable potential to influence museums in the deployment and management of fossil collections. Museological organizations in particular, such as The Museums Association and the Geological Curators' Group, incorporate the collective curatorial expertise necessary to advise museum authorities on standards and practices, but in the light of the known lack of standards as applied in some institutions housing fossil material, one wonders whether advice is offered with sufficient vigour. I believe that these societies have a responsibility to act as pressure groups and to highlight areas of neglect through widespread publicity. Through its *Newsletter* the GCG has been successful in this respect in recent years, and museum authorities are now beginning to take note of specific problems pointed out to them. Such publicity, however, should not merely

be critical, but should also offer practical help and advice in the way that the GCG is doing through its 'rescue' scheme (see also above, p. 39).

As users of collections the geological/palaeontological societies can also exercise a collective voice in stating their requirements with regard to collection standards. The formal affiliation of the GCG with The Geological Society of London as one of its specialist groups is a welcome move in that it forges firmer links between curators and other geologists and increases the potential pressure that can be brought to bear on museum authorities. Specialist palaeontological organizations such as The Palaeontological Association and The Palaeontographical Society have the expertise available to assess the over-all scope of palaeontological resources, which would be of great benefit in recognizing particular areas of neglect or need. In North America The Paleontological Society has given an outstanding lead in this way through its CONARIP report (Glenister *et al.* 1977) which analyses the scope of available invertebrate fossil collections across the continent; there is a similar report for vertebrate palaeontology (see Glenister *et al.* 1977, p. 1). The conclusions and recommendations made in the CONARIP report (p. 29) are remarkably similar to those discussed at this colloquium, and in the three final recommendations, quoted below, the role of professional societies is succinctly summarized:

- (5) The Paleontological Society would serve the needs of the profession by appointment of a Standing Committee on Paleontological Resources, concerned with vertebrates and plants as well as invertebrates.
- (6) A Collections Newsletter would serve a useful communications function [in Britain this function is fulfilled by the GCG *Newsletter*].
- (7) The Paleontological Society or its Standing Committee on Resources should initiate a funding proposal to permit sponsorship of such activities as collections salvage and a visiting specialists program.

Professional societies in other countries could play a valuable role by following similar aims. In Britain the GCG and The Palaeontological Association are the obvious bodies to make such an assessment of resources, and could most usefully combine to set up a Standing Committee along the lines suggested by The Paleontological Society.

And finally, as mentioned briefly above (p. 42), the professional societies also have some responsibility towards the training of curators. Here again the training programmes would benefit if the museological and the geological/palaeontological organizations were to combine in some way in order to recommend minimum standards for courses to take into account the requirements of both curators and users of collections.

Publications

Many organizations, including individual museums and professional societies, produce publications of various kinds of relevance to palaeontological curating and collections, and some of these have already been mentioned above in relation to different aspects of collective responsibility. However, the role of publications as permanent records is sufficiently important to stress them further here with particular regard to three categories, viz. training manuals, primary scientific journals, and secondary publications. The first of these have been discussed (p. 42) in some detail as

important aids in training, and the need for such publications is thus simply emphasized here.

Primary journals are the main vehicle via which palaeontological collections are described and assessed in their over-all scientific context. Type, figured, and cited fossils dealt with in these publications should be housed in a permanent and accessible institution and properly stored and curated. A great number of problems that taxonomists face today arise from the fact that in the past insufficient details were given of the repository and registration numbers of type and figured specimens, with the result that they cannot now be readily traced for purposes of comparison. Even today this is still true to some extent, and in order to overcome this problem there is a responsibility on journals and their editors to refuse to publish data on fossil collections unless they are accompanied by full registration details. To my knowledge, no journals make this a *mandatory* condition of publication, but like The Palaeontological Association (one of the sponsoring societies for this colloquium) they only recommend that such material 'should be in the collection of a reputable institution such as a museum' and that the 'registered numbers should be quoted' (see *Palaeontology*, 1977, **20**, p. 925). Similarly, both the *ICZN* and *ICBN* only recommend that such practices should be adopted, rather than making them a mandatory condition for the recognition of all taxa; at present only the deposition of zoological neotypes is mandatory [*ICZN*, Article 75c (6)]. Until such insistence is made for all described material the problems of tracing and recognizing specimens in the future will remain. Swinton (1955, p. 10) has pointed out that it would be most advantageous if the rules of nomenclature were to be amended to make such conditions a necessary clause for the establishment of taxa, but since this is unlikely to happen in the near future, the responsibility rests with the primary journals themselves.

Secondary publications in the form of bibliographies and catalogues are also important in recording the whereabouts of fossil collections. As noted above (p. 40) *ICZN* Recommendation 72D puts a particular onus on museums to publish lists of their holdings of types, and many such publications are now available for various parts of the world (e.g. see Banfield 1968; Bassett 1975; Forney and Nitecki in Glenister *et al.* 1977, Appendix 5, pp. 50–55). Smaller museums may not have sufficient resources to publish individual catalogues, or the size of the type collections may not warrant it, but since information on individual specimens is of value to palaeontologists it should be distributed in some form, and here collections newsletters such as that of the GCG form an ideal medium whose use should be encouraged to the full.

Funding agencies

*. . . The major systematic collections are man's treasures of information about his fellow creatures on earth. Today man is beginning to realize that his population and technological needs must be accommodated in a finite world. The challenge of the hour is for man to find ways—culturally, economically, aesthetically, and spiritually—to respond to this truth. The great systematic collections of the United States are the key to that understanding. If they are to fulfill their vital role, they urgently require the active support of the Federal Government (Glenister *et al.* 1977, p. 1).*

The day to day financing of collection management is very much the responsibility of individual institutions, which are funded in various ways, but this quotation from the CONARIP report, although referring specifically to the United States, clearly

points out that the broader assessment of collections is very much a national and international responsibility, requiring active financial support at the highest level. The CONARIP report itself was supported by a grant from the American National Science Foundation, which attests to the importance attached to it. Elsewhere, similar governmental support has not been available in the same way to my knowledge. In Britain, if the problems attached to the assessment of palaeontological resources and improvement of curatorial standards are to be tackled at a national level, then bodies such as the Natural Environment Research Council and The Royal Society should be urged to provide financial support. As noted above (p. 43) one of the concluding recommendations of the CONARIP report suggests the initiation of funding to sponsor activity in this field. In Britain one way of implementing such a recommendation would be for NERC to agree to finance postgraduate studentships designed specifically to tackle curatorial problems in particular institutions. Such a scheme would have the advantage of both introducing curatorial training into universities and producing results towards an over-all assessment of resources. At present bodies such as NERC tend to restrict their funding to direct research activities, but again as stressed by the CONARIP report (p. 29) national funds should also 'be promoted for the support of *collections*'. Without such national support and recognition of the problem a considerable part of our scientific heritage will remain in danger of decay and destruction.

In the eighty years since G. Brown Goode and F. A. Bather so eloquently expressed their views as to the ways in which museums should be run, many of the curatorial problems associated with fossil collections appear to remain with us. North America has led the way through its CONARIP report in recognizing the extent of the problem, and the time is now ripe for other countries to follow suit through collective action.

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DISCUSSION

C. D. Waterston. The recommendation in Article 72 (*f*) of the ICZN, that types should be considered the property of science, means not only that museums should not regard them simply as their own property, but that research workers must also regard them as the property of science and should not feel free to misuse them.

M. G. Bassett. I agree entirely. Research workers studying museum material should, along with curators and administrators, accept their equal share of collective responsibility.

P. Lingwood. In relation to the recovery of material from inadequately curated museums, perhaps we should be encouraging greater research on the collections. In this way authorities might be made more aware of the importance of the collections and it might lessen the accompanying possessive attitude. This greater awareness might then lead to the voluntary transfer of material to a more reliable institution.

A. W. A. Rushton. It is worth mentioning in this context that personal communication is both important and effective. For example, a good number of years ago the Royal School of Mines was given a large number of Geological Survey specimens for teaching purposes. The late A. Morley Davis, then in charge of the School of Mines at Imperial College, took it upon himself to pick out anything that he thought to be of more significance to the Geological Survey, and to return it. This is an example of the personal approach that led to the amicable restoration of specimens to an established museum.

R. B. Rickards. In my experience there has been an improvement in attitudes in the last ten years or so with regard to loans of material. In the Sedgwick Museum there are very few outstanding loans despite the fact that, in recent years, there have been more requests than ever. There are, of course, some offenders who do not reply to requests for the return of specimens; but material that goes to the Soviet Union, for example, comes back on time and in perfect condition.

H. W. Ball. For many years the BM(NH) had a very restricted policy but now we permit the loan of type and figured material, although for limited periods only and under stringent conditions—the safety of the material being regarded as paramount. On the whole there has been very little loss and the procedure we have taken has justified our confidence so far.

M. White. A great deal has been said about the need for increases in members of staff but I wonder if this is looking at the wrong end of the problem. Should we not be asking whether we have too many museums? Many local authorities are reluctant to close down their museums because they are afraid of local pressure. People tend to think of them as centres of attraction but those that are inadequately staffed and curated often have little or nothing to offer.

C. T. Scrutton. Surely it is not that we want to close museums particularly, but what is urgent is that those museums without expertise should give up the material that they have and pass it to an institution where it can be properly curated. This would solve most of the problems. We cannot expect small museums to take on extra staff to curate small collections.

H. S. Torrens. This has been part of the philosophy of designation of centres of excellence in the museum structure. Although many people have opposed the idea, we have simply pointed out that there are important centres which should be encouraged to accumulate material that would otherwise be at risk.

B. Pyrah. While I agree that many smaller collections should be deposited in larger museums, I do not think for one moment that it will solve the staff problem because I do not know of any large geology museum in which the curators and collections are sitting around with nothing to do. Almost all curators are already overworked without taking on such an extra load.

H. S. Torrens. Many of the problems under discussion highlight the fact that as a profession we have been ineffective in getting our message across to those who ultimately control our museums. Professional associations must certainly play a more active part. As yet the GCG is small and ineffectual, but it is just beginning to point out areas of severe neglect and many of the findings have come as a shock, even to those who previously suspected the worst. What we really need now is some ammunition to fire at administrators in order to convince them of the seriousness of the problem. Hopefully the proceedings of this symposium will have some effect on those administrators in charge of our treasures.

W. D. I. Rolfe. In the long run we should also be seeking to introduce a curatorial care among general geologists and administrators by education, both at universities and via specialist courses. The point has been made that no handbook for curators exists, but eventually perhaps such a handbook might be more effective than a series of isolated papers in a symposium volume such as this.