

main reasons why we have adopted this control of the animals is that we have two male African Elephants, which are now adult. Although at present our keepers are able to go in with these animals, we have made provisions so that they can be attended to without the necessity of anyone going in with them, if they should become bad tempered.

THE PROJECTED PACHYDERM HOUSE AT PRAGUE ZOO

by Ing. Ant. Turek

THE plans for the new Pachyderm House in the Prague Zoological Gardens have just been completed. The building will be finished in three years. It is the fourth big building for animals in our zoo and was planned as follows:

- 1,1 African Elephants (*Loxodonta africana*)
- 1,1 African forest Elephants (*Loxodonta cyclotis*)
- 1,2 Indian Elephants (*Elephas maximus*)
- 1,1 Indian Rhinoceros (*Rhinoceros unicornis*)
- 1,1 African Black Rhinoceros (*Diceros bicornis*)
- 1,1 Sumatran Rhinoceros (*Didermocerus sumatraensis*)
- 1,1 African White Rhinoceros (*Ceratotherium simum*)
- 1,2 Hippopotamus (*Hippopotamus amphibius*)
- 1,2 Pigmy Hippopotamus (*Choeropsis liberiensis*)
- 1,2 American Tapirs (*Tapirus terrestris*)
- 1,1 Malayan Tapirs (*Tapirus indicus*)
- 1,2 Manatees (*Trichechus*)
- 5,15 Hyrax (*Procavia syriaca*)

The building is situated in the lower part of the garden and is surrounded on the north-east by higher terrain. The elephants' enclosure will be surrounded from three sides by a raised path for visitors so that they will have the best possible view of these most attractive animals.

The plan of the house was not made according to the usual regular pattern, but very divided. By these means we gain a very effective division of the exterior and interior enclosures and the differences of the terrain allow the best possible movement of the animals in their enclosures.

The house is divided into three parts:

The *first part* includes:

- (a) The entrance under which the engine room and the boiler room are situated.

Over the entrance pool lies a pool for manatees, visible to the public from the upper and side views.

- (b) The stables of the rhinos up to the large pool for the hippos. The basin is in the crankfloor section of the house, with rich tropical flora. This exposition divides the interior of the house visually and architecturally.

The *second part* is devoted to the hippopotamuses and the tapirs.

The *third part* consists of the stalls for elephants. This last section has an upper storey so that the visitor has a bird's-eye view of these attractive animals. At the same time the range of vision of the visitor is increased.

When the visitor enters the first floor of the house, it is possible to proceed as follows:

- (a) It is possible to pass the gallery of the first floor and watch the elephants from a roofed terrace in the outdoor enclosure.
- (b) It is possible to go upstairs to the second floor to the cages of the hyrax and have the possibility of viewing all the enclosures of the large mammals as well as gaining a bird's-eye view of the whole lower part of the Zoological Garden.

Before leaving the house in front of the corridor there is a view from above of the manatee pool.

At the side of the house there are the necessary domestic premises with the rooms for keepers, the food-preparation rooms, the food-storerooms, as well as the veterinary premises for treating the animals. There is a specially large provisions yard which is very necessary in operating such specialized buildings in Zoological Gardens. In direct contact with the preparing-rooms there are special corridors for the animals and a suspended gallery for the keeper treating the animals. It was necessary to erect this gallery quite independently as one has to take into account the critical situations which may occur while attending the large mammals.

In addition to the stalls there are always entirely separate boxes for treating animals. These are the measurements:

Elephant stall – 7.5 m. wide, 7.5 m. deep, 8 m. high.

Hippopotamus stall – 10 m. wide, 7 m. deep, 5.5 m. high.

Rhinoceros stall – 6 m. wide, 5.5 m. deep, 5.5 m. high.

Tapir stall – 5.5 m. wide, 4.5 m. deep, 5.5 m. high.

For the manatees a pool of 12 sq. m. is reserved and for the hyrax a cage of 10 sq. m., leading through both floors to the roof which allows the animals enough movement and a walk in the sunshine whenever they like.

The building itself is a classical brick house, strengthened in its critical parts (elephants' stables, exits from the boxes, etc) by concrete frames in form of pillars, columns, rubbing posts, railings, etc.

The front of the House is a combination of natural materials in the original colours of the building materials used, i.e. the grey of the concrete and the bright red of burnt bricks. That contrasts well with the grey skin of the animals.

The floors of the different enclosures are made of cast asphalt 2 cm. thick on a concrete base. The floors for the visitors are of cemented ceramic pavement which even after fifteen years' use guarantees a faultless surface without any maintenance.

The boxes of the animals are paved with ceramic paving stones and faced with special plastic coatings not only on the walls but also in the pools.

The doors of the boxes can be shut in two ways:

(a) The gates can be moved from above.

(b) The gates can rotate on vertical pins.

The mechanism is run by servomotors. In case of any disorder it is possible to handle the gate manually by a gearing transmission. In case the animal should move the gate by force there is a safety mechanism which immediately stops the movement of the gate and holds it in a fixed position.

The doors are placed in such a way that they form in the service corridor automatic bars for controlling the animals as well as for other actions. In the service corridor there is a cage where the animals can be pinned in a fixed position for treatment and where they can be directly taken in from their boxes. If it is not used the cage stands in a box in another part of the building.

The heating of the house is managed by air-conditioning in such a way that the rooms for the visitors are separated from the boxes by an air-screen. At the same time fresh air for better circulation and ventilation streams into the room for visitors.

The water in the pools is continually cleaned by speed-filters and always warmed to the necessary temperature of 18–24°C under permanent circulation. The cleaning baskets are placed on the ground floor where they are filled, cleaned and brought upstairs by a lift to the yard.

The animals are fed directly from the upper gallery from where the food is poured into the feeding silos. The food is fixed there firmly so that the animals must use force to get it out and have thus to move in a way similar to the movement when obtaining their food in natural conditions.

Light enters the house through double, hermetic duplex glass, cleaned from the serving gallery. The artificial lighting is by fluorescent lamps and individually movable reflectors.

A movable technical television set makes it possible to watch the life of the

animals throughout day and night from the room of the keeper and from the laboratory of the zoologist.

The outdoor enclosures of the animals are built in such a way as to serve the individual needs of each animal. To occupy the elephants there is a pool, and different sorts of rubbing amenities; the whole enclosure differs in height every 4 m. so that the animal has always enough movement.

Besides these communal outdoor enclosures, provision is also made for the necessity of individual separation of the animal (fierce bull, mother with baby, etc).

The outdoor enclosure of the hippos (60 m. \times 25 m. in the plan) lies near an old river bed which will be watered with river water. This section will also include a great many waterfowl. The enclosures of the tapirs and Pigmy Hippos are similarly endowed.

The enclosures of the rhinos (35 m. \times 20 m.) are arranged in such a way that the animals have no possibility of charging over long distances, thus preventing injuries which are common with this kind of animal in Zoological Gardens.

The whole House is well situated in a park of big old trees (*Quercus rubra*, *Populus canadensis*, *Salix babylonica*, etc) and positioned to fit in with the general plan of the garden.

ELEPHANT TECHNIQUES AT COLOMBO ZOO

by Major A. N. Weirmann

Director of the Government Zoological Gardens of Ceylon

OCCUPATIONAL therapy for elephants is very desirable and at the Colombo Zoo they are kept occupied by educating them to display their intelligence. A school is held regularly every morning for half an hour and the elephants are put through their repertoire; and every evening they give a show which lasts for about twenty minutes. To start with, the animals are trained under my supervision, but once they have learnt what is wanted of them, the Head Elephant Keeper is allowed to put them through their paces before the public. The method of instruction is to reward them when they do what is wanted of them. No cruelty whatsoever is permitted and if an elephant is slow to learn it is discarded. A proof that the elephants enjoy their schooling is that on very wet days when they are kept in their stables, they trumpet loudly in disappointment. The arena is an open-air one and the performance is cancelled in wet weather