

Some Traditional Captive Elephant Management Practices in Sri Lanka

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Introduction

Elephants have been managed in captivity in Sri Lanka for many decades. The owners and keepers of captive elephants carefully observed their behaviour and established many concepts, which eventually became traditional knowledge but went undocumented (Dangolla *et al.* 2002a). It is interesting and important to study such knowledge to understand elephants better and to provide them with better medical attention. Traditional knowledge on a few topics is briefly described below.

Provision of water

Since ancient times, calves are given drinking water more frequently, even at night, compared to adults. Recently, it has been shown that skin evaporation is faster in elephant calves than in adults and therefore, calves must be given drinking water more frequently (Bandara *et al.* 2005; Kumudinie *et al.* 2006a).

Bathing

During the warm hours of the day for 3 - 4 hours, most captive elephants are immersed in water even if they are not worked (Bandara *et al.* 2005). Most captive elephants sleep in the water while bathing when they are tired. During night festivals, which occur over a few consecutive days at times, participating elephants do not sleep well possibly due to unusual noise and too much light. During such times, elephant keepers force their elephants to sleep in water (Dangolla *et al.* 2002b).

Thermoregulation

The heat from the sun is absorbed by blood

vessels along the back of elephants (Kumudinie *et al.* 2005) and their thermal conductance is raised with increasing environmental temperature (Kumudinie *et al.* 2006b; Mikota 2006). Sweat glands are scarce or absent on the skin of elephants except in inter-digital spaces (Mikota 2006). Flapping the ears helps them thermo-regulate.

Elephant races and use of elephants in sport activity could generate excess heat which elephants may find difficult to dissipate. The organizers of festivals where elephant races are featured, usually delay holding the races, perhaps in order to refrain people from leaving the festival grounds early. Consequently, elephant races are held mostly towards the end of the day after 4:00 pm when the day becomes cool, running is limited to 150 - 200 m and most adults do not run. It is very rarely that an elephant misbehaves at such events, which shows that the elephants tolerate thermal stress to some extent, if the keeper commands them to do so. Elephants playing football or polo, both of which are not popular in Sri Lanka, could be more stressed, since these are games played earlier in the day and for longer durations.

At times, Sri Lankan elephant dress is criticized because it covers the entire ear (Fig. 1). In all other Asian countries, the ears are left bare when elephants are dressed up for festivals, and some make drawings on the ears. However, the rate at which processions in Sri Lanka proceed is very slow (approximately 1 km/h) which is unlikely to create a substantial impact for the rate of ear flapping to increase (Sakalasooriya *et al.* 2006). Interestingly, when a male elephant runs riot during a procession, keepers try and remove the earflaps of the dress first, if possible. This is because keepers believe that elephants are 'heaty'

animals, who could become temperamental when their ears are covered. This is also possibly why keepers and owners prefer elephants with larger ears, and such elephants are more expensive.

Elephant control

Most keepers can predict when elephants are likely to run riot during processions. This has prevented many disastrous situations and injuries to both humans and elephants because the keepers remove such elephants from processions before they become unruly. Captive elephants, when angry, often kill their keepers (Dangolla *et al.* 2008). Therefore keepers observe and study the behaviour of their elephants primarily to protect themselves and the public. However, when an elephant runs riot during processions, the assistance provided by the keepers to the veterinarian to bring the animal under control is commendable. In such situations, keepers request chemical immobilization as the last resort even if an equipped and experienced veterinarian is present, because they believe it disturbs the morale and character of male elephants.

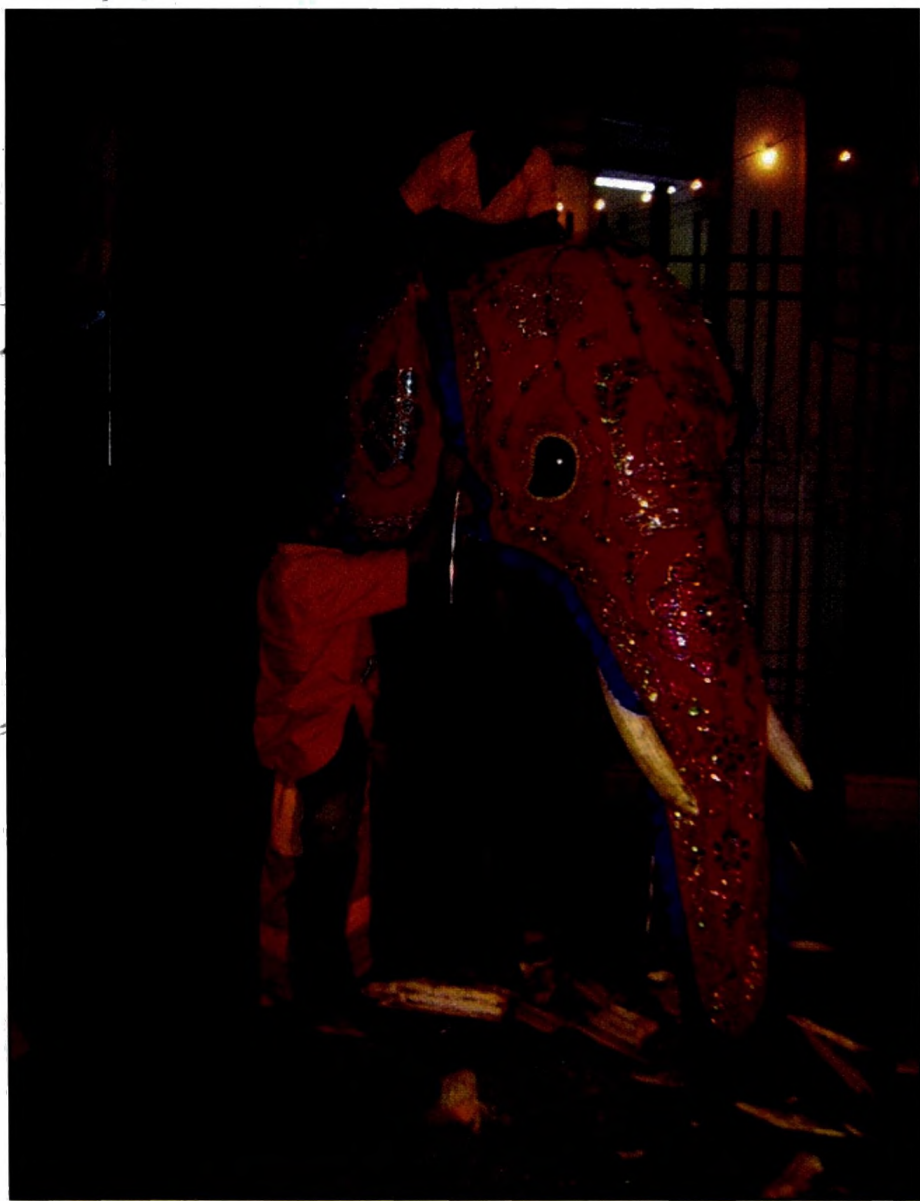


Figure 1. Elephant being dressed for a festival in Kandy, Sri Lanka (Photo by Jennifer Pastorini).

Owners frequently change keepers of male elephants with unpredictable behaviour. Therefore, it is possible that bonding between the elephant and the keeper is renewed more frequently than the elephant would like (Hettiarachchi *et al.* 2005). A well-known tusker of the temple of the tooth in Kandy, with relatively high serum testosterone levels has never shown unruly behaviour while most others did so, possibly because the keeper of this particular tusker was the same for 10 years (Hettiarachchi *et al.* 2005).

During musth, captive males are kept tied in the same stable for several months. After external signs of musth disappear, traditional keepers spend approximately two weeks discussing the matter with the owner, native doctor, village headman, the priest and the fortune-teller. The keepers release such males on an auspicious day at an auspicious time, after a special function for which several traditional sweets are prepared. Fairly recently, it was found that serum testosterone takes approximately two weeks to reduce to basal levels after disappearance of external signs of musth (Schmidt 1993).

Sometimes keepers want musth to end earlier than expected. In such instances, most keepers add bamboo (*Bamboosa vulgaris*) leaves into the diet, which is possibly less nutritious. After about one week, musth secretions cease. However, musth management always poses a challenge in elephant work (Mar 2006). I have encountered one female regularly coming into behaviour similar to musth males, who also killed a man and had to be tranquilized and re-captured.

Depending on the strength of the bond between the keeper and the elephant, keepers use various approaches to judge the behaviour of elephants every morning. Some keepers hum a song and others raise their tone and shout or scold so that the elephant could hear. They approach elephants from the front, giving the elephant sufficient time to identify the person, show friendship by various means and wait until the elephant urinates, defecates or perhaps performs a unique sneeze or a mild long grunt. It is only afterwards that a keeper would approach and clean the stables. The area close to the hind legs is cleaned

first, possibly as a precautionary measure. Such behaviour, commonly used until the elephant-keeper bond is well established, can be interpreted as a submissive approach by the keeper. It is now known that in the morning, serum testosterone levels are likely to be higher compared to the evening (Hettiarchchi *et al.* 2005).

The ankus, the instrument used to manage captive elephants, is approximately seven feet long in Sri Lanka while in other range countries it is much shorter. It is possible that Sri Lankan keepers prefer to manage elephants from a distance for additional safety. Some Sri Lankan kings in the past used to execute criminals by commanding trained elephants to trample them and therefore keepers themselves possibly had to be careful.

Most elephants are always tied with the “walk chain” which is applied to both hind legs at an adequate length to allow walking. Additionally, several traditions of chaining are applied depending on the occasion. For example, if a male after running riot must be taken to his home, a stringent method of tying which could even injure the elephant if he struggles too much is adopted. But if the same animal has to go for a procession, a criss-cross method of chaining the legs is applied to prevent him from running or jumping forward. Recently some keepers have started applying walk chains to the front legs. The latter may be better from the welfare point of view, since the thoracic girdle is stronger with several strong muscles compared to the pelvic girdle and therefore, is unlikely to be dislocated or injured.

Treatment

Most keepers know medicaments that serve as a physical barrier to prevent entry of bacteria when applied on wounds. There are several combinations of herbs that prevent deterioration of existing wounds and infection of new wounds. Most of them work better on younger animals (Perera *et al.* 2004). With older elephants, such native medicaments work well in combination with paranteral antibiotics. There are also native medicines, which if applied continuously for 3-5 days, would destroy the pyogenic membrane of

abscesses and sinuses and expel necrotic tissue (Perera *et al.* 2004). One reason for keepers to prefer native medicaments may be that they do not cause fresh bleeding from wounds, which most of them do not like to see. Among the several factors attributed to the reduced incidence of pododermatitis in captive elephants (Gamage *et al.* 1998), the contribution by elephant keepers is important.

Immediately after musth, most males develop stomach ailments due to sudden changes in their appetite. Such males at times become pale due to anemia, mildly constipated and show signs of colic. For such animals, traditional keepers orally administer a combination of five herbs, which leads to a mild diarrhoea with which *Mushidia* spp. worms are excreted. The loose motion caused by such medicines, settles on its own and elephants get clinically better within about two weeks. If a modern anthelmintic is given afterwards to such males, they excrete more worms. In India, immediately after musth, most captive elephants are given a combination of cereals, which improve most hematological parameters but do not expel worms.

Elephants, when ill or in old age, develop malabsorption syndrome (Dangolla & Silva 2000) during which some sleep for very long times on their sides. Most traditional keepers are aware that if elephants sleep on their sides for more than about 8 hours, the prognosis becomes bad. One of the medicaments administered in such situations, irrespective of the cause, is to blow certain medicaments into the eye. This strongly irritates the cornea and in reaction, they get up at once. In western medicine, if an animal has been administered with all supplements liquids, vitamins, minerals and energy, an electric stimulation (shock) is given to get them on their feet. Most keepers are aware that some elephants have a preference for the side to lie down and sleep and that not all elephants sleep on both sides equally. Therefore, depending on the side they are either sleeping or even fallen at times, keepers tend to predict the prognosis. Such information is important to design treatment plans and also to device a strategy for hoisting and keeping such elephants upright thereafter.

Thus, the traditional elephant keepers in Sri Lanka, not versed in science, have through observations and experience figured out a number of practices that are conversant with what would be advocated from scientific study of the animals.

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