

SNAKE HUSBANDRY EQUIPMENT.

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INTRODUCTION

This article outlines those items of equipment the author has found to be of particular use in the captive husbandry of snakes. Most of the items described are for the capture and/or restraint of specimens, and therefore may be of use in capture in the wild. New and practical ideas are constantly being developed to assist the husbandry of snakes. It is essential that these are published, to assist others in improving their techniques and success in captive maintainance and reproduction.

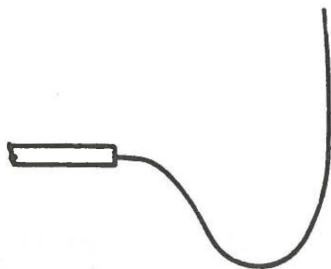
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Snake Hook

This is probably the most familiar and frequently used piece of snake husbandry "hardware". Basically it takes the form of a rod, of a length to suit the purpose and ease of use for the handler, attached to the end of which is an "L" or "T" shaped hook. The hook end is used to pin the snakes head (not the neck!) prior to being restrained by hand behind the head. Alternatively the snake may simply be hooked at midbody, balanced on the hook, then transferred to a new location. It is good practice to always "pin" snakes on a soft substrate, such as sheet foam rubber. This greatly reduces the risk of damage to the snakes head and neck, plus requiring less force to

immobilise the specimen.

In America at least one specialist company supply excellent purpose-made snake hooks. The principal



design of these hooks is as in fig. 1, i.e. a re-curved shape. The advantage of this design is that when a specimen is lifted, it will slide into the throat of the hook, making the grip less likely to twist in the hand when manoeuvring the specimen. When lifting it higher than the butt of the shaft the "throat" of the recurved shape prevents the snake sliding down the shaft onto the handler's hand - an important consideration when handling venomous specimens. This recurved shape is however difficult to use in corners and areas with restricted access. For these situations the simple "L" shaped hook is preferable.

Viper ring

This is a variant on the snake hook used to handle sluggish, heavy bodied species, such as vipers (these snakes are easily damaged if lifted by the neck due to the weight of their bodies). This piece of equipment takes the form of a ring attached to a shaft, the diameter of the ring being slightly larger than that of the body of the snake to be lifted. The ring is passed over the snakes head and the snake is allowed to crawl through until the ring is at midbody position. The snake can then be lifted and as it should be in balance,

should not fall through the ring. Most snakes at this stage will grip the ring as they are lifted. It should be noted that a relatively long handle is required to keep the specimen out of striking distance of the handler. When lifted the snake is unable to slide down the shaft onto the handler's hand. However should the specimen crawl out of the ring there is no means of pinning it in on emergency, and therefore a conventional snake hook should always be available.

Grab stick

This takes the form of a shaft with a trigger alongside the hand grip which operates padded jaws at the opposite end. The jaws frequently incorporate an "L" shaped hook which enables a snake to be easily scooped up into the jaws. The snake is grasped gently, but firmly in the jaws, the pressure being controlled by the trigger. Grab sticks have been extensively used for capturing snakes in the wild, particularly fast moving species such as cobras and mambas. Frequently these recent captives exhibit extensive body bruising due to inexpert use of grab sticks. These snakes rarely feed and soon die. Grab sticks are probably the most frequently abused and misused piece of snake equipment. It is always better to seek an alternative technique as the risk of damage to the snake is so great, particularly in the hands of the inexperienced.

Strap stick

The strap stick is a shaft with a padded tip against which an adjustable leather strap can restrain the snakes neck. It is a combination of the viper ring and the grab stick. The snake is encouraged to crawl through the loosened noose at the end of the stick, which is then constricted to restrain the snake, its body usually being

supported along the length of the shaft to prevent the snake injuring itself. This device has been popular in the past for handling cobras, but its use has largely been superceded by the grab stick. Its inclusion here is for completeness and it is not seriously recommended. Releasing the snake is a time of danger to the handler, the noose frequently not becoming loose enough to allow the snake to escape freely.

Acrylic tube

Clear rigid plastic tubing is useful to restrain, examine, and treat snakes. The snake is encouraged to enter the tube by passing one end over the head, and gently tapping the tail. The diameter of the tube should be only slightly larger than that of the snake to prevent it being able to turn around. The snake can be confined in the tube by ventilated stoppers. Slots and holes previously cut into the sides of the tube can be utilised to gain access to the snake for such functions as injections or removal of retained eye-caps. Snakes can sometimes be encouraged to feed if food is placed in front of them in the tube, or if the food is first placed in the snakes mouth prior to introducing it into the tube. This is the safest method of force feeding venomous species.

Strap board

This takes the form of a wooden board of semi-circular crosssection with a number of stretchable cloth straps attached along one edge. These straps fix on the opposite edge onto strips of velcro. The board should be longer than the snake to be restrained. The snake is laid along the top edge of the board and the straps pulled across to hold firmly without unnecessary constriction. The snake once it is restrained can be easily examined and treated as required.

Squeeze box

This is probably the most accurate technique for measuring snakes currently available, and is particularly suitable for measuring hatchlings. An open topped box is lined with a thick foam rubber pad. To measure a snake it is placed in the box and gently but firmly pressed into the foam rubber pad with a piece of clear plastic sheet, of the same length and width as the internal dimensions of the box. Using a water soluble pen a line is drawn on the plastic sheet along the vertebral line of the snake. A piece of non-stretchable thread (e.g. Dacron) is then placed along the line drawn, marked for length and measured. This measurement is an accurate assessment of the length of the snake.

Snake-bags

The normal way to transport snakes is in cloth bags. They travel well in this way, provided they are packed in a softly-lined box with adequate ventilation and not subjected to extremes of temperature. The most useful snake bags are those that are much deeper than wide. A piece of tape can be sewn to one side seam about 20 cm from the top of the bag. The top can then be twisted, doubled back on itself, and secured with the tape. It may seem obvious but it should be ensured that the snakes head and neck are not in the top of the bag before twisting and securing. Snake bags made of rot proof porous rip-stop nylon, sewn with strong polyester thread, with the bottom corners sewn off, are ideal for venomous species. The translucent nature of the nylon allows visual appraisal of the position of the snakes head, whilst the sewn off corners allow the safer emptying of dangerous species.

Polythene bags

Polythene bags are useful for restraining smaller specimens. The snake is placed in the bag, then gently forced to assume the smallest coiled mass possible by twisting down on the bag. In this way the snake is almost completely immobilised. This technique is particularly useful for giving snakes subcutaneous and intra-muscular injections.

Hide/shift boxes

Captive snakes are less stressed if given the facility to hide at will. This is not always possible for specimens on display unfortunately, but the principle can be usefully incorporated to catch snakes on display for ease of transfer to other cages. Few zoos build permanent shift boxes to the back of their snake cages. Where it is done, it proves highly successful, particularly for the safe maintenance of venomous species. Where removable boxes are used a tapered shape facilitates the snakes removal if reluctant to leave, and also enables neater stocking when not in use. A guillotine style door is useful for trapping specimens in the box. Long, thin boxes appear to be more attractive to cobras and mambas.

Hide boxes should be positioned in relation to the habits of the snake to be kept, i.e. high in the cage for arboreal species, ground level for terrestrial species. The internal dimensions of the box should be in relation to the size of the specimen. Most snakes are thigmotactic, that is to say they feel most secure when hiding in a very closely confined space - their body in contact with all surrounding surfaces. To encourage snakes to leave a hide-box it may be propped upright with the opening at ground level. The snake usually finds this position uncomfortable and will freely emerge. It is often preferable to get a snake to enter a portable hide box if it is to be moved, rather

than catch it by other means. This is particularly true of very large pythons and boas, which may go off their food for long periods as a result of man handling.

Adhesive tape

In most cases brown paper masking tape is preferable to clear plastic adhesive tape. Small pieces can be used to temporarily muzzle a snake liable to bite, permitting it to be handled freely. Anaesthetised snakes are best taped to the operating table to control any "serpentine" motion, which can occur even in deeply anaesthetised snakes. Snakes frequently retain eye caps when shedding their skin. These can easily be removed by pressing a small piece of tape against the eye, and lifting it away usually complete with the eye cap. Once attached to the eye the tape is best gently pulled towards the tail, if an edge of the eye cap is lifted it should be grasped with tweezers and removed gently. Long retained eye caps are more difficult to remove. In these cases the eye cap should be softened first by soaking in water or a moisturising cream.

Forceps

Long surgical scissor forceps are extremely useful for offering prey items to individual snakes. By using forceps the snake is not distracted by the keeper's hand, and will concentrate on the food. Shy individuals in a group may be offered food individually. The forceps should at no time be used to pick a snake up, as they are likely to cause fatal tissue bruising. Forceps of about 25 cm long appear ideal. Aquarium tongs and planting sticks may have similar applications.

Scoop spoons

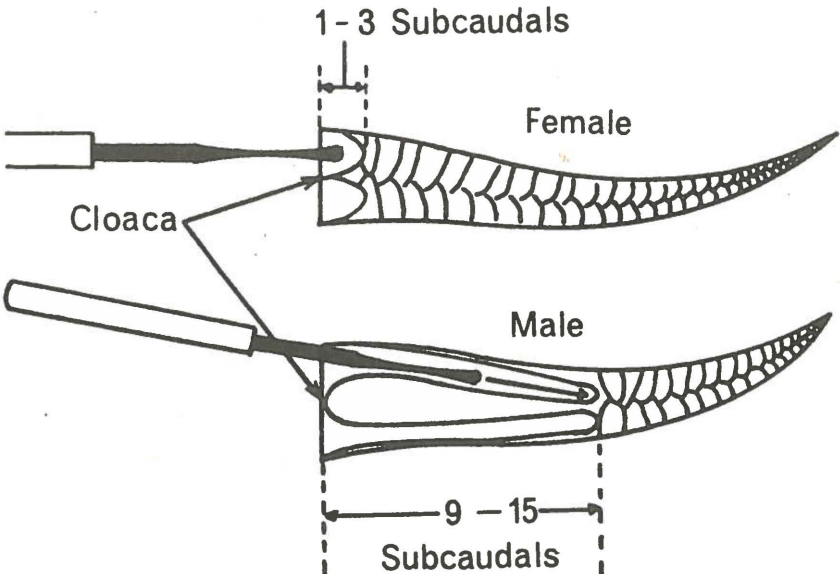
Long handled spoons allow the collection of faeces and urate material with little disturbance to the cage inmates. Bending the spoon at right angles to its handle may make it easier to use particularly in top access cages.

Shields

Small shields constructed of plywood, and faced with cork or plastic dustbin lids cut down to size, are useful to ward off the strike of an angry snake. These are most applicable when servicing the cages of the larger unpredictable Boids. Shields should never be relied on to ward off the attack of a venomous snake, as the risks are too great.

Sexing probes

These are thin, blunt ended rods 1 mm to 5 mm in diameter. They are used as a mechanical sexing



technique that involves their insertion into the snake's cloaca and directed posteriorly into the base of the tail. In males the probe will follow the depth of one or other hemipene for a depth of from 9-15 subcaudal scales. The following examples may be useful in selecting the right diameter probe:

1. A 1.5 m Royal Python (*Python regius*) would require a 4 mm probe, males to a depth of about 10 subcaudals, and females about 3.
2. A 2 m Black Rat Snake (*Elaphe obsoleta obsoleta*) would need a probe of 3 mm diameter to a depth of 11 subcaudals for males and 2 for females.
3. A 1 m Californian King Snake (*Lampropeltis getulus californiae*) takes a 2 mm probe to a depth of 10 subcaudals in males and 2 in females.

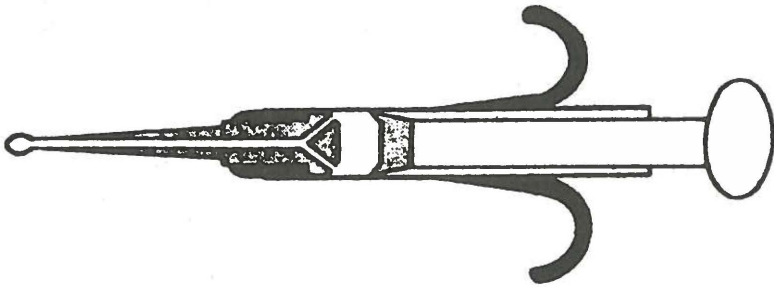
Snakes under 75 cm would be probed with a 1 mm diameter probe whilst 2.5 m and larger Boas and Pythons would take a 5 mm diameter.

The probes should preferably be lubricated before use. Most lubricants are spermicidal in snakes with the exception of saline. It is important to bear this in mind if sexing specimens that you hope will breed in the near future.

The "Pinky Pump"

This is a piece of equipment designed, developed and initially produced by Ralph J. Shepherd (Seattle, Washington, U.S.A.). It is a technique used extensively now by successful snake breeding herpetologists in the United States as well as in England.

I was fortunate enough to be able to obtain an example of the "Pinky Pump" from Warren Jones when I visited Seattle (September 1980). Since then numerous reproductions have been made by interested persons throughout this country and it



has achieved wide acceptance as the best feeding technique available at the moment for both reluctant hatchlings and adults.

The pump takes the form of a stainless steel syringe, with a special cannula (Fig. 3). The "pinky" is forced through the offset holes at the end of the cannula into the central canal and out by the syringe plunger. This process is repeated as often as necessary to render any bone small enough to present no risk of injury to the throat of the snake and thus completely macerating the "pinky".

The technique then is to introduce the snake onto the cannula, using the spoon-shaped tip to initially open the jaws. The charged pump is then gently expelled into the snake's throat. The snake is removed and the food massaged into the belly. In the hands of a skilled operator, the process is very quick, reducing stress to the snake to a minimum. Hatchlings fed in this way can achieve growth rates similar to siblings feeding voluntarily. This reduces the frequently vast disparity in size between siblings enabling all to achieve maturity at roughly the same time. Other snakes requiring different food can be fed if the food is soft enough to go through the pump. In addition, adults can be fed too, if the cannula is extended with plastic tubing at a position near or in the stomach.

One word of warning is, however, essential in the use of the pump. It is possible to literally blow a snake's guts to pieces with this technique. This is caused by either too great a pressure build-up before sudden release, or too great a volume of food being introduced. The pressure problem is due to an insufficient number of passes of the "pinky" or whatever through the pump to properly liquify it or too stiff an action within the pump itself. A gas-tight fit is neither necessary or desirable and will lead to uneven operating pressures. Because of the efficiency of the pump, it is tempting to overfeed, therefore consciously judge the minimum required. Frequent small feeds are more desirable than a few large feeds.

EDITORIAL NOTE

It is good to know what tools are available to catch, to transport or to treat a snake. However, many of these above mentioned tools can be dangerous to the snakes in hands of inexperts. Especially tools that have to be introduced into the snake. About the tools used in catch we can state that these become more and more redundant because of the increasing number of successful breedings. For handling in terraria this list of tools can be of help.