

4

REPTILES

Snakes

THERE is, I am firmly convinced, more absolute nonsense generally believed about Snakes than any other group of the Animal Kingdom. To most people they are slimy, deadly creatures that must be killed on sight, but the naturalist knows that out of the 2,000 odd species known to science, less than 200 have sufficient poison to render them harmful to a healthy adult human, and that a Snake in good condition is perfectly dry to the touch. Contrary to popular belief, the long forked tongues of these Reptiles, which they continually flick in and out if in health, are not "fangs" or "stings", nor are they organs with which to spit, neither can their owners be killed only at sunset, and so on and so on. Why this dread of Snakes exists is by no means clear as it has been proved that no human is born with it—it definitely seems a trait that is inherited in later life, probably via some foolish parent.

Often when lecturing I have shown my audience a beautiful and perfectly tame Indian Python and have been startled by the "ughs" and exclamations of disgust that have greeted it. My immediate reaction is always to ask why they so obviously fear it—and never once have I had a logical answer! My question as to whether anyone would like to hold it produced a near panic, but after speaking a few sentences of what I consider to be common sense, one or two of the bolder spirits offer to touch it and I am always amused by their faces which, at this point switch from showing apprehension to amazement at feeling the firm smooth body of the beautiful creature I am holding out to them. I must have converted several hundred "Snake haters" in this way.

So very many species of Snakes are now imported into this country to be offered for sale as pets that it would be both difficult and unsatisfactory to describe them all in one general section, so I propose to deal first with the group that in my opinion are the most suitable to keep.

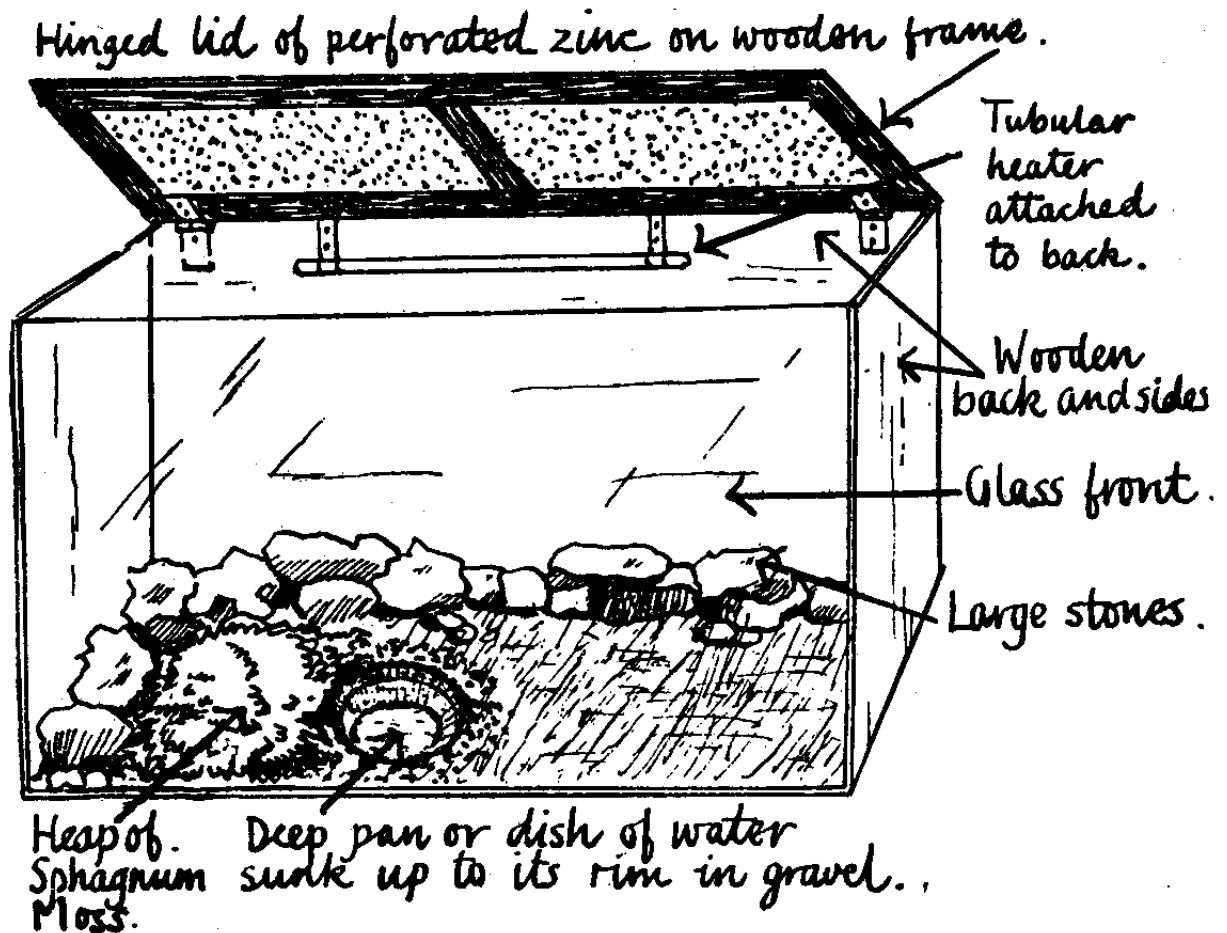
Pythons

There are twelve species of these, the largest of all Snakes, although only the common African and Indian species, the Royal and the Reticulated, are likely to be obtained from a dealer. The group is entirely non-poisonous and relies upon killing its prey by throwing two or three coils round its victim's body, prior to exerting terrific muscular power which has fatal results in a matter of seconds. Like most Snakes, Pythons are reproduced through the medium of the egg—and in this direction lies one of the great mysteries of Nature.

The female lays a clutch of about fifty soft shelled eggs, each about the size of a hen's egg, and about them she coils her body, partly to guard them, and this in itself is unusual as Snakes are normally notoriously bad mothers, but primarily to hatch them, wherein lies the mystery. All Snakes are cold blooded, but alone among them the Pythons are capable, when incubating, of generating a body temperature of some 80°F. which is maintained for the six to eight weeks that the eggs require to hatch in. Just how this is accomplished no one really knows—it is yet another of Nature's countless inexplicable mysteries. The Reticulated Python of Malaya is generally regarded as the World's largest Snake, one specimen having attained a record length of thirty-three feet.

HOW TO OBTAIN A PYTHON

These interesting creatures can be obtained at any time of the year from any of the dealers mentioned at the back of this book, although the prices asked for them vary enormously. The average price for the common Indian Python, for example, is about fifty shillings for every foot of his length, but double this amount might be charged for a really tame specimen or considerably less for one that over a long period had tried to bite all and sundry and would obviously never be suitable as a pet. Incidentally, through some freak of nature, the lighter the colour of an Indian Python, the tamer is it likely to be, thus a yellowish specimen might cost three times as much as one that is dark brown, and less pleasing aesthetically in any case. Another Python that makes a good pet is the small Royal from West Africa, or as it is sometimes called, the Ball Python on account of its ability to roll up into a ball when frightened. This habit is soon lost when it becomes tame and the price for a healthy specimen varies between £12 and £15. When choosing a Python, first enquire whether it is tame (i.e. handleable), or your first attempt to handle it may result



Vivarium suitable for Snakes or Lizards

in a surprisingly sharp bite, then notice its tongue which should be protruded and withdrawn almost every few seconds. If it protrudes some two inches or so, with the forked ends well separated from each other, the chances are that its owner is in good health, but a tongue whose ends are apparently stuck together, or which is slowly pushed a short distance out of the mouth means something wrong somewhere. This test, by the way, applies to any species of Snakes, as also does the method of placing one on its back (not an easy matter with a large one) and observing the rapidity with which it wriggles over to its normal position. One that remains upside down or very slowly rolls over should be similarly rejected. Don't be put off if a Snake's eyes are milkily opaque—the owner is not blind, but merely about to cast his skin; but more of this later.

HOW TO CARE FOR A PYTHON

A Python makes, on the whole, a good pet. It has no objectionable smell, it is easily tamed, quite intelligent and long lived; but there are two drawbacks about keeping one (a) it will have

to be kept constantly at a temperature of about 75°F. and (b) it will have to be fed on such unlikely items as Pigeons, Rats, Rabbits, etc. Once these latter points are appreciated, however, there are few other difficulties.

First let us deal with housing your strange pet. The most suitable cage is a wood or metal box with a removable glass front and a strip of perforated zinc along the top for ventilation—in short, the type of cage usually known as a vivarium. The construction of one would mean perhaps an afternoon's work for a handy man, or they can be purchased ready made. Naturally one as large as can be housed conveniently must be obtained, although obviously it is unlikely that one of sufficient dimensions to allow its owner to stretch out to its full length will be a possibility. If this is so, don't worry. Except when swimming, few large Snakes stretch themselves out fully, while it is believed that some of the Pythons rarely, if ever, uncoil themselves, so discomfort or cruelty does not enter into the matter. The best heater for a vivarium is the tubular type, fitted with a thermostat, and affixed near the roof to minimize the risk of the inmate burning itself. The floor should be covered with peat moss or small smooth gravel, but sand must be avoided at all costs, as it has a tendency to work under the scales on the underside of a Snake's body, resulting in hard growths that often prove fatal. The provision of a large dish or jar of water is essential, as in my experience Pythons are thirsty creatures, while a fairly small specimen will spend much of its time completely immersed in the water with only its nose above the surface for breathing.

Whether or not you will be able to keep a Python will to some extent depend on whether you belong to the twentieth century happy majority who enjoy the benefits of electricity, as this medium is by far and away the best method of heating vivaria—in my boyhood days, when, although we had electricity, I lacked the money with which to buy heaters, I experimented extensively with devices depending on paraffin and the like, but on the whole, results were distinctly discouraging. A well-made vivarium, tastefully arranged with pebbles, pieces of rough bark, a pool and so on can be quite a respectable drawing room "ornament" in its own right, although of course, its position in the house depends upon the whereabouts of an electric plug.

Like most Reptiles, Pythons like a bright sunny aspect, or they will eventually die through refusing to eat—and for this reason are best kept near a window or a light that is normally kept on for long periods. Some people fix a small strip light in the roof

of the vivarium for this purpose but I disagree with it as the Snakes have no eyelids and the discomfort suffered in this way must be considerable. It is not necessary to provide any light at night, and I have found that during warm summer weather it is sometimes possible to dispense with heating altogether—sometimes for weeks on end, which is a considerable saving financially, although, of course, such prolonged fine weather is rare in this country.

Feeding a Python does in some cases present difficulties, as they feed only on small Mammals and Birds, which often have to be given alive or they will be refused, although quite a lot of Snakes will accept immobile food. If the idea of killing, say, a Pigeon prior to offering it to your pet does not appeal to you (as it would not to me) you need have no qualms about giving it to it alive, as he will make a much quicker and more humane job of disposing of it than you will, while, should he not be quite ready for a meal the Bird will evince no fear but will probably perch on the scaly body and preen itself. Do *not* tell your friends that you feed your pet on living animals, or you will be regarded as some inhuman monster—the bright souls will no doubt conveniently overlook the fact that it is absolutely natural for one creature to prey upon another, whilst those who might persist in their view in this direction should be persuaded to visit a slaughter house, where they will be so shocked and horrified that I guarantee you and your Python will be left alone in future.

Normally a Python will feed only once per week or fortnight (being cold blooded it does not require very much fuel in the form of food to keep its body going) but when the need arises is capable of fasting for a long time; the record in this direction is held by a Common Boa that lived in the Paris Zoo for two years before it condescended to feed. A Python which refuses to feed can usually be tempted to do so by being given a warm bath and the temperature of the vivarium raising ten degrees or so.

Periodically all Snakes have to cast (or slough to use the correct terminology) their skins and when the time for this is imminent the eyes become white and opaque, while the skin adopts a dull rough appearance. Apparently this irritates the owner, who, to allay it, rubs his nose against a stone or tree trunk whereupon the old skin splits at the nose and commences to peel off the whole body in one complete piece, the whole operation taking perhaps two hours or so. Regular sloughing is a sign of serpentine health and in a young specimen at least, should occur about every six weeks, while in all cases the casting

off of the old "clothing" will leave the individual concerned with a good appetite.

It is likely that a recently acquired individual may not at first appreciate being handled, and will have to be gently introduced to human company by being held as frequently as is possible, one hand gently grasping the neck just behind the head, the other holding the body some two-thirds along its length until it ceases to struggle and will of its own accord coil its sinuous body round the arm of its owner in much the same way that it would disport itself round the bough of some forest giant in faraway India. Needless to add, a Snake exceeding some six feet or so is not likely to be tamed in this way.

READ: *Snakes of the World* by R. L. DITMARS.

Boa Constrictors

The Boa Constrictor, or to give it its proper title, the Common Boa, is one of a large group of Central and South American Snakes that are virtually the New World equivalent of the Pythons, the only real difference between the two groups being the fact that the latter reproduce their young through the usual medium of the egg, while the Boas are mainly viviparous, i.e., are born alive. This is one of the most beautiful of all Snakes having a creamy fawn and dove grey as a general ground colour, on which are large markings of rich brown, pink and orange-buff, all of which acts as perfect camouflage against the subdued tints of the dense Amazon jungle which is its native home. The maximum length appears to be about sixteen feet, but for some reason it does not apparently grow to that size in captivity although doing perfectly well otherwise, and most imported specimens are some four to six feet in length.

Periodically, large numbers of very young specimens each no more than a foot in length and only recently hatched, are imported and subsequently offered for sale at extremely low prices. My advice is to avoid these as though they were Rattlesnakes, as at this early age and away from their natural environment, their expectation of life is very poor indeed. Some might survive and do quite well, but they will be a very small proportion. When buying Reptiles of almost any species it is useful to remember that on the whole, the younger the specimen, the less chance it has of surviving to maturity—this is not an insinuation that you will prove incompetent in coping with its needs, it is merely

because very young "hatchlings" do best in the environment Nature chose for them.

HOW TO OBTAIN A BOA CONSTRICTOR

Like Pythons they are almost always obtainable and at a comparable price.

HOW TO CARE FOR A BOA CONSTRICTOR

As this is really the American equivalent of a Python there is basically no different treatment required for it and the same type of vivarium, food and temperature will serve its needs perfectly well.

Grass Snakes

These are very easily obtained, make good pets and do not require the high temperatures that most foreign Snakes need. The main drawback is their power of exuding a strong smelling secretion which may strongly irritate delicate skins, but this is voided only in fright or anger and once a newly caught or purchased specimen has been handled a few times it will cease these protective measures for all time.

DAILY LIFE

The Grass Snake is found practically all over Europe, reaching its largest size in the Mediterranean area where lengths of six feet are not unknown, but in Great Britain it is rather restricted to damp low-lying localities and averages some two to three feet in length—the record for this country being an exceptional example that measured a few inches under five feet and was without doubt a female, as the male Snake is usually the smaller of the two sexes. The main colour is dull olive green, with small black dots spaced irregularly along the entire length of the body, and a yellow "collar" edged with black on the side farthest from the head easily distinguishes this species from either of the two others likely to be found wild in this country, while under the body, dull yellow and black scales form a fairly regular "chequer" pattern.

During the late spring or early summer the female lays a clutch of some twenty to thirty soft shelled white eggs in some convenient pile of compost or farm manure where the constant moist heat hatches them in about six weeks. At first the eggs are about an inch in length but as the embryonic Snakes inside them grow

larger, they increase in size considerably until, when ready for hatching, they are about the size of Pigeon eggs and each touches the others in the clutch, whereupon all stick together in a mass. The young Snakes are perfect miniatures of the parents and precocious at birth, having no need of protection from them.

Fond of water and good swimmers, Grass Snakes catch the bulk of their food (small Frogs) in this element, and will not hesitate to take to it should danger threaten. They are beautiful, harmless creatures and it is most distressing to hear, as one so frequently does, of their being cruelly and senselessly beaten or stoned to death by uncouth louts who would doubtless give them a wide berth were they capable of defending themselves. Like all British Reptiles, they hibernate during the winter.

HOW TO OBTAIN A GRASS SNAKE

Thousands, literally, are offered for sale every spring in pet stores all over the country and I have even seen them sold from market stalls. These are mainly imported from Italy, and may differ in minor ways from those that are native to Great Britain, but in all cases the price varies between two and five shillings each according to size. It is far more satisfying, however, to collect one's own Snakes, say from some low-lying marshy meadow on the sort of hot day when these Reptiles love to bask—walking cautiously in stout waterproof boots and armed with a large close-meshed net on a long stick, ready to scoop up any that may be seen lying curled round some tuft of grass before they are able to glide in to the comparative safety of the water.

HOW TO CARE FOR A GRASS SNAKE

Generally speaking the basic type of vivarium will house almost any kind of Snake so no housing difficulties should arise where this species is concerned—I have even kept them in ordinary glass aquariums covered with perforated zinc and on second thoughts I would even go so far as to suggest that this is the best method of keeping them owing to the ease with which these watertight receptacles can be kept damp—which latter state is essential to these creatures.

The best material covering the bottom of the Grass Snake cage is sphagnum moss (obtainable from any florist) which must be kept as damp as possible; in fact, a permanent depth of half an inch or so of water in the bottom will give more comfort than otherwise to the inmate who will also make use of a deep dish of water for swimming in, especially in hot weather. Feeding

presents a slight problem as almost the only food they will accept is small live Frogs, which renders them rather difficult to cater for if one is a town dweller, although some of the larger pet stores retail these Amphibians, presumably as snake fodder, at most times of the year. If your Grass Snake's vivarium is in a darkish corner or a room which does not receive much sunlight, it is extremely unlikely that he will eat, so due consideration will have to be given in this direction to the siting of his home.

In a wild state, Grass Snakes hibernate from late October until April, but it is quite possible to keep them awake all the year round in captivity by keeping them at ordinary room temperature and providing their natural food, which, if also kept indoors, will likewise refrain from hibernating. Some people, maintaining rightly that Nature knows best, are tempted to place their pets in a small hay or leaf filled box which is then buried in some compost heap and leave them to hibernate therein until dug up again the following spring. However, unfortunately, a captive Grass Snake which embarks on the winter sleep almost invariably dies before its completion.

OTHER SNAKES SUITABLE AS PETS

As I mentioned previously a great many species of Snakes are available as pets from a number of sources, and here I propose to give brief details on a few of those that are most suitable for the average enthusiast.

King Snake

An American species, of which there are several sub-varieties, coloured mainly black and plentifully spotted with white or yellow markings. Averaging a length of some six feet it will eat Mice quite readily in captivity, but in the wild frequently kills and eats other Snakes, even poisonous ones. Needs a little heat and costs from £8 to £10.

Mole Snake

A South African about the same size and price as the King Snake. It receives its name from its burrowing habits and after centuries of leading this mode of life has developed a very blunt, rounded head and smooth cylindrical body which is coloured a rich bronze although individual specimens vary considerably.

This Snake feeds upon Mice and Rats so voraciously that it is officially protected by the South African Government who recognise it as a valuable "vermin" destroyer. Provided its vivarium contains several inches of peat moss into which it can burrow, it does quite well in captivity, although it must be borne in mind that it is a very powerful creature that is inclined to bite, non-poisonously, of course, if unused to being handled.

Aesculapian Snake

A uniformly light brown species (from Southern Europe) about four feet in length, and coloured pale yellow underneath, with a glossy appearance generally that makes it look as though it has been varnished.

Some people do not consider that this Snake thrives in captivity, but in our experience they feed quite freely on Mice which they first constrict, and become very tame. The Aesculapian Snake is particularly interesting as it was the symbol of Aesculapius the great physician of Ancient Rome, and is the species depicted on the insignia of the British Medical Association. Cost about 30/-.

Diced Water Snake

Alternatively known as the Tesselated Snake. This is imported in large numbers from Italy every spring and is often sold as the Grass Snake, a species it in no way resembles, being grey in colour and marked with a series of black chequered spots, hence one of its popular names. In a damp vivarium it will live for a good many years, feeding upon small Frogs, but it must be borne in mind that a new specimen, unused to being handled, will void the secretion that is the Grass Snake's first line of defence. It has a curious habit of flattening its body and costs about 3/- to 5/-.

Four Lined Snake

Despite its drab colouration—light brown with four longitudinal dark lines—this Southern European species is deservedly popular as a pet as it feeds well (Mice) and becomes very tame, rarely attempting to bite even when newly purchased. It does best with a little heat and costs from £3 to £5.

From time to time poisonous Snakes appear on the market but I certainly do not advise them for the amateur, they are best left for Zoological Gardens, and experienced herpetologists (Reptile specialists) to deal with, but oddly enough there appear to be no restrictions on the sale of them—anyone could obtain a specimen if he so desired.

Every spring large numbers of Whip Snakes from Southern Europe are offered for sale at about 10/6 each. DO NOT buy them. They almost invariably refuse all food in captivity and soon die, which means that hundreds of these Reptiles are annually taken from their native home simply to spend their last months in misery. If everyone were to co-operate in this direction this unnecessary waste of life would soon cease.

Lizards

The majority of the vast number of Lizards that are known to Science do not, in my opinion, make good subjects for the average pet keeper, but the comparatively few exceptions to the rule are well worth keeping and will prove of tremendous interest to their owner, provided he bears in mind the golden rule of Lizard keeping—warmth.

One of the hardier varieties, however, is the Sheltopusik.

Sheltopusiks

DAILY LIFE

This stange Lizard has, through the ages, gradually lost its legs, with the result that it now bears a very Snake-like appearance, although two minute clawlike appendages are visible where the hind limbs once were, and are their sole remains, a similar characteristic to that of the Python. The average length is some two to three feet and the colour varies between golden and dark brown while the head is usually grey in colour, and down each side of the body is a deep lateral crease. Like many Lizards, this species has the power of parting with its tail, should any enemy seize it by that part of the body, and this habit has caused it to be dubbed by the alternative, though misleading name, of Glass (meaning brittle) Snake. The question of whether or not a Lizard that has lost its tail can grown a new one causes quite a lot of bewilderment to armchair naturalists as apparently some books that touch upon the subject say that it can, while others declare that it cannot. Personally I have kept many varieties

of Lizards from all over the World, both with and without tails, and in my experience they will not grow new ones; short rounded stumps, perhaps, but never such perfect ones as the originals.

The Sheltopusik, a native of Central Europe, is a most voracious fellow, and in the wild is reputed to kill and eat the poisonous Viper; this may or may not be true, but it certainly eats Mice, Lizards, Frogs, wounded Birds and eggs, while here in the Zoo a specimen that we placed on arrival in our Tropical House soon developed an unfortunate liking for the Green Lizards that it found there. Its method of capture was invariably to crawl silently up to its unsuspecting victim which it seized across the body, in its mouth, for all the world like a Terrier catching a Rat, before killing and jerkily gulping it down.

Unlike its close relative the Slow Worm, this Reptile produces its young through the medium of the egg, but as they rarely, if ever, breed in captivity, little is known of their habits in this direction.

HOW TO OBTAIN A SHELTOPUSIK

A rather limited number of these most interesting Reptiles are imported annually, and there seems to be quite a big demand for them. At least one of the importers mentioned on page 93, has them for sale regularly, but it is advisable to place an order for a specimen as soon as you have decided to keep one and in this way you might be lucky when the next consignment comes in. They cost around 30/- each.

HOW TO CARE FOR A SHELTOPUSIK

As with most Reptiles the vivarium is the best medium for keeping a Sheltopusik. One might also keep one to advantage loose in a greenhouse, where it would consume quantities of Insect pests, although any young plants in boxes on the ground will probably be flattened as its long person crawls over them.

A pile of dried sphagnum moss for hiding under is appreciated, and the high temperature required for many tropical Lizards is quite unnecessary in the case of this species, which requires only that of an ordinary living room. Feeding presents few problems if you offer Snails, Slugs, Worms and an occasional Mouse, but remember that, being cold-blooded, your pet will require food only about twice a week. A dish of clean water must always be available.

Sheltopusiks can become very tame and appear to enjoy being handled, rarely, if indeed, ever, attempting to bite even when

freshly imported. Great care must be taken, however, not to grasp the tail or the chances are that you will find this part of your pet's anatomy breaking off in your hand.

Chameleons

These curious Lizards are fairly easy to keep and in a great many ways, e.g., their colour changing powers, their methods of feeding, and their mode of locomotion, are most interesting, but one must bear in mind that out of the entire Lizard family, these are the shortest lived, and rarely survive more than a few months in captivity.

DAILY LIFE

The word Chameleon is a combination of Camel and Lion owing partly to their rounded backs (reminiscent of the hump of the former animal) and partly to the casques and exaggerated ear flaps that many sub-species boast, and which might be said to resemble the mane of the King of Beasts if one stretches the imagination (almost) to breaking point. Actually there are about fifty varieties of this grotesque creature (many authorities say it should be placed in a separate class from the true Lizards), most of which are found in Africa and the island of Madagascar, although one variety extends its range into India and another to Southern Spain. Despite various minor superficial differences, such as number of "horns" and the like, that donate status as sub-species, all Chameleons follow a general body pattern which rather resembles a somewhat stylised drawing of a Mouse, together with eyes that can be moved independently of each other; feet perfectly adapted for grasping (a bifurcated foot with two toes one side and three on the other), and a prehensile tail. Needless to say, however, their prime claim to fame is their colour changing propensity which, though certainly most remarkable, have nevertheless been grossly exaggerated. A specimen that will change from bright blue to scarlet when placed on a piece of cloth of that colour, or purple to gold, has never existed outside the imaginations of the general public, a fraternity ever notorious for expecting animals to do the impossible, and most people, when shown one of these creatures for the first time, are a little disappointed to find that the range of shades he can turn into is limited to three—yellow, green, or brown, or perhaps a mixture of two or all of these, while some can produce quite a large number of black dots also. Contrary to popular

belief they do not as a rule change colour in a matter of seconds, but might take well over a minute to do so, and in any case a variety of circumstances such as anger, hunger, or the temperature decide upon the speed at which the change over takes place. On the whole, and incredible as it may sound, no other book seems to have mentioned this, the brighter the light the darker they are and vice-versa. Whenever I take one to a lecture it is invariably a very pale yellow when first brought out of its travelling box, but soon begins to darken as the discourse on its life and habits gets under way; while one placed out of doors on a really sunny day in summer soon turns almost jet black. When sleeping at night (they are strictly diurnal) they are usually yellowish or almost white. Undoubtedly their colour changing abilities are unconscious.

Their methods of feeding are hardly less interesting. The food, which consists mainly of large Flies and other Insects is caught by the adhesive end of the long club-shaped tongue which is flicked out at the victim with almost lightning-like speed. Worms and Spiders are also taken, whilst the largest members of the group (which might easily measure two feet) are alleged to catch and eat Mice when the opportunity arises.

It would appear that each side of a Chameleon's body is capable of working independently of the other. Thus the eyes can look simultaneously "fore and aft" and it is not uncommon to see a specimen with one side of its body coloured differently from the other, while, as the *pièce de résistance* in this direction, it may be mentioned it is possible for it to be asleep on one side and wide awake on the other.

These are among the slowest moving of all Lizards and might take anything up to an hour to move a few yards, walking sedately along with high deliberate steps. Should the Chameleon see a Fly or Beetle crawling along a leaf in front of it, it will immediately stop in mid-stride and poised with one foot raised, will shoot out its long tongue, seize and swallow the victim and then nonchalantly move on again as though nothing had happened. When the animal is teased or annoyed his gait can best be described as a rocking gallop in slow motion.

As he is of many forms of small animal life, the average African is terrified of the harmless Chameleon, regarding it as a harbinger of ill luck, and refrains from touching it at any price, while the white resident in his land, on the other hand, often keeps a couple at large in his living room where they act as living fly catchers. They are unable to swim.

HOW TO OBTAIN A CHAMELEON

7s. 6d. to £1 each, depending upon the size of the specimen, is the average price of one of these Reptiles, which are easily obtained every spring and summer from almost any of the larger pet stores.

HOW TO CARE FOR A CHAMELEON

Before finally deciding to keep one of these most interesting of Reptiles you must bear in mind that it will live only a very short time, a few months being the average length of life in this country. The Common Chameleon, the species most frequently offered for sale, is one of the shortest lived, although the Dwarf Chameleon, fairly rarely imported, has been known to live for six years in captivity, but this is exceptional.

Should you still be in favour of making a purchase, the question of housing will next arise, but this is by no means a great problem as they can be kept almost anywhere that is fairly warm. I used to keep one in my bedroom where it spent the night clinging to the electric light switch flex a foot or so above my head, but I realise that other people, perhaps less eccentric than me, may prefer to house theirs in a vivarium, covered aquarium tank, or roaming about loose in a greenhouse. This latter method is probably the best as the creature can find its own food in something approaching natural surroundings which will give it something to do and possibly prolong its short life. It will not, by the way, damage plants. Here at the Ashover Zoo we always keep our Chameleons roaming about loose in the heavily planted Tropical House which is really a converted greenhouse.

If a vivarium or tank is used, the inclusion of a few "twiggy" sticks or twigs, or better still a small narrow-necked pot of some kind of broad-leaved plant cutting in water (Laurel is ideal) is absolutely essential, as these Lizards are strictly arboreal, rarely, if ever, coming to the ground owing to the conformation of the feet. Consequently the type of floor covering is practically immaterial.

If their vivarium is in a position where it receives some sunlight your pets will prove voracious feeders, consuming Flies, Beetles, Spiders, Caterpillars and the like with avidity, while they do not usually drink in the normal way but require moisture, in the form of tepid water, which is best administered by being sprayed over them by means of a "Flit" gun or similar device. One word of warning, however, about the feeding of almost any newly acquired Lizard. It is unused both to you and its surroundings,

and therefore is extremely unlikely to eat any food proffered before it while you are staring at it a yard or so away waiting to watch how it does so. Leave it in a sunny or light position with whatever you hope it will eat and the chances are good that it will soon do so.

It is very unlikely that your Chameleons will breed during their brief lives with you, but nevertheless their habits in this direction are worthy of mention here. Most lay very small (numerically) clutches of eggs—often only one or two which are buried in earth or sand, for the warmth of the sun's rays to hatch, but the Dwarf Chameleon of South Africa is one of the few which produce their young alive at birth, and these are perfect miniature editions of the adults.

When handled for the first time a Chameleon may hiss his disapproval or may even try to bite, but this latter show of defiance is unusual and was present in only one of the many specimens I have owned. On the whole they make interesting and very gentle pets, and I can recommend them to the enthusiast who is making his debut into the Lizard world, as they are not such reluctant feeders and are much easier to handle than most of the other species of comparable size. But one point that he must always bear in mind is that one day he will notice that his charge has undergone a sudden colour change, is much lighter and more colourful than normal, and will be dead in an hour.

Monitors

Monitors become very tame in captivity and will live a long time, but it must be understood that they require a high degree of warmth and, until used to their owners, are capable of inflicting painful wounds with teeth, claws and blows from the tail. Once one knows its owner, however, it will feed from the hand, permit itself to be handled freely, and even behave perfectly if let out for a run in the living room.

DAILY LIFE

These are the largest of all the Lizards, although most of the score or so species fall far short of the dimensions of the giant of the clan, the huge Komodo Dragon which might attain a length of twelve feet and which was discovered only during this century. Generally speaking they are all of more or less the same physical pattern (almost the stylised conventional Lizard shape) and are mainly carnivorous in diet, feeding mostly on small Mammals,

injured Birds, Lizards and eggs. The Nile Monitor, found over much of Africa, is so adept at digging up and eating Crocodile eggs that it is protected by a grateful native population.

Monitors are found in the warmer parts of Africa, Southern-Asia and Australasia, but are absent from the Americas, their place here being taken by the Iguanas. Like most wild creatures they are harmless to the human who leaves them to go their way, but if interfered with or attacked they will justly defend themselves, usually to good purpose, as an angry Monitor is a formidable proposition. Many species are good tree and rock climbers, while all are excellent swimmers and spend a great deal of their time in water in oppressively hot weather, or take to it as a final refuge. There are many "explanations" of the derivation of the word "Monitor", one of the most likely of which is that it comes from the Swahili (lingua franca of Africa) "Mamba", meaning "covered with scales".

HOW TO OBTAIN A MONITOR

Importations of (perhaps fortunately) small specimens of many species occur from time to time throughout the year, and the would-be owner of one can usually obtain what he wants within a few days. The species most frequently offered are the Lace, Nile, Golden and Gould's, and youngsters of up to a foot in length cost about five pounds. Those up to three feet might cost three times as much as this, but the discrepancy means a specimen that has a greater metabolism and correspondingly greater chance of reaching a ripe old age than a youngster not long out of the egg. Tame specimens naturally cost more than those which are not, and in any case I do *not* recommend one of the latter gentry for the novice.

HOW TO CARE FOR A MONITOR

Once again that hardy perennial, the vivarium, is the best residence for the species under discussion, and in this case should have a floor covering of gravel or smooth pebbles and a pan of water sunk to the level of its rim at one end, in which the denizen will, probably, spend much time. A temperature of up to say 90° will cause a Monitor no discomfort, and generally speaking the warmer its surroundings, the more active and hearty a feeder is any Lizard. Food should be offered about three times a week, and should consist of raw meat cut into smallish pieces, Mice (which can be given dead), eggs, and, in some cases, cut up fruit will be greedily taken. A Monitor which refuses to eat

can often be induced to do so by being given a warm bath and having the temperature of the vivarium raised slightly.

For some reason these Lizards appear to cast their skins more frequently than other groups and during the sloughing period usually refuse all food, while the old dead skin peels off in large irregular patches—not in one piece as a Snake's would.

Some little care is required in handling Monitors, even when tame, as their sharp claws can inflict surprisingly deep wounds, although this is probably an unconscious act due to trying to grasp whatever is closest to them in order to feel secure, which knowledge, however, does not lessen the resultant pain one whit. I will always bear on my left arm the scars implanted in this way by a five foot Double Banded Monitor that was so tame it would feed from the hand. When handling a specimen of up to about three feet in length, and whose temperament you are not sure about, grasp it firmly round the neck with the left hand and press the tail between your right elbow and the side of your body, while your right hand should be under your pet to support the weight of his body. In the cases of nine specimens out of ten it will be a matter of days only before they are used to being picked up and consequently may be handled in a more conventional fashion. This creature's first line of defence is its tail, which, when angry, it lashes from side to side like a whip, hissing loudly the while, and which is capable of delivering quite a severe slash across one's ankles or calves, but the majority of the specimens offered as pets are too small to cause any damage in this direction.

As previously mentioned they can be allowed a certain amount of house liberty when tame, but not in a room containing a suite of furniture of any consequence, owing to their love of climbing and sharp claws. On warm sunny days it is a good plan to let your pet enjoy the benefits of natural sunshine by providing it with a pen or run made from strong wire netting stapled around and overhanging four wooden uprights, situated in a part of the garden that is not shaded from the sun, and in this way it will lie basking in its favourite element for hours. During the winter it is an excellent plan to invest in a small infra-red lamp which can be directed on to your Monitor for short regular periods with great advantage to him—in fact this is beneficial for practically any Mammal, Bird or Reptile in dull sunless weather.

Skinks

These rather oddly shaped Lizards do very well in captivity

and are present in a great variety of sizes and colours, although most of them are of generally sluggish demeanour and are voted "uninteresting" by some people—obviously non-naturalists, as every living thing is interesting.

DAILY LIFE

There are well over 300 different species of these strange burrowing Lizards which are found over a wide area of the world, but mainly in Africa and Australia. Like the Sheltopusik they have cylindrical bodies well adapted for burrowing through sand or loose earth, but unlike that species they still retain their limbs, though it is obvious to even the most casual observer that these puny members are not in proportion to the robust conformation of the rest of the body, and that they are in the process of disappearing over the course of the centuries. Most are omnivorous in diet, feeding upon Insects, Worms, smaller Lizards, Snails and fallen fruit, while an Algerian Skink that I had, developed a curious liking for small pebbles, but this is exceptional and was possibly to relieve the irritations of internal parasites.

Skinks, which vary enormously in colour and size according to their species, are mainly egg layers, although one notable exception is the Stump Tailed variety from Australia which rather miraculously produces twins whose combined weight almost seems to equal that of the mother.

In bygone days these creatures were prized greatly for their "medicinal" properties, and many Palestinian varieties were caught by the Romans (this once was part of their Empire, of course), killed, dried in the sun, and shipped to their native land. Here the bodies were regarded, when crushed to powder, as a panacea for all ailments from blindness to rheumatism, and I often wonder how many sufferers were relieved of their sufferings for ever by being made to eat a long defunct Skink.

HOW TO OBTAIN A SKINK

The Algerian, Occilated and Orange-flanked from Africa are usually obtainable in spring and summer at a cost of about 12s. 6d. each. Our winter is the best time to obtain the Australian ones (which are much larger on the whole) and these are much more expensive. The Blue Tongued and Stump Tailed varieties, those most frequently offered, cost at least £5 each. The first is the most attractive and the latter the most grotesque; I must confess that it is my favourite, so I will give a brief description of it. About a foot in length, it has a broad round stump of a tail

from which it derives its popular name, and is covered with rough, slightly rounded brown scales from which it gets an alternative title of "Shingleback". The head is broad, flat and triangular and the gape of the mouth gives it an apparently whimsical expression. Some people when they see this creature for the first time, apparently quite seriously think that it has a head at each end of the body, an incredible piece of "observation" that leaves any intelligent person speechless.

HOW TO CARE FOR A SKINK

First obtain your vivarium, then fill the bottom to a depth of several inches with coarse sand or fine gravel in which the inhabitant can burrow in the way that Nature intended it. Branches are unnecessary, but a pan of water should be provided as, strange as it may sound, many species are tolerably good swimmers despite their puny limbs. Coming as they do from mainly desert areas Skinks require a reasonably high degree of heat, and will often leave their underground dwellings to lie basking in the welcome warmth of a heater or infra red lamp.

Finely chopped raw meat, and fruit similarly treated are eaten by captive Skinks but the diet that seems to appeal most to them is mealworms—the larval form of a small Beetle obtainable from the larger pet stores—which they will snap up with great avidity.

Provided we bear in mind their heat and burrowing requirements they are very easily kept, and will usually permit themselves to be handled freely.

Other species of Lizards usually obtainable are:

The Horned Toad from the South Western United States, which is really a grotesque "flattened" Lizard and wonderfully camouflaged to resemble a small rough stone. Over the eyes are two small "horns" from which it is able to "squirt" a blood-like fluid some considerable distance when frightened or annoyed—at least that is what practically every natural history work which mentions it declares; but in my personal experience and that of many other practical naturalists, it apparently cannot do any such thing under any provocation.

Requires a fairly high temperature and a diet of Insects. Cost about 30/-.

The Green Lizard is a well known species, imported each spring in hundreds from France, although its range extends eastwards as far as Persia. Despite the numbers sold it is not a

good subject for an ordinary vivarium, but in a greenhouse a small number make a beautiful and useful show as their emerald bodies flash in pursuit of Flies and other undesirable Insects. The average length is some six to eight inches and the colour bright grass green with the underside clear yellow. The males are easily distinguished from the females by a touch of turquoise at the throat and cheeks.

Very easily obtained and cost about 48/- per doz.

The Eyed Lizard belongs to the same group as the Green, but is much longer (an exceptional specimen may measure up to two feet) and is beautifully coloured mainly in golden green with a line of deep blue spots (eyes) down each side of the flanks. The food consists of almost any form of small Invertebrate life, and the expectation of life in captivity is good either in a large vivarium or greenhouse. It can, however, give a surprisingly severe bite, and I have personally never known a specimen which would willingly allow itself to be handled. A native of Southern Europe valued at 15/- to £1 each.

The Sand Lizard is a fairly rare British species, found in widely scattered localities, viz., parts of Hampshire and Dorset, around Frensham Ponds in Surrey, and in the neighbourhood of Southport on the Lancashire coast. The male measures some four to five inches in length, and is emerald green in colour, while the cream spotted brown female is an inch or so longer, and generally more robust in build. They are obtainable at a cost of about 20/- per pair in the spring, when they are imported in small numbers from the Continent, and I appeal to readers to acquire them in this way, and not by catching them for themselves in the few parts of this country where they still exist—they are rare enough as it is, so please don't make them any more so.

The Slow Worm is a native of sunny banksides in our own country can be purchased from any pet stores for about 3/6 or collected by oneself—the golden rule being not to seize the tail which may easily come off in one's hand. This species is entirely limbless which gives it a very snake-like appearance, but it is easily identified by its glossy almost "varnished" skin and rich bronze colouration. In fact it closely resembles a piece of animated plastic wire, and there is no other British Reptile with scales of this nature.

Small Worms and Slugs seem to be its favourite food in

captivity, and in a sphagnum littered vivarium (kept very slightly damp) it will live for a long time—fifty four years appears to be the record—at ordinary room temperature, although it should have a little heat from late autumn to early spring as this is the period when it would normally be hibernating. Some people put their Slow Worms into small boxes of hay or leaves in some frost-proof cellar or outhouse about this time so that they may spend the winter in a more or less natural way, which, theoretically sounds a good idea, but the fact remains that a very high proportion of those offered these facilities die before spring arrives.

The young, which are born alive, arrive rather late in the year—sometimes as late as August, are about an inch in length at birth, and usually number up to about a dozen. They have been known to breed in captivity, but such occasions have been rare. Like many Reptiles, the female Slow Worm is larger than the male; the average length of the latter being about eight to ten inches whilst the longest female I ever owned measured fifteen inches.

The Mastigure is a most interesting species imported usually in fair numbers from North Africa, but which is not as popular a pet as anyone who has kept one would expect. Possibly their rather fearsome and heavily armoured appearance may prove a little disconcerting to some people, but they are among the gentlest of all the exotic pets it is possible to obtain and I have never known one to attempt to bite or defend itself in any way; this does not mean to say that it would not do so but merely that I have never come across any instances of it.

The Mastigure measures an average of ten inches or so, and has a generally flattened appearance with a broad, almost triangular head and bowed but surprisingly muscular limbs, the toes of which are armed with short, rounded claws; the general ground colour is greenish brown with a suffusion of either bright yellow or orange on the upper parts and I have noticed that this is greatly brightened and intensified should the creature be exposed to strong sunlight. The most remarkable physical feature, however, is the tail, which covered as it is with rows of short spikes, closely resembles the rind of a pineapple, and is about half the total length of its owner. It plays a vital part in the life of the Mastigure, which normally lives a semi-burrowing existence in the sand of the fringe of the Sahara, by serving the function of a strongly guarded "back door" protruding from the mouth

of the shallow tunnel dug by this species and deterring small predators by means of the short spines. Because this Lizard's nether appendage is so indispensable in its daily life, it is unable to part with it in the way common to many others.

A fairly high degree of heat is required, but the feeding is a simple matter especially in summer, as vegetable matter is all that is required. In my experience the favourite food appears to be dandelion flowers, but their foliage, watercress, lettuce, cabbage, spinach and soft fruits are also eaten with avidity. The floor of the vivarium must be covered with some dry substance.

There are several varieties of these strange Lizards, but the one most frequently imported is the one described above. One peculiarity present in every individual I have ever owned is a great delight in being stroked firmly along the back from head to tail—the movement causing the receiver to behave generally in a way more normally associated with a domestic Cat. Cost about 50/- each.

Alligators

Many hundreds of these creatures are offered for sale as pets in the larger pet stores of this country every year. Many die soon after purchase; partly because some people will persist in buying animals whose requirements they know nothing about, and partly because an unfortunate number of pet store proprietors make no attempt to make enquiries in this direction before selling any of their stock, and apparently "couldn't care less" about what happens to it after it has left their premises.

Those which survive usually grow at such a prodigious rate that they outgrow their quarters in a surprisingly short time, while a few perversely refuse to grow at all and will live for years and feed well without growing more than an inch or so in length. So if you are the average pet enthusiast with limited accommodation let us hope that you are lucky enough to acquire one of these "Peter Pans". One will have gathered, however, from all this that I do not recommend them as pets on the whole.

DAILY LIFE

The reedy margins of rivers, lagoons, creeks and swamps are the natural haunts of the American Alligator, which may on occasions reach a total length of fifteen feet, although such giants are rare today owing to the rate at which the smaller specimens have been hunted over the last century for the sale of their

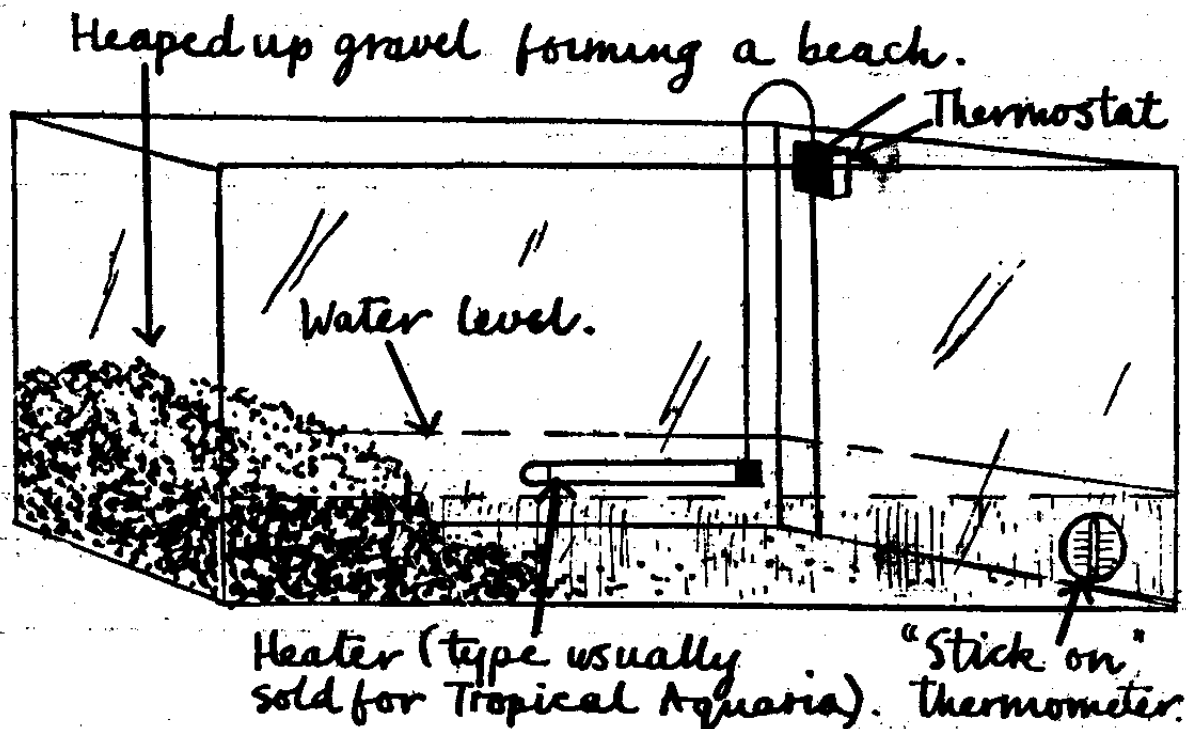
skins which are used in the manufacture of a variety of articles.

The female lays a clutch of fifty or so, six-inch long eggs in a heap of damp rotting vegetation, the moist heat of which hatches them in a few weeks, and from them issue six-inch perfect replicas of the parents.

For the first few years of their lives they grow at the amazing rate of about twelve inches annually, although as they grow older the rate slows down considerably, and several decades may elapse until the full size is reached; there have, incidentally, been authentic cases of odd specimens living for over a century.

In the wild, the food consists mainly of Fish but aquatic Birds, small Mammals, caught swimming or drinking, and Insects are also eaten, while the newly hatched specimens feed mainly on Insects, Frogs and Worms for the first few months of their lives. Should an Alligator be so unfortunate as to lose any of its eighty or so teeth through some accident or injury, it will be only a matter of a few weeks before new ones have grown to replace the missing members.

Most people regard these Reptiles as rather silent ones, but this is far from the truth. When angry or annoyed, they hiss loudly in a most aggressive fashion, while during the breeding season the adult males make a most peculiar sound that closely resembles the roar of a Lion and which they take up in chorus. It is probably some form of challenge or show of defiance.



Suggested tank for young Alligator

When the Spaniards first colonised the Americas some 400 years ago they noticed these huge Reptiles—much commoner then than now—floating in the rivers or basking on the reedy banks and thinking, quite wrongly that they were Lizards, referred to them as “el legarto” meaning “the Lizard”, and from this the present day name has been derived.

These interesting Reptiles are perfectly adapted for an aquatic life, as close examination of any “handleable” specimen will reveal. First it will be noticed that the nostrils and large eyes (they are mainly nocturnal) are situated on top of the head to allow almost complete immersion, with only the organs necessary for seeing and breathing remaining above the surface, while the horizontal slit-like ear can be closed under water, as also can the nostrils. The hind feet are strongly webbed and the powerful tail, being flattened or compressed, serves the purpose of a rudder or steering oar. The whole body is wonderfully camouflaged to resemble a floating log or tree trunk, as the skin closely resembles bark and the colouration varies between dark brown and greenish grey with irregular lines or spots of black.

HOW TO OBTAIN AN ALLIGATOR

Specimens up to a foot in length cost from about 30/- and are obtainable from the larger pet stores throughout the year, but DO NOT answer advertisements offering them during the cold weather; they will be despatched by rail, and as they are more susceptible to low temperatures than any other small Reptiles, may arrive dead (personal experience).

HOW TO CARE FOR AN ALLIGATOR

First consider the following important points: (a) These require a fairly high degree of constant heat and a noticeable drop in the temperature for only a few hours might be sufficient to cause death; (b) it is sometimes difficult in the extreme to induce them to eat, and many young specimens die from starvation in captivity despite the correct temperature and abundant supplies of suitable food, which seems quite unaccountable; and (c) if your Alligator is one of the majority which does feed, the chances are that in a matter of a few years it will outgrow its quarters.

If after that warning you are still determined to keep one, read on and I will try to help you.

In my opinion the best means of accommodating a young Alligator is in an ordinary aquarium containing water to a depth

of a few inches only, with a floor covering of small pebbles which should be arranged at one end to form a sloping beach out of the water, while a small quantity of floating water plants such as *Azolla* may be introduced, but this is mainly for aesthetic reasons as it will not greatly add to the amenities from the inmates' point of view. By means of an ordinary aquarium heater and thermostat (obtainable from any pet stores) the temperature of the water must be kept at about 80°F. and it is most important to remember that at this heat the evaporation rate will be rather high so a good plan would be to get into the habit of "topping up" the water daily.

If the temperature falls very much below 75°F. the chances are that your pet will refuse to eat but at the optimum heat, nine out of ten will greedily accept small pieces of raw meat or Fish, Worms, Tadpoles or Frogs twice or three times a week. The Reptile, if he persists with the hunger strike, should be offered something really tempting (small cheap tropical Fish such as Guppies would be ideal) and the temperature of his tank raised a little. Should this prove unavailing after a week or so I would seriously suggest that the unfortunate creature be painlessly destroyed rather than endure a miserable and lingering death from starvation. I do not advise forcible feeding which some people advocate. An Alligator which feeds frequently grows at a faster rate than one which does so less often, and some people more or less regulate the growth and size of their pets by infrequent or irregular meals and in this way retain their suitability as aquarium pets for much longer than would be normal—a practice which is to me the acme of arrogance by causing discomfort and possible deformation to another living being merely for one's own pleasure. Occasionally an Alligator will feed well but refuse to grow, which may be due to lack of calcium in its diet or some other less obvious reason, although such individuals are rare.

Despite some authorities' assurances that the American Alligator is peacefully disposed towards Man, the race nevertheless produces some admirable and inveterate biters and even some of the smallest are almost impossible to handle, but the majority are quite tractable and can be picked up with impunity in almost any way (with the finger and thumb immediately behind the forelegs is the best method, however) even on the first day of your acquaintance with them.

Should the reader feel I have painted a rather gloomy picture of Alligator keeping, he must bear in mind that the great majority

of the specimens brought into this country are only a few months old and therefore, in common with all Reptiles of a comparable age, have not the stamina of older ones, and as a result the death rate among them is high. They nevertheless make most interesting pets, are easy to feed and live a long time. Incidentally, their intelligence is, for Reptiles, very high, being approximately comparable to that of a domestic Hen.

5

AMPHIBIANS

AN Amphibian is not, as is popularly supposed, an animal which is equally at home in water as it is on dry land (I have actually seen a Hippopotamus described as one) but one which begins life in the former element in the larval form usually termed a Tadpole and finally develops into the adult which usually spends most of its time on land although rarely far from its original habitat.

On the whole they are not very popular as pets, but there are a few exceptions.

Tree Frogs

Of the hundreds of species of Tree Frogs known to science, the one most frequently imported is the Green Tree Frog of Southern Europe, which I can thoroughly recommend as a pet owing to the ease with which it can be kept, its interesting habits and long life in captivity.

DAILY LIFE

This very attractive little creature closely resembles a piece of animated green wax owing to the smooth shiny appearance of the skin, while the underparts bear a surprising likeness to eggshell china, and should anyone feel sceptical as to the accuracy of this latter statement the examination of a specimen will, I think, prove that I have not greatly exaggerated here. Each digit terminates in an adhesive sucker-pad, and it is by this means that the creature is able to walk up or along almost any surface, such as leaves that its weight has bent into the perpendicular, or, in captivity, even the glass front of its vivarium. The average length of the head and body is about one and a quarter inches, with the hind legs measuring about the same and it is by means of these that it is able to make leaps of up to six feet horizontally from a standing jump. I have had personal experiences of their prowess in this direction, the one case that immediately

springs into my mind being the occasion when I was lecturing to a group of people in the Nottinghamshire town of Mansfield; sitting on the palm of my hand which I was holding out at arms length, the better for my audience to see, sat one of these attractive little creatures, facing me. Suddenly and for no apparent reason, it took fright and leaped blindly forward—into my mouth!

The vocal efforts of a group of Tree Frogs have to be heard to be believed, and I well remember one night a year or two ago, walking in the Zoo and suddenly being startled by a sudden outburst of loud throaty “chuckles” which boomed out from the direction of the Tropical House, before stopping as suddenly as it began.

I was completely mystified, and not a little unnerved by this cacophony before it dawned upon me that it was only the dozen or so representatives of this species that we had in there at the time, indulging in a little communal croaking; the volume of sound was amazing when one considered the size of the vocalists.

The food, which consists mainly of small Insects, is caught by the sticky tongue which is attached to the front of the mouth and not to the back as in most other animals—a characteristic of all the Frogs and Toads.

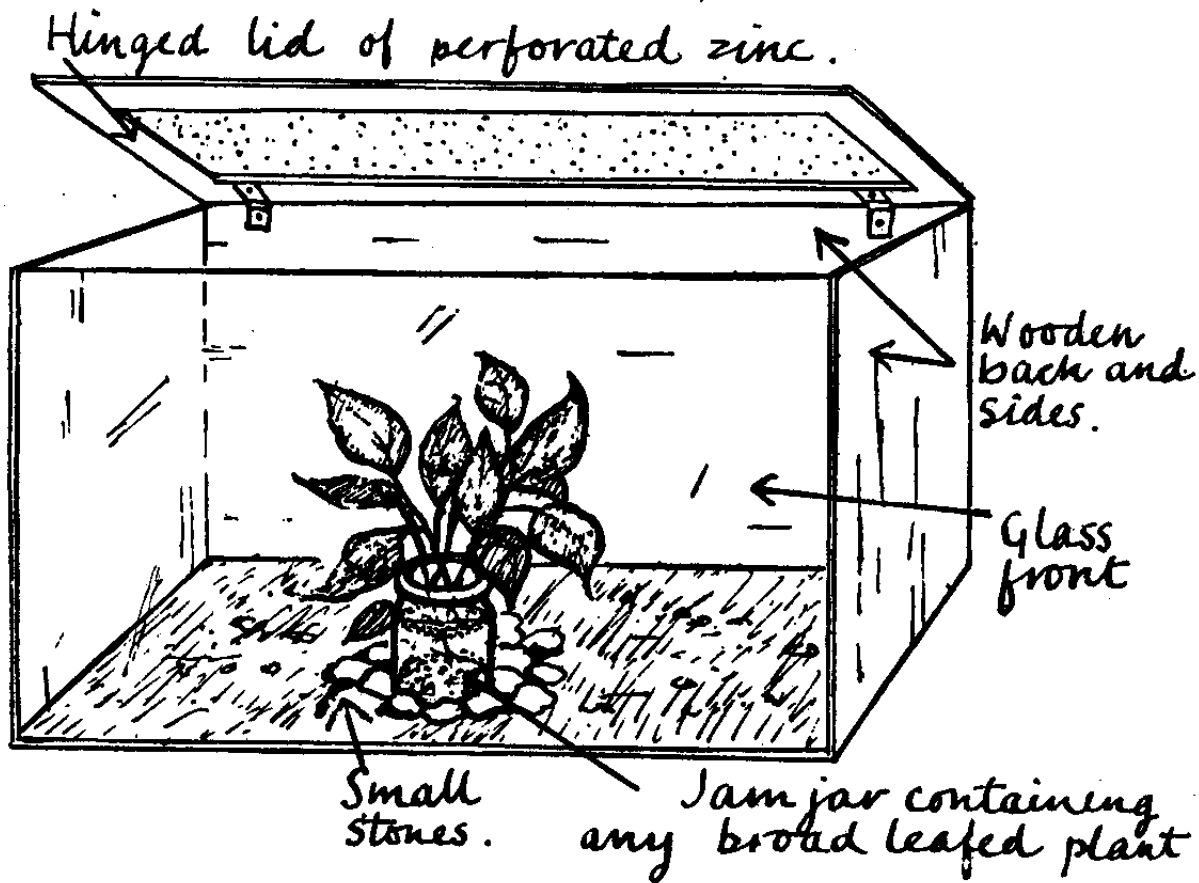
There are two interesting points about Green Tree Frogs I have noted as personal observations, and oddly enough have not seen recorded by anyone else—although I feel certain that many others must have noticed them, as they seem such obvious peculiarities; (a) they appear to be the only Frogs which are able to “crane” or turn their heads, and (b) that some can and some cannot swim. The great majority of course are able to progress quite well in water, but a considerable number have no powers in this direction and will immediately sink and ultimately drown if placed therein.

HOW TO OBTAIN TREE FROGS

12/- per doz. is the usual price charged by the many pet stores that import them in large numbers in the early spring.

HOW TO CARE FOR TREE FROGS

At large in a greenhouse they will do yeoman service in keeping the Insect population down, although supplementary feeding (a small tin lid of gentles or mealworms would be ideal) is advisable at all times and essential during the winter, but not everyone is blessed with such an erection in his garden and in such a case



Vivarium for Tree Frogs.

has to resort to the vivarium as an indoor home for his Tree Frogs. In view of the agility of these creatures this should be as large as possible and must contain a large bunch of sprigs of some large-leaved plant in a small jar of water, among which they will spend most of their time. When renewing the foliage, however, care must be taken to ensure that no Tree Frogs are being thrown away with the old leaves, so wonderfully camouflaged are they. The secret of keeping almost any species of Frogs is to ensure that their quarters are kept damp by means of periodic spraying with water; remember that these Amphibians breathe partly through their skins and may easily die from asphyxiation should they become dry through being in an atmosphere that is not sufficiently moist. Sphagnum moss or small pebbles make the best type of floor covering, and sand or similar substances are most unsuitable owing to the readiness with which it will adhere to the Frogs on their rare visits to the ground.

All manner of small Insects and Spiders are eaten by Tree Frogs, but in my experience Greenfly appear to be their favourites, which should please gardeners who take particular pride in their roses.

Many people say that these interesting creatures are reliable weather prophets and will herald the approach of thundery weather by prolonged croaking, which, for all I know may be perfectly true, the fact that none of the many scores I have owned have been so gifted being merely coincidental. On the whole they make very good pets, provided they are not handled more than is necessary (this irritates their sensitive skins) and are kept at a temperature of some sixty degrees or so during winter; and under similar conditions to those suggested above they have been known to live for up to twelve years.

READ: *The Frog Book* by M. C. Dickenson.

Clawed Frogs

I think I can say without fear of contradiction that these are the easiest to keep of all "unusual pets" requiring only a small tank of water in which they will live for years. A meal of Earthworms twice a week and no special care in winter; while their general habits are most interesting, almost unique in fact, and their movements are buoyant and graceful in the extreme. They are particularly to be recommended for those whose work keeps them away from home for long periods and consequently have little spare time in which to cater for the needs of a more conventional pet.

DAILY LIFE

Clawed Frogs are found mainly in still water in West, Central and South Africa and are remarkable in that normally they are entirely aquatic, leaving the water only in exceptional circumstances, such as the eventuality of it becoming foul, and then finding another watery home as soon as possible. Some four inches long, with hind legs of a similar length, they have curiously flattened bodies and the eyes placed on top of the head. The fore-legs are slender and somewhat puny, but the hind ones are enormously developed with huge webbed feet (it was because of these that the Boers named them *Plathander* meaning "flat hand") and a sharp black claw on each toe from which it derives its popular name. There appear to be two colour varieties, marbled grey and marbled brown with white underparts in both cases, the former being the most frequently imported and therefore one can assume the most common in the wild.

The food consists of aquatic Insects of all kinds, most of which

are caught by means of the "hands" and thence conveyed to the mouth, which is tongueless.

The most remarkable use to which these creatures are put is the testing, in laboratories, for pregnancy in humans. If a female Clawed Frog is injected with urinary fluid from a woman of three weeks pregnancy or over, she will lay infertile eggs within sixteen hours, provided the temperature of her tank is raised immediately after the injection, while a male Frog similarly treated will void sperm cells after a similar period. Much work is done and a great deal of money spent on these experiments which are admittedly interesting in the extreme but ever since I first heard of them I have been asking myself—Why?

In the wild, most of their time is spent on the bottom of the pool—usually with the tips only of the hind feet resting on the mud or gravel and the body at an angle of 45° looking as though balanced in that position by the forelimbs which are held apart and out in the manner more usually associated with a tightrope walker; periodically they make their way to the surface by means of powerful strokes of the hind feet, Thereupon they refill their lungs with air, then slowly sink to the bottom again.

HOW TO OBTAIN A CLAWED FROG

Obtainable mainly from aquarists shops at a cost of from 7s. 6d. to £1 according to size.

HOW TO CARE FOR A CLAWED FROG

As previously mentioned these are very easy to keep, and two medium sized specimens will do very well in a tank 18-in. x 8-in. x 8-in. containing unheated water. A layer of gravel or pebbles may be added for aesthetic reasons, as might a little Duckweed, Azolla or similar floating plant, but those requiring roots to obtain their nourishment should be avoided unless you are prepared to be perpetually replanting them after they have been inadvertently uprooted by the large hind feet of the tenants. Incidentally, despite the climate of their land of origin, they are amazingly hardy and may be kept out of doors in garden pools, indeed I have known at least one specimen to spend the entire winter under such conditions, during which period the water was ice-covered on several occasions. If your Clawed Frogs are kept in such a place, care must be taken lest the water become foul for under such circumstances they will embark upon one of their rare terrestrial excursions and endeavour to find a new, more congenial home, with the odds in favour of your being

unable to find them again. If and when transferring them from one tank to another, always catch and handle them by means of a net as it is almost impossible to take hold of one in the hand and hold it for more than a second or so, so incredibly "flabby" and slippery are their skins, while one dropped on the floor through being seized in this way may easily be injured before it can finally be picked up.

Feeding is a simple matter, as Earthworms appear to be their favourite item of diet and should be offered (one medium sized Worm per Frog) three to four times a week, it being a simple matter to decide how frequently to feed your pets by noting the enthusiasm or lack of it which they evince towards proffered food. By dangling a Worm in the water it is quite easy to induce a Clawed Frog to feed from the hand, its method of acceptance invariably being to take it at one end by the mouth and "feed" the rest in by means of the fore digits. I once had a specimen which I invariably fed in this way, and if I happened to pass its tank when it was hungry it would rise to the surface and go through the motions of eating, exaggeratedly stressing the "hand" play so characteristic of this species; incredible as I admit this sounds, it is nevertheless perfectly true. Raw meat cut up into small pieces will also be accepted, but care must be taken to remove any that remains uneaten for longer than half an hour after feeding time or it will turn the water foul.

Although active and interesting when shown food, these Amphibians are normally prone to spending long periods remaining perfectly motionless, usually on the bottom of the tank, a trait which causes some people to remark confidently "Hmm, they're dead" (personal observation).

Salamanders

These are found in a number of species and make satisfactory if rather unintelligent pets. Distributed over a wide area of the World, the smaller species, on the whole, appear to be mainly terrestrial in their habits, while the large ones are more or even entirely, aquatic; the largest being, incidentally, the Giant Salamander of Japan, reaching a length of four feet. The general physical conformation resembles that of a Newt (actually they are close relations), but lacking the ornate crest that the male bears during the breeding season, while the skin is rich in poison glands (perfectly harmless towards human hands) and for this reason is often brightly coloured or strikingly marked as a warning

to other animals that might be contemplating it as an item of diet.

Throughout the ages there has persisted a strange belief that these creatures lived in fire and actually fed upon the flames, although just how it originated is by no means clear. As Amphibians they naturally breathe partly through their skins, which for this reason are moist and soft as a dry or even warm atmosphere may cause death from asphyxiation, which makes this fable all the more fantastic. However, there is no smoke without fire if you will excuse the pun. The species most frequently kept in captivity is the Common or Spotted Salamander of Southern Europe, which measures some six inches in length and is mainly jet black in colour, offset with most startling spots and streaks of bright "duster" yellow.

HOW TO OBTAIN A SPOTTED SALAMANDER

5/- to 7/6 is the usual price charged for one of these interesting creatures by aquarists or pet shops.

HOW TO CARE FOR A SPOTTED SALAMANDER

Perhaps more so than any other Amphibian, these require a very moist atmosphere which is best provided by lining the floor of the vivarium or tank with sphagnum moss which must be kept perpetually damp, while for the same reason it is wisest not to keep them in too warm a room or handle them more often than is necessary. Being nocturnal they are shy and retiring by nature, and consequently will appreciate the provision of a number of large irregularly shaped stones or pieces of bark under and behind which they can hide by day.

Earthworms appear to be their favourite food in captivity, although they will also take gentles and small pieces of raw meat.

This species quite frequently breeds in captivity, and its habits in this direction are most interesting, as in the wild the female, when gravid, enters some pool or similar convenient stretch of water and there gives birth to anything up to thirty living tadpoles, each measuring somewhere in the neighbourhood of one inch in length. This is decidedly unusual for the Amphibia, as their normal breeding cycle commences with the ova or egg; e.g., the familiar jelly-like mass of the Frog's spawn; the Toad's long strings of unhatched young; or the Newts single eggs wrapped in the leaves of water plants; but in this case it would appear that the eggs are hatched inside the mother's body and the young born in a comparatively advanced state.

Like most tadpoles their first food is the tender young leaves

of aquatic vegetation, graduating to Insect life as they grow larger. On this diet they grow at such a rate that when they forsake their native element to come on to land as perfect miniature editions of the adults, some six months or so later, they have at least trebled their size at birth. It is a good plan to place a large pan of water in your Salamander's vivarium, in the hope that should you unknowingly possess a newly imported gravid female she will be able to give birth to her young normally.

The reader may be interested to hear that I was once given six very small Spotted Salamanders by a Zoology student who had found them in larval form in the body of an adult that was being dissected. These minute creatures, which I suspect were by no means ready for being born, were placed in water and given every attention by their finder, although no one thought they would survive; but nature nearly always contrives to do the unexpected and they eventually reached the state where they were able to leave the water and generally fend for themselves—whereupon they were given to me. It was interesting to note that, doubtless due to their unnatural mode of birth, they were little more than one inch in length at an age when they should have been three or four times that size. Otherwise, however, they were in perfect condition.

Salamanders are rather subject to fungoid skin diseases which some authorities maintain is caused by overcrowding in the vivarium, but this is quite easily treated by swabbing with a piece of paraffin-soaked cotton wool. Apart from this they appear to have no ailments peculiar to them and, provided their owner remembers the two golden rules of constant dampness and little, if any, handling, the average specimen might live for a quarter of a century.

Axolotls

These grotesque looking creatures are really Salamanders which have never developed from the tadpole stage, and which spend their whole lives in a form that the other species lose after their first six months or so; but even more amazing than this is the fact that they reach the age of puberty and are able to breed while still technically undeveloped.

For these, and other reasons dealt with in this section they make most interesting pets, besides being easily obtained and cheap to house and feed.

DAILY LIFE

The Tiger Salamander is common over a large area of North America and, it would appear, was particularly plentiful in Mexico centuries ago before much of that country was the dry arid place it now is. As the moisture producing vegetation gradually disappeared from the countryside around the great lakes in the middle of the country (roughly where Mexico City now is) and the conditions slowly deteriorated from a moisture-loving Amphibians point of view, the tadpoles born in this area began a process by which they gradually changed their mode of life to an entirely aquatic one owing to their inability to find a living on the adjacent land. So was "born" the Axolotl (a word of Aztec origin), a Salamander which spends its entire life in the larval state, frequently attaining a length of about a foot, with a pair of branched gill tufts behind its large head and short though sturdy legs to support its long, almost cylindrical body; the tail resembles that of a Newt.

There appear to be three distinct colour varieties; brown with yellowish spots and streaks, black, and albino (this kind has startling red gill tufts). The first is the type most commonly found in the wild, the second is the one most frequently seen in this country, while the latter is, I suspect, a product of selective breeding and not found in a wild state.

Despite their bizarre appearance, they are nevertheless highly esteemed as a human "bonne bouche" in their native country and are invariably offered for sale in the fish markets in the poorer quarters of Mexico City.

HOW TO OBTAIN AN AXOLOTL

Small black specimens cost about 7/6 each, while larger ones (up to about 7-in. in length) are usually 12/6, the albino (admittedly a much more striking looking creature) costs about twice as much. They may be obtained at any time of the year from any of the dealers listed at the back of this book.

HOW TO CARE FOR AN AXOLOTL

Despite the warm climate of their native country, they will do very well here if kept in a tank of unheated water, although it is important that the bottom be covered with pebbles or coarse gravel and not sand or other fine material which the ponderous movements of their clumsy bodies will surely be perpetually stirring up into an unsightly cloud. For the same reason it is unlikely that you will have any great success in inducing aquatic

plants to grow with them, while the enthusiast who contemplates introducing a few Goldfish into their aquarium would do well to bear in mind that Fish form their main item of diet in the wild.

Worms, Tadpoles, small Fish and strips of raw meat will be readily accepted at feeding time, which should take place two or three times per week, and it is interesting to observe the manner in which large Worms are seized and violently shaken, for all the world like Rats in the jaws of a Terrier prior to being swallowed.

If you are in any way scientifically minded you may like to try to induce an Axolotl to develop into an adult Tiger Salamander, which can be achieved (with luck) in the following way: segregate a specimen about four inches in length and feed it well for some considerable period, then, by degrees, reduce the level of its water so that it is slowly forced to use its lungs in the normal way as it gradually becomes a land animal. Fourteen days after finally being deprived of water (it must still be left damp, however) it should metamorphose into an adult Salamander, which, by the way is almost certain to be sterile for some reason known only to Mother Nature. Should my reader ask whether or not this is cruel, I can only reply that if I only thought it were so I would certainly advise him not to experiment in this direction should he hear of it, instead of putting the suggestion to him.

Although somewhat unprepossessing in appearance the Axolotl is none the less deservedly popular as a pet and is bred in large numbers in this country; while with a little care and attention paid to its welfare, it should live in confinement for anything up to fifteen years.

APPENDIX

I FREQUENTLY hear people say: 'I would love to keep a Mongoose (or Alligator, or Monkey), but where on earth can I obtain one?'. The following dealers always have such creatures for sale:

Robert Jackson Ltd., Grove Lane, Hale, Cheshire.

Palmer's Ltd., 45 Parkway, Camden Town, London, N.W.3.

South Western Aquarists, Glenburnie Road, Tooting, London
(Mainly Reptiles).