



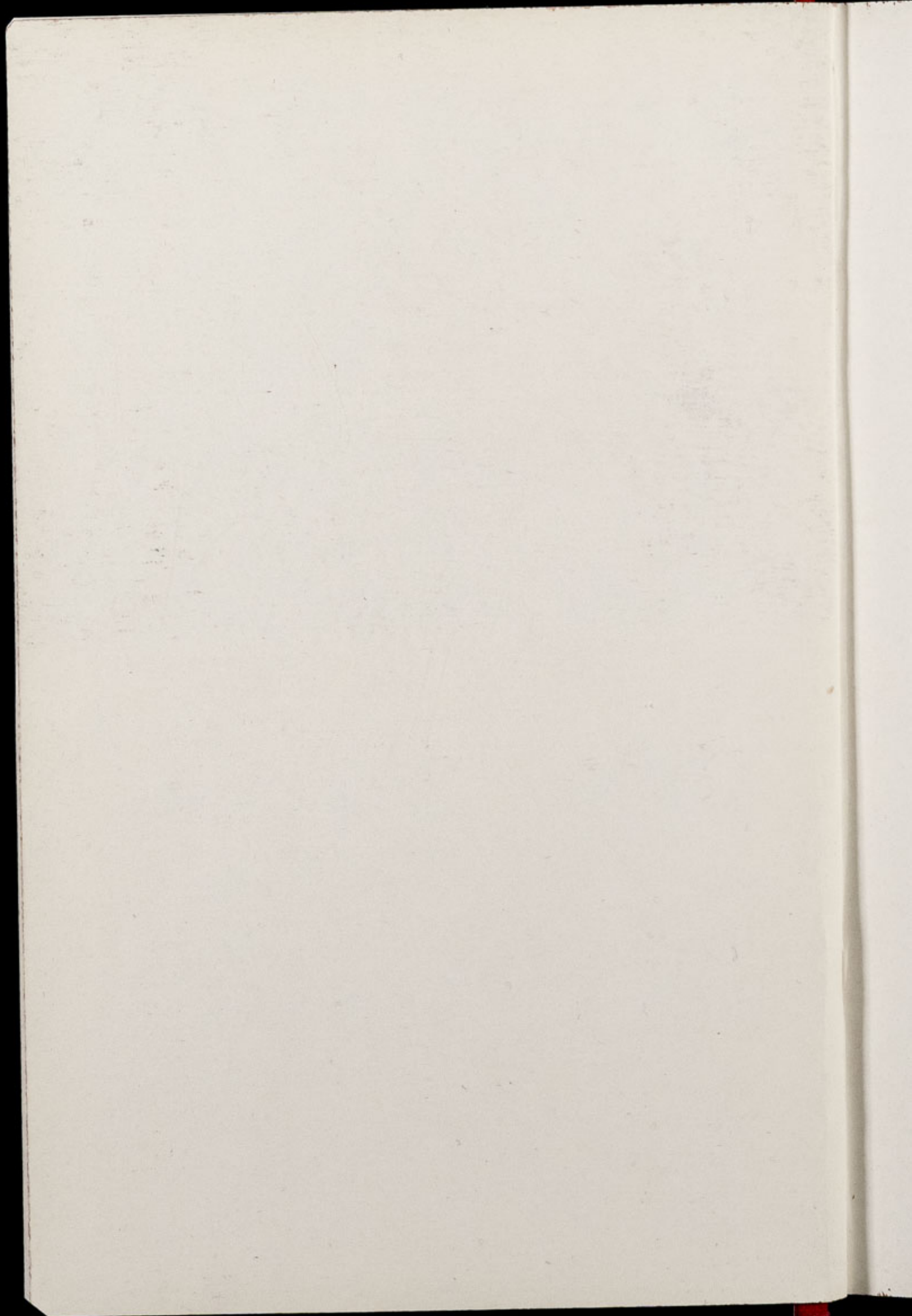
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Chester Zoo News

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

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Editorial

This month we are very happy to welcome Mr. and Mrs. Mottershead back to Chester. Somehow the Zoo is just not the same without them. Mr. Mottershead has returned with several hundred colour transparencies of their trip, so we will have a number of film shows to look forward to in the near future. We think readers will enjoy the last chapter of "*News from Mr. and Mrs. Mottershead*", on page two.

We are not including a "*Gardening News*" article in this issue, as there is really very little to report from that section of the Zoo, but we think readers will find "*Aquarium News*" on page seven more than usually interesting.

Although the weather has been cold, up to the time of writing we have had very little snow in Chester and we hope that the weatherman will continue to 'let us off lightly'.

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COVER: In our Cover Picture this month two of Chester Zoo's Pelicans are in the midst of a preening session.

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NEWS FROM MR. AND MRS. MOTTERSHEAD

Since Mr. and Mrs. Mottershead are now home again, we are able to report the final stages of their fifteen week trip in greater detail. This concluding chapter begins as they are about to leave Melbourne, where they were so well received by the Director of Melbourne Zoo and also the Director of the Royal Botanical Gardens, who had visited Chester Zoo some years previously. Their last visit in Melbourne was to Sir Colin Mackenzie's Sanctuary at Healesville.

From Melbourne Mr. and Mrs. Mottershead travelled to Adelaide and were met by the Director of the Zoo, on Monday, 7th December. Their first engagement that evening was a sherry party, given in their honour and attended by the Lord and Lady Mayoress of Adelaide and other prominent citizens.

Apart from visiting the Zoo, which Mr. Mottershead reported as having great potentialities and seeing something of the city, Mr. and Mrs. Mottershead also met some of their son-in-law's relatives and former employees of Chester Zoo, who had settled in that district. Before leaving Adelaide Mr. Mottershead gave a television interview, which was freely quoted in the local press.

On Thursday, 10th December, they left Adelaide for Perth, where they were most impressed by the city and the beauty of the surrounding countryside. At the airport Mr. and Mrs. Mottershead were met by the President and Superintendent of Perth Zoo, who took them on a tour of the Zoo. One of the interesting things about this Zoo is that a very deep borehole supplies hot water, capable of heating any of the animal houses -- although with the warm climate this is rarely necessary. Mr. Mottershead commented on the obviously well-cared-for appearance of Perth Zoo and thought it had great possibilities. The same evening Mr. and Mrs. Mottershead were entertained to dinner by the President of the Zoo, who also took them on a tour of the district, along the banks of the Swan River.

During a conducted tour of the John Forrest Nature Reserve the following day, Mr. and Mrs. Mottershead enjoyed seeing the wonderful collection of plant life, as well as the many animals and birds.



MR. MOTTERSHEAD AND THE ADULT FEMALE WHITE RHINO

Before leaving Perth on the 12th December Mr. and Mrs. Mottershead were taken to see the delightful Yanchep National Park, thirty miles from the city. They spent the greater part of the day in the Park and saw numerous exhibits of botanical interest. Mr. Mottershead photographed many of these, including the Flame Tree and one commonly called the "Christmas Tree", which is a blaze of yellow and bears little resemblance to the British idea of a Christmas Tree. In the evening the travellers flew out to Mauritius. They called at the Cocos Island en route, but were quite glad it was a short stay as the weather was uncomfortably warm.

As there was a delay on the further journey to Africa, Mr. and Mrs. Mottershead had to spend several days in Mauritius and employed the time touring the entire island and visiting the Botanical Gardens.

On Wednesday, 16th December, Mr. and Mrs. Mottershead arrived in Johannesburg, to be met at the airport by Dr. Brand, Director of the Pretoria Zoo. A very full programme had been arranged and the following morning, after a quick look round the Zoo and a shopping trip to buy tropical clothing, they set out for the Kruger National Park.

Towards evening they arrived at Skukuza Camp, beautifully situated on the Sabie River and thirty-two miles from the entrance to the Park. Dr. Brand and his guests were accommodated in huts, built to the native design but with every modern convenience. Mr. Mottershead thoroughly recommends Skukuza, for anyone wishing to spend a really restful holiday.

Early on the morning of Friday, 18th December, the party set off to explore the Park. Impala were everywhere and both Mr. and Mrs. Mottershead were thrilled to see so many great herds with their young. Included in the long list of animals photographed were Giraffes, Bush-pig, Buffalo, Chacma Baboons, Greater Kudu, Hinged Tortoises, Vervet Monkeys, Steinbuck and Waterbuck. Birds such as Hornbills seemed to be very common, as did Weavers and Red-faced Lovebirds. Perhaps the most spectacular sight was a great flock of Whydahs, which must have numbered at least two thousand. Towards the end of the day a pride of Lions was spotted by the roadside and, soon after, the party noticed four Elephants standing under some trees, only a few hundred yards from the car.

The outstanding memory of the following days tour of the Park was seeing a herd of Elephants crossing the road, apparently guarded by three large bulls. Game Wardens had estimated this particular herd to number one hundred and fifty elephants, of which Mr. and Mrs. Mottershead saw about forty or fifty, as they moved into the jungle.

Again an early start was made on Sunday, 20th December, and at the Sabie River several Hippos were seen, before the party drove on to Pretoriuskop Camp for breakfast. To reach Umfolozi Reserve, which was their next objective, Dr. Brand and Mr. and Mrs. Mottershead took a short cut through Swaziland — a mountainous country with vast natural forests.



DR. BRAND AND MR. MOTTERSHEAD INSPECTING THE
TRANQUILISED WHITE RHINO CALF

They broke their journey at the Imperial Hotel in Piet Retief, Natal, which is some five thousand four hundred feet above sea level. When the proprietor of the Hotel discovered that Dr. Brand and Mr. Mottershead were Zoo Directors, he offered to show them his pet Lion. It turned out to be quite the biggest Lion that either of them had ever seen and Mr. Mottershead estimated its weight to be over one thousand pounds. Although definitely a male, this amazing animal had the head of a Lioness and no sign of a mane whatsoever. It was perfectly tame and shared an enclosure with a Saint Bernard dog, the only confining barrier being a low, wire-netting fence, hardly more than six feet high.

After a good nights rest they continued their journey to Umfolozi, reaching the Reserve at noon on Monday, 21st December. A quick meal, out of tins, was followed by a conducted tour of the Game Reserve, during which they saw no less than seventy-four

White Rhinos, as well as countless other wild animals. It will be remembered that it was from Umfolozi Reserve that Chester Zoo's pair of White Rhinos came, in July 1963.

That evening they were told that there was to be a White Rhino catch in the morning. A young female Rhino was to be sent to Johannesburg Zoo and the catch had been specially arranged to coincide with Mr. and Mrs. Mottershead's visit. Needless to say our Director and his wife were delighted to be able to join in the hunt, which turned out to be one of the outstanding highlights of their visit to South Africa. (On pages three and five are two photographs taken towards the end of the hunt and hurriedly processed so that Mr. and Mrs. Mottershead could bring them back to England).

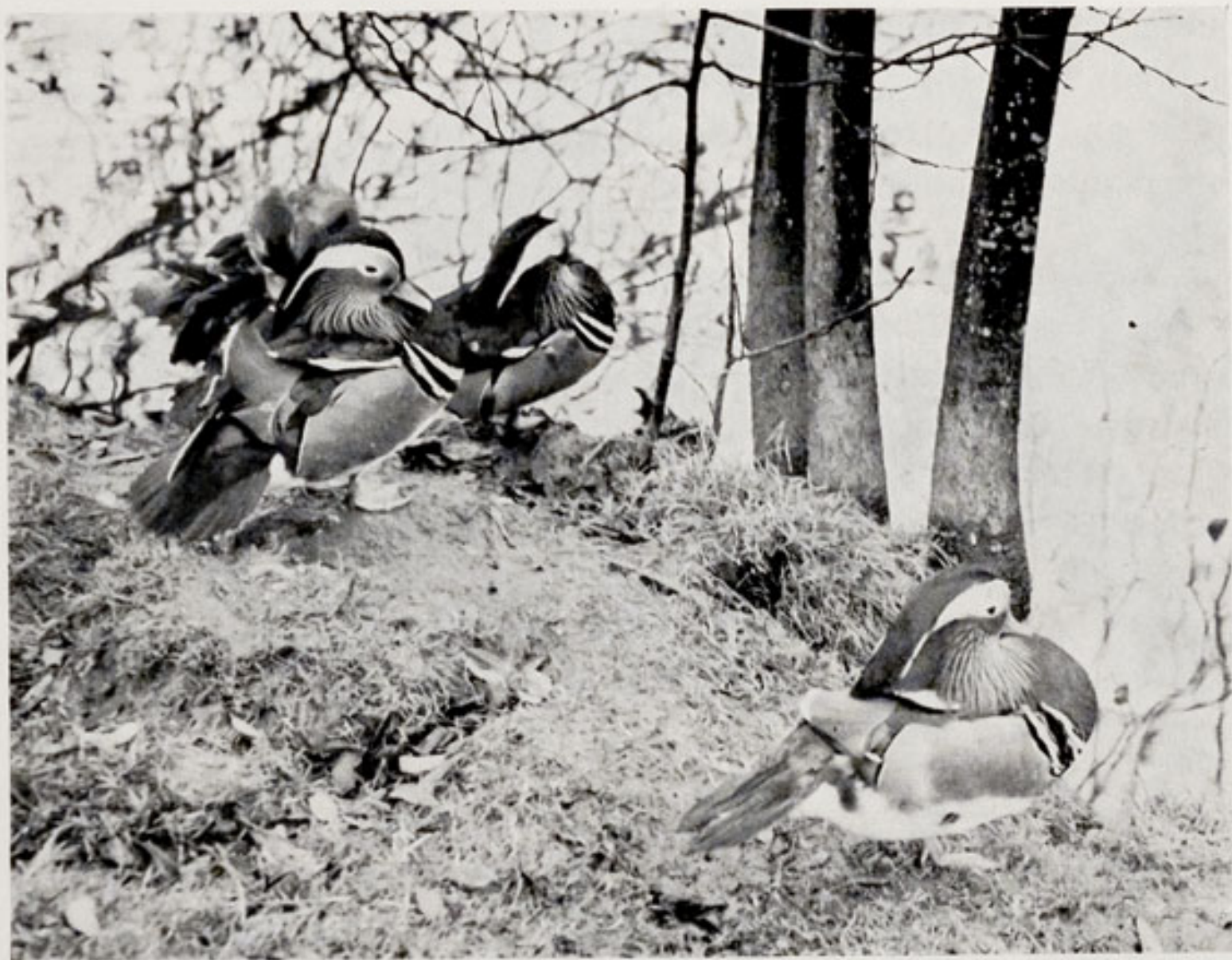
Eventually a suitable calf was sighted, but the mother was so aggressive that both animals had to be tranquilised, although the mother was released again, once her measurements had been noted. Mr. Mottershead was very impressed by this humane and well-developed method of catching wild animals — whereby they are "shot" with a dart carrying tranquilising drugs.

Later in the day they travelled to Hluhluwe Reserve and saw several of the Black Rhino. In the evening they were entertained to dinner at the home of Mr. Ian Player, who has done so much for the preservation of wild life in the Game Reserves of South Africa.

Next day, 23rd December, Dr. Brand drove Mr. and Mrs. Mottershead back to Pretoria, a distance of between six and seven hundred miles, which they covered in a mere ten hours. Altogether they had driven something approaching two thousand miles between leaving and returning to Pretoria.

A longer visit was paid to Pretoria Zoo on Wednesday, 24th December. This Zoo is undergoing complete remodernisation and when completed will probably be one of the finest in the world.

After a truly fantastic fifteen weeks, spanning more than fifty thousand miles, Mr. and Mrs. Mottershead arrived back in England from sunny South Africa, to be greeted by the snow and ice of a typical British winter. However, they were glad to be home and we were just as glad to see them again.



MANDARIN DRAKES IN WINTER PLUMAGE *E. Kirkland, F.R.P.S.*

Throughout their trip Mr. and Mrs. Mottershead were overwhelmed by the wonderful reception and generous hospitality given to them. To all their old and new friends everywhere Mr. and Mrs. Mottershead send their sincere thanks and will endeavour to show them an equally warm welcome should they ever visit Chester.

NEW ARRIVALS

- 2nd December: a White-faced Capuchin Monkey was presented by the R.S.P.C.A.
- 9th December: a Carolina Drake and a Mandarin Duck were presented.
- 11th December: four Coypu Rats were born in the enclosure opposite the Beaver pond.

AQUARIUM NEWS

During the course of a year enquiries covering every aspect of Aquarium management are made by interested members of the

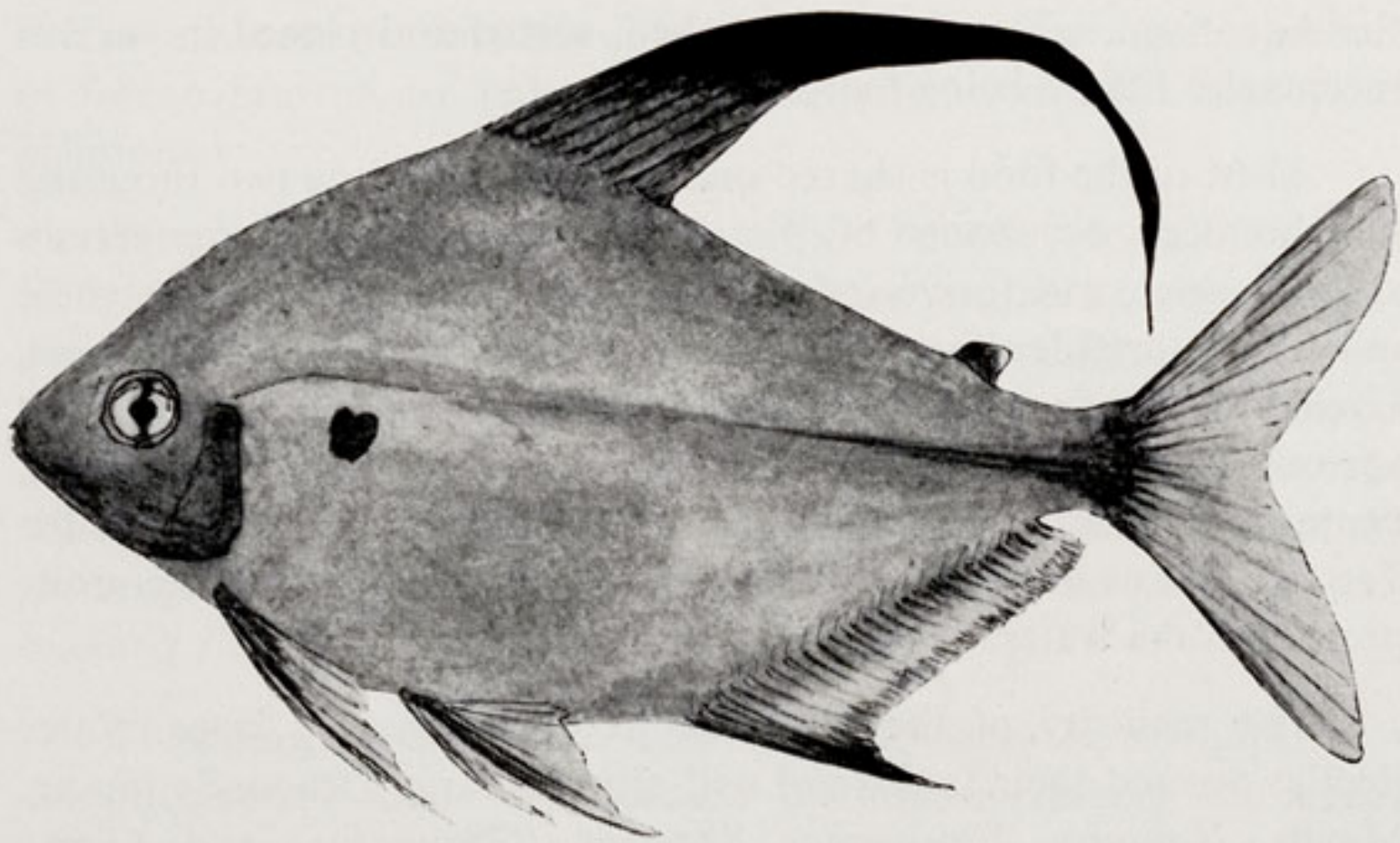
public. These range through questions on maintenance of tanks, methods of heating, pumps, filters and filter media, gravel, rocks, water and its correct components, to a whole host of queries on fish, plants, amphibia and turtles.

Perhaps the one subject which arouses the most interest is that of food and feeding. The numerous aquarists shown around the Aquarium find the greatest cause for comment and admiration in the tremendous vitality of the fish and consequently their brilliant colours and large size. These three all-important conditions are entirely dependent on the provision of a correctly balanced diet, covering as wide a range of foods as it is possible to provide. The popular belief that a pinch of some obscure dry food is sufficient to keep a fish happy, is quickly shattered when the subject is examined more closely.

Let us take the feeding routine on an average summer day in the Aquarium. The majority of the fish are fed early in the morning with dried wheat germ, which is sprinkled on the surface of the water in two grades, fine and coarse. This allows any young fry present to get their fair share.

After a short time has elapsed, allowing the fish to eat and digest the wheat germ, the first trip is made to one of the numerous ponds in the Gardens. With a large, fine-mesh net and a bucket, a suitable quantity of *Daphnia* (a fresh-water crustacean popularly called a "water-flea") is collected from the water. During warm weather the *Daphnia* is present in such vast quantities that it colours the water bright red. At the Aquarium the *Daphnia* is washed, passed through sieves and graded into various sizes, before being distributed to each of the eighty tanks used for public exhibition and also to any reserve tanks behind the scenes. Care is taken that young fry and small fish get the finest grade of *Daphnia* available.

After this general feeding has been finished we deal with the fish requiring individual attention. Broken dog biscuits, which are eaten in surprisingly large quantities, are given to the larger Cichlids, Barbs, Metynnis, Scats, Orfe and all the British Coarse Fish. Next, the days raw meat is chopped, minced or ground up into suitable sizes and distributed to the carnivorous fish, some of which will accept pieces of meat from the fingers.



BLEEDING HEART TETRA

M. D. Murphy

On alternate days raw herrings are fed as a change from meat, the roe of the herring being a particularly good food for all the smaller fish. Such large specimens as the Electric Eels and Piranhas will accept whole herrings and demolish them in a few minutes, whereas the smaller and more delicate varieties require them to be chopped to exactly the correct size, otherwise the herring will not be eaten. Our two large Snapping Turtles, on the other hand are not so fussy and will bolt down enormous quantities of meat or fish. The larger of the two Turtles has been known to eat as many as six herrings at one sitting.

The smaller Terrapins, of which we have five different species and our three Marine Turtles, all accept meat and fish and will also demolish a couple of lettuces between them. Lastly our breeding colony of Black and White Axolotls are also fed with large strips of meat.

During the course of the afternoon several more trips are made to other ponds in the Zoo. A formidable array of aquatic life, including Glassworms, Gnat Larvae, Blood Worms, Cyclops, Tubifex Worms, Dragonfly and Mayfly Larvae, Freshwater Louse, Freshwater Shrimps and some aquatic plants are brought back to

the Aquarium, where they are washed, sorted and placed in various receptacles before being fed to the fish.

Most of the food is shared out equally among the two thousand five hundred occupants of the Aquarium, but there are certain species which will thrive only on one particular food and so these must be catered for first. Such fish as Giant Pencils (*Anostomidae*), Elephant Trunk-nosed (*Mormyridae*), Pompadours (*Cichlidae*) and various species of Catfish prefer to grub around in pond detritus, containing various annelids and crustaceans, whereas many of the Tetras, Danios and Barbs will tackle any free swimming organisms present in the water.

The majority of the big Cichlids enjoy chasing large Water Beetles around their tanks and will also eat large Dragonfly larvae. Mayfly Nymphs, Freshwater Shrimps (*Gammarus*) and Glass-worms are relished by the Sea Horses, although for most of the time they eat miniature Marine Shrimps, collected for this purpose in Anglesey.

After all these types of live food have been distributed there are several fish which still have not been satisfied. We refer to the really voracious carnivores, which include such interesting species as Bichirs (*Polypteridae*), Lungfish (*Dipnoi*), Snakeheads (*Ophicephalidae*), Arowana (*Osteoglossidae*), Siamese Tiger Fish (*Lobotidae*), Piranha (*Characidae*), Electric Eel, (*Electrophoridae*) and Astro-notus (*Cichlidae*). These fish form the bulk of our collection of "heavy weights" and require either rats, mice or live fish at least twice a week, if they are to remain in the best of health.

Once again we are fortunate in being able to rely on the extensive canal system in the Zoo to provide sufficient live fish in the form of Silver Rudd and Sticklebacks, to supply all the needs of the Aquarium. During the summer these fish are caught in their hundreds in traps and nets and provide an excellent change of diet for the inmates of the Aquarium.

When all these tastes have been catered for there remain a number of fish which are entirely vegetarian and these require three or four lettuces a week included in their diet.

Apart from the above-mentioned foods, we also provide quantities of maggots and mealworms from time to time, for such

fish as are used to partially insectivorous diets and small numbers of frozen prawns are fed to our marine fish and collection of sea anemonies.

When time permits we also like to provide Earthworms (*Lumbricus*) as these, in sufficient numbers, are an excellent source of nutriment for all the fish and are also a good method of bringing the fish into breeding condition. In addition to the common Earthworm we also maintain a thriving colony of Whiteworms (*Enchytrae*) which are always a good standby when inclement weather does not allow sufficient live food to be collected from the ponds — particularly during the winter months.

Providing food for the fish fry of all sizes is a slightly less complicated business. The easiest method of rearing the newly hatched fish is to obtain a bucket of fresh green water from one of the ponds and after running it through a fine net to remove any possible predators, drip feed it into the hatching tank.

The green colouring in the water is caused by millions of minute Diatoms and assorted animal life, which are classed loosely as Infusoria. After the young fish have grown past this stage we feed Microworms, which we also culture in the Aquarium. When the youngsters are larger still they are changed onto a diet of Brine Shrimp nauplii, hatched out in our Tropical Marine Section. Finally Daphnia and other forms of pond life are substituted for the nauplii.

Perhaps after the reader has "digested" this brief survey of our feeding routine he (or she) may understand how important it is to provide a diet containing practically every form of life the inhabitants of the Aquarium would be likely to meet if they were at liberty. Only in this way can any collection of fish be maintained at a high standard of colour and size and the number of breeding successes increased — the occurrence of which is only a yardstick in assessing an animals relative happiness in captivity.

New arrivals this month include further specimens of Bleeding Heart Tetras, *Hyphessobrycon callistus rubrostigma*, from Colombia, Indian Glass Catfish, *Kryptopterus bicirrhis*, some fine Japanese Shubunkins and a new type of highly coloured Carp (known as Coi), just recently produced in Japan. Among the breeding successes were a number of White Axolotls.

GIRAFFES

Among the most popular animals in any Zoo are the Giraffes, *Giraffa camelopardis* — the tallest and most stately of all mammals. They are found in the wild only in Africa south of the Sahara, but with the growth of towns have been eliminated in the very southernmost parts of Africa. Giraffes have been classified in various ways but the simplest method is to divide them into the northern and southern groups.

To the northern group belongs the Reticulated Giraffe — *Giraffa camelopardalis reticulata* — of which we have one specimen at Chester. Reticulated Giraffes are found in Somaliland and Northern Kenya and the brown patches on their coats are much more clearly defined and regular in shape than those of their southern relatives. The Masai Giraffe, *Giraffa camelopardalis tippleskirchi*, is a member of the southern group and has a greater number of irregular brown patches on his coat.

Although Giraffes are so tall it is a remarkable fact that in their long necks are the same number of bones — seven — as in the necks of the tiniest mammal. When drinking in the wild the giraffe is forced to straddle his forelegs in order to reach down to water and in this position is at his most vulnerable. Giraffes live mainly on leaves of acacia trees, plucked off with their long, rough tongues — see photograph opposite. Both sexes have short horns covered with skin.

As a rule Giraffes travel in small groups, perhaps one old male with several females and young and they often mix with the herds of Zebras and Antelopes on the savannah lands of Africa. Unlike most other animals their sight is very well developed and this, added to their great height, gives them the advantage of being able to spot danger from afar. For short distances Giraffes can run faster than a horse and, as can be imagined, they have an extremely powerful kick.

Giraffes seem to do well in Zoos and breed quite regularly. They are usually very docile animals, but can be startled by sudden movements or sharp sounds. It was thought at one time that they were mute, but this has since been disproved. On two occasions



Mr. & Mrs. E. Sorby

"GEORGE" SAMPLING WILLOW LEAVES

here at Chester our Giraffes have been known to "roar" (see previous articles in "Zoo News").

In the Gardens we have a fine herd of Giraffes, consisting at the moment of two adult males, "George" and "Henry", three adult females, "Maud", "Margaret" and "Debbie" and two young males — "Gerry" born in April 1963 and "Maxie" born in January 1964.

George is of course well known as a great character and has had some amusing escapades with telephone wires and stolen hats. Even for a Giraffe George is a tall animal, measuring just over nineteen feet. Unfortunately the two adult males have to be kept apart as they cannot agree and could inflict heavy damage to one another with powerful swings of their necks and heads.

The three females are all breeding animals and we are looking forward to more youngsters in the future. Debbie was handreared when young and is the friendliest of the three, whereas Maud

(sometimes known as "Goofy") has the largest appetite and is our only Reticulated Giraffe. Like Margaret his mother, Gerry is rather a shy youngster, but is growing into a fine animal and will be leaving shortly for a new home in Leicestershire.

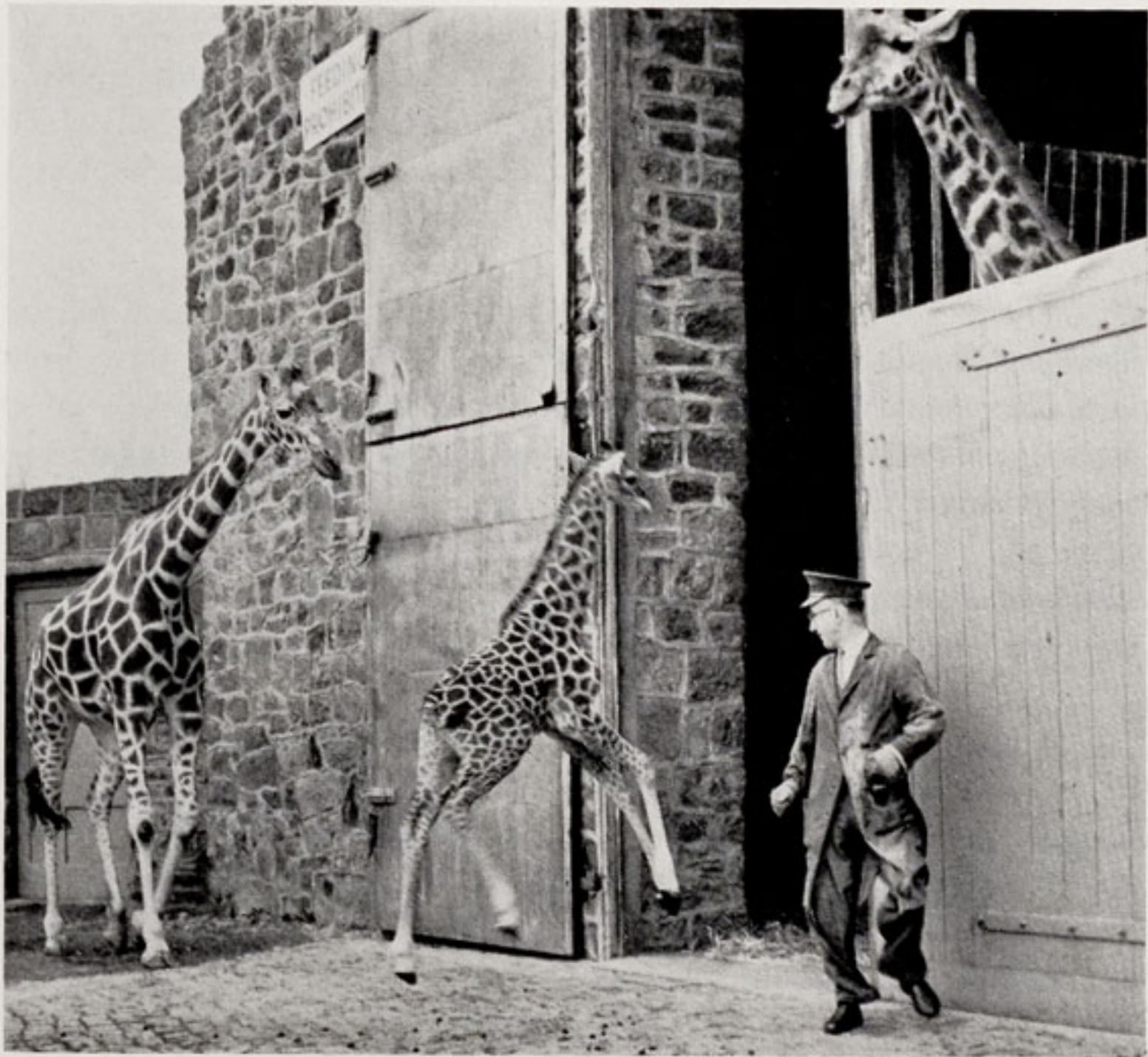
Maxie, the youngest and offspring of Maud and George is a particularly cheeky little Giraffe. Even at a very tender age he would kick out at his Keepers if they passed nearby and is afraid of nothing. We feel that someday he will be just as much of a character as his lofty father — he is certainly showing every indication! Whenever he gets the opportunity Maxie will grab a mouthful of his Keeper's smock and his latest game is to knock down the feeding troughs when he has finished eating.

At Chester we try to provide our Giraffes with a diet as near as possible in content to their diet in the wild. Throughout the summer months branches and leaves are fed, also fresh grass, together with mixed corn, minerals and vitamins. Very strong, stemmy lucerne or clover hay is fed throughout the year with chopped cabbage, kale, carrots and turnips as available.

IN THE REPTILE SECTION — ANACONDAS

The Anaconda (*Eunectes murinus*) is usually considered to be the second largest species of snake, first place going to the Reticulated Python of South East Asia. The largest substantiated record for an Anaconda is a length of twenty-five feet, but they are proportionately greater in bulk than other allied species. A specimen of nineteen feet long was found to have a circumference of thirty-six inches.

Anacondas are natives of Brazil, the Guianas and North East Peru, where they lead a semi-aquatic life. They are also known as Water Boas and are adapted to their environment by being able to close their nostrils and remain submerged under water for a considerable length of time. In fact when our Anacondas are submerged in this way visitors are occasionally misled into thinking that they have drowned.



Associated Press

"SHALL WE DANCE?"

"MAUD", "MAXIE" AND HEAD KEEPER NIELD, WITH "GEORGE" A SOMEWHAT HAUGHTY ONLOOKER

Although they have a good set of teeth and can give a serious bite, Anacondas are non-poisonous. They are known as constrictors, as they kill their prey by squeezing until it is rendered lifeless. In the past, people imagined that an Anaconda would crush an animal almost to a pulp, but this is completely inaccurate — the prey only being squeezed until it suffocates.

The size of meals taken by the Anaconda has often been the subject of speculation and gross exaggeration, although, like other snakes, their jaws are very flexible and have strong membranes capable of extension. A large Anaconda could manage to swallow a peccary or a third grown Tapir, but the majority of feeds would consist of smaller animals, especially waterfowl.

Anacondas are rather difficult to keep in captivity and it has been found necessary to keep them at a temperature in the eighties. Due to being semi-aquatic they also require a large pool in which they can submerge completely and the water must also be kept at a high temperature.

The two Anacondas exhibited in the reptile section of the Tropical House are about ten feet long. Although they have been here since May 1964 it is only of recent weeks that they have started feeding. However, it is not uncommon for large species of snakes to fast for even longer periods than this, on first being taken into captivity. We have found that our Anacondas relish duck and it seems that a large proportion of their food in the wild state consists of waterfowl.

Anacondas have been bred in captivity and, in common with many other species of snake, are live bearers. In fact eggs are formed but are hatched when still inside the mother. The young are produced in considerable numbers, up to seventy two having been recorded. A young Anaconda is just over two feet long and has a diameter of about one inch.



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