

Association of Systematics Collections

College Station, TX 77843
(US-032)
Museum of Natural History
University of Illinois
Urbana-Champaign, IL 61801
(US-033)
Department of Entomology, Fisheries
and Wildlife
University of Minnesota
St. Paul, MN 55108
(US-034)
Department of Botany, Zoology and
Geology
Miami University
Oxford, OH 45056
(US-035)
Florida State Museum
University of Florida
Gainesville, FL 32611
(US-036)
Museum
University of Colorado
Boulder, CO 80302

(US-037)
Pennsylvania State University
University Park, PA 16802
(US-038)
University of Michigan
North University Building
Ann Arbor, MI 48109
(US-039)
Natural History Council
449 Noland Hall
University of Wisconsin-Madison
Madison, WI 53706
(US-040)
Herbarium
Department of Botany
University of Texas-Austin
Austin, TX 78712
(US-041)
Division of Plant Industry
Florida Department of Agriculture
P. O. Box 1269
Gainesville, FL 32602
(US-042)

North Carolina State Museum of
Natural History
P. O. Box 27647
Raleigh, NC 27611
(US-043)
The Academy of Natural Sciences of
Philadelphia
19th and the Parkway
Philadelphia, PA 19103
(US-044)
Museum
University of Alaska
Fairbanks, AK 99701
(US-045)
New York State Museum
Room 3140 Cultural Education Center
Albany, NY 12230
(US-046)
THOMAS J. BERGER
Staff Biologist - Law Project
Association of Systematics Collections
(913) 864-4867

ASC

COMMENTS ON A STUDY TRIP TO EUROPEAN ZOOS

In 1977, after three years as Curator of Reptiles and Amphibians at the San Diego Zoo, discussions with zoo enthusiast Marvin L. Jones convinced me that my education would not be complete without visiting the major European collections. Several arguments were offered which convinced me that such a trip would be more than a sightseeing boondoggle. The planning of facilities for housing a collection is an extremely important curatorial responsibility at a zoological garden. Two factors made the first-hand observation of European facilities attractive. Many European zoo facilities are less than 40 years old, having been destroyed or damaged during World War II. In addition, European facilities for exhibition of reptiles and similar small, caged animals have followed an evolutionary pattern very different from that seen in North America. In Europe, the "glass cage in a glass house" can be hypothetically placed at the base of their facility phylogeny. In North America, the central theme appears to have been a "living museum" strategy.

In addition to this chance to see a large number of reptile houses first hand, the trip also offered an opportunity to gather information on breeding programs, food rearing and feeding techniques, graphics approaches and materials, exhibit decoration, staff size and hiring criteria, venomous animal policies, accidental envenomation procedures, record keeping policies and materials, collection philosophy and practices. In retrospect, perhaps the most important results

of the tour were the personal contacts made with colleagues at European institutions.

Grant proposals were positively received by the Zoological Society of San Diego and the National Museum Act (#78/251). My wife and I traveled during July and August of 1978 with a fairly loose itinerary. We visited 19 zoological gardens during 56 days of travel. Information was gathered on a form prepared for the purpose and on 35 mm color slides. Our peregrinations took us to the zoological gardens at: London, Chester, the Jersey Wildlife Preservation Trust, Basel, Berne, Zurich, Vienna, Dvur Kralove (Czechoslovakia), Stuttgart, Frankfurt, Berlin (Western sector), the Berlin Animal Park (Eastern sector), Cologne, Wuppertal, Amsterdam, Rotterdam, Wassenaar (Holland) and Antwerp.

At post mortem, it was apparent that an unforeseen benefit was derived from talks with European colleagues. Discussions of the broadest sort regarding where modern zoological gardens are going and how they can get there left me very optimistic about the future of our endeavors. Somewhat unique is the Jersey Wildlife Preservation Trust. Here animal welfare and reproduction are foremost and conservation is the objective of the institution. The Jersey staff is dedicated to saving some of the world's smaller and less publicized endangered forms of animal life such as the Round Island skink and Mauritanian pink pigeon. Graphics seen all over the grounds discuss the work done by the JWPT, breeding results,

and conservation problems and principles.

At the Basel Zoo, one encounters a zoo staff with a set of high standards for exhibition excellence. They apply the diverse talents of their staff along with a series of landscaping and construction techniques which help them reach their goals.

One of the most obvious differences between temperate zone American and European zoos lies in the fact that, in Europe, reptiles and amphibians are most often displayed in a building variously called the aquarium, vivarium, exotarium or tropical house. The structure usually houses fish and arthropods as well as the poikilothermic tetrapods. These multifunction dwellings are common, but perhaps the most modern and elaborate at this writing are those seen in Stuttgart, Cologne, Frankfurt and Basel.

Skylights, glass roofs, domes and bubbles are common in the European reptile houses and natural light abounds as a result. When visiting some of the slightly less imposing and often older structures, it becomes apparent that the conceptual origin of the modern exotarium lies in the greenhouse. At institutions like Wassenaar, Wuppertal, the Berlin Animal Park (Eastern sector) and Dvur Kralove, the basic structure differs little from that of a greenhouse when viewed from outside. Peripheral work areas may (Dvur Kralove) or may not (Berlin or Wassenaar) be visually separated from a central visitor viewing space. Animals are housed in

cages that are largely and sometimes wholly made of glass. Water in crocodilian pools, watering containers and in planters, combined with summer sun can make for a physically trying, very tropical experience for the visitor. In addition, reflection on viewing glass surfaces is rampant and exhibition efforts are greatly diminished as a result.

Having already mentioned plants, I hasten to point out that their use in the reptile houses of Europe absolutely eclipses any similar efforts yet attempted in this country. Plants do not thrive in artificially illuminated museums. One can see that the use of plants becomes more sophisticated as the concept and execution of the facilities evolves.

Various methods are used to meet the challenges of retaining natural light for plant and beast, reducing viewing surface reflection, maintaining comfortable environmental conditions for many species of poikilothermal tetrapods and one species of homeothermal viewer while minimizing the redundancy and "caginess" of glass-fronted enclosures. Frankfurt and Zurich allow a lot of light and heat to enter through expanses of glass, but Zurich reduces light intensity to some degree with overhead plantings. In Vienna and London there is little or no natural light in the visitor section, but skylights still admit light to the enclosures behind a wall separating the keeper work space from the visitor area. At Cologne, Stuttgart and Basel, we see the state of the art in the use of light, shade, plants and separation of environmental systems. Here plantings are situated inside, outside, beside and often behind enclosures in varying patterns. The effect minimizes the reality of the separating glass barriers. Lowered light intensities in the viewing area minimize reflection. The predictability, born of the redundancy of cubic cages in a cubic house, is minimized by irregular enclosure shapes and a circular building with a spiral ramp for the visitor in Basel. Irregular building angles and dramatic changes in vista upon rounding a corner help maintain a high level of interest at Cologne and Stuttgart. On a smaller scale, the staff of several zoos have acquired the skills of building miniature swamp exhibits or paludariums for marshdwelling amphibians and reptiles. Particularly fine examples of paludariums are to be seen at Berlin, London, Cologne and Stuttgart. Many common species of "house" or "aquarium" plants adapt surprisingly well to the marsh environment.

The use of graphics as an educational tool seems to only recently be receiving the emphasis in Europe that it is in this country. One of the world's most renowned zoo profes-

sionals, Dr. H. Hediger, has had a considerable impact on European zoo graphics. Professor Hediger evolved a compact but flexible signing system which was innovative and useful some twenty years ago. However, this system has changed little over the years. More appealing graphics are now appearing, and the use of auxiliary educational graphics is growing. At Frankfurt, Wuppertal, Jersey and Antwerp, excellent graphics systems are developing.

The animal collections themselves are surprisingly similar to those seen at zoological gardens in this country. Despite the fact that many of the facilities are new or nearly so, many of the collections seem to be guided as much by the availability of space and animals as by exhibit or collection philosophy. This observation merely reinforced my opinion that in a zoological garden setting, one of the most important legacies a curator leaves is facilities which are designed to fit a collection and display philosophy which itself hinges on the state of our knowledge of the biology of the animals involved. This legacy will be improved upon if the facilities can be modified to meet future advances in the areas of biology and the technological aspects of environmental modification.

One of the most remarkable discoveries of the entire trip was the caging system used at Cologne, Stuttgart and Wuppertal. All three are not exactly alike, but they are basically similar. Access to the cages may be gained from two sides, the top for day-to-day feeding and maintenance and the front for convenience and safety during more drastic renovation and viewing glass clean up. A safety barrier may be dropped behind the viewing glass which separates the viewing glass/door from the enclosure and its residents. This permits cleaning of the inside of the viewing glass with next to no chance of an accidental animal/keeper encounter. When used in conjunction with detachable capture boxes for dangerously venomous species, these cages are the safest snake holding facilities I have yet encountered.

These few paragraphs summarize primarily those aspects of my information and impressions regarding the zoos as seen from the visitor's viewpoint. Much more was learned regarding behind-the-scenes aspects of zoo operation. All of this information is available in the form of a report available free of charge from the National Museum Act, Smithsonian Institution, Washington, D.C. 20560.

JAMES P. BACON, Ph.D.
Curator - Reptiles and Amphibians
Zoological Society of San Diego
P. O. Box 551
San Diego, California 92112

INFORMATION EXCHANGE

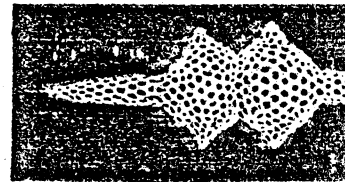
BUPRESTIDAE INFO NEEDED

I am working on a fauna of the Buprestidae (Insectera) of Lower California. I would greatly appreciate records from or borrowing of material collected on the island. Where necessary, material from collections determinations.

RICHARD L. WESTCOTT
Taxonomic Entomologist
Plant Division
Oregon Dept. Of Agriculture
Salem, OR 97310

SURPLUS BIRD SKINS

The Biology Department of University at Potsdam, New York, is seeking surplus skins of local specimens to supplement its collection. The department most appreciate any donations. Those wishing skins should contact:
DR. ROBERT H. CERWONKA, Chair
Biology Department
State University College
Potsdam, New York 13676



COUNCIL ON CURATORIAL MET

Resources Committee reported that communication among curators (and institutions) is to be desired. This most has been true especially at the national level, a fact in part responsible for the rise in importance of the ASC. However, at the local or regional level it is rare to find communication functioning effectively.

For this reason, individuals sending institutional inventories of collections in California were invited to attend a meeting on January 1979 at the California Academy of Sciences.