British Cattle Veterinary Association Conference: The Practical Approach

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A wide variety of subjects were discussed at the British Cattle Veterinary Association Conference and there was a strong emphasis on practical items. The meeting was held at the Seale Hayne Agricultural College and was blessed with more than its fair share of April showers. Over seventy people from all over Great Britain descended on the college in time to hear its Principal, **Dr. Dowrick** deliver the welcoming address.

Located in the southwest, the college tried to optimise grass production and so cattle were important. There was an affinity with the veterinary profession and this was augmented by a "tame vet" being present on the staff. The college was founded following the death of Charles Seale Hayne in 1903 and was mainly devoted to agricultural studies. The sum required to build it was ludicrously small by today's standards in that a few years ago the cost of re-wiring the college cost more than its initial erection in 1910! There were 500 students as well as 150 on sandwich courses and another 200 were on pre-entry courses. There were eight major fields of study including one-year postgraduate courses in general management studies and farm general management studies. All the other subjects lasted three or four years and included a new BSc Honours course in Agriculture, whose first students were due to graduate this year. Other courses included rural environment, plant studies, and food technology. Dr. Dowrick said that they were indeed lucky to have been funded centrally by the Department of Education and Science rather than locally and this had resulted in the erection of several new buildings over the past ten years.

The bovine teat formed the first major topic to be tackled at the congress. **Dr. Richard Smith** (Bristol Veterinary School) described the teat as being divided into the teat duct, teat opening, glandular and teat part of the lactiferous sinus. Above the teat there was the body of the mammary gland, a glandular complex. The udder was a skin gland developing from ectoderm. Two mammary lines became apparent behind the umbilicus during the first months of life. There was then ectodermal invagination into the mesoderm and by three months the layers split to form a sinus. By half way through pregnancy the glandular part of the lactiferous sinus was produced and the teat was sealed. It was then in a state ready for function which probably would not occur for two or so years after birth. There was a problem as to why there were four teats, but the reason was probably to allow researchers to experiment or more likely to fit the number of teat cups on the milking machine cluster!

The udder was covered by soft skin and hairs but on the teat the skin was hairless, not moveable and creased in mosaic forms. The depression at the end of the teat was filled with cellular debris if not in lactation. Inside the teat there were folds and bands, these ran on into the septa which divided up the teat both longitudinally and transversely. On cross section the epidermis was arranged into papillae so as to help withstand sheer forces of the calf sucking or, more recently, those of the milking machine. The invaginations also allowed nerves and blood to come close to the surface. Thus capillaries are easily exposed with abrasions and the end organs produced a sensitive structure. Touching the teat caused a neuro humoral response going to the central nervous system releasing oxytocin which acted on the myoepithelial cells thereby releasing milk to the gland surface. Superficially there were fine fibres, but in the deeper areas thicker fibres. The intermediate zone contained longitudinal arteries, veins and lymphatics running in a groundwork of smooth muscle. Their arteries derived from the external pudendal. The layer underneath the interal mucosa was not papillary as it was not under tension. The inside mucosa was a double layer of cells, the apex of the teat formed a barrier to entry and was filled with waxy sebum secretion.

The teat's defence mechanisms were discussed by **Dr. Ken Hibbert** (Compton). It could be argued that as 30-35% of the time there was subclinical mastitis in the udder, the teat was a bad barrier to infection. However as there was a great deal of contamination in the environment it could equally be claimed that the teat provided a good defence to disease. Usually the inside of the teat was sterile although there was much infection on the outside. The length of the canal was 8-15mm but did not appear to be critical in bacterial defence, although the tightness of the canal was important. Once organisms enter the teat various constituents of the lactosebum had antimicrobial properties. Lipids vary in their anti-bacterial activity but unsaturated fatty acids work well. However proteins appeared to be more effective particularly those of a cationic or basic type. The teat duct lining was only two cells thick and it was found that following infection the cells became rounded with

accumulations of neutrophils under the epithelium. These white cells passed out between the epithelial cells to help counteract the bacteria.

Turning to the common conditions of the teat, **Philip Francis** (CVL), said the most frequent type were outside injuries. Warts (or funks) were often present and they were of all shapes and sizes. The lesions were said to be caused by viruses and regressed in "the fullness of time". Most therapy was "to keep the farmer at bay". Lesions caused by stepping on the teat could be due to faulty cubicle design and insufficient litter. Pseudo cowpox was caused by the para-vaccinia virus and affected ten percent of cows' teats. The organism was similar to orf in sheep, milkers' nodules in man and bovine papular stomatitis. Usually no vesicle was seen, the epithelium ruptured to produce shallow lesions which soon scabbed over, and, as the lesion healed, the scab dropped off leaving a characteristic ring or horseshoe shape. Immunity was very short lived and there were often flare-ups in heifers entering herds, cows strip grazing kale or in early spring when they were turned out to grass in poor weather.

Bovine herpes mamillitis was rare but might result in an epidemic in the herd with extensive lesions, serum exuded onto the surface and hardened to form a thick brown scab. As outbreaks tended to occur between July and November, there was a suspicion that flies were involved. Teat chaps were horizontal scabby lesions which were thought by some to be a flare-up of herpes mammillitis and they could be the result of milking machine faults. Summer sores were common and recently a nematode has been found in Sweden. Teat orifice abnormalities were often the result of the teat shape. Thus "carrot shaped" teats caused problems. Abnormalities were more common in the fore than the hind teats, and they were a feature of high yielders. The teat orifice problems tended to improve during the lactation. Mr. Francis concluded by saying that teat conditions upset the milking routine, the cow and the herdsman. About 25 years ago the aim was a 1000 gallon cow, today it is 3000 gallons and so the teat is more abused.

Barrie Edwards (RVC) then described teat anaesthesia and surgery. The list of conditions requiring surgery included acquired conditions such as contusions, haematomas, fibrosis of the streak canal, obstructions of the rosette area and teat sinus, fistulae and congenital conditions such as occlusions of the lactiferous sinus, teat sinus, or streak canal, supernumary teats and fistulae. On average there was one teat lesion per 100 cows per year although one of the audience remarked that if this were so, then all the lesions must occur in his practice! Most conditions occurred around parturition, mainly in cows 5-6 years old when at peak yields. Many lesions were due to their being trodden on by themselves or other cows and others were due to barbed wire fences. Injuries posed real problems and demanded asepsis otherwise this resulted in the danger of mastitis, although secondly there were strict demands on surgery. The latter was particularly so when the wound penetrated the teat sinus, in such cases anything other than first intention healing was a failure. In one study 16.5% of animals suffering teat injury were sent off for slaughter within 6 months.

Xylazine was a considerable help in teat injuries as it overcame the discomfort and allowed the teat to be cleaned and damage assessed. As much of the surgery had to be meticulous, it was impossible to undertake such operations standing up. Lateral or dorsal recumbency was necessary. There were various anaesthetic techniques thus, with a laceration, local infiltration was useful. In more extensive lacerations, an inverted V over the laceration might be necessary. The most effective block was a ring block at the base of the teat with local anaesthetic not containing adrenaline. Intravenous anaesthesia could be obtained by use of a tourniquet at the base of the teat and then 6-8ml of local anaesthetic injected into a vein.

Following anaesthesia, the teat was cleaned and the injury assessed. Minor lacerations, provided not triangular in shape, healed well, but deeper wounds involving the muscularis of the teat wall were more serious as there was always the possibility of necrosis. This could lead to penetration and such wounds presented most challenge because although they healed by granulation, a fistula of varying size might be produced. This was aesthetically unacceptable and attracted flies. Often such lesions were best left until the cow as dry as the incidence of mastitis was low with a fistula, because of the flushing effect and adequate drainage. Haemostasis for surgery was provided by intestinal clamps with the arms covered with rubber, the wounds were dissected and then sutured with a vertical mattress suture or two lines, one penetrating deep and opposing the subepidothelial layer and the other joining the epithelium. The teat was then protected by interwoven strips of zinc oxide tape. The teat was then allowed to milk, using a cannula with the plug left out, a teat syphon or a Foley catheter.

The practitioner approach to teats was given by **Mike Vaughan** (Tavistock). He used a small dose of xylazine except in late pregnancy. The area was cleaned with disinfected water and if a pea was present in the teat, it was relaxed with local anaesthesic and usually it was then possible to remove the mass. Blackspot occurred at the tip of the teat and normally received the farmer's thumb nail treatment. Often the infection was *Fusiformis necrophorus, Streptococcus uberis* or other organism and milking helped to maintain the problem. Once the cow resented milking, the practitioner was called in. Mr. Vaughan's treatment was to cease milking for 5-6 days and use local and parenteral antibiotics. Teat dip was used regularly and normally they were better in 5-7 days.

Teat wounds and lacerations were again cleaned and following sedation the seriousness of the wound was assessed. The animal was sutured standing, but in a foot crush with a belly band and removable side bars. A ring block was performed,using a dental syringe, with the tail held up. A cannula was placed in the teat opening and a double

layer of sutures used for the wound. The superficial layer was normally stitched with a horizontal mattress suture. Following surgery, an Elastoplast bandage was spiralled down and up the teat. Broad-spectrum therapy was produced for 5 days with intramammary treatment for 10 days. Teat amputation was a common procedure. Mr. Vaughan found it of use in cases of summer mastitis. He considered such cases were an abscess, in other situations there would be no hesitation to lance the abscess. However there was a reluctance to remove the teat although it was necessary. Amputation was performed with xylazine sedation and the teat drawn down and steadied with needle and string. Incision was made as close to the spincter as possible and the contents of the abscess removed.

The next talk was by the reknowned Israeli veterinary surgeon, **Gideon Ziv** of the Ministry of Agriculture Veterinary Services and Animal Health, Israel. He spoke on recent developments in mastitis therapy. For optimum effectiveness of antibacterial drugs, whether administered parenterally or by intramammary infusion depended on maintaining effective drug levels at the site of infection. The main factors determining the duration of effective drug concentrations in the udder were the in-vitro sensitivity of the pathogen expressed as the minimal inhibitory concentration and the physicochemial properties of the antibiotic. Bioavailability of oxytetracycline and chloramphenicol was limited and so it should be administered intravenously. Most effective passage of drug from the blood into the udder was with the macrolide antibiotics, although their antibacterial spectrum was mainly limited to Gram negative pathogens.

When undertaking intramammary treatment drugs that were distributed throughout the udder and were quickly absorbed were best, such as erythromycin, chloramphenicol, ampicillin and nifuroquine. Such drugs should be infused at least three times at 12 hour intervals. Some of the most active drugs in vitro are poorly and unevenly distributed in the udder and absorbed only to a limited extent. Intramammary infusion of polymixin B could help to overcome the course of coliform mastitis possibly by partial detoxification of endotoxin in the udder. Several areas still caused problems such as the variation in the efficacy of intramammary antibiotic preparation in the elimination of *Staphylococcus aureus* in various herds, the limited prophylactic value of dry cow therapy, and the possibility that some antibiotics and methods used in intramammary preparations might impede phagocytosis of the bacteria in the udder.

The following day began with Professor Ziv discussing intratracheal therapy for respiratory diseases in calves. The in-vitro determined minimal inhibitory concentrations of several antibiotics for pathogenic micro-organisms isolated from the respiratory tract of young cattle were compared with serum antibiotic concentrations after intravenous (iv), intramuscular (im) subcutaneous (sc) and intratracheal (it) injections of equal dose. It was found that the length of effective antibiotic levels at the site of infection in the lung depended on their intrinsic antibacterial activities, kinetic properties and the route of administration. Therapeutically, effective levels of chloramphenicol could be maintained in the lung for at least 12 hours after the im or sc administration of the drug. When macrolide antibiotics were used at a level of 50mg kg, blood and lung tissue levels were adequate following im or sc administration. Additionally, therapeutic antimycoplasmal activity was effectively maintained in the lung for 8-12 hours. Very high lung tissue drug levels followed use of aminoglycoside antibiotics, polymixins and chloramphenicol succinate by the it route. It would seem that therapeutically effective concentrates could be reached and maintained at the site of infection with considerably lower levels following it treatment than those injected im or sc.

A condition often seen, but not diagnosed, was granular vulvovaginitis (GVV). Its characteristics were described by **Cliff Wright** (East of Scotland College of Agriculture VI Centre) leader of a Scottish investigation team. The main differential diagnosis was infectious pustular vulvovaginitis (IPV), which was associated with the IBR virus, there was a rise in pyrexia, the lesions were soft in appearance, mainly produced a vulvitis, and, on microscopy, inclusion bodies occurred in the mucosa. With GVV there was no pyrexia, it occurred 3-5 days after coitus, lesions might last 30 days or more and were gritty in appearance with no inclusion bodies in the mucosa. GVV was first recognised in 1887 and various agents had been incriminated by *Streptococci* spp, *Staphylocci* spp, *Bacteroides* spp protozoa, viruses and mycoplasma including *Mycoplasma bovigenitalium*. The recent work incriminated ureaplasmas, also called *T. mycoplasmas*. They were first isolated from cattle and could cause hyperaemia of the vulva with small raised nodules in the vulva and posterior vagina. The mucopurulent discharge usually lasted 4-10 days post-breeding and repeated returns to service with increased interservice intervals were present in some cases. Colloquially the condition was known as "big in the thing".

Ureaplasmas were common and could be isolated from 23% of cattle examined but 74% of those with moderate vulvitis had the organism and 100% of those with acute vulvitis. Often affected animals returned to service 5 to 7 times, and commonly on 3 or 4 occasions. There was also the problem of AI and 79% of semen straws examined contained mycoplasma. Treatment of GVV involved a sanitary sleeve on the insemination pipette, the infusion of 1gm oxytetracycline into the uterus the day following service, a three month sex rest for bulls plus treatment with antibiotic for five days and sheath washing. The addition of Minocin (Cyanamid) at 500ug/ml in the semen extender helped to eliminate ureaplasmas.

The BCVA has since its inception been an organisation for the dissemination of knowledge on cattle matters. Following years of successful financial management the Council decided to initiate a research project. A report on this study on

cattle flies and summer mastitis was provided by **Dr. Eric Hillerton** and **Dr. John Bramley** (NIRD). The project involved a study of heifers at three farms (NIRD) with a low summer mastitis risk and two (Dorchester, Warminster) which usually has several cases. The project involved fly counting and capture, easier said than done. It meant crawling round on the ground on one's belly with a pair of binoculars. Hopefully not too many reports of the odd behavior came to the attention of the police! Of the flies themselves, *Stomoxys calcitrans* was implicated in damage to teats and although that might be so around the milking parlour, no stomoxys were found around the remote pastures. *Haematobosca stimulans* was not found in great numbers and had a patchy distribution, whereas *Musca autumnalis* was only found in the south. One fly found in great numbers on the groin and back was *Lyperosia irritans* and they were considered to be related to summer mastitis. They were easy to identify as they sit on the animal with their heads downwards. With *Hydrotoea irritans,* the headfly, the male was found only frequently in early summer with the female only present later on. The numbers varied at the three farms, being lowest at NIRD, low in mid-July at Warminster followed by higher numbers later, and at Dorchester, they were initially high but then tailed off.

In general the number of flies increased towards the end of the day. However it soon became apparent that the fly numbers were not important, although the species and where they were on the body did appear to be. Towards evening the number of *Lyperosia* species decreased and those of *Hydrotoea,* increased. Dr. John Bramley continued by saying that summer mastitis was complex and it was specific from other forms of mastitis with an acute necrotising condition containing pus and with a foul smell. Several bacteria have been incriminated including *Peptococcus indolicus, Corynebacterium pyogenes, Streptococcus dysgalactiae* and a microaerophilic coccus. Pure cultures of the organisms failed to produce the disease although a mixture did.

Many cases of summer mastitis occurred when insects were likely to be present. Over 1000 insects were studied of all the major species and many were negative. The only positives were obtained from *Hydrotoea irritans* in August and July. Overall 11.1% were infected with 7.4% at NIRD, 10.3% at Dorchester and 12.0% at Warminster. During the summer there were no cases of summer mastitis in the studied herd at NIRD, one animal was infected in one quarter at Warminster and in Dorchester it involved five quarters in three animals. There was also one interesting chance finding in that one infected calf was found to be surrounded by flies. Flies were taken from this animal and all were positive to *C. pyogenes* although all the samples from the rest of the group were negative. Dr. Bramley concluded by suggesting that a critical temperature and humidity appeared important for summer mastitis and that *Hydrotoea* were most active in the morning and evening as were other insects such as midges and mosquitoes which had yet to be examined.

Under general circumstances the uterus was sterile, so began **Professor David Noakes'** (RVC) contribution on "The Therapy of Bovine Metritis". The uterus usually only yielded pathogens post partum, or following metritis. Most infections tended to be ascending with those of the vulva occurring via natural service, parturition or thereafter, artificial insemination or trauma resulting in a pneumo vagina. Cervical infection also followed AI, parturition post partum and trauma as well as urovagina. After calving, many bacteria were present in the uterus but these rapidly reduced so that by 45-60 days post partum only 9% of cows were infected. The uterus tended to have reduced resistance to infection through devitalised tissue, overwhelming bacterial infection, poor involution, delayed return to oestrus and possibly nutritional factors, but infection was eliminated by involution, endometrical sloughing and regeneration plus a return to cyclic activity. Oestrus provided a powerful natural defense mechanism by increased mobility of leukocytes and phagocytosis, increased mucus secretion to wash away bacteria, increase in secretory immunoglobulins, increased mobility of leukocytes and phagocytosis, increased mucus secretion to wash away bacteria, increase in secretory immunoglobulins, increased capillary permeability, increased blood flow to the uterus and increased myometrial activity.

Uterine therapy depended on the condition but in acute puerperal metritis it involved systemic and supportive therapy. Nothing was placed into the uterine lumen and oestrogens should not be used. Subacute or chronic puerperal metritis required systemic antibiotics, uterine lavage and drainage then intrauterine therapy but no oestrogens. Chronic endometritis required prostaglandins or analogues, intrauterine antibiotics and oestrogens at therapeutic dose levels. Little work had been undertaken into uterine therapy and Professor Noakes concluded by saying it was surprising how few preparations had indications in their dose levels for metritis.

Gethin Rees (Seale Hayne) provided an introduction to the rare breeds of cattle. He said that the Dartmoor National Park had wished to create a farm of rare domestic animals. These included the White Park cattle which were used as sacrificial animals by the druids and several herds were enclosed in parks in the 13th century such as Cadzow, Chartley and Chillingham. The Dexter came from South West Ireland and had a lactation of 500 gallons at 4% butterfat. The animals were black, red or dun. Longhorns were depicted in neolithic man's cave paintings and were still recognisable today. They have been improved in the 1700's by Bakewell to form the Shorthorn. The Gloucester cow had a characteristic white tail and strip going half way up the back and it was very similar to the Glamorgan cow which was lost in about 1909, although some maintain the breed persisted. The West Highland was a slow growing indigenous breed with horns to defend their calves from wolves. There were several farms of Welsh Black in

existence including the belted Welsh Black which was quite dissimilar from the belted Galloway. A white Welsh black, perhaps something of a paradox in terms, was hunted up until the reign of Elizabeth I. The afternoon was spent looking at these breeds of yesteryear. Expert advice was on hand from Gethin Rees, Jim Hindson (Collington) and the owner of the farm, Tim Ashe.

The final day began with three members of Seale Hayne staff discussing proposed changes in the management of their dairy herd. **Mr. Halley** (Deputy Principal) introduced the subject by saying the objectives of the farm were to support education, to produce data, to assist with final year honours students' projects, and maintain financial stability. Sixty years ago the herd consisted of 30 South Devons and they produced 1000 gallons at 4% BF. The yields were achieved by a brilliant cowman but, because the breed generally could not increase its milk potential, the herd was changed to 60 Guernsey cows. The breed was selected, because the South West was associated with fat rich milk. However the herd was riddled with disease including tuberculosis and Johnes. This resulted in a change to black and white cattle with the number increasing to 100.

Four options were at present open to the farm; firstly no change which meant the herd would not be representative. It was difficult to find a labour force to work in the unit and it was dull for students. Secondly, to increase the unit to 160 dairy cows with an upgraded parlour, additional cubicles, slurry tank at increased silage capacity, but within a budget of £90,000. Thirdly, the unit could be made 140 cows, with an upgrading of the parlour and accommodation, and the possibility of a further increase to 160 cows. Finally, the existing parlour and holding could be used to maximum potential so that 120 cows could be housed with minimal capital investment.

Simon Hill (Farm Manager) then illustrated the various changes required by each option. At present the farm had a cubicle shed and one for rearing the young stock. Feeding was by means of complete feed with a fore end loader and mixer wagon. The slurry was stored close to the milking parlour collecting yard. The system did not allow cows to be drawn out. The advantage was that it saved money, but the disadvantages were its limited educational value, there were no grouping facilities for research and development purposes, and the system would not create much capital for expansion. Increasing to 160 cows was the maximum considered for one man to operate with automatic slurry removal and mixing facilities. The slurry store had to be moved and the cubicle housing, allowing six separate groups, was placed in the region where the young stock were previously. There were larger collection and dispersal pens and the young stock were held in the previous cubicle area. The cost was considered to be £120,000 and obviously that was a large amount of capital at risk. Increasing to 140 meant that the present slurry store and cubicle accommodation could be used and the young stock rearing building was enlarged to also house some cubicles and feeding areas. It could result in the formation of four separate groups but working the system would be hard and not much R and D could occur. A rise to 120 cows would mean the utilisation of existing slurry and cubicle areas, but with an extra feeding area connected with the young stock. There was a reduced capital investment of £20,000, but it was hard to justify for education purposes although grouping of cows might be possible.

J. Niemeyer (Lecturer) then discussed the implications of each system. There was a reduction of wheat and barley areas for each proposed change, but the flock of 500 sheep could be continued except at the 160-cow stage when it reduced to 300. Other problems included there was an increased risk from a monosystem of farming. There was also the implication of working conditions, the motivation of labour and the phasing in of the new buildings. The extra margin for each step from 120 to 140 and then 160 cows was £7,445, £11,955 and £22,520 with an extra profit of £3,245, £4,755 and £11,520, extra capital of £45,000, £85,000 and £110,000 resulting in a return on capital of 7.8%, 5.4% and 10.5% respectively. Although an extra profit of £11,500 was very useful it would not receive the support of a bank manager, if on borrowed money. If the farmer was a tenant it would probably result in an increase in rent and so he would have second thoughts.

Turning to "A simple approach to prognosis in the downer cow" I had been asked to provide the meeting with something controversial. There are between 25 and 30 conditions which could be seen in the recumbent cow and many of them were quite impossible to distinguish on clinical examination. The downer cow had many definitions and for purposes of the discussion it was considered to be an animal around calving, which had been down longer than 24 hours, with no clinical reason for its recumbency, and it had received two bottles of calcium (i.e. it was unlikely to be suffering from milk fever). Prognosis depended on several factors but on average about half the cases were up within 4 days buy there was usually a poor outcome if animals were down 7 days and over although, in some cases cattle got up after 2-3 weeks. Most animals were alert, drinking well with a slightly reduced appetite, but normal respirations and rectal temperature, although pulse rate might be increased to 80 or more. Variations from the above often indicated a cause and from this a prognosis could be arrived at. It was essential on each visit to reassess the cow thoroughly for changes whether for better or worse and this helped with the likely outcome. Often there were metabolic or other disturbances which could only be detected by biochemical tests. Therapy should be provided accordingly.

However in all cases of downer cow there was little point in pursuing the case if the stockman was not prepared to undertake a great deal of nursing with turning, feeding, watering, milking, etc. If all attempts at prognosis failed and there was neither improvement or deterioration, a sequential assessment of the serum biochemistry was of some help, and involved an assessment of changes in CPK,

SGOT and urea levels. The scheme had been tried out on referral cattle and sheep and gave useful results. The findings in three cases submitted by a practitioner, which obviously could not be monitored as well as ones at college were used to illustrate the use of the technique.

John Nicol (Guildford) then gave a theoretical and practical demonstration of preventive foot care in cattle. A Compton survey had shown an annual loss of £35 million from foot lameness which worked out at £60 per 100 cow herd. The annual incidence of lameness treated by veterinary surgeons was 5.5% with 24% of problems in the front and 76% in the hind. 88% of lesions were in the feet with 12% in the leg and the outer claw had two and a half times as much problem as the inner claw. Most cases occurred within 50 days post calving and heart girth was important, with medium sized cows most likely to be lame. Young cattle only seemed to show foul in the foot or laminitis, whereas animals 6-8 years old were most affected. The horn was modified skin and contained moisture. It was affected by wet or dry conditions and the quality of the horn was affected by urine, nutrition and infection, with black horn being hard and white horn soft.

The young heifer walked with her legs well away from the midline, but the highly-bred cow in milk tended to bring its legs to the midline whereas in the poorly-bred cow the legs actually passed over the midline. The outer claw tended to take more weight than the inner claw. Interdigital dermatitis and laminitis led to horn deformity with the outer claw becoming raised and this resulted in excessive weight bearing and bruising of the quick in the outer claw leading to ulceration or white line disease. Control was by foot baths in five percent formalin, improving hygiene in housing and undertaking skilled foot trimming. The last required a restraining crush, single action shears, hollow ground knives, chisel, sawdust, hand brush, yard brush and sharpening stone. The foot was cleaned off with the blunt edge of the knife, the length of the inner claw from coronary band to toe should be measured - 7cm, the foot was hoisted, the soles and bulbs were cleared off with sawdust, the inner claw was sectioned if necessary with single action shears. The outer claw was then shortened, the inner claw was pared if necessary to the correct height, the outer claw was pared to the same pattern as the inner claw, the clefts were remodelled, and any sharp edges removed. Mr. Nicol stressed the above was being taught by the ATB as functional trimming, if horn lesions were present then it was a job for the veterinary surgeon.

The final session was again a theoretical and practical demonstration of handling recumbent cows by **Bill Harrison** (Castle Cary). The objectives were to return the cow to normal mobility with the intermediate objectives of removal of cow to a better environment and the movement of the cow to restore the ability to stand. In the last case there had to be relief of pressure on limbs, improvement of circulation, restoration of function to the limbs, assisting veterinary inspection to assess damage and achieve accurate prognosis and provide access to the udder for milking, etc. The facilities required included motive power in the form of men, tractors, continuous chain, block and tackle and rachet winches. Restraint of the patient included a strong head collar. It was essential that there was adequate help, first class equipment was necessary, and proper regard for safety of the cow and operatives. The cow could be moved by a gate, buck rake, or fore end loader and net. Turning the animal required man power or possibly a single man with a rope, and lifting it could be by horseslings, Bagshow hoist or inflatable bags. Ancillary aids included hobbles to reduce abduction, a single rope and loop, the Eddie Straiton method to turn the cow and the shelter for a cow outside using a round feeder. Demonstrations were then given on the use of the Cow net, Hamiobag and Henshaw bag. There then concluded a most informative and practical three day programme for all those concerned with cattle work.

BCVA Officers

The following officers were selected at the British Cattle Veterinary Association Annual General Meeting held at Seale Hayne Agricultural College, Newton Abbot, on 6th April 1983.

President	James Booth
Senior Vice President	Chris Davis
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