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Author(s): Brinklow, R.

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featured institution

DUNDEE MUSEUMS & ART GALLERIES

NATURAL HISTORY SECTION

Introduction

Dundee is one of Scotland's larger cities, with a population of about 180,000. Its Museums and Art Galleries Service has for many years been the responsibility of the Local Authority. The first museum in the city was that of the Watt Institution, founded in 1824 to provide further education for industrial employees. After flourishing for a few years, it declined and was wound up in the 1850's, the collections eventually being transferred to the Town Council to provide the original nucleus of the present Museum's collections.

Although the first of our present museum buildings was completed in 1867, it was not until 1949 that the need to employ a full time Curator was accepted, and as recently as 1970 that the first Natural Historian was employed to take charge of the Natural History collections. It is therefore not surprising that much of the biological material assembled in the early years has failed to survive to the present day.



Barrack Street Museum

The Staff

The present permanent staff of the Natural History Section consist of a Keeper, Mr. R.K. Brinklow : Two Assistant Keepers, one of Biology, Mr. A. Garside, and the other of Geology, Mr. D.S. Henderson : An Astronomer, Dr. F. Vincent : A Taxidermist, Mr. M. Nicoll and a Natural History Technician, Mr. J. Sage. Miss M. Matthews, a biologist who is the museum's Assistant Extension Services Officer, completes the professional team responsible for all aspects of the Natural History Service in Dundee.

In addition, the Curator (the administrative head of the whole Museums and Art Galleries Department) Mr. A.B. Ritchie, a former Keeper of Natural History himself, maintains a personal interest in the subject although not actively contributing to the work of the Section.

As the staff list implies, "Natural History" is interpreted in its widest sense in Dundee, although the astronomical activities and geological collections have been excluded as being beyond the scope of this article.

The Buildings

Four separate buildings scattered across the city house the Natural History staff and facilities. Two main buildings, the Central Museum and Barrack Street Museum, both near the city centre, house, at the time of writing, Natural History displays. Those in the Central Museum are, however, to be transferred to Barrack Street Museum, where most of the staff and collections are accommodated, in the near future. Broughty Castle, five kilometres to the east in the suburb of Broughty Ferry at the mouth of the River Tay, contains our Seashore Gallery and provides accommodation for the Assistant Keeper (Geology). The Mills Observatory, built in 1935 as a public observatory and set high on a hill in one of the city parks, completes the list of buildings.

Displays

In the Central Museum we have one gallery (150 m²) completed in 1973 in which local birds and mammals are displayed, mainly in ecological groupings or habitat settings. At Broughty Castle, the Seashore Gallery (60 m²) which was opened in 1977, includes open displays of the sandy and rocky shore creatures and an audio-visual presentation. Barrack Street Museum has one gallery (130 m²) containing a mixture of temporary Natural History displays currently open to the public. Our only live exhibit at the moment is a full size observation beehive, the sometimes temperamental behaviour of which is more than outweighed by its public popularity.

The Tay Whale Skeleton, which was formerly suspended from the ceiling in the Central Museum, has recently been dismantled and is stored awaiting gallery modifications at Barrack Street which will enable its redisplay. The vertebrate displays will then join it as part of a rationalisation programme to develop Barrack Street as Dundee's Natural History Museum. It is hoped that this will eventually result in the opening of five galleries, providing a total of more than 500 m² of Natural History and Geology displays in the building. The Seashore gallery will remain at Broughty Castle.

Collections

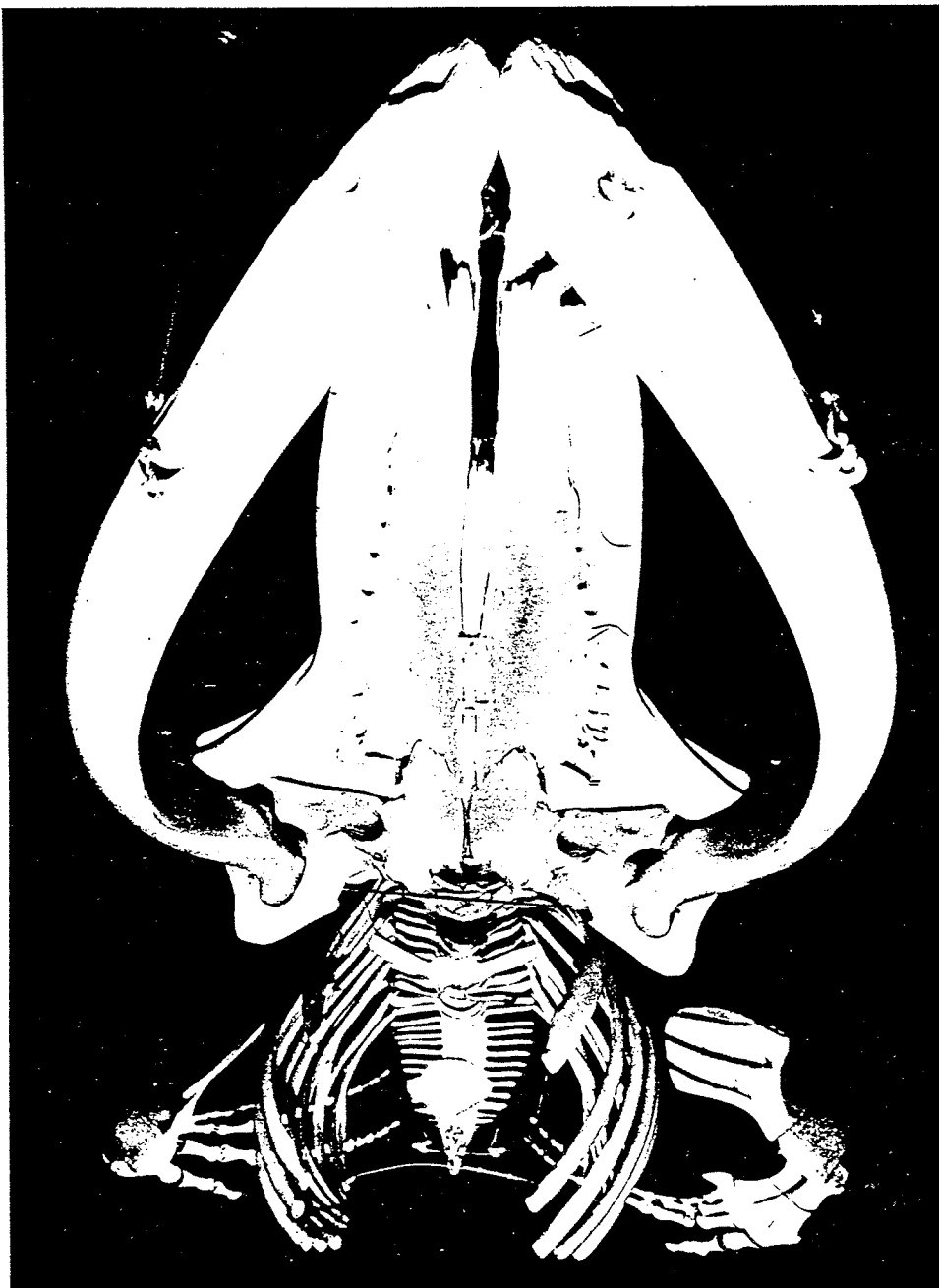
The historic collections in Dundee have still to be fully researched and documented. The following is therefore a preliminary account and is based on information collected as part of the Scottish Natural Sciences Collections Research exercise. We have recently begun a complete inventory of our entire collections which is programmed to be completed by April 1984.

Dundee was formerly a major whaling port and at one time the museum contained a very fine collection of Arctic, and to a lesser extent Antarctic, specimens. In addition, the captains of trading vessels returning from all parts of the British Empire presented a rich variety of exotic material. Surviving donations books from the 1880's to 1930's make tantalising reading, but indicate an overwhelming predominance of exotic over Scottish specimens. Years of neglect undoubtedly resulted in the destruction of many of these specimens, while a policy decision in the early 1950's to concentrate on local material led to the destruction or dispersal of still more of the foreign collections, so that only a fraction now remains.

Since 1970 a policy of concentrating on the active accumulation of well-documented Scottish specimens has been followed.

Vertebrate Zoology

Undoubtedly our most impressive specimen is the "Tay Whale" which has been one of Dundee Museum's main attractions for the last hundred years. The skeleton is that of a male Humpback Whale, Megaptera novaeangliae, nearly forty feet long, which was harpooned in the River Tay in December 1883.



The Tay Whale Skeleton

Bird Mounts : About 350 specimens survive from the previously much more extensive collections assembled in the late 19th and early 20th century. The modern collection contains some 420 specimens, almost all of Scottish origin and mounted by museum taxidermists, J. Wardrope and M. Nicoll. In addition we have 33 specimens from the Charles Stonham collection which were purchased in 1976.

Bird Skins : The 1,500 skins in our collection comprise : 650 modern Scottish specimens prepared by museum staff; 400 British and 40 foreign specimens from the J F T Nisbet collection purchased in 1971; 80 British and 75 foreign specimens from the J T Boase collection, donated in 1949; and 60 foreign specimens that formerly belonged to the Dundee Naturalists' Society.

Osteology : In addition to a heterogeneous assemblage of old material, our osteology includes over 100 bird sterna and over 100 bird skulls, prepared recently from Scottish specimens. The majority of the mammal study skins also have skulls attached.

Birds Eggs : These total nearly 7,000 and include the Alex Kennedy collection (1,000 British and foreign eggs from the late 19th and early 10th C.); the J F T Nisbet collection (535 eggs, mainly British and dated between 1920 and 1970) and the Dundee Naturalists' Society collection (3,373 eggs, mainly British and from the period 1900 to 1920). Of historical interest are 16 eggs collected by Sir Ernest Shackleton on South Georgia in 1914. Most of our eggs are however very poorly documented and appear to have little scientific value. The egg collection is not currently being increased.

Mammals : Of the late 19th and early 20th C collections of probably several hundred mounts, less than 20 still survive. However, since 1960, some 130 British specimens have been prepared. The mammal skin collection includes more than 200 British mammal skins prepared by museum staff and a further 60 skins from the J F T Nisbet collection that were purchased in 1971.

Fish : This collection amounts to over 500 specimens, the vast majority of which are spirit preserved. Almost all are modern, local specimens and most were collected by J. Sage from the Tay Estuary during a survey of the water cooling system of the Carolina Port Power Station, which has since closed.

Invertebrate Zoology

Insects : These total approximately 12,500 specimens. About half are old (late 19th and early 20th C) specimens and include some 2,000 generally poorly documented exotic specimens, mainly Lepidoptera and Coleoptera; 3,200 generally poorly documented British Lepidoptera and 930 specimens from the A F Braznor collection purchased in 1973. This well documented collection, mainly from Sussex, includes 220 Orthoptera.

The modern material (6,250 specimens) is almost all well-documented, of Scottish origin, and collected since 1970. The major components are as follows:

<u>Lepidoptera</u>		<u>Coleoptera</u>	
Garside, A.	1,100 specimens	Garside, A.	1,100 specimens
Brinklow, R.K.	520 "	Smith, M.	750 "
Wardrope, J.	110 "		

Diptera
 Smith, D 600 specimens
 Brinklow, R.K. 430 "

Hymenoptera
 Brinklow, R.K. 150 specimens

Hemiptera
 Smith, M. 100 specimens

Trichoptera
 Garside, A. 180 tubes

Plecoptera
 Garside, A. 100 tubes

Molluscs : This collection contains about 6,000 specimens, although in many cases a "specimen" is a bag containing a number of shells. Exotic material constitutes the major part, but most is poorly or totally without documentation. Potentially interesting however, is a collection of 1,200 American Gastropoda and Bivalvia, principally from the Milwaukee and Wisconsin river systems. Unfortunately the collector has not yet been identified. Very little old Scottish material is present, while the modern collection (about 500 specimens) has largely been made by members of museum staff, past and present, particularly T M Clegg and C R McLeod.

Other Invertebrates : Virtually none of the once extensive spirit collections from the late 19th C. have survived, but we do still have a few Porifera specimens from the 1873 - 76 Challenger Expedition and a small collection (85 sheets) of mainly local Coelenterata, Bryozoa and Porifera probably made by W. Gardiner between 1830 and 1852. We have 285 recently collected tubes of local freshwater and terrestrial invertebrates (other than insects or molluscs). Groups represented include; Arachnida, Crustacea, Myriapoda, Annelida and Platyhelminthes. The collectors are Campbell, J.K., Dodd, C., Harper, D., in addition to museum staff.

Modern marine invertebrates are represented by about 100 specimens covering, Arachnida, Coelenterata, Porifera, Bryozoa, Annelida, Crustacea and Echinodermata, all acquired as the result of fieldwork by museum staff.



Natural History Gallery circa 1960

Botany

Vascular Plants : There are approximately 9,000 herbarium sheets of vascular plants. The main collections included are: Miss U.K. Duncan (3,500 specimens), all of high quality, well documented and mainly Scottish, including some 2,200 voucher specimens for the "Flora of Angus", and 563 for the "Flora of East Ross-shire"; David, F. (1,600 specimens) collected between 1920 and 1960, well documented and mainly from VC 75 and 101.

Dundee Naturalists' Society (about 1,400 sheets), a poorly documented British collection from the second half of the 19th C.

Historically interesting collections include: 350 local specimens, the remnants of the herbarium of W. Gardiner, author of the "Flora of Forfarshire" (1848), and 49 specimens from his father, D. Gardiner.

We also have three out of the set of six fasciculi of Alexander Croall's "Plants of Braemar" (291 specimens).

The so called "Dundee Museum old collection" amounting to some 500 sheets dated between 1870 and 1920, is a motley collection with very variable data. As yet not fully catalogued, it contains specimens from J. Aimer, J.P. Low, J. Fulton, D.R. Robertson and T.K. Braithwaite.

Of the herbarium of the Dundee Watt Institution collected in the 1850's just over one hundred sheets have survived.

The foreign material, in addition to some pretty, but dataless albums of ferns, includes about 200 sheets collected by James Brebner between 1870 and 1900, mainly from Switzerland, Norway and Palestine; 43 sheets collected by A.Hutton between 1865 and 1867 in New Zealand and 18 sheets collected by G.L. Durando in 1862 and 1863 in Algeria and labelled "Flora Atlantica Exsiccata."

Current botanical activity is reflected in the H J Noltie and R K Brinklow collections, 300 and 200 Scottish sheets respectively, which have been gathered over the past decade.

Bryophytes : The museum collection contains between 3,000 and 3,500 specimens of which some 1,500 form the "Old Museum Collection" of British specimens, collected between 1830 and 1900 and a further 1,000 specimens of the G.Forbes collection, again mainly British and dated between 1870 and 1900. Both contain a considerable number of exchange specimens with over seventy associated collectors being represented.

Also present are 250 specimens of J.Ferguson, collected between 1869 and 1879, mainly from Angus and Perthshire, and 150 of W. Gardiner from the same area collected between 1830 and 1848.

Foreign material amounting to less than 200 specimens dating from 1830 to 1900, includes specimens from Germany, N. America, East Indies, and New Zealand. The associated names include; G.D.Brighton, G.Davies, T.Drummond, I.Eulenstein, W.Gourlie and R.Miller.

Our only modern bryophytes are 250 specimens collected by R K Brinklow from Angus and Perthshire.

Lichens : Most of the 2,000 or so lichens in the museum are modern, more than 1,500 being R.K. Brinklow specimens, mainly from Scotland and many being voucher specimens from the Angus Lichen Flora project. Other modern collectors include A. B. Ritchie (177 specimens), P. B. Topham and S. R. Davey (each 25 specimens).

We have approximately 150 local specimens from the mid to late 19th C. by collectors such as W Gardiner, A. Croall, A Kerr, W Jackson and also one copy of Fasciculus 2 and 3 only of W Mudd's lichens, (200 specimens).

Marine Algae : Ignoring the several hundred specimens on scraps of paper that totally lack data, the marine algae in the herbarium include about 500 British sheets from the second half of the 19th C., Angus, Fife, Orkney, Devon and Dorset are the main areas represented and G. Bell and A. Croall among the collectors.

In addition there is a collection of 200 foreign specimens donated by Max Paulsen in 1922. This contains many German specimens, but other localities include Australia, Tasmania, New Zealand, China Sea, Brazil, W. Indies and South Africa and were apparently collected in the 1860's.

Fungi : The only historic material present is one small collection of 53 microscopic fungi collected by W. Gardiner about 1848. The rest of the collection, size unknown, was lent to the Royal Botanic Gardens, Edinburgh in 1933.

We also have a small collection of about 100 modern macro fungi, the majority of which have been prepared as freeze dried display specimens.

Biological Records

As in many museums, the gathering of biological records is seen at Dundee as an important part of the work, and a logical extension of the data associated with the specimens which are recorded on MDA cards. The records cover most taxonomic groups and include species, collector and locality-based lists and composite mapping cards.

At the moment all the information is transcribed manually, imposing a considerable clerical workload on the curatorial members of the section. Future developments in the automatic handling of data may help to ease the situation. This could be very important, as I suspect that the manipulation of scientific data will become an increasingly important part of museum work.

Publications

Over the years, the museum has published a number of booklets and information sheets on various aspects of Natural History. The publication of "The Flora of Angus" by Ruth Ingram and Henry J. Noltie in 1981 is however our first major book. Running to more than 300 pages, it forms the first comprehensive account of the vascular flora of VC 90 since W. Gardiner's "Flora of Forfarshire" in 1848.

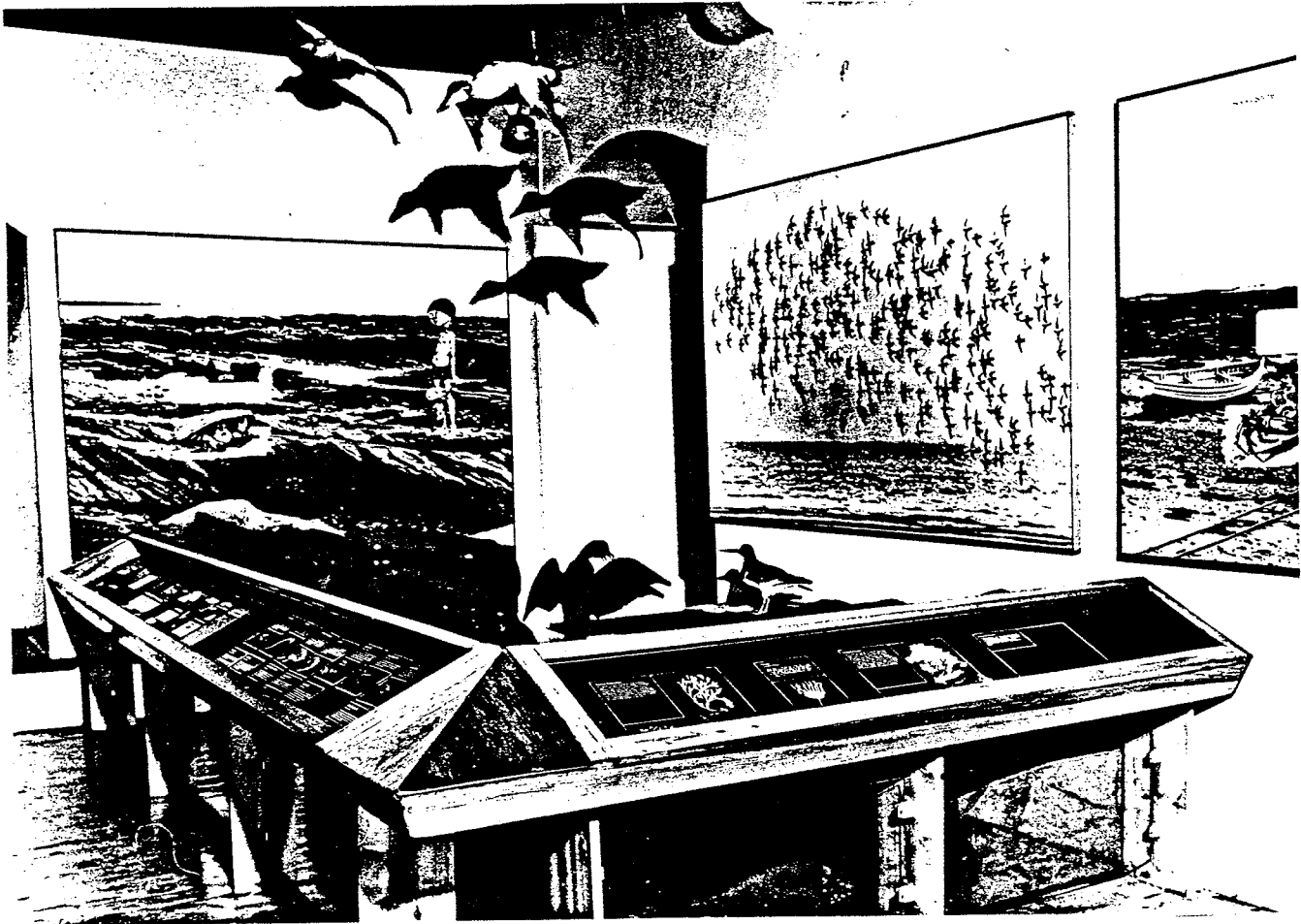
Research and Fieldwork

As previously indicated, active collecting by members of staff is now our major source of specimens. In botany, "The Flora of Angus" is being continuously updated, while the accumulation of both field records and voucher specimens as part of an "Angus Lichen Flora" project is the other main activity.

In invertebrate zoology, insect collecting and recording is the main area of interest. Lepidoptera, mainly sampled by regular light trapping, and to a lesser extent Coleoptera, Trichoptera and Plecoptera, are the main groups being investigated. We are currently concentrating on trying to build up reasonably representative data on a small number of the more interesting local sites.

Our activity in vertebrate zoology is reflected by the steadily increasing size of our bird study-skin collection. Excellent contacts with the local birdwatching and ringing fraternity are maintained by the Taxidermist, mainly as a result of his active personal involvement in ringing and migration studies.

In addition to these main interests, an attempt is made to gather information on all aspects of Natural History. This local knowledge underpins our public displays, and our identification and information service. We also try to contribute data to as many of the mapping schemes as possible.



Seashore Gallery, Broughty Castle

Extension Services Activities

The museum has an active Extension Services Section which liaises closely with the local Education Authority. One main feature of this work is the School Loans Service; specimens are lent to local schools, being delivered and collected each week by the museum van. Wherever possible, our policy has been to mount specimens specifically for the school loans collection rather than send out reject display material.

The current catalogue lists over 70 vertebrates, almost all local birds and mammals.

The collection also contains kits on a variety of topics such as local and exotic insects and seashore life. More recently small travelling displays on subjects linked to the school syllabus such as "Minibeasts" and "Animal Tracks and Signs" have been produced.

Educational activities within our buildings are at the moment limited by the lack of any suitable facilities, but staff regularly visit schools to give illustrated talks, and to assist with projects and to lead fieldwork excursions to sites in and around the town.

Extra Mural Lectures

For a number of years, members of the Natural History staff have given series of lectures on various aspects of Natural History as part of Dundee University's Extra-Mural programme, both in Dundee and the surrounding area. There is also a steady demand for museum speakers to address a wide range of local clubs and societies.

Redevelopment Plans

As previously mentioned, Barrack Street Museum has been designated to become Dundee's Natural History Museum as part of a rationalisation programme.

It is a fairly typical early 20th C building about 25 metres square, situated near the centre of the city and containing two public floors and a semi-basement. For more than 50 years it housed both part of the library service and museum galleries, but since the end of 1978, when a brand new library was opened elsewhere, the whole building has been under museum control. The Natural History collections were transferred temporarily into a public gallery and the redevelopment work began.

By 1980 a new boiler-room and firestair had been installed, two offices constructed and detailed redevelopment briefs for the whole building prepared. Unfortunately, restrictions on capital expenditure have resulted in little progress since that date. When completed, in addition to five public galleries, the building will contain modern storage facilities for the study collections and a suite of technical rooms. At the moment, however, although we have a range of technical equipment including two freeze-dryers, the working conditions of our technical staff leave much to be desired.

The proposed technical facilities include a general workshop and a laboratory, with separate taxidermy and geology workrooms, all to be hygienic, well-lit and ventilated and equipped to modern standards, including fume-cupboards where necessary.

I look forward to a time when the standard of the non-public areas matches those that are expected of public galleries.