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Commentary

# Mammoth asses—selected behavioural considerations for the veterinarian

Tex S. Taylor<sup>\*</sup>, Nora S. Matthews

*Texas A&M University, Department of Large Animal Medicine and Surgery, College Station, TX 77843-4475, USA*

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## Abstract

Observations of the behaviour of domestic mammoth and standard asses (donkeys) receiving routine herd health and therapeutic procedures are described. These procedures include capture, physical examination, restraint, medicating, adapting to hospitalization and training for inter-species breeding. © 1998 Elsevier Science B.V. All rights reserved.

*Keywords:* Asses; Donkeys; Mammoth; Behaviour

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## 1. Introduction

The successful practice of clinical veterinary medicine and surgery is dependent upon the ability to utilize clinical signs of disease coupled with supporting laboratory data to make a diagnosis. It is imperative that the veterinarian understand the typical behaviour patterns of the animal being examined or treated. This understanding may be personal knowledge by the veterinarian or it may be provided by the owner or caretaker. Unfortunately, veterinarians, owners, and caretakers who are familiar with the behaviour of asses and mules are the exception rather than the rule. Since there is limited information published about the typical behaviour of these animals, they are usually treated as long-eared horses. In many instances, this is a mistake.

In the United States, following the American Revolution, there was a real need for animal power in agriculture until about 1930–1940 (Cooper, 1937). The mule was identified as the most suitable animal for this purpose. In an effort to meet this need, male asses were imported to breed the farm mares. During this period, selective

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<sup>\*</sup> Corresponding author. Tel.: +1-409-845-3541; fax: +1-409-847-8863.

breeding of large imported asses produced a unique large ass that has come to be recognized as a breed. This breed is the American Mammoth Jack or American Mammoth Jackstock. They have been given the scientific name of *Equus asinus americanus* (American Mammoth Jack Stock Journal, 1988), and in this country they are often incorrectly referred to as donkeys. The Majorca, the Maltese, the Andalusian, the Catalanian, and the Poitou were the primary breeds contributing to the development of the American Mammoth Jack (Lange, 1989).

The following discussion is not intended to be all inclusive, but to share some observations about the behaviour of mammoth asses that could be helpful to other medical and research personnel working with these animals. These observations come from the authors' more than 29 yr combined experience in research, breeding, training, and providing veterinary care for mammoth, standard, and miniature asses and mules. One author (TST) has maintained a mammoth ass herd of 25–80 animals for approximately 20 yr. Whether the behaviour of the mammoth ass is typical of or identical to the behaviour of the smaller asses (*Equus asinus*), commonly called donkeys, could be debated. Moderate experience suggests that there are some differences in behaviour of the variously sized asses, but those differences are slight.

## 2. Atypical behaviour

The single most important assessment of asses, from a veterinary standpoint, is derived from the observations of an astute owner or caretaker. These animals are very much creatures of habit, and the earliest sign of a problem is a change in their usual or typical behaviour. All changes in their usual behaviour should be investigated. Simple things, such as which animals are always waiting at feeding time and which ones always come up late, are important. When fed in a group, does one animal that is usually aggressive stand aside, refuse to eat, or take a bite of food and walk away? Animals with severe respiratory or gastrointestinal disease may not show clinical signs, other than the aforementioned, until the disease is too advanced for recovery. Asses have such a pain tolerance that even when experiencing intestinal strangulation or intestinal rupture, they may only show a slight pulse elevation, a weakened pulse, and a reluctance to move. Lying down and rolling in response to abdominal pain, as seen in the horse, is uncommon. To ignore or postpone a thorough examination of animals showing mild signs may lead to death of the animal.

A further complicating behavioural trait is that animals suffering from diseases of the respiratory system, the reproductive system, the gastrointestinal system, or the musculoskeletal system do not necessarily demonstrate clinical signs specific to the system involved. Laminitis, bowed tendons, foot abscesses, uterine torsion, dystocia, pneumonia, intestinal rupture, and intestinal strangulation have been identified in asses that were apparently normal 24 h previously but did not come to the barn for a regular feeding. All of these animals showed slightly elevated and weakened pulse, normal or slightly elevated temperature, and reluctance to move. A thorough physical examination of all systems may not identify the involved system in the early stages of disease. Variations

from a normal stance are helpful in identifying a lameness, however. Painful lameness, such as a foot abscess, more frequently results in lying down than do gastrointestinal disorders.

One exception to the expectation of change in behaviour being indicative of problems is estrus. Some jennies will show minimal, if any, signs of estrus unless approached by a male. However, others totally change character and do all of those behaviours previously listed as signals for concern. They refuse to come up for feed, they refuse to enter their stalls if individually fed, or they may go to their feed and refuse to eat. A very affectionate animal may be almost unapproachable. As some jennies exhibit marked character changes during estrus, this must always be considered when behaviour changes are noted. These changes are most apparent if two or more jennies are exhibiting estrus at the same time.

### **3. Typical behaviour**

Mammoth asses do not adapt well to changes in their daily routine and frequently respond to changes in a manner not consistent with their usual behaviour. For example, a herd of asses routinely fed in a corral at 5 pm will be difficult to drive into that corral and often cannot be readily attracted into the corral with feed if offered at an earlier time. If they come in for feed at their usual time and feeding is delayed, they will often wait for hours. They are especially reluctant to come in at an earlier hour if one habitually brings them in early whenever they are to be vaccinated, dewormed, or have their feet trimmed. It is best to schedule such procedures at the time they normally come up to feed.

Although the mammoth ass that leads well and is accustomed to having its feet trimmed is the exception, these animals are very people-oriented. Without special training, they come up for petting, treats, or just to see what one is doing. This affection does not immediately transfer to strangers. Even if accompanied by their owner, when strangers approach a herd in pasture the asses frequently move away as though they were unfamiliar with humans. At a time inconsistent with their daily routine, they may also do this in response to their owner or caretaker. When this occurs, attempts to follow them are unrewarding. If one remains still and waits, the animals will slowly assess the situation and come to one. Animals confined in a corral, pen, or other smaller area will demonstrate a less wild attitude but will remain aloof until they want to approach. This approach will be delayed or nonexistent if halters, lead ropes, or other restraint appliances are visible.

### **4. Capture and restraint**

If a single animal is to be caught from a confined area, capture can usually be accomplished quite easily by walking toward the animal at a normal pace. As the animal moves away, move as if to corner the animal, and be patient. The less handling the animal has had, the longer it will take, and even many of the gentler animals will move

away several times before giving up. When pursued in this manner, the animal is never really excited and, interestingly, it will usually stop not in a corner but in the open. Such a technique makes the group less anxious, and makes the captured animals much easier to catch on subsequent occasions, than one involving multiple people pursuing the animal to capture it. Multiple pursuers are useful if the animal is to be driven into a stall or smaller area of confinement before haltering.

Sometimes even the most gentle and well-trained animal will undergo behavioural changes in the presence of a veterinarian. The veterinarian must therefore be prepared to manage the untrained animal. A few key points about the behaviour of mammoth asses can make this easier. Unless they have never been touched by humans, they are unlikely to bite, strike, or kick just because someone is in range. They do, however, tend to move toward a negative stimulus. If a person stands between two animals or between one animal and a fence, stall wall, or horse trailer side and tries to push the animal away, it will move toward the person rather than away. The more someone tries to push them away, the more forcefully they will move toward that person. If the animal is a miniature or standard, it might be possible to overpower it, but with the mammoth, who may weigh more than 450 kg, this is usually not feasible. It is also usually not possible to hold a mammoth ass with a standard halter and lead if it has decided to walk away and the person leading has a caudal angle of pull on the lead. These asses have tremendous head and neck strength. A bridle with a bit, a lip chain or a chin chain, or a war bridle, is frequently required to control them. Their resistance is not vicious or fast; they just casually walk away dragging those trying to hold them. A short tie to a snubbing post, a set of stocks, or a tree with a good halter and lead works well. As soon as they find they cannot get away, mammoth asses stand quietly. To reach such an object may require leading the animal some distance, and this too can present a problem. Mammoth asses rarely respond to noises, arm motions, or whips behind them when being led. If they are led from the front, any activity behind them seems to detract from their forward motion. They respond best to a moderate persistent discomfort on the front. Here again, the use of the war bridle or chain lead works well. These asses tend to step toward the stimulus. This gives relief, and when tension is reapplied, they repeat the movement. This is not a rapid process, but, with patience, the distance walked forward increases and the interval between pauses decreases. It is not unusual for the animals to rather quickly learn to be led. They will stop for reassessment as unfamiliar objects are approached or as walking surface varies. If subsequent training and practice are not implemented, they may always require the application of the war bridle to get them to lead, but once it is put on they frequently walk without ever requiring tension on the lead. If the bridle is removed and leading with a standard halter is attempted, they will not follow.

The twitch, as used on horses, is far less effective on asses. It will distract them from such procedures as passing a nasogastric tube, collecting a blood sample, giving an injection, and in some cases even picking up a foot. What it will not do is keep an ass from lowering its head, turning its head away, or just walking away dragging along a reluctant assistant. As previously mentioned, stocks or tie ropes are usually more effective or required in addition to the twitch. Once convinced they cannot leave, mammoth asses accept most procedures within reason.

The mammoth ass does not possess the overall athletic agility of some of the smaller-sized asses, yet when loose in the pasture it frequently demonstrates unexpected prowess. Conversely, when the mammoth ass is unwilling to cooperate, it seems devoid of any sense of balance or coordination. This is especially notable when one tries to examine the foot of one of these animals. They refuse to hold it up, or if someone picks it up, they lean on that person to the extent that careful examination is impossible. Even the smallest animals can jerk a rear leg with such strength and rapidity that one cannot maintain a good hold. This is a behavioural trait and not a lack of physical capability. A workable solution is to tie the animal up short and use an elbow strap or over-the-back-tie on a front foot or a sideline for a rear foot. Tie the foot up at a comfortable working position. Do not immediately start the examination. Do not force the animal to try to make two adaptations at once. Give it time to check out what has been done, test the security of the restraint, and convince itself that it can stand on three legs. This usually requires from 3–45 min. Once the ass relaxes and stands well on three legs, proceed with the foot examination. Be aware that the pain tolerance of the mammoth ass will often render hoof testers or other indirect palpation techniques useless in the examination. In general, these animals adapt better to having a rear leg tied up than a front leg. Never use knots or ties that cannot be quickly untied. The lesson learned by adapting to having one foot tied up is not necessarily transferred by the ass to the other three. Each is a totally new experience the first time, but mammoth asses rarely object to the tying up of a foot on subsequent occasions. In fact, if repeated examination is required, one can frequently place a rope around the foot, pick up the foot, and proceed without the need of tying.

## 5. Medicating

All asses dislike quick movements, especially those that cause them pain. Injections and blood collections can usually be easily performed by pinching up some skin, placing the needle on the skin, and slowly sliding the needle in, as opposed to making a rapid and sudden penetration. Some animals will react strongly to the touch of the needle before penetration is started. These may be best injected by a rapid penetration, but the amount of hand and arm motion should be kept to a minimum. If one works with the same animals on a regular basis, it is amazing how much one learns about each individual's peculiarities and how working within these parameters simplifies all that must be done.

The administration of oral medications to asses is a simple and commonly used routine. Keep in mind that if they do not like it, and you put it in their feed, they will not eat it. The same is true of adding medication to their water. Small quantities of liquid medication may be slowly dripped on their tongue with a dose syringe. Usually just the presence of the dose syringe in their mouth gets their tongue and lips moving, and the medication is swallowed. Unless they enjoy the taste, they rapidly learn not to move their lips and tongue and allow the medication to pour out. Paste, powders, and pills can be mixed with syrup, peanut butter or honey and given orally. The product should be tasty and sticky and placed behind the base of the tongue. Even with the best of

techniques, the asses can and will frequently spit out the product. It should be kept in mind that they may hold the medication in their mouth for almost an hour and then spit it out. It is hard to absolutely insure that all medications have been consumed.

## **6. Training for interspecies mating**

It is generally accepted by mule breeders that a young jack, to be used for mule breeding, should be separated from other asses at weaning and reared with one or more horses. A young male of similar age is preferred. This is because asses easily bond closely to whatever animals they are reared with or cohabit with for extended times. At maturity, this jack will think he is a horse and usually adapt readily to breeding mares. If raised with his own kind, and especially if he first breeds jennies, he may never breed mares. There are confirmed cases of young jacks being placed in the pasture with only cattle. At maturity, they would only breed mares or jennies if first teased with a cow. It is also common for a jack raised with horses to refuse to breed a jenny. A good history of how a young jack was raised is vital to evaluating a jack that refuses to breed either or both species.

A mature breeding jack, properly raised for his purpose, can still be one of the most frustrating animals imaginable. He may refuse to breed or may procrastinate for hours due to such things as wearing a different halter or bridle. The time of day may be different than usual. He may have been moved to new premises or a different breeding area. Frequently wet ground or too much wind will negatively influence his performance. Strangers or an increased number of people around can be a real deterrent. Occasionally, a particular mare is identified as just not appealing to him, and at other times he may decide to just take a few days off. Most of these deterrents are more common with jacks that are hand bred rather than those used for pasture breeding.

## **7. Responses to hospitalization**

Like most species of asses, the mammoth is very reluctant to drink water from unfamiliar sources. They are not quite as selective about their feed. When these animals are not eating normally, the first thing to check is their water. Although they may lose 30% of their body weight due to dehydration without ill effects (Yousef, 1979), they will stop or markedly reduce feed consumption if water is not available or if available water is not to their liking. Some animals will refuse to drink if the water level in a trough is so low that they must put their head into the trough below eye level. One must always be cognizant that if sick or injured asses are transported from their normal environment to a hospital or clinic, given different feed, given different water in a different container, and perhaps confined rather than being out in a pasture, it takes more time for them to adapt than it does for horses. It can then be difficult to decide whether the environmental changes or the disease process is responsible for the observed clinical and behavioural signs. Until we learn more about the causes of their behavioural changes and develop more discriminating diagnostic techniques, it is best to treat these animals in their own environment when possible.

Drug responses are not true behavioural characteristics. However, each veterinarian working with asses of any size needs to be aware that their responses to commonly used sedatives and anesthetics usually differ from those responses observed in horses. This may well be found to be true of many other types of drugs such as antibiotics (Matthews et al., 1992, 1994; Miller et al., 1994).

## **8. Summary**

The awareness of the previously discussed behavioural traits of asses should contribute to a more timely evaluation of the animal needing medical attention and to a less stressful and more effective examination and treatment regimen.

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