Chapter 1

WHAT IT MEANS TO HAVE DONKEYS

WHY use donkeys ?

During this century, in Europe and America, machines largely replaced working animals, although it is now acknowledged that it makes better economic sense to use animals for some of the tasks performed by machines. It hardly needs saying that, in weighing the relative merits of motor draft/transport and animals, motor vehicles win on speed and animals on cheapness. It takes only a step further in reasoning to see that donkeys can well be used in conjunction with motors: animals for the shorter, slower tasks in order to save money, and motors for the longer, faster tasks where it is important to save time. In developing countries where fuel and machines are still prohibitively expensive, and are likely to remain so, there are more jobs to be done by animals.

It is a little known fact that, in many parts of the developing world, there are today rich men (and women) who first started in business by using donkeys for transport. Donkeys have started many people on the road to wealth.

Kilogram for kilogram, donkeys are stronger than oxen, and are much more manageable. They are also very different from horses, as they live longer and

survive better in poor environments.

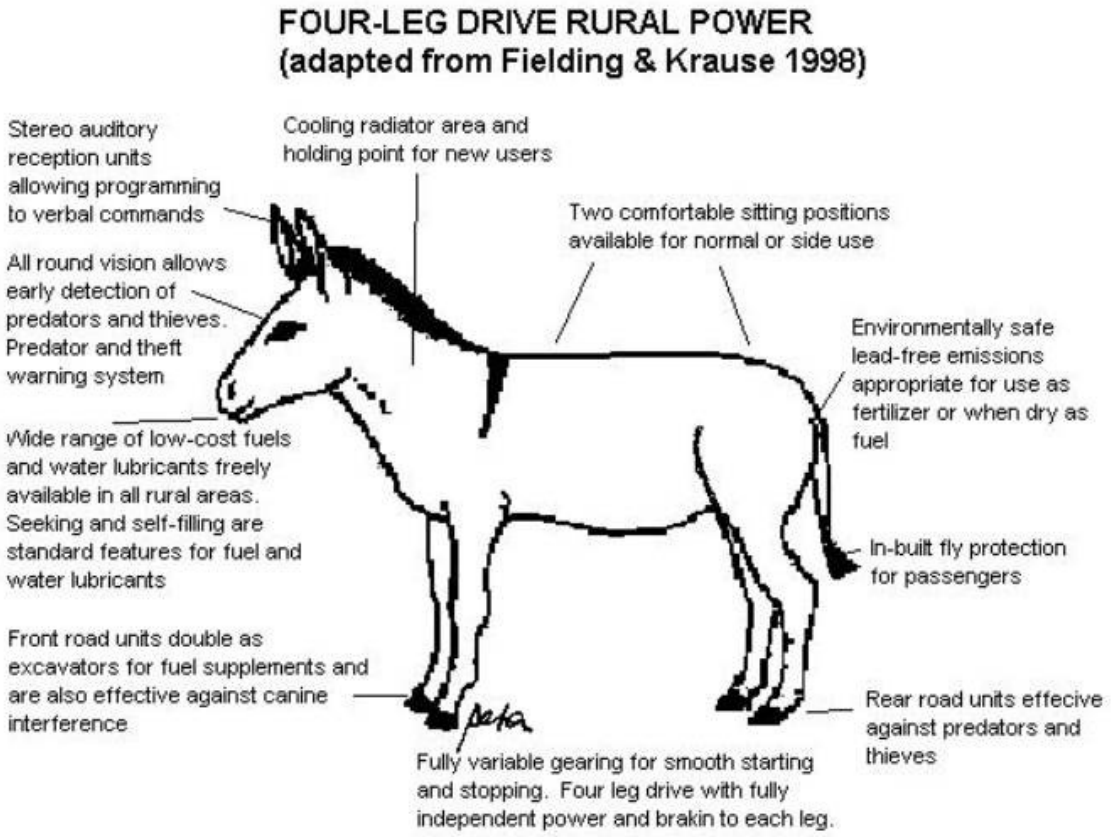
Donkeys can pull and carry surprisingly large loads, and where carrying is concerned can easily handle one third of their own body weight walking all day and even climbing and descending rocky paths. A load that can be divided into evenly-numbered parcels of 30-40 kg, one for each side of each donkey, can therefore be put on the back of one donkey or more, and taken any distance over any terrain.

The general working capacity and the uses of a donkey are described further below. What needs to be emphasized above all is that a donkey is supremely a multi-purpose animal, able to perform a very wide variety of tasks with very little trouble from pulling heavy plows to guarding sheep from predators and providing therapy for disabled humans. They can even provide milk and meat, but are not often asked to do so, as this subtracts from the value of their other tasks.

What is the difference between a horse and a donkey ?

There are many differences, not only in size, but in appearance, in the way they move, and in the way in which they adapt to heat, to dryness and in the way they digest their food and water. Donkeys can resist diseases that horses suffer from, and they can withstand heat, dryness and poor diets very much better.

Perhaps even more important are the differences in behaviour. Even horse owners acknowledge that donkeys are more intelligent. They are much easier to train than horses are, but cannot be trained so far. They are more willing to work, but less willing to perform. It is said that it is possible to command a horse, but with a donkey it is necessary to negotiate.


FOUR-LEG DRIVE RURAL POWER
(adapted from Fielding & Krause 1998)
Stereo auditory reception units allowing programming to verbal commands
Cooling radiator area and holding point for new users
Two comfortable sitting positions available for normal or side use
All round vision allows early detection of predators and thieves. Predator and theft warning system
Environmentally safe lead-free emissions appropriate for use as fertilizer or when dry as fuel
Wide range of low-cost fuels and water lubricants freely available in all rural areas. Seeking and self-filling are standard features for fuel and water lubricants
In-built fly protection for passengers
Front road units double as excavators for fuel supplements and are also effective against canine interference
Rear road units effecive against predators and thieves
Fully variable gearing for smooth starting and stopping. Four leg drive with fully independent power and brakin to each leg.

How much are donkeys worth ?

Various economic calculations are given in Appendix A.🔲 In Zambia, recently, donkeys sold for the same price as cattle.🔲 However, generally the buying and selling price of donkeys is far below their true value, which should be computed on the basis of the work they give over the years they live, which are many 🔲 possibly 50 years, accounting for the phrase 'donkeys years' meaning a very long time.🔲 If a donkey works 6 hours a day, 4 days a week over 40 years, it will have given about 50 000 (fifty thousand) hours of work.🔲 This is not a small contribution to any household or even national economy.🔲

The low price of donkeys is not only a result of supply and demand, but also a reflection of distorted perceptions of their role.🔲 However, it ensures that donkeys represent a very high-yielding investment for sections of the community that need them most: remote smallholder farmers struggling to improve their lot.🔲 Such farmers know very well when they are on to a good thing, which accounts for the fact that, among such farmers, donkeys are still in high demand and, when acquired, are not often sold.

It is possible that one factor which accounts for the low price of donkeys is the reluctance of owners to part with them; they will often only do so to friends whom they trust to treat the animals well, so that they are not really looking for a financial return on cost.🔲 A donkey's work - and its companionship - gives a

much higher return than its selling price.

How do donkeys compare with other working animals ?

The table below (also adapted from Fielding & Krause 1998) compares donkeys, mules, horses and cattle in general terms.• It should be remembered that real differences can be observed in different breeds of one animal, and that the sizes of both cattle and donkeys can vary according to environment, also that there is one class of horse (ponies) which are the same size as donkeys although heavier and different in behaviour.

DONKEYS	MULES	HORSES	CATTLE
Mostly work only, so little value dead	Mostly work only, so little value dead	Mostly work only, so little value dead	Work, milk and meat, high value dead
Cheap to buy	Costly to buy	Costly to buy	Costly to buy
Low social status	Low social status	Very high social status	High social status
Comparatively	Comparatively	Comparatively	Comparatively

light	heavy	heavy	heavy
Reasonably powerful	Powerful	Powerful	Reasonably powerful
Variable speeds, good for roads	Variable to high speeds, good for roads	Variable to high speeds, good for roads	Slow and steady
Efficiency depends on good hitching and harness	Efficiency depends on good hitching and harness	Efficiency depends on good hitching and harness	Simple harness enough
Learns fast	Learns fast	Learns fast	Learns slowly
Resists most diseases, including nagana	Resists most diseases, including nagana	Gets many serious diseases, including nagana	Gets many serious diseases, including nagana
Easy to feed *	Easy to feed	Difficult to feed	Difficult to feed
Easy to manage	Difficult to manage	Difficult to manage	Easy to manage
Gets injuries	Gets injuries from	Gets serious	Gets fewer injuries

from work	work	injuries from work	from work
Feet need attention	Feet need attention	Feet need a lot of attention	Feet need less attention
Longest working life	Long working life	Medium working lihe	Shortest working life
* Donkeys need virtually no supplementary feed, whereas working cattle need dry season extras.□ Horses often require special foods.			

What is the background of donkeys ?

The donkey (or ass or burro, the words mean the same) seems to have been the first animal after the dog that humans domesticated for work, and work only, and the first to do agricultural work, so its association with humans goes back many thousands of years.□

Despite the length of this association, it has to be said that there still seems to be a lot of ignorance among humans about donkeys, and it sometimes seems that donkeys know more about humans than humans do about donkeys.□ There is a good deal of inaccurate and contradictory

folklore, some of which may be reflected here for lack of more scientific information. For instance, some people say that donkeys cannot swim, others say that they can. Probably some donkeys can swim and some cannot; real evidence is lacking, so on the whole it is safer to say that donkeys cannot swim, though it may be closer to the truth to say that they will not. Similarly there is doubt about whether or not donkeys should be allowed to eat salt. What is certainly true is that, if they really want it, they are clever enough to find it.

What is the best environment for a donkey ?

The donkey's wild ancestors were found in north-east Africa and the Near East, and this is why the donkey can withstand considerable heat and dryness, and is well adapted for savanna and semi-desert conditions. On the other hand, its health suffers in cold and wet conditions, even though it can grow longer hair in the winter, which it may shed in the summer in favour of a smoother coat.

The donkey is especially suited, therefore, to conditions which are found in most of the developing world, Africa in particular. Of all the continents, Africa has the highest number of donkeys compared to its relatively low number of people, and this is doubtless because Africa contains both tropics as well as the equator, which no other continent

does.&#65533; Most of the developing countries exist in equatorial regions or in what are known as the 'semi-arid tropics', if not the really arid tropics.&#65533; The equatorial regions may be too damp for donkeys, but donkeys are ideally suited to the other tropical regions.

Do donkeys have a bad impact on environments?

As far as the soils are concerned, because donkeys are light and their hoofs are small, they cause less compaction than animals such as cattle and horses - and of course far, far less than tractors and trucks.

Where vegetation is concerned, donkeys have relatively low feed requirements, and are very efficient in their use of food, especially compared to animals like cattle and horses.&#65533; Donkeys need to eat more frequently than ruminants do, but on the whole they eat less, so are cheaper to feed, and like most animals mainly only eat during the cooler hours of the day.

Donkeys do eat a variety of plants and parts of plants, though not as many as goats and camels do, but individually they are very selective in what they eat, and will leave many plants and grasses alone, preferring to journey long distances in search of what they like rather than to stay in one place and eat everything.&#65533; Because this helps them survive droughts

so well, they are often the only animal survivors of droughts.• The sight of donkeys as the only animals in a bare landscape leads some people to blame them for the bareness of the landscape, whereas in fact they are simply the survivors, existing where few other animals can.

The dung and urine of donkeys feed the soils as the wastes of all animals feed the soils, and the high fibre content of donkey dung also can have a stabilizing effect on soils.• In addition, one of the things that donkeys like to eat is human waste, and so a donkey is one of those animals that performs a cleaning function in the environment, limiting the spread of bacteria harmful to humans.

The following list is derived from the findings of various recent research programmes published in the animal traction• literature• It repeats some of the advantages of donkeys, with the emphasis on those that favour the environment.

- Most of the advantages that donkeys have compared to cattle arise from their much lighter impact on the environment
- In Europe, they are valued for their conservation role
- Twelve donkeys will eat the same high value food as one ox
- Five donkeys will eat the same in total as one ox

- Four donkeys will drink the same as one ox
- Three donkeys can do the same work as two oxen
- In other words, six donkeys will consume about the same as one ox, but do the same work as four oxen
- Donkeys process food more efficiently
- Donkeys manage heat better
- Donkeys conserve their energy better

- Depending on the soils, not many donkeys may be needed
- Small, round hoofs do not cut soil, nor do they impact very much, because of the light weight of donkeys (130-250 kg)
- Donkeys are also light on the environment by travelling far for food and eating a great range of vegetation
- Lighter implements are better suited to donkeys
- Such implements can be very versatile

- As transport animals, donkeys do not need wheels

How do donkeys relate to humans?

The many references to donkeys in the Bible show that, in the past and in the Near East still, the donkey was considered the particular animal of

kings and noblemen (e.g. II Samuel 16:2).&#65533; In many instances, indeed, it is clear that it was regarded as &#65533;God&#65533;s Own Animal&#65533;.&#65533; In fact, folklore has added to the Scriptures, particularly about the role of donkeys in the life of Jesus.&#65533; The Gospels only mention the Palm Sunday entry to Jerusalem.&#65533; A donkey&#65533;s presence at the Nativity and the Flight to Egypt are matters of folklore.&#65533; Further folklore concerning the markings on a donkey is mentioned in the next chapter.

In Europe, however, where the environment is better suited to the horse, the donkey came to be regarded as an inferior animal.&#65533; It is only now recognized that the donkey played a decisive role in developing North America, and also countries in Africa such as South Africa.&#65533; In Botswana today, regarded by everyone as cattle country, donkeys do more work than cattle.

Perhaps because of its very long association with humans, the donkey seems actually to *like* humans and to enjoy working with and for them - when conditions are right; otherwise it does no more than consent. It is undoubtedly one of the most intelligent of the animals that humans use for work, the only argument against its intelligence being its willingness to work for humans.

Most donkeys are by nature gentle animals which can be trusted not to

**harm smaller animals including peaceful children, and the disabled.
These days donkeys are often used in therapeutic exercises for traumatized, disabled or convalescent people, children and adults.
Donkeys also respond well to gentleness, which makes them particularly suitable for being worked by women.**

The fact that most of the farming work in the developing world is done by women makes it doubly fortunate that the donkey is so well adapted to those environments and those population structures.

How do donkeys relate to one another ?

Nobody really knows what the optimum herd size of donkeys is. When donkeys are kept together in fairly large groups, however, it can be observed that they split up into subgroups of 4-6 donkeys each, not necessarily composed of mates or mothers and offspring. To some extent it seems to be a question of a donkey with a leadership personality accompanied by others which prefer following, or perhaps are natural trouble-makers. Sometimes it is a question of familiarity: donkeys which have known one another a long time, or who have had experiences in common, tend to stick together.

However, because by ancestry the donkey is a herd animal, it becomes

**unhappy when it is alone and may engage in troublesome behaviour.
The braying noise is often made by a donkey in such a situation. As can be observed, it usually has its own special friend, preferably another donkey of its own age and sex, and best work can be obtained from both donkeys if they are worked as a pair. This is because any separation from its friend will cause a donkey unease to the point of unhappiness, and permanent or long-term separation may even cause it to die of heartbreak. This tendency to friendship and pairing is therefore both an advantage and a disadvantage.**

But donkeys are also individuals. Not all will enjoy company equally, and every herd will have one or two characters that prefer solitude, or may simply not like the others and will have a tendency to go wandering alone, perhaps in search of better companionship which they may never find.

Male donkeys are also given to fairly aggressive sexual behaviour towards each other, a topic which is discussed later.

What causes a donkey to bray ?

On the whole donkeys are very quiet animals, particularly when they are moving. In a herd among their friends, they hardly ever bray. The

main causes of braying seem to be the following:

- **Separation from their friends**
- **Encountering strange donkeys**
- **Sexual excitement**
- **Acute physical distress (and even then, often not)**

When excited about something, like the prospect of special food, donkeys can squeak and whine. When faced with an enemy that they want to warn others about or frighten away, the sound they make is closer to a lion s roar.

How do donkeys behave in general ?

One of the most important things to be known about donkeys is that each one has its own personality and preferences: each is different from every other. They easily recognize different people and know their ways, and will often behave differently according to who is with them. Owners should in turn be able to recognize easily different donkeys and know their personalities and habits, modifying their treatment accordingly. The donkey is an animal that forms decided habits.

The steady speed of a donkey's walk (although some donkeys are slow, and others fast, all are faster than oxen) is what makes them so popular as pack animals or for pulling carts.• When properly harnessed and hitched, they are also fairly fast at plowing, and also much easier to manage once they know what to do and recognize the appropriate verbal commands.•

The intelligence of donkeys is often underestimated. •When one refuses to work, it is almost always because the work is impossible for it (perhaps because it is overbalanced, overloaded, or because some other factor is interfering), not because it is 'stubborn'.• When a donkey refuses to work, its handler needs to find out why, as Balaam in the Bible was told to do (Numbers 22:23-38).•

Donkeys are very territorial animals, marking their territories with dung piles.• They will sniff any donkey dung they encounter, and add to it if they can.• When going down a new path, they will generally try to deposit dung or urine every 15 minutes or so.• Sometimes the unfamiliarity of a new territory will make them nervous, and this will cause diarrhea, so marking is sometimes with rather liquid dung.•

All the same, donkeys seem to enjoy moving over distances, because if they are left alone, that is what they will do.• So it can be said that

donkeys really like three things: good food, journeys and routine. A human who can provide all of these will be equally liked !

The donkey is one of the most rewarding animals to train and, once trained, can be trusted to do many tasks without human supervision. A donkey will learn quickly both from other donkeys and from humans, and has a remarkable memory, especially for paths and routes. It is a very good animal for anyone who is blind.

One particular disadvantage of donkeys is actually a result of their intelligence. They only accept guidance if they themselves see the sense in it, and they do not always see things in the same way as human beings do. An example of this is their attitude to traffic on the roads. Once a donkey gets used to motor vehicles, it realizes that they can steer and stop, just as a donkey can. As donkeys will always stop and steer around a stationery object, a donkey will expect vehicles to do that when the stationery object is itself - usually standing in the middle of the road because the view is good from there. What it does not seem to realize is that motor vehicles are actually going faster than donkeys can, and are therefore less efficient at steering and stopping and are also controlled by humans with unreasonable notions about rights of way. Sadly, it is a lesson many donkeys learn only in the instant they are killed.

The main advantages and disadvantages of donkeys are listed here, but discussed in more detail later.

In parts of Africa the story is told of three animals boarding a bus: an ox, a goat and a donkey. Only the ox had the correct fare; the goat sneakily avoided paying its fare at all, and the donkey failed to get change from the conductor. Now, when a bus comes speeding down the road, cattle pay no attention to it, goats run to hide, but donkeys are determined to stop it so as to claim the change that was never given.

What are the main advantages of donkeys ?

- **Friendly towards humans**
- **Willing to work**
- **Can turn in a small space**
- **Easy to train**
- **Need little supervision in work**
- **Can utilize poor food well**

- **Need little water**
- **Not affected much by external parasites**
- **Less impact on soils than cattle or machines**
- **Less impact on vegetation**
- **Can survive well in tsetse areas**
- **Can survive droughts better than cattle**
- **Comparatively cheap to buy**
- **Strong relative to size**
- **Live/work long years in good care**
- **Milk good for humans, especially babies**
- **Useful for calming, training and guarding other kinds of animal**

What are the main *dis*-advantages of donkeys ?

- Suffer from being alone

- **Noisy when frustrated or lonely**
- **Friends not easily separated**
- **Uncastrated males aggressive towards other donkeys**
- **Skin easily wounded**
- **Tendency to wander long distances if not supervised**
- **Tendency not to move out of the way of traffic**
- **Need shelter from cold and damp**
- **Produce only enough milk for own young, no extra**
- **Comparatively small in size**
- **Mature slowly**
- **Breed slowly**
- **Manure more fibrous than nutritious**

How much work can a donkey do ?

Although donkeys *use* less energy than larger animals, probably because they are better adapted to their environments, they actually are capable of producing more work.• A donkey can produce about 250 newtons of work for up to 4 hours, and for each kg of bodyweight can produce almost twice as much work as an ox, though for shorter periods.• It has been found that donkeys outperform cattle by about 120%.• Donkeys are also more efficient than humans: carrying loads on a level surface or down slopes, a donkey uses little or no more energy than it does unloaded, whereas a human uses twice the normal energy.• If it is allowed to go at its own speed, a fit donkey can go further than any other animal, and still work hard.• It has been calculated that a donkey can produce 1.8-2.8 megajoules per day, and has a power output of 170-200 Watts; also it will move at about 0.7 metres per second.

GENERAL ENERGY PRINCIPLES

Whether pulling or carrying is involved, there are three aspects to be considered: weight (or mass), friction (or resistance), and speed.• These form part of the calculation of the energy required for work, definitions being as follows:
WEIGHT (or load) is in fact a force, since it is mass operated on by gravity, and this force can be expressed both in kilograms and in newtons (10 newtons = 1 kg).• A newton is actually the measurement of the exertion of a force, so can include resistance.
WORK, expressed in joules, is the energy needed to move a force through a ***DISTANCE***, i.e. 1 joule is the work done in moving 1 newton through 1 metre in 1 second.
POWER is the rate of doing work, expressed in watts or kilowatts

(1 joule per second = 1W; 1000W = 1kW), so that ***TIME*** becomes an essential part of the calculation.

Work and power, therefore, cannot be easily separated from speed, which is a function of distance and time, so it is easy to see how weight and speed, two things which we are accustomed to measuring, must be considered in calculating what an animal can do.• The unknown quantity is usually resistance, and what is interesting about it is that it operates in a different direction to weight: weight is a vertical force downwards; resistance is usually horizontal, certainly where draft is concerned.• The relative sizes of these forces is in different directions determines the angle at which they can best together be overcome with the least wastage of work.• These factors, particularly the angle, need to be taken into account when considering equipment, discussed in a later chapter.

A donkey can carry half its own weight, or more, depending on how long it is expected to do it, but in theory can only pull about half as much, as deadweight such as a log dragged along the ground.• In practice, a donkey usually does a lot more than expected, but will stubbornly refuse if it feels the job is too much for it.

What needs to be borne in mind where donkeys are used for pulling, is that when joined together in teams, their strength can be reduced.• This is to say that, if six donkeys pull an implement or cart, they do not produce 1500 newtons or so of work, but more like 1375 newtons,

following the rule-of-thumb that 10% of available energy lost for every animal added.

How long do donkeys live and work ?

Although a donkey matures slowly and should *not* be used fully for work before its bones are properly knit when it is 3 years old, or its bones will become distorted, causing pain that will interfere with work, a very well cared for donkey can live beyond 50 years and give useful work for about 40 years.☐ However, in many countries this is hardly known, due to the harsh working conditions, parasites and disease ☐ even though donkeys suffer less from these than other animals do.☐ Still, people who think about it can usually remember one example of a donkey "already old when I was young, and still alive today".

Does a donkey need to be marked or branded ?

Donkey theft has become very common as the real value of donkeys is becoming recognized.

When a donkey knows its owner, very little identification is necessary, because the donkey's reaction to its owner will clearly demonstrate where it belongs.☐ Donkeys seldom allow strangers to approach them

unless in the company of someone they know.

In cases where confusion or argument is likely, however, the best means of identification is probably branding, although the doing of this may have a bad effect on the donkey's behaviour.• The practice, in some parts of the world, of cropping donkeys' ears has many disadvantages, including this one: fighting and mating donkeys often damage one another's ears, thus destroying or imitating ear marking.

Luckily it has become much cheaper to arrange computer implants for identification, and where such a scheme is available, it is one way of ensuring that donkeys can be found again if stolen, and gives the thief no grounds for argument.•

What should donkeys mainly be used for ?

The necessary equipment is described in a later chapter, but some is shown in the photographs here.•• The main purpose here is to show the wide variety of possible uses for donkeys.

CARRYING LOADS

In the many parts of the world where there are no roads, donkeys are mainly used for carrying goods, putting people in remote areas in touch

with development, enabling them to sell and buy goods in urban markets.• There is practically nowhere a donkey cannot go; with four feet it can often manage steep rocky paths better than a human can.

Padding prevents wounding and a frame makes loading easier; front and back straps prevent problems on slopes.

An individual donkey should not carry more than one third of its body weight (i.e. 40-80 kg, depending on its size, which may be between 120 and 240 kg).• Some variation can be allowed for time and distance, as heavier loads can be carried for shorter times over shorter distances, but the overall amount that can be carried is limited only by the number of adult donkeys available to do the carrying, and how well the loading is done.• As nearly as possible a load must be distributed equally over the two sides of the donkey.

Liquids can be carried, preferably in containers that can lie flat along the donkey's sides and which can be closed.•

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One litre =

Traditionally, in many parts of the world, goatskins are used for carrying water on donkeys' backs.

Well-prepared bundles of firewood, such as a woman may put on her head, can be carried by a donkey - only a donkey can carry much more - if the wood is carried on top of a sack to protect the donkey's back.• Several donkeys can carry a supply to last a household several weeks, or be sold to supplement family income.

Donkeys can therefore relieve women of much of their time and energy-consuming work.

For loads which need to be carried flat, or such things as long poles, two donkeys, one walking behind the other, can be used, with the load suspended from both backs and spanning the space between them.

CARRYING PEOPLE

Although traditionally ridden by kings, donkeys these days are often too small for large human beings, and are more frequently ridden by children, although often also by people moving cattle. Most donkeys do not move very fast unless trained to do so, and refuse to be hurried. A donkey which is not hungry also moves faster than one which desires to eat.

It has to be said also that, because a donkey's ribcage slopes down on either side of its spine, it is less comfortable to ride than a horse, which has a flatter back. But not all human beings can walk easily: the sick, the old, the crippled and very small children. For these people the donkey is ideal, as long as there is somebody to help them get on and off. A blanket over the donkey's back makes it more comfortable; a saddle with stirrups is not really necessary, as a donkey's movements are much smoother than those of a horse. A light basket chair can, however, be made to fit on a donkey's

back over a blanket, so that there is no danger of falling off

.

Although at 120-240 kg, donkeys are obviously not as big in size as cattle (which are about 500-700 kg) or mules or horses, thus not able to give as much strength in draft, for their size donkeys are actually stronger and work twice as hard as cattle, each donkey giving an average output of about 250 newtons for up to 3 hours - after that the output is less, so it is not efficient to use a donkey for more than 3 hours without a rest.• A pair has no difficulty in pulling a standard plow at 20 cm depth through previously plowed or light or sandy soils.• Only poor harnessing would make this difficult.• And no more than a single donkey may be required to pull a light mechanical weeder, cultivator, ripper or other light implement.• Soil types and moisture conditions would make a difference, of course. Because not overly powerful, the donkey is also well suited to wooden plows, which can be home-made, contributing even more to self-sufficiency.

Further donkeys can naturally be added to the team for heavier soils, though it must be borne in mind that even healthy donkeys cannot and will not pull at full stretch for more that 2-3 hours at one stretch, or 4-6 hours per day (doing lighter work, they go longer) and must also have plenty of time to eat, including at least one hour of eating before they start work.

Well trained donkeys need only one human to operate them: donkeys like to walk in straight lines, and can recognize and follow a furrow, and quickly learn where to turn, especially if they have been taught voice commands (discussed under 'Training').

What makes donkeys useful for plowing also makes them useful for pulling carts, but with similar limitations on time.☐ Nonetheless, they can pull a cart faster than any oxen.☐ It must be borne in mind that carts are not easily used away from well-maintained roads, and the carts in many countries were designed for horses or oxen, not donkeys.

These 10 donkeys, pulling a 2-share plough, as can be seen, needed the minimum of supervision, they were so well trained.

It is worth mentioning that, in some parts, water drums are mounted on wheels for donkeys to pull, and small vehicles with two shafts for pulling by a single donkey are becoming more common and useful.

If donkeys are well harnessed - i.e. if they can pull at chest level and take the vertical load on their backs (*not* their necks) and can also use their backsides to help with the braking and backing - two donkeys can pull in a cart three times the load that they can carry on their backs.

In practical terms this means that a cart is economical only if it costs less than four donkeys, and carries a load not exceeding 500 kg.

Poor harnessing reduces the donkeys' efficiency, and also the balance and condition of the cart itself makes a difference. If the wheels are not turning freely, the force needed is greater, and weight is also more if movement is not on a level surface. Often, therefore, donkeys can only pull a cart containing less than a load they could easily carry on their backs.

GUARDING SHEEP

In various parts of the world donkeys are used to protect sheep from wild dog-type predators, such as jackals, coyotes and dingoes. If not accustomed to dogs, donkeys seem to dislike them enough to chase them, attack them, and even kill them.. It is necessary, however, to ensure

that the donkey feels that the sheep are first its friends.

With the right equipment, donkeys can also be used for turning the wheels for milling grain and operating pumps for lifting water.

On a treadwheel which operates a reciprocating pump, a donkey working for 20 minutes (one donkey should not do more than 20 minutes continuously of this work) can pump 3 600 litres of water up 10 metres, which is enough water for 150 cattle or the ample domestic needs of 100 people for a day.

An actual donkey lifting water is a rare sight today, although it should not be. In South Africa, it is only to be seen in museums.

TOURISM

Culture sensitive tourists, a growing market, are often from cities where interaction with any kind of animal is rare.• Wild animals and large animals such as horses may be too threatening, whereas donkeys quickly put tourists at ease.• In addition to this, of course, they can do all the usual tasks of carrying goods and people and pulling carts, although it is in treks through wild and rural areas that they are most popular.• This is a real income-generating opportunity for donkey owners.

Are there any useful byproducts from donkeys ?

MILK

A donkey mother does not really produce a surplus of milk, and it is her own baby (foal) that needs it most to form strong bones and resist disease.• But if a donkey loses her baby, it is worth bearing in mind that her milk can be used, because donkey milk is nearest in composition to human milk, and therefore well suited to human babies whose mothers may be having difficulties providing them with enough. A donkey's milk can also be used once the foal is older than 6 months and starting to need less.

Some people believe that donkey milk can be used to cure asthma and various other human ailments, but there is no good medical evidence to support this.

Donkey meat might not be to everyone's taste, but there is nothing wrong with it as meat. Humans in some parts of the world do eat it. However, where donkey meat is not eaten, this adds to the value of donkeys as work animals because, if donkeys are used exclusively for work, more cattle can be used for meat. It is also difficult to imagine how a donkey's meat can be worth more than its work, when it works so hard and for so many years.

Donkeys which are old and incapable of work still can have a meat value, and can often be sold to pet food factories, zoos and crocodile farms which will kill them humanely for their meat.

Some industries will buy the bones of any dead animals, including

donkeys.

LEATHER

Donkey skins are thin and certainly do not make the best leather, but when softened by tanning a donkey's skin, like any other, can be made into clothing. Salted and oiled it can be used for riems and the like. Since harnesses cause less damage to donkey skins if they are made of leather, the skins of dead donkeys can in this way preserve the skins of live ones.

Because the donkey makes such good use of poor food, this means that it does not excrete many minerals or organic chemicals that would be of use to plants; a donkey produces mostly fibre.• This, however, can be of great use in stabilizing sandy soils and especially useful mixed with chicken manure which supplies more nutrients.• As donkey droppings are usually hard and dry, they decompose and release their nutrients better under the soil than on top of it.

Transferring manure from kraal or heap to garden or field also of course becomes much easier when donkeys are used.

As a stabilizer, donkey manure is used in North Africa mixed in the proper proportions with mud for building, particularly in the production of sun-dried bricks, now being appreciated worldwide as the perfect building material. Donkey manure is also used in North Africa as a fuel when dried, which it quickly becomes.• The smell of donkey manure is not very strong, and is liked by many people for its fresh sweetness, different to but as nice as cattle dung.

What are the laws concerning donkeys ?

Naturally enough, every country would have its own laws regarding animals of different types. The donkey is not only an animal, but a domestic animal and a draft animal and, as all of these, there are laws in most countries which would apply to its treatment, use and responsibility for damages caused.

The Highway Code in Zimbabwe is a good example of what is required of donkeys which are used on roads:

"Animals and those in charge of them form a separate class of road user and those in whose care the animals are have a special responsibility, for their charges have minds of their own and are prone to stray and become restive. If they do, they are a serious danger to themselves and others.

"If therefore you are in charge of an animal or animals, it is of first importance that you should always keep them under control.

"When you are riding ... keep as far to the left of the road as you can and, if possible, ride on the verge. Ride in single file if you are with others.

"If you are leading an animal, you are pedestrian and should walk facing oncoming traffic, as far to the right of the road as you can. Walk on the animal's left so that you are between it and the traffic."

Also in Zimbabwe, the STOCK THEFT ACT specifies that anybody found on land where animals are kept encloses must prove that

he or she was not trying to steal the animals. This is related to the POUNDS AND TRESPASSES ACT which concerns animals which take themselves away. This act has been much changed, but it is still true that owners are responsible for the damage that their animals do, unless the animals have been stolen.

The PREVENTION OF CRUELTY TO ANIMALS ACT forbids beating, kicking, ill-treating, overdriving, overloading and torture of animals, and the use of diseased or ill animals. It equally forbids an owner to abandon an animal. Knowingly selling or using poisoned food is also an offence under the law. The way in which animals are killed is also strictly controlled.

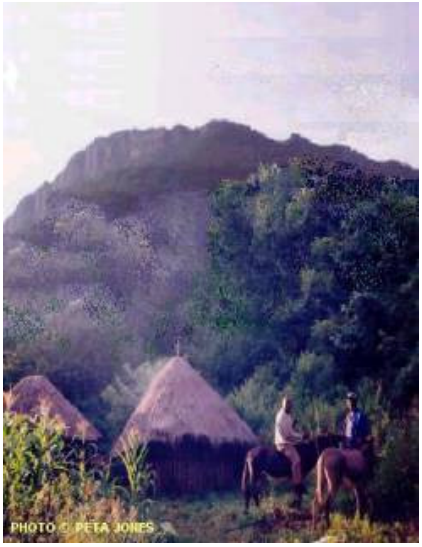
The ANIMAL HEALTH ACT mainly concerns what must be done about diseased animals, especially if they can infect other animals. Most farmers and veterinary staff are aware of the list of notifiable diseases. Ones which affect donkeys include rabies, anthrax and trypanosomiasis [see chapter on Veterinary Considerations].

What is the truth of some of the things that are said about donkeys ?

DOES DONKEY URINE BURN THE SOIL ? Only because donkeys like to

urinate where others have done so • they can be observed smelling first, and then spreading their legs to deposit where others donkeys have made their deposits.• In such a spot, this can overload the soil with urea, but if it is spread more widely, it is very beneficial to plants.

DO DONKEYS TEAR GRASS OUT OF THE GROUND ?•• They can do so if they are desperate, and if they like the taste of a particular root.• But their front teeth are very good cutting implements, and donkeys in fact make excellent lawnmowers by cropping grass a few centimeters above the ground, including edges and corners.



Where there are rocky mountains and no roads, the donkey is still the best means of transport.

Chapter 2

CHOOSING A GOOD DONKEY

What are the different breeds of donkey ?

In some parts of the world, especially where donkeys are show animals, different breeds have been emphasized: there are black donkeys, white donkeys and spotted donkeys as well as the more familiar grey ones; there are shaggy donkeys and smooth ones; there are mammoth donkeys as big as horses and miniature donkeys not much bigger than dogs - but in most of the developing world, where breeding is difficult to control, natural selection does not usually allow any of the extremes.☐ By and large, the very small, the very large, the very shaggy and the white and spotted donkeys do not exist where donkeys are kept for work and not for show.☐ 'Pure' breeds as such are not really found in developing countries, and no breeding registers of donkeys are kept.

All the same, donkeys can vary a lot in size, probably representing adaptation to different environments.�� The average donkey weighs about 140 kg, and walks at about 0.7 metres per second.

What visible features should a donkey have ?

Some people are puzzled by the 'chestnuts', oval black areas of skin midway up the inside of a donkey's front legs. These are in fact an evolutionary vestige of� 'thumbs', possessed by all equines, and do not indicate anything abnormal.

Also characteristic of donkeys, from their remote ancestry, is their 'cross', which is a dark stripe from head to tail down the centre of their backs,with a shorter stripe crossing it at right angles across their shoulders/withers.� In rarer instances, a number of shorter cross stripes can occur behind this one, diminishing in size towards the tail.� These 'crosses' can sometimes be visible even on dark donkeys, seen in a certain light, but on some breeds of donkey they can also be entirely absent.� From a different remote ancestry, many donkeys may also have stripes up their legs.

The American Donkey and Mule Society has put out two charming folk legends about how the donkey got its cross (even though not all

donkeys have one, and we know from Egyptian paintings that the cross existed long before the birth of Jesus).

> *The story is told that the little donkey that had been Jesus's mount on Palm Sunday, came to the hill of Calvary.*
>
> *Seeing the tragic event occurring there he wished with all his heart he had been able to carry the cross for Jesus as he was the proper one to carry heavy burdens.*
>
> *The donkey turned his back on the sight, but he could not leave because he wished to stay until all was over because of his love for Jesus.*
>
> *In reward for the loyal and humble love of the little donkey the Lord caused the shadow of the cross to fall across his back and left it there for the donkey to carry forevermore as a sign that the love of God, no matter how humble carries a reward for all to see.*

And an alternative from Mexico:

> Maria was holding the baby Jesus before her on the donkey during the flight into Egypt. The baby was still very young, and

he wet the back of the donkey where he was sitting. *Because of this, the donkey carries the cross on its back.*

Occasionally some genetic throwback shows many more stripes than is common on a donkey.[illegible] One might think that a zebra cross is involved, but it is not.[illegible] What it does demonstrate is that the donkey is really a north-east African variety of zebra. (Mudenda)

Also characteristic of donkeys, but absent in some breeds, is their white 'pointing', i.e. white areas around the mouth and eyes, inside their ears and under their bellies.

What *all* donkeys have, in contrast to horses in particular, regardless of breed, is long ears, an upright mane of bristles about 5cm long (though this is a little variable), a tail with a tuft of long hairs only at the end, and a bray. A mule or hinnie, or a zebra pure or crossbred may have one or more of these, but only a donkey has all.

What is the difference between a donkey and a mule ?

A mule is a donkey-horse hybrid: the mother a horse, the father a donkey. The disadvantage of size in a donkey can be overcome if mules are bred. Mules are just about as strong as horses, but have the disease resistance and willingness to work that donkeys have. The great disadvantage of mules is that they are not fertile, and only extremely rarely can breed further. This is because horses and donkeys have different numbers of chromosomes. All the same, the male mule behaves like a fully sexed stallion unless castrated, and the female comes on heat.

What does one need to look for in a donkey ?

The most important thing to look for, when buying a donkey, is the donkey's *friend*. Donkeys must be bought as pairs of friends, as otherwise many problems can be caused. Also, a young donkey should not be separated from its mother before it is at least a year old. Ways of judging a donkey's age are considered later.

However, farmers also need some guidelines for the purchase of new donkeys and in deciding which of the males should not be castrated. They may also need to decide which of their donkeys may be used for which purpose.

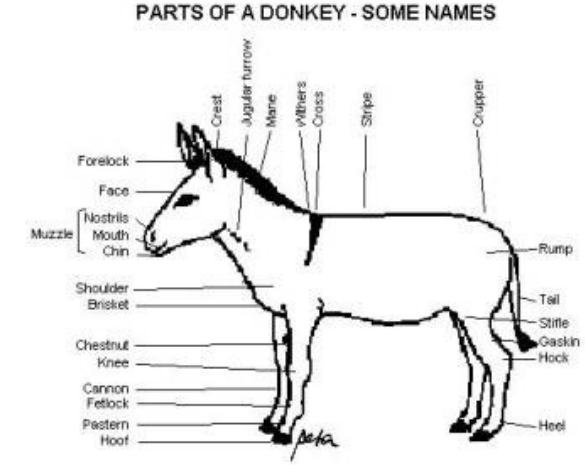
Since all donkeys are working animals, most of them are expected to work at more than one kind of task, and training needs to start at a very early stage (before many of the donkey's characteristics can easily be detected), this process of selection does *not* concern deciding which donkeys must be trained. Up to a point, they all must be.

It is the needs of the user which must therefore decide what characteristics are most desirable and what further training the donkey should be given. Some of the characteristics mentioned here, such as speed and obedience, are often the outcome of training before the donkey is old enough to be used.

To some extent, a donkey will select itself. An owner will often know what kind of work his or her donkey will like doing best and be most good at. A buyer should not choose a donkey until it can be seen regularly in use (*Caveat emptor !*)

Not to be forgotten, when a donkey is bought, is its *name*. If the previous owner has no name for the donkey, then this indicates that the donkey has probably not received good treatment, and has certainly not received good training. As a buyer, you will need to use the donkey's original name so as to establish a good relationship with it.

A campaign is currently under way to ensure the regular showing and judging of donkeys in agricultural shows and field days in Africa, for the purpose of awarding prizes and thus ensuring that users care for and value their donkeys bit more highly than hitherto. To this end some judging criteria have been drawn up.



This list is just a suggestion; application and practice will teach judges possibly better criteria to aim for.

CRITERIA
(the "best" to aim for if not achieve when judging prize donkeys)

BODY FORM

- **Large overall size**
- **Length of leg equal to length of body**

- **Front legs straight when viewed from all sides**
- **Hind legs straight when viewed from back**
- **Back straight**
- **Back parallel with ground**
- **Neck straight**
- **Ears unbroken**
- **Hoofs at good angle (see later diagrams)**
- **Chest deep**
- **Haunches well-muscled**
- **Underside of hoof well-shaped, regular and concave**
- **Teeth regular and uniform in shape, meeting squarely**

CONDITION

- **No scars**
- **Coat shiny**
- **Mane thick**
- **Hoofs smooth and shiny**
- **Underside of hoofs clean**
- **Ribs not visible**
- **Hip bones well covered**
- **Belly flat**
- **Eyes alert**
- **Ears alert**
- **Teeth sound and clean**
- **Eyes dry, not weeping**

MOVEMENT

• Long stride (2 back and 2 front legs form equilateral triangle• with ground when donkey walking)

• Fast walk (any one leg moves once per second)

• No up-and-down movement of back when trotting or cantering

TEMPERAMENT

• Calmness in the presence of strange humans

• Calmness in the presence of strange donkeys

• Calmness in the presence of other species of animal• (e.g.dogs, cattle, depending on what is available)

• Immediate obedience to handler's words or signs: start moving, speed up, stop, turn right, turn left, go backwards

• Standing still while being harnessed

WORK

(in team or singly, depending on donkey sizes, local conditions and equipment • but with only one handler)

- **Pull plow to make straight furrow on level over 50 m in 1 minute**
- **Pull fully-loaded cart through zig-zag obstacle course on level over 50 m in 1 minute**
- **Pull fully loaded cart up 1:5 slope 10 m in 1 minute without breathing hard**
- **Take fully loaded cart down 1:5 slope 10 m without slipping**
- **Back fully loaded cart on level 10 m in straight line**
- **Drag 5 m pole over level 50 m in 1 minute without breathing hard**
- **Carry 2 x 5m poles in tandem with another donkey, 100 m in 1 minute**
- **Carry full backload 60 kg up 1:1 (45 degree) slope or series of 10 rocks approx. 1 m diam. 10 m in 1 minute without breathing hard**
- **Carry full backload 60 kg down 1:1 slope or series of 10 rocks approx. 1 m diam., 10 m without slipping**

No donkey can be perfect, and some characteristics on this list may be unobtainable.�� For instance, a big donkey is not necessarily a fast one.� If a donkey is desired to be both big and fast, some compromise may have to be made.

It must also be remembered that, in marginal environments, donkeys tend to be small.� This is because smaller donkeys survive better where there is little to eat and drink.� Natural selection has chosen the most suitable size.

How can a donkey�s weight be measured ?

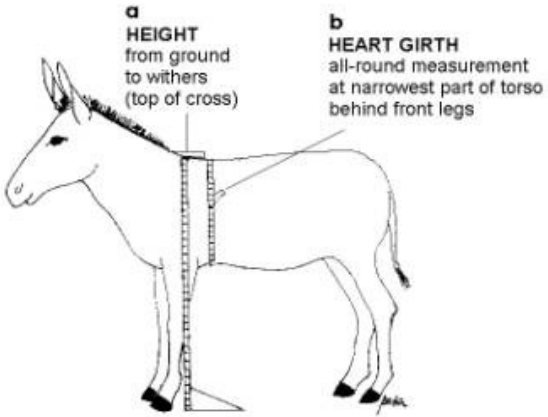
It is sometimes necessary (especially when estimating dosages for medication, but also when trying to estimate a donkey�s capacity for carrying weights, to be able to judge the body weight of a donkey.

Unfortunately, there is little agreement as to how this can best be done, and much would also depend on the donkey�s general condition.� Is it too thin ?� Is it too fat ?�

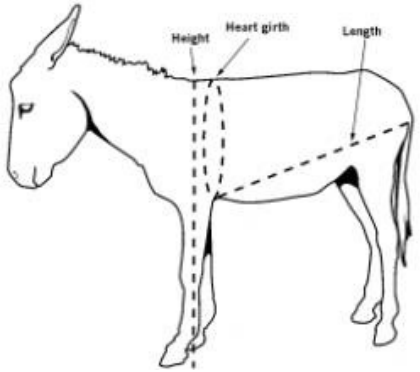
The Centre for Tropical Veterinary Medicine (CTVM) at the University of Edinburgh (see reading list: Pearson & Ouassat 2000) has produced a

booklet to enable practitioners to judge the body condition of donkeys, but in fact there is little more to be learned than common sense will tell one.• Any animal is too thin when its ribs are very visible, just as an animal is too fat when its ribs cannot be felt through its flesh. An overweight donkey also has a roll of flesh on its neck, which slips sideways.•

Both the CTVM and the Donkey Sanctuary in England have also produced 'nomograms' from which weight does not need to be calculated, but only measured on



A donkey 110 cm tall (a) and with a hearth girth 130 cm (b) should weigh 217 kg (c).
The nomogram is accurate to within 10 kilograms.
The Donkey Sanctuary © 1997



a chart once certain dimensions have been measured on the donkey in question. Both are reproduced here;

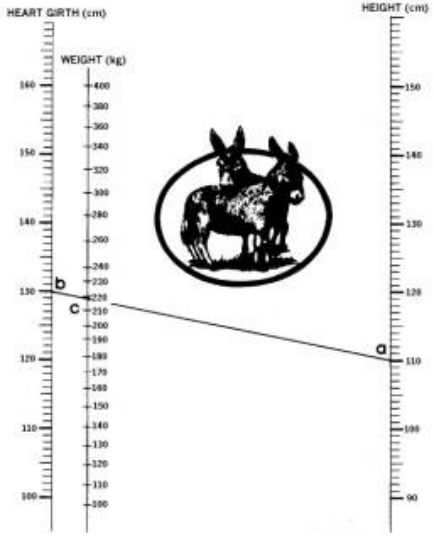
THE DONKEY SANCTUARY FORMULA APPLIED:

c is discerned by joining a and b by a straight line.

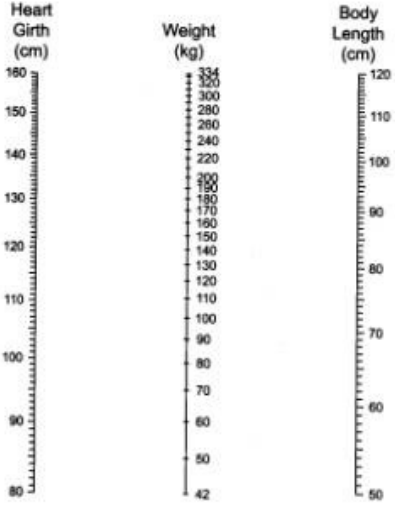
THE CTVM FORMULA

APPLIED

for use in the same way as the Donkey Sanctuary method; 'length' is to be measured here from 'point of rump' to elbow as in the drawing.



Using a slightly different formula, the Donkey Sanctuary also gives a weight table for donkeys under 2 years, using heart girth only; this is an abstract:



HEART GIRTH cm

75 80

85 90 95 100

WEIGHT kg

46 55 65 76 88 102

What else needs to be considered when choosing a donkey ?

This has already been mentioned, but it cannot be repeated too often.• Bearing in mind that donkeys separated from their friends are liable to suffer and, at the very least, give trouble, it is wise to choose donkeys in *pairs*, i.e. pairs of friends.

If breeding is to be considered, then the matter of gender should also be taken into account, and if breeding is not desirable, gender is still important, as males will have to be castrated and females kept with the possibility of isolation from males • see further discussion of these things below.

When a female is chosen, it is also important to know whether or not she is rearing a foal, often detectable by the fullness of her udder.• If she is

still nursing, she should not be separated from her foal before it is about a year old, and certainly not before she has weaned it herself - otherwise both health and behavioural problems might be caused in both mother and foal.

SOME WAYS OF JUDGING A DONKEY'S PHYSICAL CHARACTERISTICS

SIZE/WEIGHT

A donkey's weight may be estimated from measuring its girth and height (see illustration), and then using one of the
nomograms reproduced here to convert cm to kg.
More than 250 kg would be LARGE,
150-250 kg would be MEDIUM,
and less than 150 kg SMALL.

CHEST
The width of a hand should be able to fit between a donkey's front legs where they meet the chest, from the time the donkey is about a year old. More important, though, is the distance between the bottom of the neck and the top of the legs. This should also be at least the width of a hand.

BACK
The line of the backbone should be level between the shoulders/withers and rump/crupper.• A slight sag just behind the withers or just in front of the crupper is acceptable, especially in a young donkey.•

LEGS
Seen from front, back or sides (in the case of front legs; for back legs, only from the back for the whole leg, otherwise only for the bottom part of the leg), the legs should be straight and as nearly as possible perpendicular to the ground.• Thick legs are well-muscled ones.• In a baby, large knees are an indication of future thickness, and small knees are an indication of future thin legs.• But even in a large-kneed baby, knees should not touch.

FEET/HOOFS• (see diagrams below)
Unless the sole of a donkey's hoof is concave underneath, i.e. only the front part and the edges are touching the ground, the donkey will not be walking properly.• The shape should be nearly as round as possible, and the frog etc. inside (see diagram) symmetrical in shape, and all parts clean and hard, not crumbly.• The grooves should not be clogged.• For an

adult donkey, the average measurement from one side of a hoof to another is about 5 cm, but this depends on the donkey's size and is best judged by eye for good proportionality.

The ANGLE of the foot with respect to its leg on a donkey makes a big difference to the donkey's ability to take loads and move with agility. To some extent the angle can be controlled by the care given to a donkey's feet. Seen from the side, the angle that the front of the hoof makes with the ground should be about 60 degrees from the horizontal in the case of the back legs, and a little more in the case of the front legs. In an adult donkey, the back of the hoof should rise at least 2 cm above the collar of hair surrounding the top of the hoof.

EYESIGHT

Donkeys on the whole have rather poor eyesight. However, if a donkey is known to be awake and reacts to movement coming from the rear and on ***each*** side of it, and at a distance of about 10 metres, then its vision can be considered good. Close examination of the eyes should also be made. From some angles they may look slightly opaque, but this should not be the

case from ***all*** angles.

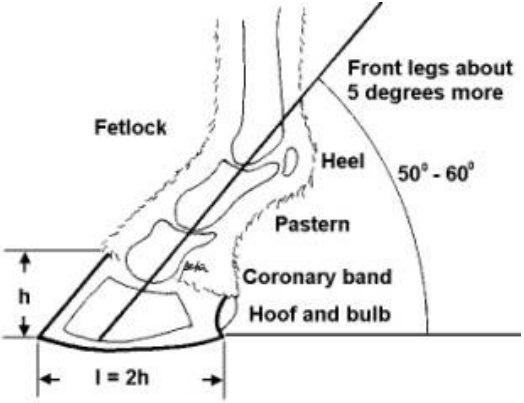
WHAT A DONKEY HOOF SHOULD

LOOK LIKE UNDERNEATH

When clean, all these should be visible

HOOF AND BONES,

SHOWING BEST ANGLES



AND DIMENSIONS

What difference does a donkey's sex/gender make to its work ?

The best and most valuable donkey is one that has all the desirable characteristics for its job (or jobs), with only the possibility of old age and disease to change them. If it is a fully sexed adult, however, its reproductive hormones can change its behaviour in undesirable ways.

FEMALES (or Mares or Jennies)

Female donkeys, when on heat, will forget their work and friends and follow - often actually pursue - male donkeys of their fancy. Even if there are no males around, they will be restless and disobedient for several days at a time, about once every two months until finally and successfully impregnated. Females, especially the younger and older ones, which are still suckling their young do not seem to fall pregnant very easily, even though they may come on heat, so one to two years can elapse between deliveries.

It is difficult to know when a female donkey is pregnant. Towards the end of her pregnancy, which is 10-14 months long, she will be much more docile than normal, but if her pregnancy is so far advanced that it is obvious, then she should not be used for work, as this can threaten the life of the foetus. Once the mother has given birth, she may anyway be impossible to use for several weeks, as she will be too busy defending and feeding her baby.

A mother donkey should not be used for work until her baby is about three months old, and even after that there should be plenty of time for the baby to suckle its mother's milk.• The baby will grow into a better donkey the longer it is allowed to suckle, but if the mother is working, then she needs supplementary feeding (see section on 'Keeping donkeys').

MALES (or Stallions or Jacks)

Fully male donkeys (•intact• with testicles) become difficult to control when they are anywhere near a female in oestrus: they may leave their work and their friends to pursue her.• In addition, dominance over other fully-sexed males becomes important to them, and they can engage in quite damaging fights with each other.• They are also a danger to very young donkeys who are still with their mothers; the males resent their presence and can attack them, by biting and kicking.• In this way, potentially useful donkeys can be ruined.

CASTRATED MALES (Gelded Jacks or Geldings)

It is obvious, therefore, that a castrated male donkey is the best type to have.• It is *not* noticeably true that castration itself changes a donkey's characteristics to being stouter in shape and slower in behaviour,

although many people believe so.• There may be some increase in fat, which can protect the donkey from some harness sores.• Also, a castrated donkey is believed to use less energy than an intact stallion, while still producing the same amount of work.• Of course, less sexual excitement contributes to a reduction in excitability, but a castrated donkey can still be a very alert and responsive donkey, and will be more willing to work.

While a castrated donkey is certainly less sexually aggressive than one not castrated, it still seems to engage in most of the fun, including mounting and penetrating mares on heat.

The only thing a castrated donkey cannot do, unfortunately, is reproduce its own good characteristics through breeding.• Therefore it is necessary, in a community of donkeys, to choose about one out of every twenty males to remain uncastrated.• In making this choice, the community of donkey owners must be very sure that it is preserving the most desirable characteristics possible.• The owner of a donkey left uncastrated may well be considered responsible for the damage the donkey does, and also for the characteristics of its offspring, so the selection of a male donkey to be left intact should be a matter for the *whole* community, and not just an individual owner.

HOW TO DISCERN THE SEX OF A DONKEY

HOW TO DISCERN THE SEX OF A DONKEY

Different to so many other animals in so many ways, donkeys also keep their sex well hidden from the eye. For a human to identify the sex of a donkey, especially a baby donkey, it is often necessary to slide a hand along the rear of its belly and feel with fingers. The presence of the umbilical cord might confuse things, however. For female foals and older donkeys it is enough to lift the tail and look; however, doing such intimate things within reach of an adult donkey's rear hoofs may be a bit of a risk ! Luckily donkeys lift their tails to flick at flies, to defecate and urinate (and also when they are a bit excited), so if one is in the right position at the right time, and not too far away, one can do a bit of detecting then.

One of the difficulties is that male donkeys, which keep their penises retracted when not in use, have on the outside of their penis sheath two little protrusions, like nipples, and these are in exactly the same position between their back legs as a female's udder, and a female udder, with two nipples, is also pretty small on a donkey, even when lactating.

FEMALE (mare, jenny, jennet)

A donkey's udder, with only two teats, is well hidden between the back legs. It

cannot easily be seen within a baby's fluffy coat, although it can be felt.• An alternative is to observe from behind when the tail is lifted: if a *two*-stage slit can be seen below the round anus-hole, then the animal is female.

MALE (stallion, jack)

A male donkey's penis sheath, although usually withdrawn close to the body, is in much the same position as a female's udder, and therefore also difficult to see clearly on a foal.• Also, it has two nipple-like projections which can be confusing.• The scrotum only drops and becomes visible when the young male donkey (colt) is about one and a half to two years old.• However, male donkeys extend their penises when they urinate, and this makes their sex easy to assess.• As males grow older, also, more of the penis in its sheath becomes visible from a distance.

CASTRATED MALE (gelding)••••••••••••••••••••••
••

If over 2 years old, and the scrotum is not visible, but the donkey is a male, then it is probably castrated.

How can a donkey's temperament be judged ?

Apart from what is mentioned in the list of criteria above, a donkey's temperament can often be judged by the way its owner handles it, so good opportunities to observe this are necessary.• Temperament can also be judged to some extent by the donkey's own body language.• A donkey with its ears pointed forward is interested in what is happening and willing to participate.• A donkey with its ears back is frightened, angry or too excited and can easily behave badly.• A donkey with its ears back a lot of the time can be said to have an ill temper.• Training may change it, but not necessarily.• Angry twitching of the tail is another sign of uncertain bad temper, but if a lot of flies are around, a donkey will need to twitch its tail a lot, so cannot fairly be judged on this.• A donkey with its ears down, and usually its head down too, is feeling depressed and unwell.• If it is seen like this a lot of the time, then something is probably seriously wrong with it (further signs of ill health are discussed later).

Again it must be repeated that a donkey's relationship with its particular friend should not be forgotten.• However well suited for a job, a donkey may not perform it well if it feels that the job separates it from its friend.• Since donkeys often work in pairs, they should if possible be chosen in pairs - pairs of friends - and that way they will do better

work. It will also become apparent in what order and on what side a donkey prefers to work i.e. which donkey is to go in front, which on the left, etc. Donkeys behave better when their preferences are allowed.

Thus a donkey's relationship with other donkeys with which it works also needs to be observed, especially in the context of team work. In a group of donkeys there will always be at least one which is trying to be leader, with or without the co-operation of the others. Some will be willing to take rear place, others will always want to be in front. The handler of a team of donkeys needs to know not only which donkeys are stronger and which are weaker physically, but also which donkeys have ambitions to be leader, and how the situation is to be resolved, usually by the donkeys themselves.

Donkeys well accustomed to each other will have their own order of working, and it is better for a user not to interfere with this. But when a new donkey is to be introduced to a group, it is as well to know whether it is going to be ambitious, or content to be a follower. This has very little reference to the gender of the donkey: many female donkeys are leaders.

WAYS OF JUDGING A DONKEY'S TEMPERAMENT

A donkey with a CALM temperament would, in an open field, allow a strange human (or donkey) to come quite close before moving away, and when it moves, it will move slowly.

A RESPONSIVE donkey will be very watchful and, although allowing a stranger to come quite close in an open field, will be prompt-t in backing away from any strange movement.

An EXCITABLE donkey will run, probably kicking its heels in the air, when seeing a stranger in an open field.

A donkey is OBEDIENT is it knows the commands, responds to them quickly and does not need to have them repeated.

Moving 1 km in under 5 minutes is FAST for a donkey, and it cannot be expected to go much further than 1 km at this speed. A donkey that walks more slowly than a human being is TOO SLOW.

A donkey is AGILE if it can turn in a space only a little wider than itself and climb up and down steps at least 50 cm high;

if it cannot do these things, it is CLUMSY.

What is the best kind of donkey for carrying loads ?

Strength of back and legs are more important in carrying than in other kinds of work, because the animal must not stumble.• The whole weight of the load is moved by the donkey's small feet.• Therefore good physical characteristics would be large size, straight back, straight legs, large, well-angled and concave feet and good eyesight.

Although a calm temperament might seem desirable, as nobody wants a donkey with a load on its back to run in fright, there is also the thought that, if such a donkey is regularly travelling in dangerous situations • where, for instance, there might be wild animals • then a quick response to danger can be an advantage after all.•

Therefore good behavioural characteristics would be a responsive temperament, prompt obedience and fast speed.• Another desirable characteristic may be nimbleness, in negotiating narrow paths and rocks.

What would be the best kind of donkey for riding ?

The only difference between a donkey which is ridden by a person and

one which is carrying a load, is that the desirable characteristics should become more important.• Stumbling and running away are even less to be desired; but alertness, agility and prompt obedience to commands are paramount.

- and/or for agricultural work ?

Since all field operations require the strength to pull, and the pulling must be done by the chest or adjacent shoulders (depending on the type of harness), with the legs providing the power and the back taking the vertical force, obvious physical characteristics here would be large size, wide and deep chest, straight back, straight and well-muscled legs.

In addition, the animal's behaviour needs to be considered.• It must have the endurance to pull for as long as possible; to some extent this is determined by its breathing ability and is therefore related to the conformation of its chest.• However, its willingness and patience are also factors, and in addition it must be able to stand still for long periods.

What is the best kind of donkey for pulling carts ?

Since this is also a draft operation, characteristics needed are similar.• However, since the animals will presumably be operating on roads that

other vehicles use, a calm and unexcitable temperament is even more important.

Speed also becomes more necessary in pulling carts than it is in field operations, so this can be added as a desirable characteristic.

For how many years can a donkey work ?

Although donkeys should be trained as young as possible, if donkeys do any heavy work before they are three years old, their bones which are still forming and hardening - particularly the backbone - will get twisted into the wrong shape.&#65533; This will cause them pain and disablement for the rest of their lives, rendering them less capable of good work.

A donkey cannot be considered mature until it is about 4 years of age.&#65533; Mature weight is only reached at about 6 years.&#65533; As can be seen from the table below, the adult incisors (front teeth) are not erupted until a donkey is about 3.5 years old.&#65533; A donkey can begin to reproduce before then, but this, too, is not desirable.&#65533; Any animal which reproduces too young does not reproduce well, and its own health may be threatened.

An animal is too old to work only when it becomes a struggle for that work to be done.&#65533; As can be judged from the table below, from about the

age of 35, a donkey may have some difficulty eating its normal foods and could need to be fed soft supplements.

Donkeys can work up to about the age of 40 years if they are well cared for, but often it can be expected that disease and/or parasites will shorten the period considerably.• However, a really well cared for donkey can live beyond 60 years, and even towards the end do very light work, such as carrying children or small cans of water.• Donkeys dislike being bored and like to feel useful, even in their old age.

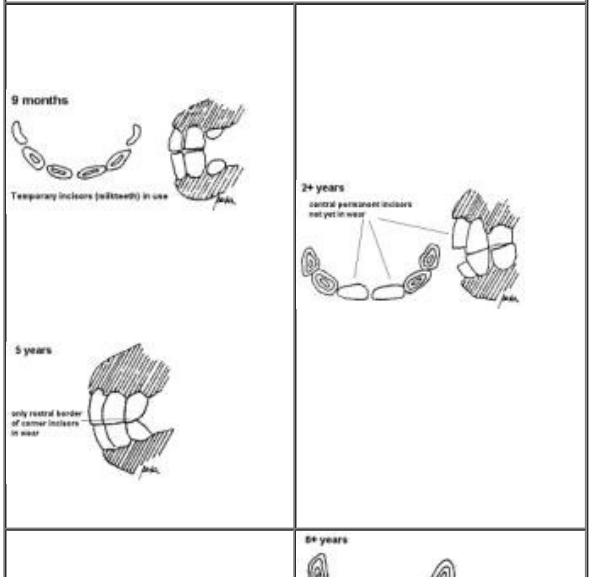
HOW TO JUDGE AGE IN A DONKEY (mainly from the incisor teeth, in the front of its mouth)	
Age	**Signs**
0-1 month	Eruption of temporary teeth; 2 central incisors & 3 molars/back teeth
0-6 months	Donkey's body covered with soft, fluffy coat hairs. No corner incisors.
9 months	Temporary corner incisors erupt (see diagram); they are about the size of a little finger nail, and shell-like, not yet in use, although other temporary incisors showing wear. Baby coat usually completely gone.

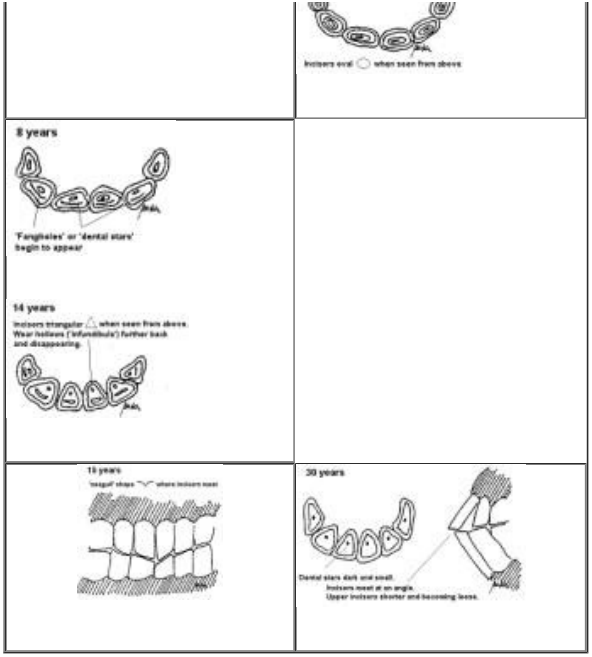
1-2 years	Male testicles drop, scrotum visible (usually).
1+ years	Permanent central incisors & 5th molars erupt (see diagram), temporary corner incisors already showing full wear.
2+ years	Permanent central incisors & 5th molars in wear.
3 years	Permanent lateral incisors erupt.
3+ years	Permanent lateral incisors in wear & 3rd molars erupt.
4 years	Permanent corner incisors erupt.
4+ years	Rostral border of permanent corner incisors in wear.
5-10 years	Labial border of permanent corner incisors increasingly in wear (see diagram).
6 years	Incisors oval when seen from top.
7 years	Upper corner incisors' back edge unworn, forming 'hook'.
8 years	Central teeth more triangular, but corner 'hook' nearly gone. Fangholes (dental stars) appear in central incisors, but light colour.
9 years	Tooth alignment longer and more angular, shorter but more exposed near gum.
10 years	Entire labial edge of permanent corner incisors in wear.

	Maybe in some donkeys, yellow-brown groove outside of upper corner incisors, starting at gum.
11 years	Infundibula of central and middle incisors becoming shallow.
12 years	Fangholes visible in all teeth.
13 years	Shallow V-shape to meeting of upper & lower incisors just discernible. Incisors pronounced triangular shape when seen from top.
14 years	Infundibula further back on teeth and wearing out.
15 years	Noticeable V-shape to meeting of upper & lower (see diagram). Infundibulum starts to disappear in lower central incisors. If groove on upper corner incisors, it is halfway down teeth.
20-21 years to 26 years	Infundibulum disappears in the following order: 1st: lower lateral incisors 2nd: lower corner incisors 3rd: upper lateral incisors 4th: upper corner incisors.
30 years	Upper incisors noticeably shorter than lower incisors.

	Upper incisors & lower incisors meet at acute angle (see diagram). Dental stars (fangholes) dark and small (see diagram). Any groove on upper corner incisors now gone.
35-40 years	Upper incisors splayed and loose, or flush with gum.
40+ years	Molars (at back of mouth) become loose.

Bottom teeth shown in plan form, as seen from above




Incisors oval when seen from above
8 years
'Fangholes' or 'dental stars' begin to appear
14 years
Incisors triangular when seen from above.
Wear hollows ('infundibula') further back and disappearing.
15 years
30 years
Dental stars dark and small.
Incisors meet at an angle.
Upper incisors shorter and becoming loose.

A two-week old foal – a filly, as this one is female.– Three years before she can do the heavy work of a donkey.

Chapter 3

THE LIFE CYCLE OF DONKEYS

At what age can a donkey start to reproduce ?

A male donkey reaches puberty and thus can be potent as young as 10 months (which is one reason why castration may need to be early).– A female donkey may start coming into heat for the first time when she is about 2 years old, which is still about a year too young for a good pregnancy.

How quickly can a female fall pregnant ?

After a jenny has given birth, the first 'heat' can come within about 1-3

weeks.• In times of stress • nutritional or emotional • on the donkey, this may not happen at all, and whole years can be skipped without a jenny going on heat.• When she does, however, until the next pregnancy begins, this may repeat every one or two months, and lasts between 2 to 10 days.• During those days the jenny behaves in a fairly nervous way and will spend minutes at a time making strange opening and closing movements with her mouth.• Other signs are •clitoral winking•, i.e. the opening and closing of the vulva with tail-raising, but her behaviour towards males will make it fairly obvious what is happening.

When a jenny is on heat, she herself will actively look for a stallion to mate with, and where donkeys are free-ranging, it is generally true that eager stallions will arrive from surprisingly long distances away, but usually not more than two at a time.• Nobody really knows how donkeys arrange this among themselves.• Because stallions will fight each other, and any young males around - often picking on just one of them as a chosen victim - and also because the mating behaviour itself is quite violent, it is wise for an owner to make sure that a jenny on heat is well isolated from other donkeys.

The last days of the heat period are the most important for conception, so there is generally time to find a stallion if a pregnancy is desired.• If, as it should be, the jenny does not have free access to a stallion, this is also

an opportunity for an owner to choose a proper time for the foal to be born.

For how long is a donkey pregnant ?

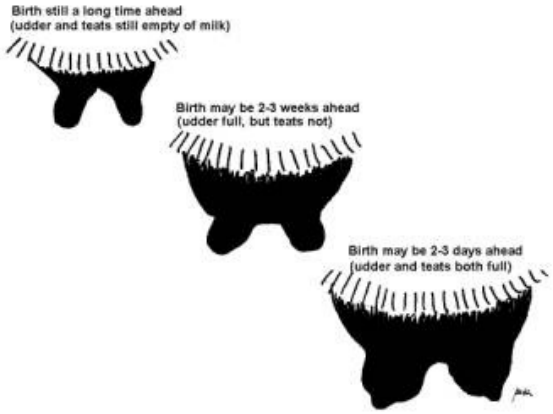
It should be kept in mind that a jenny that is not healthy may not be able to carry her foetus to term.• Therefore only healthy jennies should be allowed to conceive.

A donkey is pregnant for anything between 10 months and 14 months (but 10 a month foal is *not* premature), a fact which often surprises even veterinarians, few of whom are real experts on donkeys.• For most of the period of gestation, it is very difficult to know when a donkey is pregnant or not.

When is the best time for a foal to be born ?

The best nutrition for mother, foetus and eventual foal is provided if the birth takes place late in the rainy season, i.e. when there is maximum begetation, and the mother will also have spent the last month or two of her pregnancy on an improved diet.• All the same, when elft to themselves, donkeys seem to foal mostly in the middle and late dry season, although it can be at any time.

How can a donkey's pregnancy be recognized ?



The main sign is simply an absence of heat periods, but these are often seasonal anyway.• For a long time a pregnant donkey will simply look mildly fat, and only in the last month or so will that fatness look like pregnancy, especially if the donkey is viewed from the front or back.• The bulge will be lower in the belly than normal fatness, and will very likely be more on one side than on the other (being without a rumen, the donkey is normally symmetrical).• A donkey in the last stages of pregnancy will normally be more docile than usual.

About 3 weeks before birth takes place, the jenny's udder will swell in the making of milk (lactation), and about 3 days before birth the teats will swell and may exude a little milk.• At the same time, the pelvic muscles slacken and the bones around the top of the tail become moveable.• The lips of the vulva may swell out to be flush with the hindquarters a few hours before delivery.• The jenny also becomes restless and may stop eating.• If she is free to go where she likes, she will hide.

What happens when a donkey gives birth ?

If she can, a donkey will choose to be alone when she gives birth, but of course it is wise for an owner to be watching in case there is trouble. However, the trouble is very seldom serious, and it is much better not to interfere.

The whole process takes about an hour from the first contractions. After the waters break (i.e. when the amniotic sac is broken inside the mother), the foal usually comes out forelegs first with the amniotic membranes which it must quickly clear away from its nose for breathing. If the owner is close enough, and the jenny is not too nervous, help can be given in clearing the foal's nose of membranes and also ensuring that nose and mouth are clear of mucus.

If the foal is not emerging from the mother at all, help can be given by reaching in with a thoroughly cleaned and disinfected arm, fingernails cut right down to prevent scratching, to make sure that the front hoofs and head are pointing in the direction of going out. If the foal is stuck with only one foot out, it may need very gentle pushing back in order to ensure that both forelegs and head are pointing in the right direction and not bent backwards. One foot will always be slightly ahead of the other in any case.

Once the foal is out, after a few minutes' rest, the movement of the jenny and foal will break the umbilical cord naturally.☐ The owner should definitely *not* try to break it or cut it: the cord should remain intact for as long as possible.

Within the following hour, the jenny should pass out the placenta (afterbirth), which she may eat although being a herbivore, and will meanwhile clean the foal by licking it all over.☐ If the jenny fails to do this licking, she should be encouraged to do it by sprinkling the foal with a little salt.

For an hour or so the foal will struggle to stand, and keep on falling.☐ Finally it will remain standing a bit unsteadily and then make some clumsy attempts to find its mother's udder, usually in the wrong place !☐ An experienced mother will guide the foal to the right place, but a young mother may herself get rather confused for a while.☐ Only if the confusion goes on too long, i.e. longer than an hour, should the owner try to help.

The first milk (colostrum) of the mother is very important to the foal, because it contains substances to help the foal resist diseases in its early months of life.☐ This colostrum must be taken within two hours after birth if possible; after six hours, it is probably too late.

How should a young donkey be cared for ?

The best carer of a young donkey is its mother, and up until a donkey is about 6 months old, it should never be separated from its mother for more than an hour, and should be allowed to drink her milk as often as it wants, because at each suckling it actually drinks very little, the milk production of donkeys being rather slow compared to animals especially bred for milk production.• Thus, if the mother is working, her foal should be allowed to be 'at foot', i.e. walking alongside.

The foal will need to, and will, lie down and rest frequently.• As its mother will not then be willing to go any long distance from it, this must also be taken into account when working the mother.• On the whole it is better not to work her at all.

Soon after birth, stimulated by the mother•s licking, the foal should pass its first faeces, a dark brown substance called 'meconium'.• If it fails to do this, something is wrong.• After that, it may be some days before faeces comes out again. When the mother comes on heat after foaling, the foal may show signs of diarrhea ('scouring') caused by the hormones it takes in with the milk, and also perhaps from sheer nervousness, but this is normal.• At other times scouring is a bad sign and should not be ignored (see 'Veterinary• chapter).

For the first few hours of a foal's life, its tiny hoofs are covered by a rubbery substance which soon peels off.• Thereafter the foal is ready to move quite long distances with its mother, and if the mother has any mistrust of the home environment, she may go with the foal and hide somewhere for a couple of weeks.• After that, she will very likely come back, as jennies seem keen to introduce their foals into the herd.• She will in any case be *very* protective, and any approach to the foal should be made very carefully, as its mother will place herself in front of it and without mercy kick any human or animal that she feels is a threat, even her best friend. It is better not to try and approach at all, but to persuade mother and foal to come instead by offering them tidbits.

It is, however, important to *try* to handle a foal as soon as possible after its birth, a matter of hours, before it learns to be nervous.• This saves a lot of trouble later on, when training begins (see section on 'Training').

A young foal can spend a lot of its time sleeping flat on the ground with its legs stretched out as if dead, which is not the common sleeping position of adult donkeys.• It will also get a lot of exercise running around its mother and kicking its hind feet in the air. This youthful dancing about never quite disappears; a happy, healthy donkey will occasionally do it right into old age.• Even a heavily pregnant donkey can do it, a sure sign of top condition.

LOOKING AFTER AN ORPHANED FOAL

LOOKING AFTER AN ORPHANED FOAL

If a foal's mother dies, and there is no other mother available, or one cannot be persuaded to adopt it (by covering the foal with salt to encourage mother-licking), then of first importance is to find a suitable other animal, not necessarily a donkey, to keep it company 24 hours a day.

It should of course be kept warm and dry, and have plenty of soft places where it can lie down to sleep.

Foals have teeth and will start tasting plants and gradually eating them from the time that they are only a few days old. However, they will not survive without plenty of milk, and they should have this for at least 6 months.

The recommended mixture for donkeys is very close to human formulae, i.e.

375 ml cow's milk + 125 ml water + 1 tablespoon brown sugar

Feed this, warmed to blood temperature, every 3 hours to a young donkey out of a suckling bottle. If fresh cow's milk is difficult to get, then one of the human baby-formula products based on cow's milk

will work very well.&#65533; Mix as for human babies, but of course give in greater quantities to equal 500 ml every three hours.

A very young donkey can be quite susceptible to illness.&#65533; Its fluffy coat does not repel water, but absorbs it, so there should be somewhere for it to keep dry during the rains, especially if they occur in a cool season and/or are very frequent and heavy.&#65533; The longer a foal can suckle from its mother, the better on the whole for its health.&#65533; It should certainly not be weaned before it is 6 months old, and weaning should be allowed to be done naturally by the mother.&#65533; Only if the mother already has another foal, but has failed to wean the previous one, should some intervention like separation or, preferably, a weaning halter (see under 'Equipment') be used.&#65533; A donkey jenny cannot normally produce enough milk for two foals, and twins are extremely rare.

A foal will generally follow its mother wherever she goes, but if it is born into a herd of some size with which it spends its infanthood, it will show signs of indecision when its mother is led away from the herd.&#65533; It may choose to stay with the herd and then later become frantic because it cannot find its mother, so care must always be taken to ensure a foal accompanies its mother in preference to the herd until it is weaned.

From the time a foal is about 3 months old, its mother can be used for work, but she should not be separated from her foal for more than 3 hours in the day. This is why, as has already been said, it is much better to let the foal accompany its mother while she is working (i.e. have the foal 'at foot'), which will also mean that the mother gives less trouble. She must also get enough to eat for the production of her milk.

When should a foal be weaned ?

A foal should be drinking its mother s milk until it is at least 6 months old, or it may not have a good chance of survival. There should be no reason to wean it before its mother undertakes the job, as the longer a young donkey can suckle, the more healthy it is likely to be. However, if the mother s own health is being threatened by the need to give milk, then she can be encouraged to wean her foal if a weaning halter is put on to it (see below under Equipment), causing irritation to the mother. This is a much less damaging method than separating mother and foal.

Usually a donkey mother will ensure her foal is weaned before she gives birth to the next one. Sometimes, however, the older foal will try to share the milk of the younger one, and it is not always the case that its mother will stop it. Then it is necessary for the owner to make sure that

the younger foal • and the mother • are not being deprived of nutrition, and either the weaning halter or separation must be used.

When is a donkey adult ?

As with any animal, maturity in donkeys is a question of definition.• The ability to reproduce comes well before other forms of maturity.• The bones of a donkey continue to grow and do not knit at the joints and become strong until it is about 3 years old, which is why it should not be used for heavy work until then.•• To judge this age, it is easiest to do so by inspecting the front teeth (see previous chapter).• A donkey is old enough for work when its *second* set of teeth are not only fully present, but also showing signs of use, including the middle ones.

However, a donkey generally only reaches its full size when it is between 4 and 5 years old, when it will engage in rather less of its youthful, playful behaviour.• By the time it is 6 years old it will have almost all of the physical and behavioural attributes that will form its identity through most of the rest of its life.

What should be done about castrating donkeys ?

As mentioned above, unless there is some special reason for not

castrating a donkey, and all neighbours agree to this, *all* male donkeys should be castrated.

There is general agreement about *how* donkeys should be castrated, which is to say not with a burdizzo, but surgically.

What is still under debate is the age at which a donkey should be castrated.☐ It is desirable that it should be done before the donkey becomes too sexually active, which would mean before it is a year old.☐ It is also desirable that the donkey should still have the comfort of suckling from its mother to help it overcome the pain and shock, which would mean before it is six months old.☐ On the other hand, a donkey's testicles do not descend until it is about 18 months old, and before then they may be somewhat difficult to find ☐ there is great variation from donkey to donkey.☐ It is also true that it is difficult to know the true nature of a donkey until it is fully adult, and if one is looking for a breeding donkey to leave uncastrated, castrating too early may turn out to be a regrettable mistake.☐ These days it is generally recommended that donkeys should be castrated as close as possible to when they are 3 years old.☐ The older the donkey, the greater the risk of bad reaction to the operation and the less the chance of changing its behaviour.

The sexual behaviour of a male donkey may become so aggressive and

impossible, however, that an owner becomes glad to castrate as soon as possible.

Castration should only be performed at the coldest time of year, to minimize the risk of flies spreading infections.☐ Castrating surgically means that the donkey will shed a lot of blood, and take some time to heal - at least two weeks.

It is always better to have a veterinarian castrate a donkey.☐ If there is no government service of this kind, an owner may try to contact a local private vet or animal welfare society and arrange with other donkey owners for several (say 10 to 15) donkeys to be castrated on the same day, to save costs.

CASTRATING DONKEYS (without anaesthetic)

Have ready:

1. Razor blade or scalpel, sterilized by soaking in alcohol/methylated spirits for 30 minutes.

2. Iodine, preferably in a spray (the liquid can be made from a solution of iodine crystals, and put into a sprayer or, lacking that, a

squeezy bottle with a small hole at the top).

3. Woundspray or powder, usually an antibiotic.

4. Ligatures, e.g. nylon fishing line, cut into 10 cm lengths

5. A sack filled with hay.

Keep the donkey as calm and quiet as possible and try to cast it onto the ground (see next chapter, but also the pictures here) with the minimum of fuss.

When the donkey is on the ground, make sure that all four legs are securely tied, to trees or strong posts back and front. The donkey will use all its strength, which is considerable, to try to fight free, especially at the beginning. Later, even if anaesthetic is not being used, fear and pain will keep it still. It is best to have other people helping, one to make sure that the donkey's head stays on the ground resting on the sack filled with hay, even to the extent of sitting on the head, and others ready to deal with any loosening of ropes or other trouble around the legs. Certainly this cannot be done by one person alone.

It is important to work as quickly as possible, which is why everything

must be ready, and the blade very sharp.

First, scrub your own hands, making sure that your nails are short and cleaned, and wash the donkey's genital area. Then spray or paint it with the iodine solution/tincture of iodine.

The donkey being on its back, the testicles will have slipped back into their hollows (or, if the donkey is very young, not yet emerged). Fingering around with your left hand - if you are right-handed, otherwise the other way around - move the first testicle up into the scrotum to judge the proper position there, and keep your fingers underneath to support it. With the other hand, use the blade to cut through the uppermost layers of the scrotum, cutting from back to front (i.e. parallel with the donkey's body length) so that the testicle can be pulled through the opening and its stalk exposed.

As far down the stalk as possible, tightly tie a ligature with a secure knot, then cut through the stalk above it to remove the testicle, which can then be thrown away. Into the wound opening put lots of wound spray or powder, and even clean brown sugar to help the healing process. Then quickly repeat the process on the other testicle.

When both testicles have been removed, dust or spray the wound area

further, then carefully release the donkey's ropes, staying clear of possible kicks, and stand back.

The donkey may be a bit slow about coming to its feet and staggering away, and you will find that a frightening amount of blood gets shed, even with the use of ligatures - but this is normal.��� To save the donkey too much walking at this stage, let it eat the hay that filled the sack.

For the next ten days to two weeks, check the donkey twice a day and spray the wound.� For four days to a week, the scrotum may be very swollen, but this is also normal.

If healing is not nearly complete by the end of three weeks, then veterinary advice must definitely be sought.

As castration causes a donkey a lot of pain and shock, it is desirable to use at least a local anaesthetic for this, a common one being Pentobarbitone/Euthanase.�� A general anaesthetic is even better, though more expensive, and in most countries no anaestheic is allowed to be used by anybody unqualified.� Using chloroform is said to be simple and cheap, though it carries the danger, if used carelessly, of rendering unconscious the human who uses it.� However, the non-availability of

anaesthetic should not be a reason for not castrating.• It is necessary to remember how much pain donkeys can cause each other if they are not castrated.

The use of a burdizzo is not recommended by professionals, because if it is not done properly, it can give rise to more problems than it solves.• If done properly, it can be effective and has the advantage that it results in little if any bleeding, thus reducing the risk of infection.• The pain for the donkey is still very considerable, however, and it may continue longer than the pain caused by surgery.• There are different burdizzo sizes, so it is necessary to use one appropriate for a donkey, and of course it is not possible to use a burdizzo on a young donkey whose testicles have not yet descended.•

USING A BURDIZZO

The donkey must be cast to the ground and tied just as for a surgical castration (described above).

Here too, the testicles must be fingered up into the scrotum, and then lifted away from the donkey•s body so that the burdizzo can be fitted around the outside of the stalk.

When closing the burdizzo on the stalk, there should be a perceptible "crunch" felt by the person performing the operation. This indicates that the vessels inside the stalk have been ruptured. At the same time, the outer skin should not be punctured.

The burdizzo should be held in this position for a full minute before being released, to ensure that the ruptures are complete.

After that, the donkey can be released, but must be checked daily for a couple of weeks to ensure that there are no problems.

In the course of about a month, testicles and scrotum should shrink and virtually disappear. If not, then the operation has not been successful.

A donkey cast to the ground, its back legs tied to posts with strong ropes, thick enough not to cut, front legs bound with wide straps made of sacking.

Then castrated with a burdizzo

It may be observed that a castrated male donkey can sometimes achieve an erection and even penetrate a receptive female. **However, if the castration has been done properly, there will be very little accompanying aggression and certainly no resulting pregnancy.**

What should be done when a donkey dies ?

When a donkey dies, every effort should be made to find out the cause, in case it is something that might spread among other donkeys, and can be prevented.

The dead donkey's special friend (or in the case of a foal, its mother) should be left with the corpse for about an hour, to help it adjust to the loss.☐ Otherwise a donkey which suddenly loses its friend or offspring can give problems of behaviour.

As to the disposal of the remains after that, this will depend on the particular circumstances of the owner.☐ Can the hide, meat or bones be used or sold locally ?☐ Can a deep hole be dug for a grave ?☐ Can a large fire be made ?☐ etc.

Chapter 4

KEEPING DONKEYS

Is it really necessary to look after donkeys ?

Care of animals often means that an owner must give attention to them before thinking of his or her own comfort.☐ Ownership must also be seen as responsibility, and the value of a working animal can be greater than the value of any other possession, regardless of☐ the buying and selling

prices.

If it is not healthy, a donkey cannot give good work.• Housing and feeding contribute to animal health, so are just as important as the more direct care and prevention of ailments and injuries.

A happy, healthy donkey is one that will do the most work for its human owners.

In addition, it should be remembered that male donkeys can be aggressive towards other donkeys, and that all donkeys have a tendency to wander and look for food.• Simply so as to avoid trouble with neighbours, not to mention loss of donkeys, it is necessary for an owner to supervise donkeys, and to make sure that they are safely enclosed at night.

Who needs to know about looking after donkeys ?

The owner of a donkey should obviously be aware of his animals' needs, but we must not forget the people who use the donkeys and herd them, which are therefore the people who spend the most time with them.• Often this is *not* the owner, but his wife (if the owner is a man) and children.

Since in much of the developing world the care of animals • and especially of donkeys • is usually in the hands of women and even more so of children, it is up to owners to be sure that their children know all that is necessary about donkeys.• Children should *never* be allowed to throw things at donkeys, or to chase them.• Such treatment will simply cause bad behaviour in the donkeys (and probably the children too) that would otherwise be well-behaved and friendly. Good working donkeys can in this way be ruined.

Are donkeys different to other animals• in the way they should be cared for ?

It needs to be strongly emphasized that there is a large difference between donkeys and ruminant animals like cattle and goats, particularly in the way that they digest their food.• They may all eat similar things, but donkeys are different in the way that they process what they eat, and because of this they need to eat much more often than cattle and goats.• Even though what donkeys eat is often the poorest food available, and is never very much, unless they eat frequently they can suffer sever health damage.

In practical terms, this means that donkeys need to spend more time eating and less time digesting.• It should also not be forgotten that

donkeys may be full-time working animals, unlike most other animals.&#65533; Just like humans, they cannot be expected to work on an empty stomach, and by morning their stomachs are empty.&#65533; They will work badly and reluctantly if they do not have a chance to eat for at least an hour before they begin work.

Can donkeys be kept with other animals ?

As already mentioned, a donkey should not be kept alone.&#65533; It will have one special friend, which will be obvious, and less trouble will be experienced if the donkey is kept with its friend.&#65533; A lonely donkey is also more likely to be noisy.&#65533; If there is no other donkey to be a companion to a single one, donkeys seem to be quite willing to accept almost any other sort of animal as a friend, after some thought.&#65533; In fact, donkeys are often kept with other animals so as to calm and guard those other animals, so more for their sake than for the donkey's.

Where many donkeys are kept together, jennies just about to deliver or with young foals, as well as stallions, should be kept separate from the herd and from each other - for obvious reasons.&#65533; Pregnant jennies and young foals can easily be harmed by other donkeys, and stallions can be violent. If females are absent, however, stallions will not give much trouble.&#65533; Jennies have been known to try to steal another's foal, and this

is not good for the foal.

Donkeys co-exist well with most other species of animal but do not much like animals which are bigger than themselves, until they know them.• They are nervous of horses.• It will be observed that donkeys generally avoid close contact with cattle, and they should not be confined in a pen together because of the damage that horns can do.

Unless donkeys are accustomed to dogs, they may chase them and even kill them, but they are very tolerant of most other small animals, including human children, and readily make friends with them.

At pasture, it has been found that it is an advantage to keep donkeys together with sheep and goats, as to some extent they consume each other's parasites, to the benefit of both.• What is more, donkeys are sometimes used to protect sheep from dog-type predators, so such coexistence can have a double advantage.

Should a donkey be cleaned ?

A donkey can keep itself clean if it has a dry, sandy place to roll. This means its coat will tend to be dusty, so not really clean in human terms. Donkeys also like to roll in ash. Rolling is an essential activity to keep a donkey free of external parasites (see under 'Veterinary Considerations'), so an owner should always ensure that donkeys have plenty of opportunity to roll.

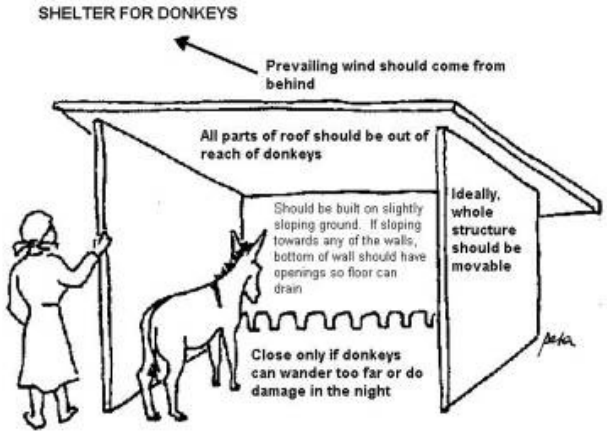
A working donkey is to some extent protected from harness and backloading irritation if the loose hair and skin oils are *not* brushed away, but left in place with whatever dirt there is. For show purposes, however, at the very least good brushing of donkeys is necessary, plus oiling of hoofs. Donkeys treated in this way on a regular basis tend to look very much better and healthier than any ordinary working donkey, so it can be a good thing to encourage children to do.

If the soil is damp, it can compact and accumulate in the hollow underside of a donkey's hoof, and if the hoofs are not cleaned underneath in such circumstances, bacteria and fungi can breed and cause infections in a donkey's feet. These should always be kept clean and dry and

trimmed to the proper shape to ensure working health, as described more fully in the next chapter.

Should donkeys be kept in at night ?

Most donkeys, especially if they are young, lie down for sleep at night.• There must therefore be enough space for all the donkeys to lie down away from their own excreta.• At the same time, they should not be damp or cold, or exposed to predators.• This usually means that they should be provided with shelter and protection of some kind at night, whether in a paddock or a kraal or byre.



Also important is that donkeys should spend the *minimum amount of time* in confinement.• As soon as it is light, and for all the hours of light, they should be free to move around for eating, scratching and rolling, and establishing their own social relationships.• As already noted above, the most important thing is to allow donkeys to eat, but other activities are important too, as a bored

donkey will give trouble, and also make a lot of noise.

Donkeys confined at night may also need to be protected from each other, especially if there are jennes on heat or young foals that may get damaged if there is any kind of excitement.☐ Some division that separates male donkeys from jennies and foals is a wise investment.

What sort of fencing is necessary for donkeys ?

Barbed wire should *not* be used for enclosing donkeys.☐ If they see enough space, many donkeys will try, and most will succeed, to get through or jump over a barbed wire fence, and can injure themselves.☐

On the other hand, a donkey, unless it is made desperate by being kept enclosed for too long, will not use great force to get through a fence, so poles do not have to be very large or heavy as they have to be for cattle, or even very closely spaced, as they have to be for goats.• However, individual donkeys tend to have individual ways of dealing with fences and gates, and once again it is a question of an owner knowing the habits of his or her donkeys.

Wherever donkeys are kept, they will make a rolling place for themselves, and choose a rough surface for scratching themselves by rubbing against it.• It is therefore a wise precaution to provide in a central place a stout pole with rough bark or little projections, particularly at donkey head level, so that donkeys are not tempted to use the fence and maybe damage it.

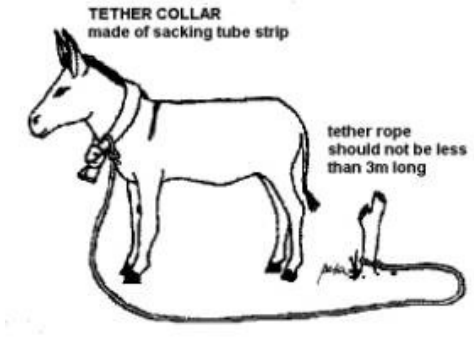
Grids can be tried to prevent donkeys getting onto tar roads, but many donkeys are able to jump across them.• They need to be very wide.

Where fences are absent and donkeys cannot be let loose because of the damage they might do to people's gardens, then the only option that an owner may have would be to tether his or her donkeys, i.e. to tie

them to a tree or post.

Can donkeys be kept tied up ?

This is not at all good for the donkeys, and involves some danger for them, so if it is necessary great care and attention should be given to how it is done.



The donkey must have a wide collar (see the 'Equipment' chapter for a fuller description of ropes and the like) which will not cut its neck, and a rope which allows it to move away from the tether point at least 5 times the donkey's own length. **There should be nothing along that length that will catch the rope, and ideally the donkey should be able to move in all directions around the tether point.** **However, if the tether point is a pole or a tree, the donkey could easily wind the rope around it, thus limiting its grazing, and not all donkeys are intelligent enough to unwind the rope again.** **The presence of a fence on one side, giving only 180 degrees, is therefore often helpful.**

It is very important that the object or tether point to which the donkey is tied should be *absolutely immovable* or the donkey will certainly find a way to move it and maybe cause a lot of damage.

Naturally the tether point must also be chosen so as to allow the donkey the maximum amount of eating, and a good variety of the plants that the donkey likes to eat (i.e. not only grass) must be within its reach.

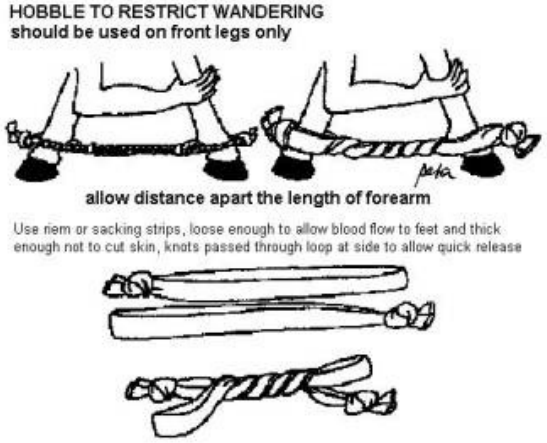
Even when there seems to be plenty for the donkey to eat, it should not be left tethered in the same place for more than 3 hours. Particularly towards noon, donkeys need to doze in the shade, and if a donkey does not have it, it will go to some lengths to get it. Food can be brought to the donkey, but it is easier of course to move the animal. In any case, regular change ensures that, if the donkey gets into trouble with its tether or collar, it does not suffer for too long. Tethers can often get twisted around a donkey's foot, strangling the blood supply, and a young donkey trying to scratch its head with a back foot can catch that foot in its collar and fall to the ground helpless. Most donkeys have the sense to keep still when in this kind of trouble, but could panic and do themselves damage if approached by a stranger.

An alternative strategy for confining the movement of a donkey is to hobble it, i.e. to link its front feet in such a way that it can only move a

very small distance with each step - but this must also be very carefully done so as to avoid damage to the donkey.��� Also, it should be pointed out that even a hobbled donkey can be determined enough to move itself surprisingly long distances surprisingly quickly, as is the way of donkeys.

A hobble is particularly dangerous to use where a donkey might be able to get onto a road.� While it is not the habit of donkeys to run when they see a motor vehicle approaching, it is obviously dangerous for them if they cannot do so at all.

Also, a hobble� made of wire or thin rope can cut into the most vulnerable part of a donkey�s leg, making work difficult for it for the rest of its life.� In the circumstances, a hobble must only be used with the greatest caution.



How long should a donkey graze in the same place ?

A pasture which is used too long or too often may become not only exhausted of nutrition, but seriously infested with parasites.&#65533; As has been said, pasturing sheep and goats along with donkeys may control this to some extent, but no pasture should be used on a permanent basis.

A donkey makes very good use of food, but this does not mean it should be deprived of food.&#65533; It will do well on plenty of dry grass, but grass is very far from being the only thing that it eats, and it needs the variety just as much as quantity.&#65533; If the owner observes what herbs, bushes, trees and fruit donkeys like, then places can be found where maximum nutrition is provided.

Donkeys should have at least six hours a day at pasture, but this should not include the hot hours of the day, when they will eat little and simply doze in the shade, even if they are hungry.&#65533; They do like to drink durng the hot hours, but providing water is available at home in the evening,

this is one way of ensuring their return.• They do most eating in the early morning and late afternoon, so this is when donkeys really need to be out at pasture.

What can be done to keep down parasite infestation of pastures ?

Apart from grazing donkeys and sheep/goats together, the best way of reducing parasites is to keep the animals themselves free of internal worms, so they do not deposit the eggs with their dung.• Chemical means of doing this are discussed under •Veterinary considerations•, but keeping down the worm population should be a routine matter of animal health care, especially if local herbal rather than commercial chemical means are available.•

It is known that different things like woodash, a tea made of tobacco and certain sorts of aloe are effective against internal parasites.• Other plants known to be used are *Anogeissus schimperi, Balanites aegyptica, Chenopodium spp., Clerodendrum glabrum, Cordyla pinnata, Cucumis prophetarum, Picroenia excelsa, Pyrethrum (Chrysanthemum spp.), Vernonia corymbosa.* Others which could be tried, if available, are: *Aloe barteri, Artemesia maritima, Caesalpina crista, Cariea papaya* (latex and seeds), *Diospyros mollis, Heracleum spp., Heysarum coronarium, Mallotus philippensis, Mateuccia orientalis, Melia azedarach, Terminalia*

vicennioides. **The difficulty with all of these, however, is that the appropriate dosages are not generally known.**

What supervision is necessary for free-range donkeys ?

Donkeys are liable to take advantage of any freedom, and may range uncomfortably far, particularly if they are new to an area or if they are in search of mates. In time, however, donkeys can be taught to follow a daily route which, once it becomes habit and provided it is long enough and varied enough to satisfy them (say about a 5 km circuit), they can be trusted to follow alone. Until then, they should be watched most of the day, as they can vanish surprisingly quickly and far if they know they are not being watched. Even after their habits are set, a check should be made at least twice a day to ensure that they are all where they should be.

To make their return each night as sure as possible, water and tidbits should only be provided in the evenings, at their sleeping place. This can be difficult with water, but a nice tidbit such as a handful of grain for each donkey, once they know they can rely on it, is the surest way of getting donkeys to come to a particular place at a required time.. The cost is not much, and when the labour saving is considered, the investment is well worthwhile.

Are there things which a donkey should not eat ?

Serious problems may be caused if a donkey eats any food which is mouldy or bad. Food which is infested with insects or other animal pests can also make a donkey very ill, and even kill it, so a good owner will make sure that the donkey's food is as clean and fresh as possible.

Generally speaking, what is poisonous to other animals and to humans will very likely also be poisonous to donkeys, even where digestive systems are different. However, donkeys being very selective in what they eat, are fairly good at avoiding what does not agree with them, providing that they have plenty of choice available. A young donkey, though inclined to be experimental, will generally learn from its mother what it should eat and what not. Even so, it is also true that no two donkeys will prefer quite the same plants.

A donkey which knows its environment also knows which plants should be avoided, so the donkeys most in danger from poisonous plants are the ones that are brought into an area which is strange to them, where the plants are not familiar. The donkeys will then be obliged to try a range of plants, more than one of which could be poisonous.

Some poisonous plants will make a donkey sick at once, whilst others

have a cumulative (and thus usually irreversible) effect. Plants which are harmful to cattle, goats and humans may not necessarily harm donkeys, but it is wise to assume that they will.• Donkeys should therefore be kept away from them or trained to avoid them.

How much water should a donkey be given ?

A pregnant or lactating donkey, or one working hard in a hot, dry environment may consume as much as 20 litres per day, but usually it will be about half of this.• In rainy weather, donkeys are liable to go several days without drinking and consume about 10 litres a week.• It is almost unknown for a donkey to consume more than it needs, so it can be allowed to drink freely.• If a donkey is carrying its own water on journeys, allow for 10 litres a day.

The main restriction is that a donkey should not be allowed to drink very cold water when it is still hot from working.☐ The water must also be as clean and fresh as possible; donkeys can be very fussy about their water, and may refuse to drink dirty water even when they need it.☐ This shows some sense, because dirty water can make them sick.

Under exceptional circumstances (and certainly not if they are working, pregnant or lactating) donkeys can go without water without harming themselves for up to 3 days, but this should not be regarded as normal.☐ If, however, it comes to a choice between good pastures and access to clean water, then non-working, non-pregnant and non-lactating donkeys can be taken to the good pasture for two days and given access to the water every third day.

Should nutrition supplements be given to donkeys ?

Although donkeys do not have a rumen, they make very good use of the cellulose in plants by means of a specialized part of their colon, and require a high proportion of such roughage.☐ On the other hand, an excess of proteins can actually be harmful to donkeys, so if supplements

are provided, these must be especially selected for a donkey's own digestive needs.• Cattle supplements will not do, and horse supplements must be used with caution.

A general rule of thumb is that a donkey should be provided daily with straw or hay equalling 5% of its bodyweight, even though it may only eat about half of this.• If a donkey is working and has no opportunity to graze, specific daily amounts are recommended:

Old donkeys which cannot easily use their teeth should be allowed to have finely ground grain and chaff, in slightly lesser quantities if they are not working.• Young, pregnant or lactating donkeys may require another half a kilogram of grain.• A resting donkey which cannot graze and has to be given food needs about 1 kg less than a working one.• About one-eighth of the diet needs to be

To be given in the morning, and then the same amount again in the evening: (this for 200-300 kg donkey carrying 25-70 kg load at 4 km/hr, 6 hrs/day) 500g grain (e.g.maize,sorghum) coarsely ground

FOLLOWED BY
2.5 kg chaff (i.e.waste matter from winnowing sorghum or millet) or groundnut shells.• Some chaff can be replaced with hay or straw (dry grass)

NOSEBAG

for supplementary feeding while at work or away• from home

A net instead of a bag, and fitted well over muzzle, can be used to *prevent* a donkey taking supplementary feed for itself when working among crops

Food industries in some countries produce a supplementary food for horses in large pellets, known as 'horse cubes'.• These can quite safely be given to donkeys, who like them very much.• However, it should always be borne in mind that donkeys need more fibre and less protein in their diets than horses do.• They are *not* simply 'small horses', as they are quite different in many ways.

Even when well fed, donkeys will often seek out their own supplements if they have the opportunity.• This is because of the different individual requirements of each donkey.• They will search rubbish heaps and

poultry runs for tidbits, but should really be prevented from doing so. They might take in substances harmful to their digestion, like plastic and meatmeal. Also, they might over-eat, or eat decaying food with poisonous bacteria or fungi.

Sometimes it could be minerals that donkeys are looking for. Salt blocks or licks, as well as calcium and phosphorous in powder form (the most important ones) can sometimes be obtained from farm suppliers. A WARNING: Urea is poisonous to donkeys in large enough quantities, and is sometimes included in cattle licks. So if donkeys have access to a cattle lick, make sure that urea is included.

Otherwise,

to every kilogram of grain could be added:

3 teaspoons bonemeal
1 teaspoon common salt.

Alternatively, give this mixture in a quantity that would fill a matchbox as a daily supplement for each donkey.

An occasional supplement which provides minerals and can also help with constipation, is molasses. Because it is sweet and could rot their teeth, donkeys should not be encouraged to have it too often or in large quantities. However, it is very good for their health and they love it. Mixed with their evening tidbit to bring them home, it has a powerful effect.

Supplementary feed should be provided in clean containers that cannot easily be knocked over by donkeys - and there should be sufficient containers that the donkeys do not need to fight for priority.• If there is one thing that really interests a donkey above all else, it is food.

One way to ensure that a donkey has enough to eat is to provide at least the fibre component in the form of hay - cut dried grass or the smaller stalks of grain - available in the night enclosure in a hay net.• It is one thing that will draw the donkey home at night, but should *not* simply be scattered on the floor.• Nets of wide mesh can be made which can be hung from poles or walls, and the nimble mouths of donkeys can easily take out what they want.

CROP RESIDUES AVAILABLE AS SUPPLEMENTS

Such residues piled in a yard that donkeys occupy can serve as supplementary feed through the dry season.• If mouldy, however, they can harm donkeys.

What is the best way of moving donkeys long distances ?

Donkeys cannot easily be transported in lorries and trucks in the way that cattle and sheep are, and it is necessary for those selling and buying donkeys to be aware of this.• Too often, donkeys will die a couple of days after reaching their destination.

This could be for a number of reasons, one of which could be separation from friends, another the sheer terror of the journey.• Both of these contribute to a nervous reduction in a donkey's blood sugar levels.• A period without food will also contribute to this; it has to be remembered that donkeys digest food more rapidly than ruminants like cattle, sheep and goats and must therefore eat more regularly.• In normal circumstances a couple of days without food might not kill a donkey, but a stressed donkey is a different matter.• A donkey suffering from fear or any other nervous upset is also likely not to want to eat, and the problem can thus be compounded.• The anxiety may also cause diarrhea and this too will stress a donkey's digestive system as well as dehydrate it.

Just by itself, the drop in blood sugar level can be fatal, but this can be

prevented if the donkeys are given a glucose injection immediately before the journey begins.• That then leaves other things to be dealt with: physical damage caused by other donkeys and the vehicle, the effect on the donkey's behaviour, and also dehydration.

It is far better, and probably cheaper too, to have donkeys driven on foot across country than to have them taken in a motor vehicle.• It may be slower, but it has a less disastrous effect on donkeys.

CROSSING BEIT BRIDGE

December 2001

800 km walked, only 100 km more to go – 8 donkeys on their way into South Africa.

Getting the permits was the really difficult thing.

Chapter 5

VETERINARY CONSIDERATIONS

Where veterinary opinions are concerned, it has to be said that there is much disagreement over the needs of donkeys, largely because donkeys have been so little studied.– Sometimes vets will pronounce a donkey incurable when in fact it is not, so a vet–s pronouncement on this should not be taken as final.

Much of what is said here represents a compromise between the advice of different veterinarians and the practical experience of actually looking after donkeys in a remote rural area of Africa.– Some of the donkeys did

die, causing much grief and loss and the determination to avoid mistakes in the future.

Where I work now, farmers report that one of their biggest problems with donkeys is foal deaths, and a study is currently under way to find the cause.☐ My own guess, based on factors already mentioned in earlier chapters, is that it may be a matter of management, and therefore of *prevention,* and that poor nutrition, lack of shelter, and lack of separation from sexually active males all probably contribute.☐☐ Donkeys seem to be tough animals, and they are, but even they can get ill and die of neglect, most especially when they are very young or very old.

Is veterinary care really necessary for donkeys ?

In developing countries it has to be assumed that veterinary services are often not available, and certainly not available quickly, so that much that might otherwise be done by a vet will need to be done by a donkey's owner.☐ This is not to say that, if a veterinary service *is* by chance available, it should not be made use of.☐ A donkey is a valuable animal, and if professional veterinary care can keep it healthy and alive when an owner cannot, then professional care is well worth having.

In this section, aspects of care and treatment are covered which are

properly the province of professional veterinarians, on the understanding that an owner will often have to deal with these things without professional help - and that even when professional help is available, it may have little experience with donkeys specifically.

Is prevention not better than cure ?

Where possible, of course it is better to forestall problems.&#65533; Thus much of what follows here really has more to do with the keeping of donkeys, as covered in the previous chapter, than with the treating of them.&#65533;

An owner's main task is to prevent any harmful effects of work on working animals.&#65533; Regular work, because it is physical exercise, strengthens the muscles of the animal, improves its circulation and breathing, and increases appetite.&#65533; On the other hand, overwork - such as carrying or pulling loads that are too heavy for too many hours in the day without proper time for resting and eating - can be harmful.&#65533; Overworked donkeys will suffer from fatigue, loss of weight and general weakening which makes them susceptible to disease.&#65533;

Like any other working creature, a donkey that does not feel well will not do good work.&#65533; The health of a donkey can best be checked by regular, daily contact and familiarity with the donkey when it is healthy.&#65533; Then,

when changes occur, they will quickly be seen and appropriate measures can be taken.

What is normal in a donkey ?

A donkey's normal heartbeat or pulse rate is 35-55 per minute, depending on what it is doing, and its normal temperature is very close to a human's at 35.8 to 37.5 deg C. The table below, compiled by the Donkey Sanctuary, gives some of the variations. A donkey seems to regulate temperature in much the same way as a human, too, as a donkey sweats for the same reasons that a human does. A feverish donkey is therefore quite easy to detect.

		AVERAGE	RANGE
C adult donkey	37.1 C	36.2-37.8	
	F	98.8	97.2-100
	C young donkey	37.6	36.6-38.9
	F	99.6	97.8-102.1
Pulse (beats per minute)	adult donkey	44	36-68
	young donkey	60	44-80
Respiration (Inspiration per minute)	adult donkey	20	12-44
	young donkey	28	16-48

Ways of scoring a donkey s body condition for general health have been devised, but as yet there is no general agreement as to the

applicability of such a score.• Those who know donkeys can usually judge quite easily one which is in good condition, i.e. with coat shining, ears and eyes alert, movement easy, ribs and hip bones adequately covered with flesh, and no wounds.

There is another score for •wound and foot care•, but on the whole it does not offer more than good observation and common sense can provide.

What are the signs of a donkey being unwell ?

Among the signs of health trouble in a donkey are the following:

- **Fever (body sweat; muzzle hot and dry)**
- **Loss of appetite**
- **Drooping ears and maybe also a drooping head**
- **Coat rough and dull looking**
- **Dull eyes**
- **Lack of energy and response**

• Frequently lying down

• Liquid droppings (diarrhea, known as •scouring•)

• Passing no droppings (constipation)

• Wrong colours of droppings (i.e. signs of blood, although colour does vary a lot according to diet).

Donkeys on the whole do not show their feelings of pain in very obvious ways, but behave as a human would who is called 'stoical', i.e. tolerating pain without complaint.• They may make an initial violent movement of avoidance, but after that they become silent and as nearly as possible immobile in the face of pain and/or fear.• Therefore it is sometimes difficult to know when they are suffering acutely, and their behaviour may look like 'stubbornness' rather than stoicism.• One indicator of pain or fear can be diarrhea, just as in humans.• Since this may also dehydrate the donkey, it will be adding to its problems if it persists.

How should a sick donkey be treated ?

According to the ailment, there are specific treatments (see below).• If the ailment is infectious, and the donkey must be separated from others,

it should still be kept where it can see them, or it will suffer from additional stress.

What are the most common problems suffered by donkeys ?

The following is merely a description of the problems; ways of dealing with them are discussed in the next section.

FEET AND LEGS

A donkey which cannot walk cannot work, no question about that, so the feet are the most vital part of a donkey's working equipment and any problem with feet or legs must be considered a serious problem.• It is true that donkeys have less trouble with legs and joints than horses do, and that their feet are also fairly tough, but this should not be taken for granted.• Donkeys very often walk on stony ground and among thorns, and small stones or sharp thorns lodged in parts of their hoof can cause pain and lameness - and, if not quickly corrected, possible lasting damage.

EYES

Very commonly in dry and dusty areas, and where there are flies (i.e. in

most of the environments where donkeys live and work), donkeys suffer from weepy eyes.• This could be a symptom of a number of different things, but it can lead to bacterial inflammation.• If this is not soon remedied, it can lead to much worse things and eventually blindness for the donkey.• This is another thing which would reduce the working effectiveness of the animal.• Blind donkeys can still work in teams and if led, but they have more trouble finding good food and cannot find their way through bush.

SKIN AND HAIR

A donkey's skin is easily broken and easily bleeds.• Once this happens, the donkey becomes exposed to all sorts of infections, so skin wounds should be prevented as much as possible, and an important way of doing this is by using the correct equipment for work (see later sections).• This should ensure that anything that comes in contact with a donkey's skin is soft and does not rub or cut.

In cooler conditions donkeys often grow longer hair, but in poor conditions they can also lose their hair entirely, usually in ugly patches.• As a donkey needs its hair to protect its skin from the sun, hair loss is something that cannot be ignored.

INTERNAL PARASITES

One of the chief things affecting donkeys, especially on poor and over-used pastures, are internal parasites • which may cause lung infections, diarrhea, weight loss, infertility, abortions and eventually early death.• These parasites therefore represent a serious economic threat in the developing world.• Internal parasites make young donkeys, especially, very sick, while older donkeys are more accustomed to parasites although their lives are shortened by this problem.

EXTERNAL PARASITES

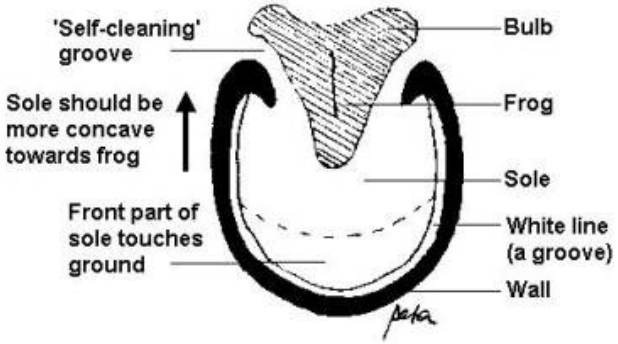
External parasites are not very common among donkeys, as their habits of mutual grooming, rubbing themselves against trees and rolling in sand and ash indicate that they are sensitive to itches, and such habits rid donkeys of some of the most important external parasites.• Individual donkeys, it is clear, can have different levels of infestation • some in a herd• may be affected not at all, and others affected quite badly.• Small •pepper ticks• on the lower legs seem to be the worst problem, because donkeys find it difficult to deal with this irritation, and often scratch themselves to the point of bleeding.• This in turn attracts flies, with all the attendant bacterial problems.

What can be done to control these problems ?

Much of this is routine maintenance and should not really be listed under "Veterinary considerations"; it is, however, a matter of degree. In what follows, an effort is made to recommend only home remedies or the cheaper remedies obtainable from pharmacies and farmer suppliers. Expensive antibiotics may be the fashionable approach these days, recommended by the extension services, but they have two major disadvantages aside from their price: repeated use of them results in bacteria and disease organisms which can resist their application, and also they carry an expiry date and often expire before they can be used. It is both cheaper and safer to use simple chemicals which may be kept indefinitely.

FEET AND LEGS

The under-surfaces of each foot should be checked daily during the rainy seasons, especially if ground conditions are sticky.



DONKEY HOOF

What it should look like underneath

When clean, all these should be visible

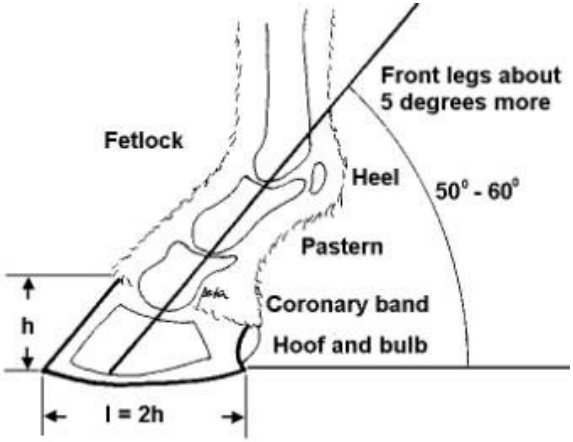
Clean alongside frog, pushing dirt out at the back. **Check for stones thorns and nails which may be lodged, and remove them carefully**

Hoofs should be regularly cleaned with a hard, sharp stick to make sure that no decayed matter stays lodged in them, and that no stones or thorns remain to irritate them. **During the dry seasons checking once a week should be enough, but of course if a donkey shows signs of discomfort or limping, then this must be checked right away.**

As long as a donkey is working regularly, its hoofs are unlikely to get soft or overgrown, but the growth and condition of the hoofs should be watched to ensure that the shape remains as it should. **If necessary, a hoof can be filed or 'rasped' to the right shape; this may also be necessary in very young donkeys to correct the shape of the legs.** **If the hoofs are badly overgrown, correction should be in gradual stages.**

HOOF AND BONES

Showing correct angles and dimensions



Donkey hoofs can be very hard, to the extent that even the sharp ‘hoof knife’ used on horses’ hoofs may have difficulty’ cutting through them.’ What I have found most useful is a ‘junior hacksaw’, along with a 6’ nail for cleaning.

Dealing with donkey feet usually requires training the donkey first (see the appropriate chapter), so this may be an urgent matter and should be done well in advance of any emergency need.’ Donkeys can be nervous about their feet, but as they gradually learn that comfort is the result of having their feet treated, they seem to grow to like it.’ The correct position for dealing with any of a donkey’s hoofs is to stand right next to the donkey’s body, facing towards its tail.’ Thus if the donkey kicks, even when the hoof is being held, little damage can be done and good control can be exercised.’

In very dry conditions, especially where surfaces are hard, donkeys' hoofs may crack and split.’ For donkeys which are frequently working on hard roads, this may mean that they need to have metal shoes nailed to their hoofs by an especially trained blacksmith or 'farrier'; such people

are usually used by horse-owners or mounted police patrols, and should be able to do donkeys as well, if at a price.

Regular rubbing with oil, but particularly 'neatsfoot oil' will also help to prevent cracking of hoofs, and a small knife-cut or burn made in the hoof at the top of the crack, at right angles to it, will help to stop the crack spreading.

Lameness in a donkey is often caused by thorns or nails or small stones, and these are the first things to look for.☐ After the cause of the lameness is removed, it may be enough just to soak the donkey's foot in warm salted water.

If a donkey is lame, and the hoof is hot to the touch, something is causing inflammation.☐ Every effort should be made to find the cause, such as a wound or thorn.☐ Very often the inflammation can be reduced by a hot soak (a clean rag soaked in hot salt water and pressed to the inflammation until the temperature of the rag and the swelling are the same) or by soaking the foot in a solution of copper sulphate with a little vinegar.☐ This deals effectively with both fungal and bacterial infections, including ☐white line disease☐ which vets sometimes use as a reason for condemning an animal to death.

Soak hoof for 10 minutes twice day until better in -
4 litres clean water +
500 g copper sulphate crystals/powder +
100 ml vinegar

Blue copper sulphate crystals are usually fairly cheaply obtainable from pharmacies or farmers' suppliers, and can be kept for an indefinitely long time.• A plastic 2-litre container for liquids with the top cut off just enough to insert the hoof is the ideal thing for doing this.• A donkey seldom likes to have its feet wet, but one way of keeping a foot standing in a bucket of water is to tie one of the donkey's front feet up with a belt.• Another method is to use about 75 cm inner tube of a car tyre • fold up the bottom and tie it with a rubber strip higher up the leg, first pouring in some of the solution so that when the donkey walks the solution will be squeezed up through the hoof wall.

A condition known as 'hoof rot' can be caused by standing in wet and dirty conditions for long periods, particularly in hoofs which may have small wounds.• It is recognizable by its foul smell.• Once the donkey is placed in a better, drier and cleaner environment, the condition can be treated by soaking with copper sulphate, as described above, and then

painting the hoof with linseed oil or engine oil and keeping it dry.

EYES

Many eye problems are caused by insects, but these are dealt with under 'external parasites' below.

Washing out the eyes with a very, very mild antiseptic or even clean water is usually enough to remedy eye irritations if caught early enough.• In the case of attack by spitting cobra, however, action needs to be as quick as possible and the water needs to have in it as much bicarbonate of soda (cooking soda) as can dissolve.

When treating a donkey's eye, the easiest way is to stand on the other side of the donkey's head, to hold the head against your own body. Application is easiest with a syringe (without a needle); otherwise with a plastic squeezy bottle such as those in which lemon juice or washing up liquid is sold. Before such a bottle is used for a donkey's eyes, however, the original contents should be very thoroughly cleaned out. Squirted when held a little distance away from the eye, the liquid is then the only thing to touch the eye (apart from any fingers which may be needed to hold it open, but these should only touch the lids, not the eye itself), thus minimizing the possibility of spreading infection. Effective mild antiseptics that can be dissolved in water about 1 teaspoon to half a litre of water are cooking soda, which is a mild alkali, and common salt.

Eye irritation, causing weeping, can in turn cause irritations in the skin below the eyes. If it itches, perhaps because flies are feeding there, the donkey will rub it against a rough surface and even cause bleeding, which will then attract even more flies and possible infection. Any sign of tear irritation of the skin must therefore be quickly dealt with, and the best treatment is usually non-irritating petroleum jelly (vaseline), which most

rural people keep handy for their own skins.• Stronger insect-repellent medicines generally cause further irritation so near to the eyes, so don't really solve the problem.

The washing and soothing should be done twice a day.• If the eyes do not improve within a week and completely recover within two weeks, then a commercial antibiotic ointment, powder or spray could be tried as a last resort.

SKIN AND HAIR

If prevention fails and a wound occurs, it must be quickly dealt with.• First of all, the wound must be kept clean, with twice-daily washings.• Hydrogen peroxide, which is fairly cheaply obtainable in pharmacies, is efficient as an initial cleaner, especially if decayed matter is in the wound.

Various home remedies, as are also used on humans, are said to be appropriate: honey, papaya leaves and fruit, coconut oil, ground fresh nutmeg, rosemary tea, snuff, sulphur, lard, vaseline, kerosene, camphor, Epsom salts, etc.• The purple liquid known as •gentian violet•, or a solution made with iodine or betadine powder or crystals or potassium permanganate crystals are also fairly cheaply obtainable, and can be used as a good twice-daily treatment for wounds.• The peroxide and other

solutions can also be administered from squeezy bottles or syringes (without needles) in squirts ensuring that only the liquid touches the wound.

If a wound is deep, it must first be thoroughly cleaned, preferably with hydrogen peroxide, and then clean brown sugar or honey put into it before the iodine and any covering such as stockholm tar (described below) will help healing flesh granulation occur, and also reduce some of the inflammation.

Otherwise to be recommended is a solution of common salt (sodium chloride; depending on the strength required, about two teaspoons in a bottle of water that has been boiled, but cooled before it is applied to the animal), which may sting the donkey but promotes healing while it disinfects. Sometimes, to ensure covering especially of wounds facing downwards, this can be mixed into a paste with very clean, fine white wood-ash.

Brown sugar or honey (not diluted) can help in the particular case of a wound which has become septic, i.e. inflamed and exuding pus. Before being treated such a wound must of course be very thoroughly cleaned, preferably with hydrogen peroxide or methylated spirits.

In most of the developing world, however, flies and insects can be a problem for wounds, and then it is a matter of covering them, after thorough antiseptic drying, with some special oil or petroleum jelly (vaseline), or insect-repellent 'stockholm tar'. Stockholm tar is used on wounds particularly as protection against fly-spread screw-worm. A form of this worm, actually a fly maggot which gets into wounds, is common in most parts of the developing world, but some forms are worse than others. To protect the wound properly, the stockholm tar must be like *tar*, thick and sticky, but unfortunately these days it is being produced in a more oily form, which is less useful. Kept for a while, it does thicken.

Most of these remedies, it will be noted, are the kinds of things that humans use upon themselves. The main difference with animals is that it is nearly impossible to bandage them. A thick paste that will stay in place is probably the best that can be managed, and stockholm tar is the one that repels flies, although it can be messy to use (clean your hands and the flat wooden applicator before and after with methylated spirits or paraffin/kerosene). This is why woodash paste is a good alternative. On the other hand, once stockholm tar is in place, the dust that it collects on its surface can form a crust that can be left to protect the wound, with healing taking place underneath as long as there are no signs of infection, e.g. heat and discharge. Otherwise wounds on

donkeys must be kept clean as far as possible, washed and not neglected.

Lumps in or just under the skin • sometimes alarmingly large lumps • are fairly common in donkeys and have many causes.• Most will disappear or remain stable without further trouble.• If they are hot to the touch, and also if this happens around a recently closed wound, 'hot soaks' as described for foot treatment, or a paste of green soap and brown sugar can be tried to concentrate the pus.• If the swelling and heat is getting worse, however, an owner should seek professional help or, if that is impossible, cut the swelling open with great care to allow the pus to drain out.• Clean the resulting wound out for treatment and keep it clean.• Once the pus is fully drained from the site, treat it like a normal wound, as above.

The loss of hair on a donkey can have two main causes: poor housing or diet (see above), or mange, which is caused by a tiny external parasite (see below).• Before treating for mange, it is worth trying to move the donkey to another place or otherwise to improve its diet by allowing it free grazing in a better place.• If a donkey is perpetually wet, especially when it is young, its hair roots can become affected and it may lose its hair.• A donkey on a poor diet can also lose its hair, but such a problem soon disappears when the donkey's conditions change • so it is always worth trying to improve the donkey•s diet before using chemical

remedies.

INTERNAL PARASITES

Removal of manure, rotation of pastures, grazing with other kinds of animal (especially sheep or goats) and ensuring that supplementary feed is always clean - these are all things that can help keep parasites under control, particularly where donkey numbers are low.

If donkeys are seen eating droppings, especially donkey droppings in their enclosure, n increase in parasites is likely.

It has been found that it is not wise to eliminate parasites entirely; it is actually better for donkeys to achieve some adaptation, and thereafter simply not to be overburdened by parasites.&#65533; Maintaining clean shelters and pastures is better than frequent dosing to kill all the parasites in a donkey&#65533;s system.

In many countries, a twice-annual 'anthelminthic programme' to control internal parasites for donkeys is government policy due to the economic implications of the parasite threat.&#65533; Where there is a pronounced dry season, veterinary services often recommend that donkeys be treated for internal parasites at the end of the rains and again at the beginning of the

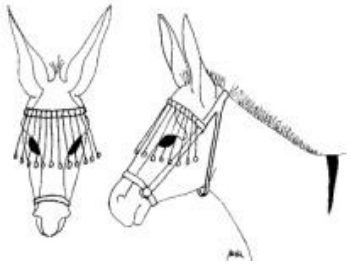
next rains.• Foals as young as a month old can be included in such a programme.• Pregnant jennies should be dewormed a few weeks before giving birth.

Care must be taken to ensure that the drug used is suitable for donkeys.• Many which are suitable for cattle are *not* suitable for donkeys.• If they are suitable for horses, they are generally suitable for donkeys or, at any rate, will not do much harm to donkeys.• All the same, much depends on the drug used, and the instructions which must be followed.• Drugs suitable for donkeys which may be available are 'Dichlorvis', 'Fenbendazole', 'Febantel', 'Ivermectin','Ivomec', 'Mebendazole', 'Oxfendazole', 'Panacur', 'Pyrantel pamoate', 'Strongid', 'Systamex', 'Telmind', 'Thiabendazole', 'Trichlorfon', 'Valbazen', etc.• Local centres may offer anthelminthics at subsidized prices, because otherwise they can be very expensive.• In many countries research is being done to see what local herbal remedies may be suitable, as these would probably be the best for donkeys, when known, as discussed in the context of pasture management in the previous chapter.

Once parasites have been reduced in donkeys and pastures, chemical treatment should be minimized to avoid the risk of the parasites becoming resistant to the drugs.

EXTERNAL PARASITES

In tropical environments, donkeys can be much bothered by flies around the eyes, which spread eye infections, which if neglected can cause blindness (see above).• A very light smear of vaseline on the skin below the eyes where the tears flow (but *absolutely not* where it can get into the eyes) can prevent flies settling there.• A purely physical method of prevention which may help is the 'fly fringe', which can be left on the head of a donkey for most of a day.



FLY FRINGE ON A DONKEY

This can easily be home-made from string or strips of cloth or plastic, close enough together to exclude flies and as long as the width of a hand with knots or beads to weight them, attached to the brow-band of a halter or headrope.

Parts of the donkey which may still harbour parasites are under the tail, between the legs and in the 'armpits', and inside the ears.• Parasites such as ticks in these places can often be removed by hand (but make sure they are properly killed and fully removed), or by the use of tick grease which is commercially available.•• However, cheaper vaseline works just as well and is less dangerously poisonous.• Used motor oil, if

not used over-much, or a non-irritant insecticide such as 'Malathion' mixed with vaseline can be effective, particularly against the mange mite - a small insect which gets into the top layer of skin and causes much irritation.☐ Contact with infested animals or the equipment of infested animals spreads mange easily.☐ Biting flies can cause a similar ailment, but that one disappears when the weather cools.

The small ☐pepper ticks☐ which irritate the lower legs of donkeys and other animals, and which can be difficult for donkeys to deal with, cannot easily be seen.☐ Loss of hair on the lower legs, and even wounds where the donkey has tried to scratch against something, are the most common sign.☐ Again, regular applications of vaseline seem to be the best way of dealing with this.☐ Even if used twice a day on all four legs, not more than about 100 g of vaseline per month is needed for each affected donkey ☐ not all will be equally affected ☐ and the effort is well worthwhile in preventing further trouble.

On the whole it is not a good idea to dip donkeys like cattle, since they easily drown; and many cattle dips are poisonous to them.☐ 'Delnar DFF' and 'Decatix' are suitable dips for donkeys but *not* 'Triatix' or anything containing 'Amitraz'.☐ The 'deadline' or ☐pour-on☐ method of applying an insecticide along an animal's back is probably not suitable for donkeys, which groom each other by nibbling along necks, and rest their heads on

each other's backs.

Donkeys generally love to be scratched, especially around the ears and inside them; owners can justify this as a necessary method of pest control, which should become a daily habit.• It also makes a donkey very friendly towards any human who does it.

What else might occur in donkeys ?

In addition to what has already been described, there are certain things to be watched for:

Signs and symptoms	Treatment
SNAKE ATTACK	
Swollen face (in the case of spitting cobra • in which case treat also eyes); difficulty breathing • but for different kinds of snakes there are different symptoms, and often no effective treatment	For eyes: strong solution of bicarbonate of soda. For rest, inject whatever available anti-inflammatories together with antibiotics for 24-48 hours.
TOOTHACHE	

Donkey allows food to fall from its mouth; reluctant to chew; growing thinner.	Professional treatment only, unless herbal remedies are known.
TORN MUSCLE OR LIGAMENT; SPRAIN	
Limping; muscle or joint hot to touch and/or swollen; possible inability to rise from lying down. (This inability to rise can also be caused by general weakness due to starvation, in which case support as described.)	Apply cold soak to swollen area. Rest from work but not from gentle exercise. If donkey cannot rise from sleeping or rolling, it must be helped up and during the day kept in a standing position, either in the crushpen or by means of a cloth sling around its belly hung from the branch of a tree - the animal to be in the shade. Since it will not then be free to graze, the donkey must be given low-protein food and water. This may have to continue for several weeks.

DONKEY IN SLING

made of two sacks joined together at open end (under donkey's belly) and strong sticks inserted in opposite ends to enable suspension from strong tree branch, donkey's feet just touching the ground to give it partial support.

Signs and symptoms	Treatment
LAMENESS DUE TO HOOF INFECTION	
Limping; no obvious muscular trouble; no obvious wound; usually only one foot hot	Cold copper sulphate and vinegar soak for affected hoof/s **(see recipe above)**, ten minutes twice a day until better.
LAMINITIS/ FOUNDER	
Limping; no obvious muscular trouble; no obvious wound; two or more feet hot; weight put on heels; some fever. Long-term effect: hoof overgrowth.	Reduction in diet protein. Cold soaks for feet. Exercise, but not work. Antihistamines administered professionally.
COLIC/ACIDOSIS (but needs professional diagnosis)	
Persistent diarrhoea (scouring); abnormal rolling;	Restriction of diet but increase of liquid, especially with cooking

kicking at stomach.	soda.• Soot has also been mentioned as a remedy.• If the donkey has taken in urea from a lick, then diluted vinegar rather than soda should be tried.• Plenty of exercise but not work.• If acute pain persists, professional help should be obtained as soon as possible.
CONSTIPATION	
No faeces passed for more than 4 days.	Solids of locally-brewed beer, or 1 litre of such beer.• Water and salt with fresh greens.• Molasses or 1-2 litres cooking oil, depending on the size of the animal, to be given as a drench (see below).
COLD	
Discharge from nostrils.	Carbohydrate-rich diet.• Inhale steam from boiling water poured on crushed eucalyptus leaves.• Feed at ground level to allow nostril drainage.
INFLUENZA	

Discharge from nostrils; difficulty in breathing; weakness; loss of appetite; fever.	Antibiotics under veterinary advice; dry, warm environment, good ventilation and food.
INTERNAL PARASITES OF SOME KIND	
Loss of weight and appetite; listlessness; possibly but not necessarily eggs and/or worms in faeces/droppings.	**(See also above)** Drenching or dosing with one of the available worm medicines or 'anthelmintic' drugs. Donkey should not be worked until health restored.
LUNGWORM	
Persistent coughing but without nasal discharge	Treat by drenching/dosing as for other internal parasites, as long as drug is suitable for horses, and lungworm treatment is mentioned on bottle.

In addition to these, it can sometimes happen that donkeys seem very bloated, bellies swollen almost as if pregnant, but the cause obviously

something they have been eating.&#65533; This can last days or months, but usually disappears in the end without needing intervention, and does not seem to cause the donkeys themselves much trouble.&#65533; If it does, seek help.

What serious infectious or 'notifiable' diseases do donkeys share with other animals ?

&#65533;Notifiable&#65533; diseases are those subject to government legislation, whereby veterinary services have to be informed when symptoms are noticed, mainly because there are a lot of other animals that could get infected.&#65533; For donkeys, luckily, this amounts to very few diseases.&#65533; Like horses, they do *not* get Foot and Mouth Disease.

Donkeys can share nagana with cattle, but it they get their own form of the disease, known as dourine, which is not spread by the tsetse fly, but sexually and by other flies.&#65533; Many donkeys will not show symptoms of this even though they have it, and so they act as carriers.&#65533; If the disease is confirmed, 'Berenil' can be used, but itself can cause illness and even death in donkeys, so diagnosis must be sure.

Signs and symptoms	Prevention/control

NAGANA	
Dullness, weakness; anaemia; thinness; sensitivity to light; dragging hind limbs; loss of balance.	Eliminate tsetse fly; early diagnosis and treatment with 'Berenil'.
DOURINE	
Fluid collecting under skin; especially under belly. Swelling of penis sheath & scrotum of males, and animal generally seems ill, so no confusion with common types of under-skin swelling.	Animal must be destroyed (?) to prevent further spread, but worth professional advice.
RABIES	
Change to unsociable or aggressive behaviour (where not sexual); rigid paralysis; inability to swallow; foaming at mouth; death in 3-7 days.	Annual vaccination; destruction of infected animals.
ANTHRAX	
Rapid fever and death; on	Vaccination in area of occurrence;

death, very dark non-clotting blood from nose and other openings.	pregnant donkeys vaccinated only if outbreak; dead animals must be well burned and deeply buried.

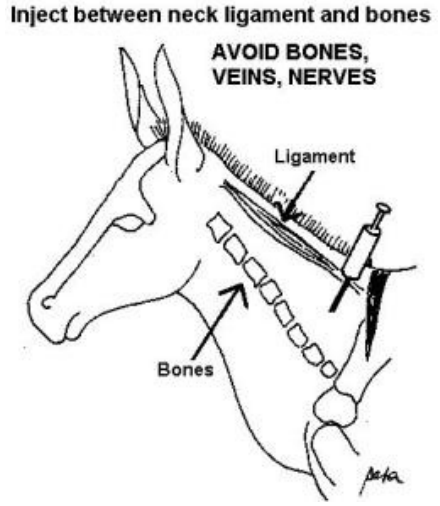
How should medicines be administered to donkeys ?

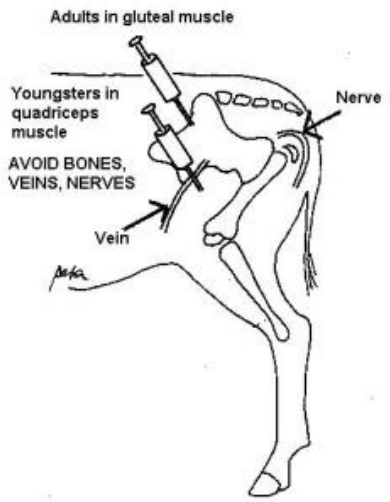
INJECTING

A vet or vet assistant will often leave an owner to his or her own injecting once a treatment has been prescribed.• These will always be injections into the muscles (intra-muscular injections) and it is to be hoped that the owner will be shown how and where to make them.• There are two common injecting sites for adult donkeys, one of which is different for young donkeys • see illustration.

The important thing is that veins, nerves and bones should not be hit by the needle.• Also, the needle must be sterile clean and be held upwards for all air to be expelled from the syringe and the needle by the plunger before the needle goes into the animal.• An owner should make sure of proper supervision by a vet before doing it alone.

INJECTION SITES ON DONKEYS





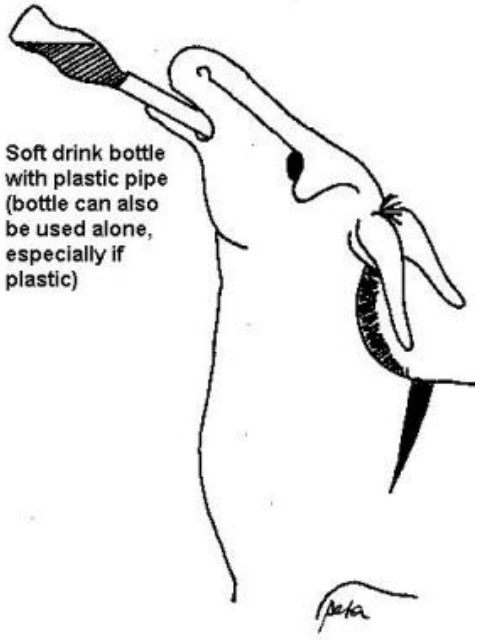
DRENCHING/DOSING

Medications for internal use which are liquid or can be dissolved in water can be given to a donkey through the back of its mouth (see illustration).

There are no teeth where the mouth ends, although there are some further back in the jaw, so the top of an unchipped bottle can be safely inserted through the gums at the corner of the mouth (without needing actually to open the mouth).• A syringe without its needle • or with a plastic tube extension • can also be used in this position for smaller doses where the squirting action is not going to have a choking effect.

Do it gently, with the donkey's head held up • but not so far back that it closes the throat • first giving the donkey time to swallow what it has been eating.• Move the bottle backwards and forwards until you are certain that its neck is inside the donkey's jaws, not between the jaws

and the lip, and also that it is over the donkey's tongue and not beneath it.• Then tip the bottle up slowly to empty its contents.• If given too fast, liquid medicine may cause choking.• In the case of worm doses, however, these are generally fairly small, and an old needleless plastic syringe can be used to squirt the chemical once the syringe is in the position described for the bottle.



Keep holding the donkey's head up until you are sure that the donkey has swallowed the medicine.• It can be quite cunning in trying not to, and inserting one or two 'horsecubes' or other small tidbits into the donkey's mouth directly after removing the bottle and while still holding the head up can often induce the donkey to chew and swallow and thus not keep the medicine in its mouth.• Remember always to be careful not to get your fingers in the way of the donkey's teeth !

Medicaments in a sticky paste form can also be inserted through the side of a donkey's mouth through a squeezy tube or bottle (or special appliance like a cake-icer), and this is actually the best way of giving medicines, as the donkey can only get them out of its mouth by using its tongue and swallowing – at least in theory. However, if the medicine is too near the front, or between the teeth and the lip, or under the tongue, the donkey can easily spit it out and will surely try to.– Sometimes donkeys like the taste of their medicine, so that it can be given by soaking it in bread or something similar, and then the only problem will be that they will begin demanding more.

How can a donkey be kept still while being treated ?

HEADHOLD

If a second person is available, in the case on injections (one person is enough for drenching), the donkey can be kept still by this person standing by its shoulder, using one arm to turn the donkey's head up and towards the person's body.&#65533; Holding onto an ear also persuades the donkey to keep still, as if it tries to turn so as to present its backside to its tormenters, which is what a donkey instinctively tries to do, it will only cause itself discomfort.&#65533; In fact, adopting this posture while *twisting* both the donkey&#65533;s ear and its upper lip is a very effective way of keeping it immobile.

Holding a donkey for someone else to treat

NOSETWITCH OR LIPTWITCH

By twisting the upper lip together with the nostrils, or twisting a rope around this part of a donkey to restrict its breathing, it is possible to force a donkey to open its mouth for breathing and keep rather still, again to avoid further discomfort.

This technique is certainly one way of getting access to a donkey's teeth

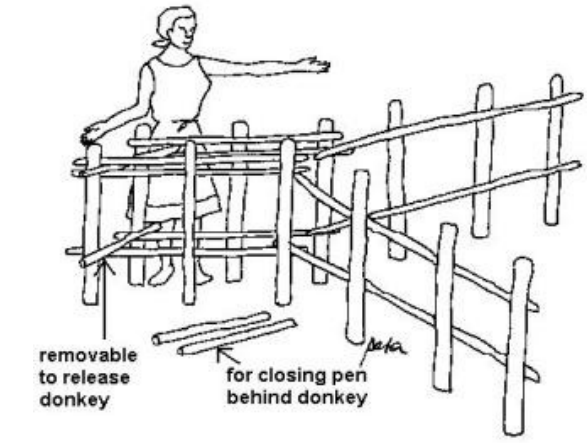
without risking a serious bite.• When a donkey does not want to open its mouth, it can be very difficult to persuade it to do so.

Unfortunately, getting a donkey's mouth open does not necessarily give one good access to the teeth at the back of its mouth, which are really very far back indeed and difficult to see. To operate on these back teeth, it is mostly necessary to have the donkey under general anaesthetic.

CRUSHPEN

Especially when it is question of quite long treatments, such as dressing painful wounds, it makes best sense to confine a donkey in a crushpen, where it can move neither backwards nor forwards, nor lie down.

Donkey owners should always have such a pen available or nearby; they are quite easy to build.



CRUSHPEN FOR DONKEY

Donkey body is about a human armlength-and-bodywidth long and as wide as lower armlength

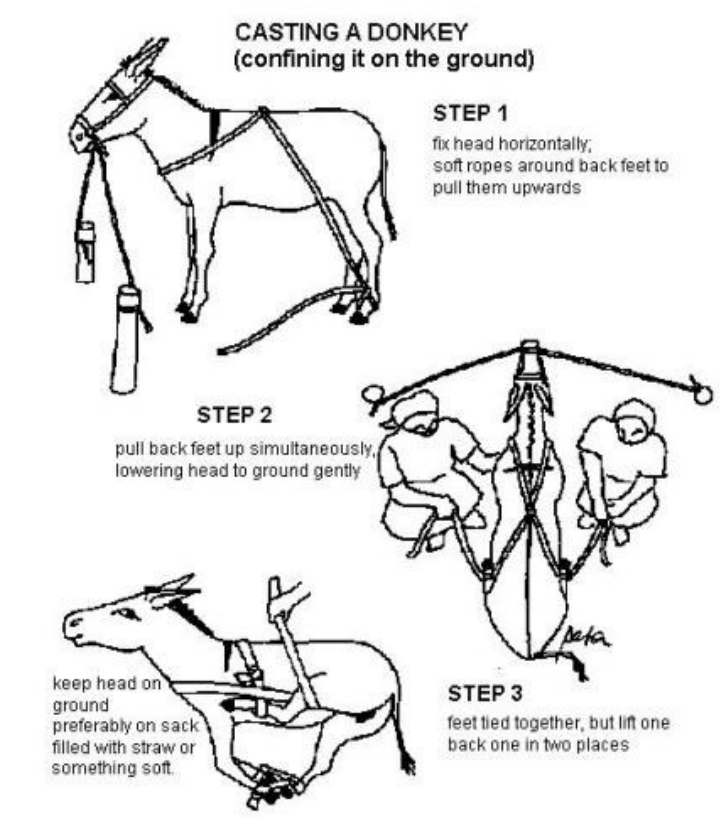
A donkey may object to being herded into a crushpen, so, long before treatments are necessary, it is wise to get the donkeys into the habit of being driven through the crushpen, even to having something nice to eat on the other side, so that they do not associate the crushpen with anything uncomfortable and to be avoided.

CASTING (getting the donkey flat on the ground)

Throwing the donkey onto the ground and tying it up should be avoided as much as possible, but it is unfortunately necessary for donkeys which are to be castrated, unless under anaesthesia (see the previous chapter, where castration is described).

The illustrations show the recommended procedure for casting, but many farmers will have their own methods.• It should always be done on a soft

surface, like sand or a pile of straw, and away from objects that may injure a frantic donkey.&#65533; Even a docile donkey, when sufficiently frightened by something like being thrown on the ground, will fight with all its strength, and may injure itself as well as people, so the hoofs must be well confined with strong straps (not thin ropes which may cut into the skin) right at the beginning of the casting procedure.



To prevent the donkey damaging its head and neck, it is recommended that a pillow or sack full of straw be placed underneath the head and that someone should sit on the donkey&#65533;s head while it is on the ground.

Luckily it will be found that many donkeys, when they know they are helpless, will lie quite still until

released, despite any pain that they might be feeling, emitting only an occasional groan.• This is another indication of their basic intelligence, as well as their stoicism.

Chapter 6

EQUIPMENT SUITABLE FOR DONKEYS

What types of equipment are there ?

Essentially, equipment divides into two types: that which is used on a donkey, traditionally called 'tack', and that which is used by a donkey, such as carts, plows, etc.

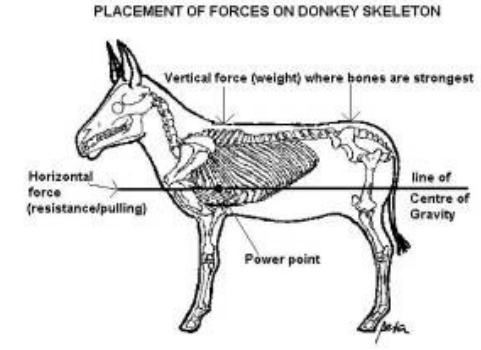
What is special about donkey equipment ?

The equipment which is used on or by a donkey can make a great deal of difference to its comfort, and thus to the effort it will put into its work.• An excellent test of donkey equipment is to try it first of all on *yourself* (or another human, if willing).• If it is not comfortable for you, how can you expect a donkey to use it for hour after hour, day after day ?

Is equipment used by donkeys different to equipment used by other animals ?

As already explained, for its size, a donkey produces more work than animals such as oxen, so where two oxen can perform a task easily, two donkeys can also usually perform it, although with a little more difficulty. However, if things like plows and carts were designed for oxen, this can add substantially to the difficulties of donkeys, because pulling points may be in the wrong place and at the wrong height. Also, equipment designed for oxen may be too heavy for donkeys.

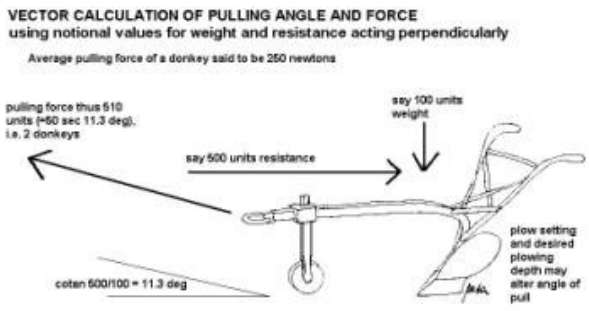
What needs to be considered where donkeys are concerned ?



Donkeys pull from their chests rather than from their shoulders, and the vertical force of some equipment may be out of proportion to the horizontal force so in order to judge the effect of this, it is useful to know some of the principles involved. Energy principles have already

been outlined, but now it is necessary to consider how the disadvantages of inappropriate equipment used *by* donkeys can, to some extent, be compensated for by the equipment used *on* donkeys.

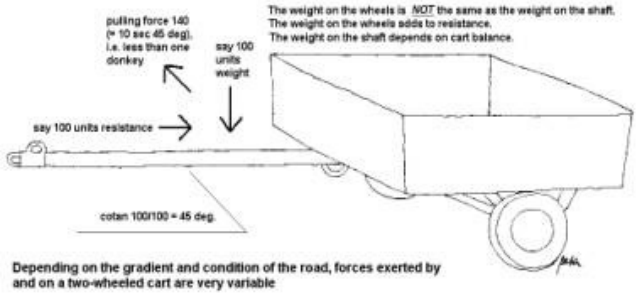
It has already been stated that weight always operates as a vertical force, and resistance usually as a horizontal one.&#65533; The relative sizes of these forces in different directions determines the angle at which they can best be overcome with the least wastage of effort r work.



For instance, the resistance met by a plow going through soil is more than that met by a cart going over a surface, especially if the cart's wheel rims and bearings are in good condition.&#65533; On the other hand, if the cart has only two wheels and is loaded too far forward, its shaft weight will be more than the vertical weight of any plow.&#65533; Given relative forces of, say, 500 and 100, the resultant vectors would determine the angles of pulling like this:

These angles are what should connect the animal to the equipment being pulled - in other words, the angle which the traces, ropes or chains or straps make with respect to the ground along which the pulling is done.

In the first chapter, it was said that a donkey can exert a force of 250 newtons. Since this is going to be divided between the vertical and horizontal parts of the harness, they must each be strong enough to take their share.



Depending on the gradient and condition of the road, forces exerted by and on a two-wheeled cart are very variable

The pulling of carts is complicated further, as discussed below, but it should now be clear that angle of pulling becomes important in the harnessing, and the harness must also have vertical and horizontal parts in places where the animal can best bear the forces of weight and resistance.

In the case of a donkey, weight is best taken on the back, preferably by the ribs rather than the spine, if possible on the shoulders and well forward of the hips where the spine is at its flimsiest. If the donkey is to move forwards, the resistance should be taken by the shoulders, where they are level with the chest under the neck. A donkey's shoulders are too low to be reached by the pegs of a yoke over the neck, so it is obvious why using a yoke is not an efficient way of using a donkey. In addition, a yoke can have the effect of keeping a donkey's head too low, by

weighing on its neck, whereas a donkey works best with its head up, in the normal position for looking straight ahead.

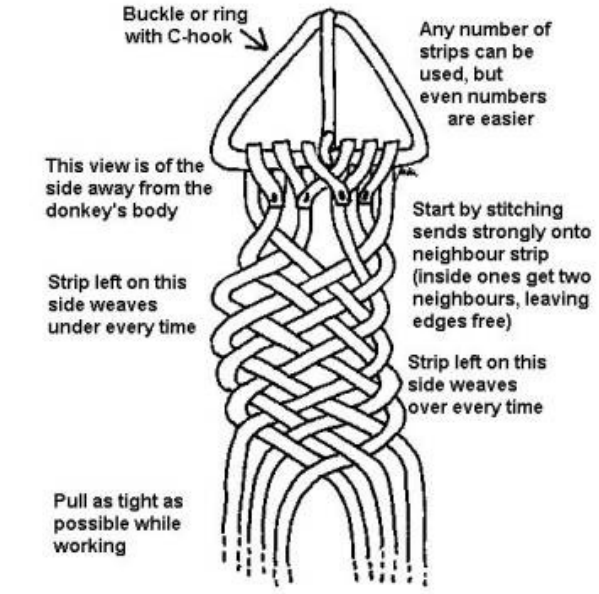
For a donkey's comfort and good health, no equipment must be allowed to rub against the skin or dig or cut into its flesh. Good fitting is a first requirement. Most equipment can be made by a competent shoemaker, since all it really needs is leather and stitching, and leather can be made by anyone who is slaughtering animals. Weaker skins, such as goatskins or even the skins of donkeys themselves, can be cut into strips and braided for strength; this also helps to make wider straps which are more comfortable for the donkey.

(Given here, but repeated in Appendix B)

BRAIDING GOATSKIN (OR OTHER) STRIPS FOR HARNESS

MAKING HARNESSES FOR DONKEYS OUT OF GOATSKINS

Goatskins can be cut like cowhides: legs and other protrusions trimmed away to make an oval shape, then cut in a spiral starting from the outer edge, to make the longest possible strap.



Traditional ways of softening skins *before* they are cut are definitely better, but a popular method is to hang the straps of water-soaked rawhide (soaked before it is cut) with a weight to stretch them, and then repeatedly twist them in opposite directions, making them soft and squeezing out the water. In between squeezings, they are left twisted for no more than 24 hours.

When the skins are nearly dry, they are painted with used car oil (or burned castor oil), and continue being twisted frequently to make them soft. In between twistings, the straps can be left to hang straight, but again no longer than 24 hours.

When the straps are ready, depending on their width, 6, 8 or 10 straps can be stitched to a buckle. Depending on how soft they are, 1.5 to 2 metres is the length they need to be. When sewn to one buckle, they can be braided or cross-woven to their ends, and then stitched to the second buckle. For stitching, holes are made with an awl before needle and thread are passed through, twice in different directions through each hole for extra strength.

Stitching can be done in the standard way for leather: by making holes with an awl, and then threading waxed twine through these holes with a blunt needle. The twine must be pulled as tight as possible, and passed through each hole twice - in opposite directions. Twine and needles are fairly cheap, long-lasting and easy to obtain, but it may be advisable to have a locally-made awl fashioned out of sharpened bar wire with the handle composed of a loop of the same piece of wire. Commercially-available awls are expensive and do not last very long.

In a 'breastband harness', the backstraps are most easily made if they are large circles of braided hides, the same length as the chest strap, but the ends are sewn together. This join is laid at the top and the circle flattened. The sides are tied to make loops through which the chest strap with the buckles is passed. There are two backstraps, each therefore a looped double strap. The end result, if goat hairs are still on the hide, looks like a complicated furry caterpillar!

Produced without skill and without practice, this harness actually works. The donkey's heat and sweat will gradually soften and stretch the goatskins to comfort for the donkey.

CUTTING GOATSKIN STRIPS

SPIRAL FROM OUTER EDGE OF HIDE

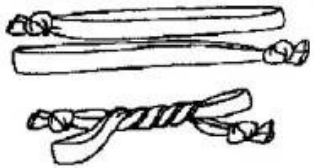
TWISTING TO SOFTEN HIDE STRIPS

AND THEN BRAIDING WHEN SOFT

STITCHING THE STRAPS

INTO A HARNESS

Many other materials can be used for braiding, including thin plastic straps.&#65533; But testing should be done first and care must be taken that these do not harm a donkey&#65533;s skin.&#65533;



An alternative, not quite so good, is to use folded strips of sacking, which can be sewn into tubes, either hessian or not-really-to-be-recommended plastic. This is less commonly used for harnesses, being certainly not strong enough for the

pulling parts, but does very well to make a comfortable tether collar, and hobble, as described earlier.

Where and how should equipment be kept ?

All equipment, especially leather, should be stored in a hanging position to keep it free of dirt and damp to avoid damage and infection in the donkey's skin. For this reason, equipment should *never* be left lying on the ground, but always hung up somewhere out of reach of children and animals, especially dogs and rats which may try to eat it.

In the case of leather, which is relatively expensive, care also ensures that it lasts longer. Also for the donkey's sake, as well as the leather's lifespan, it should be kept soft and oiled. There are commercial preparations for this ('saddle soap' and 'dubbin' to be used together) but an owner will often have preferred traditional methods of his or her own, e.g. with oil of castor beans or animal fat.

What items of equipment are important to have or to know ?

For purposes of description here, it is useful to consider thongs and ropes, leading equipment, driving and riding equipment, and equipment for draft (harness).• Thongs and ropes and leading equipment should be stocked by any owner, but the rest will depend on what uses the donkeys are put to.

What needs to be considered concerning thongs and ropes ?

Although thongs and ropes may be strong enough to take the strain of the required force, particularly if they are twisted several together, they should not be able to stretch against parts of a donkey's body which they can dig into, however thick they are, and cause damage.• The tack against which a donkey exerts its force must be as wide and as comfortable as possible, and fixed in position.

Thongs and ropes, as well as chains, can be used for linking parts of the force-bearing equipment, as long as they have little or no contact with the donkey's skin, because they may move too much.• Otherwise thongs and ropes (but not chains, as metal is irritating) should be used in contact with the donkey only where they are needed for more gentle control, as around the head, and are not likely to rub or dig in.

Aside from such limitations, they must be chosen for the work they are intended to do.

When using thongs and ropes, it is necessary to take great care not to get them tangled around any part of your own body, or the donkey's, or a sudden fright could cause disaster.• Never *ever* wind anything around your hand if it is also connected to a donkey: grasp all coils with the inside of the hand, but never let them loop over.

THONGS

This implies simply long rawhide strips, i.e. strips of animal skin preserved with salt and oil, which by their nature cannot unless braided together be as long as ropes and certainly not as strong as nylon ropes.• In general, thongs are stiffer than ropes, but are not so abrasive on human hands or a donkey's skin.• Thongs also need rather more maintenance than ropes do.

The sliding loop form, used in controlling cattle, is meant for horns and should certainly not be used on a donkey's neck for fear of strangling it. Thongs can, however, be used in forming headropes and halters just as ropes can, and are suitable for reins and the lashing of backloads, all of which are described below.

No matter what hides they are made from, thongs can also be braided or woven together to make flatter, wider shapes suitable for other parts of the harness, as illustrated here. Since with good care they become smoother and softer than rope, they are very suitable for this.

ROPES

The strength of ropes depends on the material out of which they are made, and the method of their manufacture. Cotton has little strength, although it is nice and soft and absorbs sweat; nylon is of course the strongest, but also the most abrasive as well as being the most expensive. Ropes made of yarn braided around a separate core of twisted yarn break less easily under friction. Sisal and home-made fibre ropes can be variable in quality, but also hard and scratchy.

Also to be considered in choosing a rope is its diameter: in a thin rope knots are easier to make but harder to undo; a thick rope will do less damage to either human or donkey in the case of some accident where it pulls or rubs to break the skin. It will generally be found that rope about the diameter of a ballpoint pen or little finger is the most useful, but the particular use and cost should be factors in choosing.

As with thongs, ropes can be used for forming headropes, halters, reins

and lashings - as well as collars if they are thick enough.• As with strips of leather or plastic, they too can be braided or woven to make something flatter and more comfortable, where this is necessary.• A simple collar for tethering is a good example where the strength of a rope may be needed, and where width can be achieved by braiding.

What needs to be considered where leading equipment is concerned ?

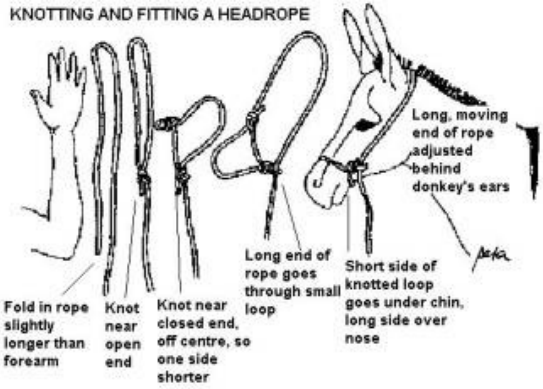
Controlling a donkey's head is the best way to control a donkey.• An owner will quickly find that a donkey does not consider the fact that it is working to be any reason for it to stop feeding.• If it sees something nice and can get its head down to eat it, it will try to do this and pressure on a collar around its neck will not stop it.• When leading a donkey, therefore, it is necessary to be able to keep its head well above the ground, and a rope attached to the head, specifically the front part of the head, is the only thing that can do this.

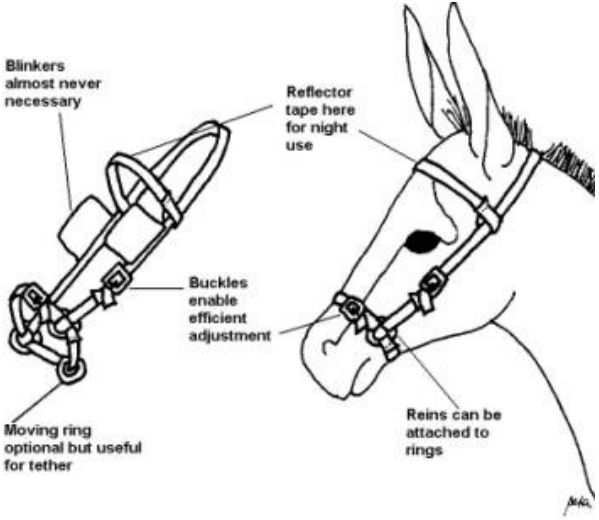
Care must always be taken to ensure that the equipment around a donkey's head does not rub against its eyes.

HEADROPE

Because usually made of rope, and if able to rub, this should be for

temporary use only. It is, however, very easy to make quickly and to slip on to a donkey. It is also easy to keep in a pocket when not being used.





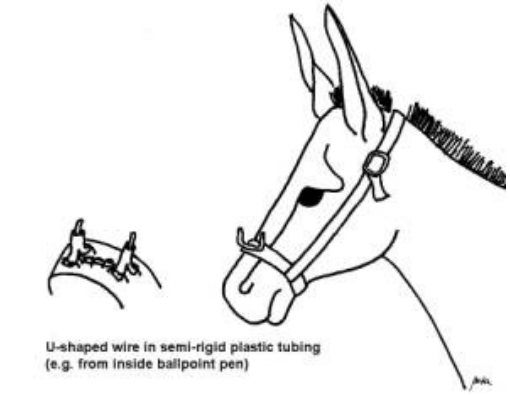
HALTER

For more prolonged use, a halter should be made of leather or strong webbing - in any case, something flat, and this gives an opportunity for a browband to be included, even a throatlash, so that the donkey cannot easily shake or rub the halter off.

A halter should have buckles or ties for proper fitting to individual donkeys, and also it may have the advantage of strong metal rings by the donkey's mouth to which reins for driving may be attached when it is seen that a donkey can easily be managed without a bit (see below).�� If a leadrope or tether is to be attached, this is better done to a ring fixed to the centre of the chinstrap, to equalize the pulling strain.

ADJUSTABLE HALTER MADE FROM STRAPS

A special kind of halter may be necessary to use on a foal when its mother has failed to wean it naturally, particularly when she has another foal to suckle.� Projections added on the nose strap of the halter prod the mother's belly when the foal wearing it tries to reach her udder.� Then the mother's discomfort prompts her to push the older foal away.



WEANING HALTER

What needs to be considered concerning equipment used for driving and riding ?

Driving and riding are essentially the same in that they are both methods used from behind the donkey's head and largely out of its sight for controlling it. In the case of driving, which is from further away, there is no chance of any other contact with the head.

The control which is necessary involves holding the donkey's head up by pulling on its jaw, so that it cannot stop to eat, turning the head in the direction in which it is desired the donkey will move, and pulling the

donkey's chin against its neck as a way of stopping it if it ignores the verbal command (not very likely).• The difference between donkeys and horses is important here.• Donkeys do not respond well to force, and are likely to engage in passive resistance.• It is better to have a donkey which is a trained and willing collaborator in the work which it does, not difficult to achieve with donkeys.

Most donkeys respond so well to guidance that they do not really need a bit, which is why reins can be attached to a halter for riding instead.• Even a headrope can work quite well: the long end, usually used for leading the donkey, can be tied around the knot on the other side of the donkey's head and thus used as a rein. It does not take much force to pull a donkey's head around, or up, and a donkey is intelligent enough very quickly to get the idea of what is wanted, however much it may disagree.• Experience tends to show that a rein on a halter always works much better than one attached to a bit.

BRIDLE AND BIT

These are merely described here but not illustrated, because in fact the use of a bit on donkeys is not recommended, and even without a bit most kinds of halter can do the job of a bridle.• The equipment is also expensive, but for owners who are determined to waste money and effort

on bridles and bits, in some countries pony bridles and bits are sold which fit donkeys.

For driving and riding control, it is not just control of a donkey's head that is sought, but control specifically of the mouth end of the jaw, so the head can be turned and lifted. This is achieved in horses by putting a metal bar inside the mouth, since just where the mouth ends there happen to be no teeth. Pulling on the ends of this bar which project on either side of the mouth is supposed to control the animal's head, but in the case of the donkey it does not in fact work very well in view of a donkey's tolerance of pain. The main effect of using a bit on donkeys is to cause wounds and bleeding at the corners of donkeys' mouths as handlers pull too hard, and futilely.

It is also true that a bit can be a very expensive piece of equipment, and too many people substitute the metal bar with wire, which only makes the problem worse. The simplest and cheapest bits can be made in local workshops, and to these leather discs should be added inside the rings for the better protection of a donkey's mouth. Under no circumstances should wire be used for forming a bit.

A bridle is therefore very similar to a halter. Instead of a strap over the animal's nose and under the front part of its chin, the bit is buckled to

the bridle by its rings, and inserted into the animal's mouth on top of the tongue. Doing this and fitting the bridle over the ears are all part of one smooth operation. The throatlash a thin strap attached to the cheekstrap behind the eyes and passing under the animal s chin is left loose, and buckled after the other parts are in place. For each individual animal the cheekstraps of the bridle should be adjusted so that the bit fits snugly but not painfully into the top of the mouth, and the animal cannot move it with its tongue. In that position, it fits between the front set of teeth and the molars at the back, and so does not much interfere with eating. However, an animal should not habitually eat while wearing a bridle and bit.

Another addition to the bridle which can also be added to a halter if that is used for driving and riding is often a set of blinkers. These restrict the animal's field of vision so that it is neither distracted nor alarmed by objects and activities behind or beside it. However, these are only necessary for donkeys with excitable temperaments, and such donkeys are rare. By and large, blinkers are another unnecessary expense, particularly as users often position them wrongly so that the donkey can still get a view to its sides.

REINS

The driver or rider is connected to the halter (or bridle and bit) by means of the reins, which attach to the rings of the halter (or bit) on each side of the animal's mouth. A strong leather strap is kinder to human hands than a thong or a rope will be, but any of these things can be used. A narrow strap of braided thongs is very common.

Where it is a question of turning the donkey's head, or the donkey is troublesome, two hands are better than one - to pull on each side of the head. Very often, however, it will be a question of just jogging along with a donkey which knows where to go, in which case the reins can be bunched in one hand while the other can hold the lead rope, perhaps, of a donkey behind carrying baggage. This is better than tying such donkeys together, as release can be quicker in case of trouble.

Where donkeys are being driven as a team, it is obviously necessary to have the left side of both or all the reins in the control of the driver's left hand, and the right side of both or all the reins in the control of the driver's right hand, and all at equal tension unless turning. Care must also be taken that the reins do not become tangled, so that the driver loses all control. For this reason, combined reins may be used (see illustrations of teams, below). Where collar harnesses are used (see also below), they have the advantage of providing a place for the reins to pass through and up away from the traces (see the 'saddle and girth'

illustration below) and also through the saddle if desired, thus avoiding entanglement with the traces.

What should be considered where equipment for draft is concerned ?

Anything drawn by animals has 5 essential components:

- **The animal/s (power source)**
- **The harness (what is on the animals to enable them to pull)**
- **The hitch (connection between harness and implement)**
- **The implement (includes carts)**
- **The work (in the case of carts, this is the load they take).**

Each one of these has an effect on the functioning of the others. Bad design in one can have an adverse effect on the efficiency of every other.

Since we are already dealing with a known power source, the donkey as already described, it is the other things that need to be looked at in relation to it and in relation to each other. Sometimes it is difficult to regard them separately, so much are they interconnected, but harnessing

and hitching should clearly be seen as having different purposes.

COMPONENTS	REQUIREMENTS
Harnessing (What is on the donkey's body)	• Forces properly directed on donkey • Compatible with hitching • Simple • Adjustable • Comfortable for donkey: allowing easy breathing and movement, and blood circulation • Easy to put onto a donkey • Easy to take off a donkey • Easy to make • Easy to repair

Hitching (How the donkey is attached to the cart or implement)	• Inexpensive • Forces properly directed on cart or implement • Compatible with harness • Easy to connect • Easy to disconnect
Implement (in this case, a **cart**)	• Able to carry required load • Facilitate good balance of load • Exert least pulling/horizontal resistance (wheel bearings in good condition) • Enable optimum hitching (hitching points well placed) • Avoid converting ground irregularities into movement

	(should have springs)
Load (for cart)	• Suitable for cart • Not exceed cart's capacity • Balanced evenly over axle and wheels

It is in draft operations that it is most important for the harness to take the horizontal force of the resistance. In plowing and other operations the resistance is obvious although not easily measurable.

In pulling carts, on the other hand, the resistance is mostly created by the load on the wheels and the condition of the bearings. However, the weight is added to this resistance when a cart is pulled uphill, or in the case of a two-wheeled cart if it is loaded too much in front of the wheels, so all this adds to the work of the pulling animal. Going downhill, the animal itself has to provide the resistance to overcome the weight by means of breeching (see below), and this is another kind of work. There is also, sometimes, the need for the cart to be moved backwards.

It can be seen that a yoke is just not suitable for any kind of draft work when a donkey is used. Not only does a yoke not reach the shoulder

where a donkey's horizontal force is exercised (see diagram of the donkey skeleton, above), but the donkey has no muscles to form a cushion at the withers and so withstand the damage that a yoke can do. Also, it will push against the rope tied under its neck, and this will interfere with its breathing.

Just as bad is the system that attempts to lift the weight of the shaft onto the donkey's neck by means of a strap over the neck and a pole under it. Even if the pulling of the cart is still supposed to be done by a harness, what usually happens is that the traces are not well enough adjusted, so that the donkey still does the pulling by means of the shaft, with its neck and throat. Going downhill, it can easily be over-run by the cart, even more so if the cart is loaded so that the weight of the shaft is forcing the donkey to keep its head down.

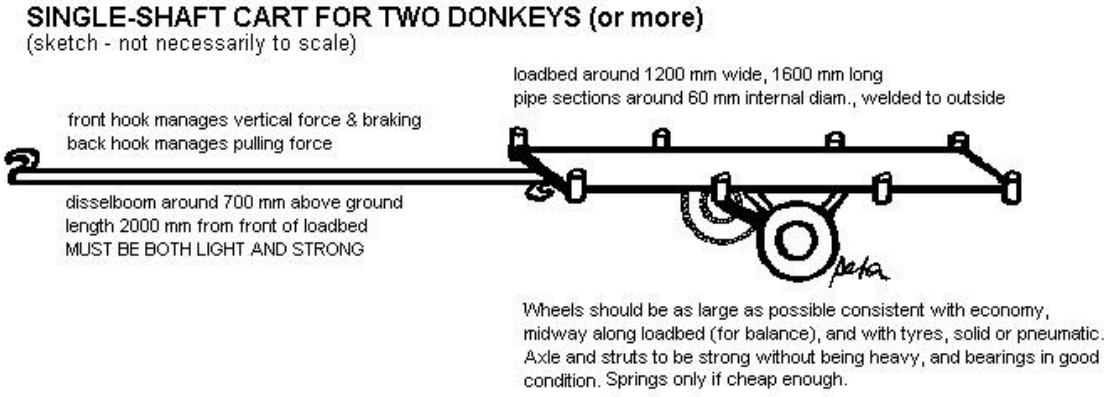
For draft, therefore, the harnessing around the shoulders of the donkey becomes most important, and it must be remembered that the functional part of a donkey's shoulders are on a level with its chest (see diagram of skeleton at the beginning of this chapter). There is in fact not usually much space spanned by a donkey s chest between the base of its neck and the top of its legs, so equipment for pulling from this position must be well designed and fully adjustable.

The back of a donkey should be expected to take less force; in the case of a well-balanced cart, there should be none, but often carts are not well balanced, especially if they have two wheels.• Too much weight on the back of the cart can lift a donkey off its feet, into the air, especially when going uphill and especially if it is wearing a girth.• If the donkey's feet have no proper contact with the ground, it cannot pull.• On the other hand, the more weight on the front of the cart, the more weight on the donkey's back • if it is harnessed properly and the weight is not on its neck • as the shaft pushes down, and again the less efficiently the donkey can pull.• Most of its effort will then be used for overcoming weight and not for going forward (see illustration of pulling angles, above).

Many carts, especially the two-wheeled, single-shaft type, are not designed for donkeys, but for oxen.• Lighter carts are able to travel on tracks where the larger carts have difficulty, and smaller carts with a lower bed can also be pulled by just one donkey if two shafts are provided • yet very similar loads can still be carried in the carts.• Such carts are very widely used in East Africa, although donkeys there are still not used at their optimum because of mistakes made in hitching.

A very common problem is a lack of any proper pulling point, especially on a cart where the front of the shaft is designed to be attached to an ox-

yoke. In the case of donkeys, harnesses must pull at something which is behind the animal, or at least halfway down its sides. Usually harnesses function best if they are designed to exert their force through swingles and eveners (see illustration here and fuller description below) to the centre of the thing being pulled.



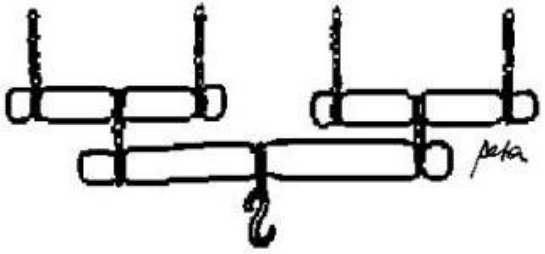
This sketch gives some guidelines for donkey-drawn carts.

Pipe sections at the side are for the insertion of poles so that sides can be erected when required; otherwise they serve as anchors for ropes, as when wood is loaded and sides would be a nuisance.

The loadbed dimensions are calculated to accommodate 200-litre drums.

A ringbolt through the shaft or chassis of a cart directly in front of the loadbed can provide a point for attaching the centre of the evener/swingle, and this system avoids any wastage of effort resulting

from a pair of donkeys pulling against one another.

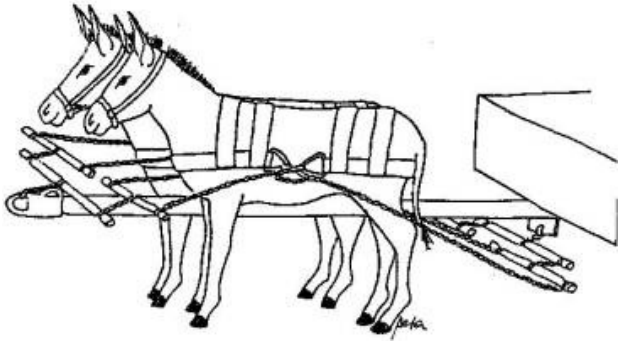


SWINGLE AND EVENER ASSEMBLY FOR TWO ANIMALS

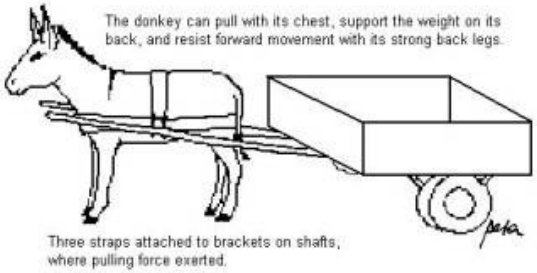
(described more fully in the appropriate section, below)

HOW THIS CAN WORK ON A CART

Many of these problems fall away when a cart has four wheels and, to a lesser extent, when it has two shafts. Large wheel sizes, too, as well as tyres (although for muddy and unsurfaced roads, metal wheels are better) can minimize the variablity of the forces on uneven surfaces, and thus also minimize the stress on the pulling animal. Two-shaft carts are usually light enough and easy enough to pull that a swingle seems not to be necessary, and pulling is done on the shafts themselves, with the harness attached directly to these on each side of the animal, halfway down its length.

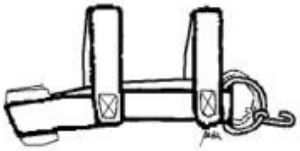


All carts seem to have something wrong with them; in this case it was the wheels.



In fact, the three straps of the harness – one across the chest for pulling, one over the back for taking vertical forces, and one under the tail for braking and backing – can remain attached to the shafts by means of a staple, halfway along, and simply slipped over the donkey when it is in position. If the cart is well-balanced, a girth or strap under the belly (see below) need not be included.

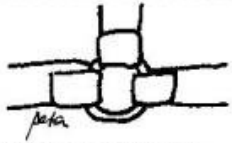
BREASTBAND



The narrowness, vertically considered, of a donkey's chest requires that the breastband be 5-8 cm wide, and so it must be particularly strong to take the pulling force exerted by the donkey against the resistance of the implement or cart.

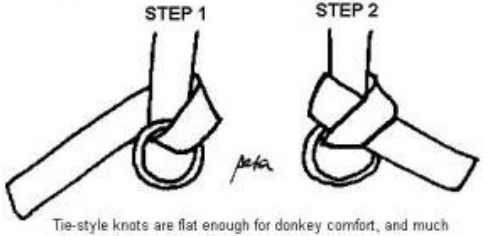
The breastband harness is a simple and cheap design, and effective inasmuch as it brings horizontal and vertical forces together at the donkey's "power point" (see illustration of skeleton at the beginning of this chapter) just behind the donkey's elbow. Various options as to materials and ways of adjustment exist, as shown here. (See also pattern in Appendix B.)

RING JOINT FOR HARNESSES



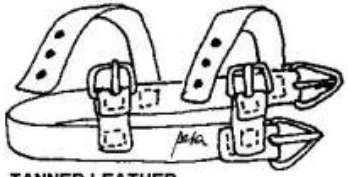
If right angles are joined by a ring,
the forces themselves can adjust the angle.

TIE-STYLE KNOTS FOR HARNESS STRAPS

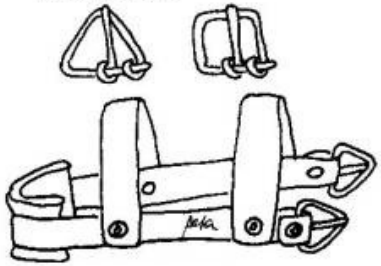


Tie-style knots are flat enough for donkey comfort, and much cheaper than buckles. Strap must be flexible enough.

BRAIDED GOATSKIN
adjust by tying at top



TANNED LEATHER
adjust by buckles, which can be made from wire



MACHINE BELTING
allows no easy adjustment and should be padded across chest

The adjustment of angles and lengths is very necessary to ensure proper fitting on individual donkeys and elimination of the possibility of movement of the harness against the donkey's body.

Never **repair with wire!**

Unfortunately, the breastband is often made of thick rubberized canvas belting, joined with bolts. One of its disadvantages is that it is often not adjustable, particularly when made of such material, and is thus very often too small and thus too high for the donkey wearing it, pressing on the animal's throat and obstructing its breathing. Alternatively, when it is too loose, it tends to cause rubbing and wounds. The sharp edges of the belting, unless filed down or padded, can in addition cut into the donkey's flesh. It is really necessary that some padding, preferably enclosed in leather because of the donkey's sweat, should be provided. There is also the problem that the bolts, which must of course have their heads on the inside, next to the donkey's skin, often catch in the donkey's hair and irritate the skin, also often causing wounds.

The solution to this is to make such harnesses out of leather, such as braided goatskin (illustrated above) whereby an owner can, by making them, ensure a better fit. Such materials would avoid so much damage to the donkey, whereas the simplicity of the breastband harness means that home production is more feasible. Less satisfactory, but cheaper

and perhaps more obtainable, is fire hose, essentially a broad rubber tube covered with canvas, usually about 10 cm wide.&#65533; This can be slit down the middle to produce two double-thickness straps 5 cm wide with a fold on one side, and is as easy to stitch as leather.

Harness made of firehose being judged. The backstraps are in fact too short for this donkey.&#65533; If too long, they are easier to adjust by means of holes punched in the top to make a pleat by threading strong twine.&#65533;&#65533;&#65533;&#65533;&#65533;

Only very simple tools are needed for making harnesses.&#65533; This picture shows a piece of leather strap &#65533; but other materials are possible &#65533; with a wire awl for making stitching holes, a bar awl for making bigger

holes, a razor blade (or sharp knife), strong twine and a strong harness needle.

All that needs to be remembered is that any projecting bits, such as fold-overs, should be *away* from the donkey's body.☐ Stitching needs to be strong, so twine should go through each hole twice ☐ in opposite☐☐ directions ☐ and finishing knots should preferably be between two thicknesses of leather, and certainly not in contact with the donkey's skin.

The breastband also distributes the vertical force in the right place: over the withers and the widest part of the ribs.☐ In fact, it will be found that this is where a breastband harness will first break if it is weak enough: at the join between the vertical strap over the withers and the horizontal one around the chest

However, this is really only important with plows.☐ Carts have shafts through which the vertical force is transmitted in combination with the forward pushing force on downslopes.☐ Some other harnessing strategy is needed to deal with these ☐ which is often the purpose, respectively, of the saddle-and-girth and breeching, as described below.

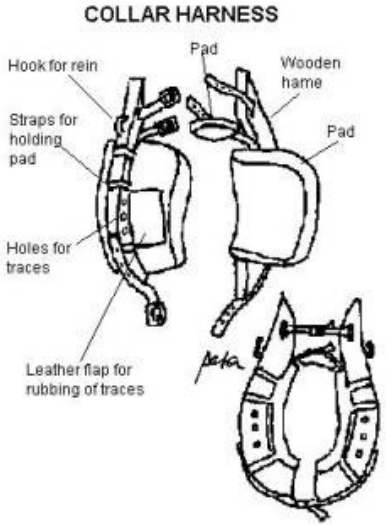
Other harness types are often recommended, particularly the collar

harness.

	ADVANTAGES	DISADVANTAGES
Breastband	• Easy to make • Takes vertical weights • Places forces together at donkey's own power point • Can double as saddle and reeching • Can be made of variety of materials	• Materials can be inappropriate • Can be non-adjustable • Wrong size/fittings bad for donkey
Collar (wooden or hame type)	• No danger of windpipe restriction • Adjustable	• Difficult to make • Tricky to fit • Only for one purpose: pulling • Limited in materials

		Difficult to repair

COLLAR HARNESS



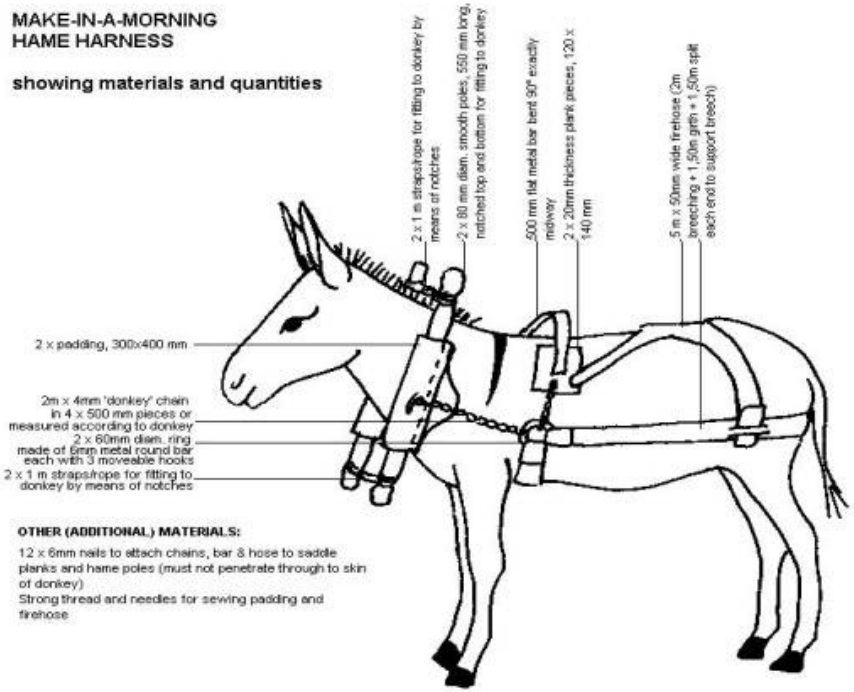
The collar harness (as opposed to the simple collar used for tethering) has the disadvantage of being more complex in design than the breastband, but it can be made of materials that are easy enough to find in rural areas, so that anybody with reasonable craft competence, and the time, can make one if provided with the design.

The materials are wood, cloth, leather, some nails, and stuffing for the cushions – the best material for this being the tail hairs of cattle, or even of donkeys themselves. Some non-absorbent grasses have also been found to be useful.

The advantage of a collar harness is that it

serves to concentrate all the pulling force at the donkey's shoulders, where it can be fitted exactly and is adjustable for the donkey's comfort. Also, it cannot interfere with the windpipe in any way.

A reputedly simpler version, which incorporates breeching (see above) has been developed at the University of Fort Hare.



SADDLE

A saddle over the donkey's back is necessary in draft to take the vertical force of the weight, when it occurs.• Since this force is usually not very great unless two-wheeled carts are involved, the saddle needs to be no

more than a wide, strong strap, sometimes over padding and sometimes in an upside-down V, to take some of the weight off the spine and transfer it to the ribs, so it needs to be fairly far forward on a donkey.&#65533; Sometimes, to achieve the same purpose, a saddle strap is passed over a backframe, illustrated below in the context of carrying equipment.

If the breastband is used, the saddle is included in the design, over the withers.&#65533; A collar harness does not provide for the vertical force, so if a collar is used, the saddle has to be provided separately &#65533; but then it can have the advantage of being made more stable with a girth or bellyband under the donkey's belly.&#65533; The girth, also, should be a wide, soft strap which is adjustable to make the whole apparatus tight.

The shafts of a cart should somehow be attached to the saddle for the balance of the weight, and for the vertical force to be taken by the donkey's back.&#65533; However, because a donkey&#65533;s back is and should be level along its length, with no dip in the middle as well as no shoulder hump, the saddle should *definitely not* take any of the pulling force.

If there is only one shaft, some way has to be found to avoid attaching it to only one side of the donkey, thus creating imbalance.&#65533; *What needs most to be avoided, on the other hand, is the system in common use, adopted from horse technology, whereby the front end of the shaft is*

suspended from the animals' necks by means of straps attached to a horizontal transverse pole shared by the two animals. Especially in the case of two-wheeled carts rather than four-wheeled wagons, load imbalance generally means that much of the cart load is transferred through the shaft onto the draft animals. If the traces are too short, this load comes directly onto the donkeys' necks rather than their withers, and donkeys' necks are less strong than those of horses and can suffer damage. If the traces are too long, the load may be on the withers but the animal ends up exerting pulling force not through the harness but on the transverse bar which can cause damage through not being designed for the purpose. ''

Much better is a front swingle (as illustrated above) between the saddle and the shaft, with traces which can distribute the weight to both sides of the donkey, thus avoiding the danger of side-to-side imbalance and at the same time any stress on a donkey's neck and throat.

GIRTH

A 'girth', or strap under the belly, is often used in conjunction with a saddle or saddlestrap, as shown in the Make-in-a-Morning illustration. Experience with donkeys, however, leads one to realize that this is

seldom necessary, and is more nuisance than functional.• Unlike a horse•s back, a donkey•s back is •pitched• so that the spine forms a peak.• Just by itself, this serves as a barrier to sideways slippage, which is the main purpose of a girth.• Another purpose of a girth is to prevent backwards and forwards movement of any tack, but properly fitted breastband and breeching should ensure this anyway.

BREECHING

Breeching is only necessary when a cart is being used, as in effect it acts as a brake, taking the force which is parallel to the ground when the cart is going downhill, when the weight of the load becomes part of that force.• It also enables an animal to move a cart backwards when it is on the level.

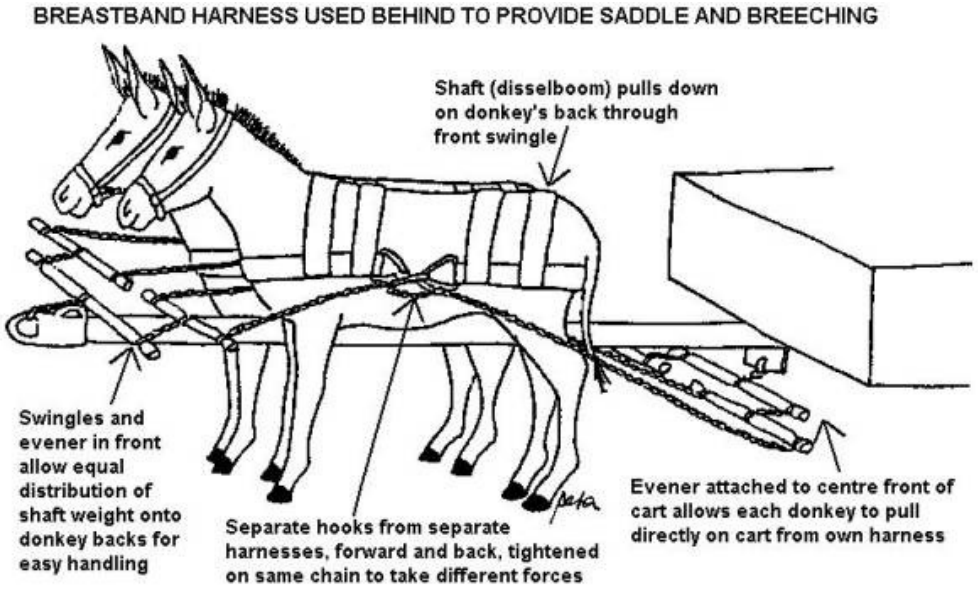
The breech strap is a wide strap that passes under the tail of the donkey - not placed so high that it stops a donkey defecating nor so low that it interferes with the movement of the donkey's legs - and should also be attached to the shaft/s in some way.• It is therefore an advantage for the breechstrap to be attached to the saddle and girth, if there is a girth.

As with all parts of the harness, a breech strap should never be loose to rub the donkey's skin, but fitted snugly. So as not to cut the donkey's

skin, it must be wide and soft as well as strong.

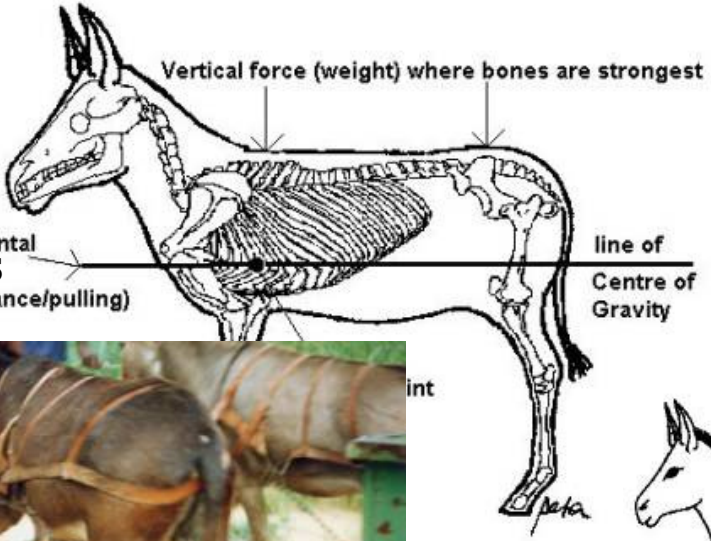
A compromise which is simple and practical is to use an additional breastband harness [illegible] home-made or of the commercially-available type [illegible] as a saddle and breechstrap combination.[illegible] This can be connected to the shaft of the cart by means of *forward* traces and *front* swingles and evener, thus effecting the necessary lift of the shaft and distributing its weight over the hindquarters of the donkey.[illegible]

A donkey's hindquarters are not the ideal place for the vertical weight, but since it may be combined with the forward force, also transmitted through the shaft of the cart, this is the best

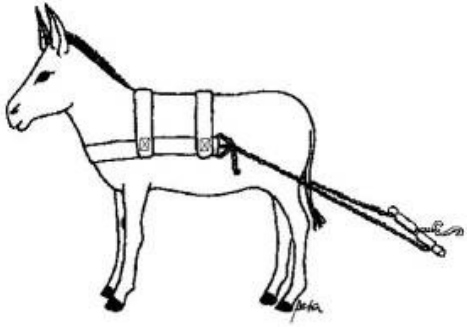


part of the donkey for dealing with the shaft, and this system manages that very well. It is certainly a lot better than the donkey's neck for managing vertical forces, i.e. weight.

PLACEMENT OF FORCES ON DONKEY SKELETON



TRACES



The traces are the lines that transmit the forces from the harnessing to the cart or implement itself, and therefore take a good deal of the strain.

They should be connected to the animal at a point where there is vertical as well as horizontal support, and to the body of the implement or cart through swingles and, in the case of more than one donkey, an evener (see below).• The shaft of a cart is not really designed for pulling at all.

Because of the strain they take, traces need to be strong, and chains are often therefore used.• If chains are used, particular care must be taken that they do not touch the donkey's body, since metal can have a very irritating effect on the skin, especially if the hairs can also be caught in the chain links.• In any case, since the traces are free of the donkey's body and may move against it, contact must be avoided no matter what the material.

BREASTBAND HARNESS AS USED FOR FIELD IMPLEMENTS

The further away the implement, the smaller the pulling angle, which puts less strain on the harness, depending on the resistance of the soil and the required plowing depth.•

Greatest force is exerted where breastband and backstrap meet.• For a steeper pulling angle, the second backstrap (saddle) should be further back, over the donkey•s hip bone.

The angle of the traces is important, as explained for the purposes of 'placement of forces' above, and this is mainly governed by the distance of the donkey from the point of attachment to the implement, i.e. the length of the traces. To maintain the proper angle, however, and to prevent any chance of entanglement, from a collar harness the traces are usually passed through a ring below the saddle at the animal's side. In the case of the breastband, this is where the traces are usually connected to it.

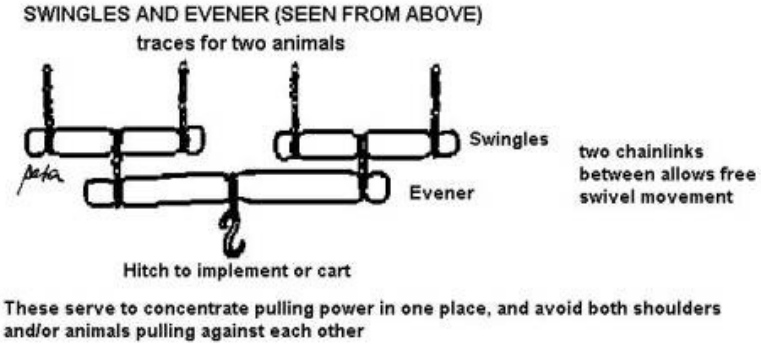
A surprisingly small donkey can drag a surprisingly heavy pole over a surprisingly long distance, using a simple harness and swingle. Donkeys can pull heavy objects using a swingle in the same way that they would pull a plow.

The traces should obviously not be so long that they get entangled when the animal is stationary. They should also not be so short that the angle of pull is wrong for the forces which it has to overcome (see above). It follows from the same arguments about the balance of forces that weaker animals need to be nearer the pulling point, especially where carts are concerned, the better to overcome the vertical forces.

SWINGLES AND EVENERS

These should be made of a good, hard wood, which is both light and strong.• Any farmer can easily make them with an axe.• They should not be thicker than a child's wrist, and only long enough so that the grooves where the traces are attached are wide enough apart to ensure that the traces stay clear of the animal's body.

A swingle serves to compensate for the uneven movement of the donkey's body as it moves first one leg forward and then the other.• The swingle ensures that all this movement is concentrated at one point in line with the middle of the body.



The evener has a similar function, only it compensates for the unevenness created when more than one animal is used side by side, i.e. abreast.&#65533; Where this is the case, the swingles are attached to the evener, and the evener is attached to the centre of the implement or cart - but there can be permutations of this (see illustration of teams).&#65533; It is only necessary that the attachments between the swingles and eveners and implement or cart be fairly mobile and take movement up, down and sideways.&#65533; Two chainlinks, one fixed at one end and the other fixed at the opposite end (most easily by wire wrapped in the groove of the swingle or evener) achieve this in a satisfactory way.&#65533; Better still, but more expensive, are two D-shackles, or a ring and a shackle, or a ring and a hook, because these allow for quick unfastening when this is needed, while still allowing for mobility.&#65533; Good, strong S or C double hooks are very useful in this context.

Back

Back swingles and evener, which are attached to the traces and therefore

transmit the pulling force of the donkey, are attached directly to the implement or cart.

What is necessary is that there should be a point at the very centre, as measured from side to side, of the implement or cart where the swingle or evener can be attached.• Apart from concentrating the force so that the animals are not pulling against each other, an evener also makes turning very much easier.• It needs to be borne in mind that, where carts are concerned, shafts have no real function where the pulling of the cart is concerned, unless it is being pulled by oxen with a yoke.• When donkeys are used, the purpose of the shaft or shafts is to transmit the *pushing* force of the cart, on downhill slopes or when it is to be reversed, to the front of the animal.• From that position, the animal can resist it better by pushing backwards with its rump on a breechstrap.

Some care must be taken when using back swingles to ensure that they do not knock against the donkey•s legs, and the traces must be long enough so that the donkey can be harnessed well forward of the swingle behind it.

Front

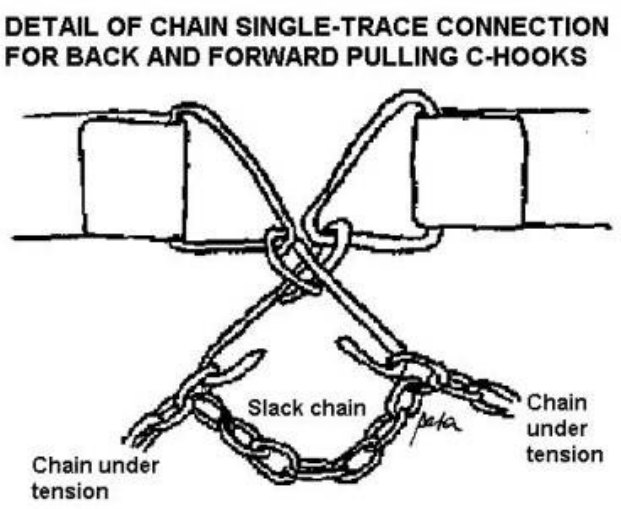
Front swingles and evener, which only need to be used with single-

shafted carts, serve the purpose of taking the forward force of the cart, when it occurs, and transmitting it from the shaft to the breechstraps on the animals.• The evener is therefore attached to the front of the shaft.

It is a principle of most harnessing attachments that they should be easy to fasten and even easier to release.• Therefore knots are undesirable, buckles are better, but hooks are best • always provided they do not loosen too easily and are not positioned so as to hurt the animal.• Swingles and/or eveners can be attached to implement or cart by double hooks: S or C shape, which can easily be made of strong bar wire or by local blacksmiths.

There is no actual reason why there should be separate traces to the back and front swingles in the double-harness or breastband-and-breechstrap system.• Especially if chains are used as traces, hooks through neighbouring links and then to the harness ends are an effective way of allowing for both backward and forward horizontal force on a single trace connecting the back swingle to the front one.• It is also very convenient to have the chains permanently joining back and front swingles which themselves may be permanently attached to eveners, and those perhaps permanently attached to a cart.• The donkey can then be harnessed and taught to step into position between the traces, which can be easily be lifted (or lowered) to be hooked on to the harness.• Release is just as

easy.&#65533; This is an instance where C-shaped double hooks are necessary, so that both ends are away from the donkey's body.



With the traces permanently attached to front and back swingles and eveners, getting donkeys hitched is a simple matter

(see hitching instructions in Appendix C)

It will be observed that donkeys hitched in this way do not have any girth.&#65533; This means that the shaft can actually lift the harnesses off the donkeys if it rises too high, but this is better than lifting the donkeys themselves.&#65533; On uneven ground, the shaft rises and falls quite a lot, and the donkeys do feel this on their backs &#65533; which is also better than feeling it on their necks.

The main thing to be remembered is that donkeys must pull at something *behind* them.&#65533; Harnesses must never be connected to something which is next to the donkey, like the harness of another donkey.&#65533; Only where two shafts are next to the donkey on either side of it, and therefore also connected to what the donkey is pulling behind it, can the harness be attached at the donkey&#65533;s side rather than to traces going back to a

swingle.

Step-by-step hitching instructions are given in Appendix C.

Teams

As has been said earlier, the number of donkeys used in a hitched team does not represent a multiplication by that number of donkey strength.• The more donkeys that are used in a team, it has been found, the less power each donkey provides.• A rule of thumb is that, for every animal added, 10% of the available energy is lost (see table in the Appendix A), although it is not clear whether this varies according to the hitching system used, or not.

Various hitching systems (rigs) are illustrated here, and the question always to be answered where tandem teams (i.e. those with one animal behind the other) are concerned is: on what do the front ones pull ?

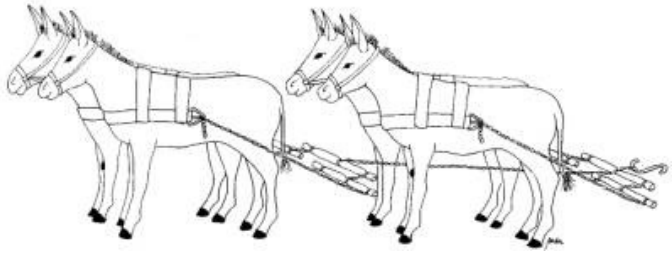
Where only two donkeys are in tandem, they both have to pull on the same swingle, behind the back donkey, or on the brackets of the shafts, so the front one has much longer traces than the back one, if the back one has traces at all.• The one in front• should certainly not pull on the back one's actual harness, which is not designed for front-pulling forces, but

the traces can pass through a ring or loop on that harness to achieve a proper angle. Where it is a question of four donkeys, two by two, then the front pair should pull through their swingles on an evener which is positioned in front of the back two donkeys, connected by a single line either to the evener used by the back pair, or directly to the pulling point. This evener positioned between the two pairs of donkeys should not be connected to the back donkeys in any way, or the front donkeys may simply end up pulling on this connection and not exerting their force where it is needed. If that evener is hung on the back donkeys' necks, those donkeys will then be performing the double task of pulling and also resisting the pull of the donkeys in front of them, and the force of the front donkeys will be wasted.

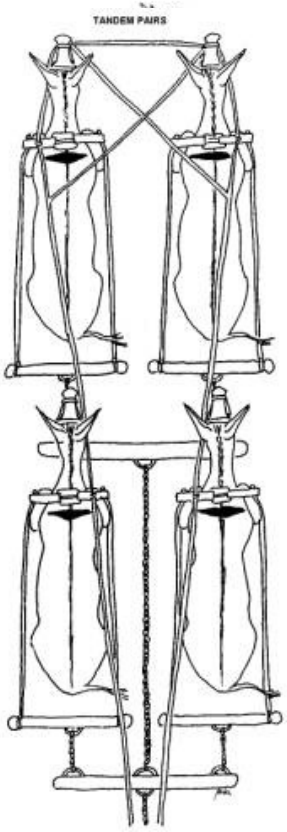
The front evener must therefore be attached to the rear evener, but under enough tension that the traces are well above the ground while the donkeys are pulling.

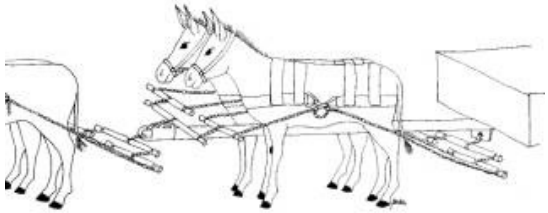
On the whole, it is better to avoid any possibility of one or more donkeys exerting force on the harnessing of any other, which can create more movement in such harness and stresses in places where harnesses are not designed to take them. All force must go to the cart or implement, and there should be no risk of harnessing on a donkey being moved, once it is on.

The combinations illustrated here, where they are shown as seen from above, show the traces coming from a collar harness and also reins for driving, neither of which will necessarily be used.



From implements, a long chain with evener goes to the pairs in front connecting evener to evener. In the case of carts, front pairs can pull on the end of the shaft.


TANDEM PAIRS

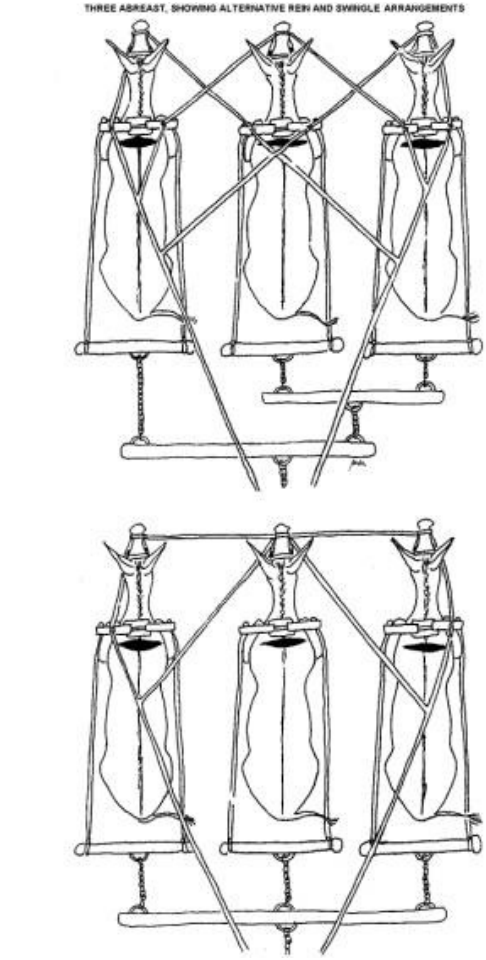


HITCHING THREE ABREAST

There are various ways of doing this, but always there should be an evener connecting to a central pulling point

In the case of both triples and pairs, if one donkey is weaker than the others, it should be hitched closer to the cart.

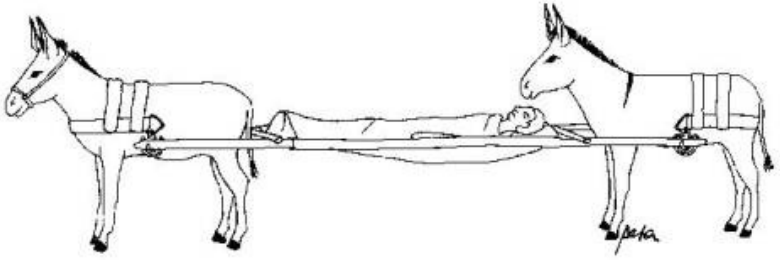
What needs to be considered concerning the



equipment to enable a donkey to carry loads ?

People not familiar with donkeys often believe that it is 'cruel' to put any load on a donkey's back. Perhaps this is because, as humans, they know that a headload is more comfortable than a backload. However, humans walk on only two feet, and a donkey has four. For a donkey it is actually much easier to carry a load than to pull one, and many donkeys will show by their behaviour that they prefer carrying to pulling. (Some, of course, do the opposite, being the individuals that they are!) Whenever a donkey thinks that it overloaded, or overworked generally, it will simply lie down and refuse to go further, so it is easy to judge when one is being 'cruel'. Donkeys often seem to like carrying, perhaps because it signifies a fairly long walk, and most donkeys really like to walk long distances.

In general, where carrying is done, this is by putting a load directly onto an animal's back. The shape of the animal thus dictates the carrying of a load either vertically or at an angle.



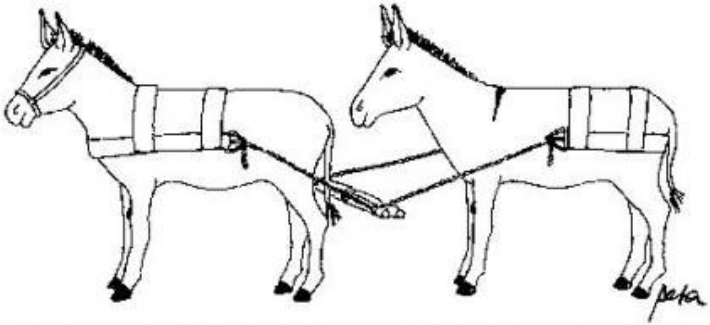
Large things which need to be horizontally flat, such as sick people or trays of fish with ice, therefore present a difficulty. However, there is a solution which does not involve the use of a cart or wheels: a ladder-like 'litter' attached to harnesses worn by a donkey in front and a donkey behind, moving in tandem. The front donkey wears a breastband harness so as to take the weight on its withers; the pulling it does on the breastband is mainly of the donkey behind, exerting force through the

litter itself. The back donkey wears saddle and breechstrap, which can be a breastband harness worn over the tail, so it takes the weight on its crupper and is pulled forward, if necessary, by the breechstrap around its rump, on which the litter may pull.

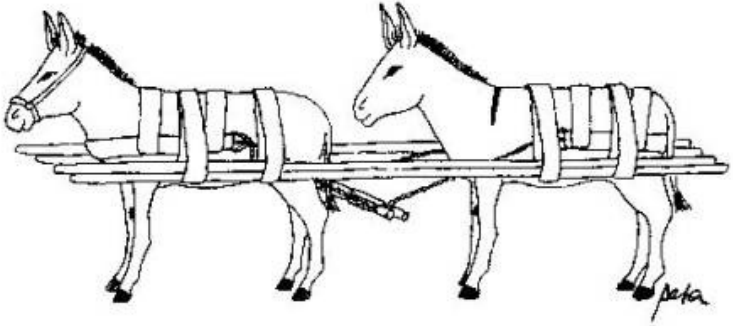
To avoid too much raising and lowering of the litter, the donkeys have to be kept at a constant distance apart; this happens automatically if the side poles of the litter are fixed to the harnesses, not merely suspended from them.

The same method can be used for carrying long and heavy poles suspended on either side of a couple of donkeys in tandem. In that case, the donkeys can be kept at the right distance from one another by attached traces from each harness to a swingle between the two donkeys.

TANDEM DONKEYS FOR LONG BACKLOADS



Front and back harnesses with traces to back and front swingles joined between donkeys to keep distance constant



Load suspended by means of rwo wide slings over each back

The most difficult thing is to get the load equal on both sides, for balance.

Otherwise, carrying will be done by single donkeys, on their backs, and the only limit to the number of donkeys that can be used is the number available, and the number of humans needed to supervise them.

Donkeys can be moved along a track more easily by two people than by one: one in front to show the way, and one behind to keep the donkeys moving - but those two people should be able to manage ten donkeys easily.

And if donkeys are accustomed to taking loads along a particular track, especially if something they like awaits them at the end of it, they can often be left to do it alone, a trick that smugglers have often found useful.

As a general rule of thumb, a donkey can carry twice as much as a human being, and it is in doing this that a donkey can really show its skills, as donkeys are almost as good as goats in jumping from rock to rock up and down steep paths, even when the loads on their backs can change their centre of gravity.

Various sorts of equipment can be used, but there are some universal requirements.

- **ABLE to keep weight off donkey's spine; it should be possible to insert two fingers between the load and the donkey's spine.**

- **ABLE to distribute the weight of the load onto the fleshier part of the animal, such as the upper part of the donkey's ribs and close to the centre of gravity (see skeleton diagram)**

- **LIGHT, so that it adds as little as possible to the weight.**

- **OF STRONG materials, to withstand being pulled against rocks and branches and thorns in narrow places, and being torn or pulled off.**

- **WELL-BALANCED, to ensure that the load is divided equally on both sides of donkey's back.**

- **SECURE against sliding backwards or forwards when donkey is climbing or descending slopes, but with breechstrap rather than crupper, and never so narrow as to cut under the donkey's tail (must also not**

interfere with defecation).

- **NOT ABLE to cut or rub the donkey.**
- **ABLE to carry the necessary weights.**
- **ABLE to be tightly packed, so that the load does not project too far from the donkey and lies flat down its sides.**
- **REASONABLY HIGH above the ground, so as not to interfere with donkey's moving feet.**
- **FAR enough away back and front from the donkey's moving legs.**
- **POSSIBLE to offload from the donkey within seconds in the event of an emergency, so also preferably possible to offload from same side.**

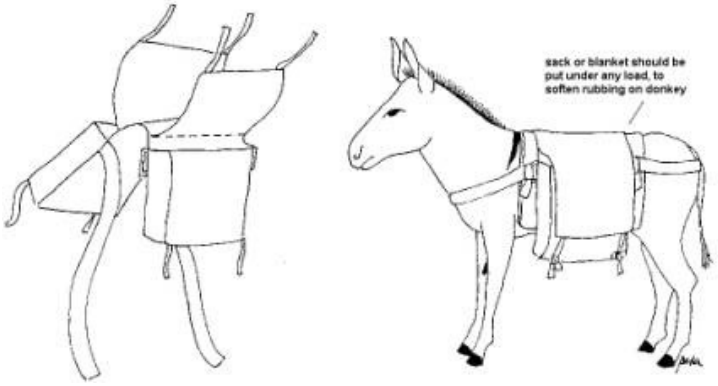
Generally, a folded blanket should come between the donkey's back and anything it carries, to prevent rubbing and catching the hairs. **If a filling**

or padding can be provided so that something of a cushion is achieved, so much the better.• What must be avoided, however, is any folding of fabric or the edge of the padding under the load: the padding must be smooth and all edges must project beyond the load on the donkey•s body.•

A rough texture will cause sores on the donkey's skin.• A nice absorbent blanket will also mop the donkey's sweat and the dust from its back.• If a sack is used, it should be of the jute or hessian kind, *not*• plastic-based, as non-absorbent plastic encourages the breeding of harmful bacteria as well as causing more wounding.• Being separate, such a blanket or sack or cushion can easily be washed and cleaned.

BAGS

These can be home made out of some strong material such as canvas, and should have flaps at the top so that they can be securely closed.



Straps around the donkey's chest, under its tail ☐ and, if used, under its belly ☐ should all have their fastenings close to one of the bags on the same side (traditionally, this would be on the left-hand side) of the donkey, so that they can be undone without any need to move around the donkey.☐ Also, this way, the fastening is in a less irritating place for the donkey than if it were in the middle of the chest or just under the tail.

A very useful thing, if available, is to use Velcro for these fastenings.☐ Not only is it strong enough, but is very quick to fasten and unfasten.☐ (See pattern in Appendix B)

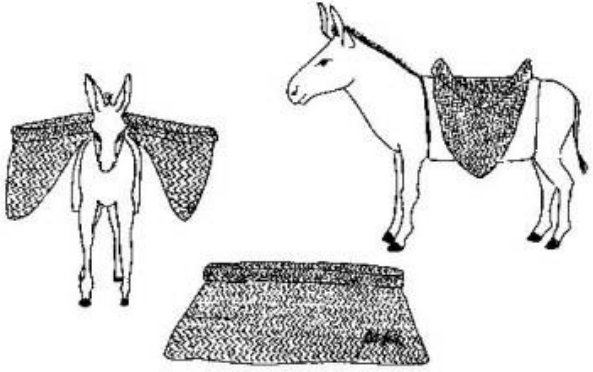
One disadvantage of such bags is that they are connected, so must be lifted together on and off the donkey.☐ This may not be easy when they are fully packed, so such bags often have to be packed and unpacked

when they are on the donkey.

Another disadvantage is that, with such a design, too much of the weight may be taken directly onto the donkey's spine. The main advantage of bags is that they can easily be made and repaired by anybody with a needle and thread, as well as easily washed. They can also therefore be made so as to incorporate the underblanket, which would not then need to be separate.

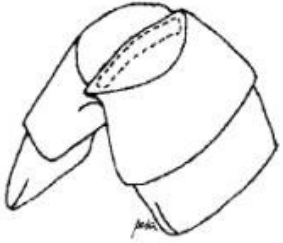
SOGGIES

This is really just another kind of bag, woven out of palm leaves, which is widely used in East Africa, where it is said to be one of the best ways of loading a donkey. It has no straps to secure it, but nonetheless seems not to move once it is loaded.



A soggie has the disadvantages of bags - also it does not close - but its material is much stronger and longer-lasting. It can be made not only out of palm leaves, of course, but out of rushes or grasses, and any

competent basket weaver should be able to make one.

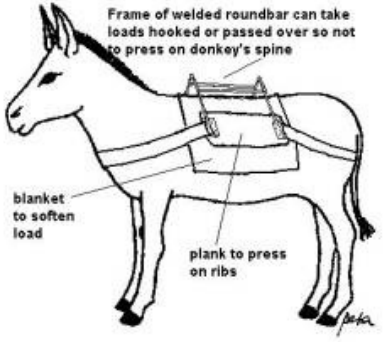


An alternative type of soggie is one made out of sacks, as illustrated.&#65533; These do not stay open for loading quite as well as a soggie does, but are more easy to obtain.&#65533; Also, as long as an absorbent under-layer is provided for loads carried for long periods, plastic-based sacks can be used for this purpose.

BACKFRAME

Many types of load can be made into parcels in advance, and, as long as the parcels are of equal size – especially as regards to weight – they can be tied to or suspended from a frame that can be put onto the donkey in advance, and independently fastened to the donkey.– With the availability of rural welders and the cheapness of roundbar as used for burglar bars, a simple backframe that is very easy and light to handle can be made (see also pattern in Appendix B).

Something similar can also be made of strong sticks, like a reduced form of the 'backbox' described below.



Anything that can be hooked onto the bars can in theory be carried this way by a donkey

PANNIERS

A pannier is a more rigid container than a bag or a soggie, so that it incurs less risk of poor packing and shape to the load. Also, it can be made of a stronger material, such as bamboo or reed basketwork, or even a light metal. In fact, the cooler boxes as illustrated above come very close to being panniers.

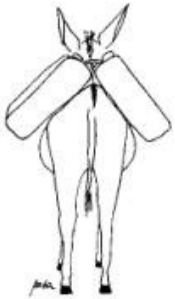
Panniers are usually open, but they can of course be provided with hinged lids. They usually are separate and can be so designed that they hook onto a backframe, or they can be joined in such a way that they form a backframe or saddle of their own. Being rigid, this saddle can be shaped so that the weight of the load is not taken by the donkey's spine, but by its ribs. It should also be cushioned so that there is no risk of any part of it digging into the donkey.

These panniers were made out of canvas for the sides connecting long mats made of sticks, then hooked to a backframe.

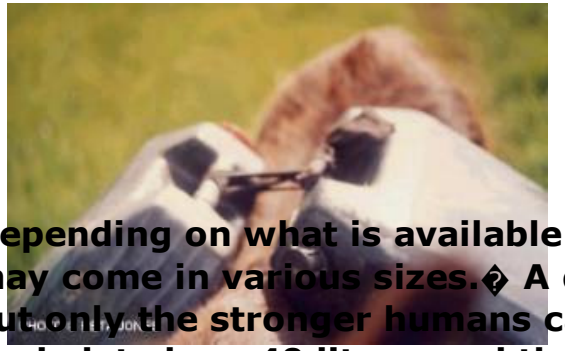
If there are things of a regular size which can be stacked, such as bricks, a rectangular shape is often needed. This can be quite easily constructed out of wooden fruit boxes, or strong sticks and fibre (see pattern in Appendix B) to function very like a backframe.

Flat, rectangular containers designed to carry liquids and made of metal or plastic (plastic being lighter, but weaker) usually have handles at their

top.&#65533; Two such containers with their handles tied tightly together form a good angular shape to put over the back of a donkey so that the weight is taken by the donkey's ribs and not its spine.



Only if jerrycans are tied very closely together will the angle thus made lift the tying point above the



donkey's spine, but this is essential to prevent damage to the donkey.

Depending on what is available in any particular country, such containers may come in various sizes. A donkey can easily carry 40 litres or more, but only the stronger humans can lift 20 litres at a time onto a donkey's back, let alone 40 litres, and there can also be a problem of balance while loading. Filling can be done once the containers are on the donkey, but then balance can still be difficult to manage. If 10 litre containers can be obtained, it is easier to have four of these for carrying by each donkey. At the other extreme, using 5 litre containers is altogether too fiddly when it is remembered that a donkey can be carrying 8-12 of them. But also to be considered is the fact that, if puncturing is a common danger, then it is better to have many small ones than a few big ones.

When there are several to be carried, of course then it is easier to hang them from a frame, or stack them in a backbox, as illustrated above. Even where there are only two, this also makes loading very much easier.

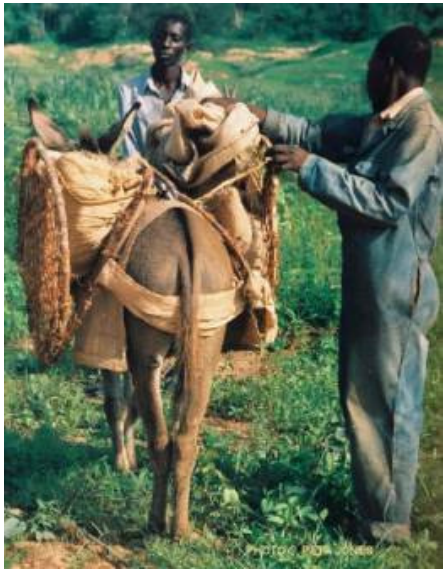
Where there is a choice in the matter, and especially if the liquid is to be used while the donkey still has to carry it, it is better to choose

containers that are translucent or transparent, where the level of the liquid can be seen from the outside.&#65533; This will help in getting the levels equal on both sides of the donkey, if the jerrycans are not quite full, and thus balancing them properly on the donkey.

BUNDLES

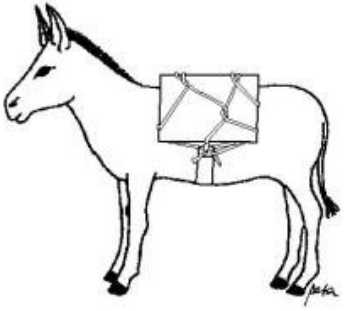
This is the name by which these things are known in Zimbabwe, but they are common around Africa for the parceling up of dried fish and suchlike things.&#65533; They make excellent frames for both supporting and enclosing softish packages of irregular shape.

They are usually made and used in pairs of the same size. However, for backloading a donkey, four of the same size would be needed.



First tie firmly together concertina-style upside-down, before reversing to load on donkey

Tie the bundles tightly around the load.



LASHING

A 'lash' is simply a rope or thong that can be thrown around something. Such ropes are needed for securing a load to a backframe or some other kind of saddle, or directly across the donkey's back, being secured under its belly.

There are ways of doing this so that:

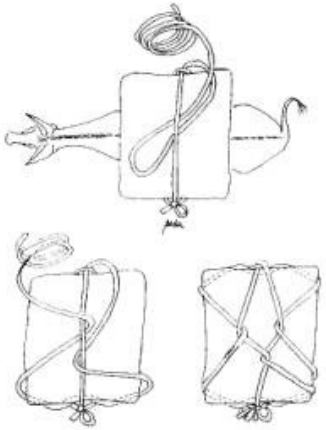
** the load is secure at all points where gravity may cause it to slip, and**

** in an emergency, the load may be released in seconds and removed**

from the donkey.

Such lashing is facilitated if the load is attached to a saddle, such as a backframe, with projecting points around which the rope can be securely hooked - on the same principle as the hooks on the back of a truck.

LASHING A SINGLE LOAD OVER A DONKEY?S BACK



seen from above, in 3 steps

In this illustration, a girth is used, and there is no back or front support for the load to prevent it slipping on gradients. Tying must therefore be very tight indeed, and side-to-side balance is important.

These donkeys, awaiting loading, have clearly been provided with equipment to take the load off their spines and spread it a little way along their backs. Spreading it further would have been a bit better, but the principle is a sound one.

Almost anything can be put onto a donkey, provided the weight is equal on both sides.

Chapter 7

TRAINING DONKEYS

Are donkeys difficult to train ?

Almost any donkey owner will testify that donkeys need little or no training.☐ The main thing is to get them to trust you, and after that they will mostly go along with what you want ☐ as☐ long as that does not conflict too seriously with what donkeys themselves want !☐ However, there are some things that it is wise to get a donkey accustomed to, such as having its eyes washed and hoofs cleaned.☐ Occasionally an owner will acquire a very mistrustful donkey, and will need to know how to gain its trust.

As already noted, in a lot of the developing world it is children who have most dealings with donkeys, so perhaps the first step in training donkeys is to train children.☐ When donkeys are being trained, children should participate.

When should a donkey ***not*** be approached ?

When a donkey's ears are pointing backwards and its tail is swishing strongly from side to side – this means that it is frightened and preparing to kick. In such circumstances it is better not to try to approach the donkey, but to check what is frightening it and remove the threat. If the donkey obviously considers the approaching person to be the threat, then that person must stand still, make soothing noises, use the donkey's name, and hold out some tidbit to encourage the donkey to make the approach to the person, rather than the person approaching the donkey.

Can a human outrun a donkey ?

Chasing a running donkey is simply a waste of time. A donkey can run faster and longer than any human, if it wants to. However, mostly it prefers to walk, and if nobody is running behind it, it will soon slow down. A human can overtake it by another path, and stop it more effectively by meeting the donkey from the front - and then using the voice.

What is the best way to approach a donkey ?

If the donkey does not know you, unless you are with someone that it does know and trust, it will be very cautious about allowing you close.

It is important, however, to realize that, if you want to get near a donkey, the approach should not be made directly from the front, so that the donkey feels threatened, or directly from the back, where a donkey cannot quite see (though a donkey can see surprisingly far around the back) and so will be suspicious.• Like most animals, donkeys should be approached from the side.• This of course does not stop a donkey turning to present its back legs for a kick.• If it tries to do that, then the donkey must be encouraged to do the approaching instead, as described above and in the 'steps' below.

In parts of the world where horses are common, it has also become the practice to approach donkeys and work with them always from their *left* side, as is the prescribed practice for horses.• This is also the side on which to stand before climbing onto the animal's back, and is called the 'near' side.• The right side of the animal is called the 'off' side, but is not in fact the side for getting off the animal.• One is supposed to get off the animal the same side from which one gets on, i.e. the 'near' or left side of the animal.• It is not clear how much of this is necessary for donkeys, though it must be borne in mind that donkeys are decided creatures of habit, and behave best in the presence of what is familiar.

When walking with a donkey, using its lead and headrope or halter, the best position is right next to its head, on the near side, with the lead rope

short and your hand close to the halter. However, in most developing countries where footpaths are narrow, this is simply not an option, and donkeys must get used to being led by a person directly in front of them, or being driven from behind. With different donkeys in different situations, one or other of these will be more effective. The most effective strategy of all is to have *two* humans, one in front and one behind, to conduct a donkey - and then it might as well be a dozen donkeys as one, with a human to lead in front and another to drive behind. Donkeys seem really to like such a situation, and behave very well, walking sedately in a line.

How much strength does a human need to train a donkey ?

No force is needed to train a donkey, only patience. The strength that is needed is spiritual.

If force is used, it can have a bad effect. It means that you are putting yourself in the role of a predator on the donkey herd; and donkeys have the sometimes useful habit of attacking predators. At the very least, a donkey will ignore force or resist it. Remember a donkey s tolerance of pain.

It is much better to try to put yourself in the role of the leader of the

herd.• To this end, if you have several donkeys, it is worth observing which donkey is usually the leader, and how it behaves towards the others.• It is of interest to note that the herd leader is often a female donkey.

So what is needed to train a donkey ?

Sometimes a lot of patience is needed, especially to overcome the first barrier: the donkey's unfamiliarity with the human touch and voice - unless it is newborn, when everything will be unfamiliar to it and it will react as its mother does.

In addition, the presence of any other well-trained donkey makes it much easier to train a new one.• There is no doubt that donkeys learn as much from each other as they do from humans.

Unlike some other working animals, a donkey does not give its best effort and behaviour to a person that it respects, but to one that it trusts and likes.• It is therefore in the owner's best interest to get the donkey's trust and liking.• This can take time, but after that, everything is remarkably easy.

Is it wise to use reward and punishment ?

Reward is much more effective than punishment, and certainly no punishment should be given for any failure to show the right behaviour, as opposed to showing plain bad behaviour. Maybe the donkey didn't know what the right behaviour should have been. Reward the donkey when the right behaviour is shown, and it will soon learn.

Reward can take various forms: at first it can be small quantities of food that a donkey likes, i.e. tidbits, given always with a word like 'good !', so that in the end the word alone will function as a reward. Too many tidbits may not only cause digestive troubles to a donkey, but also encourage an animal to start demanding them, so the sooner a word alone can be used, the better.

Once a donkey is accustomed to the human touch, there are also actions that can be used as reward, such as scratching around the base of a donkey's ears, and massaging its back and neck around the shoulder bones - in much the same places that humans also enjoy massage !

Punishment should only be for the wrong *actions* such as kicking or biting. Punishment can of course also take the form of action itself, such as a sharp whack with a stick; a donkey feels this less on its buttocks than a bit lower down, where in fact its mother nips it when she wants to discourage something it is doing. It is important to avoid damaging the

donkey when hitting it, and a donkey should never be hit on or near its face.☐ In fact, in punishment as in reward, the sooner a verbal substitute can be made, the better.☐ Words actually mean more to a donkey than pain does, so all punishment should be accompanied by a word such as 'No !'.

The golden rule is:

☐☐☐☐☐☐☐☐☐☐☐☐ REWARD GOOD BEHAVIOUR as MUCH as posssible
☐☐☐☐☐☐☐☐☐☐☐☐ and
☐☐☐☐☐☐☐☐☐☐☐☐ PUNISH BAD BEHAVIOUR as LITTLE as possible

What other tricks or techniques could be used in training donkeys ?

The main instrument in training donkeys is the human voice.☐ The donkey's long ears are very acute, and even when it does not understand words, it is very understanding of moods as expressed by the voice.☐ It wants to hear and expects to hear the tone in a human voice, by which it will recognize which human it is (eyesight being not always so reliable), and what behaviour that human is likely to show.

When dealing with donkeys, therefore, a human must talk as much as possible. Friends and neighbours will cease to think an owner mad once they see how well the donkeys behave.

At what age should a donkey be trained ?

The earlier the process of training and familiarity starts, the easier for everyone. It can and should start the day the donkey is born, if the mother is sufficiently trusting. By the time the donkey is ready for full work three years later, no particular effort will be required.

Failing the opportunity to start training a donkey straight after its birth, another good time is when it is about 8-10 months old and its mother is wanting to wean it. It will be looking for alternatives to its mother, and will be glad of human interest just then.

How long does it take to train a donkey ?

All training can be completed in one to two months, using only half an hour a day. However, if training starts when the donkey is an infant which is the best time to start then, although the process is a lot easier, it must take a little longer, as some steps must wait until a donkey reaches the appropriate maturity (see 'steps' below). After that, the donkey will be useful for the rest of its life.

What words does a donkey understand ?

Of course a donkey will not understand the 'meaning' in human terms of most of what is said, but there is a range of words and sounds that a donkey can easily be taught to recognize and associate with actions it must perform, and in general it will perform them very promptly, showing its understanding.

Although the words can be in any language, it is useful if one standardized set can be used over a fairly large area, so that if a donkey changes owners there is not too much confusion for it.

SOME USEFUL COMMAND WORDS (English version)	
Word	**Intended effect**
No !	Stop the donkey's action
Good !	Word of praise for donkey

Good !	Verbal reward for donkey
Come	Move donkey towards speaker
Home	Send donkey home
Shed	Send donkey into shed
Harness	Donkey to stand still for harnessing
Move	Start donkey moving
Faster	Speed up donkey
Stop	Stop forward movement of donkey
Reverse	Donkey to go backwards
Straight	Donkey to move in straight line
Path	Donkey to follow path
Right	Donkey to turn right
Left	Donkey to turn left
Close	Donkeys to move closer together
Leg	Donkey to lift leg
Furrow	Donkey/s to follow the furrow

It is also important for the donkey to know its own name.• The use of the name will calm it when excited, and sometimes the name itself is enough instruction.• If a donkey knows that something is expected of it, even it does not know what, then it will often work out for itself what it should do, and do it.• There is generally no need to catch a donkey which knows

its own name; if it doesn't come when called, it should at least stand still for an approach.

What steps should be used in donkey training ?

The training steps here described are mainly given in the order in which they can be performed. As already said, it can all be done within two months. However, some of these - from tethering onwards - are not suitable for a baby donkey. Tethering and the later steps can wait until the donkey is 10 months old. And a donkey should not be pulling or carrying full weights until it is 3 years old. But as the first steps should be taken as early as possible, this means that there can be long gaps in the training of a donkey. It will be found that a donkey does not often forget its training.

It is possible to train two donkeys simultaneously, but no more than two should be tried. Training sessions should take place well away from the herd and other distractions which may affect the donkey and the trainer.

Training a young donkey can start with its mother, but later progress will be faster when it is separated from its mother, at least for the hours (or minutes) when training is taking place.

Once again, the individual differences between donkeys will make every training programme decidedly different. Some donkeys will learn some things quickly, where other donkeys will have great difficulty learning the same things, even though they are quick at other things.

And it needs to be emphasized again that, for most donkeys, training hardly seems to be necessary at all. If donkeys trust their handler, they will allow themselves to be pushed around and made to do unfamiliar things, and will make no fuss. The next time they are given the same task, they will know what to do and get on with it. Most of this section, therefore, concerns only highly nervous donkeys with an unfamiliar person handling them.

HANDLING AND CONFIDENCE

Movement towards an animal will frighten it, and in early training anything that frightens the donkey must be avoided, and all movements must be slow and careful.

Something that a donkey particularly likes to eat, such as a handful of maize grains or a cob, should be held within its view, and then carefully put down where the donkey can see it. When the trainer has retreated to what the donkey considers a safe distance, and sat down, then the

donkey (or jenny with foal) will approach and eat the tidbit.

As too much maize is bad diet for a donkey, this cannot be repeated too often in a day, but each time it is done, the trainer should retreat less far.• In due course, the donkey will approach the maize when the trainer is sitting right next to it. •During the whole process, the trainer should not stop talking to the donkey, and using its name often.• It is best to sit, because then the donkey feels less threatened.

The next objective is to touch the donkey, first letting the donkey get accustomed to hands placed on either side of the maize, and then held a little above the maize. The first few times it is actually touched, the donkey will jerk away, but if nothing further is done to frighten it, it will allow itself to be touched and then, after a while, to be scratched a little.• Soon it will even come when the trainer is standing next to the maize, and allow itself to be scratched, which it will begin to like very much indeed.

After this, it is very easy to get the donkey to allow itself to be touched all over, and to have a rope slipped around its neck.

All this should happen within a few days to a week, and it is time well worth spending.• At the end of it, the donkey should also be ready to

take food from the trainer's hand.• With less trusting donkeys it may take as much as a month to reach this stage, but thereafter all the rest will come very quickly.

Once the donkey allows approach and handling, things like maize do not need to get used to attract the donkey, but should only be used as rewards for good behaviour in further training.• In the end, even these may not be necessary, as praise words and actions such as ear-scratching soon become enough reward for the donkey.

Anger in the voice is often enough punishment for bad behaviour, but if a physical form of punishment is needed, a donkey mother's own method can be used: a sharp nip on the donkey's lower back leg or shoulder.• This means more to a donkey than a slap on the rump.• If one is walking behind the donkey with a stick, waving with the stick will often work better that poking with it and certainly better than hitting with it.• In the case of a whip (not recommended), the noise works better than the contact with the flesh.

Any punishment, associated with anger and a word like 'No !' can soon be replaced by the word, to get the right result.

LEADING A DONKEY

Although it is easy enough to get a rope around a donkey's neck, the first attempt to use that rope might cause some fright.• The rope must be tied so there is no chance of it tightening and threatening strangulation, and therefore added terror, if the donkey tries to pull away.

A rope collar should not be left in place around the neck of a donkey younger than 6 months without supervision, as accidental catching and entanglement will frighten it so much that it may do itself some damage.

It is a little more tricky to get a headrope on a donkey for the first time, but this is necessary if the donkey is to become accustomed to being led.

At first the donkey will resist being pulled by its rope, plunging up and down when it feels the pressure.• Use of its name and a calm voice will soon settle it, and it will calm sooner if the person holding the rope is within view at the front or slightly to one side, particularly if that person is close enough to give some rewarding ear-scratching or even a tidbit, once the donkey is calm.• Reward should be given only when the donkey is thoroughly calm and *not* while it is still fighting the rope. In no time the donkey will be walking obediently at the tug of the rope.• That is the best time to reward it, using a praise word like 'Good !' at the same time.

When the donkey starts associating the word with the tidbits and general

reward, some saving of tidbits can be made - but that comes later.

A donkey which simply resists moving can be encouraged in various ways. If reward doesn't work too well in the beginning, a second person waving something noisy, such as a leafy stick, behind the donkey can start it. Tapping the donkey's hindquarters with something noisy and hollow, like a plastic pipe, works better than a painful beating (which is punishment and will only confuse it). Even passing a rope under the donkey's tail and pulling it from the front can encourage it to make the first move forward - although later the donkey will have to be taught to resist this kind of pressure so as to have a braking effect on carts.

Once the donkey starts moving, reward should do the rest.

Once the donkey is being led, it must start becoming accustomed to other people. Additional people should be asked to stand still, but talking, while the donkey is led up to them and is given time sniff or try to taste their clothes. In the case of the clothes, just push the donkey's head away and do not get excited: it will not really do any harm. The trainer should also be talking and scratching the donkey

around the ears, and after a few minutes the other people can start doing that too.

After such exercises, leading a donkey into crowds of people will be no problem. Donkeys are so good at being led that they are often used in the training of young cattle and horses that have to be led.

CROSSING WATER

The sooner a donkey learns to cross running water, both by bridge and by wading, i.e. walking through the water, the better. A baby donkey is still small enough to be pushed if necessary; an older donkey is almost impossible to persuade. It should be remembered in this connection that most donkeys cannot swim, or at least do not think they can, supposedly because their heads are too big for their bodies (although this seems to be something of a myth). However, it can readily be appreciated that a donkey which will not cross water is something of a liability in the rainy season.

So an effort needs to be made to find running water somewhere in the

neighbourhood when the donkey is still very small, and a day or two (only an hour or so in each) should be spent persuading it back and forth across the water, and rewarding it accordingly.• If the water can be progressively wider and deeper, even better.

If donkey to be trained this way is still a baby, and its mother is willing to cross water, this makes the training much easier.

WASHING EYES AND LIFTING FEET

Since these are two things that will have to be done to a donkey throughout its life, the earlier it becomes accustomed to them, the easier it is for everyone.•

The donkey may not allow the whole action to be performed right away, so training should proceed step by step, with each step rewarded when the donkey allows it.

TRAINING DONKEY TO HAVE ITS EYES WASHED	
Steps	
1.	touching eyes (which will close)

2. forcing eyelids open

3. squirting water onto eyes (which will close)

4. doing the same while holding eyelids open

TRAINING DONKEY TO HAVE ITS FEET LIFTED, CLEANED

AND RASPED OR CUT

Steps

5. running hand down front leg

6. brief lifting of front foot from ground

7. lifting front foot right up

8. keeping front foot held up

9. running hand down hind leg \ punish

10. brief lifting of hind foot from ground /

kicking	
11.	lifting hind foot right up
12.	keeping hind food held right up
13.	cleaning out sole of front foot
14.	cleaning out sole of hind foot
15.	rasping/cutting front foot
16.	rasping/cutting hind foot

Where touching and lifting legs is concerned, it is important for the human to take a 'safe' position, i.e. at the donkey's side, facing backwards, for both front and back legs. In this position, there is no danger of being kicked, and if the donkey tries to kick while its foot is being held, the trainer need not release the foot or restrain it, but with a relaxed arm allow the donkey to kick while still keeping hold of the foot. The donkey will soon tire of trying. If the foot does get free, punish the donkey by slapping the offending leg and saying a cross word, and then try again. Also, if the donkey is lazy and wants to lean on its trainer, it is necessary to break such a habit by simply moving away each time it

tires, and upsetting its balance.

Once the donkey is accustomed to all of these, it seems quite to enjoy having its feet tended and its eyes washed. This is probably because the actions usually serve to relieve some discomfort.

BIT AND BRIDLE

It has already been said that using bits is not a good idea where donkeys are concerned. In any case, for training purposes it is not at first necessary to have an expensive metal bit (see 'Equipment' above). A hard, smooth non-splintering stick or metal bar about the diameter of the human finger, and long enough to stick out both sides of a donkey's mouth can be used instead. While it is still very young, the donkey only needs to become used to having such a thing stuck in its mouth, crosswise behind the front teeth. If the donkey is very small, an actual human finger will not be in danger and can be used instead at the beginning.

The trainer, with one arm over the donkey's neck, can then hold both ends of the stick and pull on alternate sides to turn the donkey's head one way and then the other, using the appropriate commands for 'turn right' and 'turn left'. By the time the donkey is accustomed to all this, it will

probably be apparent that an ordinary headrope or halter gives adequate control without the need for a bit.

When the donkey is big enough for the full bridle and metal bit • or just halter and reins • this training can continue with the trainer walking • or running • behind the donkey while giving commands and guiding it with the bridle, until the donkey is old enough to be ridden or to be used in draft.

TETHERING

By this time, if the donkey is not following its mother around, or it has no other donkey to follow, it may be becoming a bit of a nuisance, wanting to follow its trainer around.• Even if it has a paddock to roam in, it will be time to get the donkey accustomed to being tethered.

Any donkey detests being tethered, as they are essentially mobile animals.• If the donkey has a mother available, the sight of her at tether will help to reconcile it to the idea.• The first time it is tethered itself, however, it will fight strenuously to get away, so it must be carefully watched and soothing words must be used, while the trainer moves gradually further away.

Start by tethering the donkey for short periods only, until gradually it becomes accustomed to being tethered for the whole day. It should not, of course, be tethered in one place for the whole day. As recommended above, a tethered donkey should be moved every three hours or so.

RUNNING

It is now time to teach the donkey to run. It will, of course, know perfectly well how to run on its own, but usually only in quick dashes, apart from galloping round and round its mother.

Now it must be taught when to start moving, when to speed up, and how to keep going at a steady, sustained speed at the command of a human and also when to stop. The actions of starting, speeding, sustaining movement and stopping should each have their own word, that the donkey can learn. In the initial stages the start word can be accompanied by the waving of a stick, preferably with noisy leaves on it, which is the surest way to get a donkey moving. Such a stick, waved behind the donkey in an appropriate position, can also be used for steering purposes, again to be used with the appropriate word until the word itself is enough.

When adult, a donkey will not be able to keep up a gallop for long, so

there is no point in teaching that.&#65533; In any case, since teaching has to take place with the trainer running alongside the donkey and not riding it (because it is still too young), a gallop is difficult to achieve.&#65533; For a donkey, a trot or a triple is fast enough.&#65533; It will not be able to sustain anything faster for any length of time.&#65533; In the case of young donkeys, it will be found that they are more willing to engage in fast movement when they are moving towards their mother.

Obviously the trainer has to be in quite good condition for such an activity !&#65533;&#65533; Choosing an appropriate command word, sound or action, the trainer must begin with this and then immediately start running, holding the donkey's head in the headrope close alongside so that the donkey is forced to run too.&#65533; Another person helping from behind with a leafy stick can speed up the process.

It will take a little time for both trainer and donkey to find a comfortable speed, but when the trainer is satisfied, the stop command can be given, and the donkey immediately brought to a halt (and rewarded).

After that it will be a question of longer and longer distances. If the trainer doesn't have the stamina, and we can be sure that donkey stamina will exceed that of any trainer, it is not a bad idea to accustom the donkey to running alongside a bicycle.&#65533; A bicycle should not be tried, however,

until starting and stopping are under perfect verbal control, and require no strength from the trainer. Also, donkeys for some reason do not like bicycles much, and the donkey will have to get accustomed to that, too.

CARRYING

When a donkey is still very small, it is possible for a reasonably large human to stand on the ground with legs on each side of the foal. It is a very good idea to do this from time to time, simply to get the donkey used to the idea of something touching its back and sides, and also of a human being in this rather odd position over its back and behind its head.

Once the donkey is about 6 months old, it can start its training for lifetime work by handling very light loads for very short periods. A fair rule is 1 kg for 5 minutes for every month of its age until it is about 6 years old.

First, just put a sack over its back. The donkey may jump around at first and, if loose, will gallop away, trying to shake the load off. It will come off, just as the donkey desires, but tying it on should come only a little later. As usual, the use of the donkey's name, calm words and reward will do the trick, and quite soon the donkey will make no fuss at all. If the donkey has seen others carrying loads, it may allow things to be put on its back right from the start without so much as twitching an ear.

After that, two sacks tied together can be used, and then a brick put in each. The donkey will quickly allow bricks to be lifted in and out while the sacks are on its back. If there is a small animal, such as a puppy, which is willing to be carried in this way, it can also be put on the donkey's back or in a sack (though there must be equal weight on both sides of the donkey), to accustom the donkey to having something living and moving on its back. A donkey makes less trouble if it can first see what is being put on its back.

When the donkey is about a year old, it can have a human baby on its back, held carefully in place while the donkey is led around. This is actually equally good training for the baby, which can be more trouble than the donkey at this stage.

HARNESS AND PULLING

There is no sense in making an especially small harness for a young donkey, but as soon as the donkey is big enough to fit into a harness, it should be taught to do wear one. Also, when a donkey is about a year old, it may start wanting to take a front position, and will no longer be quite so willing to follow other donkeys or a human with a lead rope. It is better, therefore, to start this training after that happens, if it does.

The traces can be hitched to a small log, so that the donkey can accustom itself both to pulling and to something moving behind it in response to its own movements.• Sometimes a donkey can find this quite alarming.

Using the headrope, the trainer can then practise the donkey in obeying the commands.

Once the alarm is overcome, an owner may be surprised to find how much a donkey likes to pull against some resistance, with its behaviour becoming much more steady and persistent in such a situation.

DIFFERENT IMPLEMENTS

Very little special training will be needed to accustom the donkey to different cultivating implements, and mostly this can wait until the donkey is old enough to do the full work.

If the donkey is to work in harness with a companion, the pair can be trained together • pulling a log, say • at quite an early stage.• If one of the animals is already trained, the new one will learn much quicker, because it will be picking up techniques from its companion.

PULLING CARTS

The main difference between pulling carts and other draft work is that carts need braking and sometimes backing.• The draft animal itself, more often than not, is expected to provide the braking and backing power by means of a breech strap (as described under 'Equipment').

To make a donkey ready for this, it is necessary only to pass a strap under its tail and exert pressure from the front.• The donkey needs to be taught that this is not an encouragement for it to move forward or increase its speed, but to maintain the same pace while resisting the pressure on its buttocks, or, in the case of stopping or backing, doing these in response to appropriate command words.

TEAMWORK

This is where the *trainer* gets trained. As herd animals, donkeys work quite naturally in teams, but they have their preferences as to position, team mates, etc. They work best in the position they prefer, and it is up to the handler to know what this is, through observation and experience.