Biology Curators Group Newsletter

Title: Exhibitions: The Live Animal Displays at the Herbert Art Gallery and Museum, Coventry

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To achieve the above we need to set some targets:

1 To aim to persuade all practising natural history departments to become members of the Group, (i.e. to launch a membership campaign).

2 To use the Collections Survey Report as the basis for BCG statements on the care of systematics collections including recommendations for appropriate action and to lobby those organisations who are in a position to implement the recommendations.

3 To formulate plans for a 'Guide to Curatorial Practice for Zoological and Botanical Collections' on the lines of the GCG Manual.

4 To prepare a programme of seminars (at least one per year) and associated publications to achieve the above.

5 To press for specialist natural history curatorial training courses to become part of the Museums Association Diploma training, to be run by the Group with full Association support.

6 To continue to improve the Group's publications and to seek their acceptance by the scientific and museological communities as essential sources of informed opinion and information relating to all matters involving biological sciences in museums.

7 To campaign for more biology curators and conservators to be employed in permanent posts, particularly in museums without specialist staff.

G. Stansfield, John Mathias, Gordon Reid
June 1987

BCG Curatorial Training Course

Only one person expressed an interest in the proposed course for 1987, so the committee have decided to POSTPONE THE COURSE TO 17 - 21 OCTOBER 1988. Once again we have booked Losehill Hall in the beautiful setting of the Peak District National Park, within easy reach of Manchester, Liverpool, Bolton, Buxton, Derby and Sheffield museums and with suitable localities for fieldwork. The course will be aimed at Museums Association Diploma students (for example, there will be a mock practical) but will also be suitable for the mid-term curator as a refresher course, and the non-specialist curator. Once again the price wil be 'bargain basement', hopefully less than £100, covering full-board accommodation at a delightful field centre, with excellent food and facilities. Please make a note in your diary now, and look out for further details in forthcoming Newsletters.

Derek Whiteley
Sheffield Museum

Exhibitions

The Live Animal Displays at the Herbert Art Gallery and Museum, Coventry

Historical background

Like most live animal displays in museums in Britain, that at the Herbert Art Gallery and Museum started life as a series of aquaria housing native freshwater fish. It consisted of thirteen glass and angle-iron aquaria, six measuring 120 x 45 x 45 cm and seven measuring 75 x 38 x 38 cm. These were installed in the late 1960's.

When the author started work at the Herbert Art Gallery and Museum in April 1979, the emphasis of the display had shifted slightly to include native species of reptile and amphibian, and small mammals and stick insects in addition to the fish. The display cages (which at the time of my appointment were apparently the original angle-iron aquaria!) were replaced during the summer of 1979 by "all-glass" aquaria (six 120 x 45 x 50 cm and seven 75 x 40 x 40 cm).

Between 1979 and July 1981 the live animal display was further diversified to include exotic reptiles and amphibians, tropical fish and foreign invertebrates. Animals were selected which exhibited special adaptations for movement within their chosen environment, in readiness for the opening of the new permanent exhibition "Animal Movement" which opened on July 1st 1981, and of which the live animal display was designed to be an integral part.

The problems of maintaining a successful live display in small vivaria were familiar to the author, and plans to redesign completely the vivarium section were commenced in 1981, and implemented in January 1984. For those contemplating changing their aquaria into vivaria, the following possible pitfalls should be borne in mind:

1 It is virtually impossible to create a realistic looking and interesting habitat within a small vivarium.

2 All glass viviaria can cause condensation problems; for many reptiles dry conditions are vital for healthy survival.

3 Small vivaria impose considerable limitations on the size of animal which can be kept. With lizards, this has far-reaching implications. Small lizards are extremely vulnerable to predation in the wild. To combat this problem they are normally (a) nocturnal or crepuscular or (b) extremely secretive and retiring or (c) cryptically (usually drably!) coloured. Although there are exceptions, the majority of small lizards make poor display specimens in terms of arousing public interest.

4 In small vivaria many lizards are unable to set up territories, thus the more interesting aspects of their behaviour - territory defence, and often courtship and mating, are not witnessed.

5 Even for many snake species which are undemanding in terms of their space requirements, display in small vivaria can result in concern amongst visitors who feel the animals are cramped.

In the context of a live animal display relating directly to an exhibition on animal movement, the limitiations of small vivaria are felt even more acutely.

The new vivarium at the Herbert Art Gallery and Museum

The new live animal display is composed of two 4 cu m vivaria, one tropical house of approximately 10 cu m, two 240 litre aquaria, one 300 litre aquarium and a terrapin pool of roughly 1020 litres capacity. All vivaria and the terrapin pool are octagonal in shape to complement the shape adopted for the display cases in the "Animal Movement" exhibition.

All vivaria are painted internally with a durable washable paint to facilitate cleaning. Lighting is provided by fluorescent tube lights of two types. "Trulite" produces a spectrum so close to natural sunlight that reptiles are actually capable of vitamin D synthesis using "Trulite" as the light source rather than sunlight. Few other synthetic lights can provide this facility. "Grolux" is an ultra-violet light used to promote plant growth. It should be noted that the current trend towards "Black" light ultra-violet tubes to promote rapid growth and breeding responses in reptiles can be dangerous, and can cause blindness to specimens (pers. comm. with several herpetologists) unless radiation time and intensity are carefully controlled.

Heating is provided by spotlights which produce concentrated areas of heat and light to stimulate basking. All lighting is controlled by individual automatic time switches for each vivarium and day length can thus be altered to simulate seasonal changes. Similarly, the wattage of the spotlights is altered to vary the temperature in the vivaria, again simulating seasonal changes.

A silvered "egg-crate louvre" ceiling separates all the lighting and its attendant electric wiring from the livestock, and serves to make this equipment unnoticeable to visitors.

Vivarium 1

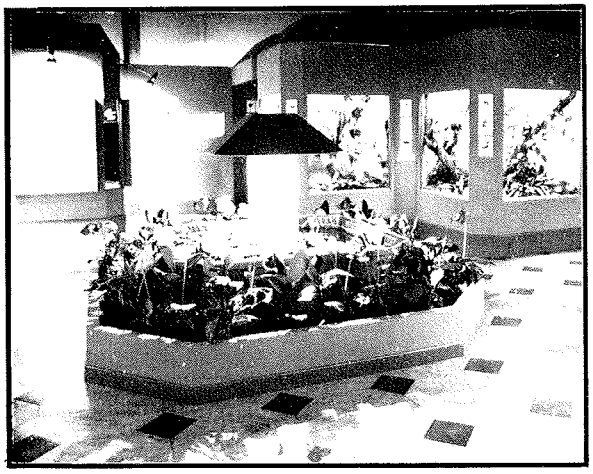
Lit by three x 120 cm "Trulite" tubes and one x 120 cm "Grolux" tube light, with two 150w "Par 38" spotlights to provide hot basking areas where the temperature may reach 40°C. False rock work landscaped in Tetrion coated papier mache provides climbing, basking and hiding spaces. There is a bark chip substrate. The vivarium houses one adult pair of Mexican Black Spiny-tailed Iguanas, Ctenosaura acanthura.

Vivarium 2

Lit in the same way as Vivarium 1, except that two x 150w and two x 100w spotlights are used to provide basking areas rather than the Par 38 spotlights. The effect is to produce cooler basking areas. The floor temperature is around 26°C. The substrate is bark chips, with sandstone rocks providing shelter and basking areas. The vivarium houses an adult trio of Mexican Indigo Snakes, Drymarchon corais erebennus, which produced seven fertile eggs in 1984. Sadly, these were destroyed part way through incubation by a failure in the incubator.

Tropical house

Fluorescent lighting comprises six x 60 cm "Trulite" and six x 60 cm "Grolux" tubes. Eight 100w spotlights provide basking areas, although it is normal only to utilise six of these at any one time. The air temperature is normally 27°C, higher in basking areas and cooler on the ground.



Animal movement exhibition, Coventry Museum.

Tree frog in the tropical house.

The floor of the tropical house is polythene lined, and it is covered by a substrate of soil and forest bark to a depth of up to 40 cm. Two plastic ponds (largest dimensions 120 cm x 60 cm) are sunk into the substrate. One contains water to a depth of only 5-8 cm, the other is up to 40 cm deep in places. The tropical house is furnished throughout with living plants, including Ficus pumila, Ficus elastica, Maranta leuconeura, Monstera deliciosa, Philodendron scandens, six species of bromeliad and several epiphytic orchids.

In terms of animal life, the tropical house contains a variety of small amphibians, including newts, tree frogs and true frogs, and three species of lizard. The selection of livestock to live in such an environment must be undertaken with great care. Few lizard species will tolerate high humidity levels for long periods in captivity, and care must also be taken to ensure that no species present will bully or predate upon other cohabiting species.

The following lizards are currently maintained in the tropical house: Cuban Knight Anoles (Anolis equestris), Thai Water Dragons (Physignathus cocincinus) and Tokay Geckoes (Gekko gekko).

In terms of amphibians, the "tropical" house contains Oriental Fire-bellied toads (Bombina orientalis), Thai Golden Tree frogs (Rhacophorus leucomastyx), Leopard frogs (Rana pipiens), and Chinese Rough-skinned newts (Paramesotriton sinensis).

Aquarium 1

This tropical freshwater aquarium comprises a community tank of small fish exhibiting a variety of adaptations to moving in water.

Aquarium 2

An aqua-terrarium housing Clawed frogs (Xenopus laevis) and Axolotls, Ambystoma mexicanum.

Aquarium 3

This tropical marine aquarium has power filtration in addition to the undergravel filtration system. It contains a Porcupine fish Diodon hystrix, Cowfish Ostracion cornutus and Humbug Damsels Dascyllus araanus.

Terrapin pool

This free-standing wooden construction is essentially an octagonal pool with an island in the centre. The water depth is approximately 45 cm and the pool capacity is 1020 litres. The pool is lined with a butyl pond liner of the type used for lining reservoirs. Above this is a layer of pea gravel. The water is electronically heated and filtered.

The central island is constructed of cornish slate and spotlit by four 100w spotlights, which provide warm basking spots. A sandbox is available for egg deposition. Originally the pool was open, but following thefts of specimens (including a snapping turtle Chelydra serpentina!) the whole has been enclosed in perspex covers sloping from the roof to the pond sides.

The daytime air temperature is 25°C, rising to 34°C directly under the basking area. Water temperature is 25°C.

Following the thefts mentioned above, current stock in the terrapin pool comprises two species: Red-eared terrapin Pseudemys (Chrysemys) scripta elegans, and common snappers, Chelydra serpentina.

There are back-up facilities behind the display, containing aquaria and vivaria for breeding, separation, quarantine and feeding purposes, a refrigerator, incubator, sink and food preparation area, including breeding cages for locusts and mealworms.

The effects of the Zoo Licensing Act, 1981

Following the implementation of this Act in 1984, all museum live animal displays were obliged to apply for a licence to operate as a zoo, or for exemption from the effects of the Act. Whilst some museums applied for licences, others applied for exemption under Section 14 of the Act. The implications of the Act for museum live animal displays have been documented by Reid (1984) and Wright (1985). The latter reference includes the case history of the successful application for exemption from the effects of the Zoo Licensing Act, 1981, by the Herbert Art Gallery and Museum. Exemption was applied for on the grounds that the collection of live animals at the Herbert Art Gallery and Museum was of small size and limited diversity.

Breeding

Although the live animal displays at the Herbert Art Gallery and Museum are primarily kept for educational purposes, efforts are made to breed from the specimens we maintain. Since the opening of the vivarium in 1984, the breeding records are as follows:

1984 8 eggs from Indigo snakes, destroyed by incubator failure

1985 14 Oriental Fire-bellied toads bred
5 Red-eared terrapins bred (representing over 35% of recorded British zoo-bred population 1972-1985)
6 eggs from Banded basilisks (Basiliscus vittatus); full term, dead in shell.

1986 3 Banded basilisks hatched
3 Red-eared terrapins hatched
6 eggs from Cuban Knight Anoles. 3 of these went full-term; dead in shell. It would appear there are no published reports of anyone breeding this species in captivity.

1987 At the time of writing (13 February 1987) we have a further egg of the Cuban Knight Anole incubating. We are hoping that utilisation of "black light" during 1987 may cure the "dead in shell syndrome" problems we have experienced with both this species and Basiliscus vittatus.
1 Red-eared terrapin successfully hatched.
4 "red ear" eggs in the incubator
6 eggs of the Thai Water Dragon Physignathus concincinus in the incubator.

References

Reid, G.M. "The Zoo Licensing Act, 1981 : Implications for Museums with Live Animal Displays". Biology Curators Group Newsletter 3 pt.10 (October 1984).
Wright, A. "Museum Livestock Collections - Licensing or Exemption!" Biology Curators Group Newsletter 4 pt.3 (October 1985).

Acknowledgements

Thanks are due to Alan Robinson, Design and Display Officer at the Herbert Art Gallery and Museum for the design of the whole gallery and to Chris Palmer, Keeper of Natural History for helping me with the practicalities of establishing the new vivarium. Thanks also to Penny Wheatcroft, my predecessor as Senior Keeper, Natural History at the Herbert Art Gallery and Museum, who originated the concept of the Animal Movement display. Had she not chosen this topic for the permanent exhibition, the need for the new vivarium would not have been nearly so pressing.

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Peter Lambley was until recently the Keeper of Biology at the Castle Museum in Norwich. He now works in the Natural Sciences Resources Centre at the University of Papua New Guinea. He sent this description of a recent family visit to the Queensland Museum.

The Queensland Museum

Australian museums generally set high standards in displays, research and publications. I was therefore very interested to visit the Queensland Museum which reopened last October in a new purpose-built building which forms part of the Queensland Cultural Centre Complex. My visit was in January during a family holiday and I only had time to sample the public exhibition galleries. Nevertheless my short visit convinced me that this is indeed a major event in the museum world and deserves to be widely known outside Australia.

The Queensland Museum was founded in 1862 in Brisbane and had a number of homes before moving to its new site in 1986. It is part of a Centre which also includes a magnificent art gallery, a performing arts complex and the State Library and is situated on the south bank of the Brisbane River just across from the main shopping centre. The museum building occupies 18,000 square metres and includes three floors of displays with twelve main rooms, each covering a specific topic.

The main subject areas covered in the displays are biology, geology, ethnography, science and technology and social science. The building is spacious, clean, air conditioned and carpeted and this produces a pleasant atmosphere in which to view the displays. Escalators link the three floors and provide a relief from museum fatigue. There is ample parking in an adjacent multi-story car park and the museum cafeteria is good. There is no charge for admission except to a special exhibition which was on at the time of our visit.

The style of the displays is a marriage of some long tried successful techniques, for example dioramas, with open displays coupled with the use of computers and audiovisual methods. The standard of presentation is high and I liked the uncluttered style of text which made it easy to assimilate the important points. Some of the techniques owe something to those used at the Natural History Museum in London, but there is a greater use of dioramas and specimens are more in evidence. Resin moulding has been used to great effect in a number of very realistic dioramas on such diverse subjects as termite mounds, rain forest trees and a fossil reptile in situ.

I did find the arrangement of the various rooms to be rather confusing; for instance on the ground floor you move from a display on images to one on fish followed by displays on underwater archaeology and transport. I suspect that this is perhaps inevitable when the Museum's policy is to change half the displays every five years. This rather confusing layout did not seem to bother my children who I think enjoyed the sense of discovery that this created.

The first floor reached by escalator has an engine room with working models of steam and combustion engines and a very enjoyable demonstration of various types of levers. Set in the middle of the next room are two resin casts of termite mounds, while the walls of the room are lined with a photo montage of a grassland landscape dominated by termite mounds. A feature of these mounds is that they are always aligned north-south and the visitor is provoked into thinking of possible explanations. A very successful demonstration of population dynamics is provided by the display titled "Feast and Famine". This follows the cycle of events after the ending of a drought near Birdsville in central-west Queensland, in particular the growth of a native rat plague and its