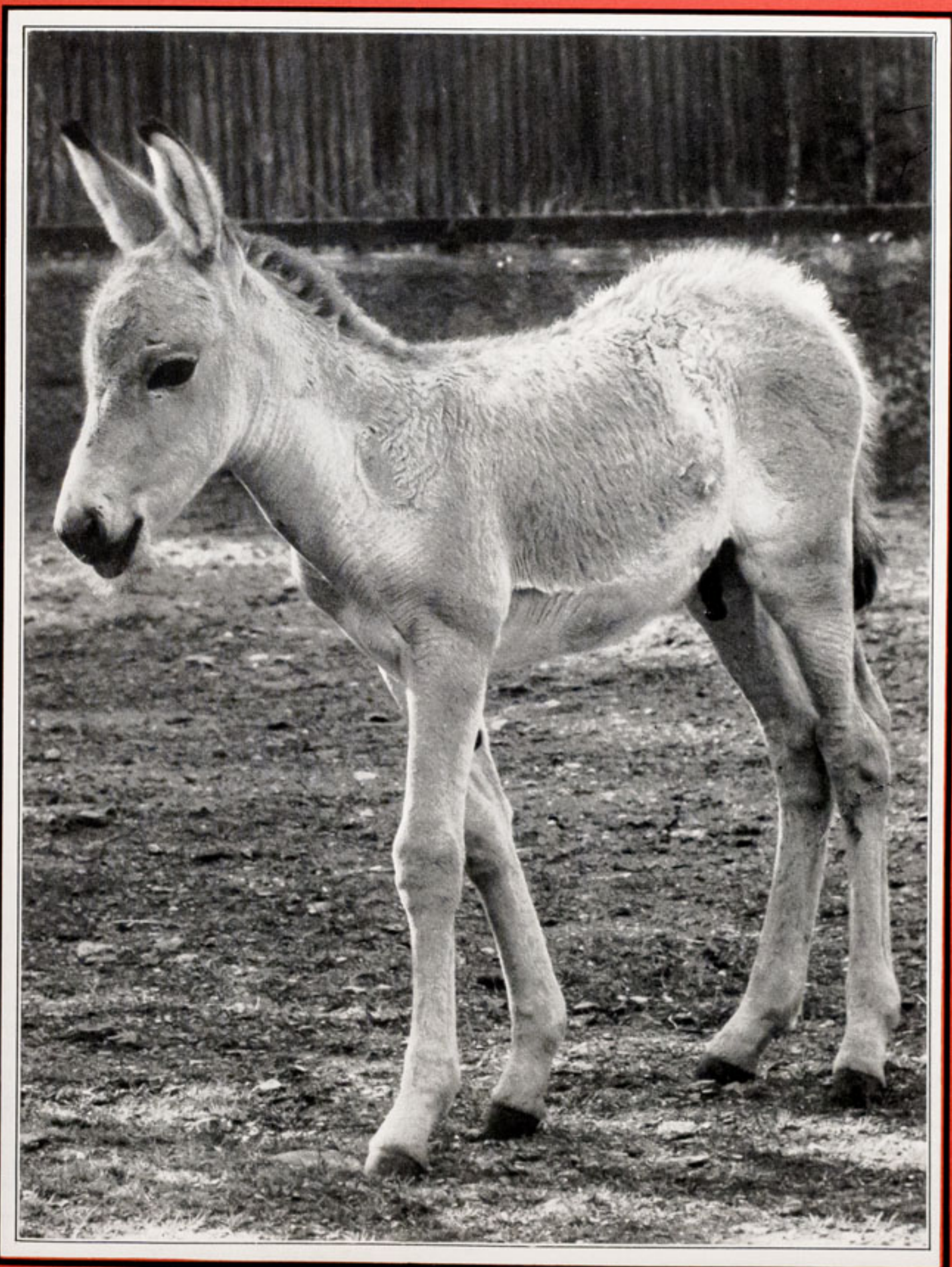


CHEZ NOUS



CHESTER ZOO NEWS

WINTER 1985



Editorial

Rather a different, and longer, Editorial than usual, there are so many things to mention.

Dr. Brambell's article about the odd-toed ungulates and "continental drift" highlights just how vulnerable this group of animals has now become. It is fascinating to think that the horses took many millions of years and drifted and migrated right round the world during their evolution, and, at the turn of this century, there were only a few dozen wild horses left. Without zoo help, there would be none left now, and, without zoos being helped, there will be none left for our grandchildren's grandchildren.

Until recently, it has been comparatively complicated to become a Member of the North of England Zoological Society, but now it is much easier. New Members no longer need to be proposed and seconded, but only have to fill in the application form and pay the subscription. (The new rules do safeguard the Society against people joining who do not support the aims and objectives of the Society). We very much hope that as many Associate Members as feel able will now transfer to Annual Membership. Annual Members can take part in the affairs of the Society in General Meeting and have free entry to the Zoo, as well as the right to buy tickets at a discount. Up to 20 tickets may be purchased for half-price, i.e. £1.30 each until the end of March, after which they will be £1.50 each. These tickets must be purchased in blocks of five from the Membership Office, and are not available at the gate. They can only be sold to Members whose subscriptions are fully paid-up.

We are very much hoping that membership will become greatly expanded and that Members will organise functions in support of the Zoo. Mr. Brian Coles, M.R.C.V.S., is Chairman of the Membership Committee of Council which is concerning itself with developing the membership.

Mr. Brian D'Arcy, who has done a great deal to help us with Junior Membership, has moved to a new post in Scotland and so, sadly, has had to relinquish his seat on Council. We are very sorry to see him go and we wish him well in his new job.

One of the prettiest and most gratifying sights in the Zoo this autumn has been that of watching the young Sealion pup making his presence felt in the main pools of the Sealion exhibit. From the word go, he has been a strong and extrovert youngster, and his Keeper, Alan Woodward, has detailed his early days for you in this issue.

You may be surprised to read that the Sealions are kept in the "Whipsnade Section" of the Zoo. This is a very old name, dating back to the time when Chester Zoo and Whipsnade Zoo were founded. The open paddocks were known as "Chester's Whipsnade". At one time, this section was also responsible for the meat supply to the rest of the Zoo, and there is a story of an angry Cat House keeper whose meat had not arrived asking the switchboard to put him through to Whipsnade. A few minutes later, a perplexed Zoo Director in Bedfordshire was getting an earful from someone with a strange accent, demanding vociferously to know what had become of his meat!

It has to be said, however, that, as we enter the winter, in some ways it will be a relief to have 1985 behind us. The weather in June was bad; in July worse; and in August awful; so that it has not been a thriving year for the Zoo, and, for the second year running, we will be finishing the year with less people having visited us than did so during the previous year. One can only be hopeful for 1986 and rely upon the support of our Members to spread the word about the Zoo to their friends, not only supporting the Zoo passively but actively.

Have you thought of having a Christmas or New Year lunch at the Zoo? We have been booking a lot of special lunches at £6.50 each, although there is a lot of room for more. Why not have a January lunch to liven up the flat period after all the rush and fuss of Christmas is over? Whatever you decide, do have a very Happy Christmas, and let us all hope that 1986 brings prosperity.



South American Tapir calf "Joanna" with her Mum "Joy"

Courtesy of Dave Kendall, Daily Mail

Contents

Editorial, Michael Brambell, Penny Rudd	2
"Perrissodactyls"	3-5
Dr. Michael Brambell, Director	
"Californian Sealion Pup"	6-7
Mr. Alan Woodward, Senior Keeper	
"Animal Adoptions"	8
Mrs. Pat Cade, Media Liaison Officer	
"Helping Playschools"	8-9
Mr. Brian D'Arcy, former Council Member	
"Membership News"	10
"Ju News"	11
"Arrivals and Births"	12

Editorial Board

Penny Rudd	Editor
Dr. Michael Brambell	Director

FRONT COVER

Asiatic Wild Ass foal

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

The Perissodactyls

"Odd-toed Ungulates"

(How the Horses, Tapirs and Rhinoceroses evolved on the Drifting Continents)

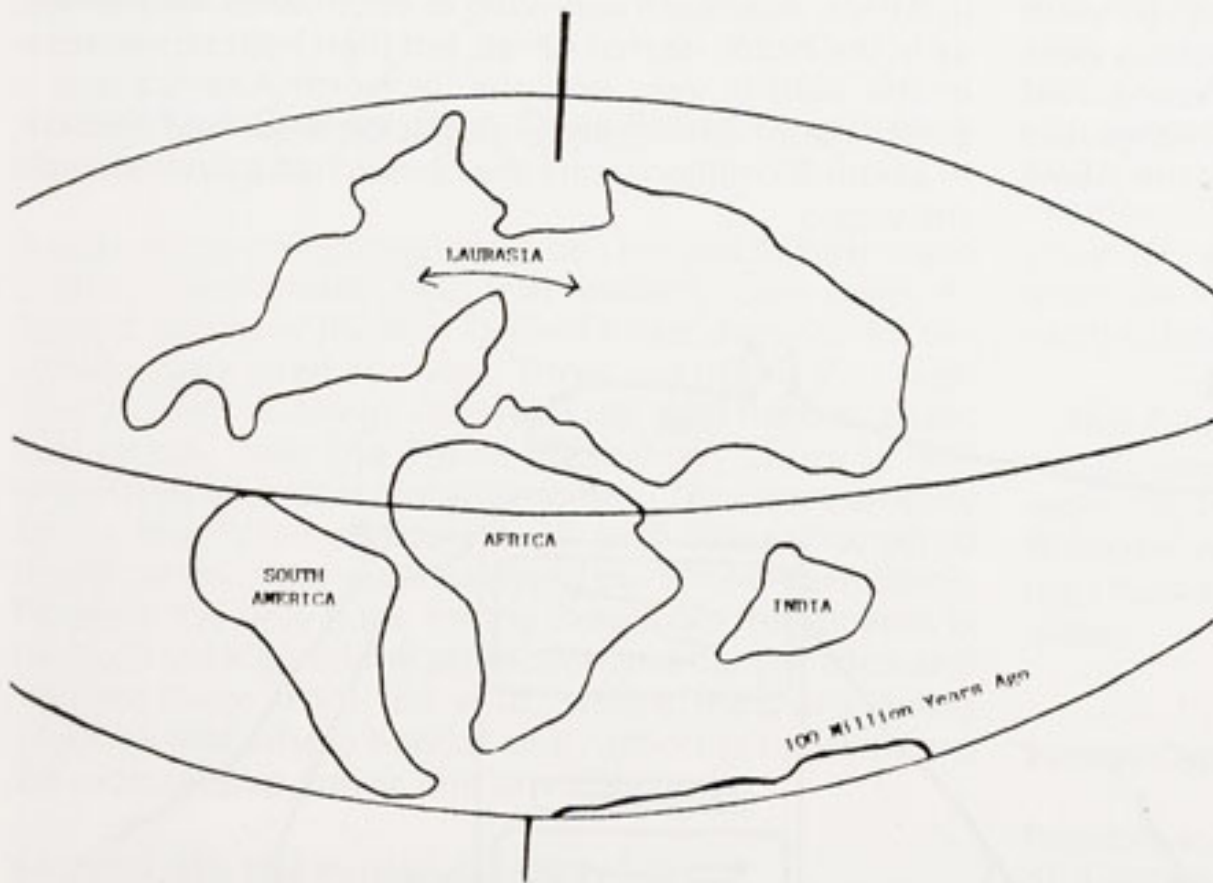
When I was a student, it was regarded as a bit cranky to express belief in the theory of Continental Drift. It had been noted for a long time that the shapes of the great continents could be fitted together, rather like the pieces of a jigsaw puzzle, but the suggestion that this was because they were all bits broken off from a much larger super-continent was, to the "old school" of the day, stretching credulity too far. Now we know the theory to be true. We can measure the rates at which continents are drifting away from each other and we can see that the explanation of most mountain ranges is that they are the result of two continental "plates" bumping into each other.

separating and bringing together the animal populations riding on their backs, it is impossible to understand the evolutionary history of the major groups of land-living vertebrates. Perhaps the best group of mammals to demonstrate how Continental Drift can effect their evolution is that of the Perissodactyls, the group of "odd-toed" ungulates, which includes the horses, tapirs and rhinoceroses.

The mammals began to separate from the rest of the reptiles about 200 million years ago, long before the great age of the dinosaurs began. It is not clear when this primitive stock of mammalian ancestors had reached the stage when it would have fitted the definition of modern mammals, but, by 100 million years ago, the Monotremes (egg-laying Echidnas and Platypus) which

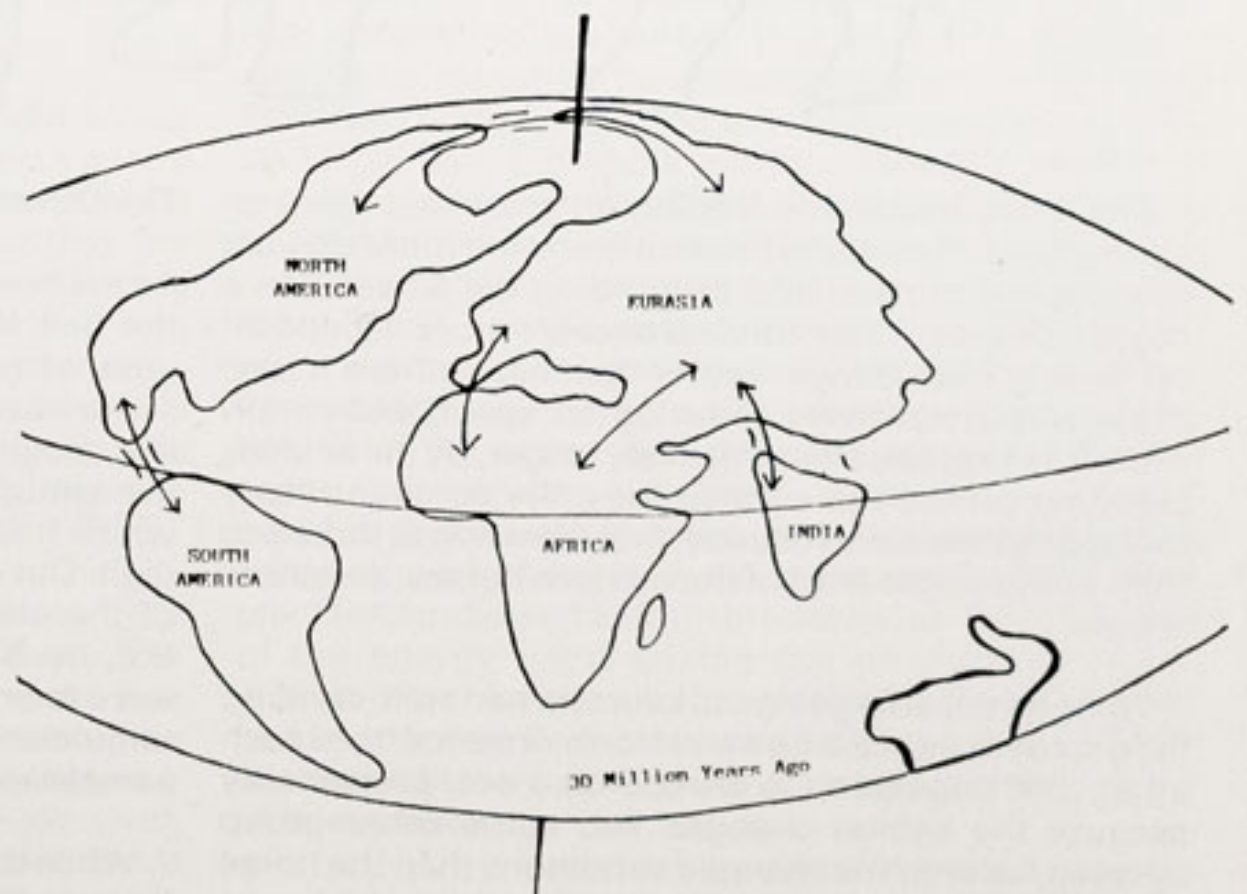
do fit the description, had split off from the rest of the mammals. By 60 million years ago, the placental mammals, that is the ancestors of all the mammals alive today which are not Monotremes nor Marsupials, had differentiated into the groups that are recognisable today. The early Perissodactyls remain as fossils of Eocene times, 45 million years ago. Twelve "families" of Perissodactyls flourished. Now only three "families"—the horses, the tapirs and the rhinoceroses—exist, and even they cannot be said to be flourishing in the wild.

Pangea first split into two halves, Laurasia in the north and Gondwanaland in the south. The Perissodactyls began to prosper and flourish in the Eocene, at the time before Laurasia split into North America and Eurasia. Gradually, as the



Actually, it is not the continents themselves which are drifting, it is the plates of heavier, oceanic rock on which the lighter continents float, which are moving over the earth's surface.

Ever since I first heard of the theory of Continental Drift, I have tried to keep up with the advances that have been made to substantiate it. What is particularly interesting to a zoologist is that the drifting continents carried on their surfaces their own faunas, which would have been continuing to evolve in isolation from the animals on other continents, at least until the continents bumped into one another. The continents have been drifting from the original super-continent of "Pangea" to their present positions over the same period that the land vertebrates have been evolving. Without an understanding of the way the continents have been moving,



Courtesy of Dave Kendall, Daily Mail

continents drifted apart, the fragmented pieces, continents in themselves, tended to bump into each other, allowing the animals that were on them to "jump off" and colonise new lands. This has happened several times in the history of mammal evolution, particularly between North and South America, between north-western North America and north-eastern Asia; and between Eurasia and Africa. Such bumps and jumps have had an important part to play in the evolution of the Perissodactyls.

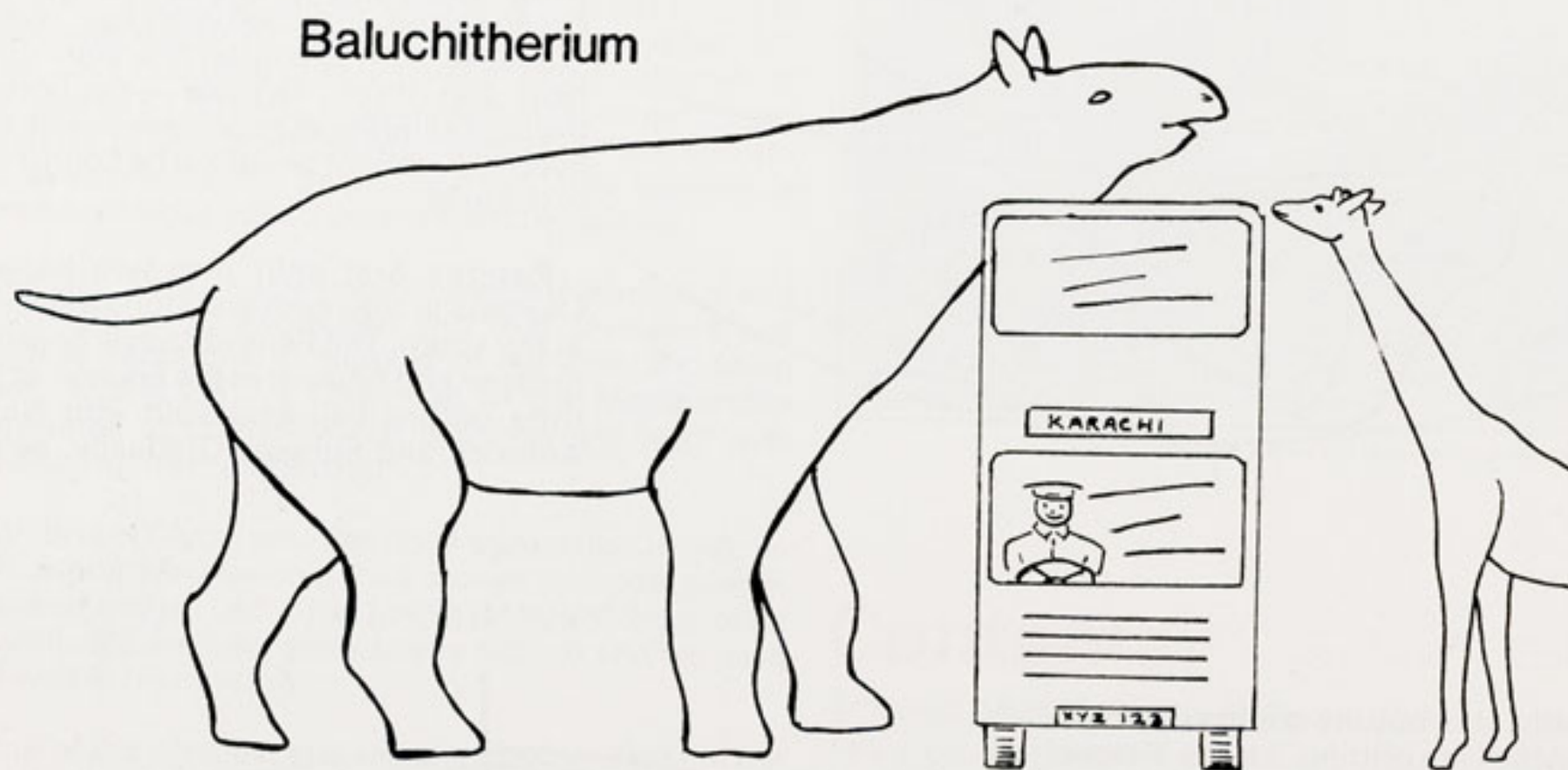
How The Horses Came About

The horses have evolved from small foragers which lived in woodlands, and had five digits on each foot. They probably escaped from danger by darting into cover and hiding. They lived in western Laurasia (what is now Europe and North America). They were first described from fossils found in England and were thought at the time to be primitive hyraxes, so were given the name *Hyracotherium*. Later, when fossils were found in North America, they were not at first recognised as being those of the same animals, but were recognised as being primitive horses, and were given the name *Eohippus*.

slowly drifting westwards, that much of the evolution of horses took place.

About 15 million years ago, South America made one of its many bumps into North America and horse stock jumped across for the first time, only to die out after several million years. The horses continued to develop in North America, where they may have already begun to differentiate into zebras and asses as well as horses. They only got into north-east Asia and colonised the central plains of Asia about 12 million years ago. The true horses spread over the whole of the central Eurasian plains. The Mongolian Wild Horse, Przewalski's Horse, is the last wild-living remnant of this stock, though the European Tarpan survived in the wild until only a hundred years ago. Even Przewalski's Horse was down to a few dozen animals by the turn of the century.

Meanwhile, about 5,000,000 years ago, the asses and zebras crossed into Africa. the zebras died out everywhere else, and only three species are now surviving, all in Africa. Asses are surviving in south-west Asia, as well as in the north-east of Africa, but their hold on existence in the wild is very tenuous. In North America and in South America the remaining horse stock had died out. In about 30 million years the horses had travelled round the world.



The stock adapted to feeding on grass and living on open plains. Their teeth became more and more efficient at cropping grasses and at grinding the leaves into a digestible pulp. Their survival became more dependent on fleeing from danger rather than hiding from it, and there was progressive selection for speed and endurance. The legs became effectively longer, by the animals standing on the tips of their toes, the number of toes being progressively reduced, first from five to three and then to the single hoof of the modern horses, asses and zebras.

While all this was going on, Laurasia had split, dividing the populations in Europe and North America from each other. The population in Europe died out, presumably because the habitat changed and some other group adapted faster to the changed conditions than the horse stock could. Thus it was in North America, which was

The Other Groups Of Odd-Toed Ungulates

As the horses were beginning their long evolution from the tiny *Hyracotherium*, there were at least 11 other lines of odd-toed ungulates developing in Laurasia. There was a hippopotamus-like group, several rhinoceros-like groups, including running-rhinoceros and a tapir-like group, and a curious group, the Chalicotheres, which had two claws, not hooves, on the end of each digit. Out of all this evolutionary activity, the ancestors of the present-day tapirs and rhinoceroses emerged. But, by 20 million years ago, the odd-toed ungulates were facing increasing competition from the even-toed ungulates, that is from the deer, the antelopes, the camels and the true hippopotamuses.

While the horses were able to match the new competition on the open plains, the tapirs were only able to

survive in relatively specialised habitats in south-east Asia and to take advantage of South America bumping into North America. The rhinoceroses, which had been a very widespread group, were reduced to fewer and fewer species, until only the present-day five were left. At the height of their success, one species of rhinoceros, *Baluchitherium*, which lived in what is now the modern Pakistan, was 18 feet high at the shoulders, higher than the top of a giraffe's head! The only other odd-toed groups to survive the competition of the even-toed ungulates were the Chalicotheres. They survived until at least 2,000,000 years ago, so they overlapped with our own species of mankind.

The rhinoceroses got into Africa about 15 million years ago, died out in North America perhaps ten million years ago, and survived in Europe and central Asia until well after the arrival of man. The Woolly Rhinoceros still survives today, for it is the same species as the Sumatran Rhinoceros, now on the verge of extinction in the forests of Sumatra.

Only A Few Species Of A Once-Proud Group Now Remain

If there is any one group which can be said to be in need of the conservational help that modern zoos, properly funded, can give them, it is the Perissodactyls. All the rhinoceroses need our help. Three out of the four tapir species need our help. Amongst the wild horses, asses and zebras, only the Plains (Common) Zebra is still reasonably abundant and widespread. Zoos have already saved the Przewalski's Horse and close-managed conservation in the wild has saved the White Rhinoceros. Probably the only hope for the Sumatran Rhinoceros is for them to be given the protection and care of zoos and remove them from the wild, where they are being poached and where habitat destruction is breaking up the residual population into unviable units.

So What Are The Perissodactyls?

The reason why these animals are called "odd-toed" is that their feet are symmetrical around the middle of the third digit. This is in contrast to the even-toed ungulates, whose feet are symmetrical around the space between the third and fourth digits.

They are plant feeders, which digest the leaf material by fermentation in the hind gut. This may seem a very technical point, but it is of crucial importance when dieting the animals in the Zoo. It means that they are more protein-efficient than the even-toed ruminating animals, which ferment their leaf material in their fore stomachs, but it also means that they are less energy-efficient. Obviously, the balance of these two factors is fine, because large herds of odd-toed Plains Zebras co-exist with large herds of even-toed Wildebeeste in Africa, each failing to out-compete the other.

The three kinds of animals defend themselves from danger in very different ways. The horses run away. The one that runs first, fastest and farthest being the one most likely to survive. Horse-racing has been described as the controlled panic of a horse. In the zoo it means that the horses and their relatives have to be given paddocks in which they can distance themselves from anything they feel threatening, and in which there is

enough space for them to run out their fear if they do take fright. Fortunately, they habituate to being close-managed, a factor which has made it possible for them to be domesticated, so that they require considerably less space in which to feel safe in a zoo than they do in the wild. And I can assure you that that is not special pleading! The horses are superbly adapted for running. Everything about them is centred around increasing the length of their stride and prolonging their endurance. Their backs flex and extend as they gallop, their weight is carried at the very tip of the single toe remaining on each leg. Open plains provide no hiding places for the very young, so, in order to survive, the new-born foals of the horses, asses and zebras have to be able to move with the rest of the herd when there is danger around. They are well advanced when they are born, capable of fast running on their disproportionately long legs.

The tapirs cannot escape from danger by running away over long distances. The ground on which they live is too soft, and there is too much undergrowth to give clear routes away from the threat. Instead, the tapirs escape from danger by heading for water. They can submerge until only the tip of the snout is above the surface, giving them a "schnorkel" through which to breathe. Baby tapirs, which would not be able to reach the water through the undergrowth as fast as the adults, avoid danger by lying doggo, their mottled coat pattern camouflaging them from predators.

The rhinoceroses are big enough to have no major natural enemies. Only the very young are liable to attack, which is resisted by the mothers' defending them. Rhinoceroses turn to face any danger, charging with their horns pointing forward when the threat comes too close.

Energy Capture

Possibly as good a way as any to understand the zoology of a group of animals is first to remember that those animals best able to survive long enough to reproduce more of their own kind are going to replace those which are less able, and that whatever it was that made the animals which did survive better able to do so is likely to be passed on in the genetic make-up of the offspring. And second, to remember that animal populations survive by capturing food energy and using it to make their own bodies grow and to make youngsters of their own kind. Thus the whole process of feeding, digestion, growth, avoidance of predators, mating and reproduction to produce more of the same kind can be seen as the capture and defence of energy. When a lion eats a zebra, there is less energy around to make more zebras, but more energy available with which to make lions. All the Perissodactyl species are plant-feeders, gaining their energy at the expense of the plant species that have captured it from the sun. Their zoology is the story of how the species which make up the group have had to adapt to meet changes in the competition, from other plant feeders as well as from predators, and in the supply of the energy itself arising out of changes in the environment. As far as mammals like the Perissodactyls go, Continental Drift has been behind much of these changes which the group has had to face over the course of its evolution.

Michael Brambell
Director

Californian Sealion Pup

Although not strictly listed as an Appendix 1 species, the Californian Sealion (*Zalophus californianus*) certainly has its place in zoos. They do well and endure as one of the most popular exhibits with the public. Within the U.K., this species is managed under the Joint Management of Species Scheme, the idea being to place individuals under the care and management of the particular collection with the best facilities for that animal. The Group also ensure that the best possible use is made of the "blood lines" of the various species



Proud father "Sonny"

involved. At Chester we now have six Sealions, "Trudy" and "Kitty" from Regent's Park, "Sally" from Dudley Zoo, "Freddie" (a female) from Brighton Aquarium, "Sonny" our breeding male from Twycross Zoo and the youngster from this year.

In their wild state, Californian Sealions breed off the west coast of California, from San Miguel Island in the Californian Channel Islands, southward into the Gulf of California. The breeding season ranges from May till August and, during this time, the males—or bulls—return to the rookeries after ranging as far north as the coasts of British Columbia. Each bull tends to stay at the rookery for between nine and 14 days, fiercely establishing and defending his hard-won territory and harem of 15 to 20 cows, during which time mating with the cows takes place. During the mating season, many bulls will

visit one rookery. The female—or cow—Sealions return to the rookery nearly a year later, normally arriving on the beaches one or two days before parturition to give birth to a single pup. This would suggest that the gestation period for the Sealion is about 11½ months, but most authorities agree that a delayed implantation occurs in this species, the true gestation being around eight months, with the egg being fertilised some three to 3½ months after mating has taken place. The female comes into oestrus within two weeks of the birth of her pup.

Our Sealion pup was born on 11th June and weighed approximately 10 lb. (4½ kg.). The placenta was not eaten, which is normal for this species. The youngster's mother is "Trudy", who was born at Regent's Park on 17th June 1975. The pup was born in the more secluded part of the enclosure, in an off-show area behind their indoor quarters. This area had been specially redesigned, with a small nursery pool and plenty of beach area, made up of small rounded boulders covered with sand, in preparation for the arrival of the youngster. The work in the nursery area was carried out by the Youth Training Scheme Group of helpers within the Zoo. The nursery pool was built to be shallow, with a gradual slope. The area allowed us to isolate the female and her pup from the main pools as these were too deep for the youngster's initial swim. In the wild, they are taught in small tidal pools by their mothers, before going to sea. The gate separating this area was built at a height to allow the female access to the bull in the main pools after a few days of suckling the pup almost continuously. During this time, the cow's diet was increased, as was her vitamin intake. After a week, it was noticeable that the cow spent less time with the pup, only popping over the gate three or four times during the course of the day to suckle her youngster. The other cows, too, became



Sealion pup with mother

frequent visitors to the nursery area, having at first completely ignored the pup. After a few weeks, the gate was lowered to make access easier for the female, whilst still retaining the pup. Around the same time, the gate had to be strengthened, after the bull decided to go the same way as the cows, and virtually wrecked it! The bull's reaction to the young Sealion was a slight interest, and he allowed the pup on to his back from time to time, with no aggressive behaviour towards him.



Californian Sealion Pup

Cliff Brett, Mel Grundy Photographic Agency

During the first few weeks, the pup, which we think is a male, slept most of the time; after that, however, he became more adventurous. At eight weeks he was allowed into the nursery pool, which he took to straight away, often playing with the other females, who also used it. This pool, which served as a tidal pool of the wild, was essential to allow the pup more confidence in swimming before being allowed into the main pools. After three months, he was allowed into the main pools and was by then a proficient swimmer.

Sealion pups are weaned between six and 12 months. Our pup, whom we have named "Berkeley", is, at the time of writing, five months old, and he has started to take some interest in fish, but is still regarding them more as playthings rather than as something edible. "Berkeley" now weighs approximately 35 lb. (16 kg.). The female "Trudy" is thought to have been mated again and, hopefully, some of the other females too, so perhaps next year we will have another pup or two to keep "Berkeley" company!

An interesting point to note with regard to the management of our Sealion Group is that they are fed on a variety of fish, such as mackerel, herring, whiting and sprats, the females eating around 5.5 kg. each day and big males up to 8 kg. We supplement this diet with specially-formulated "fish-eater" tablets, which are a vitamin supplement and are loaded into the fish, and the Keeper makes sure that each Sealion receives the correct amount. The approximate cost of feeding our group for one year is around £8,000. This figure does not include the various other overheads involved!

Alan Woodward
Senior Keeper—Whipsnade Section



THE NORTH WEST GROUP OF THE

Fauna & Flora Preservation Society

The North of England Zoological Society was pleased to be asked to become associated with the Fauna and Flora Preservation Society by acting as headquarters for the North West Group of the F.F.P.S. The F.F.P.S.'s main offices are based at the Zoological Society of London (Regent's Park) and, earlier this year, some keen local Members decided that there was enough support in this area to maintain a North West Group.

The first meeting of the group was held at the Zoo's Lecture Hall, on Friday, 20th September 1985, the subject being **An Evening of Mountain Gorillas**. The guest speaker was Dr. Sandy Harcourt, who gave an absolutely fascinating talk, with slides, depicting his years of work with these animals in Rwanda. Dr. Harcourt was pleased to answer the many questions which cropped up, as was Roger Wilson, who also spoke at the meeting, to accompany a *Naturewatch* film with Julian Pettifer which Roger had helped to make when he too was working with the Gorillas in the Rwanda National Park. In between the slides and film talks, a buffet supper was served, and discussion about the plight of these beautiful animals continued with the two speakers afterwards.

This was an extremely successful and well-supported event to launch the North West Group, with almost 150 guests attending, including both Members of the F.F.P.S. and the North of England Zoological Society.

The next meeting of the North West Group of the F.F.P.S. will be:—

An Evening of Seals and Whales

on Friday, 17th January, 1986, when Chester Zoo will host this second meeting. The evening will include a talk by Sheila Anderson, of the Sea Mammal Research Unit at Cambridge, on *Conflicts in Seal Conservation*, as well as a film on whale conservation.

The meeting will be held at the Russell Allen Lecture Hall, starting at 7.30 p.m., and will include a light buffet and wine. Tickets will be available at the door, although we would be grateful if you would reserve your tickets in advance, either telephoning the Zoo or by writing to Barbara Bradfield, Secretary F.F.P.S. North West, c/o Chester Zoo. Tickets will cost £3.50.

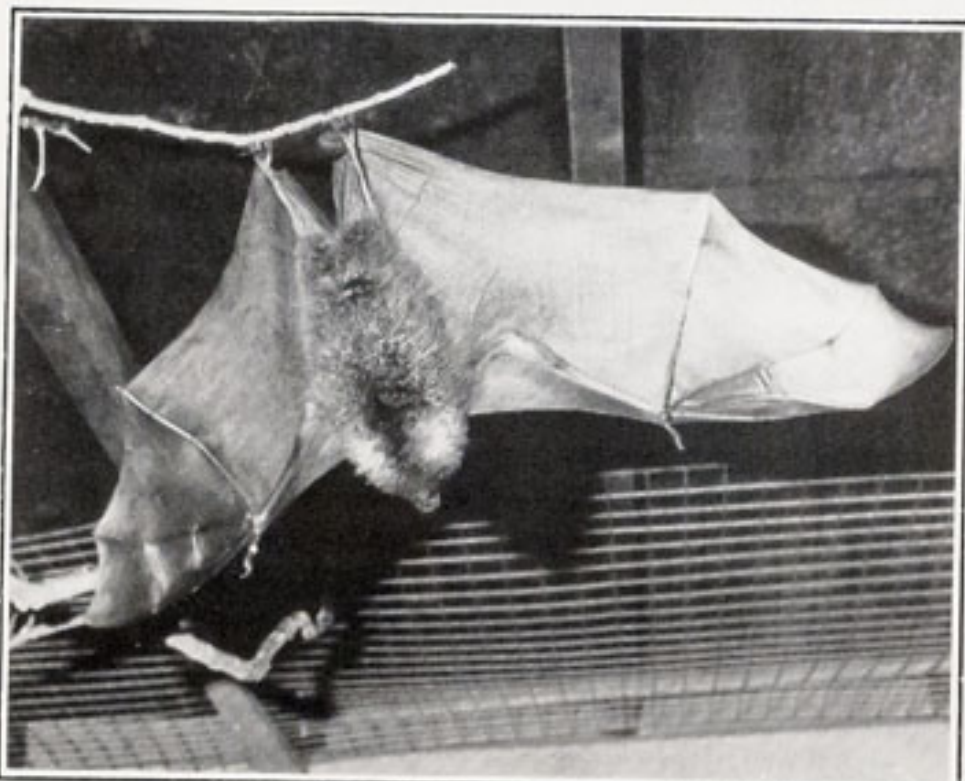
"SNIPPETS"

Animal Adoption Scheme

The Animal Adoption Scheme has received some very welcome publicity recently. Since the last issue of *Chez Nous*, we have attracted two celebrity adopters!

In September, jazz singer George Melly visited the Zoo, to adopt a Rodrigues Fruit Bat. George proved to be a very knowledgeable and keen naturalist. His choice reflects his deep concern for rare and endangered species.

As a nocturnal fruit bat is not the easiest of photographic subjects, George happily posed with "Kinky" the Kinkajou, who was stealing the fruit bat's lunch!



Rodrigues Fruit Bat

"Kinky" also made the newspapers a few weeks later, when our second celebrity, William Roache, came into the Zoo with his wife and four-year-old daughter, Verity. William—perhaps better known as "Ken Barlow" of *Coronation Street*—wanted to make an adoption on behalf of his daughter. Little Verity spent some time studying all the inhabitants of the Nocturnal House, before deciding on a Kinkajou.



William Roache with daughter, Verity, and her newly-adopted Kinkajou



George Melly with Kinkajou

The scheme has been tremendously successful in its second year, raising approximately £20,000 for the Trust Fund.

Helping Playschools

Members of the North of England Zoological Society have consulted several playschools and pre-school groups to produce a "Playschool Zoo Box". The box will be available on free loan to any pre-school group or nursery prepared to collect it from, and return it to, the Zoo, on a "Losses and Replace" basis. It is available now for Members and their friends to borrow for their own local groups.

Thanks to the generous support of Britains Limited, who have donated a supply of their excellent toy animals, we have been able to assemble an initial box, containing animal books, face masks, jig-saws and toy animals. Further donations of additional material would be useful.

The intention is to encourage an interest in wildlife and, of course, remind the children (and adults involved with them) that they can see a wide range of wild animals from all over the world at Chester Zoo!

Before the summer holidays this year, the Zoo Box had already been on loan to playschools as far afield as Helsby and Blackburn. We have received several suggestions for improvements and this is where YOU can help!

Firstly, we need a large play-mat, preferably a piece of fold-up or roll-up heavy fabric, with a zoo marked out on it (ideally like the plan inside the Zoo Guide!). The mat should be about table-top size.

Secondly, we need volunteers to make authentic Zoo Keeper suits for three- to four-year-olds.

Thirdly, we urgently need a proper box—a Noah's Ark shape has been suggested. Any DIY enthusiasts please come forward . . . Remember, the box must be an appropriate size for easy transport in an average family car.

Anyone interested, or with proposals of their own, please contact Maureen Allsopp at the Zoo.

Brian D'Arcy
Former Member of Council

"Scene Changes"

Regular visitors will have noticed much activity in the area of the old Capybara enclosure and the Siberian Tigers' enclosure. They have been knocked into one to make a beautiful new Tiger enclosure, with a new Tiger House, built along similar lines to the Lion House opened last year, only larger.

Between this new enclosure and the Children's Playground, we will be building a Children's Farm Enclosure, where it will be possible for young people to touch, stroke and run their fingers through the coats of animals. We plan to have the first enclosure, for goats, ready by Easter. Until now, this area has been used as a dumping-ground, with some rather decrepit outbuildings, which will be swept away. Eventually, we hope to be able to restore fully the Stable Yard Building itself, for it is listed as having great architectural merit and is a beautiful structure. At present, the Maintenance Department uses the Stable Yard as its base. Before we can restore the yard, the Maintenance Department will have to move to another site.

We will also be building a new kitchen area for the Bird House, and open up as a pathway the space by the Fountain Building, where new aviaries have been built by the Youth Training Scheme Group of the Manpower Services Commission at the Zoo.



New Tiger enclosure under construction

Dave Sowers

Senior Members' Meeting Reports

Held on Saturday, 26th October 1985

Jean Dixon—*East African Safari*

Members were treated to a colourful and spectacular start to the winter's season of talks when Jean Dixon, one of the Zoo's Life Members, came to talk to them on 26th October about her recent trip to Kenya. Miss Dixon visited Kenya in September this year, and so was able to bring totally up-to-date news from Africa. Her marvellous slides depicted her tour through some of the major game reserves of Kenya, including the Samburu and Masai Mara.

These showed a wide variety of game, including Elephant, Wildebeeste, Lion and Cheetah, to name but a few. Aware of the mainly zoological interest of her audience, Miss Dixon was keen not to stray too far from the animal side of her tour, but it was obvious to us all that the whole "African Experience" was one to savour, and we were delighted to be able to share this with her.

Held on Saturday, 23rd November 1985

Mr. Walter Worth, Head Gardener of Chester Zoo, on *The Gardens at Chester Zoo*

Our Gardeners produce floral displays which delight and entrance our visitors year after year.

The admiration and respect we all feel for our Head Gardener and his staff of 21 was reflected by the very large number of Members who came to listen to Walter Worth's reminiscences of his career—spanning 25 years—with the Zoo.

Throughout the four seasons of the year, the gardens display a riot of colour, from the magnificent displays of springtime daffodils, crocuses and polyanthus, through to the summer begonias, fuchsias and roses, autumn displays of dahlias and pansies and, finally, winter shrubs, whose brightly-coloured berries also provide a food source to the wild birdlife living within the Zoo.

During the course of Mr. Worth's talk, we learned that the Zoo has 15,000 square feet of greenhouses, where, to fill all the flower-beds, 80,000 bedding plants are grown from seed each year. Some of the larger flower-beds require as many as 2,000 plants! Bedding is changed at the end of May/early June, and again in October, at the end of the summer. No commercial fertilisers are used in the Zoo; all the beautiful plants are fed organically, using "home-grown" manure.

At the conclusion of the talk, Professor King, Chairman of the Zoo Council, presented Mr. Worth with a beautiful glass bowl engraved with roses and suitably inscribed, as a memento of his distinguished services as Head Gardener at Chester Zoo.

Mr. Worth has also been awarded Honorary Life Membership of the Society.

Maureen Allsopp
Membership Secretary

Senior Members' Meetings 1986

(See back for subscription details)

"Some Aspects of Game Ranching and Management in Rhodesia"

Mr. Brian Hughes

Saturday, 15th February 1986, at 2.30 p.m. in the Lecture Hall

Brian Hughes was in Rhodesia from 1951 to 1976, starting off as a District Policeman in the Bush Division and then becoming a Game Ranger with the Rhodesian Game Department, dealing with a very great number of aspects of wildlife management, finally attaining the position as the Senior Game Officer with the Ministry of Internal Affairs in Salisbury. Brian Hughes will be speaking on some aspects of his 26 years' experience of Rhodesia. He presently works with the British Association for Shooting and Conservation as the Senior Firearms Officer.

"Birds of Eccleston"

Reverend Hugh Linn

Saturday, 15th March 1986, at 2.30 p.m. in the Lecture Hall

An unusual and amusing talk is anticipated by the Vicar of Eccleston, the Reverend Hugh Linn. His interest in the birds of the village and the vicarage garden will be something to look forward to.

"Chester Zoo—A Review"

Dr. Michael Brambell

Saturday, 26th April 1986, at 2.30 p.m. in the Lecture Hall

The Zoo's Director will give his annual review of the Zoo's progress and, once again, it will give Members the opportunity to give their views and discuss points of interest with Dr. Brambell.

Junior Members' Field Trips and Meetings 1986

The following programme of events arranged for the Junior Members for the forthcoming year has been made up with the requests of present Junior Members in mind:—

CONTACT SESSION—Saturday, 18th January 1986

Your annual opportunity to meet some of our friendlier residents at close quarters. Zoo staff will be on hand to show how to handle snakes, tarantulas, locusts and perhaps others too.

Please assemble outside the Oakfield at 2.30 p.m.

CONDUCTED TOUR OF THE ZOO AND ANNUAL JUNIOR MEMBERS CONFERENCE—Saturday, 22nd February 1986

This is an important day for Junior Members, when you have the opportunity to put forward your views and ideas about the Zoo and about what you would like to do

within the Club. During the morning, we will be showing you around the Zoo, which will give you plenty of time to think up lots of questions to put to Nick Ellerton, Allan Guy and myself during the afternoon. Once again, we hope to have some Junior Members who will be prepared to talk about their slides and photographs of the Zoo. A quiz will also be arranged. Following a picnic lunch, we will continue the day in the Lecture Hall. Meet outside the Oakfield at 10.00 a.m., will end around 4.00 p.m.

ACTON SCOTT WORKING FARM MUSEUM—Saturday, 22nd March 1986

A visit to this working museum in Church Stretton, Shropshire, which demonstrates farming and rural life at the close of the 19th Century. We will have a guided tour of the museum and farm, which stocks historic breeds of livestock, and should not be missed.

The bus will leave the Staff Car Park at 9.00 a.m.

COLLECTING STOCK FOR THE NEW CHILDREN'S ZOO—Saturday, 24th May 1986

This is an opportunity to be really involved with the new Children's Zoo as a follow-up to your hard work raising funds at the Bazaar last year. Without making any hard and fast promises, we do hope to be in a position to send youngsters out to various locations, in order to collect stock and have some Juniors awaiting their return at the Zoo to help unload the animals on their arrival, and set them up in their new homes. More details nearer the time.

Meet outside the Oakfield at 9.00 a.m. and 11.00 a.m., depending upon groups.

DAY HELPING A KEEPER—Saturday, 21st June 1986

Groups will be sent to various areas in the Zoo to help Keepers and see what their job can involve. Unfortunately, we have to limit this event to 12-year-olds. Old clothes and "wellies" essential.

Please meet at the Oakfield at 2.00 p.m.

JUNIOR MEMBERS' BAZAAR—Saturday, 26th July, 1986

The Junior Members' Bazaar in 1985 was a huge success, and we hope for even more support in 1986. Please contact me with any ideas and/or contributions you may have. Keep an eye on the Junior News in *Chez Nous* for further information.

PLEASE NOTE.—For those trips involving either a bus or provision of food, a charge will have to be made in order for us to cover basic costs. This will be collected on the day and will vary according to the distance to be travelled/food to be provided.

Booking must be made for all events. Please ring me at the Zoo, not more than two weeks before an event, if you would like to attend. Places may be limited.

The list is provisional and, in exceptional circumstances, we may have to alter dates of some trips, so please keep an eye on the listings in *Chez Nous* to keep up to date.

Penny Rudd (Mrs.)
Junior Members' Club

Information about Senior Membership can be obtained from Mrs. Maureen Allsopp and about Junior Membership from Mrs. Penny Rudd at the Zoo; Tel. (0244) 380280.

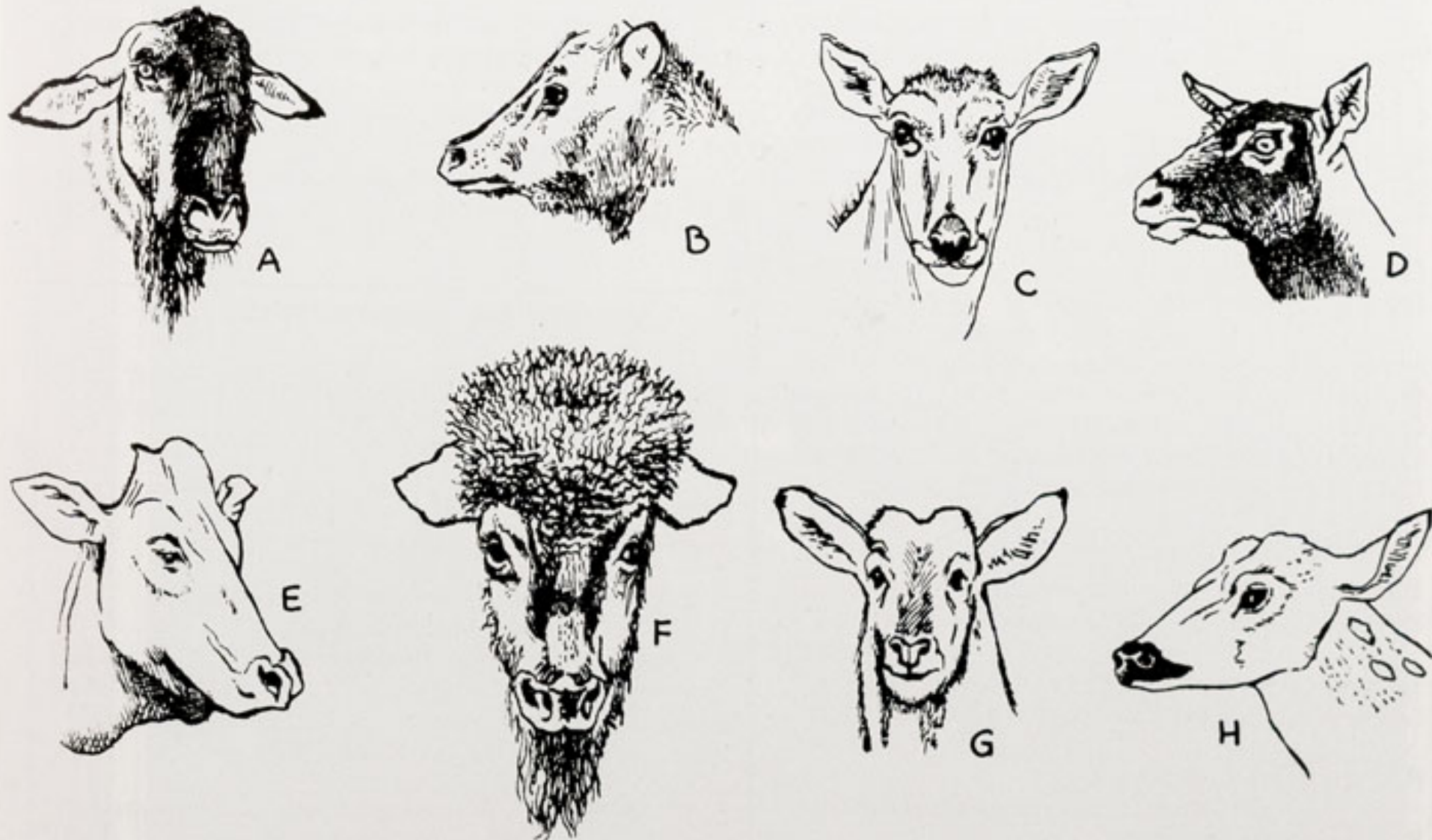
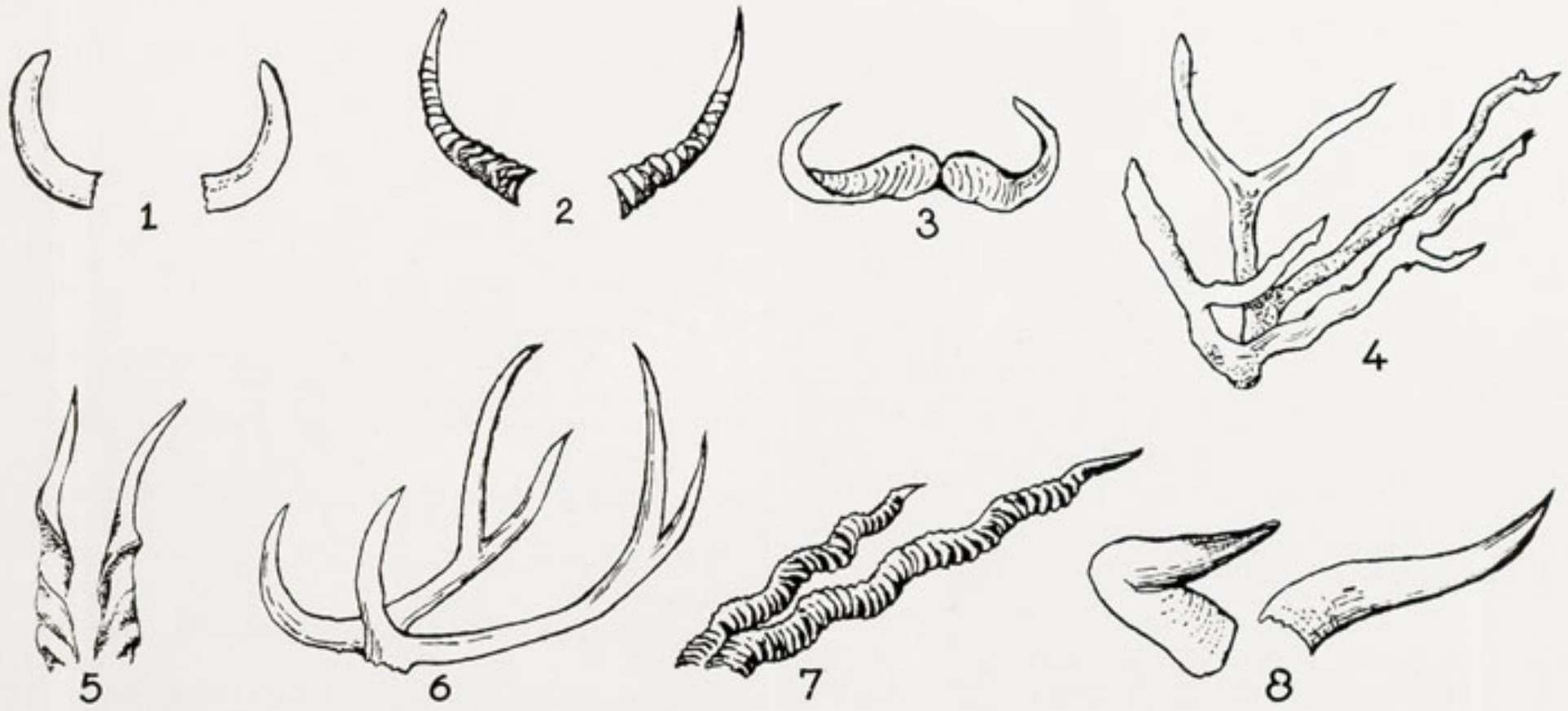


JUNENews

This one will make you all think pretty hard! See how you can do matching the correct set of horns or antlers to the correct head. For those of you who need clues—*Grzimek's Animal Life Encyclopaedia*, Volume 13, may

be able to help.

Send your answers to me as soon as possible—there will be a book prize for the winner!



Arrivals and Births

1.0	Chimpanzee (<i>Pan troglodytes</i>)	Birth
2.1	Red Lechwe (<i>Kobus leche</i>)	Birth
0.0.2	Common Marmosets (<i>Callithrix jacchus</i>)	Birth
0.0.1	Wapiti (<i>Cervus canadensis</i>)	Exchange
0.0.7	Coypu (<i>Myocastor coypus</i>)	Birth
0.0.1	American Bison (<i>Bison bison</i>)	Birth
0.0.1	Lesser Bushbaby (<i>Galago senegalensis</i>)	Birth
1.2	Arctic Foxes (<i>Alopex lagopus</i>)	Arrival
1.0	Polecat (<i>Mustela putorius</i>)	Arrival
0.4.0	Nilgai (<i>Boselaphus tragocamelus</i>)	Birth
0.0.3	Golden Agouti (<i>Dasyprocta aguti</i>)	Birth
0.0.1	Rodrigues Fruit Bat (<i>Pteropus rodricensis</i>)	Birth
0.1.0	Brazilian Tapir (<i>Tapirus terrestris</i>)	Birth
1.0	Reindeer (<i>Rangifer tarandus</i>)	Exchange
1.5	Springhaas (<i>Pedetes capensis</i>)	Arrival



Baby Porcupine



Nilgai female with calves

0.0.1	Spider Monkey (<i>Ateles paniscus</i>)	Birth
1.4	Meerkat (<i>Suricata suricatta</i>)	Arrival
1.0	Lion-tailed Macaque (<i>Macaca silenus</i>)	Arrival
0.0.1	African Crested Porcupine (<i>Hystrix cristata</i>)	Birth
2.4	White-fronted Lemurs (<i>Lemur fulvous albifrons</i>)	Arrival
1.0	Llama (<i>Lama glama</i>)	Birth
0.0.2	Barn Owls (<i>Tyto alba</i>)	On deposit from London
1.0	Great Horned Owl (<i>Bubo virginianus</i>)	Exchange
0.1	Wigeon (<i>Anas penelope</i>)	Received from Mr. W. Harrison
0.0.1	Chiloe Wigeon (<i>Anas sibilatrix</i>)	Exchange
1.0	Chiloe Wigeon (<i>Anas sibilatrix</i>)	Received from Mr. T. Lay
2.2	Hooded Mergansers (<i>Mergus cucullatus</i>)	Arrival
0.1	Barnacle Goose (<i>Branta leucopsis</i>)	Arrival
0.1	Carolina Duck (<i>Aix sponsa</i>)	Arrival
0.0.3	Common Rhea (<i>Rhea americana</i>)	Hatched
0.0.10	Chilean Tinamou (<i>Nothoprocta perdicaria</i>)	Hatched
0.0.2	Chinese Bulbul (<i>Pycnonotus sinensis</i>)	Exchange
0.0.2	Sacred Ibis (<i>Threskiornis aethiopicus</i>)	Hatched
0.0.3	White-cheeked Touraco (<i>Tauraco leucotis</i>)	Exchange
0.0.2	Crowned Plovers (<i>Vanellus coronatus</i>)	Hatched
0.0.2	Lesser Vasa Parrots (<i>Coracopsis nigra nigra</i>)	Fledged
0.0.1	Red-sided Eclectus Parrot (<i>Eclectus roratus goodsoni</i>)	Hatched
0.0.3	Purple Glossy Starlings (<i>Lamprotornis purpureus</i>)	Fledged

0.0.2	Blacksmith's Plover (<i>Vanellus armatus</i>)	Hatched
0.0.3	Coletto Mynah (<i>Sarcops calvus</i>)	Hatched
0.0.2	Slender-billed Parakeets (<i>Enicognathus leptorhynchus</i>)	Fledged
0.0.2	Red-cowled Cardinal (<i>Paroria dominica</i>)	Fledged
1.1	Rourol Partridge (<i>Rollulus rourol</i>)	Received from Mr. G. Robins
0.1	Andean Condor (<i>Vultur gryphus</i>)	Hatched
0.0.1	Yellow-backed Lory (<i>Lorius garrulus flavopalliatu</i>)	Presented
0.1	Kea (<i>Nestor notabilis</i>)	Arrival
0.1	Blue-eared Pheasant (<i>Crossoptilon auritum</i>)	Arrival
0.0.4	Maroon-tailed Conures (<i>Pyrrhura melanura</i>)	Fledged
0.0.1	Yellow-faced Parrotlets (<i>Forpus xanthops</i>)	Fledged
1.1	Ruddy-headed Goose (<i>Chloephaga rubidiceps</i>)	Exchange
0.1	Lesser Snow Goose (<i>Anser caerulescens</i>)	Exchange
0.1	Maned Goose (<i>Chenonetta jubata</i>)	Exchange
0.0.1	Silver-eared Mesia (<i>Leothrix argentauris</i>)	Exchange
0.1	Melba Finch (<i>Pytilia melba</i>)	Exchange
0.0.1	Chilean Flamingo (<i>Phoenicopterus chilensis</i>)	Exchange
0.0.1	Greek Tortoise (<i>Testudo graeca</i>)	Presented

MEMBERSHIP SUBSCRIPTIONS 1986

All Members of the Society are reminded that subscriptions for 1986 are due on 1st January next:—

Senior Members	£10
Junior Members	£5

All subscriptions should be sent to:—

Mrs. Maureen Allsopp,
Membership Secretary,
The North of England Zoological Society,
Caughall Road, Upton-by-Chester CH2 1LH.
(Tel.: 0244 380280)

Life Members will receive their Membership Cards automatically