By Courtesy of J. Gwyn Jones, Esq.

Chester Zoo News

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

November, 1964 Price 1/-

Editorial

Gradually the Zoo is settling down to winter. With the exception of the Oakfield and Fountain Restaurants, all the catering establishments, kiosks and Zoo shops have closed. The waterbus season has also come to an end. During the next few months the boats will be overhauled and repainted, in preparation for spring.

We have begun moving the animals to warmer winter quarters — the first to go being the eight Common Zebras (*Equus burchelli granti*) from one of the deer and antelope paddocks alongside the canal. As in previous years the Zebras are being accommodated at the rear of the Giraffe House. Next to be transferred will be the Sitatunga to the Zebra House and the Duikers and Harnessed Antelopes to the enclosures behind the Monkey House.

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COVER: The subject of our cover picture this month is the Crowned Pigeon (Goura cristata) *exhibited in one of the Aviaries in the Tropical House.*

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NEWS FROM MR. AND. MRS MOTTERSHEAD

(Last month when we gave news of Mr. and Mrs. Mottershead's trip we left them in Banff, Canada. Now we continue with brief details of their visits to Vancouver, Victoria, Fiji, Honolulu and Australia.)

From Banff Mr. and Mrs. Mottershead travelled by train to Vancouver, arriving there on Sunday, 11th October. The next few days were spent in Vancouver and Victoria, where they renewed acquaintance with Lt. Col. A. C. Alan-Williams. At one time Colonel Alan-Williams was a Member of the Council of Chester Zoo and still retains his membership of the North of England Zoological Society.

In Victoria both Mr. and Mrs. Mottershead were very impressed by the "Underwater Garden" Aquarium there. Visitors see the fish from a below-sea-level viewing hall. A diver moves around amongst the fish, whilst a commentator in the hall describes the exhibits.

Mr. and Mrs. Mottershead returned to Vancouver on Tuesday, 13th October. The following morning they were collected from their Hotel by the Director of Vancouver Zoo, and enjoyed a conducted tour of the Zoo and Aquarium.

Later on the 14th October they left Vancouver for Hawaii. There Mr. and Mrs. Mottershead paid their second visit to Honolulu Zoo, which they had first visited in 1962.

After Hawaii the next stop on their trip was Fiji. Unfortunately Mr. and Mrs. Mottershead's arrival coincided with the start of the monsoon rains and this rather spoiled the enjoyment of their short visit to the island. Mr. Mottershead reported that up to fourteen inches of rain fell in one hour, so perhaps we should not be too critical of the British weather.

On Thursday, 22nd October, Mr. and Mrs. Mottershead arrived in Sydney, Australia, and were met at the Airport by Sir Edward Hallstrom, Executive Director of the Taronga Park Zoo. The Australian Press and Television cameras were also present in force to welcome our Director-Secretary and his wife.

Dallas News Staff Photo

The photograph above was taken shortly after Mr. Mottershead was made an honorary citizen of Dallas, Texas (*see last months* "Zoo News"). Copies of the photograph and press cuttings, which appeared in the "*Dallas Morning News*", were very kindly sent to us by Mr. E. M. Ted Dealey, Chairman of the Board of Dallas Zoological Society. On Mr. Mottershead's right is Mr. Eugene McElvaney, President of the Dallas Zoological Society and on his left Mr. Dealey.

In the next issue of the magazine we hope to tell you something of Mr. and Mrs. Mottershead's stay in Australia and their visit to New Guinea.

NEW SNOWY OWL

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

THE ORIGINAL SNOWY OWLS

An unexpected addition to our Bird Collection — in the shape of a young Snowy Owl — arrived on the 19th of October. The Owl landed on board the M.V. SIR ANDREW DUNCAN, which was en route for Birkenhead. During the journey the bird dined royally on plucked and dressed chicken from the ship's deep freeze. We believe the young Owl to be a female and it is in really splendid condition.

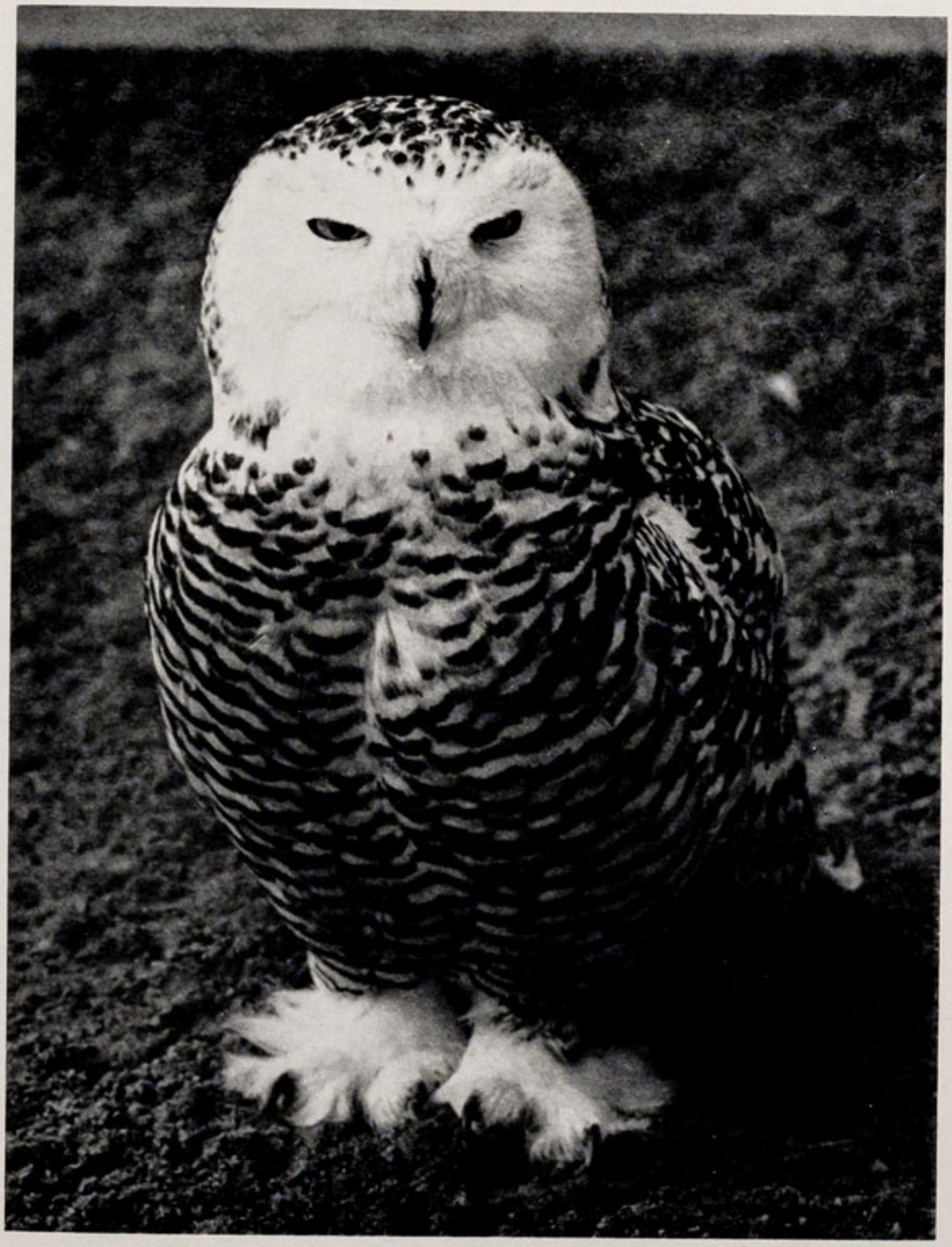
The newcomer spent its first few days at Chester Zoo in the Bird Hospital, as it had to be force fed. However, in a very short time the bird was fending for itself and was transferred to the Owl Aviaries where it shares an enclosure with the two Snowy Owls already in the collection. The black barred markings on the new Owl are much more pronounced than those of the other two. We are happy to report that the three birds have settled down well together.

BABY BABOON

Our very latest arrival is a baby Yellow Baboon — born on the 10th of November.

GARDENING NEWS

While writing this article in mid October the Zoo gardens show all the signs of late autumn. The trees are becoming increasingly bare and the sweeping up and removal of leaves is part of the daily routine. Most of the summer bedding has been cleared from the beds, the exception being that in the Dahlia border, which is still giving a fine show of colour. The Zoo has been fortunate in escaping the sharp frosts experienced all around and which have cut down Dahlias, etc.



K. W. Green, A.R.P.S.

THE NEW SNOWY OWL

We are pressing on as quickly as possible with the preparation and planting of the beds and borders with spring flowering subjects. It is essential that these plants are settled in and established, with the formation of new roots, before the onset of winter. They will then stand a much better chance of surviving any hard weather which we may experience during the next few months.

Some eighty thousand plants will be used for next spring's bedding display, comprising twenty thousand Polyanthus, forty thousand Pansies, fifteen thousand Wallflowers and smaller numbers of Daisies, Forget-me-nots and Aubretia. In addition to these there will be twelve thousand, five hundred Tulip bulbs. The Pansies are the most rewarding of the plants mentioned. In full flower when planted out, they continue to bloom all winter and finish with a blaze of colour in the spring.

Further plants have been added to our collection in the Tropical House — notably Tecomaria capensis, Clerodendron splendens, Melia azedarach, Antigonon leptopus, Ochna multiflora, Stigmaphyllum ciliatum and S. bomarea. A fine specimen of Leucadendron argenteum, the South African Silver Tree, is a newcomer to the Monkey House. All the above have been presented to us during the past month and are welcome additions to our plant collection.

When the Tropical House was fully planted in May we expected we would have to make changes from time to time. As tropical plants of varying rarity and value come to hand, those worthy of a place in the house will be substituted for other plants of less value.

The demands on our glass house nursery increase from year to year, with the result that we are always short of space for the number of plants we have to grow. Again we have had to add to our greenhouses this year. The two greenhouses erected in 1962 are being doubled in length, making them both one hundred feet long. When the extensions are completed this will bring the total area of greenhouses in the Zoo to sixteen thousand square feet.

Mr. & Mrs. E. Sorby

GARDENER BILL HUGHES SWEEPING UP LEAVES IN THE AUTUMN SUNSHINE

A CHAPTER IN OUR HISTORY

(From time to time visitors enquire about the origins of various buildings in the Zoo and this month's article deals with the Aquarium. Mrs. G. F. Williams, (who is in charge of the Aquarium) and her husband, the Zoo's Clerk of Works, were largely responsible for the building and are the authors of this article. It will give readers some idea of the problems facing Chester Zoo in its earlier days).

The first Aquarium, built in the wine cellars of what is now the Oakfield Restaurant was closed down during the Second World War, because of the impossibility of getting staff to run it. After the war it was reopened and enlarged by taking in more wine cellars. Another entrance and exit were made and cases for reptiles added. Previously the reptile collection had been housed in a conservatory, standing on the site at present occupied by our cat cages, but the conservatory was so badly damaged by shrapnel during the war that it was not worth repairing and had to be pulled down.

Even with the primitive heating facilities available the Alligators, etc., soon outgrew their temporary accommodation in the Aquarium and cleaning out grew daily more hazardous. When Mr. George Cansdale (the well-known writer and broadcaster) sent a large collection of snakes, including Cobras and Mambas, we were forced to build an entirely new Reptile House.

Whilst the reptiles were still housed in the old Aquarium an amusing, although at the time alarming, incident occurred. One of the Vipers, which of course bear live young, had a sizeable family. The tiny snakes, finding themselves in a cage designed to hold much larger specimens, soon escaped up to the ground floor and appeared in the library of the Oakfield — to the horror of the occupants. Fortunately the highly poisonous little intruders were removed before they could do any damage.

The old Aquarium continued to be very popular until three serious drawbacks forced us to begin planning an entirely new building. Firstly the presence of so much water in the basement was beginning to cause dampness throughout the entire building.

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THE AQUARIUM IN THE LAST STAGES OF CONSTRUCTION

Secondly when there were heavy rains the Aquarium became flooded which meant that it had to be closed until the water could be drained away and visitors coming to the Zoo especially to see the Aquarium had to be disappointed. The third drawback was that so many people were now visiting the Zoo that the Aquarium soon became too small to cope with the crowds.

We were sorry to think of our first Aquarium closing, because it was a very attractive corner of the old Zoo. In fact one visitor described it as an "Aladdin's Cave". This description was accurate if you consider the darkness of the basement, lit only by the glow from the tanks, with their jewel-coloured occupants.

The first step in planning a new Aquarium was to visit as many different Aquariums as possible — to pick up good ideas and learn from the mistakes of others. This was done during our annual holidays. The resultant plans were submitted to Mr. Mottershead and the Zoo Council and they agreed that when time and materials became available we should go ahead and build.

At this time the Zoo was committed to building a new Giraffe House (thereby hangs another tale), as Giraffes were already being quarantined for us in London. It appeared that it would be a considerable time before work could be started on the Aquarium. However, we decided to make a start in our spare time, mostly in the evenings.

Since we began building in the autumn of 1950, some form of floodlighting was necessary for evening work. Fortunately Mr. Mottershead had been able to acquire two aircraft runway landing lights at an army surplus sale and these were ideal for our purpose.

The building was constructed of concrete pillars six inches by six inches and ten feet six inches high and we were able to cast two pillars each evening. Six inch thick concrete was laid on the foundations, in which we left one hundred and thirty square holes to hold the pillars. When the pillars were in place wires were fastened from one to another and expanded metal hung on the wires. Sand-lime cement mortar was plastered on the expanded metal, to form the walls and fish tanks of the main structure. At first we had the help of a plasterer friend in the evenings and at the weekends. (*Fortunately by the time the plasterer had to turn to other commitments, Mr. Williams had become quite adept at plastering!*).

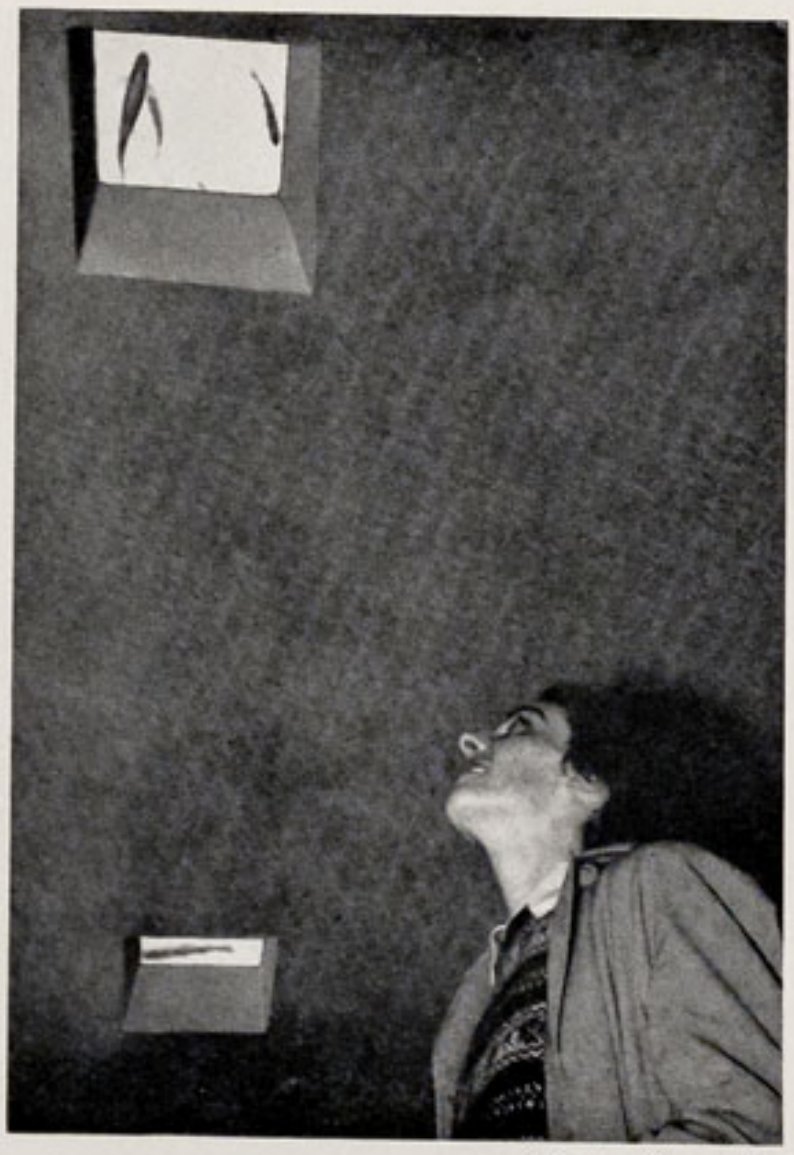
With the building itself completed, one of the main problems still to be overcome was that of heating the tropical tanks. At this time heating pipes were extremely difficult to acquire, so other forms of heating had to be investigated. It was decided to use a "Pyrotanix" heating cable. This consisted of a heating element enclosed in a copper jacket and several of these were passed through the tanks.

At first it was thought that the copper might kill the fish, but experiments suggested that the quantity used should be safe. In practice this proved to be so and this method of heating is still used in the Aquarium today.

When it first opened one of the features of the new Aquarium was the roof tank encircling the building. It was three feet wide by fifteen inches deep and two hundred and forty feet in total length. Glass panels were set into the bottom of the tank, so that visitors

in the Aquarium below could look up and view the fish swimming overhead. This tank also supplied filtered water to the fish tanks below. The surplus water cascaded over a waterfall into a semi-circular pond at the front of the Aquarium.

We had bred a large number of goldfish, which were being reared in the moat around the bear pits. When the roof tank was completed and the system put into operation, we decided to catch up the goldfish and transfer them to their intended new home, above the Aquarium. Seven



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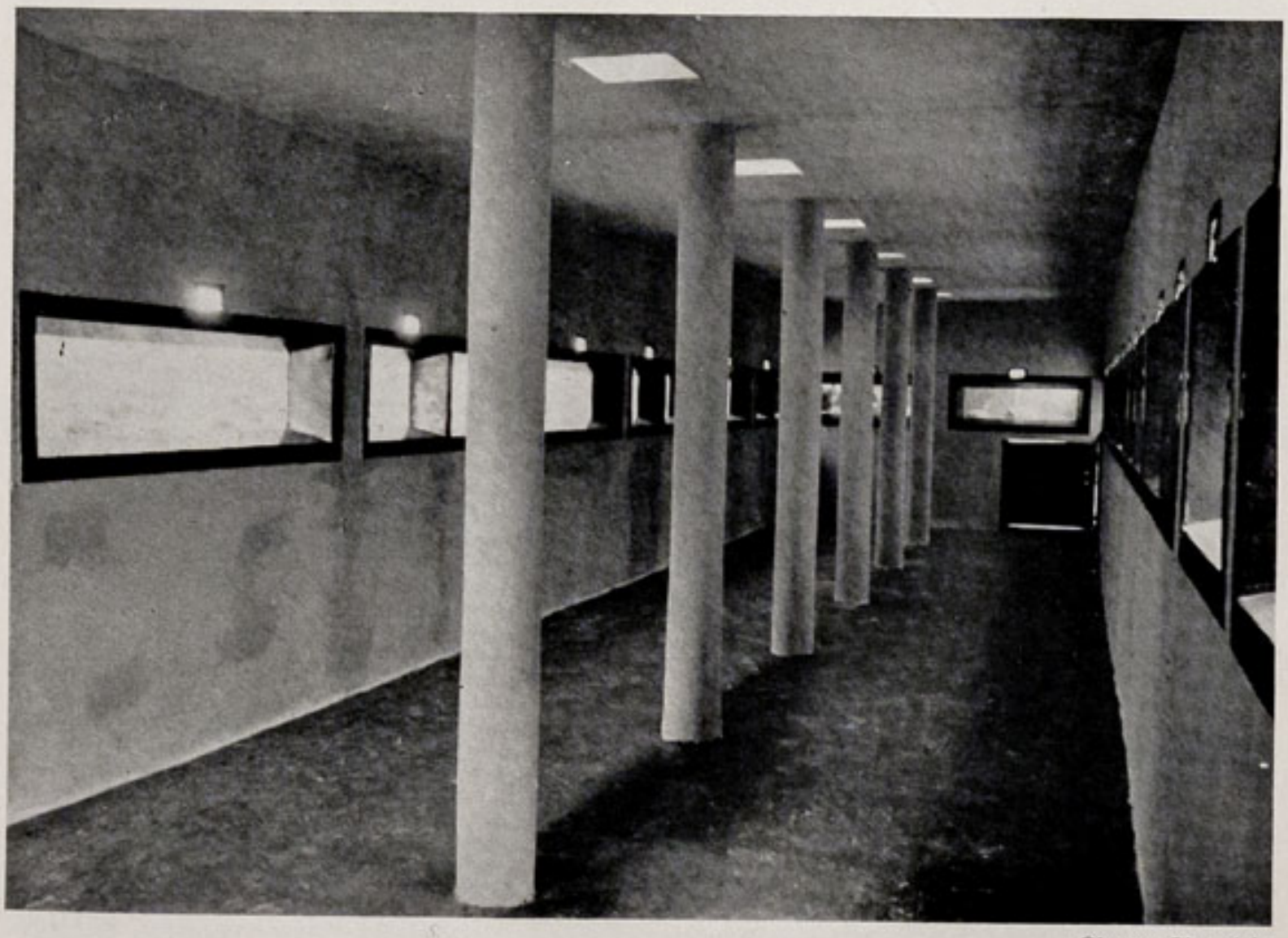
MRS. WILLIAMS VIEWING THE FISH THROUGH THE GLASS PANELS



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THE NEW AQUARIUM PICTURED PRIOR TO ITS OPENING ON 1st OCTOBER, 1952

Mr. & Mrs. E. Sorby

ONE OF THE TWIN BABY ACOUCHYS BORN IN THE SMALL MAMMAL HOUSE ON TUESDAY, 6th OCTOBER, PICTURED WITH ITS MOTHER

hundred goldfish were duly placed in the roof tank and we went off to have lunch. However, that was one meal we were never destined to finish. Imagine our horror when a gardener rushed into the dining room to say that goldfish were "dropping from the sky".

There were goldfish from one end of the Zoo to the other, in flowerbeds, lawns, animal enclosures and dropping at the feet of astonished visitors. The roof of the Aquarium must have attracted every seagull for miles around and out of seven hundred fish we were only able to save forty. After that disastrous experience it was decided to keep larger fish, such as trout, in the roof tank and also to cover it with wire netting.

Eventually we were forced to abandon this tank, because so much litter was deposited in the pond at the foot of the waterfall, that it was impossible to keep the system working efficiently. The pond then became a garden and still is today.

Although the Aquarium was opened to the public on 1st October, 1952, there was still a considerable amount of work to be done behind the scenes. We had eighty tanks only sparsely furnished with rocks and aquatic plants. Wherever we went we were always on the lookout for varieties of rocks in attractive shapes and colours. Today we are still experimenting with different methods of exhibiting the fish to their best advantage and add new and rare plants, whenever they become available.

Mr. & Mrs. E. Sorby

MEG THE CHIMPANZEE SHOWING OFF HER NEW DAUGHTER

LUNGFISH

Perhaps among the most unusual fish on exhibition and definitely one of the few remaining relics of a past age are our two specimens of African Lung Fish, *Protopterus annectens.*

First impressions on encountering these fish are rather mixed. They have a long cylindrical body, apparently walk on four weak looking legs, have no visible scales and skulk around the bottom of the tank under cover of clumps of water plants, looking decidedly menacing. This, together with the lack of true fins and their lithe, snake-like appearance all add up to the fact that they are living fossils — the missing link between the world of fish and that of amphibians.

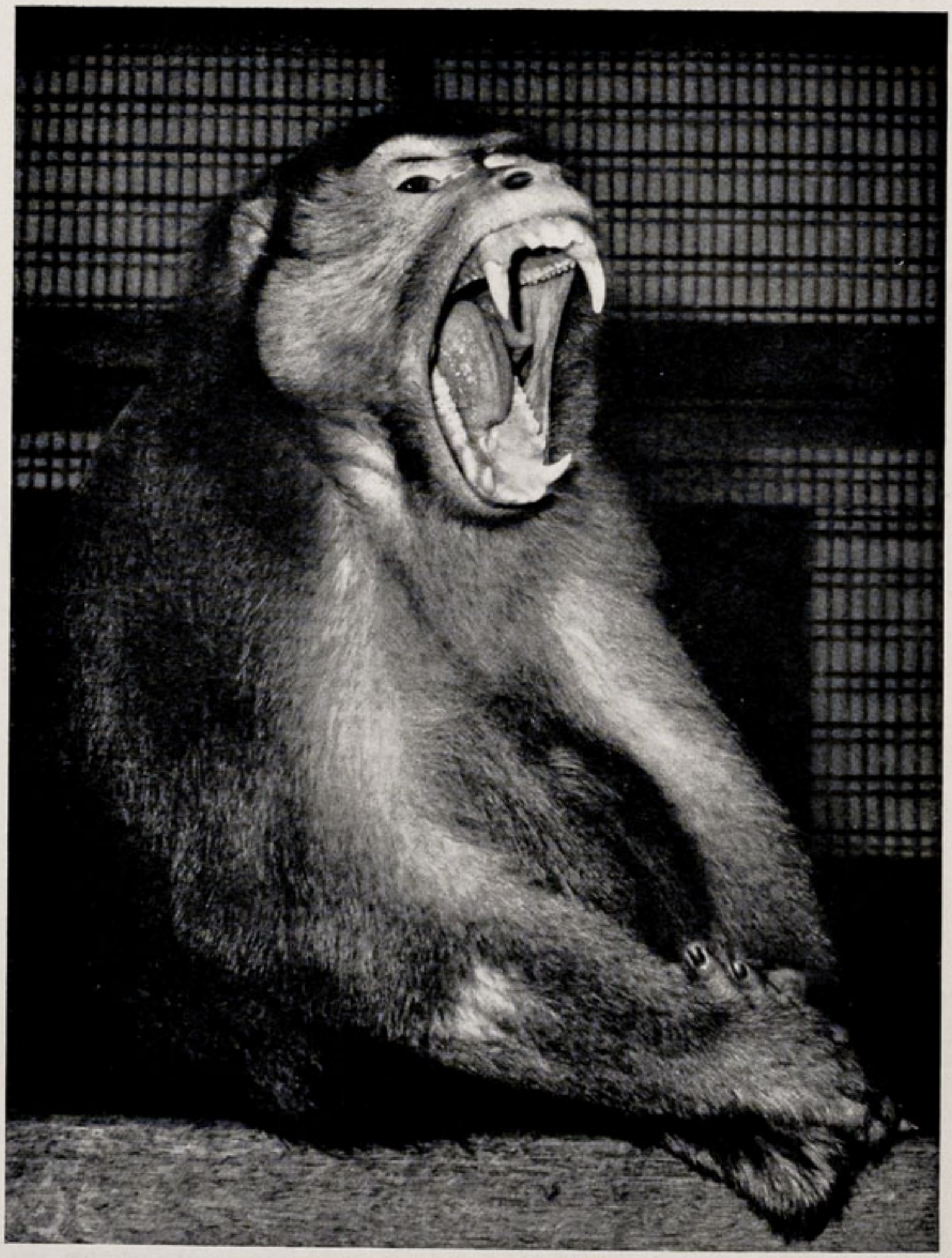
Light grey in colour and capable of astonishing speed when frightened, these strange fish show a very macabre streak at feeding times. Comparatively large fish and pieces of meat are sucked into what at first appears to be a small harmless mouth, but which in fact becomes a veritable cavern, engulfing food in enormous quantities.

Although food is snapped up with an audible gulp, one has only to wait for a few moments to see a particularly gruesome spectacle. The hapless 'meal' is slowly reduced to paste, by the powerful teeth of the Lungfish, as if it had been passed through a mincing machine. In fact the morsel is spat out and 'inhaled' several times before it is finally swallowed and the cracking of the larger bones of the prey is clearly heard when the Aquarium is quiet. This process makes surprisingly little mess in the tank as the entire morsel is bound together by a thick, viscid spittle, produced by the Lungfish and not one scrap of food is missed whilst it is being chewed over.

As its name conveys, this fish possesses lungs as well as gills, the latter being somewhat reduced. These lungs arise from and are connected with the oesophagus. Consequently it is quite common to see the fish slowly weave its way to the surface, where it protrudes the tip of its snout above the water and breathes in a large quantity of air — which may last it anything up to an hour.

The presence of this accessory breathing apparatus is particularly useful when one considers the natural habit of the Lung fish. Living in shallow swamps and weed-choked marshes, the fish has to be equipped to cope with the gradual evaporation of water in these areas as the dry season approaches. When this occurs the Lungfish buries itself in the mud and secretes an abundance of mucus with which it forms a cocoon. Inside this 'tomb' it is able to maintain a suitably damp atmosphere until the rainy season. The fish's only contact with the outside world during the dry season is through a small hole left in the top of the cocoon and to which the mouth of the fish is attached. It is through this hole that the Lungfish obtains its air supply. This period of aestivation has been known to last five or six months with *Protopterus annectens*, the true African Lungfish.

The presence of lungs has another useful application, in allowing the fish to live in stagnant water containing little or no oxygen, long after other fish have died. This applies particularly to the Australian representative of the Lungfish — *Neoceratodus forsteri* — which is not equipped to imitate its African cousin and form a protective cocoon during the dry season.



Mr. & Mrs. E. Sorby

A CAVERNOUS YAWN FROM PERCY — THE PIG-TAILED MACAQUE

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