



Chester Zoo News

AND GUIDE

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

April 1979

Price 15p



The North of England Zoological Society

ZOOLOGICAL GARDENS, UPTON-BY-CHESTER

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COVER PICTURE

Fennec Fox

By courtesy of E. Kirkland, F.R.P.S.

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GIBBONS

The four Gibbons at Chester, one pair (male and female) of Agile or Dark-handed Gibbons (*Hylobates agilis*) and one pair (two males) of Lar or White-handed Gibbons (*Hylobates lar*), have been moved to new quarters. The Agile Gibbons now reside in what was once a Macaw Flight (No. 63) near to the Oakfield, and the Lar Gibbons are in Enclosure 89, next to the Baboons. It will be easier for visitors to observe the agility of these lovely, graceful creatures as previously they roamed free on Gibbon Island and the only proof of their presence was the unusual wistful calls which echo around the Zoo throughout the day. This was a very nice place for the Gibbons, but not for the water-fowl trying to nest there, because the Gibbons ate their young.

Gibbons are skilful climbers and travel at great speed through the tree tops swinging by their arms (brachiation) and leaping from tree to tree, changing direction by merely touching branches. However, if a mistake is made a Gibbon would be doomed if it could not obtain a grasp with the other hand. Consequently, the Gibbons have developed marvellously strong arms and graceful, tapering fingers which have evolved so as to give a firm grip and yet do not become entangled in tree growth. Brachiation is a characteristic of the anthropoid apes but it is seen in its most perfect form in the Gibbons. They have developed this mode of travel to such an incredible degree that they can even catch birds in flight! The Orang-utan of Sumatra and Borneo is the closest relative among the other anthropoid apes to the Gibbons, but it moves distinctly more slowly and sedately. The Chimpanzee and Gorilla of Africa, though also anthropoid apes, use brachiation hardly at all as a means of travel.

Gibbons can often also be seen walking and standing upright but a noticeable feature is that the arms are usually held aloft and when walking or running they wave them about; imagine the same animal on a shaking branch, it is definitely at home and the balance is nothing short of perfect.

The Lar and Agile Gibbons both come from Malaya and Sum-



GIBBONS

atra and distinguishing between the two species is quite difficult, as it is with all six Gibbon species and fifteen sub-species! Very often even colouring within one family group can be totally misleading. Our two Agile Gibbons have dense coats of a smoky brown colour; whilst the Lar Gibbons have the same thick coats, they are both a lovely golden colour with white backs to their hands.

In the wild, Gibbons are found in family units consisting of an adult male, adult female and up to about four youngsters; these inhabit a family territory which is defended. Between territories there appears to be a border where different family groups gather to feed and during this time no squabbles over territory arise as they appear to recognise it as neutral ground. Fruits, buds, blossoms, ants, leaves, insects, snails, birds' eggs and the occasional unfortunate bird plucked from the air all go to form part of the diet of this energetic animal. Even though the family unit is fairly stable, the youngsters have to leave it soon after they become adult. Very occasionally other individuals are taken in but if a gibbon competes with an adult of the same sex in a group it will be severely bitten.

An adult female usually gives birth to a baby gibbon once every two years after a gestation period of approximately 210 days; the baby's eyes are open and the body and limbs are covered in a thin fur, and so must be protected by the mother. It clings tightly to the coat of the mother and, when she is resting, the baby is cradled between the thighs and abdomen with her arms wrapped around its body.

It is at this tender age that the babies are captured by peoples indigenous to the Gibbons' home range as for a while they can make very affectionate and tame pets; to catch the youngster it is usually necessary to slaughter the whole family. The baby then adopts humans as its "family" and, while it is young, appears to be easily cared for. However, cuddly wild animal babies grow into mature adults with a need for company and a life with other members of its own species, and this is when violent and unprecedented attacks occur.

Many species including Gorillas and Orang-utans suffer badly from the effects of land cultivation by Man; however, the Gibbons seem better able to convert this change into a food source as they

do not appear to be worried by the presence of humans. Major predators are common Leopards, Clouded Leopards, large birds of prey and snakes. It would be reasonable to believe that Gibbons do not often fall prey to these unless sick, injured or old, as they are alert at all times and can therefore make a successful getaway through the treetops. Equally, they themselves can be very fierce and will kill quite large attackers, as long as they are not caught unawares.

Within the Gibbon group male and female have equal status and biting "competitions" between individuals appear to be the manner in which disputes over rank are resolved.

When the Gibbon is sexually mature it may choose a mate from a neighbouring family group; if the couple are compatible they will form a new family and occupy their own territory.

Territories are defended by calls which vary from species to species, and are at their most intense in the early part of the day. This serves to keep other groups at a distance but if a group intrudes into a territory it will be attacked following a display of physical threats, including a variety of facial expressions. The gibbons within a group also use their voices to keep in touch and to warn each other of danger.

GARDENING NOTES

This year we are having one of the latest Springs for many years but we are hoping there will be plenty of colour in the flower beds and shrubs by the end of this month. The tulips will be in flower on time and the best time to see them is around the second and third week of May. The two main varieties we plant are Double Early which grow to a height of 10 inches, and Triumph with a height of about 15 inches.

When the Gardeners clear the beds for the Summer plants the tulip bulbs are kept and planted again in the following Autumn. The botanical name of the tulip is *Tulipa* and this is derived from a corruption of the Persian word *Thoulyban* or *Tulipant*, a turban, which the flower is supposed to resemble.

Quite a number of the species are planted on the rockeries; these include *praecox*, *praestans*, *greigi* and *vitellina*.

We look forward to the shrubs coming into flower this month and many of them flower before the leaves open out. One of the first is the *Forsythia*, named after William Forsyth, Superintendent of the Royal Gardens, Kensington in the 18th century. One of the best species is *intermedia* and *spectabilis* which have masses of flowers like golden bells clustered together. It is possible that during a hard Winter the birds will eat the buds and black cotton is the only way to stop them.

Cydonia japonica, or as it is now known, *Chaenomeles lagenaria*, belongs to the apple family and can be seen in various parts of the Gardens growing against a wall or as a bush. Our varieties have colours ranging from orange-scarlet to salmon-pink.

The *Magnolia soulangiana* in front of the Oakfield has plenty of buds and this specimen has now grown to 12 feet; this species flowers well before the leaves open and flowers are cup-shaped with fleshy petals. In the same area is a Handkerchief Tree (*Davidia involucrata*) which is now 20 feet high and it is hoped that it will flower this year; what we shall see are large white bracts hanging down which resemble handkerchiefs. This tree is supposed to be ten years old before it flowers, but ours is fifteen years old and has had only the odd flower so far. This tree originates from Western China.

The evergreen *Viburnum tinus* has had the edges of its leaves scorched during this hard Winter, but the white flowers are coming out. This shrub originates from Southern Europe and will grow to a height of about 10 feet.

FENNEC FOX

One of the most delightful and enchanting animals at Chester Zoo must surely be the Fennec, or Desert Fox (*Fennecus zerda*). It is as near as one can get to a children's storybook animal with its enormous ears, fluffy coat, tiny black "button" nose and huge dark eyes. But for all its gentle and delicate features it is a sturdy creature

living amongst the sand dunes of the harsh deserts in North Africa and Arabia. Although the Fennec is in such an inhospitable area it manages to survive even though the peoples indigenous to the Sahara have taken to hunting it; for this reason numbers are believed to be somewhat reduced in this area.

A litter of two to four, but occasionally five, blind youngsters are born after a fifty day gestation. Their coats are shorter and more sandy coloured than those of the adults; the adult pelt begins to grow at about eight weeks and this is usually a creamy colour with almost white limbs and underparts. The base and tip of the tail have a dark patch. Some animals may have a reddish tinge to the coat or be pure white, and in all specimens the soles of the feet are densely furred. It seems a curious point that these animals live in such a warm climate and yet have a thick coat but this is because they are nocturnal and nights in the desert are a complete opposite to the scorching heat of the days; temperatures drop dramatically at night so nocturnal hunters must be provided with adequate protection.

As night falls, groups of Fennecs emerge from their sandy burrows, where as many as ten live together, and begin the serious business of hunting. Fennecs do most of their hunting of insects and other small animals by sound, moving their large ears to locate the exact position of the source, which they then rush at with a pounce. The diet is varied and ranges from insects, particularly locusts, to rodents, lizards, birds and vegetable matter such as roots. dispensing completely with the art of stalking. Food in the desert cannot be wasted and any remains from a night's hunting are buried. After eating, the Fennec will make for a nearby waterhole where it will drink its fill; however, if water is not close by it can do without as it is possible that the Fennec is able to gain a sufficient amount of fluid from its diet.

This fox tends to be a shy animal and it is not easily bred in captivity; if surprised in the wild it can burrow at such a rate that it virtually looks as though it is sinking into the ground.

The eight Fennecs at Chester, five of which belong to Bristol Zoo, live in the Mammal House and are fed on a mixed diet of soft fruits, meat, chicken and eggs.

CHESTER ZOO

THE NORTH OF ENGLAND
ZOOLOGICAL SOCIETY
ZOOLOGICAL GARDENS

FOR A COMPLETE TOUR OF THE ZOO — Follow Nos 1-116 South Entrance,
or Nos. 16-116 from North Entrance then return to Nos 1-14

**Chester Zoo is Open Daily
from 9.00 a.m. until dusk.**

To
LECTURE HALL
& CLASSROOM
(Reservations only)



1. SOUTH ENTRANCE

2. Peacock Enclosure
3. Wapiti Paddock
4. Coatli Enclosure
5. Aviaries
6. Milk Bar
7. CORONATION HALL
8. CLOAKROOM, FIRST AID, TOILETS, INVALIDS' TOILETS, MOTHER AND BABY ROOM
9. CAFETERIA
10. Picnic Lawn
11. Bears
12. Jubilee Gardens (Noah)
13. Kiosk
14. AQUARIUM
15. NORTH ENTRANCE
16. PUSH CHAIRS, WHEEL CHAIRS, LOST CHILDREN
17. PARROT HOUSE
18. Free Flight Aviary
19. APE HOUSE
20. Shop and Kiosk
21. Aviaries and Picnic Lawn
22. TOILETS
23. Tuatara Exhibit
24. Peccaries
25. Waterbus Halt
26. Birds of Prey Aviaries
27. Condor Aviary
28. Jackal and Hyena Enclosures
29. Animal Enclosure
30. Porcupine Enclosure
31. Coypus
32. Beavers
33. Giraffe House

34. Camel House
35. Waterbus Halt
36. TROPICAL, NOCTURNAL & REPTILE HOUSES
37. CHIMPANZEES
38. Floribunda Rose Garden
39. Mammal House
40. Gibbon Island
41. H.T. Rose Garden
42. Aviaries
43. Flamingos
44. Waterfowl Enclosure
45. Waterfowl Enclosure
46. Waterfowl Enclosure
47. Penguins
48. Seallions
49. Rock Garden
50. Polar Bears
51. Big Cat Enclosure
52. Waterfowl Enclosure
53. Anteaters
54. BIRD HOUSE
55. FOUNTAIN RESTAURANT
56. Ape Nursery
57. TOILETS
58. Lions
59. SOUVENIR SHOP
60. TOILETS
61. OAKFIELD RESTAURANT

62. P.O. Telephone
63. Aviary
64. Animal Enclosure
65. Animal Enclosure
66. Ornamental Rock Garden
67. Wallabies and Kangaroos
68. Kangaroo Enclosure
69. Aviary
70. Cheetahs
71. WATERBUS BOOKING OFFICE AND KIOSK
72. Waterbus Halt
73. Fountain Flower Gardens
74. Rose Garden
75. Red Lechwe
76. Red Lechwe
77. Deer or Antelope Enclosure
78. Waterbus Halt
79. Zebra and Deer Enclosure
80. Brown Bears
81. ELEPHANTS
82. Hippos
83. Tapirs
84. Small Mammal House
85. Waterfowl Enclosure
86. Ankole Cattle
87. Emus, Cranes and Flamingos
88. Outside Monkey Enclosures
89. Baboon Pens
90. Cat House
91. Tiger Enclosures

92. Antelope Enclosure
93. Antelope Enclosure
94. Antelope Enclosure
- 94a. Llamas
95. Zebras
96. Zebras
97. Waterfowl Enclosure
98. Waterfowl Enclosure
99. Waterfowl Enclosure
100. Blackbuck
101. Wallabies
102. Animal Enclosure
103. Wallabies
- 103a. Reindeer



ANIMAL FEEDING TIMES:

LIONS—3 pm except Fridays

SEA LIONS 3 times daily—
2-30 pm, 3-30 pm, 4-30 pm

ANIMALS MAY BE MOVED
FROM TIME TO TIME

104. Pere David's Deer Paddock
105. Przewalski's Horses
- 105a. Onager
106. Arabian Gazelles
107. Musk Oxen
108. Bison
109. Pere David's Deer Paddock
110. Prairie Marmots, Alpacas
111. Antelope Enclosure
112. RHINOS
113. TOILETS
114. Mpila Snack Bar
115. Antelope Enclosure
116. MONKEY HOUSE



C Road
Warrington
Manchester
Whitchurch
and South →

THE 1978 WALLACE EXPEDITION TO AMAZONIA

Perpetual humidity and constant temperatures make the Amazon forests a perfect environment for amphibians. It is a world where there are no clear demarcation lines between land and water, where plants absorb necessary moisture from the atmosphere. The heat is never suffocating yet it remains warm all the year round. No better conditions could exist for amphibious animals whose body temperature is directly dependent upon their immediate surroundings.

Surprisingly, there is a scarcity of Urodela—Salamanders and other tailed amphibians. There is in fact only one salamander (*Oedipus adpersus*) which is found in almost every part of South America from the Amazon basin to the desert, and even at altitudes around 10,000 feet.

The Anura (frogs and toads) are better represented and around the camp and study area some 39 species of frogs and toads were collected for the British Museum of Natural History during our two months stay.

Brilliantly coloured tree frogs of the family *Hylidae* were abundant in the forest, adhesive discs at the end of their digits allowing them to cling firmly to branches and vegetation. One of the largest, about 4 inches long, is one of the few tree frogs with a common name in Brazil, where it is called *Ferreiro* ("Smith"). It was first mentioned, figured and described by Prince Maximilian zu Wied-Neuwied, who travelled in Brazil, mostly in Espirito Santo and Bahia, during the years 1815-1817. In the account of his journeys, he mentions being very much astonished by the voice of an unknown frog. It sounded like a smith working on tin or copper with a hammer, though the sound was deeper and fuller. Smith's tree frog *Hyla faber* builds a miniature private pool for spawning; this habit was first observed by Goeldi on his estate, Colonia Alpina, at Tereso'polis and described (1895) with slight inaccuracies. I was able to make notes and take measurements of several spawning pools. The nests are clay pans with raised walls, built at the edges or in shallow pools. Perfect nests are rounded, about 30cm in diameter and 7-9 cm deep, with a rampart rising 5.7cm above the water. It is the male

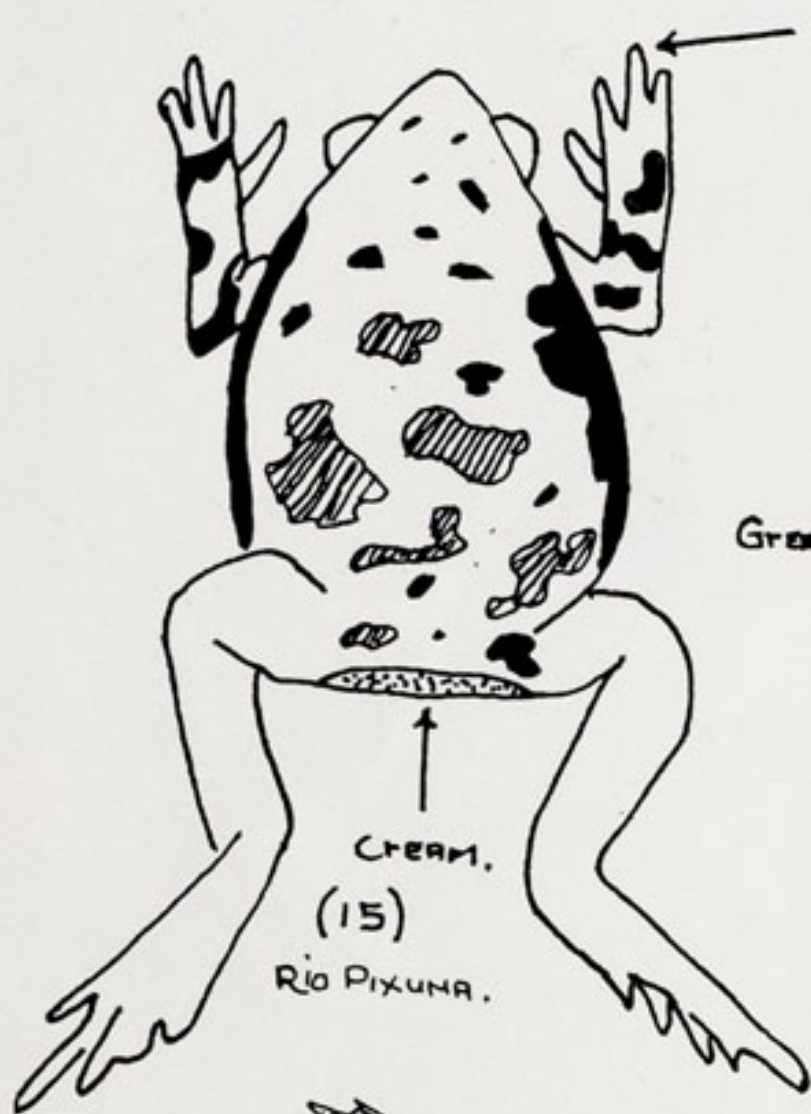


SOUTH AMERICAN TOAD (*Bufo typhonius*)



ARROW POISON FROG (*Dendrobates trivittatus*)

Photos by courtesy of W. H. Timmis, Curator of Birds, Chester Zoo



← Toes Pink.



(17.) Sept 5th. Jungle pool.



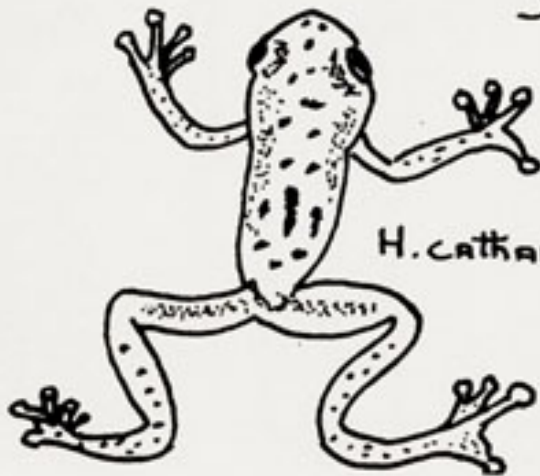
Orange/yellow. (22.) Sept 6th.



(23) Sept 2nd. Jungle.

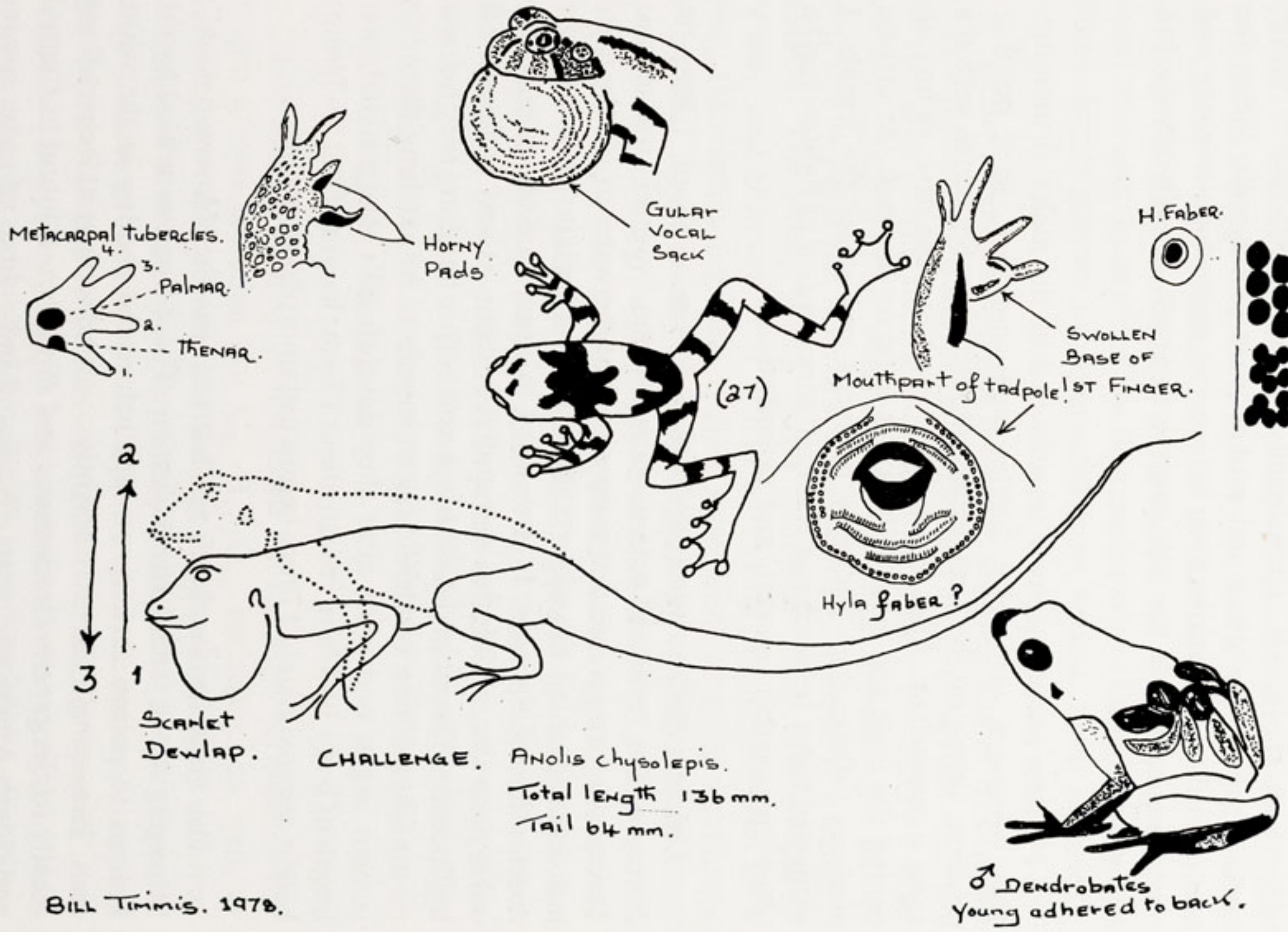


(16)



H. catharinae.

EXTRACT FROM AMAZONIAN DIARY (2)



Bill Timmis. 1978.

who builds them. He gets into the water, sits in a shallow place, and circles around in it, thus forming the cavity, and gradually deepening it. The walls are built by pushing up the clay and patting it onto the edges with the hands. Occasionally the frog goes under, brings material up on the snout and pushes it on to the wall. When the nest is finished, sometimes even before, the male stops working and starts singing, inside the nest, on the rampart, or even outside, but always near it.

Females ready to spawn are attracted by the males' drumming. They approach cautiously, halting now and then, in a peculiar position, sitting on the hind limbs and resting on the hands with the arms outstretched. After a time, one gets into the nest, swims up behind the male and eventually lays a hand on his back. At first he goes on calling, then suddenly he turns and seizes the female. I witnessed fights between males several times; a pair of fighters can be lifted up together, moved, and examined.

Unlaid eggs are numerous and very small, about 1.5mm in diameter. The "animal" pole is black and the "vegetal" one cream. The spawn forms a rounded sheet on top of the water inside the nest, not quite reaching the edges and it shows a certain pattern in the distribution of the eggs. It is exposed to some hazards, it may dry out if the water level decreases rapidly; or again, it may be floated off by flooding. The embryos are black and before hatching they assume an upright position inside the egg membranes. At hatching there is a cement organ and soon after they develop gills. Largest tadpole: length of body 30-37mm; width about 17mm; length of tail 55-74mm; height approximately 17mm, before metamorphosis begins.

The most spectacular frog observed was the "Arrow-poison", belonging to the family *Dendrobatidae*. These frogs were used by the Indians to poison their arrow tips before the coming of the white man. These small, but often brightly coloured terrestrial frogs, belong mostly to the genera *Dendrobates* and *Phylllobates*, found in Central and South American forests. We found individuals of some species were abundant in their home range, indicating that the poison equipment is highly effective in protecting its possessors against the usual hazards of jungle existence.

The Indians kill the arrow-poison frog by piercing it with a sharp stick; then it is held above a fire. The heat causes the skin glands to sweat droplets of poison which are scraped into a jar and allowed to ferment. The arrows are dipped into this mixture and dried. When shot into the body of a monkey or bird the poison paralyzes the animal almost instantly, and so the Indians ensure themselves of food. On larger animals or Man, the poison is ineffective in such small amounts. In parts of South America where these frogs do not occur, arrow poisons are concocted from various kinds of plants.

In the genus *Dendrobates* a most interesting way of incubating the young has been observed. After the eggs are laid they are attached to the skin of the male's back and there they eventually hatch, without immersion in water except for such showers of rain as may fall on the males in several weeks, during which he is a walking nursery. The young that I found numbered from four to about twenty, and although their weight is probably negligible even to a frog, their increasing bulk as they grow while clinging stubbornly to his back forces the male to seek larger holes or the refuge of large dead leaves on the ground, where he and his family may remain safe. It is said that if the tadpoles happen to be dislodged prematurely from the male's back they are entirely helpless in the water. But at a rather advanced stage they are ready to leave their parent's protection and when he immerses himself in some suitable water, they swim free and enter upon a life of independence. In a year's time they attain their adult size of between 1 and 2 inches, and then are ready to start raising next year's family.

For those who may be interested the chemical formula of the poison arrows secretion are $C_{34} H_{46} O_{10}$ Bufotalin, as well as bufonin, a weaker poison, and Bufogin, both with slightly different formulae. The action of these poisons is similar to that of digitalis, since it increases the tonicity of the heart up to the point of stopping the heartbeat, and produces weakened breathing, nausea, and muscular paralysis. A serious inflammation can be caused by toad poisons brought into contact with the eyes of higher vertebrates. While the mucous glands secrete with only the stimulus of dryness, the granular glands require pressure or injury of the toad to cause any appreciable amount of secretion. On several occasions my hands

broke out in a red rash after collecting specimens of arrow poison frogs.

Other interesting Anura collected included the South American *Bufo typhonius* which lives on the forest floor, scarcely standing out from its surrounding of fallen leaves; *Hyla leucophyllata*, one of the most charming representatives of the Brazilian tree frogs, its colours in life being chocolate-brown and silvery white. *Phyllomedusa rohdei* with its gaily coloured orange flanks and the Marsupial frog, *Gastrotheca ovifera*. This has a true dermal pouch for the eggs, which are quite numerous and cause the female's dorsal region to appear very swollen in the last stages before hatching. The scientist who named this genus in 1843 evidently confused the position of the pouch, for "gastrotheca" means literally "stomach pouch", while these frogs have the pouch definitely confined to the back. The Amazonian horned frog, (*Ceratophrys cornuta*), is a large specimen which can reach 8 inches in length and be nearly as wide. One of the tropical toads, *Bufo marinus*, was quite common on the forest trails at night and early morning as they sat waiting to catch insects etc. for food.

The last time that I saw *Bufo marinus* in the wild was in Australia in 1963, where it was originally introduced to North Queensland from South America to make war on the cane beetle, but since its introduction it has assumed pest proportions. As so often happens, Man has gone decidedly too far; certainly, the toads kill the vermin, but they also kill the harmless native fauna, whose continued existence is thus being seriously threatened.

W. H. TIMMIS

SUBSCRIPTIONS

CHESTER ZOO NEWS is at present being produced every month and readers who would like to receive the magazine regularly can obtain subscription forms at the Souvenir Shops. The current charge for 12 issues, including postage, is £2.70 per year. Completed forms can be handed in to the Souvenir Shops or posted to Chester Zoo News, Chester Zoo, Chester.

**The following notice is displayed on several boards in the grounds
Please comply with it at all times**

FEEDING OF ANIMALS AND BIRDS

IT IS AN OFFENCE for any member of the public to offer food of any description to any Animal or Bird in Chester Zoo.

This regulation is made for the sake of the health of the Animals and Birds. Since the NO FEEDING rule was introduced, the number of deaths has dropped appreciably and sickness due to wrong feeding has been virtually eliminated.

What you may be offering to an animal may only be a sweet or an inoffensive piece of bread, but it can mean a death sentence for the animal. For example, a cough drop, which may relieve your cough, can cause instant death to many Animals and Birds in the Zoo.

You must not lose sight of the fact that you are only one of over a million visitors who visit the Zoo annually. If for instance an elephant had one bun from only one tenth of a day's visitors during the summer, it would eat between three and four thousand. You can guess the result.

We realise what a temptation it is for visitors, particularly children, to feed our Animals and Birds and this is why we invite members of the public to be present at the official feeding times.

This is a polite warning to you, asking you not to feed the animals. If you ignore it, the Keepers are authorised to ask you to leave the Gardens.

If you really love Animals and Birds, you will appreciate the wisdom of the ruling—No feeding by members of the public.

**PLEASE HELP US TO KEEP OUR COLLECTION OF
ANIMALS NOT ONLY ALIVE BUT IN FIRST CLASS
CONDITION**

