Deer Research – It led the N.Z. industry

Ken Drew
Scientist, Invermay Agricultural Centre

Introduction

The World Deer Congress at Lincoln University in 1993 was a time to review current deer farming practice, future marketing possibilities and to reflect briefly on where the industry had come from in only 20 years. Nowadays it is standard practice to herd New Zealand red deer, European red deer, wapiti, wapiti/red hybrids, fallow deer, Mesopotamian fallow and their hybrids, a few Père David's, rusa and sambar deer from paddock to yards in order to harvest velvet antler and/or venison. We take for granted the fact that anything we have always been able to do with traditional livestock we now do with farmed deer. It was not always so.

Research Begins at Lincoln

It was at Lincoln University in 1969 that NZ deer research and farming really began through Professor Ian Coop and the financial backing of Maddren Bros. of Christchurch. Initial animals (9) were helicopter captured by Alpine Deer, a company led from the front by Tim Wallis, a legendary name running right through the early feral industry during the 1960s, who is still very active in farmed deer work in 1993. The Lincoln project included five tame deer in addition to the nine helicopter captured animals.

The captured deer proved extremely difficult to handle and could only be weighed by first tranquillising. Ian Coop, being a very practical man, weighed the tame ones and "the liveweights of the wild ones were estimated by visual comparison with the tame deer of known weight". By 1973 Ian Coop had concluded that biologically, deer farming was a good idea but had grave doubts that the animals could ever be managed in the manner of livestock. He concluded "In comparison with beef cattle, it might be expected that an industry based on deer would be competitive". Lincoln closed its programme in 1973 although it was later reinstated under the guidance of Professor Andrew Sykes in 1979.

Checking Out the Scene

A curious mixing of fates occurred at the Invermay Agricultural Centre (then M.A.F.) in 1972 between myself (previously a student at Lincoln under Ian Coop) and Les Porter, a M.A.F. veterinarian in Dunedin. Les had just returned from a visit to Scotland where he had seen and discussed the deer physiology work at the Rowett Research Institute and was absolutely fired up with the idea that New Zealand should jump into a farmed deer industry. At the same time, having just returned from a period in U.S.A., I was visiting Ian Coop at Lincoln to find out what had happened with the deer project. Les Porter brought much enthusiasm but no land, staff or facilities, so together we spent three days in Southland and Central Otago visiting a few people who were involved with holding deer behind fences. The first person we met was that colourful character the late John Dennis, more recently known for producing the Dennis deer crush.

In those early days things were very difficult between the N.Z. Forest Service and "entrepreneurial characters" like John Dennis and Rob Brookes of Tuatapere. The holding of deer in "illegal circumstances" was not uncommon, while cloak and dagger operations were frequent.

Wapiti on Tour

In the mid 1970s, when the Forest Service (F.S.) was trying to clamp down on illegal wapiti operations, a bull was known to be "touring" a number of early farms in the North Island. Every time the F.S. arrived at a known location the animal had been mysteriously despatched to some other location the day before. This cat and mouse affair finally came to a head near Rotorua. At 8 o'clock one morning an excited F.S. officer rang me to say that the bull had been "captured" and was in a crate at the airport. A Bristol freighter aircraft was to fly the animal to Invermay where it was to be held pending some prosecution. I was "told" to make transport arrangements to pick the animal up from Dunedin airport. At 8.10 a.m. the same day there was a further call from a demented, frustrated, angry and crestfallen F.S. employee to say that all arrangements were off because someone had sneaked in and shot the bull! Such were the early days of deer farming.

Borrowed Deer for Invermay

During the three day "journey of discovery" Les Porter and I stumbled across Herbie Taylor and sons at West Dome Station, near Mossburn. They had about 300 acres perimeter deer fenced and "five or six hundred" deer which were helicopter captured stock (Tim Wallis again!) from 1968 and on. The project was a joint venture with Southern Lakes Game Foods (a division

of Wilson Neill Ltd), and proved to be the source of 90 hinds "borrowed" for the start of the Invermay deer project. In justification to the Director of Agricultural Research (M.A.F.) in Wellington (3/8/1973) I wrote "The current price of 35-40¢/kg for wild-shot venison is well in excess of double the present buoyant beef price".

The 8 ha of flat land at Invermay was perimeter fenced with deer netting hung on 4 inch square posts (the only ones available at short notice in 1973). Internal fences were 13 high tensile wires strung like piano wires with vertical battens every 2 metres. This system was copied from Scotland. Alas it was useless for the "Mossburn mob" who took great delight in squirting themselves between the wires and moving round the farm at will.

Invermay eventually bought the red calves born on Invermay in 1973 and 1974 from the commercial owners. Consolidated Traders Ltd (Rex Giles) very generously gifted 20 hinds and three stags to Invermay in 1975 and the animals were trucked from Taupo without incident.

Glensaugh Deer Farm

The Scots in 1970 held a conference at the Rowett Institute to explore the idea of farming red deer and getting some financial backing for the project. In opening the conference a Mr McDonald was recorded as saying "Every new development is a process of experimentation, which like marriage, should be entered into with caution and circumspection". After the conference failed to support the idea of husbanding farmed deer someone is on record as saying "It appeared that such was the caution and circumspection that the whole concept might never attain a consummation"!

It took the persuasive and forceful Kenneth Blaxter (later Sir Kenneth), Director of the Rowett, to get the Glensaugh deer farm of the Hill Farming Research Organisation established. Calves were captured soon after birth during the 1970-72 seasons but it was not until June 1973 that significant numbers of hinds calved on Glensaugh (41 calves born) – the same year that 88 hinds were calving at Invermay for the first time.

The West Dome Connection

The acquisition of the Invermay "on loan" herd was a minefield of problems both technical and political. The Taylors from West Dome were an interesting lot. Herbie had a mind of his own and an interesting way of solving problems. On one occasion, while I was partaking of the excellent rural hospitality of tea and scones (with cream!) at the Taylors' very modest house, Mrs Taylor gave Herbie the proverbial earful about a 10 cm hole in the floor boards of the living room. While she was out of the room getting the tea

Herbie muttered a few non-clerical quotes, found a baking tray from behind the oven and nailed it securely over the hole with the observation that it would probably be as useful there as anywhere else!

I had the privilege of being part of an interview between Herbie and a young female journalist from the N.Z. Farmer who was asking Herbie about his sheep farm management on the very extensive West Dome Station. Poised with pen over paper she asked Herbie when he put the rams out. With a twinkle in his eye Herbie paused, looked skyward for inspiration, then looked her in the eye and said "I think it was in 1932 – late 1932!!"

The difficulties in getting deer into the yards at West Dome were monumental. There were few functional internal fences and even fewer wing fences. A cacophony of helicopters, men on bikes and horses and several battalions of ground troops made pass after pass at the "enemy" but were repeatedly defeated. Only a handful of animals went into the raceway leading to the very substantial yards made from locally milled 6x2. Some of the enemy suffered casualties, with a few broken necks from fence encounters.

Things looked difficult but the patience and persistence of the late Paddy Kilgariff eventually triumphed and we had 92 hinds trucked to Invermay on 10 October 1973. Two died shortly after arrival and one turned out to be a stag. Sixty-six calves were born from the 30 November onwards. It is not much use trying to develop any animal breeding operation without males and so we were back on the trail to Mossburn. A yarding operation at West Dome was now easier than our first effort, but still difficult. A mixed selection of stags in hard antler were held in the yards and "restrained" in medieval manner to remove the antlers. After a hard day's work and suffering multiple cuts and bruises we left the stags securely held in a pen overnight pending the truck arriving the next morning, and retired eagerly to Mossburn Hotel. Early the next morning we went to the yards only to find the gate swinging merrily in the wind and the stags out in the 300 acre paddock. The gate was 2m x 3m and made from 6x2 timber. The gate catch needed a 5 kg hammer and a cold chisel to open it and we believe that some of the locals didn't want us to take the stags.

We were now an unhappy lot but determined to return to Invermay with at least one stag. The time was nearing the rut and we knew there was one stag we could lay hands on – or more likely he would lay hard antler on us – "Herbie's hand reared 12 pointer!" This animal was a star turn with visitors in a bus because he would put his head in the door and eat anything. That was okay in the early summer but not funny in the autumn. When one visitor did venture out into the shrubs the stag was seen "stalking him" on his knees to avoid detection. The visitor returned to the bus at great speed! We teased

this stag up to a fence and managed to get a rope around his antlers and gradually tied him to the fence. By that time we were able to get a needle into him (one of us was a vet!), remove his antlers, load him onto a truck and cart him off to Invermay. Herbie was "not happy" and took some placating when he stormed into Invermay. We pointed out that "his" hinds at Invermay would be unlikely to become pregnant unless he left his stag. That animal did many seasons' work at Invermay before ending up as a carcass – the biggest red carcass we ever had at 146 kg. The head was mounted and given to the then Minister of Agriculture, Duncan McIntyre. Upon completing his term in office Mr McIntyre returned the head to Invermay where it now presides over the meetings held in the George Holmes Room.

The Donkeys' Dilemma

Herbie Taylor's daughter and son-in-law ran a tearooms almost adjacent to the entrance to the Mossburn deer farm. Bus loads of tourists from Milford and Te Anau often stopped there. On one occasion, just after an Invermay group had arrived, a bus pulled up and disgorged a party of elderly American women. As they were slowly making their way to the tea rooms a group of obviously "aroused" male donkeys arrived on the scene. Without any preliminaries the animals (perhaps they were short sighted) decided that the party were actually a group of female donkeys that deserved some social attention. To the utter amazement of the very scientific Invermay group the donkeys harassed the women, mounting them repeatedly (mostly from the rear!) and knocking several of them to the ground. In spite of the interesting "across-species" behaviour the Invermay staff formed a combat wedge and with flailing sticks put the marauders to flight. There wasn't even time for a cup of tea!!

Growing Interest

Two very prominent farming personalities became interested in farming deer in the early 1970s. They were the late Bernard Pinney (Dunrobin) and Peter Elworthy (now Sir Peter) (Papamoa). There was much animated discussion from 1972-1974 between these gentlemen and Invermay staff (both of them!). Dunrobin and Papamoa were both first stocked with some deer in the autumn of 1974 just as Invermay's first calves were approaching weaning.

Gently Does It

For the first six months of the Invermay project, when the deer began to be managed, nothing seemed to go right. They didn't want to know about gateways, they smashed into fences in panic and hated yards. The project was

almost given away. But then we found that instead of an army of people circling the deer trying to get them out of a paddock into a raceway, it was better with two or three that the animals knew; and entrances to yards were best "around the corner" where the animals thought they were escaping from pursuit. Handling in yards became possible after familiarity, and there were fewer bad experiences for the deer with each operation. Adaptation had started.

Mustering deer from paddock to yard with dogs was almost untried. The head shepherd at Invermay at the time was Jack Pearson and he was persuaded to "give his dogs a run". The dogs soon found that deer run faster than they do and that they have very sharp feet that hurt when directed at the head or down the back. Jack found that his dogs, as was frequently the case, had scant respect for his judgement and had to be brought into line with stentorian voice. He was further assisted by some conveniently placed pegs that had been originally used to mark out a plot and now found their mark on the rear end of a dog. The noise was alarming but didn't seem to worry the deer. Practise showed that dogs were good for moving deer as long as they were kept 50 m back.

The motorbike is another form of mustering device but it needs to be used with caution on stags in the rut. Grant Shackell had an early confrontation and found himself with throttle wide, heading for the netting fence hotly pursued by a rutting stag. Falling off the bike at the fence Grant flew at the

"The good news is I got two deer . . .
the bad news is they were behind this high wire fence!"

wire in blind terror. The faster and harder he tried to climb the fence the more staples he pulled out of the posts and he ended up on the ground rolled up in netting while the stag "sorted out" the bike. Grant now prefers to slide a laparoscope skilfully into a hind to examine her ovaries from the comfort and safety of his chair.

Unlike the Scots who decided to hand rear a foundation herd and hope that the progeny would be semi-domesticated (they weren't!), the New Zealand scheme was to seek out the way the deer wanted to work and adapt management around that.

Handling and tagging calves at birth at Invermay during the first two calvings led to many dead calves which had been badly beaten by hinds who picked them up with their teeth and flailed them with lethal front feet. The unfamiliar density of animals at calving and the lack of cover were probable causes. Rob Kelly and I, together with technical staff did most of this early deer work at Invermay while Geoff Moore extended the programme with excellent practical work from 1975 and on.

Return to the Wild

During a winter in the early days of deer on the Invermay hill we had a heavy hail storm which resulted in a wash-out under a perimeter fence. About half a dozen hinds escaped. Some of them walked down through the farm yards (footprints observed) crossed a main road and were found on the outside of the deer fence on the flat 3-4 km from the hill farm. We recaptured all except two and these animals established themselves at the bottom of Three Mile Hill which links Invermay with Dunedin. At least one calved and after a period of many months when some Invermay staff unsuccessfully stalked the deer as a culling operation we found we had a significant problem. Our neighbours were becoming fed up with carloads of city people carrying rifles, clambering over fences all looking for some cheap freezer venison. About the time we were getting rather desperate, Geoff Moore arrived to start work at Invermay and in the best traditions of a TV programme "sent for his guns" from Wanganui. Like a true professional, Geoff wanted no help, and the deer were "immediately culled".

There was an interesting sequel because some of the venison found its way into a research freezer. I was asked to give a lunch time talk to a Rotary group and as a gimmick I arranged with the chef to serve some Invermay venison to the group and my talk was fashioned around "the product you are now unknowingly eating is our new improved quality farm raised venison that will start a new industry" (a prelude to *Cervena?*). Unfortunately I got the venison in our freezer mixed up and took a leg from one of these "harassed" escaped

deer. When I turned up at the meeting to talk I was met by a distressed chef who told me the venison was as tough as old boots and he had turned it into a "simmered hot pot" dish to try and help it. I was left to hastily revise my notes to say "the product you are now trying to eat is wild shot venison and that our new farm raised venison would avoid the obvious difficulties"!

Wapiti from Fiordland

One year after commencement of the Invermay red deer project an approach was made to the Fiordland National Parks Board for approval to capture 20 New Zealand wapiti cows and three bulls. This was an extremely revolutionary request at that time because of the prohibition on legal removal from the wapiti areas of Fiordland. After "significant debate" the Board, to its credit, approved the request but reduced the number to 10 cows and two bulls. Tim Wallis reckoned he visually inspected more than 600 animals from the air and captured what he thought were the best 10 cows and three bulls (one damaged).

Within 24 hours the animals were on farmland at Invermay and over a short period of time major health problems showed up. In a desperately sad situation Keith Twaddle (a M.A.F. veterinarian) and I spent all Easter working with the animals trying to treat dehydration and other problems, but eventually all animals died. Post-mortem analysis was not definitive but the general conclusion was formed that drastic changes in environment and feed produced high levels of stress and susceptibility to infection.

The veterinarian's lot is sometimes not a happy one. One of the cows off the truck showed "wry-neck" which we now know is due to asymmetrical neck muscle problems from stress. The cow was backed into the corner of a pen looking at us with her head tipped 40° to one side. Her appearance made her intentions very difficult to read. Our Invermay vets were out of town and we persuaded a local vet, Jim Murray, to attend the case. Without deer experience, Jim quietly approached the cow with rope in hand while Rob Kelly and I remained closely behind. When Jim was two metres from the cow she suddenly jumped forward at him and "barked" loudly. Jim cleared the two metre wall into the next pen hardly touching the top rail. After Rob and I had recovered from this remarkable feat Jim returned with the gruff comment "there are no b..... heroes in veterinary science"! Any future efforts to capture and relocate would be done through a "half-way-house" farm which was close to the natural environment.

Rob Brookes, in the Lilburn Valley of Southland, had a farm adjacent to the National Park. The captured bulls were established there for some months and shifted easily to the Invermay hill block where they were left alone in manuka bush. These, and later captured New Zealand wapiti which were held for a

period on Tim Wallis' Mararoa Station near Te Anau, successfully adapted to life at Invermay and Geoff Moore established an extremely successful New Zealand wapiti/hybrid evaluation project in comparing progeny with red deer.

Although it was thought that live captured wapiti from Fiordland were often poached onto farms, the Fiordland National Park Board are to be commended for approving a second request from Invermay after the first disastrous experience. The 1978 capture was under Alpine Helicopters' licence and occurred in the Catseye area.

Given the important place that wapiti hybrids as terminal sires are beginning to play in venison production in 1994, Invermay was very far sighted in looking at that option from 1975 and onwards. Geoff Moore can be credited with much of the early success of that work.

Rob Brookes has always been a strong advocate of private enterprise and took exception to some of the policies of the N.Z. Forest Service which he saw as "restrictive". The holding of captured Fiordland wapiti outside a specified distance from their natural range was illegal. On one occasion, while visiting the back of Rob's farm and his perimeter deer traps, Rob and I were nearly run down by "carthorse" size animals that jumped out of the bush onto the road and disappeared in a flash over the bank. Taken aback, I asked "What was that?" Rob replied with a grin, "We breed 'em big and feed 'em well round here." With the benefit of "hindsight" there were some fairly clear white patches on the rump.

Wapiti from Canada

Another chapter to the Invermay wapiti story was added in 1981 when Geoff Moore spent three months at Elk Island National Park in Alberta, Canada, preparing the first Canadian wapiti for importation to New Zealand. Using the same aircraft, Tim Wallis brought some other wapiti from Eastern Canada into New Zealand. The Invermay animals were a gift from the Canadian Government to the New Zealand Government for research purposes.

A commercially astute Canadian wapiti breeder brought a court injunction against Invermay for the project alleging, quite incorrectly, that the animals were already "pre-sold" to commercial interests as soon as they landed in New Zealand. The respective ministers of agriculture were required to intervene before the shipment was allowed to move. Ironically it seems that this individual is now involved in a joint venture wapiti operation in the North Island! Tim Wallis and his Alpine company were of enormous value to research as well as to the entire deer industry. His company provided finance for Mark Fisher's post-doctoral fellowship at Invermay until he was appointed to the Invermay staff. On one occasion, Tim announced at the beginning of

his auction that he would put the names of the various research Institutes working with deer into a hat, pull one out and the lucky place would receive a grant equal to the highest auction price paid on the day. In the event the Ruakura deer research unit received $17,500!

With changing priorities, Invermay has now sold its wapiti animals although retaining ownership of a few survivors from the 1981 importation.

Beginnings of NZDFA

Bernard Pinney played a major part in getting deer farming going. He had an entirely different approach to the Taylors of West Dome, yet he recognised the pioneering efforts on that property. Bernard had close links with the Scottish deer project at Glensaugh and never failed to persist in rigorously questioning every Invermay deer observation. He himself was an astute animal behaviourist and very skilled photographer. Beware if you couldn't back up any sort of deer farming observation with chapter and verse (preferably several chapters).

I believe it was a meeting between Bernard Pinney, Peter Elworthy and myself, in the summer of 1975 at a meat field day in Invercargill, at which the concept of the New Zealand Deer Farmers' Association was conceived. John McNab of M.A.F.'s Meat Division was fed up with dealing with a "bunch of individuals" over planned farmed deer for slaughter and said in his "own inimitable way" that in future he would only deal with representatives from a defined association. That led to a meeting of parties interested in deer farming. This was held in Christchurch in April 1975 and was followed by the inaugural meeting of the NZDFA in Wellington a month later.

Although things happened rapidly in the early 1970s in the deer business, there were relatively few people involved and they knew each other. There are records of Geoff Moore and me arranging visits in May 1975 with people whose names are still well known in the deer industry: Les Smith of Criffel; Frank Mee of Queenstown; Herbie Taylor of Mossburn; Bernard Pinney of Mossburn; Evan Meredith of Te Anau; Rob Brookes of Tuatapere and Peter Elworthy of Papamoa. They all interchanged useful information about managing deer.

Support from Invermay Directors

The directors of Invermay have always been very supportive of the deer research programme, starting with Nelson Cullen who had to cope with the crackpot idea in the first place. Whoever heard of a staid government department sanctioning the holding of borrowed "noxious animals" behind expensive fences in the hope that they could be managed "in the nature of

livestock" and might eventually contribute to the New Zealand economy? It was a pretty unlikely story as there was very little precedent. Pat Joyce came from Ruakura to Invermay as director for two years before returning there and initiating the Ruakura deer unit.

During Pat's reign, Jock Allison, well known for his style of "getting things done", seized upon this new animal at Invermay as an excellent opportunity to stamp his mark of authority on the reproductive characteristics of the deer. To his absolute mortification, after his first visit to the deer yards, he broke into a most unseemly allergic skin condition and had to turn that field of work over to his colleague Rob Kelly.

Jock later became a dynamic director of Invermay and a strong supporter of the deer project. A plant scientist, Keith Steele, kept the deer research momentum going and when AgResearch was formed in July 1992, Peter Fennessy became the Invermay General Manager so the programme now continues in excellent hands.

Expansion into Fallow Deer

As if Invermay didn't have enough on its plate with the red deer and wapiti, it acquired a small herd of fallow deer in 1976 from Bob Swann and Mt Creighton Station near Queenstown. Geoff Moore led this work and first yarded the animals in an experimental set of yards the next year. We have a picture of a doe with her nose over the top rail of yards with 2.8 m walls. The fully enclosed animal handling crate was the prototype for the later North Island models so successfully used with the big fallow herds on South Kaipara Head.

Geoff Asher came on the research scene in 1980 as a zoology graduate from Victoria University. He was appointed to the Ruakura Research Centre to work with Mike Adam at the newly established deer unit. Geoff soon established his own particular brand of thorough and excellent research by carrying out very comprehensive reproductive surveys of fallow deer farms in the north. Invermay decided that it had more than enough to do with red, wapiti and hybrids so the fallow herd was trucked north to Ruakura in 1982 to join others of the same species.

Rationalisation of AgResearch's deer science programme has seen the closure of the Ruakura deer unit and Geoff Asher's transfer to Invermay in 1993. Ruakura's loss is Invermay's gain and there is absolutely no truth in the rumour that Geoff escaped south to avoid the wrath of the goat researchers, who overhead him say in response to a question about the animals, "Goats!? They aren't an animal; they're a disease". People close to Geoff know him as an immensely fair-minded and objective person who would not let his judgement be at all clouded by that sort of comment. Perhaps the best known

contribution Geoff has given to the fallow deer industry is his development of the crush to restrain the animal for a whole range of management procedures. This system is now used round the world to handle fallow deer.

Lincoln and Massey

Lincoln and Massey Universities developed deer research units in 1979 and 1980 respectively, although in Lincoln's case it was a return to deer investigations begun by Ian Coop, 10 years previously. Peter Wilson was, and still is the driving force behind Massey's successful and important deer teaching and research programme. He is best known for his strong leadership of the Deer Branch of the New Zealand Veterinary Association which he founded. Peter's relentless pursuit of authors who have given papers to the annual conference of the Deer Branch is legendary but has resulted in quality proceedings, published soon after the events, and recognised around the world.

Associated with Peter since arriving at Massey was Tom Barry, who had previously worked with me at Invermay on animal nutrition topics. Nutritional research with deer especially through students interested in grassland research, has been Tom's major interest and the group has him to thank for the various "events" which he launched to provide deer farm research facilities at Massey.

Andrew Sykes led Lincoln's crusade to establish modern deer research facilities and the practical hand of Paul Muir was seen in the organisation of fence and yards while doing his Ph.D. on antler growth and development. Lincoln has shown a particular interest in deer mineral metabolism and parasitism.

A Blood Test for Tb

While in veterinary vein it is appropriate to recognise the arrival at Invermay in 1981 of Colin Mackintosh, a fresh faced youth with a new Ph.D. There began a most fruitful association between the veterinary establishment and animal science. Not only did Colin have an abiding interest in horses, which was to stand him in good stead in future years, and a love of flying, but he also struck up a brilliant association with Frank Griffin in the fields of immunology and tuberculosis.

Having dragged Frank out of the "microbiological middle-ages" the Invermay team gracefully succumbed to the Irishman's frenetic pace as his group made monumental progress in developing a very effective deer blood test for Tb. Frank's work on that topic deservedly won him the deer industry award of the year in 1991. Colin and Frank have gone on to great work in the establishment of the "infected deer farm" project at Milton, just south of

Invermay, where the transmission of Tb can be studied and the effectiveness of developed vaccines can be tested.

Unplanned Pregnancy and Over-planned Parturition

Colin's work is of a very high standard but his reputation was sorely tested on one occasion. For years we had a short, very fat, hand-reared hind (622) which had often given us calving problems. It was decreed that she be not mated to avoid calving difficulties. At the conclusion of one of Peter Fennessy's stag pen feeding trials a very superior animal in full rut became full of the joys of life, smashed down a gate and with unbounded enthusiasm and pinpoint accuracy mated 622 in five seconds while she continued to eat.

Some 220 days later she looked like a barrage balloon on short legs and veterinary arrangements were made to perform a caesarian section on her at the appropriate time (which was very accurately known!). Observation of the animal pre-surgery was intense and the happy day came for the planned birth. Dr Mackintosh, having palpated, probed and prepared carefully incised with precision and disappeared into the lower abdomen with confidence and anticipation, confirming as he delved deeper and deeper that indeed the cavity was choked with fat deposits and natural calving virtually impossible. After some time and with much variety in verbal communication it appeared that the animal was "empty"! In one motion the three "experts" had the same thoughts and looked through the open doorway into the paddock. Not 20 m from the door, behind a very large thistle, dappled in disney-like colours the pricked ears, small black nose and shape of a 24-hour-old naturally delivered calf could be seen. It was presumed that he was hoping his milk supply was not going to be interrupted by the strange humans. Like in a football team, the ball of responsibility for the event was passed rapidly among the backs and fumbled into touch.

Seasonal Feed Requirements

Invermay's deer research programme owes a great deal to a science man of astonishing breadth of knowledge in many areas, who has done much in the fields of nutrition, physiology, breeding and genetics. He is Peter Fennessy who at Invermay now heads AgResearch's Sheep, Deer and Equine Division.

After graduating Ph.D. in nutrition from the University of South Australia, Peter worked with me in sheep nutrition and breeding, but his scientific curiosity soon got the better of him and he began to contemplate the seasonal appetite of deer. This happy experience rapidly led to the first real New Zealand understanding of the seasonal feed requirements of farmed deer. Such was the practical quality of the work and the excellence of the

technology transfer process that in just one or two years a big proportion of New Zealand's deer farmers took to heart the message that they were usually underfeeding their stags in winter. Mortality dropped rapidly and herd health improved markedly.

Peter's zest for quick action earned him a few rebukes from the deer in the yards. A quick flurry of flailing front feet from an unsettled yearling stag once sent his glasses flying. His furry face was generously scarred and Peter merely observed "that happened quickly didn't it!". Such are the mountain men of Invermay.

International Initiatives

From the very earliest days the Invermay deer programme attracted international interest. As information became available, and this primarily went out to New Zealand farmers, there was inevitably dialogue with overseas biologists. In 1983 Invermay hosted the first International Deer Biology Conference which was held in Dunedin. This was a "roaring" success and the initiative was picked up by Bob Brown from USA in 1990 with the second conference. The third was held in Scotland in 1994 and the proceedings from the first two of these events are excellent publications with an extremely high standard set from Invermay due largely to Peter Fennessy's very rigorous approach to editing. He and I reckoned it was the worst paid job either of us had ever undertaken.

In 1983 an event occurred that changed the shape of some of Invermay's deer activities and much of our image. Tony Pearse joined us! Most people don't realise that Tony is a geologist and a wool scientist as well as a farm manager and extremely successful deer scientist. Tony is a very practical guy around deer as well as having a top class technical understanding of them. This mix, together with an engaging personality, set him up as a consultancy resource. He worked for the Coldstream part of the Tim Wallis operation in Canada and found himself sought after by Canadians, Americans, Norwegians, some Germans and he even made a mark in China with Chunyi Li. The greatest impact was certainly made on Barronett, Wisconsin, where rumour has it that if he ran for mayor he would walk in. The phone seldom stops ringing for Tony at Invermay where his advice is keenly sought on all kinds of subjects.

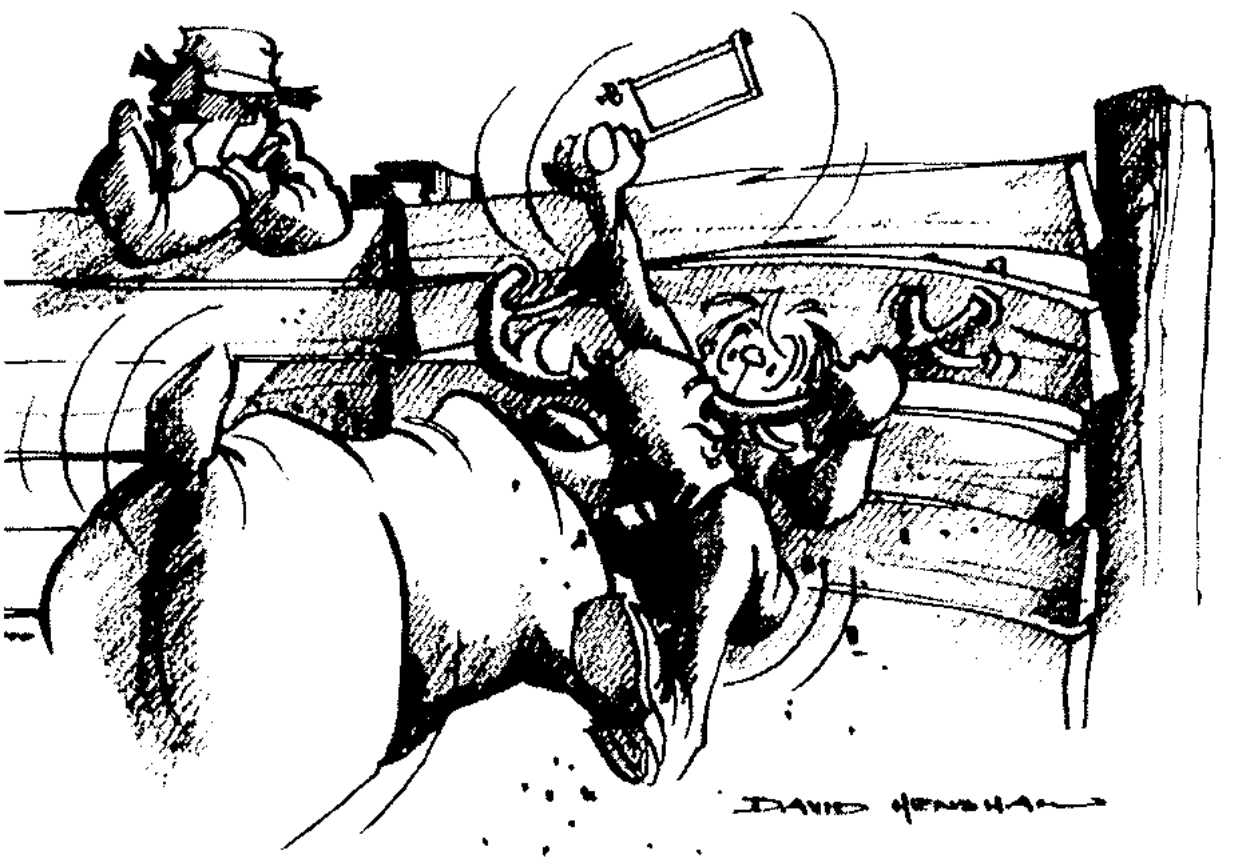
What Makes an Antler Grow?

With a strong curiosity about the mechanisms of antler growth, Peter Fennessy and I recruited Jimmy Suttie as a new Ph.D. graduate from Scotland who had completed his degree in nutritional and physiological work with red deer. Soon after arriving at Invermay Jimmy went north with me to visit

Lincoln University. Graham Barrell, a physiologist, was keen to meet Jimmy and find out what he knew about seasonal metabolism in deer.

Scientists are a jealous bunch and when Jimmy stumbled across a stag in velvet antler in mid-winter he wanted to know what was going on. Graham was very evasive and non-committal. On the way south Jimmy said, with a glint in his eye, that he would find out what was going on even if it meant two or three good stiff double whiskies in a corner of the room at the next science meeting in a few weeks' time. The meeting came and went. I enquired about Lincoln's interference procedures to produce out-of-season antlers. When asked if his social ploy had worked with Graham, Jimmy said, "Aye ... he told me everything. Problem is that I was too drunk to remember what he said!".

Jimmy and Graham are now close research colleagues and this has carried even to the ice of Antarctica to study the physiology of seals. Much of our present scientific knowledge about pedicle development and the seasonal growth characteristics of deer antlers has been due to the enormous enthusiasm and scientific dedication of Jimmy Suttie and his team over a ten year period.



"If he's a bit past the velvet mate y' may as well let 'im go!"

A Team Effort

Down through the years, no one person can claim to be the founding father or mother of the New Zealand deer industry, although a few have done that. Co-operation and collaboration between innovative and determined people was the key to progress, and research people were right there in the middle from the beginning. Life is more complex in 1994 but it is essential that research and development activities never depart from the grassroots of the industry.

Further Reading

Drew, K.R. 1976. Deer farming. Proceedings of the Ruakura Farmers' Conference 28: 53-57.

Drew, K.R. 1976. The farming of red deer in New Zealand. World Review of Animal Production 12: 49-60.

Drew, K.R., Kelly, R.W. 1975. Handling deer run in confined areas. Proceedings of the New Zealand Society of Animal Production 35: 213-218.

Drew, K.R., McDonald, M.F. (eds) 1976. Deer farming in New Zealand - Progress and prospects. New Zealand Society of Animal Production, Occasional Publication 5.

Kelly, R.W., Whateley, J.A. 1975. Observations on the calving of red deer (Cervus elaphus) run in confined areas. Applied Animal Ethology 1: 293-300.

Yerex, D. 1979. Deer farming in New Zealand. Agricultural Promotion Associates.