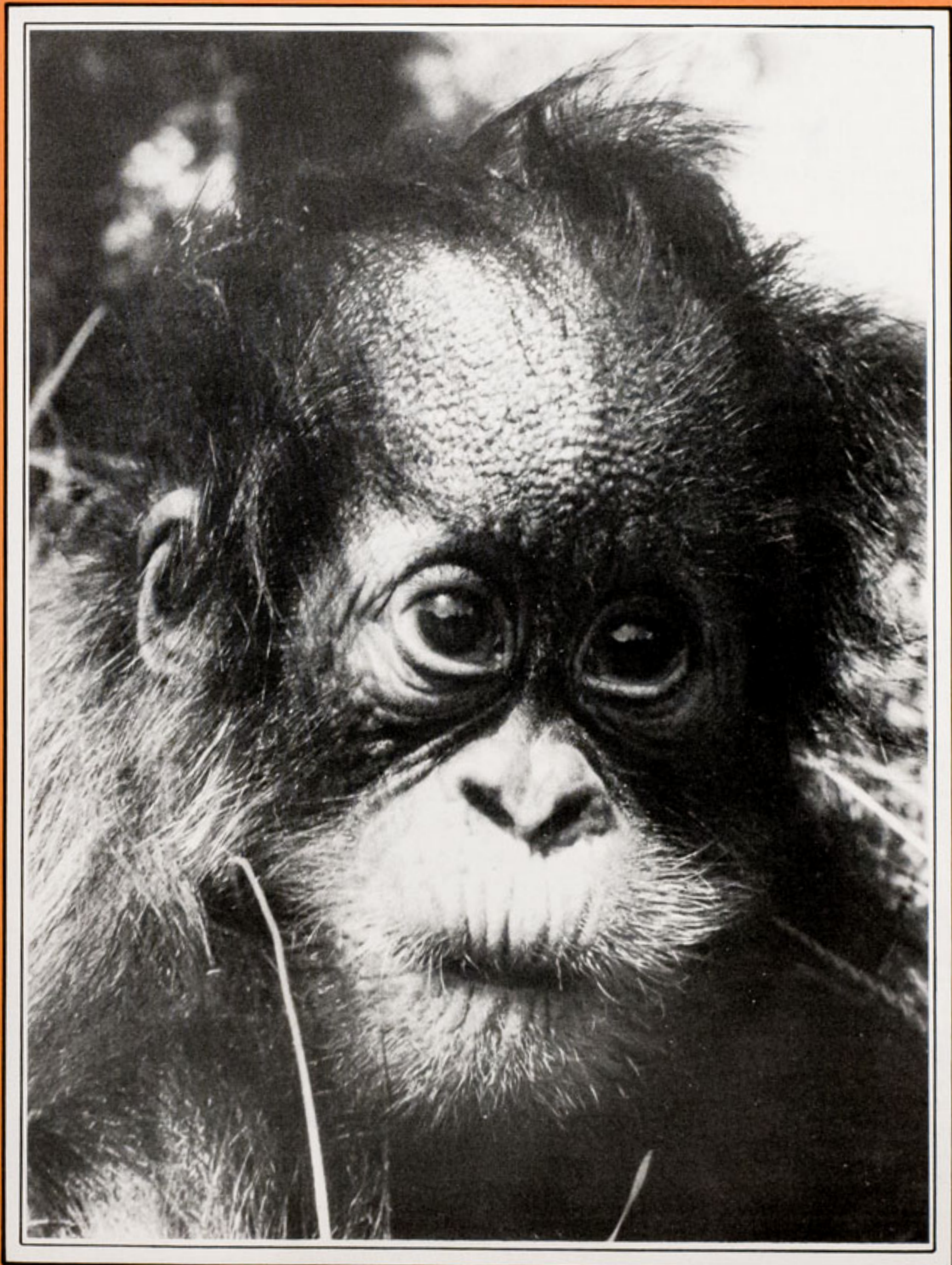


CHEZ NOUS



CHESTER ZOO NEWS

AUTUMN 1983



K. W. Green

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Chester

Editorial

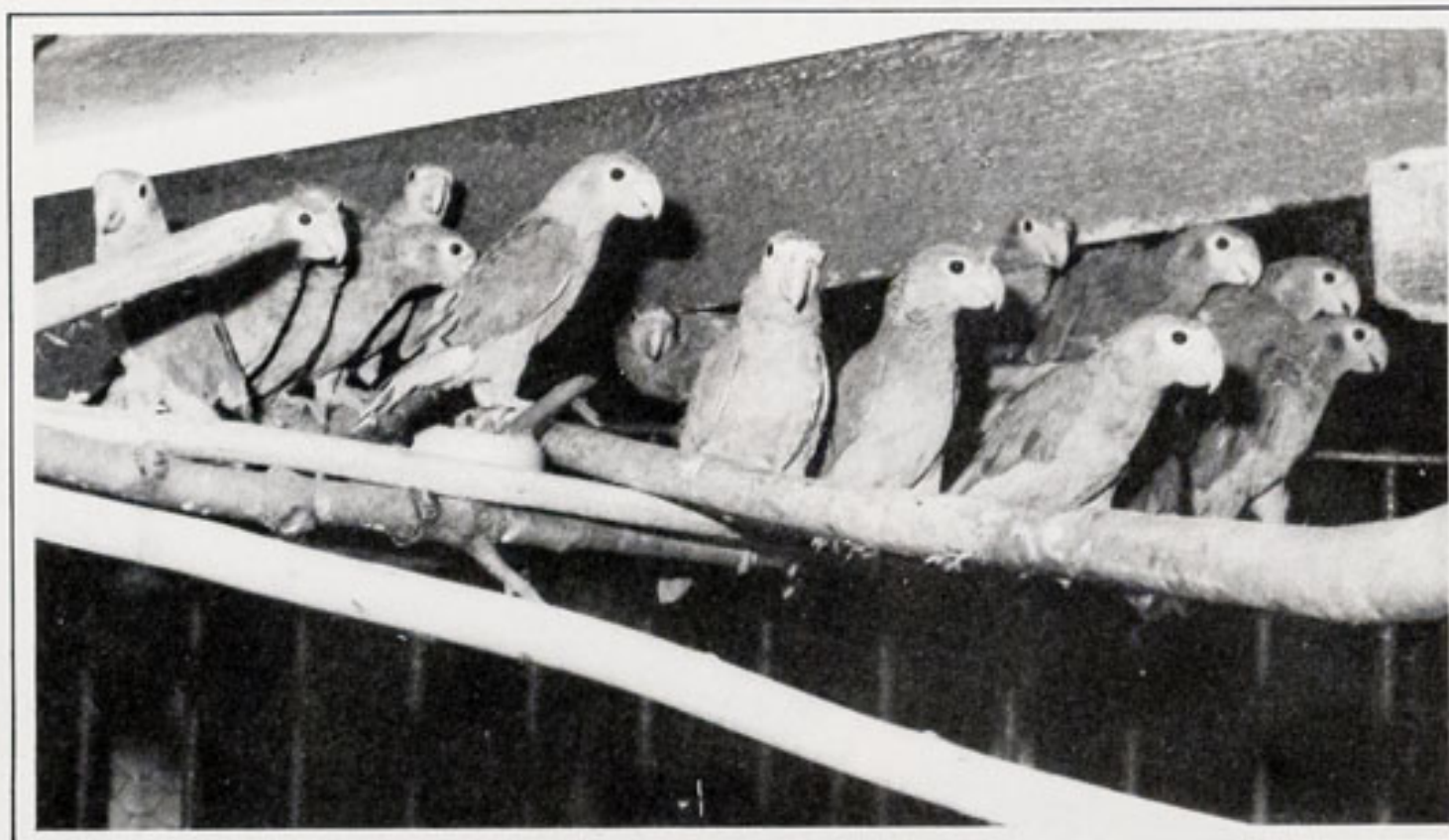
Over the last few weeks, Chester Zoo has been playing a quiet but vital part in the battle to thwart the smuggling of endangered species. Twenty Jamaican Yellow-billed Amazon Parrots arrived in the country under another name. They were labelled as being something common.

It seems that somebody in Jamaica obtained an Export Licence for common birds and then at some stage between the issue of the Licence and the time of the export, somebody switched the birds in the hope that the Custom officers at both their end and at this end would not notice.

The birds were spotted and seized by Customs and Excise officers at Heathrow airport and the Jamaican Government were informed. It is very hard for the exporting countries to control what actually leaves the country, for once the birds are on their way they are outside the reach of the exporting country's law. It is only when the importing country catches the smuggling that anything can be done. The C.I.T.E.S. convention to control international trade in endangered species was set up to do just this.

The problem with living animals is what to do with them while all the formalities take place. They cannot be locked up in a bonded warehouse and forgotten about while the authorities go through all the formalities. It has first to be established that smuggling really did take place, and then the instructions of the exporting country have to be sought. In the case of these twenty parrots, the return journey has been arranged for the 18th July and British Airways have agreed to fly the birds back to their homeland free of charge.

By being able to offer almost instant help, Chester can relieve one of the greatest problems. The birds have been doing very well in quarantine and soon they will be on their way back to Jamaica to form a nucleus for a Government run captive breeding group. We very much hope to be able to continue the co-operation which has so unexpectedly started. If the Jamaicans could breed enough parrots to meet the demands of the aviculturalists there would be no need to catch any wild parrots and this particular problem would disappear.



K. W. Green

Yellow-billed Amazon Parrots in the Zoo's Quarantine Station.

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Cover Photograph:

Young Sumatran Orang 'Sid'—*Photo by Nigel Hillier.*

Editorial Team

Penny Rudd	<i>Editor</i>
Dr M R Brambell	<i>Zoo Director</i>
Bella Neate	<i>Education Officer</i>
M F Coupe	<i>Public Relations Officer</i>

Orang-utans

Since 1776, when the first Orang-utan was exhibited in Europe, this animal has fascinated not only Primatologists but also the zoo visitor. Unlike the Gorilla and the Chimpanzee, both of whom display very obvious social structure, the often solitary Orang-utan received little serious study until the early 1960's.

The Orang-utan, meaning 'Man of the Forest' is confined to the forests of Borneo and Northern Sumatra and is the worlds largest frugivore (fruit eater). There are two distinct sub-species, the Bornean Orang-utan (*Pongo pygmaeus pygmaeus*) and the Sumatran Orang-utan (*Pongo pygmaeus albeli*). At Chester we have representatives of both sub-species and the keen 'orang watcher' should be able to observe some of the differences, both physical and in social behaviour between the two sub-species. This is a highly enjoyable daily exercise and if you are not an 'orang fan' now, you certainly will be after an afternoons ape watching. You will end your day feeling entertained, fascinated and amazed at the obvious abilities of these animals. You will also be a firm believer that the loss of this species would be a tragedy for all.

Although recent figures indicate that there are more Orangs than was thought in the 1960's there is still cause for grave concern for their future. Large scale destruction of their habitat through logging and forestry clearance is rapidly eroding their last refuges.

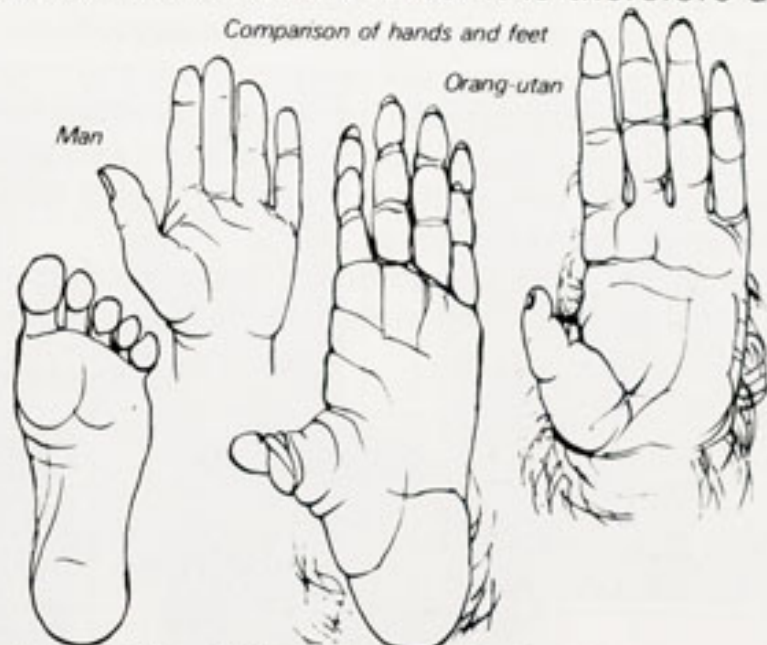
The Orang, unlike the Gorilla and Chimpanzee, has adapted to an almost totally arboreal life. With their long arms and massive hands they are ideally suited for their tree living existence.

The adult males weigh an average of 180 pounds and the females only 80 pounds, although in zoos males may well weigh up to 350 pounds. It is because of their weight that Orangs tend to travel through the middle forest canopy. The large males will sometimes travel on the ground where they will often walk bi-pedally, the Sumatran sub-species doing this more than the Bornean. It is at this stage that the phrase 'Man of the Forest' is easily understood.

Orang-utans are primarily fruit eaters although they do also consume a large variety of vegetable matter, but they show a marked preference for certain fruits many of which are seasonal and are well dispersed throughout the forest. It is certainly a good indication of their intellectual capabilities the way in which Orangs locate these fruit producing trees just as the fruit is ripening. It is this limited supply of food resources which may well lead to the Orangs relatively

solitary or loosely-knit social life. If a food resource is limited, a large group of Orangs would very rapidly deplete a localised food plant and would have to travel large distances in order to sustain their diet of particular seasonal fruit.

If on the other hand, Orangs travel on their own or a nursing female and her infant travel together, then the food source will stretch further and necessitate less travel. In Sumatra small family sub-units are encountered and a particularly productive fig tree may sometimes have up to eight animals feeding from it. From recent field studies it appears that the Sumatran Orang is certainly more sociable than the Bornean sub-species. Adult males will often travel with females and their infants. Unlike in Borneo, Sumatra does have a predator factor (apart from man), the Sumatran Tiger (*Panthera tigris sumatrae*), although greatly reduced in numbers will prey on Orang-utans, and also the very agile and noisy Siamang Gibbons (*Symphalangus syndactylus*) have been observed harassing sub-adult and solitary animals to such an extent that the Orangs have had to retreat from their food source. It is therefore advan-



'Notice the elongated fingers and reduced thumbs on the orang-utan make them ideally suited for their life in the trees.'

tageous for Sumatran Orangs to form small loosely-knit family units. This gives them security whilst feeding and a larger number of individuals have a better chance of viewing a potential predator or preventing harassment from Siamang Gibbons.

In the wild, the female Orang-utan becomes sexually mature between the age of seven or eight and from this age she will usually be accompanied by her infant. There is little

Fishing is fun! Once again 'Lola' shows her inquisitive nature.



Water fascinates 'Lola'.



'Lola' paddling for the camera.



Chester Chronicle

set pattern in Orang-utan breeding behaviour, mating can be initiated by a responsive female actively seeking out a male or a male accosting, often brutally, an unresponsive female. It is the largest and most mature males which are usually the recipients of the amorous advances of the proceptive females.

Sub-adult males, although sexually mature, become opportunistic lovers and often resort to force in order to successfully mate. Females will often hide in the high forest canopy to avoid detection from these wandering "arboreal letharios".

Gestation lasts from 250 to 260 days, the infant (twins are extremely rare) weighs between three and four pounds and is totally dependent on the mother. For the first six months of its life it will be suckled by the mother and then start to take the foods that she is eating. Up to the age of two and a half years, the infant will be suckling and dependent on the mother. Whilst suckling the infant, the female ceases to cycle and this means that the female will give birth every three and a half to four years if she successfully rears her infants. If the infant dies at an early age, the inter-birth gap is greatly reduced.

Orangs, like Gorillas and Chimpanzees, construct crude nests for themselves to sleep in during the night. Infants up to three years old share these nests with their mother. It is with the arrival of a brother or sister that the young Orang's cosseted world begins to disintegrate. The sibling is no longer allowed to share the nest with the mother and has to build its own. Most of the females attention is directed towards the new infant and although remaining with the mother, the older infant becomes more and more independent.

Males being more adventurous leave the females at an earlier age than do females. By the age of six they

have usually wandered off out of boredom and the need to satisfy their curiosity. They may consort briefly with other sub-adult animals but rapidly lapse into their solitary existence. It is this wandering and curiosity that opens up many dangers to the sub-adult males and it is this group of animals which suffer the highest mortality due to accidents. Yet this mortality ensures that as a young male grows up he can still find a home range, with sufficient food resources, in which he can take up residence.

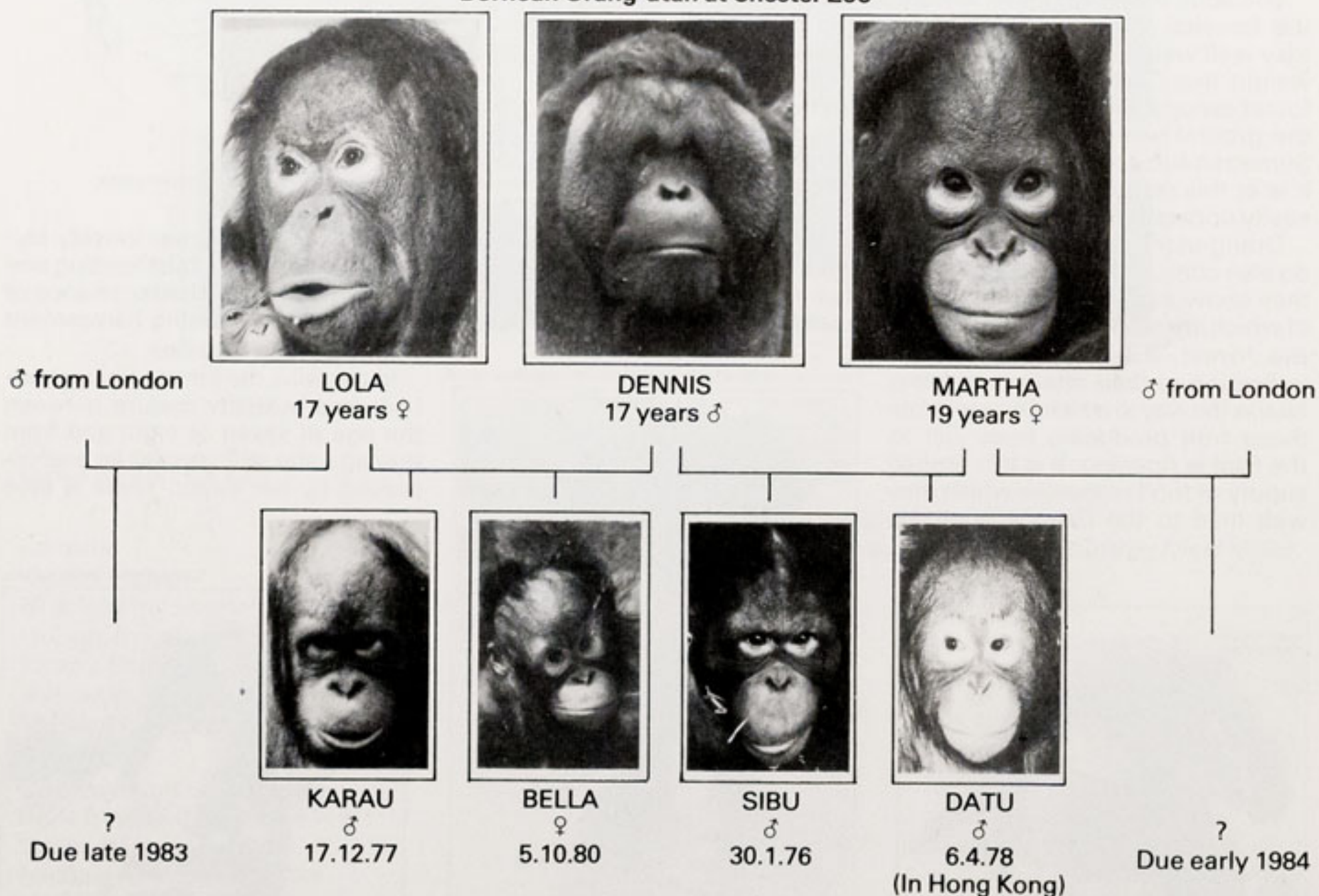


The Bornean Group.

Nigel Hillier

As male Orangs become mature certain physical changes begin to appear, these changes being more pronounced in the Bornean sub-species. By the time the male is fifteen years old he will have started to develop large cheek flanges and throat pouches. His hair will have grown much longer and he will have a beard.

Bornean Orang-utan at Chester Zoo



These secondary sexual characteristics are only found in adult male animals over 15 years old. It is with these large males that females will often actively initiate matings and limited courtship. These males are territorial and advertise their presence by vocalising at regular intervals.

At Chester the obvious differences can be seen between the adult male Bornean and Sumatran Orangs and it is also interesting to note that no two Orangs look alike, they all possess individual characteristics.

The danger to the Orang-utan population in the wild is the world's demand for timber and the lack of resources in Borneo and Sumatra. The timber provides a valuable and necessary income to these countries but the present rate of destruction is a very short term answer to economic growth. An area depleted of forest very rapidly becomes a non productive wasteland. Fortunately there is now a greater awareness of this short term destruction and hopefully some of these forests will remain complete. Without their habitat the Orang will not survive and maybe owing to their ability to disperse waste seeds over large distances, the forests will not survive without the Orang-utan.

In zoos, where Orangs can live to be over forty years old, much initial information has been secured about these animals. Since 1776 their popularity with the zoo visitor has in the past sadly led to the premature deaths of many animals as infants were taken from their mothers who were usually killed in order to supply the 'zoo trade'. I am pleased to say that this practise has now ceased and no wild Orangs now leave Sumatra or Borneo.

The early records available indicate that the Orang-utans suffered the same fate as many of the Gorillas and Chimpanzees in captivity. Owing to ignorance and poor medication, their captive lives were very short lived.

The first Orang to be bred in a zoo was born in 1928 and from that date until 1945 only 32 births were recorded. However, since 1945 approximately 600 Orangs have been born in zoos, many of the earlier births still being alive today. The captive Orang population is now fully self-sustaining and if scientifically based management is continued and the two sub-species are allowed to remain as separate sub-species and are not hybridized, then the future of this animal is secure in captivity.

Since 1968 at Chester, we have bred seven Orangs and this year we have bred our first Sumatran Orang-utan. Unfortunately this animal has had to be hand-reared by the Orang-utan Keeper, Nigel Hillier. Much time, hard work and dedication goes into hand-rearing and although rewarding, the dedication is required as the surrogate mother must always remember that the young animal must grow up an Orang-utan and not a person. Young 'Sid' as he has been called, will grow up with our other young Orangs and hopefully he will be found a suitable Sumatran mate when he matures.

Our three adult female Orangs, two Bornean and one Sumatran are all now pregnant again. The Bornean females were sent down to Regent's Park Zoo for a brief 'honeymoon' in order to enlarge the gene pool at Chester. It is through this inter-zoo co-operation that zoos can ensure a long-term survival plan of our captive species. No zoo can afford to keep a large number of adult male animals so this movement of animals is essential and certainly occurs in the wild, though not in a Bedford van!

Apart from the two adult males and three adult females at Chester, we also have four young males and one young female, so on your next visit to the Zoo why not save some more time for the Orangs—it will be well worthwhile.

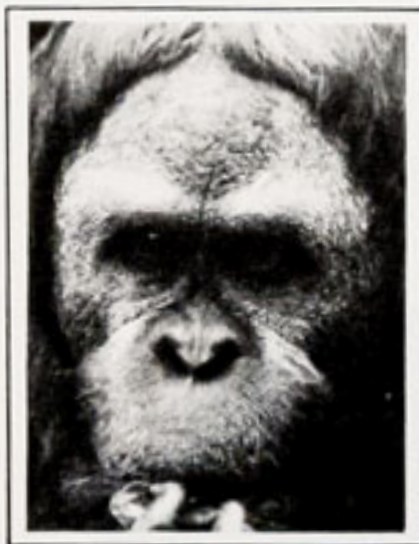
Bornean Orang-utan at Chester Zoo

JOD ♂ (Twycross) TWIGGY ♀ (Twycross)



JANTAN ♂
4.6.81
(Received from Twycross)

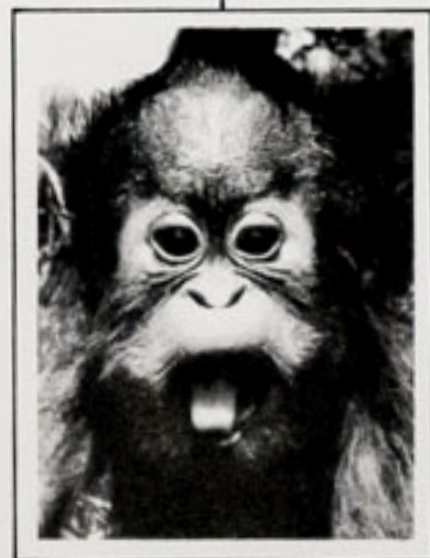
Sumatran Orang-utans at Chester Zoo



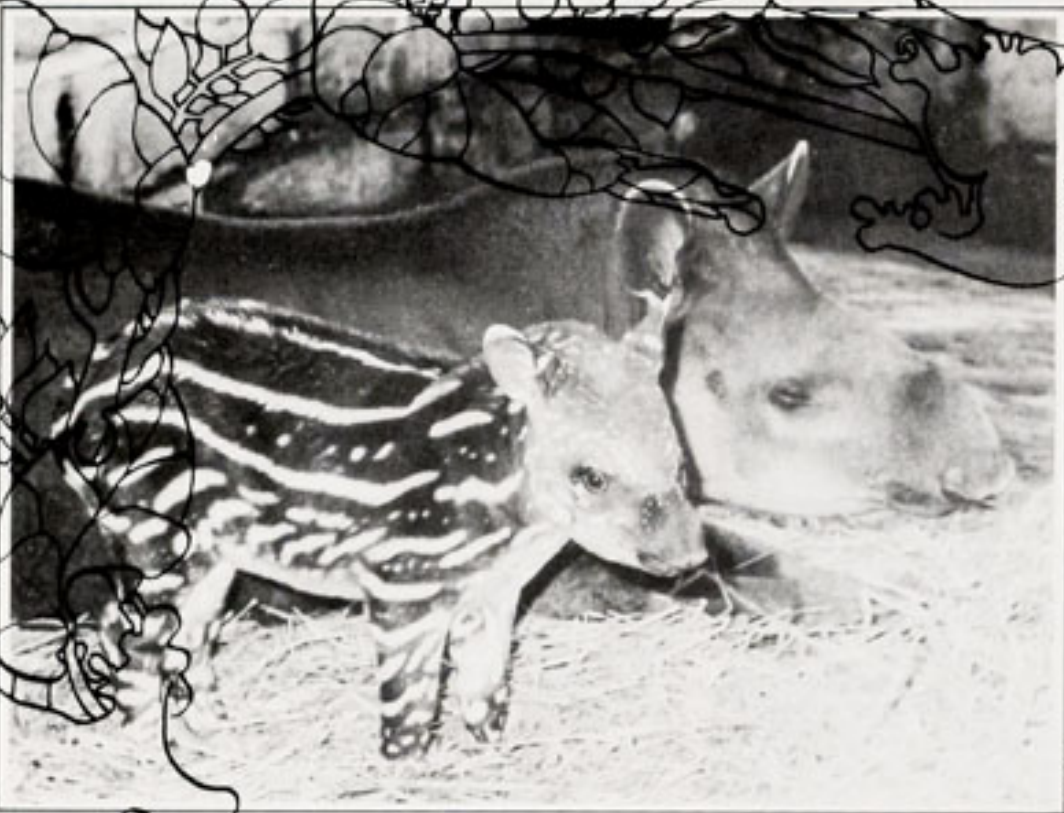
OSCAR ♂
From Bristol Zoo
Born 22.4.71
(Sire—Henry, Dam—Ann)



RAMONA ♀
From East Berlin Zoo
Born 14.10.68
(Sire—Hans, Dam—Jessop)



SIDNEY ♂
10.2.1983
Second generation bred in captivity



South American Tapir.

K. W. Green



Puma.

J. Whitworth



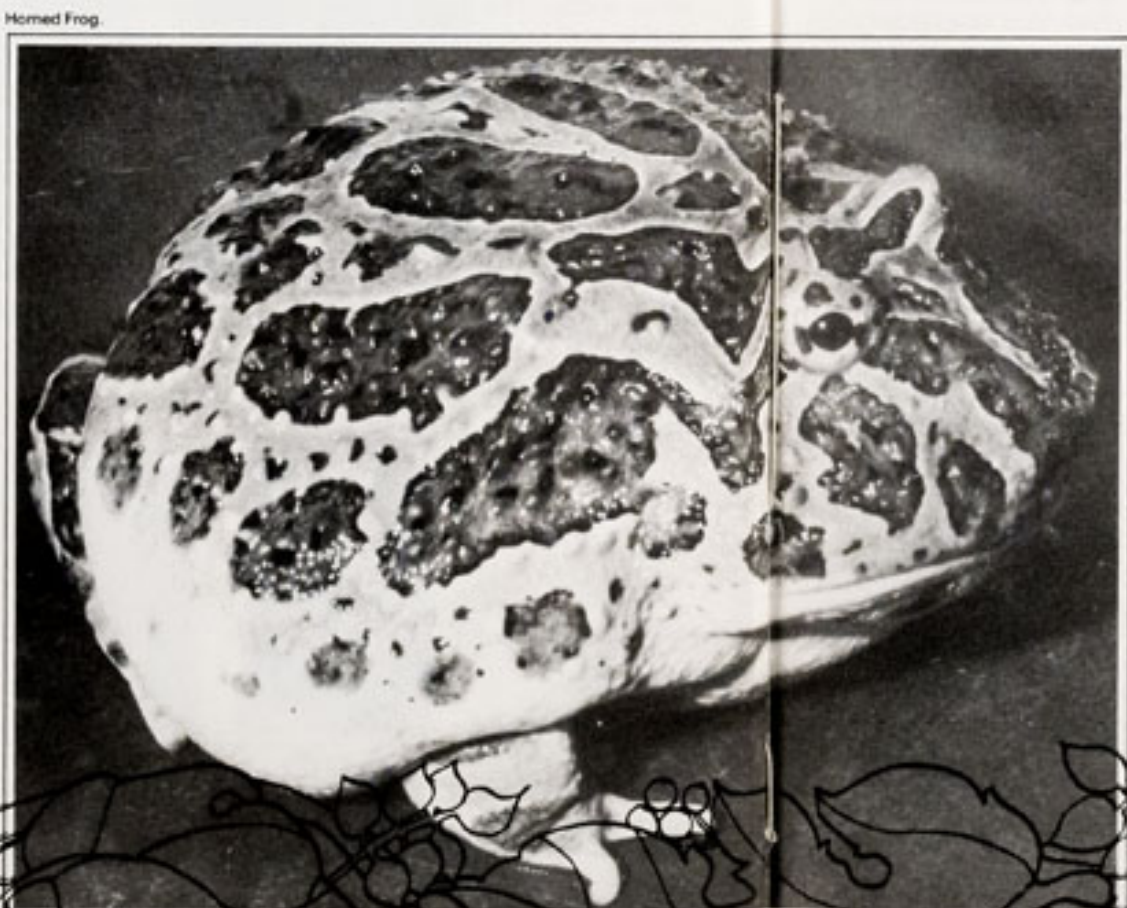
Black Spider Monkey.

AMAZON

JUNGLE



Toucan.



Horned Frog.

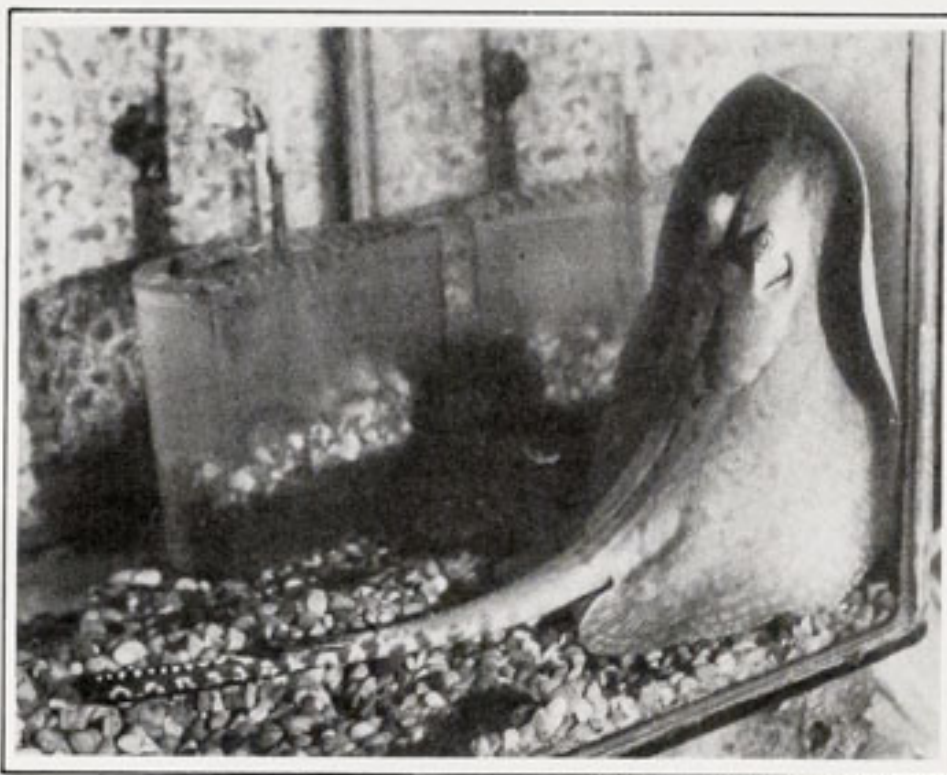


Tarantula.

Fresh Water Stingrays

The family POTAMOTRYGONIDAE are all large discoid shaped fish. The general ground colour is brown with various darker brown to black spots or hexagonal markings. The Stingray's defence mechanism consists of one or more venomous spines. These are normally held in a flat position but when the ray is disturbed the barb is raised by erectile tissue. At the same time the tail curves by reflex action towards whichever part of the main body disc is being molested. Most injuries to humans occur when rays are stepped on when they are partly buried in mud or sand with only the eyes and spiracles exposed. The spine itself is made of a hard bone like substance which is grooved down its length and has sharp serrated edges. The venom is retained inside the groove by a thin sheath. The effect of the poison is immediate, causing inflammation to spread all around the wound and affecting the heart, breathing and nerves. For this reason, South American fishermen and Indians fear Stingrays more than Piranhas. Records show that at least 100 people are stung by rays in Argentina every year. Without expert medical care, many

During the Spring and early summer of 1982, the male was showing a lot of interest in the large female, constantly swimming around her and biting the edges of



Young Stingray in the rearing tank.

K. W. Green



K. W. Green

Adult Stingrays on show at the Aquarium.

deaths have occurred in remote parts of South America owing to shock and associated infections.

Fresh Water Stingrays are widely distributed in the river systems of South America apart from Chile. They appear to be most common in shallow waters which have a bottom of soft mud or sand. There are several species of Stingray including *Potamotrygon brachyurus*, *Potamotrygon motoro* and *Potamotrygon laticeps*. Unfortunately we have been unable to positively identify the two species we have in the collection at present.

Chester acquired its first Stingrays in December 1978, both of which were females. However, one of the females was suffering from a fungal infection and died almost immediately. A pair were then purchased in June 1980 but turned out to be a different species to the large female already in stock. The three fish did well, eating only the meaty food offered such as heart, earthworms, whitebait and chopped spratts.

her disc. This is the only sign of breeding activity as mating has never been observed or recorded in this family. On the morning of the 4th November 1982, three young Stingrays were observed swimming in the Ray tank. The mother of these was the smaller female acquired in June 1980 and the three pure bred youngsters were removed for their own safety and were sexed as two males and one female. The following morning, the larger female had given birth to four youngsters but only one was alive. It is not known whether the three dead ones were stillborn or killed by the adults, the adult male had bitten lumps out of the two females so he could quite easily kill a young fish.

The tank which houses the adult Stingrays is six feet long by two feet six inches deep by three feet six inches wide and it holds approx

imately 340 gallons of water. The original female who is a different species to the pair and hence produced a hybrid offspring, has been moved to a separate tank to avoid more hybrid youngsters being born. The youngsters have all been placed individually in smaller tanks and would only take earthworms to eat at first but soon will learn to take meat and fish. In all the tanks a fine sand and gravel base medium is used so that the rays can bury themselves.

In April 1983 the pure bred pair produced two more youngsters, but unfortunately one did not survive. However, we now have five young Stingrays, all progressing well and believe we have reason to be proud of this achievement at Chester. Belle Isle Aquarium in Detroit, United States of America, claim to have the only captive breeding colony in the world as far as records show, so this breeding of fresh water Stingrays is probably the first in this country.

'Snippets'

Prickly Landing

One Saturday afternoon in June Peter Wait was passing by the outside Porcupine paddock when he saw a blue balloon float down and land, with the inevitable result, on one of the prickly occupants of the enclosure. The loud bang which followed quite terrified the poor porcupine who hurtled into his log rattling his quills madly and consequently leaving a few in a trail behind him!!

Peter had to smile at the irony of the location of the landing site as he climbed into the enclosure to investigate the balloon further. The porcupine's fright, it turned out, had all been for a good cause as the balloon was one taking part in a balloon race being run from the Broad Green Hospital in Liverpool to raise funds for charity. The soggy balloon and attached white label were removed from the paddock (much to the relief of its occupants) and returned to the address on the label as requested, with a note to the effect that even if this person's balloon did not win the prize for the one having travelled the furthest distance, perhaps it could be awarded the distinction of having landed in the most unusual place!!



'Crested Porcupine — back to the quiet life'

Tales from the Classroom

After a long involved discussion about baby animals and where they come from, a child put up his hand saying "But where do all the adults come from?"

During a further talk on the classification of vertebrate animals, I asked the question "Do all mammals give birth to live babies?" "No" said one little girl. Wonderful, thought I, she appreciates that some mammals like the Duck-billed Platypus lay eggs. Not a bit of it, her answer was qualified by "The daddies don't!" One perfectly correct answer.

Children are a necessary part of life in order to correct our misconceptions and put life back into perspective!

Chester Zoo

Golden Jubilee 1934-84

Next year the Zoo celebrates fifty years of existence as a Society Zoo. During 1984 we are organising a number of events and special features in order that our Members and visitors can join in with our Golden Jubilee Celebrations.

Some of the events will be social events for Members of the Zoological Society and these will be in addition to the winter lecture meetings. Other events will take place in and around the Zoo and will be aimed at visitors and potential visitors. If some of the events we organise do not appear to have an immediate Zoological relevance, this is because we are aiming to interest a wide cross-section of people in the work of the Zoo. By arranging a variety of events we hope that people who may not otherwise relate to the Zoo will begin to do so.

Of course we hope to attract as much publicity as possible from the special events we organise as part of the celebrations.

There will also be a number of special productions during the Golden Jubilee Year, one of these has already appeared in the form of a 1984 Calendar featuring large colour photographs of some of our animals. These are

now available from the Zoo shops at the price of £2.50.

We hope that Members may wish to help with the running of some of the events, so if you feel willing and able, please write to Bella Neate at the Zoo and we will add your name to our list of volunteers and contact you in due course.

Your Best Animal Jokes Wanted

One of the special features we hope to produce in 1984 is an animal joke magazine and we would like Members and friends to write in their best animal joke (or jokes). Perhaps some of you might even send in cartoons and such like (?). All the best jokes will be included with, where appropriate, the donor's name. Please send your contributions to Penny Rudd at the Zoo.

Watch this space for sample material
'By the way, did you know that when the animals went into Noah's Ark they all went in pairs except the maggots which went in apples!!!'

Please do better than that!!

Senior Membership News

'Birds of Prey' was the subject for the second of the Wednesday evening meetings which was held on 30th March. Mr. Michael Coupe, the Zoo's Public Relations Officer and also a very keen Falconer, brought along two birds from his own collection and gave a most interesting talk to the Members. As a precaution against 'low flying birds', a large box of Kleenex was thoughtfully provided by Dr Brambell for those Members attending who had no head protection.

On Saturday, 9th April, the Annual Members' Buffet Lunch was held in the Oakfield and a large number of Members took advantage of the opportunity to talk with friends over an excellent meal. Later, in the Lecture Hall, Dr Brambell gave a review of the past year's events and outlined some of the plans for 1983.

The Annual General Meeting was held on Saturday 21st May. Mr G R Pryor, Vice Chairman of the Council, took the chair on behalf of Professor J O L King, who was recovering after an operation. Mr Princep presented the Auditors' Report and the Council Report was given by Dr Brambell. There being six vacancies, the following Members of the Society were duly elected to serve on the Council for a period of three years:—

Mr B H Coles, Mr H D Cooper, Mr G B Hibbert, Mrs S Ironmonger, Professor D Molyneux, Mr G R Pryor.

* * * *

Junior Members' News

Saturday 6th August 1983 at 2.00 p.m.

CLEANING THE SEALION POOL—Meet outside the Oakfield to come and help clean out the Sealion Pool. Peter Wait will supervise this event. Wellies essential and only over twelves are invited to join in.

Saturday 27th August at 7.30 p.m.

BARBECUE EVENING—Not only a barbecue party but also a chance to collect some moths and insects with a moth light and to inspect the bat boxes put up last year. Meet outside the Oakfield.

Saturday 24th September at 10.00 a.m.

LLYNBRENIG LAKE TRIP—This visit to the Llynbrenig Lake in Wales will involve a walk and a talk from the area's warden. Nick Ellerton, Junior curator (Primates) will lead this trip.

Saturday 22nd October at 11.00 a.m.

BLACKPOOL ZOO AND THE LIGHTS—Meet at the Staff Car Park for a trip to see Blackpool Zoo followed by a Fish and Chip supper and then staying on to see the lights before returning to the Zoo around 10.15 p.m.

Saturday 12th November at 10.00 a.m.

DELAMERE FOREST—Dr Joan Fairhurst, Warden of Delamere Forest, will show us around the area and give us a talk about some of the forest's residents. Aiming to return to the Zoo at 4.15 p.m.

Friday 9th December at 7.00 p.m. – 10.00 p.m.

THE CHRISTMAS PARTY—There will be a snack supper in the Oakfield with some games and quizzes organised. A 'VIP' raffle will be held, the winner of which will spend a day at the Zoo accompanying one of the Curators on his rounds. Meet at the Time Office.

Saturday 21st January 1984 at 2.30 p.m.

CONTACT SESSION—For those of you who would like to meet some of the Zoo's 'biddies' and others, there will be an opportunity for you to meet some of our more touchable residents such as Snakes, Kinkajous, Tarantulas. Meet at the Oakfield.

Saturday 25th February at 10.00 a.m.

LIVERPOOL NATURAL HISTORY MUSEUM—This outing, led by Michael Coupe, will be a unique opportunity to see behind the scenes of the museum with the Curator and Education Officer at the museum on hand to answer questions.

Saturday 24th March at 2.30 p.m.

RE-BRANCHING CAT HOUSE ENCLOSURES—Allan Guy and Peter Wait will supervise the re-branching of several enclosures at the Cat House. Places for this meeting may have to be limited. Assemble at the front of the Monkey House at 2.30 p.m.

Saturday 28th April at 10.00 a.m. – 5.30 p.m.

TROUT FARM and SLATE MINE VISIT—This trip will be into North Wales, with Nick Ellerton leading the Trout Farm visit and Council Member Ray Heaton coming as geologist on the trip to the Slate Mine. Assemble at the Staff Car Park.

Saturday 19th May at 9.30 a.m. – 5.30 p.m.

MARTIN MERE—A repeat of a popular trip from last year but visiting at a different time of the year, the breeding season. We hope the Education Officer at Martin Mere will be on hand to answer questions.

Saturday 2nd June at 11.00 a.m.

ANNUAL POND SURVEY—We will choose a pond on the Zoo grounds and spend the day making detailed records of the life discovered, planning to see how this varies each year. Senior Member, Brian D'Arcy will lead this outing and wellingtons are essential. Meet at the Oakfield.

Saturday 30th June at 9.30 a.m. — 5.00 p.m.

AINSDALE NATURE RESERVE—This large reserve in Lancashire has plenty to see and we have arranged for the Warden to give us a tour. We will be leaving the Staff Car Park at 9.30 a.m.

Full details of all these trips have been circulated to all Junior Members and any queries should be addressed to Penny Rudd at the Zoo.

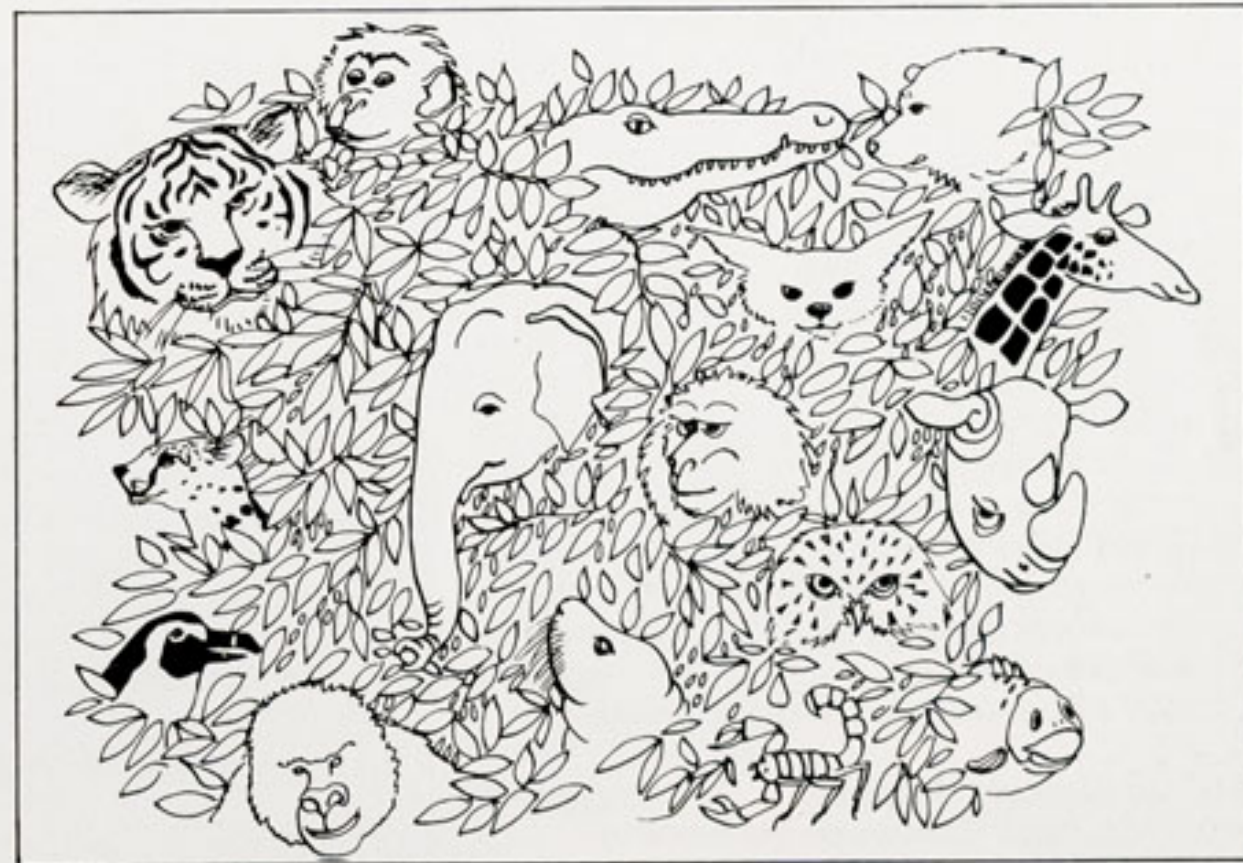
Please address queries about
Senior Member Meetings to Mrs M McNally and Junior Member Meetings to Mrs Penny Rudd, Chester Zoo, North of England Zoological Society, Upton-by-Chester, CH2 1LH. Tel: Chester (0244) 380280.

JUNGLE NEWS



Since we are in a "Jungley" mad frame of mind, this time I thought that we would have a 'spot the difference' quiz with the animals hidden in the Jungle. There are 25

differences to be found in the pictures. See if you can 'spot' them.



I must say that I was disappointed with the low number of entries for our Junior Animal Crossword in the Summer edition. I thought that you would be able to do it standing on your heads! However, I am pleased to announce that Nicholas Joinson, aged 15 from Great Boughton, Chester won the first prize of an animal encyclopaedia.

Lucy Bowra of Upton, Chester won second prize of a new Chester Zoo Tiger mug. We will arrange a prize giving day and the winners will also be able to give the chimps their lunch as a special treat.

The answers to the crossword are:—

ACROSS: 1. Orang-utan; 5. Tarantula; 7. Pie; 8. Aye aye; 9. Cow; 12. Set; 14. Eirie; 15. Tapir; 16. Kea; 17. Pine marten.

DOWN: 1. Ostriches; 2. Nyala; 3. Toucan; 4. Anteater; 6. Apes; 10. Warren; 11. Bee; 13. Otter.

The mystery animal was an Echidna. Congratulations once again to the winners.

Answers to Spot the Difference:—
1. Monkey's hand; 2. Crocodile's teeth; 3. Parrot; 4. Snake; 5. Ladybird; 6. Gazelle; 7. Goose; 8. Elephant's tusk; 9. Elephant's trunk; 10. Fox's whiskers; 11. Giraffe's knobs; 12. Baboon's

eyebrows; 13. Rhinoceros horn; 14. Tigers nose; 15. Gorilla's cheeks; 16. Spots on Owl; 17. Leaves near the Rhino; 18. Sealion's whiskers; 19. Caterpillar; 20. Giraffe markings; 21. Scorpion's sting; 22. Cheetah's spots; 23. Penguin's stripe; 24. Piranha's teeth; 25. Bear's ear.

Dawn Redwoods

There are eight Dawn Redwood trees in the gardens. Dawn Redwood is a tree which was not known in England until the late nineteen forties. It is a relative of the Giant Redwoods of California but it is a smaller tree and it comes from Central China, from near Panda country in Szechuan. It had been known from fossils but was thought to be extinct until in 1941 a Chinese botanist recognised that the trees growing in a monastery garden in a remote part of China were the same kind of tree as was known from the fossils.

After the end of the Second World War, some seeds of the tree were brought back to Britain and taken to Kew Gardens. Some of these were sent on to Bodnant Gardens in North Wales.

There was a very high rate of germination of the seeds and soon seedlings were being distributed round Britain. To make things better, the tree grows very well from cuttings. Unfortunately the conditions in this country do not seem to be right for the male flower to mature and no fertile seeds have yet been produced, so that all propagation is now from cuttings.

It is a deciduous tree growing to perhaps 20 metres in height. The branches rise slightly from the trunk and the leaves are delicate needles which grow out in about thirty opposing pairs from a central stalk. The tree, which is also called *Metasequoia glyptostroboides*, comes into leaf early in the year, about March, but is protected from too much damage from heavy snowfalls by the way its leaves droop under any weight and cause the snow to fall off. At the start of the season the leaves are a lovely pale green and they darken slowly as the summer progresses turning to yellow or even red before they are shed in the autumn.



Dawn Redwood Tree.

K W Green

As the tree matures, its bark becomes rougher and the wood rather knotty. The trunk tapers very rapidly so all in all it is not a good timber tree. However, these may be faults to the woodsman but they make it one of the most attractive trees in the gardens.

These trees are spread over the area of the Zoo's gardens, the most obvious ones being in Mrs Motterhead's Memorial Garden near the old South Entrance, in front of the Souvenir Shop, the avenue alongside the Zebra and Red Lechwe, one in the area of the Reindeer paddock and a small one in front of the Gazelle restaurant.

Arrivals and Births

0.0.1	Kinkajou (<i>Potos flavus</i>)	Birth	0.0.2	Barbary Macaque (<i>Macaca sylvana</i>)	Birth
0.0.1	Racoon (<i>Procyon lotor</i>)	Birth	0.1	Arabian Gazelle (<i>Gazella arabica</i>)	Birth
0.1	Ankole (<i>Bos taurus</i>)	Birth	1.1	Eland (<i>Taurotragus oryx</i>)	Birth
0.1	Serval (<i>Felis serval</i>)	Exchange	0.1	Common Zebra (<i>Equus burchelli</i>)	Birth
0.0.4	Soay lambs (<i>Ovis aries</i>)	Births	1.0	Onager (<i>Asinus hemionus</i>)	Birth
0.1	Bagot Goat (<i>Capra hircus</i>)	Birth	0.1	Guanaco (<i>Lama guanicoe</i>)	Birth
1.0	Yellow-fronted Amazon Parrot (<i>Amazona ochrocephala</i>)	Presented	1.1	Keas (<i>Nestor notabilis</i>)	Presented by Auckland City Zoo
1.0	Peacock (<i>Pavo cristatus</i>)	Presented	0.0.2	Humboldt's Penguins (<i>Spheniscus humboldti</i>)	Left burrow
0.1	Pere David's Deer (<i>Elaphurus davidianus</i>)	Birth	0.0.1	Blackfooted Penguin (<i>Spheniscus demersus</i>)	Left burrow
0.0.1	Hill Mynah (<i>Gracula religiosa</i>)	Presented	0.0.1	White-fronted Capuchin (<i>Cebus albifrons</i>)	Birth
0.1	Fulvous Tree Duck (<i>Dendrocygna bicolor</i>)	Presented	0.1	Moluccan Cockatoo (<i>Cacatua moluccensis</i>)	Breeding Loan from Blackpool Zoo
4.4.0	Banded Mongoose (<i>Mungos mungo</i>)	Purchased	1.0	New Zealand Brown Teal (<i>Anas aucklandica</i>)	Breeding Loan from Martin Mere
1.2.1	Reindeer Birth (<i>Rangifer tarandus</i>)	Birth	0.0.2	Red Lechwe (<i>Kobus leche</i>)	Birth
1.1	Przewalski Horses (<i>Equus przewalskii</i>)	Joint Management Scheme	0.0.1	Red-headed Laughing Thrush (<i>Garrulax erythrocephalus</i>)	Fledged
1.1	Zebra Finch (<i>Peophila guttata</i>)	Presented	2.5	Fire-footed Squirrels (<i>Funisciurus pyrrhopus</i>)	From Jersey Zoo
0.0.3	Coati (<i>Nasua nasua</i>)	Births	0.0.1	Patas Monkey (<i>Erythrocebus patas</i>)	Birth
0.0.1	Agouti (<i>Dasyprocta aguti</i>)	Birth			
0.0.1	Ostrich (<i>Struthio camelus</i>)	Hatched			
0.0.1	Margay (<i>Felis weidi</i>)	Births			
0.0.1	Geoffroy's Cats (<i>Felis geoffroyi</i>)	Birth			
0.0.3	Jungle Cats (<i>Felis chaus</i>)	Births			
0.0.1	Kookaburra (<i>Dacelo novaeguineae</i>)	Hatched			
1.2	Vietnam Pigs (<i>Sus scrofa domestica</i>)	Exchange			
1.0	Wapiti (<i>Cervus canadensis</i>)	Birth			

Key 1.0 = One male 0.1 = One female
0.0.1 = One of undetermined sex