dehydrated and malnourished I will administer a liter of Life Guard solution at this time and instruct the owner to repeat this at 6 hour intervals until nursing resumes. Milk would be even better, but it is generally in short supply on beef ranches.

In addition to felt-like hair balls which closely approximate a horse dropping in size and shape, hard cheese curds, looser accumulations of hair and plant material, mud and sand, and varying amounts of sour fluid will be found. These cheese curds have the consistency of snow tires and often have been in the stomach for 24 hours according to histories on nursing. Mud ingestion is variable, but hair is a consistent finding. In one case a rope of hair approximately 8" in length and an inch and a quarter or larger in diameter was removed from a contracted abomasum.

Recovery is usually remarkable. Within 18 to 24 hours most calves will be back nursing. Frequently the third dose of antibiotic is never administered because the rancher is unable to catch the calf conveniently. On true hairball cases the surgical success rate should be 95% complete recovery. Unfortunately, you will perform surgery on calves that should have been euthanized such as ulcer/peritonitis calves or prostrate, hypothermic calves occasionally and your overall success rate will more likely be around 80%.

Preventions: Basic herd health measures for cows and heifers including vaccinations for IBR, BVD, and clostridial diseases is recommended. Good nutrition, with adequate mineral supplementation will result in stronger calves and a lessened tendancy toward pica.

The single most important preventive measure has been the use of Dursban for the control of lice. This product has proven itself to be far superior to other back pours and dips, and we have had virtually no complications with its use. Unfortunately it has eliminated a dozen or more of these surgeries annually!

Teat Surgery — A New Approach

Dr. K. Lloyd,
Bowerston, Ohio 44695

During my years of practice i have made some observations and developed a procedure for handling those "stepped on teats" that routinely occur in most dairy operations and too often end up with the loss of a quarter or slaughter of a good cow.

The procedure I will describe is not generally printed in the literature but it has served me well for 35 years.

First, let me define the type of injury I am talking about. It has a sudden onset due to traumatic injury. It involves the distal end of the teat. There is usually some sign of injury, swelling, a little blood protruding from the teat end and usually no milk can be forced out.

Careful observation of the teat will reveal that the sphincter muscle has been torn loose from the skin opening and has receded upward leaving a severely bruised and torn area filled with a blood clot under the skin and surrounding subcutaneous tissue. By using a blunt instrument you can easily probe this area and determine its extent and how far up the sphincter has receded. The surgical procedure which I use is as follows.

First evaluate the disposition of the cow and administer necessary tranquilizers, (usually about 0.5 ml Rompun) secure the head with nose tongs or halter. Then infiltrate the teat end with 2 to 4 cc of a local anesthetic - usually I insert the needle through the opening of the teat and infiltrate into the subcutaneous tissue. There is less pain than entering the outer skin and less response from the cow.

I then insert one side of a blunt Mayo scissors through the teat opening and probe the cavity to determine how far it extends up the teat. Without removing the scissors blade I cut upward the extent of the cavity and then follow this around the teat removing the end - sometimes this may be nearly an inch. With the end removed I then debride the area - remove the blood clot and look for that bright white tissue which indicates the opening of the spincter muscle. At this point usually the milk can be easily forced from the teat.

The most important thing I can say about this procedure is that the sphincter muscle is almost *never* injured. Now this is not what most veterinarians have been told or believe, but I have used this procedure on several thousand cases and never is the sphincter muscle damaged.

The injury always is confined to the rupture of the sphincter from its skin aperture and *bruising* of the subcutaneous tissue around it. I must admit I have seen cases where the teat canal was ruptured above the sphincter, but the sphincter was intact. In these cases I recommended draining the teat with a tube and removing the scar tissue after the injury was healed.

After removing the teat end, as described, the after care consists of applying a suitable ointment (preferably sulfa and urea) to a 6½" round *gauze* milk filter pad and using this as a bandage. The bandage should be changed each milking. This is most important in the healing process, usually after 5 or 6 days the teat can be milked with the machine with no further problems and you will have almost 100% recovery without infection. Healing usually requires about 4 weeks.

Tidbits From Tennessee

Dr. Hugh McCampbell
Sweetwater, Tennessee

Good evening. Like everybody else, I want to welcome you all to Tennessee, and hope that your stay here will be such that you will want to come back real often.

I didn't choose the title "Tidbits from Tennessee" for my presentation, but when they asked me if that would be all right, I said that would be just fine, because I figured that after you all hear it, you won't think it should have any more high falluting title than that anyway.

I've gotten a lot out of these sessions in the past, so in turn, I hope that I'll present something that you will feel is worthwhile to take home and use also.

Sweetwater, Tennessee is in the southeastern part of the state. Our country is about half mountains, but there is still enough farmland there for 7000 dairy cows, and we sold 92 million pounds of milk in 1981. The 4 or 5 surrounding counties that we go into have the same sort of agriculture, so dairying is the main agricultural enterprise. We like to feel we are a little Wisconsin, little New York, or little California, as far as the dairy industry goes. At least those are the standards of excellence we like to strive for. Our mixed practice is 80% large animal, and the majority of that is dairy

work.

The practice tips and procedures I'll be going over tonight are not all original, so I am indebted to several veterinarians for passing some of them on to me.

I'm the kind of veterinarian who goes to a meeting to learn things that I can take home and use. That's how I have geared my presentation for you all.

You may have stopped doing some of these things years ago, for something better, or may have a suggestion for an improvement. If so, I'd appreciate you mentioning it to me over the next day or two, because we are always looking for ways to improve the quality of our practice.

Another thing—I still chuckle about some of the things I'll be covering, but the reason we do them is because they work.

Herd Health Infusions. We use a plunger pump in a gallon jug that pumps an ounce with each stroke. On to the spout of the pump, we use an urinary drainage tube which is made by Argyle-number AR-75. One end fits over this spout and the other is the right size to fit over a standard infusion straw.

We clean cows when the placenta will separate. We get along better removing the source of the problem, and we infuse a mixture of 3-4 oz. of Scented Nolvasan in 2 gallons of hot water, with a bilge pump and a stomach tube. We feel that if we soap them up real good and tie their tail to their neck chain, we get along better. Those that won't clean, we infuse with this same Scented Nolvasan solution, and recheck them later.

A related condition is a big uterus filled with smelly, bloody fluid. Lots of people chuckle when I tell them that we siphon them out with a milk hose, but it sure does turn them around. We soap everything up real good and take the hose into the uterus with an OB sleeve on our arm. This does a real good job of removing the toxic solution. The only drawback that we've found about this is that it is not always easy to find somebody to suck on the hose to get the siphon started! I've siphoned 2-3 gallons out in lots of cases, and 5-6 gallons in some. We then infuse them with the same Scented Nolvasan mixture, and recheck them later. Our main concern is for the cow to clean up and breed back. In the meantime, we want her to take as small a dip as possible in her milk production, so she can get into the line and start making that dairy farmer a profit. We tell the farmer this, and they appreciate us keeping this sort of thing uppermost in our minds.

When we get done cleaning cows or siphoning them out like this, we always wash off the rear end of the cow--udder, legs, etc. It's not absolutely necessary, but if I were milking her, I'd sure appreciate her being clean and not smelling when she comes into the parlor. It also shows the farmer that you do a good, thorough job. It's a little bit extra and doesn't have to be done, but we feel it is an important part. In the summertime, we even spray some aerosol fly spray around the rear parts of the cow.

We use Under-the-Hood tubing as our adapter between a syringe and an infusion straw. It has the right sized lumen to fit over the Luer-lock tip of a syringe and over the outside of a standard infusion straw. It comes in 10 ft. lengths in packages for $1.99 at our local discount store. If it is used 1 inch at a time, it will make 120 pieces. That's pretty economical.

While we're on the subject of the reproductive tract, I recommend to the interns that we have from Auburn University and the University of Tennessee, that they learn to palpate with both arms. I palpate with either arm, with no preference. It's handy if the cow is standing on the wrong side of the barn, if you get one arm hurt, or if you get in a hurry or get cold, you can put your arms in each of 2 cows, if you're in a flat barn. Those last two sure are handy if you have a day crammed full of calls, or if it's expecially cold.

On Herd Health visits, I leave two sleeves on, and when I need to infuse a cow, I remove the appropriate sleeve and infuse her accordingly.

Serum Bottles--We autoclave empty serum bottles with a piece of autoclave tape on each one. We get the sleeve stoppers from veterinary suppliers and put a label on each bottle when full. They're real handy for dispensing any injectable medication. We also autoclave tap water in serum bottles. We call it sterile fluid. It's handy for flushing out syringes, diluting antibiotics and electrolyte concentrates, and as a vehicle for other substances. We also use it as an udder flush in toxic mastitis, and find it to be real significant to include along with our other aspects of treatment. We use an IV set with a sterile disposable plastic udder infusion cannula on it to infuse this into the affected quarter, after scrubbing the teat end with an alcohol swab. This dilutes and flushes out the toxin. Commercially prepared sterile saline or sterile water for injection can also be used. We give her 2cc of oxytocin in the tail vein, strip out the quarter, flush in 250cc, strip it out again, and flush the rest of a 500cc bottle into the quarter either to be left in overnight, or stripped out later in the day. I can say that I know of NO cases of mastitis that we have worsened by doing this. We feel that it's a big factor in turning around lots of these cases.

We use our electroejaculator on cows!--whenever we need to do teat surgery, or have a teat laceration. My electroejaculator is finally paying for itself, because we don't test many bulls around Sweetwater. We stick the probe into a cow's rectum, turn it up enough to give her a little tingle, and most cows will stand just like a stone Indian. In the few cows that it won't work, we resort back to local anesthesia.

Examination gloves are very handy, and can be used in many procedures like castrating a horse, teat surgery, sewing up udder lacerations, and so forth. It looks good to the client, keeps you conscious of your hands, and is much cleaner all the way round. I think a veterinarian does a better job when this sort of precaution is taken.

Bovine Surgery is another area where we can influence an intern's practice methods. For instance, on an LDA, Caesarean, or other procedure where a surgery site must be prepped, we use a Gillette Safety Razor. It works really well. We cut the guard completely off from underneath one side of the blade. This makes what you might call "unrestricted blade exposure." We lather up the area and this razor will go

from wooly hair down to the hide in one fell swoop. It is quick, thorough, and you can make the prepped area neat, straight sided, and with good square corners. There's no worry about extension cords or trying to shave with a scalpel blade. We feel it's important to make the incision in the center of the prepped area, and make everything nice and neat and clean. Sutures are all placed evenly, the bites are taken the same, so that when we get done, all that can be said is something like, "Boy that's a neat job. I think I'll come to you next time I need to be sewn up." All the client sees when you get done is how it looks on the outside---and from a veterinary standpoint, if you've been meticulous with what it looks like on the outside, chances are-and in our situation, it's the way it happens--you've done a good job all the way in and all the way out.

Here's another practice tip that always brings a chuckle. About the only skin suture we use any more is monofilament nylon fishing line. How's that? We always double it, and we use 40 lb. test for cattle and horses, and 25 lb. test for dogs and cats. We cut it off in 4 or 5 ft. lengths, coil it up, and keep it in disinfectant solution in small plastic jars. It's strong. We have no problem with suture line abscesses. It handles easy. It's economical, but it is a good idea to put 2 or 3 extra throws per knot and pull them tight.

With a Detco Recorder, it's real handy to use one of these magnetic spring clips to hold the graph paper as it comes out of the slot, because it will go right down into the water on the floor of the dairy barn if you are not careful.

Ration balancing is the foundation of all of this dairy work, as a lot of you have found. We find our TI-59 computer real handy for doing this, and many other things, also.

I'd like to leave you with 2 thoughts. If you're not already taking your children on calls with you, I'd encourage you to do so. Ours are only 7, 9, and 12 at this point, but I can already see them growing up. I'm real glad that I've taken time in the past for them to go on calls with me, and I hope to have more opportunity in the future to do so.

The other thought: Up the road a little ways is a church that has catchy little sayings on its sign. One of them goes like this: "Ox in the ditch every Sunday? Sell the ox or fill up the ditch." Enough said.

Thank you very much.

Vaginal Prolapse Repair:

Dr. R. E. Whitford,
Clarksville, TN

Prolapsed vagina is a problem for all of us involved in large animal practice. Our treatment procedures are probably not much difference than anyone else.

We treat most of these cases in our haul-in facility at the clinic. Our facilities are not elaborate, but functional, allowing us to do about 75% of our large animal work at the clinic. I feel this is about the only way a mixed practice can survive continuing to do large animal work.

An electric fence charger wired to a wooden stick for use as an electric cattle prod is used in the clinic. That's an incidental practice tip. Prolapsed vagina cases are first rectally examined to determine the stage of pregnancy which decides how we are going to treat the cow.

The cow close to term with colostrum is given 5cc Lutalyse + 20cc Dexamethasone intramuscularly to induce labor. We recheck the cow in 48 hours if the calf has not been delivered. We see quite a few of these where the cervix opens, but the fetus is not expelled until after it dies. At 48 hours, we have always had a live calf. The cow is given 100 units oxytocin and the uterus is medicated. We then use 2-4 stay sutures as described later.

If the cow is early pregnant or not pregnant and not nursing a young calf, we recommend immediate slaughter.

Cows in middle to late pregnancy with no colostrum present the biggest problem. We give an alcohol epidural using 3-6cc isopropyl alcohol and 5-10cc lidocaine. The vagina is cleaned, replaced, and held in place with stay sutures. We use a meat stringer purchased from the local butcher supply. It is pushed through both vulvar lips as close to the body of the cow as possible and then pulled back out after being threaded with a nylon cable tie. These are self locking when pulled down snug. The owner is instructed to return the animal for induction of parturition when colostrum becomes evident in the udder. Nylon cable ties are available at auto parts and electronic parts stores and work well on large bull castrations and spays.

A couple of quick practice tips: We have gone back to using just old 500 mg generic tetracycline capsules. We use these in the uterus on routine calvings. They cost about 3 cents apiece and 2 grams of tetracycline is going to cost about 12 cents. We'll put these things on a prolapsed vagina for instance; we'll break one open and just sprinkle it in there. We know how much drug we are using, and we are keeping our cost down. We're not just taking a teaspoon of powder and dumping it in there. For use with our producers that want to come in and buy uterine pills we just put a few of them in a gelatine capsule. We are using a lot of Clorox for disinfectant instead of some of the more expensive things. Routine castration instruments are kept in a bucket of water with Clorox, likewise our dehorning instruments. We feel it does a good and very economical job. Some of you may have a problem with Clorox on your hands and may not be able to stand it, but we have not had any. We use 4 ounces per gallon of water for practically anything in routine disinfection.

One other quick statement which I know many of you will argue with - we use paper towels instead of cotton for most procedures. A roll of paper towels; you can buy 5 or 6 rolls of it for the price of the cotton and we feel when we tear them individually and throw them in the water, when you grab 3 or 4 at a time, they do a real good job for us as far as routine cleaning.

Ligation of the external pudenal artery and vein for the treatment of Gangrenous Mastitis:

Dr. Michael Kerfoot,
Bakersfield, CA 93309

In certain acute cases of gangrenous mastitis (blue bag), I have found it worthwhile to include a ligation technique of the external pudenal artery and vein to decrease the amount of toxic substances in the general circulation.