THE SINGLE-JOINTED SNAFFLE BIT
and the effect of rein angles, auxiliary reins and nosebands

Do not believe in anything simply because you have heard it. Do not believe in anything simply because it is spoken and rumoured by many. Do not believe in anything simply because it is found written in your religious books. Do not believe in anything merely on the authority of your teachers and elders. Do not believe in traditions because they have been handed down for many generations. But after observation and analysis, when you find that anything agrees with reason and is conducive to the good and benefit of one and all, then accept it and live up to it.
Buddha
Kalama Sutta

THE HORSE'S MOUTH

Have you ever bitten your tongue, or your cheek? What about that moment when you misjudge the night time tooth cleaning routine and knock your gums or your palate with the back of the brush? Hurts, doesn't it?

You may possess equine books with drawings showing the theory of how your bits work, but forget them for the moment. Let's think about actually putting the bridle on your pony. Think about his mouth.

Lift the bridle up and prepare to put it on. Feel the hair on the pony's face, the smoothness of the leather and the metal of the bit. Hear the noise of the bit joints, and the "tlock" sound as your pony opens his mouth. Wait a minute – a sound as he opens his mouth? Yes… Hadn't you noticed that? To make it with your own mouth you would have pull your tongue away quickly from the palate so air rushes in. And that's exactly the sound you are hearing from the horse – he is unsticking his tongue from his palate to let you put the bit in. *There is not normally a space between the pony's palate and his tongue.*

Whatever we put between the pony's tongue and his palate is going to touch both of them.

Do some more exploring. Put your finger and thumb around the outside of the pony's lower jaw. That jaw is NARROW. It is nowhere near as wide as you think it is (nor anywhere near as wide as most horse book diagrams, either). You could wrap your thumb and finger around it, if it wasn't for his lips and tongue. In a native pony, his tongue often bulges out between the incisors, tusk and cheek teeth. And his lips make a soft fold in front of his molars.

You will have to slide your finger quite a long way into his mouth to find the narrow, sharp-edged slippery hardness of the bars. The bars aren't directly in contact with the metal. Although the bars do "support" the bit, what they actually support are the mouth, the tongue and the lips. That's why when a horse gets its tongue over the bit we immediately get "wooden" resistance and lose much of our control. *The horse carries the bit with its tongue and its lips, not the bars of its mouth.*

Here's a Fell pony head with a headpiece and throatlash only (over a headcollar, pushed well back just to keep the picture simple). The snaffle bit is correctly fitted with a wrinkle at the corner of the lips.

FELL PONY HEAD AND SNAFFLE BRIDLE

Where is the bit lying in relation to the teeth and the upper and lower jaw? Here's a Fell pony skull superimposed on that same picture.

FELL PONY HEAD WITH FEMALE FELL SKULL IMPOSED

This is a mouth designed to chew tough fibrous plants. Notice how short the distance is from the bit to the cheek teeth, even though the bit only just wrinkles the corners of the lips. The rings of the bit partly overlap the cheek teeth.

FELL PONY HEAD WITH BARS, PALATE AND CHEEK TEETH MARKED

This is all the space that is available to carry the bit. In a gelding or stallion (and some mares) this space is further complicated by the tusks, partway down the jaw towards the incisor teeth – the green dot.

THE SNAFFLE

I won't have space to look at curb bits or gags in this article. Whole books, and many of them, are devoted to the many varieties of metal things to put in our horses' mouths. Annual issues of bit catalogues list the new fashions alongside the old.

I'm focusing on the snaffle here because novice riders and novice ponies are expected to use a snaffle. We're always advised to use one for a new pony before trying anything else. In fact, for many competitive events such as dressage, at lower levels the snaffle is the only bit permitted. So: what is a snaffle?

Classically, a snaffle bit is one that acts directly on the horse's mouth. It doesn't work through leverage like a curb, nor by lifting, like a gag. A snaffle is just a straight pull. With a

plain round ring, the rein will pull at one side and the bit mouthpiece will slide round on the ring until it's pretty much opposite that pull. It's as simple as that. And simple is kind, right? Surely that's why it's recommended, even mandated, for novice riders and novice horses?

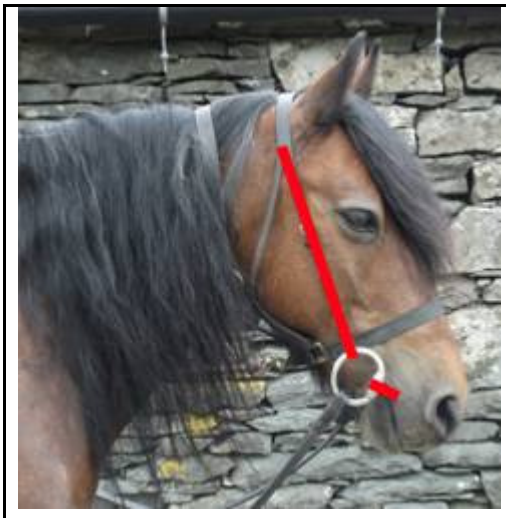
Well, yes and no.

THE SINGLE JOINTED SNAFFLE

The single-jointed mouthpiece is often the only kind of snaffle that is readily available. When I was 20, every pony on the yard where I worked was ridden in a single-jointed snaffle. I never thought about why, but it must have been because it was common and it was cheap. It still is. That means it is used a lot by people starting out with horses.

I did the same, after all, when I bought my first pony. I bought a jointed snaffle and I made a special effort to find her a jointed driving bit, the Wilson or Hungarian snaffle. Now, for most of the time I rode and drove with only a light contact, so the bits caused no trouble, until I drove her in company at a show. When the excitement got to both of us, she wanted to go faster, my contact became heavier, and her response was to stick her nose out and run like a racehorse! The judge advised me to: "Put another bit in its mouth. I would – honestly."

I had to have a rethink, and I'm still doing it.



RESTING POSITION OF BIT MOUTHPIECE

JOINTED SNAFFLE IN WORKING POSITION, BEFORE THE PONY ACCEPTS THE BIT

Let's look at how a single-jointed bit actually behaves with different angles of rein pressure. Incidentally, I am not making any of this up. The skull is a photo of a real Fell pony skull, sized to the photo of the real Fell pony head, and not manipulated. The bit angles can be checked against fluoroscope photos taken by Dr Hilary Clayton – see the references at the end. I mention this just in case you don't believe what these diagrams will show you.

On the left is our Fell pony head, with the jointed snaffle on a completely loose rein. The bit hangs from the headpiece and lies over the lips and tongue. It droops a little in the

centre – ie, the joint points towards the nostrils. It's neutral. It doesn't do anything to the tongue or the sides of the lips. This a resting position.

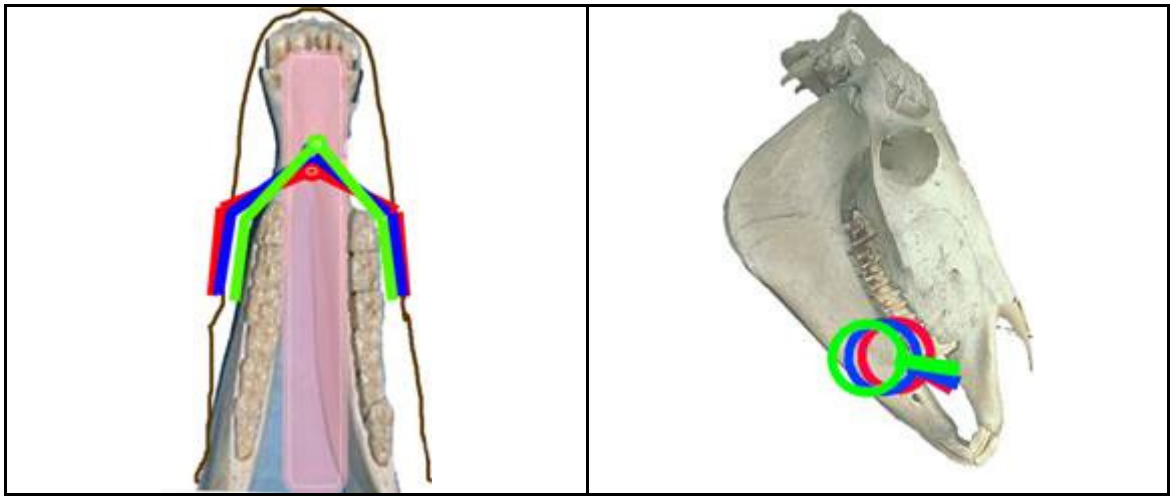
On the right, the single jointed snaffle takes up a "working position," when the rider's or driver's hand takes the "dip" out of the rein. Remember – in a snaffle the rein acts directly, so when you take contact on the rein on one side of the ring, the mouthpiece will rise in the mouth to a point roughly opposite on the ring. That means the mouthpiece of the bit is pointing in the opposite direction to the rein. Direct. It's only prevented from straightening out completely by its position on top of the tongue, supported by the lower jaw at the bars. It also presses on the lips in front of the cheek teeth.

As the bit draws backwards over these areas, the angle between the two halves of the bit (the cannons) gets smaller.

Also – remember what I said earlier about the pony's tongue and palate usually touching each other?

When the rein draws the snaffle ring to its working contact, it makes a small gap between the tongue and the palate. Any bit will do this. The slight space together with the movement of the jaw produces bubbly saliva, that we call a moist mouth, which we take as a sign of relaxed acceptance of the bit.

The sides of single jointed snaffle, however, move inwards as well as backwards.



VIEW OF THE JAW FROM ABOVE (left) and FROM THE SIDE (right)

The **red** lines are the resting bit position.
The **blue** is working contact.
The **green** is a hard pull – for instance, the rider pulling to ask for stop, the horse pulling to go faster.
Again, this isn't manipulated. The parts of the bit are all the same size – all I've changed are their positions.

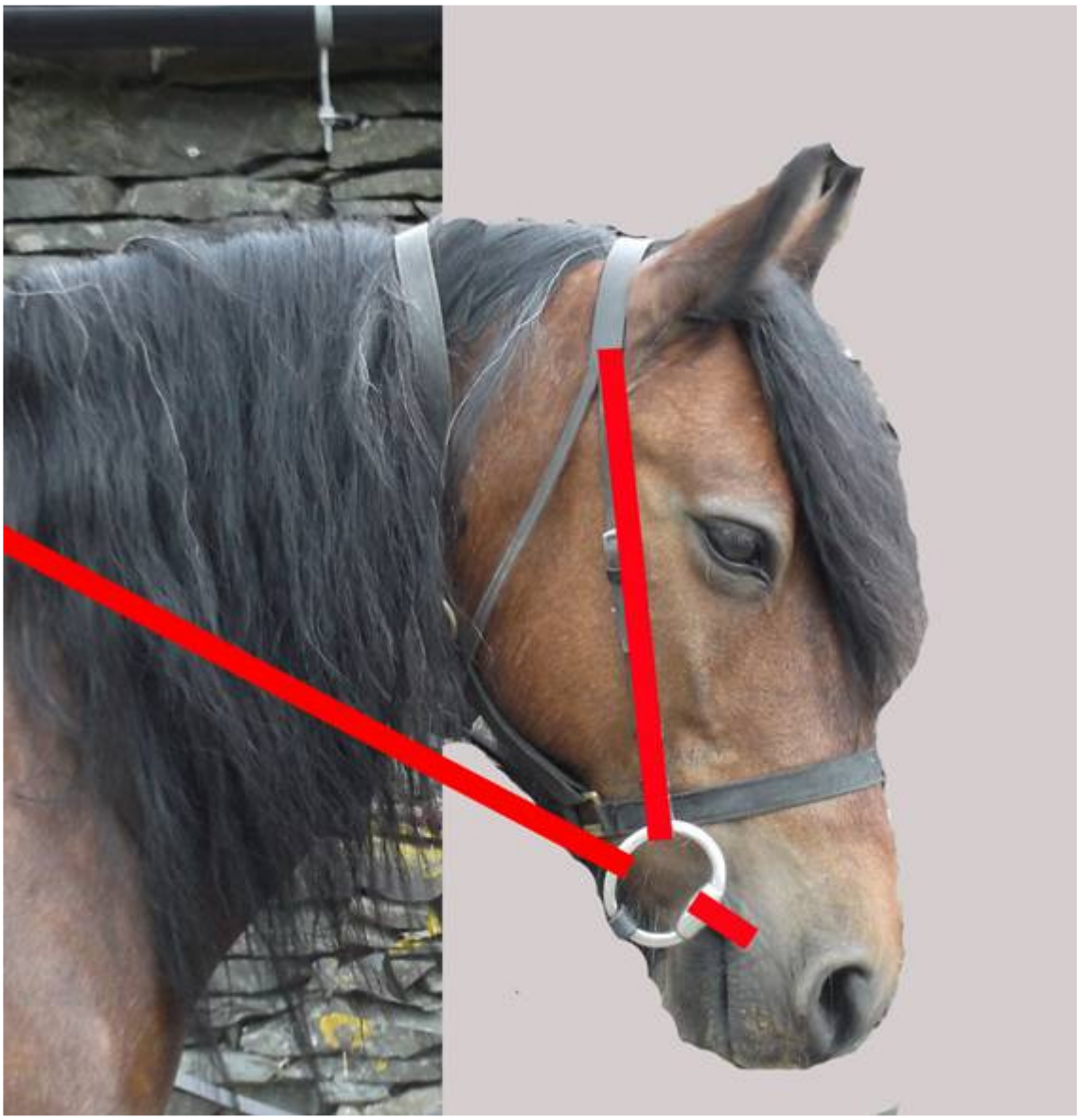
Any pressure on the reins has a pinching effect on the tongue and lips. They are pressed in, towards the cheek teeth – and remember – there isn't much space there in a pony's mouth.

The middle of the bit moves forwards at the same time and if the pull is increased, the joint hits the palate.

ARGUMENTS FOR THE JOINTED MOUTHPIECE

If the pony has been taught in early training that "giving to pressure is a good idea", then he will bring his chin in and change the angle between his mouth and the rein. We want him to do this – to relax and let his head hang from the poll, and put his face nearer the vertical.

Provided the rider has good balance and good hands and *tact,* he will then permit the pressure to ease a little, and the bit will reward the pony by coming back to a resting position.



WHEN THE PONY ACCEPTS THE BIT AND THE HEAD MOVES TOWARDS VERTICAL, THE BIT RETURNS CLOSE TO RESTING POSITION

My problem with the jointed snaffle is that it is recommended for beginner riders who – because they are beginners – do NOT have good balance or good hands or tact. The pony may not get his reward for compliance. He may instead get the pressure prolonged, or even increased.

A pony in a single jointed snaffle will often open its mouth when a beginner rider takes contact.

A frequent statement is that a jointed bit offers "independent side action, wherein one side of the bit moves without the other" (Myler web site). I've never understood the physics behind this assertion. The statement seems to imply that because the two sides of a bit are hinged, only one side of the mouth will receive a signal from a single rein aid – up, down or backwards. The general practice of using an "open rein" to assist in steering a novice horse demonstrates that this is untrue. Horse people are given to making big statements in order to get a point home, and maybe what is meant is that a jointed bit can give a signal that is stronger on one side than the other. But I can do that with an unbroken bit, too. In any case, movement of one side of a jointed mouthpiece must affect the other side of the mouth because *the cannons of the bit are joined together.*

"An unbroken mouthpiece can have a painful effect on the opposite side of the mouth." I suggest that people who say this are thinking too much about "pulling" instead of "elastic contact." It doesn't matter whether your bit is a jointed or unjointed one, or whether you pull hard or softly. The "both sides" effect is still there. *What you do with either rein affects both sides of a pony's mouth.*

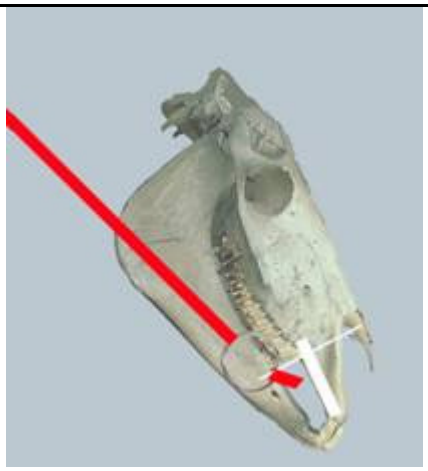
RESISTANCES

The ideal, restful bit angle is only steady if the pony's head is steady, and if your hand at the other end of the rein is steady. If you fix your hand low because you aren't in balance, or if you haven't been taught how much or how little rein contact to use, or if the pony isn't yet capable of keeping its head still while it changes from one gait to another, or if it wants to go faster, or if it tosses its head at a fly – well, you get the idea.

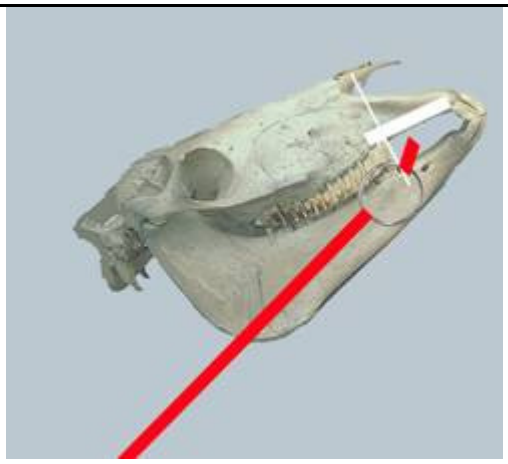
It's all made even more complicated if the bit is old and the joints have worn slack (they can even wear right through, though stainless steel takes a lot longer than the old nickel bits used to.) At any rate: a change of position at either the bit or the hand end of the rein WILL change the angle of the jointed mouthpiece.

What if the pony, instead of "giving" to your hands and dropping his face to the vertical, resists you? What if he opens his mouth? Or throws his head up? Or dives downwards into the rein? Or he may stick out his neck and take off like a racehorse, the way my first pony did. You won't need be told that this is dangerous!

Have you ever wondered why a horse does that "boring" move, when the bit clearly crushes the corner of his lips against his teeth?



EVADING JOINTED SNAFFLE WITH HEAD BORING DOWN



EVADING JOINTED SNAFFLE WITH HEAD THROWN UP

When the pony fights the single jointed snaffle, the centre joint will strike against his palate. If he is clever he will then either lift his head really high or bore downward – well, that puts the bit and the rein closer to the resting position, doesn't it? Anything to stop it poking the roof of his mouth!

Did you know that at least one American equine dental practice is collecting data about the damage done by single jointed snaffles to horses' palates?

AUXILIARY NOSEBANDS

Every saddlery catalogue will offer drop, flash or grackle nosebands to strap a horse's mouth shut and discourage evasions of the bit. Of course they would like you to buy some leatherwork. Or possibly a more complicated bit.

Let's assume you just buy a noseband – flashes are fashionable at the moment, though the drop noseband has lost popularity. Now, if your noseband is meant to stop him opening his mouth, we want it tight, don't we? Well, no. Look again at the pony's skull. When his mouth is shut, his teeth are already together, and the tongue and the palate are touching. The recommended tightness of a noseband is "enough for the pony to still be able to take a treat off your hand and chew it." He has to be able to separate the top and bottom jaw, and to move his tongue inside to achieve the "wet" mouth we want to see.

But how often is that forbidden by nosebands that are too tight?

A noseband isn't necessarily going to convince the pony to put his head where you want it to be. It's more likely that he'll continue to resist your hands. His tongue and cheeks will still be pinched by the bit. And where is that central joint of the bit going to go if he can't now open his mouth? *A tight noseband is only going to force the pony to endure the bit poking into his palate.*

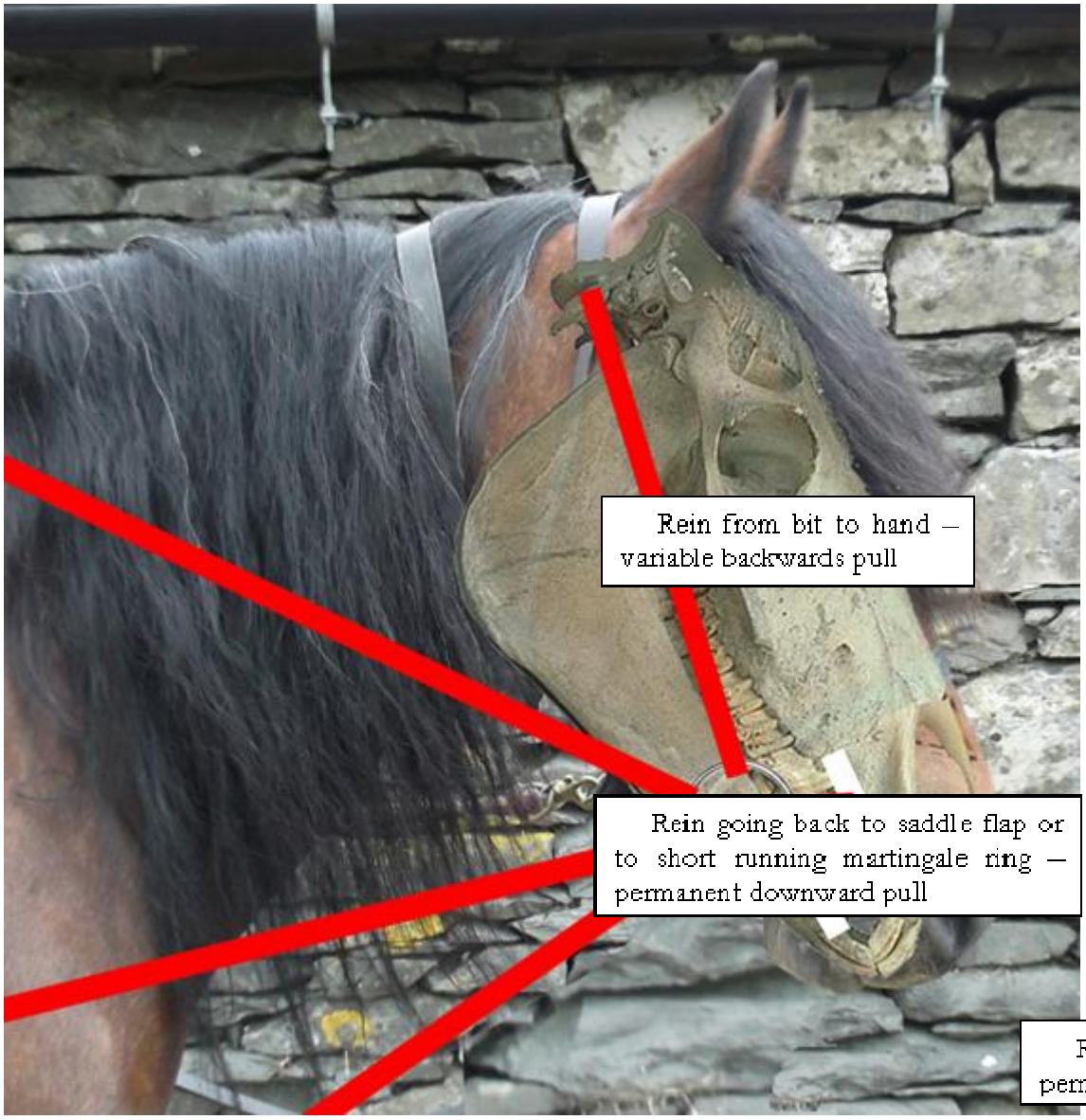
AUXILIARY REINS

Someone is bound to tell you to use an auxiliary aid, such as a martingale or a draw rein, to give more "power" to your hands when the pony gets out of your control. Well, that's only

proper, isn't it? You have to be in control. In some countries, novices can even ride dressage classes in running reins. Surely that's OK?

Look at the diagram below.

Again, this isn't a made-up scenario. I've seen photographs, recent ones, that show that even people who love their horses dearly can get their equipment spectacularly wrong.



JOINTED SNAFFLE COMPLICATED WITH RUNNING REIN

This "sliding side rein", "Viennese rein" or "running rein" acts from the centre of the girth up to the bit, then back to the girth under the saddle flap. It's even recommended in one of the "train your horse to drive" books. It offers a downward pull on the bit if the horse gets its head above a certain position. It *should* be fitted loosely. It often isn't. Exactly the same things happen if a running martingale is adjusted too short.

The trouble is that when the pull on the horse's mouth is shared between the basic rein and an auxiliary rein, the angle of pull gets lower. The mouthpiece of the bit obeys the laws of engineering and moves to the opposite side of the cheek ring – higher in the mouth and pointing the opposite way to the pull of the various reins. The mouthpiece gets closer to

the teeth as well as squeezing the tongue and lips, and the central joint is lifted and pushed forward and it hits the palate.

The only way the horse can escape that palate strike is by pulling in his head and neck. What we *want* him to do is to carry his head with the muscles under the neck relaxed. The problem is that a tight draw rein and a tight noseband will compel him to *use* those muscles to actively back off the bit. He may also use his tongue to hold the bit against his palate and prevent it constantly hitting him. The lower jaw can't relax because it is locked into position by the noseband. You have set up stiffness – a conflict that can only be resolved by the horse submitting, in the wrong way, to pain. This is NOT what training is about. *A martingale or draw rein must NOT force the pony to endure the bit poking into his palate when his head is in the desired position.*

IS THERE AN ALTERNATIVE?

There are LOTS of alternatives. Look in any bit catalogue, for a start, for French link, Myler or Sprenger KK snaffles. Look at mullen mouthed bits, or even straight bars.

I still prefer a solid mouthed bit because the behaviour of my animals suggests they like and accept it. The bit in this photograph has a mullen mouth. It curves gently over the tongue and has eggbutt sides that prevent any of the pinching you'd get from wear on the holes for the snaffle ring. All my driving bits, too, have mullen mouths or straight bars. (The only single jointed snaffle I possess was given to me in a "museum piece" 1930s hunter bridle. It's too big for any animal I have ever owned, and rusty, to boot.) Anybody can bridle my ponies with the mullen-mouthed bits I use. Carriage driving work doesn't upset them. Their mouths are just normally moist. They don't drool excessively. They don't throw up their heads or fuss. They follow the bit easily, they have brakes and they can be steered by release of pressure. And they only bore down when they want to snatch a mouthful of grass!

Forget any auxiliary reins that attach to or run through the bit. If your horse throws his head about, use a standing martingale on your cavesson noseband – but if you change his jointed snaffle bit for almost ANY other bit AND ride with kind hands, he will probably stop throwing his head, anyway.

Forget additional nosebands. Take the flash attachment off your bridle.

So please – if your horse evades the bit – if he tries to avoid being bridled, throws his head up or pulls down on your hands when you take contact; if he opens his mouth, "needs a flash noseband" or "has to be ridden in a martingale" – and *especially* if you are still using a single jointed snaffle – then please do as I suggested at the start of this piece. Go out and put your bridle on him. He can't tell you in words what your hands and the bit are doing to his mouth, but his behaviour will. Move the bit. Lift the rein. Take contact. WATCH. Observe his reactions.

Physical damage is done to horses' palates, tongues and lips every day. Emotional damage is done to their trust in a rider's hands. Is that fair? Is it kind? Is it necessary? Read this again. Study the pictures and think about it.

I AM NOT A LONE VOICE

Here are a few links to web sites that discuss bit action and specifically the single jointed snaffle:

USA: College of Veterinary Medicine: Dr Hilary Clayton for the US Dressage Federation
http://cvm.msu.edu/research/research-centers/mcphail-equine-performance-center/publications-1/usdf-connection/USDF_Dec05.pdf
and http://cvm.msu.edu/research/research-centers/mcphail-equine-performance-center/publications-1/usdf-connection/USDF_May06_Clayton.pdf

Sweden: Sustainable Dressage
http://www.sustainabledressage.net/tack/bridle.php

Germany: Sprenger Bits
http://www.sprenger.de/open/language_id/2/action/standard%3Bdetail/menu/267/M/BFyCCw
Their diagram of the horse's jaw is inaccurate but they have designed a jointed bit that attempts to avoid palate pressure and pinching.

USA: Myler bits
http://www.overafarmstud.co.uk/contents/en-us/d63.html

The photo of the Fell pony skull is used courtesy of

http://www.skullsite.co.uk/Horse/horse.htm - the skull is in Tullie House Museum, Carlisle.

For a discussion of Pelham-type curb bits (driving Liverpool and Kimblewick) please see http://www.dawbank.co.uk/WRITING/Two%20Pelham%20type%20bits.pdf