

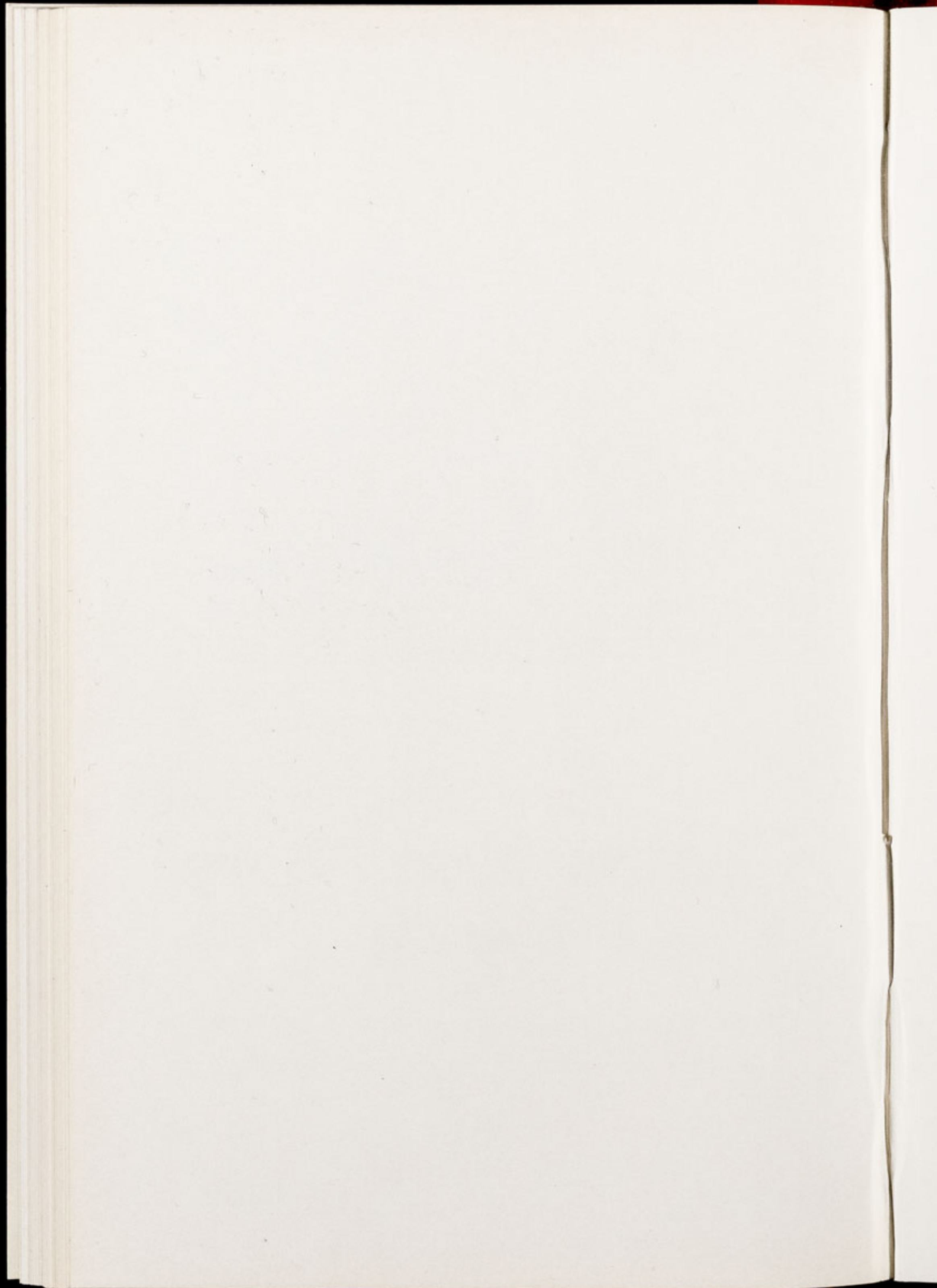
Chester Zoo News

AND GUIDE

THE NORTH OF ENGLAND ZOOLOGICAL SOCIETY
ZOOLOGICAL GARDENS, UPTON-BY-CHESTER

June 1979

Price 15p



The North of England Zoological Society

ZOOLOGICAL GARDENS, UPTON-BY-CHESTER

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COVER PICTURE

Leianna and Philip Ainsley appear to be intrigued with one of their father's charges, a Giant Spurred Tortoise

By courtesy of J. Whitworth

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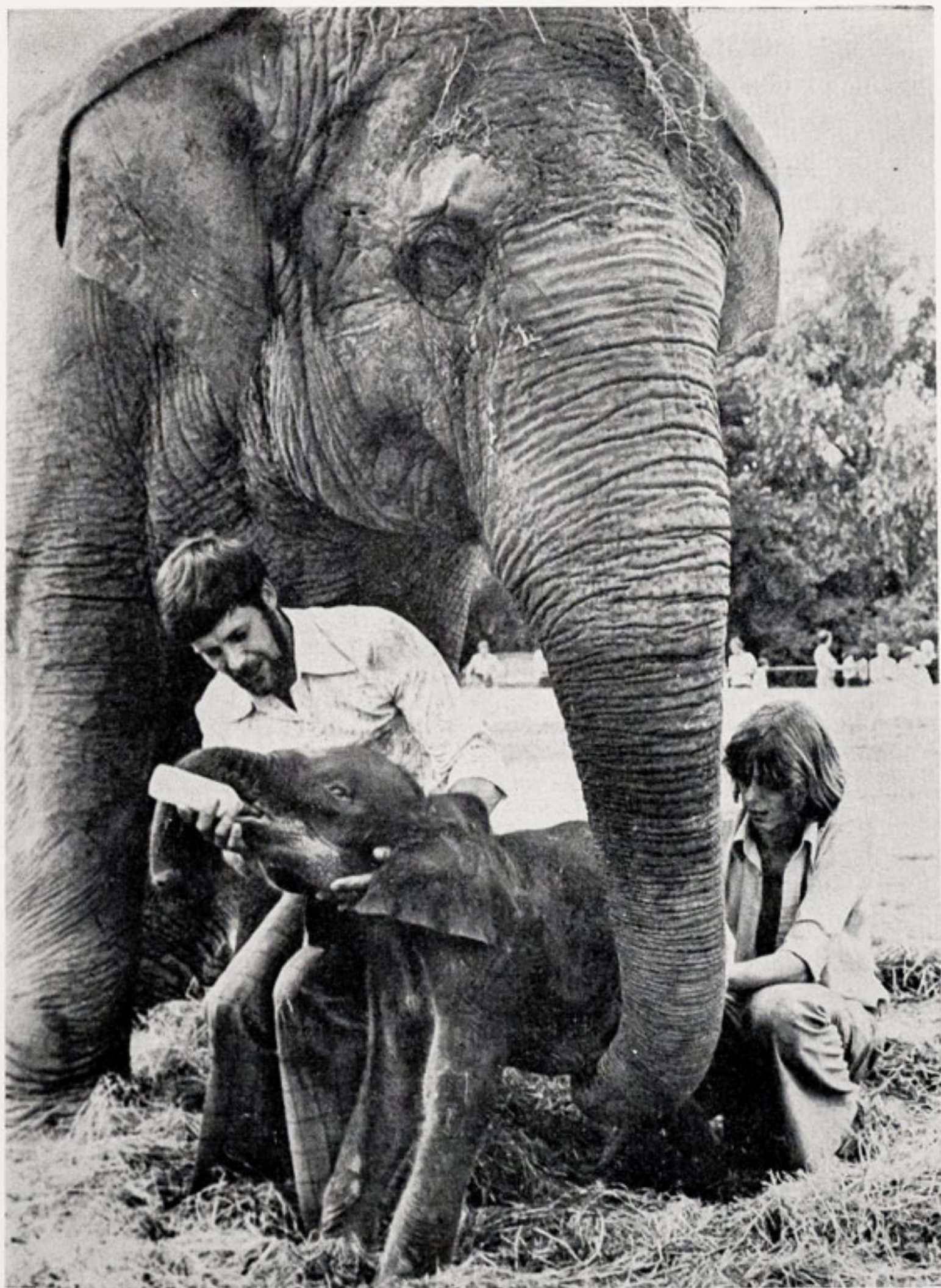
PRESENTATION TO BRITISH MUSEUM (NATURAL HISTORY)

"Motty," the hybrid Indian-African Elephant cross which was born at Chester last year and which only lived for ten days has been presented to the British Museum (Natural History) in South Kensington. On May 23rd Dr. Brambell handed over the mounted skin to Dr. J. G. Shields, Keeper of Zoology, and Mr. Ian Bishop, the Keeper of Mammals in a small ceremony at the entrance to the Museum. "Motty" is the only such hybrid known to have occurred in the world.

The Indian and the African Elephants are very different. Their skeletons differ in many ways and so do their soft parts. The structure of the teeth are so different that not only are they classed as a separate species, but they are placed in separate genera. The fact that they could interbreed to produce a living offspring was as unexpected as it is intriguing. Contrary to widespread belief the ability or inability to interbreed is not an absolute criterion for classing animals in the same or in separate species. Nevertheless, cross-breedings between genera are not common.

Sadly, "Motty's" death from an acute bacterial infection was equally unexpected and it was not possible for a sample of his chromosomes to have been preserved. This would have been fascinating as it is the chromosomes which control how an organism is put together and grows and if the two sets, one from each parent, cannot fit together they cannot function properly and the organism would die. "Motty's" birth has at least shown us that in the case of the elephants the chromosomes for the two species can fit together but we do not know how.

The illustration opposite shows the youngster shortly after birth in July 1978.



By courtesy of Steve Cartwright, Mel Grundy Photographic Agency
KEEPERS RAY AND PAUL FEEDING "MOTTY"

RING-TAILED LEMUR

The tropical forests of Madagascar became isolated from the large land masses some 50 million years ago and during this time unique forms of life have evolved much in the same way as Australia's monotremes and marsupials. Without the danger of large predators and with no competition coming from monkeys, the lemurs were able to survive safely and flourish unhindered. Sadly, despite strict regulations being imposed by the Republic of Madagascar on the number of exports, numbers of the less well-known species appear to be falling.

At one time many myths and legends surrounded the Lemurs and the native peoples would not harm them, mostly because they were frightened of them; the lemurs were believed to be sun-worshippers and spirits of the dead. However, modern Man and his technology showed the people that these animals were not what they believed them to be and another source of food was discovered in the form of these unusually beautiful animals. Extensive cultivation of the land both for crops and for grazing for domestic stock is indirectly killing-off these animals.

The Ring-tailed Lemur (*Lemur catta*) breeds well in Zoos despite having one of the shortest breeding seasons known in mammals. This only lasts for about two weeks each year and the females may be receptive for less than a day. Understandably, there is violent and aggressive competition between the males before the season and various quarrels, chases and "scent-fights" may occur. The scent glands, situated around the anus, inside the wrists and, in the male, in the shoulder region, are an extremely important means of communication. In "scent-fights" one male threatens another by scent-marking his tail and waving it about, the other male answers by doing the same. When the females are ready to mate there are often vicious fights between males; the winner, obviously, mates with the receptive female.

Twins or, less often, a single youngster, are born after a gestation of about 120-135 days. At Chester, this year, one female



By courtesy of K. W. Green, A.R.P.S.

RING-TAILED LEMURS

has given birth to twins and another has had one baby. At first they cling to the underside of the female, but after about a month they ride on her back. The troops of lemurs have a nursery arrangement, youngsters being cared for communally by the females. The large groups, particularly those with babies, are lovely to watch. If it is very warm the lemurs sit outside, arms outstretched; it is probably this characteristic sitting position that made people believe that they were sun-worshippers.

The youngsters eventually wander about on the ground with the adult members of the troop. This is the only lemur species to venture on to the ground to feed, foraging for fruits, seeds, leaves, and occasionally, insects; figs, fig thistles, tamarinds and birds' eggs are also favourite foods. Their Zoo diet is varied and includes a wide variety of fruit and vegetables; locusts are also sometimes given.

Another important aspect of the lemurs group life besides scent-marking and vocal communication, is mutual grooming. The teeth are specially formed in such a way so as to draw through the fur like a comb, though there is now evidence that the comb-like structure of the incisor teeth is an adaptation to feeding on dried sap and resin on the surface of trees and the grooming function is secondary to this. Although on most of their fingers and toes the lemurs have nails like other primates, on the second toe they have a claw which is used for grooming.

We show the Ring-tailed Lemurs in the Monkey House and in the Mammal House, the total number in the collection now being 16.

The photo on page 5 shows one of the females with the recently born twins.

THE GEORGE S. MOTTERSHEAD MEMORIAL

On the 19th May the Memorial to the late George S. Mottershead, Founder of Chester Zoo, was opened by Mrs. H. M. King, wife of the Chairman of the North of England Zoological Society.

The Memorial is shown in the picture overleaf and consists of a large stone built plinth overlooking an ornamental pool with a stone bench on either side facing a lovely sundial. A plaque, showing a picture of Mr. Mottershead looks onto the whole garden. The garden was designed largely by Mr. Pryor, the Vice-Chairman of the Society and was built by Mr. F. Williams, Clerk of Works and Mr. Mottershead's son-in-law, and Mr. Charlie Collins. The garden layout and planting were arranged by Mr. W. Worth, Head Gardener.

The surrounding area has been planted with Cupressus and Holly to provide a screen in the background which also includes some young Silver Birch. On each side of the Memorial are two standard Winter flowering cherry trees, *Prunus subhirtella* "*autumnalis rosea*." Surrounding them a variety of shrubs have been planted to flower in the early Spring and Summer. These include:—

<i>Buddleia</i>		<i>Broom</i>
<i>Bupleurum fruticosum</i>		<i>Caryopteri clandonensis</i>
<i>Callicarpa giraldiana</i>		(<i>Blue spiraea</i>)
<i>Berberis atropurpurea</i>	and	<i>Stenophylla</i>
<i>Elaeagnus pungens aurea</i>	and	<i>Ebbingei</i>
<i>Escallonia</i>		<i>Forsythia</i>
<i>Philadelphus</i>		<i>Potentilla</i>
<i>Spiraea Anthony Waterer</i>		<i>Tamarix</i>
<i>Viburnum burkwoodii</i>	and	<i>Weigela</i>

In the pool itself are three Water Lilies of the variety *Caroliniana nivea* and aquatic plants around the side are *Pontaderia cordata*, *Iris laevigata*, *Scirpus zebrina*, *Caltha palustris*, *Butomus umbellatus* and *Mimulus* Whitecroft Scarlet. The four pockets built into the surrounds of the pool are planted with *Gazania splendens variegata*.

On three sides of the paved area a hedge of *Cupressocyparis leylandi castlewellan* has been planted; when grown it will be kept at a height of four feet.

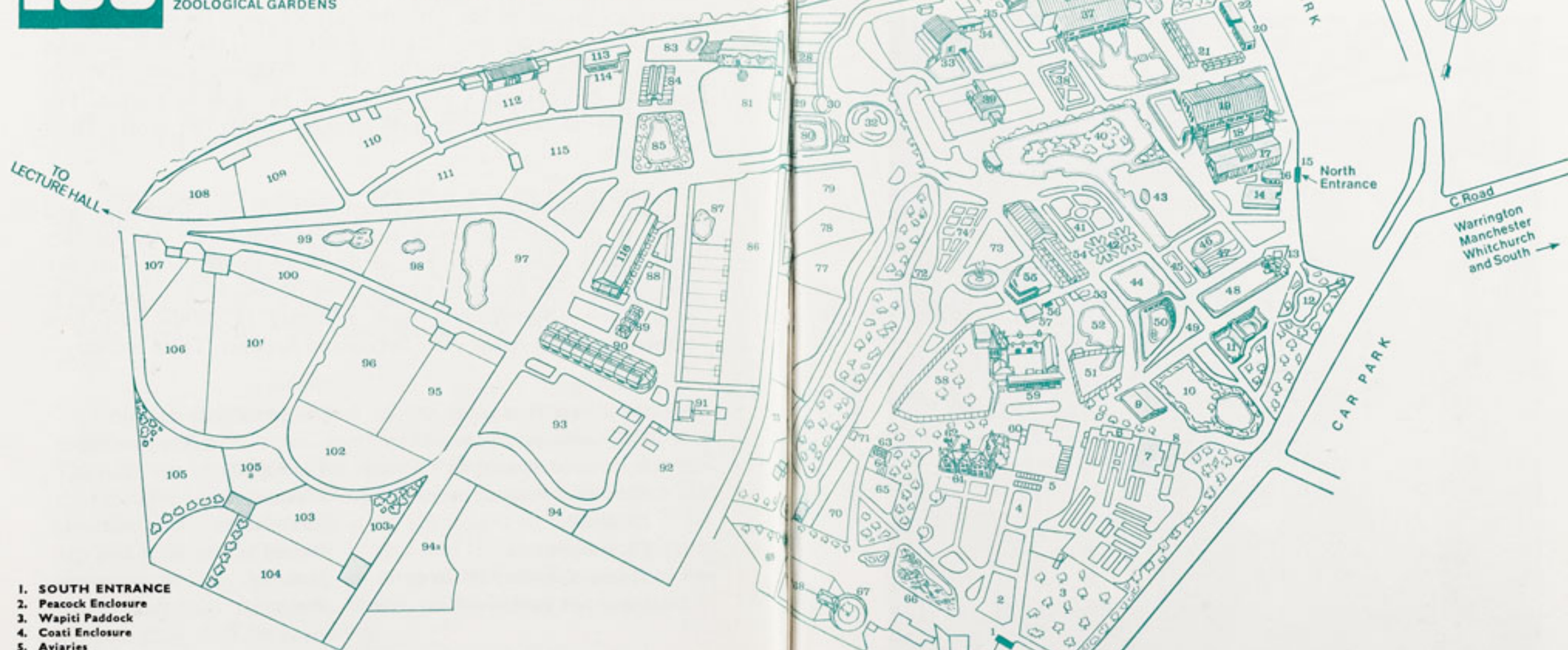
Contributions to the Memorial Fund were received from all over the world; we should like to take this opportunity of thanking all who so kindly contributed to the Fund for their assistance.

CHESTER ZOO

THE NORTH OF ENGLAND
ZOOLOGICAL SOCIETY
ZOOLOGICAL GARDENS

FOR A COMPLETE TOUR OF THE ZOO — Follow Nos 1-116 from South Entrance,
or Nos 16-116 from North Entrance then return to Nos 1-14

**Chester Zoo is Open Daily
from 9.00 a.m. until dusk.**



1. SOUTH ENTRANCE

- 2. Peacock Enclosure
- 3. Wapiti Paddock
- 4. Coati Enclosure
- 5. Aviaries
- 6. Milk Bar
- 7. CORONATION HALL
- 8. CLOAKROOM, FIRST AID, TOILETS, INVALIDS' TOILETS, MOTHER AND BABY ROOM
- 9. CAFETERIA
- 10. Picnic Lawn
- 11. Ornamental Garden (under construction)
- 12. Jubilee Gardens (Noah)
- 13. Kiosk
- 14. AQUARIUM
- 15. NORTH ENTRANCE
- 16. PUSH CHAIRS, WHEEL CHAIRS, LOST CHILDREN
- 17. PARROT HOUSE
- 18. Free Flight Aviary
- 19. APE HOUSE
- 20. Shop and Kiosk
- 21. Aviaries and Picnic Lawn
- 22. CLASSROOM
- 23. TOILETS
- 24. TUATARA EXHIBIT
- 25. Peccaries
- 26. Birds of Prey Aviaries
- 27. Condor Aviary
- 28. Jackal and Hyena Enclosures
- 29. Animal Enclosure
- 30. Porcupine Enclosure
- 31. Coypus
- 32. Beavers
- 33. Giraffe House

- 34. Camel House
- 35. Giant Tortoise Paddock
- 36. TROPICAL, NOCTURNAL & REPTILE HOUSES
- 37. CHIMPANZEES
- 38. Floribunda Rose Garden
- 39. Zebra House
- 40. Waterfowl Island
- 41. H.T. Rose Garden
- 42. Aviaries
- 43. Flamingos
- 44. Waterfowl Enclosure
- 45. Waterfowl Enclosure
- 46. Waterfowl Enclosure
- 47. Penguins
- 48. Sealions
- 49. Rock Garden
- 50. Polar Bears
- 51. Big Cat Enclosure
- 52. Waterfowl Enclosure
- 53. Anteaters
- 54. BIRD HOUSE
- 55. FOUNTAIN RESTAURANT
- 56. Ape Nursery
- 57. TOILETS
- 58. Lions
- 59. SOUVENIR SHOP
- 60. TOILETS
- 61. OAKFIELD RESTAURANT & G. S. Mottershead Memorial Gds

- 62. P.O. Telephone
- 63. Gibbons
- 64. Arctic Fox Enclosure
- 65. Serval Enclosure
- 66. Ornamental Rock Garden
- 67. Wallabies and Kangaroos
- 68. Kangaroo Enclosure
- 69. Guanaco Paddock
- 70. Cheetahs
- 71. WATERBUS BOOKING OFFICE AND KIOSK
- 72. Rose Gardens
- 73. Fountain Flower Gardens
- 74. Rose Garden
- 75. Red Lechwe
- 76. Red Lechwe
- 77. Deer or Antelope Enclosure
- 78. Zebra and Deer Enclosure
- 79. Zebra and Deer Enclosure
- 80. Brown Bears
- 81. ELEPHANTS
- 82. Hippos
- 83. Tapirs
- 84. Small Mammal House
- 85. Waterfowl Enclosure
- 86. Ankole Cattle
- 87. Emus, Cranes and Flamingos
- 88. Outside Monkey Enclosures
- 89. Baboon Pens
- 90. Cat House
- 91. Tiger Enclosures

- 92. Antelope Enclosure
- 93. Antelope Enclosure
- 94. Reindeer Enclosure
- 94a. Llamas
- 95. Antelope Enclosure
- 96. Antelope Enclosure
- 97. Waterfowl Enclosure
- 98. Waterfowl Enclosure
- 99. Blackback
- 100. Wallabies
- 101. Wallabies
- 102. Ostrich
- 103. Wallabies
- 103a. Animal Enclosure

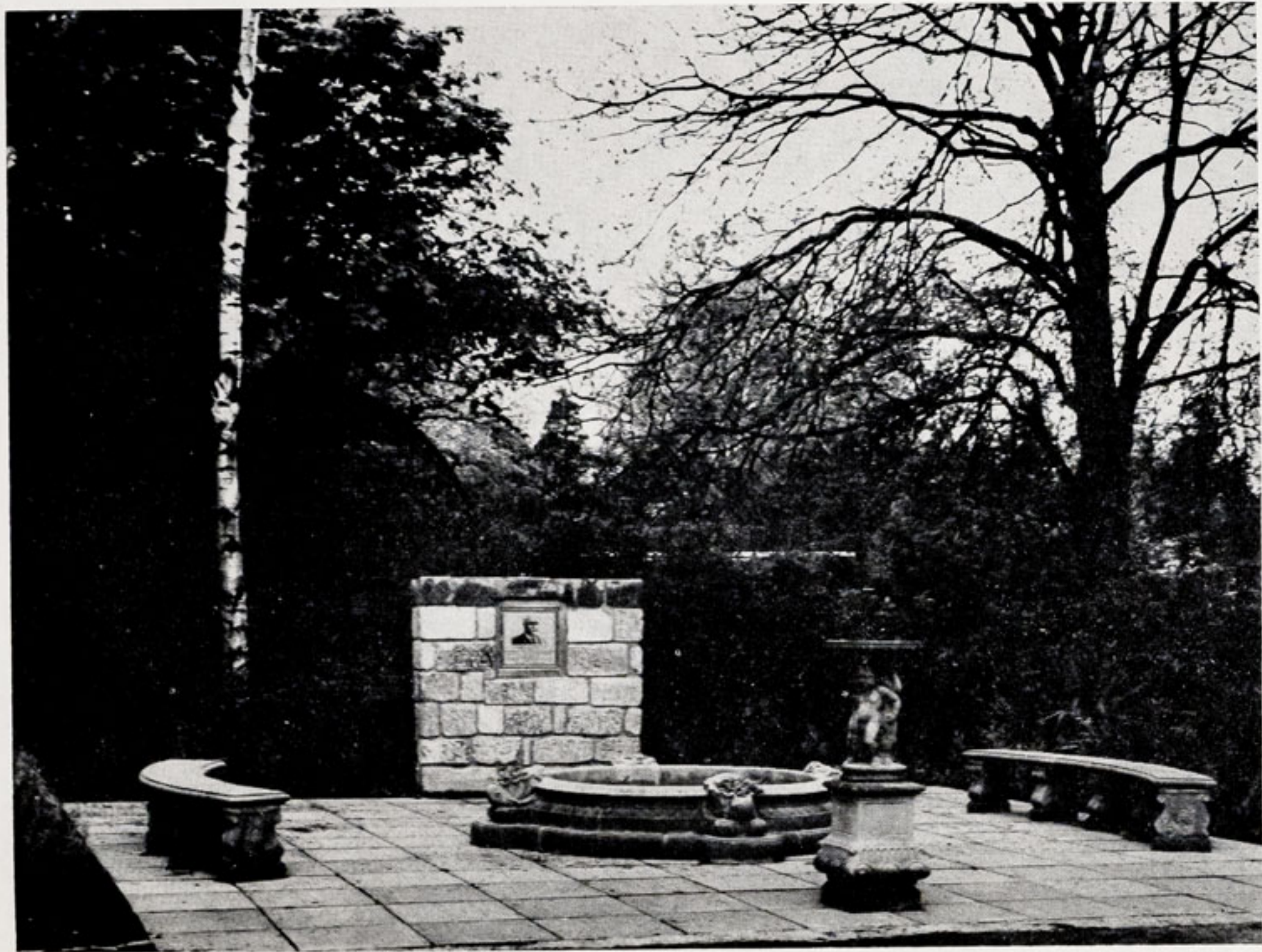
- 104. Pere David's Deer Paddock
- 105. Przewalski's Horses
- 105a. Onager
- 106. Arabian Gazelles
- 107. Musk Oxen
- 108. Bison
- 109. Pere David's Deer Paddock
- 110. Prairie Marmots, Alpacas
- 111. Antelope Enclosure
- 112. RHINOS
- 113. TOILETS
- 114. Mpila Snack Bar
- 115. Antelope Enclosure
- 116. MONKEY HOUSE

ANIMAL FEEDING TIMES:

LIONS—3 pm except Fridays

SEA LIONS 3 times daily—
2-30 pm, 3-30 pm, 4-30 pm

**ANIMALS MAY BE MOVED
FROM TIME TO TIME**



SUNDIAL GARDEN

By courtesy of D. C. Dinning, N.E.Z.S.

NORTH OF ENGLAND ZOOLOGICAL SOCIETY

Zoological Gardens, Chester

APPLICATION FORM FOR JUNIOR MEMBERSHIP

I,
(FULL NAME IN BLOCK LETTERS)

of
.....

Date of birth
(Must be over 12 and under 18)

desire to join the North of England Zoological Society as a Junior Member (Entrance fee £2.00 and Annual Subscription £2.00).

Signature of Applicant

Proposed by
(Member)

Seconded by
(Member)

Approved by.....(Parent or Guardian)

Junior Members are entitled to free entry to the Society's Gardens and Collection on production of their Membership Card and signing in the Members' Book at the Gate.

They may also attend lectures given at meetings of the Society, though Council reserves the right to limit the number of seats available to Junior Members. Junior Members may also attend any Junior lectures which may, from time to time, be arranged.

Junior Membership is open to children of twelve (12) and over and not yet eighteen (18).

Depending on the date of the next Meeting of Council the time taken to accept a proposal may be from ten days to a month.

SUNDIAL GARDEN

FLAMINGOS

Waterside birds have various methods of feeding including plunging, swooping or skimming the water but the fascinating method used by flamingos is quite unique. The bill is formed in such a way that it is able to sieve tiny organisms which live in the salt lakes and brackish lagoons where the colonies of brightly-hued flamingos collect, but it acts as a sieve only when the flamingo's head is upside down.

Tiny plants and animals constitute the sole diet of these lovely birds, of which there are six species and sub-species. However, due to the fact that some sift only the surface water, whilst others delve into the thick mud on the bottom, churning it up, it is possible for the different species to co-exist in the same piece of water, each sieving a separate depth.

The huge colonies live at the edge of the water where they build the conical-shaped mud nests ready to hold the single chalky white egg which is incubated for 27-31 days. These nests can be over a foot higher than the water level and a couple of feet across. The eggs are incubated by the parent bird sitting precariously at the top of this muddy pinnacle. The birds, after going through courtship rituals involving neck stretching, swaying and preening, mate; a few days before laying the female searches for a suitable site for the nest and then the pair begin to build. After laying, they carry on banking-up the nest with stones, mud, grass and feathers.

The newly-hatched chick has a straight, red beak, thick, swollen legs and white, downy plumage. As the beak is not yet adapted to the adult form of feeding the youngster must be fed by the parents. A liquid, similar to milk and highly nutritious, is secreted in the throats of the adults; the chick is fed with this mixture until the beak and lamellae are fully developed. The amazing feature about this behaviour is that the adults will feed only their own chick; in a flock of many thousands they are able to identify their youngster and this is probably done by vocal communication rather than physical appearance. The youngster takes a long time to mature and details are as follows:—

Development of Flamingo Chick to Adult Bird

4-7 days	Leaves nest with parents;
7-10 days	Legs and beak become black;
2-3 weeks	Plumage is grey and downy, beak begins to bend; beak filtration is developing slowly;
10 weeks	Able to fly; lamellae still not fully developed;
1½-2 years	Males reach adult size;
3-4 years	Adult plumage becomes complete;
Approx. 6 years	Birds breed for first time.

The length of time taken in reaching maturity is reflected in the long life span, some birds reaching ages of 20-30 years old.

These tall, slender birds rely totally on the tiny organisms found in water and the method is intriguing. Looking at the picture on page 14 one can see that the upper mandible is like a small lid over the lower mandible which appears as a large trough. When feeding, the head is upside down and the upper part of the beak is in the water. The bird sways its long neck from side to side in wide, sweeping movements. The tongue is used to produce suction to draw water into the beak, the tiny organisms are then caught on the lamellae plates and the tongue squeezes the water out of them. At this point, the food is practically dry; if the birds took in too much saline or alkaline water they would be in danger of being poisoned.

Some species have finer lamellae than others. Those with coarser lamellae churn up mud at the bottom of the lakes and feed on larger animals than those which feed at the surface. The diet of the Zoo flamingos must be supplemented and we feed our birds with this recipe: grass meal; fish meal; layers pellets; brown bread; layers mash; mix together with hot water.

The resulting "mush" is put out twice a day in bowls around the Enclosures (numbered 43 and 87 on Zoo Guide). Zoo flamingos often lose their colours but if they are given in their diet red carotenoids (naturally available in the wild) the plumage colour is retained. Contrasting with the blush-pinks and bright orange-reds



By courtesy of J. Whitworth

GREATER FLAMINGOS NEST BUILDING

are the severe black flight-feathers; one has difficulty visualising a whole flock of these beautiful birds rising from a lake like some incredible pink cloud!

The world distribution of flamingos is:—

Lesser Flamingo (<i>Phoeniconaias minor</i>)	E. & S. Africa, Madagascar, N.W. India
*Greater Flamingo (<i>Phoenicopterus ruber roseus</i>)	Camargue, Caspian Sea, Persian Gulf, Africa
*Rosy Flamingo (<i>Phoenicopterus r. ruber</i>)	Islands of sub- tropical & tropical America
*Chilean Flamingo (<i>Phoenicopterus r. chilensis</i>)	South America
Andean Flamingo (<i>Phoenicoparrus andinus</i>)	Andes
James' Flamingo (<i>Phoenicoparrus jamesi</i>)	Andes

The James' Flamingo is very rare, and was at one time believed to be extinct, but was recently rediscovered in the Andes. This species was exhibited here until recently when the birds were sent to the Wildfowl Trust. We now have the three indicated by asterisks. They have been difficult to breed but by keeping them in larger groups, as they would be in their natural habitat, and by providing water and mud at the right depth and by a lot of patience it has been shown that they can produce young in Zoos, and we are hoping to persuade the flamingos here to start breeding. It seems once one bird gets the idea the others follow along soon afterwards.

BIRTHS AND ARRIVALS

MAMMALS

1 Red Lechwe (<i>Kobus leche</i>)	Birth
2 Bengal Tigers (<i>Panthera tigris</i>)	Births
1 Reindeer (<i>Rangifer tarandus</i>)	Birth
1 Przewalski's Horse (<i>Equus przewalskii</i>)	Birth
1 Patas Monkey (<i>Erythrocebus patas</i>)	Birth

Births and Arrivals (*continud*)**BIRDS**

- 1 Yellow-fronted Amazon Parrot (*Amazona ochrocephala*) Presented

REPTILES

- 2 Giant Spurred Tortoises (*Geochelone sulcata*) Births

We hope to include articles on the Giant Spurred Tortoises (a first birth in this country) and the Przewalski's Horse in future issues. We are very pleased with these births as the Przewalski's foal is a "first" birth from a stallion and mare we obtained only about two years ago. The mare did have a stillborn youngster last year, but this time both mother and foal appear to be well.

OBITUARY**Miss D. E. Russell-Allen**

Miss D. E. Russell-Allen, a Patron of the Society since its founding in 1934 died in May. Miss Russell-Allen and her sister, Geraldine, who was Chairman of the Society from 1963 to 1971, and who died in 1976, lived at Northwich. The Society's Lecture Hall was named after Miss Geraldine Russell-Allen in recognition of her staunch support during the early years of the Zoo. With the remaining Miss Russell-Allen's death the Society has lost a great friend and a cherished link with the past.

SUBSCRIPTIONS

CHESTER ZOO NEWS is at present being produced every month and readers who would like to receive the magazine regularly can obtain subscription forms at the Souvenir Shops. The current charge for 12 issues, including postage, is £2.70 per year. Completed forms can be handed in to the Souvenir Shops or posted to Chester Zoo News, Chester Zoo, Chester.

The following notice is displayed on several boards in the grounds

Please comply with it at all times

FEEDING OF ANIMALS AND BIRDS

IT IS AN OFFENCE for any member of the public to offer food of any description to any Animal or Bird in Chester Zoo.

This regulation is made for the sake of the health of the Animals and Birds. Since the **NO FEEDING** rule was introduced, the number of deaths has dropped appreciably and sickness due to wrong feeding has been virtually eliminated.

What you may be offering to an animal may only be a sweet or an inoffensive piece of bread, but it can mean a death sentence for the animal. For example, a cough drop, which may relieve your cough, can cause instant death to many Animals and Birds in the Zoo.

You must not lose sight of the fact that you are only one of over a million visitors who visit the Zoo annually. If for instance an elephant had one bun from only one tenth of a day's visitors during the summer, it would eat between three and four thousand. You can guess the result.

We realise what a temptation it is for visitors, particularly children, to feed our Animals and Birds and this is why we invite members of the public to be present at the official feeding times.

This is a polite warning to you, asking you not to feed the animals. If you ignore it, the Keepers are authorised to ask you to leave the Gardens.

If you really love Animals and Birds, you will appreciate the wisdom of the ruling—No feeding by members of the public.

**PLEASE HELP US TO KEEP OUR COLLECTION OF
ANIMALS NOT ONLY ALIVE BUT IN FIRST CLASS
CONDITION**

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