



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

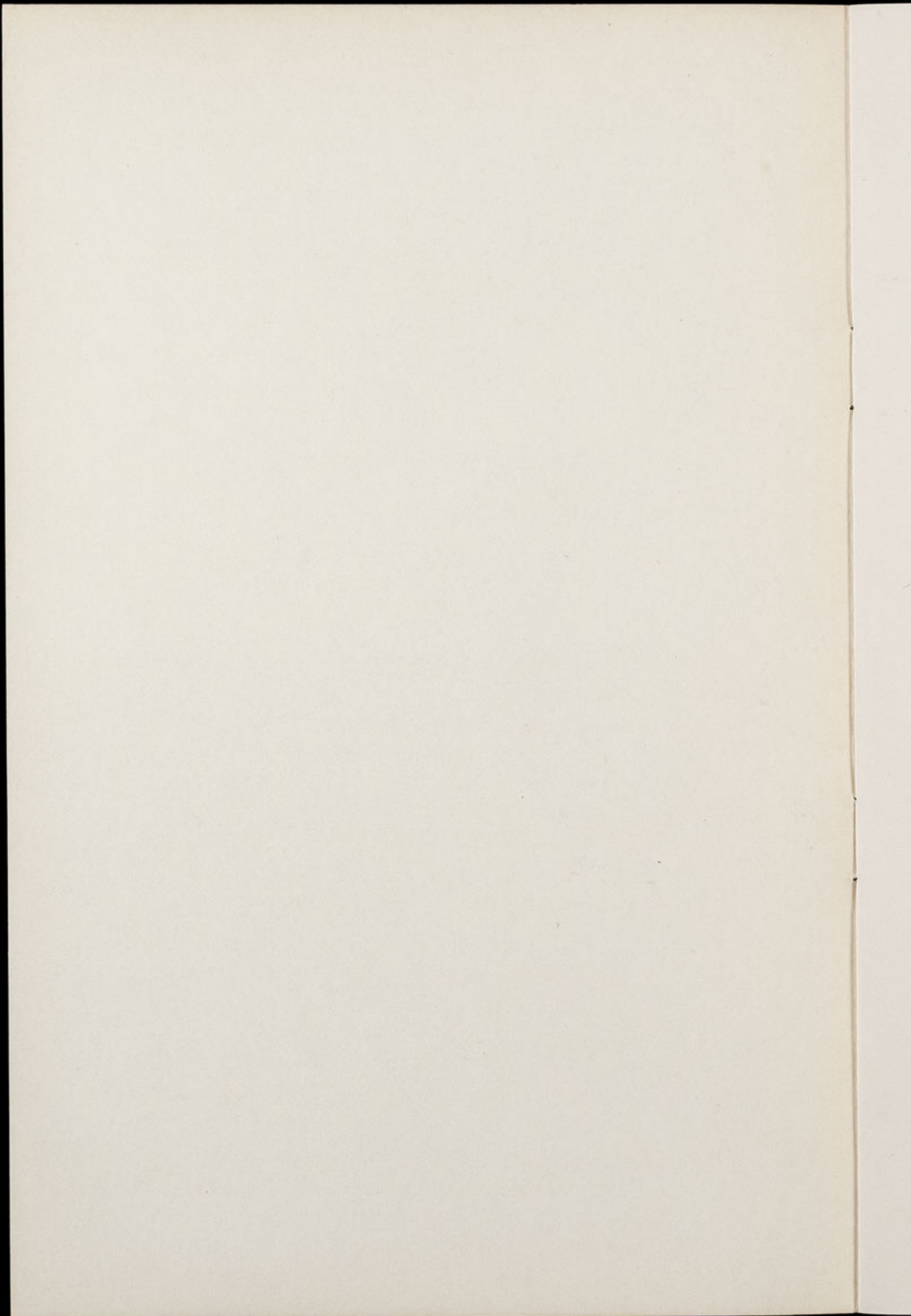
Chester Zoo News

AND GUIDE

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

June 1974

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The North of England Zoological Society

ZOOLOGICAL GARDENS, UPTON-BY-CHESTER

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COVER: Male Tuatara (Sphenodon punctatus); see page eleven.

ANNUAL SUBSCRIPTION—ONE POUND AND FIFTEEN PENCE POSTAGE PAID

TELEPHONE :: CHESTER 20106/7/8

BIRTHS

Although several more births are imminent, since our last report the only youngsters produced have been an American Bison (*Bos bison*), the first of this year's calves, and three Soay lambs (*Ovis aries*). The Bison calf has been sexed as a male and it can be seen with the rest of the herd in enclosure No. 102.

BIRD NOTES

In the Tropical House two Java Sparrows (*Padda oryzivora*) have left the nest, while in the long Oakfield flight, No. 5, another two Red-billed Weavers (*Quelea quelea*) and three Zebra Finches (*Taeniopygia castanotis*) have been fledged.

The pair of Mute Swans (*Cygnus olor*) which live in the moat surrounding the Chimpanzee islands have again bred successfully. Two cygnets left the nest, the same huge mound of reeds in the centre of the moat which the adult birds repair and use each year.

Readers may recall that two months ago a single Laysan drake (*Anas platyrhynchos laysanensis*), which had been resident in this collection for a number of years, was joined by two female Laysan Teal from Jersey Zoo. A recent opportunity to obtain a second male of this rare subspecies of Mallard was very much welcomed and the four birds have now formed themselves into two pairs.

This month's other new arrivals were also waterfowl. In enclosure No. 85 visitors can now see a pair of very attractive Common Pintail (*Anas acuta acuta*). The characteristic feature of this species, present only in the male, is a long, pointed, black tail. The Common Pintails have a wide distribution across most of the northern hemisphere but move nearer to the equator in winter.

Finally onto the same pond we have released a pair of Gadwall (*Anas strepera strepera*), another attractive species of waterfowl which has a similar but somewhat more restricted range than the Pintail and also migrates southwards in winter.

Staff were very pleased when a pair of Great Indian Hornbills (*Buceros bicornis*) commenced building a nest in a large barrel which had been provided for them in their enclosure in the Temperate Bird House. At this point it should be stressed that, although they have attempted to breed, success is by no means assured. There have been many instances where Hornbills have constructed perfect nests and even hatched eggs but have failed to rear their chicks. In fact we believe that a successful breeding of the Great Indian Hornbill has yet to be achieved in the British Isles. At any rate, as our Hornbills were young birds on their arrival at Chester Zoo in January 1972, they have probably only just reached maturity.

Hornbills are believed to mate for life and very often a wild pair will use the same nesting site, a hole in a tree, year after year. The female Hornbill imprisons herself in this hole by plastering up the entrance with mud and excrement, assisted from the outside by her mate. When their work is completed, all that remains is a narrow slit through which the male can pass food to the female and she can expel droppings from the nest. The female remains a prisoner until her chicks, usually two, are almost ready to leave the nest. Throughout this period the male is kept busy collecting food for his family and it is not until the chicks are well grown that the female, having undergone a full moult in the nest, breaks down the entrance and climbs out to assist him.

Up to the time of writing the efforts of our Hornbills at nest building have been rather awkward. Clay has been provided as a building material but the male is still trying to plaster up the entrance hole with quantities of peaty soil from the floor of the aviary,



RED KANGAROO AND BABY (*Megaleia rufa*)

P. J. Morris, Manchester Daily Mail

which soon dries and falls to the ground again. However we think the truth is dawning slowly on him and he should certainly be awarded a medal for perseverance! Even if the Hornbills do not succeed in breeding this year, it will have been encouraging to learn that this pair is compatible.

GENERAL NEWS

A party which visited the zoo recently included members of a male voice choir from Ludwigshafen in Germany, who had travelled to this country as the guests of Chester's Cestrian Male Voice Choir. Owing to a misunderstanding, a meal for this party had not been booked. However on the last minute we were able to accommodate them and they demonstrated their appreciation in an appropriate fashion. At the end of the meal the choir assembled on the lawn outside the catering establishment and sang two songs for the staff. Then they enquired if anyone in the cafe was celebrating a birthday and as it happened a gentleman in another party was sixty-seven on that day — so the choir sang a song for him also.

The photograph on the left captured one of the first excursions made by the baby Red Kangaroo (*Megaleia rufa*) from its mother's pouch. The joey, whose birth was recorded in a previous issue, can be seen in an enclosure adjoining house No. 39.

The progress of Judi, the female Orang utan (*Pongo pygmaeus*) born in February, remains satisfactory and in the near future she will be making her public debut. Prior to this long awaited event, it will be necessary to transfer the Lowland Gorillas, Jason and Gogal, from the Ape House, No. 19, to other quarters. The pair will be taking up residence in the Tropical House in an enclosure adjacent to that occupied by the Mountain Gorillas, Mukisi and Noelle. For some time zoo staff have considered that a move of this nature

would be beneficial. As well as creating additional space for the growing Orang utans in the Ape House, by installing the Lowland Gorillas in an enclosure next to the Mountain pair, we may stimulate competition between the males which in turn could lead to breeding.

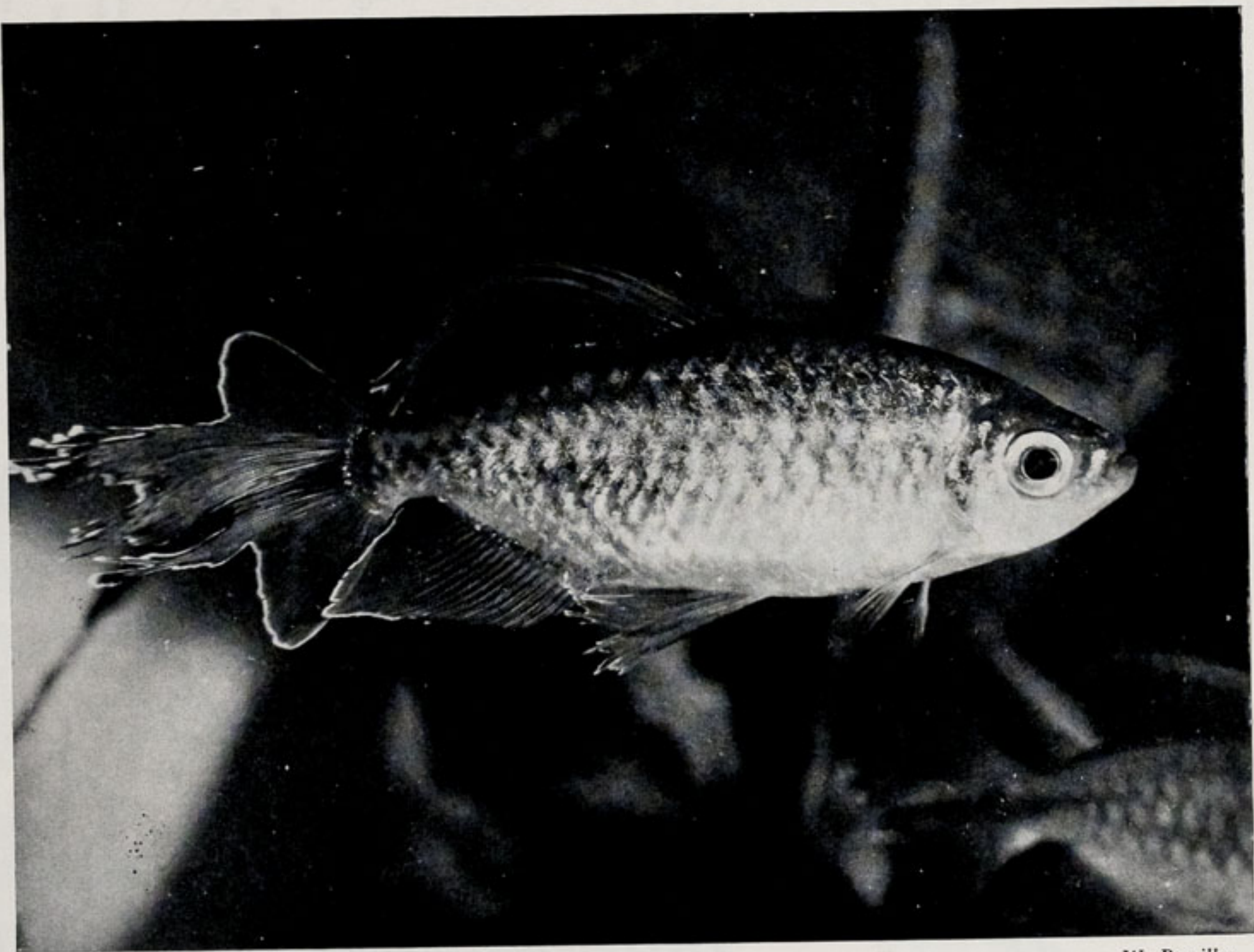
Once the transfer has been effected, it will be possible to allow Judi and her mother, Lola, into the vacated enclosure and, on fine days, on to the island. Lola is such an excellent mother that we are confident she will not allow her baby to crawl too near the moat.

AQUARIUM NEWS

With various breedings during the past month the nursery tanks are now full. Amongst the fry being reared are young Arulius Barbs (*Barbus arulius*) and Australian Rainbows (*Melanotaenia nigrans*). The Golden or Japanese Medakas (*Oryzias latipes*) have spawned regularly since their arrival a month ago and the first fry hatched have reached half an inch in length.

Two of the nursery tanks are occupied by young *Tilapia maria*, one group being several weeks older than the other. The fry obtained from the earlier spawning now measure over half an inch long and have acquired the characteristic dark vertical bars on their flanks. These stripes will disappear when the young fishes reach three to four inches. When the parents spawned for the second time, they again deposited their eggs on the side of the tank. Some two hundred *Tilapia maria* fry hatched on this occasion, of which the majority are being reared satisfactorily.

In another community tank, a pair of a related species, the *Tilapia zilli*, has just succeeded in producing a large quantity of eggs. Half the spawn has been left in the tank for the parent fishes to tend while the remainder is awaiting hatching in an offshow tank.



W. Pengilly

CONGO TETRA (*Micralestes interruptus*)

CHESTER ZOO

THE NORTH OF ENGLAND
ZOOLOGICAL SOCIETY
ZOOLOGICAL GARDENS



- | | |
|--|--|
| 1. SOUTH ENTRANCE | 41. H.T. Rose Garden |
| 2. Peacock Enclosure | 42. Aviaries |
| 3. Wapiti Paddock | 43. Flamingos |
| 4. Lesser Pandas | 44. Waterfowl Enclosure |
| 5. Aviaries | 45. Waterfowl Enclosure |
| 6. Milk Bar | 46. Gazelles |
| 7. CORONATION HALL | 47. Penguins |
| 8. CLOAKROOM, FIRST AID,
TOILETS, MOTHER AND BABY
ROOM | 48. Sealions |
| 9. CAFETERIA | 49. Rock Garden |
| 10. Picnic Lawn | 50. Polar Bears |
| 11. BEARS | 51. Tigers |
| 12. Sunken Garden | 52. Waterfowl Enclosure |
| 13. Kiosk | 53. Anteaters |
| 14. AQUARIUM | 54. BIRD HOUSE |
| 15. NORTH ENTRANCE | 55. FOUNTAIN RESTAURANT |
| 16. PUSH CHAIRS, WHEEL CHAIRS,
LOST CHILDREN | 56. Ape Nursery |
| 17. Parrot House | 57. TOILETS |
| 18. Free Flight Aviary | 58. Lions |
| 19. APE HOUSE | 59. SOUVENIR SHOP |
| 20. RAINBOW CAFE AND SHOP | 60. TOILETS |
| 21. Aviaries and Picnic Lawn | 61. OAKFIELD RESTAURANT |
| 22. TOILETS | 62. P.O. Telephone |
| 23. Tuatara Exhibit | 63. Gibbon Pen |
| 24. Peccaries | 64. Animal Enclosure |
| 25. Waterbus Halt | 65. Cheetahs |
| 26. Birds of Prey Aviaries | 66. Ornamental Rock Garden |
| 27. Condor Aviary | 67. Malayan Bears |
| 28. Jackal and Hyaena Enclosures | 68. Animal Enclosure |
| 29. Animal Enclosure | 69. Aviary |
| 30. Porcupine Enclosure | 70. Wallabies |
| 31. Coypus | 71. WATERBUS BOOKING OFFICE
AND KIOSK |
| 32. Beavers | 72. Waterbus Halt |
| 33. Giraffe House | |
| 34. Camel House | |
| 35. Waterbus Halt | |
| 36. TROPICAL, NOCTURNAL AND
REPTILE HOUSES | |
| 37. CHIMPANZEES | |
| 38. Floribunda Rose Garden | |
| 39. Mammal House | |
| 40. Gibbon Island | |

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|--------------------------------|
| 73. Fountain Flower Gardens |
| 74. Rose Garden |
| 75. Red Lechwe |
| 76. Red Lechwe |
| 77. Deer or Antelope Enclosure |
| 78. Waterbus Halt |
| 79. Zebra and Deer Enclosure |
| 80. Kamchatka Bears |
| 81. ELEPHANTS |
| 82. Hippos |
| 83. Tapirs |
| 84. Small Mammal House |
| 85. Waterfowl Enclosure |
| 86. Ankole Cattle |
| 87. Gazelles and Emus |
| 88. Stork Enclosures |
| 89. Baboon Pens |
| 90. Cat House |
| 91. Lions and Tigers |
| 92. Antelope and Ostrich |
| 93. Antelope Enclosure |
| 94. Antelope Enclosure |
| 95. Zebras and Llamas |
| 96. MONKEY HOUSE |
| 97. Waterfowl Enclosure |
| 98. Wallabies and Waterfow |
| 99. Cranes and Waterfowl |
| 100. Blackbuck |

- | |
|--------------------------------|
| 101. Alpacas |
| 102. Bison Paddock |
| 103. Pere David's Deer Paddock |
| 104. Eland and Marmots |
| 105. RHINO HOUSE |
| 106. TOILETS |
| 107. Mpila Snack Bar and Kiosk |
| 108. Antelope Enclosure |
| 109. Antelope Enclosure |
- Animals may be moved from
time to time.

FOR A COMPLETE
TOUR OF THE ZOO —
Follow Nos.1-109
from South Entrance
or Nos.16-109
from North Entrance
then return to
Nos.1-14

ANIMAL FEEDING TIMES:

LIONS—3 pm except Fridays
BEARS—3-15 pm
POLAR BEARS—4 pm
SEA LIONS 3 times daily—
2-40 pm, 3-40 pm, 4-40 pm

The two Severum Cichlids (*Cichlasoma severum*) have laid eggs but judging by the lengths of their breeding tubes, both specimens are females. We are endeavouring to obtain a mate for them.

At the present time the Aquarium Keeper is attempting to breed a pair of Congo Tetras (*Micralestes interruptus*). Our present stock of this species has been in the collection for approximately four years and is in a fine condition. We can be sure of this fact as the Congo Tetras have acquired filaments on their tails and fins, which are clearly visible in the photograph on page seven. Whilst usually these are borne by wild fishes, they develop rarely in captive specimens.

The pair of Tetras was transferred from the exhibition tank to an offshow tank which had been prepared specially. Resting about one inch from the base of this tank is a plastic sheet through which holes have been punched. As the eggs are deposited, they will sink and most pass through the holes, coming to rest beneath the plastic sheet. On hatching the fry will be reasonably safe from the healthy appetites of their parents which would regard them only as food. Congo Tetra eggs take six days to hatch, a considerably longer period than that required for eggs of most other Tetra species. The breeding tank has been filled with rain water as a further inducement to spawning.

Amongst the new arrivals in the Aquarium, there have been Bleeding Heart and Red-eyed Tetras, Tiger and Clown Barbs, Red-tailed Black Sharks and several Glass Catfish. In addition, Bronze, Albino Bronze and Blue varieties of Catfishes (*Corydoras sp.*) have been distributed through the tanks.

Thick-lipped Gouramies (*Colisa labiosa*) have not been seen in our Aquarium for a few years but recently a new exhibit of about a dozen specimens was established. The species originates from Burma and reaches an adult length of about three inches.

Several new Striped Gouramies (*Colisa fasciata*) have been introduced into another tank. Maximum length for this species is six inches and its distribution is in Bengal, Burma, Thailand and the Malay Peninsula.

Finally in the marine section visitors can see six new Seahorses (*Hippocampus sp.*). All have yellow bodies but two specimens bear dark bands across their backs and it is believed belong to a different species from the other four. As far as it is possible to judge, we have acquired one male and five female Seahorses.

TUATARAS

Near to the Pygmy Hippopotamus enclosure is a small building standing by itself, No. 23. Visitors may not always be lucky enough to see the inhabitants of this sandstone house but those who are will be looking at a species which has hardly changed in almost 200 million years. In this exhibit is a pair of Tuataras (*Sphenodon punctatus*), lizard-like reptiles whose predecessors roamed the earth before even the dinosaurs had reached their peak. Chester is fortunate in being one of only four zoos in Europe to own a pair of these unique reptiles, a distinction for which we owe thanks to the New Zealand Government. During the past few weeks our Tuataras have emerged successfully from another hibernation. For the male this was his eleventh winter at Chester Zoo, for the female her seventh, and therefore it was felt that an account of their progress was overdue.

As the last report of any length about the Tuataras appeared in the magazine a few years ago, it is perhaps worth recording some general details about the species. Nowadays the range of the Tuatara is confined to twenty islets off the coast of New Zealand. There is evidence that in the time of the earliest Maoris Tuataras were found on the mainland but there are no authentic records of such populations in recent years. With so limited a distribution, it is fortunate

that the species is afforded rigid protection by the New Zealand Government. Each year a limited number of Tuataras is made available for dispatch to a few, carefully selected collections and even then, from annual enquiries, the authorities in New Zealand maintain a close watch on the fortunes of these captive specimens.

Most of the islets on which the Tuataras live are bounded by steep cliffs and all are home to extensive colonies of sea birds. Cormorants, gulls, terns, penguins and petrels all gather on these rocky outcrops of land and research indicates that the presence of such large numbers of birds is vital to the existence of the Tuataras. In the first place, the vast quantities of droppings left by the birds enrich the soil and support healthy populations of insects on which the Tuataras feed. Secondly the constant passage of birds across the islets breaks down vegetation and thus creates a fairly open habitat which is preferred by the reptiles.

The Tuataras live in burrows and amongst their avian neighbours, the Petrels also excavate tunnels. On many occasions a Tuatara has been observed sharing a hole with a Petrel, although the reptiles are quite capable of digging their own burrows. In the natural state, the Tuataras are active both in daylight and at night and during the colder months they enter a mild form of hibernation. On these offshore islands the weather is frequently changeable but there are few frosts and the maximum summer temperature would be in the region of 70° F.

So different is this attractive lizard from other forms of reptile life, that it has been placed in an order all by itself, Rhynchocephalia. Fossilised remains of the order dating from the Triassic period have been discovered in Europe, North America, Africa and Asia. Literally translated, Rhynchocephalia means "beak-head", a description which refers to the tip of the reptile's upper jaw.

From the zoologist's point of view, the most fascinating aspect of the Tuatara must be its skeleton. Unlike modern lizards, it has

complete bars of bone around the large apertures in each side of the skull. Its ribs have dorsal processes similar to those of crocodiles and the floor of the abdomen contains a bony basketwork absent from many lizards. The Tuatara has no gums and its teeth are welded to the jaws. In addition the male differs from all other reptiles in having no organ of copulation.

Both Tuataras at Chester originated from Stephens Island, a rocky islet one square mile in extent which rises to a height of one thousand feet and in poor weather is often inaccessible. The male arrived in August 1963 and was followed in September 1967 by the young female. Bearing in mind that the climate of New Zealand is not very different from our own, it is imperative that captive Tuataras are not subjected to excessive heat. During his first two years in the collection, the male occupied a vivarium in the Reptile House and appeared to thrive. Then, in the middle of a very hot spell, the temperature in the building rose to a level which the reptile obviously would not tolerate and it became necessary to remove him. He was taken to the home of the Curator of Reptiles while a special Tuatara house was constructed.

This exhibit measures approximately 8 by 6 feet. Inside, the rockwork has been arranged to form several burrows and to include a shallow pool. The earth-filled floor enables the Tuataras to dig whenever they wish and the whole vivarium is planted extensively with ivy and other vegetation. For the greater part of the year there is no artificial heating at all in this exhibit. In the depths of winter a little warmth may be introduced, but only sufficient to prevent frost from forming in the house. Even on the hottest days the inside temperature never rises above 70° F. Whilst the sun's rays can enter the building through the large viewing window, the roof is shaded by tall willow trees. In summer also, a constant breeze is drawn from the zoo's lake through louvre windows at the rear of the house.

The Curator of Reptiles is the only member of staff who enters this building and he has not handled the Tuataras since he placed

them in this enclosure several years ago. Consequently they are not tame but neither are they afraid of him and both will take food from his hand without hesitation. Their twice weekly feeds are always administered in this way to ensure that each is obtaining adequate nourishment. At Chester Zoo the Tuataras live on a diet of locusts and young rats and mice. After hibernation especially, they may also be given a few drops of a vitamin preparation. On average, at a single feed, one Tuatara will consume between three and four locusts and a couple of rats and mice. The lizards supplement this diet themselves by catching various insects, such as spiders and beetles, which wander into the house.

Depending on weather conditions, hibernation lasts from November through to about March. In October the Tuataras become sluggish and suddenly they disappear completely. Attached to the burrow occupied by the male is an observation hatch which enables the Reptile Curator to keep an eye on him during the winter sleep. On the other hand, the female has always occupied a different burrow from the male and, while he knows where she is, the Curator must wait patiently for her to emerge in the spring. Untimely interference could result in a rather nasty bite! Incidentally Tuataras show their displeasure by emitting a deep croaking noise, not unlike that made by a frog.

The male Tuatara is the subject of this month's cover. Typically he is larger than the female and his crest of spines is more developed. Females are recognisable by their more slender heads and broader abdomens. The slow growth rate of the Tuatara is another remarkable feature of this unusual species. Individuals do not reach maturity until they are between twenty and twenty-five years old and they have a potential life span in excess of one hundred years. Sloughing occurs once a year and in common with many other lizards, the Tuatara, if under stress, will shed its tail. Eventually this will be replaced by another tail.

Aggression has never been witnessed between our specimens but



E. Kirkland, F.R.P.S.

AN EARLIER PHOTOGRAPH OF THE MALE TUATARA (*Sphenodon punctatus*)

neither have they been seen mating. To breed Tuataras in captivity would be a tremendous achievement. Our female has laid eggs on two occasions but all have proved infertile. However we are not too despondent as we suspect that she, at least, is not yet old enough to breed. On her throat she is still displaying the whitish lines and spots which are characteristic of the young Tuatara.

The female deposited both her clutches, the first of nine and the second of thirteen eggs, in a hole some six inches deep which she had excavated at the front of the vivarium. Newly laid, the leathery eggs were white and comparable in size with those of a sparrow. Incubation takes from twelve to fifteen months and in the natural state, once the female has buried her eggs, she has nothing more to do with them.

We believe that the eggs are laid in the spring after the female has emerged from hibernation. Prior to the laying of her second clutch, the female's abdomen swelled and she went off her food. When one morning she appeared at the entrance of her burrow looking remarkably slimmer, the Reptile Curator knew that she had deposited her eggs. At the time of writing she is again rather plump and we are hopeful that this is an indication of a third clutch.

SUBSCRIPTION INCREASE

Owing to the forthcoming rise in postal charges, it is regretted that as from 1st July 1974 the annual subscription rate for the "*Chester Zoo News*" will be increased to £1.15 Naturally all existing subscriptions will be honoured until they expire.

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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