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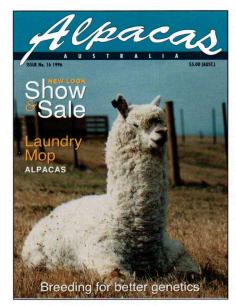
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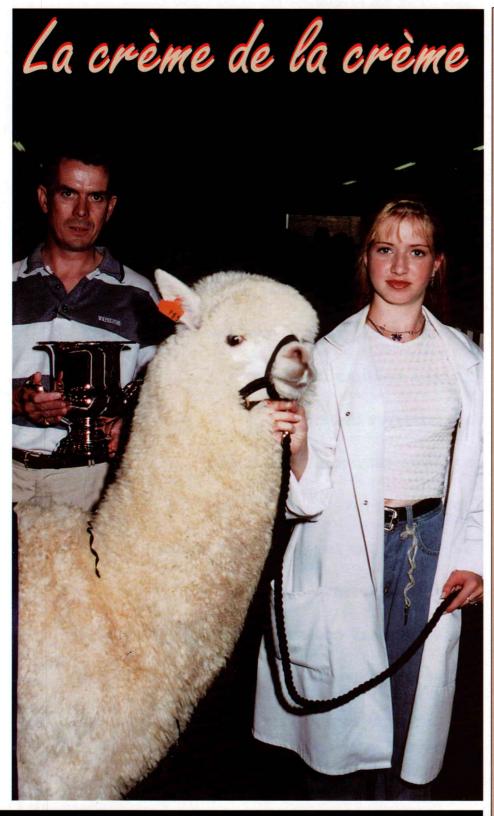
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Grand Champion Alpaca, Royal Sydney Show 1995, Purrumbete Commandor, shown by D & H Bishop.

Pictured with Naomi Bishop, this superb alpaca was the recipient of a magnificent trophy donated by Wilburtins Insurance and presented by Michael d'Apice.

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Alpacas come in 22 recognised colours but, best of all, they're green!

This 'clean, green' new-comer to the livestock stakes is responsible for an unusual phenomenon in rural Australia: people who regard themselves as conservationists are taking up farming. At last, those of us concerned about the environment and biodiversity conservation, have a livestock choice which is kind to Australia's fragile soils and ecosystems.

Most readers of *Alpacas Australia* already know that alpacas have soft padded feet which do not pug up paddocks or compact soil as do hooved animals. They also probably know alpacas are browsers, grazing delicately on different species of grass before moving on to the next — allowing faster pasture regrowth. They are probably aware that with the largest natural range of colours

in the world, chemical (often toxic) dyes are not needed. Alpaca is also becoming the environmentally acceptable answer to fur for Europe's leading designers.

And there's more. They do very nicely on native grasslands — a very big plus for many of us these days.

After succumbing to the stresses of urban life, I had longed to find a parcel of pristine bush, establish a wildlife sanctuary and enjoy the charms of country life. But I needed an income and alpacas were the answer. With a conservationist biologist for a partner and my 'enviro' luggage (still with me years after my stint as Secretary of the Australia Party, Melbourne Ports), farming spelled compromise with a capital 'C'!

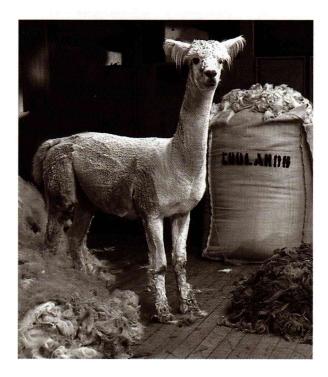
We found our perfect mix of remnant native bush and pasture in Victoria's north east. We knew alpacas already had more points on the conservation scoreboard than any other livestock. We were also convinced they'd survive on native pasture.

Happily, after a couple of years of farming alpacas on native perennial grass-based pasture, we can report that our alpacas are thriving. True, they were a little 'picky' at first having come from a property with lush, improved pasture. But they slowly discovered a liking for the native grasses. The only time we supplement is for lactating mums and weanlings and during winter.

The predominant native grasses at Pinjarra are Weeping Grass (Microlaena stipoides), Wallaby Grass (Danthonia spp.), Kangaroo Grass (Themeda triandra) with a sprinkling of Red-leg Grass (Bothriochloa macra). The good news about Wallaby and Weeping grasses is



INTERESTED IN ALPACA POTENTIAL



Take a short cut to success.

There's a lot to know when it comes to buying alpacas, and there's no shortage of advice around. Some people will tell you to buy Peruvians, others to go exclusively for Suris, and someone else will advise you that whatever you buy make sure it's white.

So, how do you know who to believe?

At Coolaroo we decided to avoid hearsay and invest in our own scientific research programme. Two years ago we employed the services of Dr. Jim Watts, an internationally renowned fibre scientist formerly with the SCIRO. His aim was to identify the characteristics required to breed high performance alpacas with the finest fleece.

Jim's task has been aided by the fact that we have selectively bred alpacas since 1988 with superior bloodlines from around the world. The results of our breeding approach have been proven by consistent Championship prizes at many shows including the Sydney Royal Easter Show.

In other words, we've done all the hard work when it comes to choosing the right stock, which means we can offer you a short cut to success in Alpacas.

You can participate in our success by attending one of a series of one-day hands-on Advanced Alpaca Production Workshops, on Sunday 22 or Monday 23 September 1996 at Coolaroo. Dr. Jim Watts will talk about breeding elite fleeces for the international market, and how to identify this quality of alpaca as a new buyer or as a progressive breeder.

Reserve a place or receive a comprehensive starter information kit now by phoning Janie Hicks on 048 785 266 or faxing 048 785 233.



The Coolaroo Alpaca Stud

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that they have high forage value. Our soil tests revealed a moderately acid soil, corrected by an application of lime. This, in turn, encouraged the growth of existing sub-clover.

Like many breeders, we found that blood tests were helpful in pinpointing areas of special dietary need. Our veterinarian also recommended 'Zincufer', a vitamin/mineral supplement including A, D, E, copper, iron and zinc, to which he added selenium.

So, what was the plus? Not having to put in 'improved' pasture species meant lower loss of native biodiversity and no need for superphosphate.

Biodiversity is a word which started cropping up in the 90s. It encompasses all life forms: plants, animals, micro organisms, the genes they contain and the ecosystems and communities they form. Biodiversity (BD) is not just the rare and endangered species; it is genetic, species and ecosystem diversity. Its value to our daily lives is enormous: food, medicine, wood products, nutrient cycling, watershed maintenance, control of natural pest species and pollution breakdown, absorption and, of course, recreation and aesthetic values.

Australia has a vast array of plants and animals, more than 80% of which occur only in Australia. It is one of the 12 regions of 'megadiversity' in the world. Investing in the diversity and uniqueness of our biota protection makes good ecological as well as economic sense.

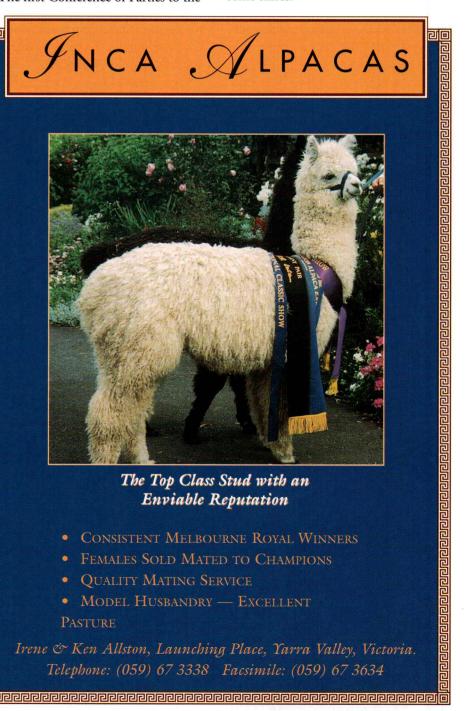
But the facts on the loss of our biodiversity in Australia are alarming. In the last 10 years, we have cleared millions of hectares of native vegetation in Australia. Some biologists estimate the rate to be close to the rate of clearance of the Amazonian rainforests. Victoria has lost three-quarters of its wetlands and less than 2% of Australia's native grasslands remains undisturbed.

The consequences of loss of biodiversity have only been understood in recent years. It only hit home to me when my partner, Bill Burley, touched a raw nerve: my love of chocolate! He handed

me David Mussared's article, 'No chokky for your kids'. Keeping commercial cocoa tree plantations free from disease to supply the world's chocolate addicts would have been impossible without preserving the original wild cacao trees as insurance policy against disease. For it is the wild variety which provides all the clues to disease resistance. This I could understand and I gave thanks to the thoughtful biologists who had put this tree on their preservation list.

The first Conference of Parties to the

Convention on Biological Diversity was held in the Bahamas at the end of last year. It was attended by delegates from some 120 countries, including Australia. Since then, the Federal Government has produced a National Strategy for Conserving Biodiversity and is developing guidelines and policies on how we can be more effective at this. Communities are working with their shire and government department staff on this issue and incentives such as rate adjustment are already in place in some shires.



Encouraging everyone to maintain and preserve remnant native vegetation is one way of preserving biodiversity. Better management of our private lands, including pastures can help to maintain the diversity of plants and wildlife which encourages a wide variety of bird species to help control insects. There are also a number of economic benefits for the farmer.

Reduction of weed infestation where native grasses dominate.

Land care. The tussocky nature of native grasses generally reduces evaporation; deep roots reduce soil erosion.

Provision of summer pasture. Being perennial, they respond to heavy rain over summer, providing 'green pick' after standing dry annual grasses are rendered useless.

Drought and frost resistance. Salt tolerance (some species). Good companion plants to sub-clovers. Fire resistance: low fuel load in summer. Acid soil tolerance.

Minimal management: no fertilisers needed.

Habitat for wildlife, especially food for invertebrate prey.

Shelter for young livestock by tussocks.

The other good news about native grasses is that they don't need phosphorous fertilisers or, at least, as much as do exotic species. Again, we can be thankful for alpacas. They can convert low quality feed better than any other ruminant. Fertilising with phosphorous, an expensive, labour-intensive exercise, is not necessary unless alpacas are being farmed intensively. It's true alpacas need minerals but these can be readily and more cheaply provided by mineral supplements than by extensive manipulation of artificial pasture.

We know that phosphorous is the main culprit for the growth of freshwater blue-green algae. The Darling River disaster in 1991 will not be easily forgotten. Its direct cost has been estimated at over \$1 million. There is concern among conservation groups that the intensity and frequency of algal bloom outbreaks indicate a move away from an ecologically sustainable system rather than towards it. A draft report, 'Algal Management Strategy for the Murray-Darling Basin', lists fertilisers as contributing to the problem. Algal blooms are a cost to tourism and other business, not just to public and animal health.

The case for native grass (and alpacas) is a strong one. Conserving our biodiversity and reducing phosphates are not the only benefits. Agriculture Victoria calls native grasses 'the hidden asset'. At Pinjarra, our native grasses have saved us many thousands of dollars in fertilisation and soil cultivation as well as thousands of manhours by not having to maintain 'improved' pasture.

Establishing or restoring native grass pastures on your property and encouraging natural regeneration is too complex a subject to pursue here. Obviously, there are many factors to be considered including stocking rates and the needs of other livestock, etc. If you are interested, contact your local conservation and/or lands management officer.

The last word goes to Bill Burley. A conservation biologist and former Director of the World Resources Institute, he divides his time between his Seattle consultancy base and Pinjarra.

'An interesting "experiment" underway in Sydney. Professor Andrew Beattie of Macquarie University, wellknown guru in biodiversity circles, has been counting the species of organisms that commonly inhabit a typical Sydney backyard: mammals, birds, frogs, plants, lizards, microbes, insects, etc. He's catalogued more than 4,000 species so far, and he's still counting!

'Australia is one of the world's 'hotspots' of BD, with an estimated minimum of one million plant and animal species many of which are not yet named or studied and which are endemic to (found only in) Australia.

'Worldwide, biologists long have estimated about 12 million species. Recently they have been humbled by results from the tropics, and estimates are being revised dramatically upwards. In Peru, a Smithsonian research has been 'fogging' trees to find out which species live high up in the canopy. One

in ten insects that fall to the ground is a beetle, and many are new to science. We have no idea how they fit into the ecological web of life there.

'Nearly half our prescription medicines derive directly form wild plant species. Pharmaceutical companies only recently have rediscovered the need to screen thousands of new species, despite the high cost of developing new drugs. We're in danger of losing many of the new drug precursors if we continue to lose major areas of habitat.

'Fortunately, Australia is one of the leaders in BD conservation, both here and worldwide. The National Strategy for biodiversity complements similar strategies in other countries and the global strategy that derived from the Rio conference in 1992. The states and territories now are developing regional strategies to conserve BD.

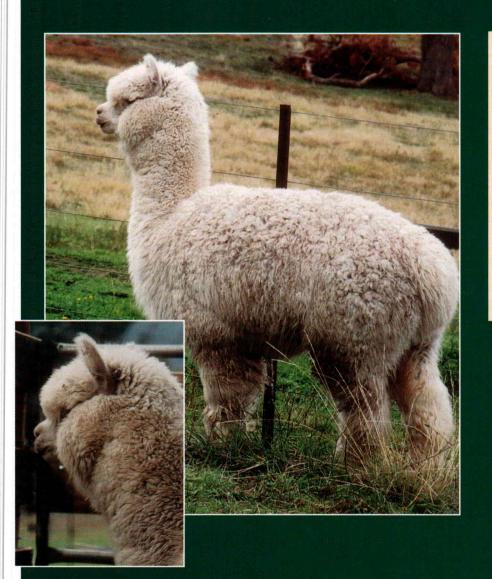
'The proposed heritage fund (from the partial sale of Telstra) is a step in the right direction (if it happens). But it is only part of the answer for Australia.

'We need to be thinking how our lifestyles, social policies, and land-use affect the BD of this magnificent continental island. Subdivisions, land-clearing, intensive pasture manipulation, pesticides, consumption patterns, water use, population increase and the movement of persons anywhere, burning slash piles and crop stubble, forestry, hunting, managing and moving livestock — all these activities and nearly everything we do affect BD, often negatively, by destroying habitats or upsetting ecological webs. What we need is a BD conservation ethic which becomes a part of our daily thoughts. It's called deep ecology by some, common sense by others, and silly by those who don't give a damn about future generations.

'This is not just greenie hype! It is good living, planning, and economics. Mainstream developers, corporate CEOs and a wide variety of people not normally part of the green political spectrum are coming to realise that a healthy environment and BD conservation are not only high priorities, but make good sense for our survival.'

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SELECTION OF ALPACAS FOR BREEDING

by Chris Tuckwell Rural Industry Developments Pty Ltd

Introduction

At present the Australian alpaca industry is based on a small population that is widely dispersed throughout Australia. Most alpacas are maintained in herds of less than fifty head and there is a large within-herd variability in quantity, quality and colour of fibre produced. There is obviously scope for genetic improvement in the production characteristics of the Australian alpaca by applying methods of animal breeding based on sound genetic principles.

In consideration of commercial profitability, selecting for a high fleece weight, fibre diameter, yield and, perhaps, body weight seems desirable. This can only be achieved through the use by objective measurement, recording and analysis of animal performance (commercially important traits) and use of this information to select genetically superior animals for use in well designed genetic improvement programs.

This discussion will consider animal breeding programs where selection is based on characteristics that are economically important in commercial production and where the animal breeding program is designed to lead to genetic improvement of commercial production.



Methods of selection

Selection is the method of choosing the parents of future generations. The two main techniques for selecting individuals are family selection and mass selection.

Family selection involves using records on relatives of the individuals under selection. Examples of family selection are pedigree selection and progeny-test.

Mass selection is the simplest form of selection of individuals and involves selecting the animal on its own performance relative to other animals of the same sex and age and affected by a similar environment.

Design of breeding programs

The first step in designing a breeding program is to define the breeding objectives, i.e. what are the economically important production characteristics involved in alpaca breeding for fibre production. Breeding objectives need to be continually reviewed.

Besides defining breeding objectives, the development of breeding programs requires information on:

- genetic parameters: heritabilities, genetic correlations;
- phenotypic parameters: means, variances, repeatabilities, phenotypic correlations; and
- environmental effects: age of dam, type of birth/rearing.

Production characteristics of importance

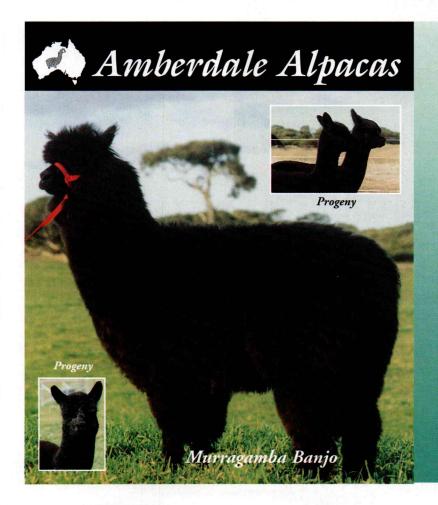
Alpacas primarily produce fibre (wool) with meat and skins likely to be important only in the long term future. Breeders should be concerned with alpacas' abilities to produce fibre in sufficient quantity and of an acceptable quality in a given environment, at minimum cost. Therefore many production characteristics will be of interest. However, remember that the fewer the characteristics in a selection pro-

gram, the more rapid the progress that may be made in each.

For alpaca fibre production, there are five economically important production characteristics.

- Reproduction rate
 Maximise weaning rate: ideally, one cria per hembra per year.
- Body size
 Should be only as large as is necessary to maximise fleece production economically.
- *Greasy fleece weight*Should be as high as possible.
- Fibre diameter
 Fibre of a lower diameter is likely to command a higher price per kg in the long term.
- Fleeces of single, uniform colour
 Reduces skirting and amount of
 clip preparation. Large volumes of
 single colour fibre are more attractive to processors.

However, before deciding which characteristics should or should not be



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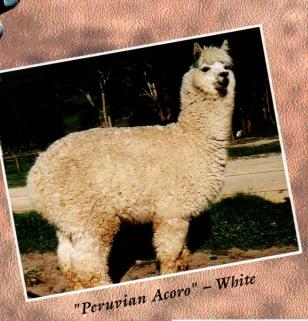
Champion Fleece Awards to 1st, 2nd & 3rd shearings by judges including Cameron Holt

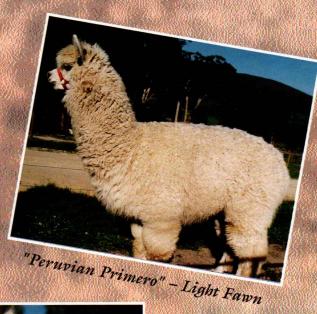
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STUDS:

Acheron Valley Alpacas

Amberdale Alpacas

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subjected to selection, it is necessary to determine whether the characteristic can be objectively measured, whether it is heritable and what phenotypic and genetic correlations exist between the characteristics.

Measurement of characteristics

The objective measurement of the production characteristics mentioned above provides information that can be used in direct selection for productivity. All of these characteristics can be measured. Some are relatively simple and cheap to measure (e.g. body weight and greasy fleece weight) while others are time-consuming and expensive (e.g. fibre diameter).

Greasy fleece weight can be easily measured with a spring balance and weighing pan, but to measure fibre diameter and clean scoured yield requires some special equipment, such as a projection microscope or air flow testers.

It is important to remember that a test giving a mean fibre of, say, 30 microns does not mean that the animal will always produce 30 micron fibre. Older animals produce coarser fibre than younger animals and nutrition influences fibre diameter.

Phenotype = Genotype + Environment

The phenotype (appearance or performance) of each animal is the result of the genetic make up of the animal's genotype and the environment in which it is to run

Therefore, valid comparisons can only be made between *animals of the same type* (sex, age), *run under the same conditions* (same property) *and at the same time* (i.e. same shearing dates).

Heritability of characteristics

Heritability is the degree to which an animal of a superior phenotype (performance) will transmit to its offspring that advantage. For example, if the heritability of body weight at tuis age is 50 per cent and the parents each

have a selection differential of 10 kg, then on average, they would transmit 50 per cent (or 5 kg) of their advantage to their offspring. The remainder of their advantage may not have resulted from their genotype, but rather from their having been reared in a favourable environment. This part of their advantage cannot be handed on to the next generation.

It should be remembered that the machos and hembra contribute equally to the genotype of their offspring. Therefore, when estimating the improvement in offspring, gains expected from each parent must be averaged: selection differential of the sire X heritability X ¹/2 + selection differential of the dam X heritability X ¹/2.

In the example above, total gain expected in the next generation would

 $10 \times \frac{50}{100} \times \frac{1}{2} + 10 \times \frac{50}{100} \times \frac{1}{2}$ or 5 kg in bodyweight at tuis age.

There are no Australian estimates of heritability for production characteristics of alpacas. Therefore, we have to rely on overseas information, which itself is limited and of a preliminary nature. However, the following heritability values have been estimated by research workers in Peru (see Table 1). Characteristics can be classified as having high (greater than 0.30), medium (0.15 to 0.30) and low (less than 0.15) heritability.

The level of heritability of a characteristic gives an indication whether selection for that characteristic will be effective. The fleece characteristics outlined above have moderate to high

Table 1. Alpaca heritability estimates

heritability estimates, suggesting that gains in these characteristics can be made relatively quickly.

Association between characteristics

A phenotypic correlation estimates the degree of association between characteristics on the same animal. For example, if data suggests that a significant and positive phenotypic correlations exist between greasy fleece weight, clean fleece weight, fibre diameter and staple length, there is an implication that if a selected animal has a fleece weight higher than the average of the herd, then the selected animal is one with higher than average fibre diameter and staple length. A high negative correlation has the obvious reverse implications. Phenotypic correlations in Table 2 have been estimated by researchers in Peru.

A genetic correlation estimates the extent to which selection for one characteristic on the parent will cause a change in another characteristic in the offspring. As an example, if a significant positive genetic correlation exists between greasy fleece weight and fibre diameter, there is an implication that, as parents are selected for greasy fleece weight, so fibre diameter may increase in its offspring. No genetic correlations have yet been measured on Australian alpacas. It is worthwhile to note that the genetic correlation between greasy fleece weight and fibre diameter in Australian merinos is not strong (+0.13 to 0.19) and that it is possible to hold fibre diameter relatively constant while selecting for fleece weight.

Character	Age	Heritability Estimates
Body weight	at birth	0.34; 0.53
	at weaning	0.39
	at 1st shearing	0.55; 0.69
Fleece weight	at 1st shearing	0.21; 0.22; 0.35
Survival to weaning		0.10

Table 2. Phenotypic correlation estimates

Characteristics	s	Age	Machos	Hembras
Body weight	with fleece weight	juveniles (< 4 years)	0.40	0.58
	with fleece weight	adults (> 4 years)	0.45	0.32
	with survival		0.126	0.26
Fleece weight	with staple length	juveniles (< 4 years)	0.30	
	with staple length	adults (> 4 years)	0.32	
Fibre diameter	with fibre length	adults (3 years)		0.27
	with yield	adults (3 years)		0.42
	with % grease	adults (3 years)		- 0.28
Fibre length	with yield	adults (3 years)		0.40
	with % grease	adults (3 years)		0.18

The importance of sire (machos) selection

Increases in commercial profitability from genetic improvement programs can be substantial over time. Selecting the best sire replacements for the sire breeding flock provides the greatest opportunity for genetic improvement. The machos buyer's most important decision is from which stud to buy sires.

Genetic differences between studs can be substantial, while only minor genetic differences can be made to a commercial flock by buying different grades of sire from within a particular stud. The machos buyer's flock is entirely dependant on improvements made in the sire breeding flock source for long-term genetic gain.

Industry breeding structures

In common and traditional flock/herd breeding structures used in Australia's animal industries, parent studs are closed to outside introductions, whereas daughter and general studs buy sires mostly from parent studs. Sires and some females move down from parent studs to daughter and general studs, but never upwards. Culling of females in commercial flocks has no impact on the breeding program in studs. Only selection of sires and females in the stud's sire breeding flock can influence the stud's

genetic improvement program. The commercial sire buyer's flock is entirely dependant on improvements made in the sire breeding flock source for long-term genetic gain.

An alternative breeding structure used in some industries is a nucleus breeding scheme. In contrast to a more traditional structure, females can be taken in to higher levels from lower down. Although selection of females in the top tier and the lower tiers influences the program at the top tier, the selection of sires remains the main way of making genetic improvement.

Important consequences of industry breeding structures

Commercial flocks 'lag' behind the stud flocks in genetic merit, on average by two alpaca generations (five to seven years). Table 3 shows the length of time it takes for a decision on which

sire replacement is selected in general studs, to result in sire progeny from that stud which are ready for sale to commercial flock owners. It takes about two years. To allow an assessment of offspring, replacement sires are likely to be at least three years of age. Pregnancies will result in tuis available for shearing two years after conception.

Table 3. Sires selected 'Today' will produce progeny for sale in 2 years

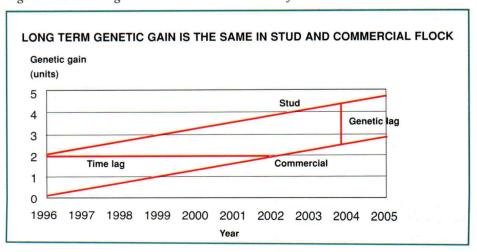
Event	Time
Final Sire Selection	January 1996
Joining	March 1996
Cria drop	February 1997
Tuis measurement	January 1998
Sale of tuis	January 1998

With regular purchase of flock sires from the same stud, the commercial flock makes genetic gains at the same rate as the stud, although it lags behind in terms of absolute genetic merit. Furthermore, the genetic progression (direction and speed) of the commercial flock/herd is the same as that of the stud, regardless of the individual sires used from the stud (see Figure 1).

Genetic merit

In commercial flocks or herds, new sires that are genetically superior to those purchased previously are intro-

Figure 1. Genetic lag between stud and commercial flock



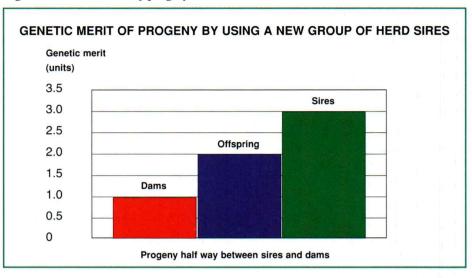
duced each year. This means that the next offspring obtained are genetically half way between the new sires purchased and the females on the property. Consequently, they are a little better than the previous year's offspring.

Imagine commercial flock females are all mated to one group of new flock sires. The genetic merit of the offspring will be half way between that of the sires and the females (see Figure 2). Unless the offspring are backcrossed to the same sires repeatedly, the commercial flock will never get to a situation where it gets all the genes of those sires and will always lag behind in genetic merit.

Sire selection

Selection of sires is paramount, especially the sires that are to be used as replacement sires in the herd/flock. This is the engine room where genetic gains are made. The sire buyer's most important decision is from which stud to buy sires. Evidence from many tri-

Figure 2. Genetic merit of progeny



als and experiments has shown that genetic differences between studs can be quite large. Only relatively minor differences can be made by buying different grades of sires from within a particular stud.

Currently, the alpaca industry needs to retain all sound females in a breeding herd. In a stable industry situation, most female tuis will be needed to replace the flock (usually in the range of ¹/₂ to ²/₃). Far fewer sire tuis are required as sire replacements. This means that much more intense selection of sires can (*must!*) be practised — *as low as 2 to 5 per cent of the sire drop selected.* Because of the small numbers required for replacements, they can be used for fewer years than females.

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Importance of stud selection

It is very difficult to use a visual appraisal as a basis for meaningful comparison of the genetic merit of animals from different environments (soil, water, feeding, management, genetics, climate, etc) unless:

- special precautions are taken regarding the mating and management of animals in different herds;
- · the genetic links between animals exist and are known (within the current alpaca industry structure this information is often not available);
- · the information on genetic links is assessed by those who have understanding and competence in genetic assessment of relatives.

An assessment of genetic merit of individuals for any one or group of characteristics/traits, is most accurately made by objectively measuring those characteristics presented by individuals and comparing data for each animal with the mean value of its contemporaries.

If genetic relationships do not exist or are not known, it is extremely important that animals compared are the same age, the same sex, at the same production status and have been managed in the same environment for a reasonable period (12 months).

It is also true that, as the size of the group of animals measured increases and the number of times the measurements are repeated increased, confidence in the prediction of relative genetic merit increases. The reverse is also true.

It is a false estimation of genetic merit to look at individual animals that have been extremely well fed, managed and prepared for sale and assume that they are 'genetically superior' or 'stud quality' animals. This false estimation of genetic merit includes both visual assessment data and objectively measured data, of an animal considered in isolation.

The major influence on an individual animal's visual appearance and

objective measurement data (fibre diameter, fleece weight, body weight, etc) is the environment. On average, genetics account for 20% to 40% of what can be seen and measured. This means that:

- the same animal managed in two different environments (soil, water, feeding, management, genetics, climate, etc) may look and measure differently;
- animals in different environments cannot be reasonably compared for genetic merit. An animal from a 'poor' environment that looks and measures worse than an animal in a 'good' environment, might have superior genetic merit that can only be displayed when the two animals are managed in the same environment;
- animals of different age, sex, health status and production status cannot be meaningfully compared on the same property and especially on different properties;
- detailed knowledge of an animal's pedigree, the heritability of characteristics selected for and the performance data of related animals can be used to accurately predict the genetic merit of blood lines and, to some extent, individuals.

Without this information, the most practical way to assess relative genetic merit of blood lines is to take several animals of the same age, health, sex and production status from each of the blood lines to be compared and manage them together in the same environment for a reasonable period (at least 12 months).

These groups of animals can then be compared by careful interpretation of objectively measured characteristics. Confidence in comparison between the groups will increase as more animals from each blood line are used in each group and the more often the process is repeated (new groups from each blood line in successive years).

Determination of a source of genetics (stud)

My advice to purchasers of alpacas as replacement sires, or dams, is to consider carefully the source of genetic material well in advance of purchase. After a source has been decided, it is important to remain with that source until a 'better' source can be determined. It is accepted that, if a breeder uses sires from a different genetic source each year, the likely outcome is that little or no genetic gain will be made over time. In fact, there is a chance that genetic merit could be lost. The reason, as described above, is non-valid comparison of animals between environments.

- 1. Before attempting to identify a source of replacement sires or dams for improvement of a herd, owners should first determine their own breeding objectives.
- What are the goals of the breeding program?
- What type of animal is considered ideal?
- How does the current stock compare with the ideal?

Breeding objectives may relate to colour, body weight, fleece weight, fibre diameter, degree of kemp within the fleece, cria birth weight, etc. There are any number of characteristics which can be bred for. Remember, though, that some characteristics are not highly heritable and, as the number of characteristics used as a basis for selecting individual animals increases, the slower the rate of change will be for each characteristic.

Alpaca breeders should look at and select animals on the basis of traits of commercial economic importance that can be objectively measured.

2. Visit potential sources of new genetic material and discuss breeding objectives of the property with owners/managers. Ask how, at what age and how frequently they objectively measure and record data used for animal selection.

3. When a breeder has identified genetic source properties with similar breeding objectives, she/he should ask about accessing the data of available animals, before making selections.

For example, if I were interested in male tuis, I would ask for data such as fibre diameter, fleece weight, body weight, fleece yield on all the male tuis and the average for the mob. Remember that comparing data for animals of different ages is difficult.

Animals can then be culled from selection on the basis of physical faults first and then on the basis of the potential buyer's breeding objectives. Animals can be compared with each other and, more importantly, with the group average for a particular trait to provide the best estimate of relative genetic merit.

Remember! The smaller the population there is available to select from, the less confidence a buyer can have in estimating genetic merit.

If a source of genetic material cannot or will not supply the data required to aid in a selection, it may be worthwhile looking to an alternate genetic source.

4. As explained above, once a source of genetic material has been identified, stay with that source for a reasonable period (5 years) before a change is considered based on rates of genetic improvement.

For most production traits, of the observed superiority of an individual with respect to the mean of its contemporaries, 20% to 40% is of genetic origin, whereas the remainder is of environmental origin.

Recommendations for selection

1. Initially, all animals should be visually assessed for structural soundness (feet, jaws, teeth, udder, etc.)

- and those found to be inferior culled from selection.
- 2. With hembras, ideal selection can be made on the basis of a visual assessment for a single uniform coloured coat in combination with the objective measurement of body weight and greasy fleece weight. The greasy fleece weight at the animal's pre-joining shearing is the most appropriate to use for selection purposes. Selection of hembras before their first joining ensures that their production has not been

influenced by the stresses of pregnancy and lactation. Fleece weight tends to be highly repeatable and one measurement is sufficient to rank the hembras on fleece weight.

At present, all females in the Australian alpaca herd that are structurally sound should be retained to maximise growth of the total population.

3. The selection of machos should be on the basis of a visual assessment for single coloured fibres in combination with the objective measure-

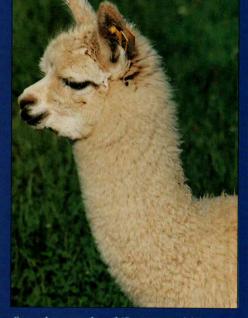
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ment of a number of production characteristics. Because machos have a greater influence than hembras over the genetics of future generations, the following objective measurements might be considered as an ideal basis for selection:

body weight; greasy fleece weight; clean scoured yield; staple length; fibre diameter.

Both body weight and greasy fleece weight of machos should be recorded at their first shearings before joining, whereas the other characteristics need only be recorded at the shearing immediately before their selection for mating.

4. Reproduction Obviously, high levels of hembra fertility and cria survival are desirable. Therefore, the most useful measure to consider is the percentage of cria weaned to hembras mated. The main factors

affecting reproduction rate are age of hembra and bodyweight at first mating. The bodyweight of a hembra at first mating has a marked effect on reproduction level. Producers should aim to have hembras weigh at least 40 kg at first mating and to be at least 12 months of age.

5. It is important that accurate records be kept of all breeding animals if genetic progress is to be made in the breeding program.

Conclusion

The production characteristics of importance in alpaca selection are likely to include reproduction rate, body size, fleece weight and fleece quality.

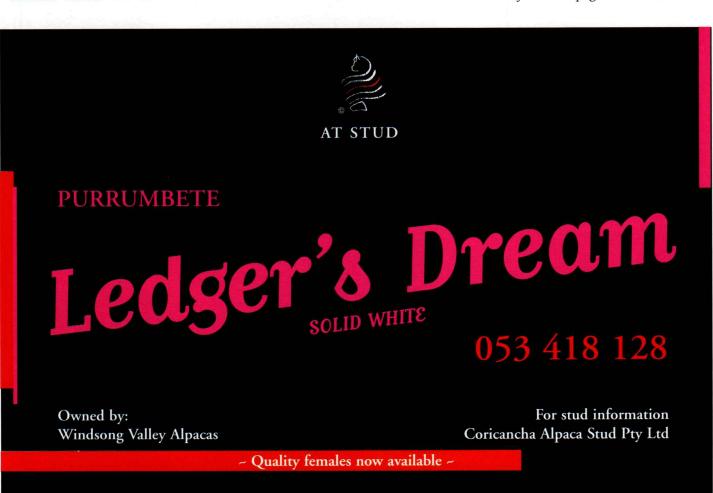
Selection for these characteristics, based on a sound knowledge of genetic and phenotypic parameters, will result in increased productivity and assist in the long term future of the alpaca industry. Selection procedures should be based on visual assessment of animals in combination with objective measurement of important production characteristics.

A prediction of the genetic merit of an individual is an attempt to predict the ability of the animal to pass desired characteristics on to its progeny.

Environmental effects significantly influence an animal's phenotype and can detrimentally or advantageously mask genetic potential.

Assessments of relative genetic merit of different animals must be made very carefully and objectively if a breeder is to make genetic improvements towards nominated breeding goals for a population.

[Ed. Chris Tuckwell's progress report on the RIRDC funded alpaca study currently being conducted appears in the AAA 1996 Seminar Proceedings. See order form back page, this issue.]



DOING IT WHITE

by Graeme Pope

Why white's the colour for the Australian Alpacas stud.

Alan Batchelor, Geoff Brennan and I like to call ourselves a team. In fact we are partners in Australian Alpacas. The stud, one of the first to be established in Australia, is located in Bylands, near Kilmore in Victoria.

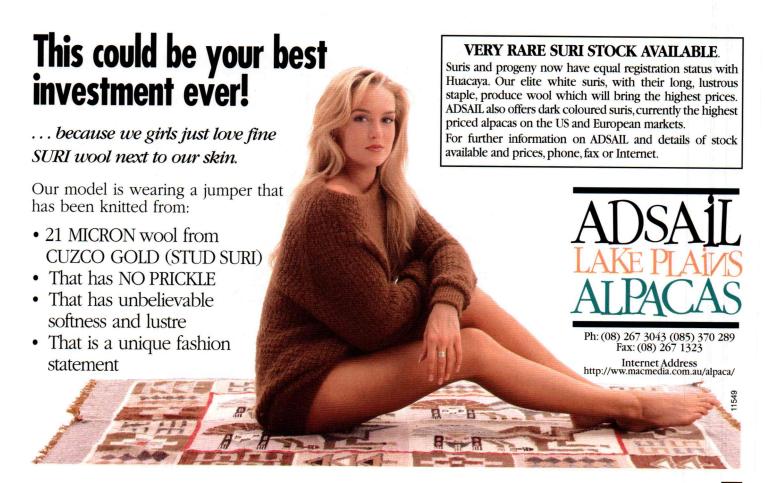
Of the three of us, it was Alan Batchelor who first became interested in alpacas, and conceived the idea of breeding for white fibre, back in the mid 80s. Geoff Brennan and I, both from aviation backgrounds, became involved a few years later. Geoff, in 1990, when the stud purchased six weanlings from New Zealand (part of a large import from Chile). For me, it was in 1991, when we brought in nine white females and two white males from Chile.

It was a case of 'out of the cockpit and into the paddock.' A golden handshake was helpful in providing capital, and a new industry offered a challenge we were all eager to take up.

It became obvious to us that further improvement of the herd would be achieved more efficiently if we could acquire a top quality white male.

Consequently Australian Alpacas recently took delivery of Peruvian Centeno, a white Peruvian male. Centeno was imported into the United States and auctioned in 1994. Australian Alpacas purchased him from his American buyer.

Typically Peruvian, with a fine, dense white fleece, Centeno is being used to improve the bloodlines and



fleece quality of our Chilean females. He is also busy servicing females of other breeders.

While we have females to stay, we also take Centeno to females. He's getting quite used to long trips - and he knows there's a good reward at the end of the journey!

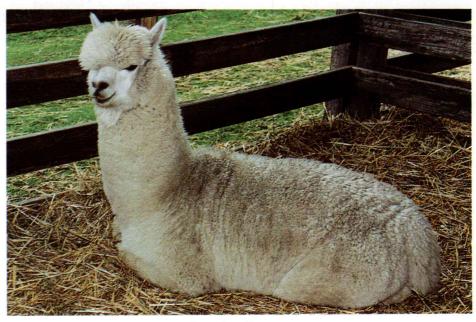
Alan, Geoff and I are developing a breeding program that we believe will not only benefit us, but the industry as a whole. We maintain a data base of available white animals (much of this information is collected as the result of networking with other breeders). We also maintain meticulous records based on regular analysis of fibre produced by our herd.

At present, we are preparing to import white alpacas from Peru. Importing is always a difficult operation, and we have been flat out these last months investigating, planning and negotiating all the details necessary to ensure the importation process runs smoothly.

Peruvians are obviously an ideal source for us to pursue our 'breeding white' goals. We also believe white Peruvian input into Australian herds will contribute to significant upgrading.

We believe it is worthwhile to aim for the international fashion market — the top end of fibre production. Fashion's emphasis on colour means, of course, that white fibre - because of its ability to be dyed to any shade - has to be our choice.

We know that it's going to take time for Australia to develop the necessary number and quality of animals needed for us to have a really viable Australian commercial industry. However, we have an Australian tradition of excellence in fibre production through our long association with sheep. We understand the importance of selective breeding to obtain desired results and we understand the need for constant analysis and objective measuring of results of our breeding programs. We have a lot of faith in the future of the industry. Let's face it, no one would put considerable amounts of time, energy and capital into an enterprise without being committed to a satisfying and profitable outcome.



Peruvian Centeno



Alpacas grazing at picturesque Australian Alpacas.

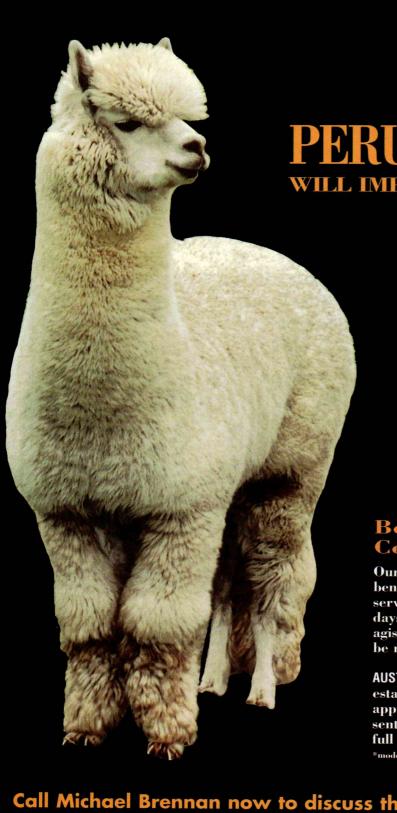


From left: Alan Batchelor, Graeme Pope and Geoff Brennan.

The Gremlins

In our story on the Alpaca Co-op last issue, the ghastly creatures struck again. They devoured two noughts. In fact, the Co-op's first fibre collection yielded 4,000 kgs (not 400) and, at time of printing, the second collection had yielded 6,000 kgs (not 600).

Aust when you think it's safe...@#*+;





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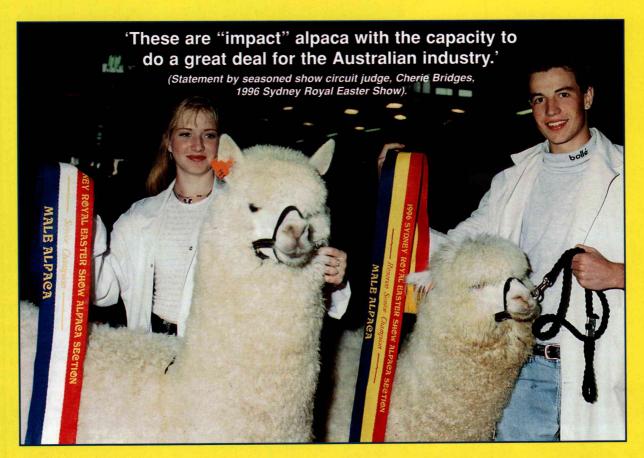
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He needs test results over a minimum of three years. If you have fourth year results, send them to him as well.

Project aims

Briefly, the aims are to identify percentage of micron blow-out; calculate influence of Coefficient of Variation; and identify district (environmental) effect.

This information, once collated, will be invaluable in helping breeders identify superior animals when making selections.

DATA REQUIRED

As a minimum:

- IAR number
- Colour
- Micron, S.D., C of V for each of the 3 (or 4) years
- Breed: Suri S Peru HP Huacaya Chile HC
- · Pasture: i.e. district where animals have been raised over 3 years

AND, if possible

- Type of sample taken (e.g. mid grid, site staple)
- Growth: 12 months? 8 months?
- · Fleece weight at each test.

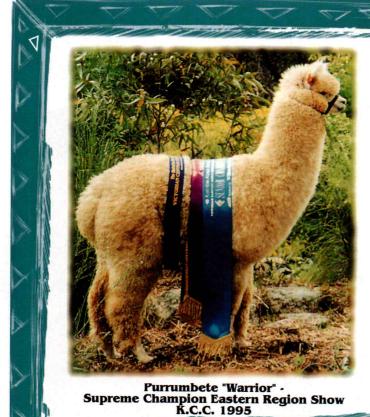
ANONYMITY ASSURED

Original results will be seen only by Cameron Holt and all IAR numbers are automatically scrambled by the computer program used to evaluate

If you would like to contribute, please send details to:

Cameron Holt Alpaca Fleece Research Project 12 Monaco Crescent Beaumaris Vic 3193.

Anyone requiring further details, can telephone Cameron, after hours, on (03) 9583 6111.



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April was a very big month for Coolaroo. Their seminar, 'Advanced Alpaca Production', run by Dr Jim Watts, breeding consultant to the stud, was booked out. The auction that followed it - the third Coolaroo Classic — attracted 600 people.

Stud manager, Janie Hicks reports excellent sales especially among weanling females (8-11 months) averaging \$18,000. Top price of \$25,000 was paid for Coolaroo Minuette (white).

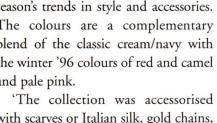
The auction attracted buyers from all over Australia as well as overseas. They included established alpaca breeders, new entrants to the industry and a number of merino breeders. Some of the alpacas sold were bound for distant shores with three going to New Zealand and two, purchased by regular client Textile Finance, were to be exported to Canada.

No Coolaroo Classic would be complete without its accompanying fashion show. This year's range was co-designed and produced by Kate Maurice. She is not only a young and talented designer, she also has a way with words...

'The styles are classic with strong simple silhouettes, spiced up with this season's trends in style and accessories. The colours are a complementary blend of the classic cream/navy with the winter '96 colours of red and camel and pale pink.

with scarves or Italian silk, gold chains, belts and our favourite accessory, alpaca camellias and roses! There really is no end to what you can do with alpaca, as we showed in the finale of our parade. The audience already impressed by the sportswear and tailored ranges, were then "wowed" by our evening range. A blonde bombshell swooned on to the catwalk in a figure-hugging silvery grey 100% alpaca knit dress. With a thighhigh split in the front, a sexy plunging neckline and diamante buttons in between, our model slinked from one end of the catwalk to the other showing everyone just how to wear alpaca to a Hollywood premiere. She was accompanied by more "evenings-in-Alpaca" numbers that combined sheer black chiffon with plush-pile cream Alpaca and black knitted Alpaca lace.

'There's no doubt, young designers are discovering alpaca and finding it great to work with.'





Kate sums it up:

'As the alpaca industry grows so does the variety in alpaca clothing and as our experience in the high fashion industry expands, our limitations shrink. These days we really are only limited by our imaginations and, believe, me in the alpaca fashion industry imaginations are running wild and the results are simply stunning!'







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The twins just after birth - Snugglepot and Cuddlepie. The alpaca with the bandaged leg, Cuddlepie on the left, had difficulty feeding and weighed only 4.3 kilograms.



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HEAT STRESS

in alpacas in australia

by Dr George Jackson



Based on George Jackson's presentation at the AAA 1996 Seminar.

What is heat stress? It occurs when an alpaca's core body temperature is elevated to a point where it interferes with normal metabolic processes. It is caused by excessive heat gain or by an inability to lose heat (this excludes fever due to infection).

The condition is also called 'heat stroke', 'sun stroke', and 'heat exhaustion' but, most accurately, it is *hyperthermia*.

Alpacas are very adaptable animals and are capable of surviving in a wide range of climatic conditions. Especially suited to cold, they will, nevertheless, manage in warmer climates with sensible management.

Heat stress is a continuum along a line from the animal being able to cope to not coping at all. It is not possible to put a figure on the temperature at which an animal will pass from being a little warm to suffering from heat stress.

The alpaca has many mechanisms which are used to maintain the core body temperature at approximately 38.0°C to 38.5°C. Some of these can be observed as the level of heat stress progresses (see table below).

However, some effects of a period of heat stress are not so obvious.

Infertility of male alpacas can be caused by relatively mild increases of body temperature. It may take 6-8

weeks for their sperm count to recover and more prolonged or permanent damage is possible. Some males definitely appear more fertile in the cooler weather.

Females can also be affected by infertility due to heat stress; premature labour, abortion and stillbirths have been reported that could be at least partly attributed to an episode of heat stress.

How alpaca lose heat Evaporation

Heat is a taken out of the body during the process of water evaporation from body surfaces (phase change from water to water vapour requires energy). The skin loses heat by evaporation of sweat. Heat is also lost through the respiratory tract during respiration by evaporation from the mucus membranes and also through exchange of air. The efficiency of these methods of heat loss is dependent on ambient temperature and humidity.

Radiation

Heat is lost from the body by direct radiation into the surrounding atmosphere. The alpaca has a ventral area of its abdomen that is sparsely covered with hair. This area is called a thermal

Normal	Mild	Severe
seeking shade seeking cool water low activity	panting, nasal flaring obsessively seeking water sweating	open mouth breathing collapse inco-ordination
		convulsions shock and weak pulse

window because it allows heat transfer, very important to a heavily fleeced animal.

Heat moves from areas of high temperature to areas of lower temperature at a rate proportional to the temperature difference. If ambient temperature is greater than body temperature, an alpaca will tend to absorb heat. If ambient temperature is close to but below an alpaca's body temperature, heat loss by radiation will be very slow and inefficient.

Conduction

Heat is transferred directly by close contact between bodies of different temperatures.

Alpacas make use of this method very efficiently by wading into water or sitting down on wet or cool ground. Heat is lost directly to the ground or water, especially through the thermal window on the ventral abdomen.

Risk factors for heat stress in alpacas

High ambient temperature

The alpaca itself generates heat and needs to dissipate this. Dissipation is made more difficult when ambient temperature is close to, or greater than, normal body temperature. The body will tend to absorb heat when the ambient temperature is greater than body temperature. Heat loss mechanisms will be fully tested.

Humidity

Heat loss becomes difficult with high humidity because evaporative cooling (panting and sweating) becomes very ineffective.

LaRue Johnson (USA) proposes an index for the calculation of possible occurrence of heat stress. The index is the sum of the ambient temperature in degrees Fahrenheit and the relative humidity.

For example, an ambient temperature of 80°F and 80% relative humidity gives an index of 160.

- Index of less than 120, heat less is unlikely.
- Index of between 120 and 180, heat stress is possible.
- Index of more than 180, heat stress is likely.

Poor ventilation

Ventilation assists more effective cooling by evaporation and the removal of radiated heat.

This is especially important when transporting alpacas in enclosed floats.

Full dense fleece

Full dense fleece does not allow effective heat loss by radiation because of its insulating effect.

Full fleece also severely affects heat loss by sweating due to lack of air flow across the skin. In this case, heat can only be effectively lost through the thermal window.

No fleece

Without fleece, the alpaca's body is directly heated and this can cause a rapid rise in body temperature.

Recent studies performed during a period of heatwave conditions have

shown that the core temperatures of full fleeced and minimally fleece animals were significantly higher than the core body temperature of animals with a few inches of fleece.

Sunburn is a possible complication when alpacas are shorn at inappropriate times of the year.

Physical activity and stress

All management which involves some stress or activity will add to the risk of developing heat stress.

The timing of weaning is important in this regard. Cria and mother may continue to seek each other — standing out in full sun and running (along a fence) — and fail to take normal measures to reduce heat stress.

Over weight alpacas

A larger body mass loses heat more slowly. Consequently, overweight alpacas will be at increased risk during periods of continuing hot weather. Fat also acts as additional insulation to prevent effective heat loss.

Advanced pregnancy

Additional metabolism and body weight increase the risk of heat stress. In some areas of Australia, it may be advisable to manage herds to avoid



birthing in peak summer. Some studs already manage their herds to avoid births in the coldest part of the year.

Shade and cool water

Shade prevents direct heating of the alpaca and provides a cooler ambient temperature. Cool water to drink is extremely important. Beware of dominant animals who may tend to defend their drinking places.

There are a number of useful water sources for cooling: dams, sprinklers, soaker hoses and paddle pools.

Cool ground or grass allows efficient heat loss by conduction, even if ambient temperature is greater than body temperature. The secret is to have cool ground temperatures by shade or water.

Newborn and old animals

These animals have impaired or inefficient thermo-regulatory mechanisms and are at increased risk. Crias' small bodies heat up extremely rapidly and, with inefficient thermo-regulatory mechanisms during their first few days, will be at high risk.

Feeding

Feeding generates heat, creates activity and competition. It is best done in the cool of the evening.

Unacclimatised animals

The moving of animals from cool or temperate areas to hot locations needs to be sensibly managed.

Veterinary treatment

It is extremely important to check rectal temperature regularly and work to reduce the core body temperature slowly.

For mild heat stress

Provide shade. Cool down with hose sprinklers or water bath. Shear back to 2 inch fleece.

For severe heat stress

Provide cold ice bath; cool intravenous fluids and drugs for shock.

Beware of the cold enema, you will lose the only method of assessing core body temperature.

Recommendations for management

Shearing

Shear animals at an appropriate time of year (September) to minimise risk of heat stress in summer but still provide some insulation. This also means shearing cria as young as three or four months.

To avoid the risk of exposing alpacas to unusually cold weather after shearing, some owners are shearing at a time only the number of alpacas they can shelter, with a new batch every two to three weeks.

Water

Provide plenty of it at numerous points. Watch for dominant animals.

Plenty of shade

Employ methods to provide cool ground — effective even if ambient temperature and humidity are high.

Management practices

Activities likely to cause stress, stud services, feeding, transporting and the like should all be carried out in the cool of morning or evening





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E xcellence
in alpaca fleece production.

Sires used in the Coonawarra breeding program include the Purrumbete sires Ledger's Dream SW, Highlander SW, Snowman SW, Eldorado SMF, Inti SMF, Don Quixote SLF, Caramel Chris SDF. Also used are Suricaya Lord Robert SMF and Sir Sydney SMF, Benleigh Champagne SLF, Jolimont Manuel SMF, Pacific Beethoven SBLK and Coonawarra Nelson BLK.

- Pregnant females available.
- Young herdsires now available from the tui male evaluation mob.
- Show and pet quality males.

WE ALSO WISH TO INTRODUCE THE OUTSTANDING SUPERFINE AND EXTREMELY DENSE COONAWARRA JULIUS SBLK

His fully shorn cria fleece measured 19.8 micron (grid sample of saddle). Then 12 months later, in his second fleece, midside sampling measured 20.2 micron (4.5 sd & 22.4 cv). His 'second' fleece weight and shearing dates will be available after shearing.

FOR ENQUIRIES PLEASE CONTACT PRINCIPAL: KIRSTY BALNAVES

Phone: 087 372 946 Fax: 087 372 945

Breeding Records & Fleece Evaluation Program: Dr Adele Feakes BVSc

Phone: 087 620 021 Fax: 087 620 055

NO ALPACA SHOULD HAVE TWO COATS!

Based on notes by Dr Jim Watts M.V.Sc. Ph.D. breeding consultant to Coolaroo Alpaca Stud.

Alpacas still produce two coats — one of wool, the other of hair. Some animals have very much less hair than others. These are the animals that should be used to begin eliminating that coarse, hair coat that characterises a primitive fleece.

A primitive fleece is not always easy to spot. But consumers will find discomfort when a garment made from such a fleece is worn against the skin, by the 'prickle' factor.

Primary follicles are part of the problem. In a primitive fleece, these follicles are extremely large. From them come medullated fibres - coarse, prickly hairs that need to be removed. These coarse fibres have other effects. Because they are shed seasonally, it is often the case that, on shearing, some very long fibres as well as very short regrowth tips are retained in the fleece. They adversely affect processing efficiency and the quality of the resultant fabric.

More importantly, these primary follicles inhibit the formation of secondary follicles. It is the number of secondary follicles on an alpaca which is crucial to the development of a dense, fine fleece — an advanced fleece. The fibre produced from an advanced fleece is not only light, warm and soft but it also dyes well. Hence the demand for this advanced alpaca fleece quality in the fashion industry.

Visual identification of an advanced fleece is possible. On an alpaca, it resembles a laundry mop with thin straggly staples - rather untidy or shaggy looking. On being parted, the huacaya fleece has a deep and even crimp, supersoft handling and gentle lustre. The suri fleece displays an even higher lustre and there's a distinct coiling of the staples (rather than crimp). In both alpaca types, the advanced fleece is the result of high levels of secondary follicles.

Advanced fleece staples are long and about the thickness of knitting needles. Within each stable are bundles of fibre that peel away into even smaller sections, each about as thick as a matchstick. This shows that the wool fibres have become so closely aligned that they form follicle groups which are the basic unit of fleece structure.

Associated with this secondary follicle development is 'soft rolling skin' It provides increased skin surface on an animal allowing larger numbers of secondary follicles to develop and grow.

The more secondary follicles there are on an animal, the more slender these follicles become. The follicles create an efficient parallel growth pattern that is uniform in length and that minimises tangling and 'cross fibring'. This pattern and the fast growth rate of secondary follicles also produce well defined and uniform crimp. The resultant fleece is not only denser and weightier but the fibres are also finer.

An advanced alpaca fleece, then, is characterised by high weight, fineness, even staple length, smooth surfaced fibres, lustre, strength and elasticity.

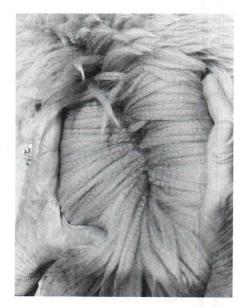
Current research indicates that high secondary follicle development appears to be controlled by relatively few major development genes. Because of this, it is likely that selective breeding of animals whose fleeces are high in secondary follicle development will produce rapid improvements in progeny.



Of the two alpacas, the animal at left displays the advanced fleece surface (laundry mop) which grows from soft rolling skin.



The opened fleece illustrates the distinctive combination of density and length coupled with high quality fibre.



The 'conventional' alpaca, however, lacks these distinctive qualities.

Visually assessing good fibre breeders

Spiky fibres are easier to see on animals in short wool, so this is the ideal state for visual assessment.

First, look for an alpaca whose fleece has a 'laundry mop' fleece surface. Feel the sides of the fleece. It should feel very soft and bouncy, exhibiting good elasticity

The staple should be well defined, boldly crimped and peeling into fibre bundles.

At this stage, desirable fleece characteristics are found only on the trunks of animals but careful breeding should enable its spread to the neck, down the back legs even, eventually, to the apron.

If quality is your aim, take care when selecting males. They will be needed for 'like to like' matings at the top of the range and for correction of more obviously two-coated animals at the bottom.

As progeny of chosen sires and dams are produced, visual assessment should be checked by measurement and analysis. Proper use of breeding performance records for classing and mating is the key for genetic improvement.

What are the rewards?

- Fibre fineness: fine wool that spins to higher counts and makes soft, lightweight garments.
- Evenly sized fibres: fine now, but with the potential to become supersoft. Lowering the coefficient of variation (CV) of wool by even five per cent — without changing the average diameter — is equivalent to improving the spinning fineness of the fibre by one micron.

- Evenly shaped fibres: smooth surfaced, cylindrical fibres that produce both softness and lustre. They dye to deeper, richer colours. The raw fleece lustre translates to the finished garment.
- Minimised narrow, weakened fibre regions: to ensure the fleece has high tensile strength, low wastage and very few short fibres.
- *Bold, deep crimp:* for softness, ease of processing and the production of a garment with superb drape.

For Australia, these rewards mean a new fibre industry that will come as the result of intelligent, managed and selective alpaca breeding.

A series of workshops under the title of 'Advanced Alpaca Production' are being planned around Australia by Coolaroo, the first will be held in NSW on September 22 and 23.

SSOCIATION MEMBERS WILL BE SADDENED TO HEAR OF THE PASSING OF JUDITH GRANT OF ASTON ALPACAS, BOMBALA, A MEMBER OF THE SOUTHERN REGION OF NEW SOUTH WALES. ALONG WITH HER HUSBAND PETER, JUDITH WAS A PIONEER OF THE INDUSTRY. WE WILL MISS HER CHEERFUL NATURE AND BOUNDLESS ENERGY. OUR DEEPEST SYMPATHY IS EXTENDED TO PETER AND THEIR YOUNG FAMILY.



PUCARA ALPACA STUD

Alpaca for the discerning breeder

Pucara have quietly gone about acquiring the best alpaca genetics available in the world in a quest to breed quality fibre for quality product. Witness the stunning Machos that arrive in March '97: Peruvians, Don Julio, Drambuie and Legend. We are also part-owners of Peruvian Hemingway – 17.8 mic., 3.9 s.d., 21.9 c.v. His progeny are breathtaking. They have consistently won in the U.S. show rings. At the Denver National Show '96 where shown, his progeny won the junior male and female classes which had more than 20 animals per class!!!

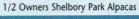
A number of our select Peruvian females bred to Hemingway are for sale. Also available are a beautiful selection of weanlings, male and female, some of Hemingway descent. With them will be an elite group of full Peruvian suris, the quality of which has no parallel in Australia. Soft, lustrous, fine... locked fleeces that hang like curtains of silk.

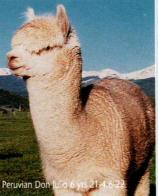
We haven't neglected colour either. All the Aussie 'experts' said there was no colour in Peru, but of the 5.4 million kgs cut there 35%(*) is coloured!!! Pucara this year got 50 coloureds in Peru before the Peruvian government shut the door on colour.. ...for ever!!!!

Give us a call, we'd like to hear from you.

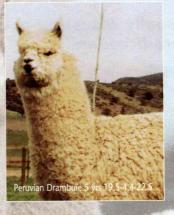
(*) R. Wearherall, 1995

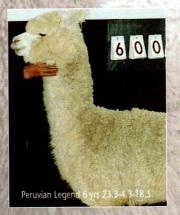
Tel: 052 633 436 Fax: 052 633 364 015 525 391 Jude Anderson Alan Cousill





1/2 owners Warralinga Alpacas









PUCARA MACHOS

(Now at stud)



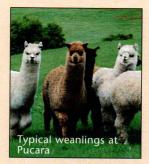


SNOW MAN PROGENY



'Snowman progeny have won the supreme championship of two largest shows of alpaca in Victoria 1995 and the Royal Sydney 1996.'

CHRIS PROGENY













BEETHOVEN PROGENY



PUCARA WOULD LIKE TO THANK THE FOLLOWING WHO HAVE BOUGHT ANIMALS FROM US RECENTLY CONGRATULATIONS &

John and Diane Kuhl Mt Gambier Jessie Jenkin Geelong Trevor and Debbie Walker Mt Gambier Paul and Lesley Tepper Mt Eliza Laurie and Margaret Binks Albany Riki and Rainer Marten Staverton Judy Brear and Lyn Sullivan Martinsville Helen Fritsch Dural Rex and Bev Shearer Bega

Geoff and Jeanette Cumming Peterborough Peter and Judith street Mittagong Kay and John Cleaver Woodend Kim and Marc Tonkin Bombala Bert and Margaret Rijk Silvan Peter and Erica Bennett Bell Post Hill Ken Madl Denver Lynn and Lutz Jacobi Little River

John Simpson and Sue Bourchier Shepparton

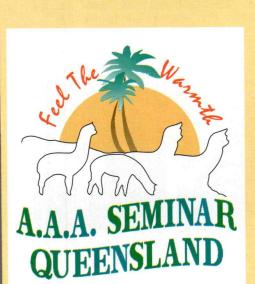
Wendy Hotchkie Newcastle Ted and Meredith Cole Brisbane Geoff Martin & Sue Curliss Mt. Edgerton Paul and Pauline Witham Elaine Sue Wood Albert Park Gary and Jan Pettit Clarkefield Geoff Cole & Gary Scarlett Torquay







Fun, frantic and informative, this was the AAA's best ever seminar.



There is absolutely no doubt that AAA members are thirsty for as much information as possible on all aspects of alpacas and the industry. And information is what they received - in vast amounts - at the Association's 'Feel The Warmth' Seminar, held on the Gold Coast in

It was decided that the seminar proper would be preceded by a day of intensive workshops. These were held on Friday 5 July and were a sellout.

The seminar itself attracted AAA members from all over Australia to two hectic days of lectures and presentations on a wide range of subjects. One and two hour sessions were held simultaneously enabling participants to join a 'stream' and attend every one. This was masterful organisation but required a certain amount of stamina on the part of attendees, especially those who enjoyed the Saturday night dinner dance (and the odd 'after dance' party!). The first Sunday sessions began at 8 am!

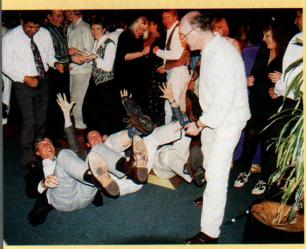
There were many highlights.

On Friday night, the Ocean Room was packed for Mike Safley's vivid presentation of 'Chacu'. The chacu or rounding up of vicuna for shearing may save this small camelid, possessor of the finest imaginable fibre, from extinction through poaching.

Chris Tuckwell revealed some of the preliminary trends in the threeyear RIRDC funded-research project presently being conducted in South Eastern Australia.

Head of the Camelid Research Program at Oregon State University, Dr Brad Smith conducted two sessions during the seminar on Hypophosphatemia Rickets and Johnes Disease. His day-long Friday Neonatal Care Clinic with Karen Timm, Denis Ryan and Andrew Paxton Hall, complete with facilities for 'hands on' work, was voted an unqualified suc-

Bob Piggot's sessions on alpaca nutrition proved very popular - and it is planned to follow up his Seminar appearance with at least one article for Alpacas Australia.













There were vet and breeder corners for informal chats — and plenty of open spaces for AAA members to meet and swap experiences. Networking and catching up with friends is always a most enjoyable part of an alpaca seminar.

AAA members were transported by monorail to Sea World for the Saturday night dinner dance. Highlight of the night was the holding of an auction in which some extraordinary items were sold for very large sums of money. (We're told that, on the basis of unexpectedly frenzied bidding, Walter Bravo may quit the alpaca business to become a full time artist.)

As usual, the energy of alpaca people outlasted that of the band. Friendly, if somewhat noisy, persuasion elicited an encore or two before the band made a successful dash for the door.

After catching the last 'train' back, the sensible people went to bed in order to manage Sunday's early start.

The closing of the seminar at Sea World, we are reliably informed, was notable for the fact that Alan Cousill remained on dry land.

The verdict on 'Feel The Warmth'?

Absolutely fabulous, dahlings!



This superb belt buckle was generously donated for the seminar dinner dance auction by Carol Davis of Starfire Alpacas in Texas, USA. Created by Max Lang, a famous American silversmith, the silver buckle is adorned with yellow, green and rose gold.

YOU MISSED OUT?

On the fun, perhaps... but you don't have to miss out on all the informative sessions!

ORDER NOW!

The 1996 Seminar
Proceedings book contains
comprehensive notes from
the weekend sessions AND
there are copies of the
Friday workshop notes.

Just fill in the order form on the back page of this issue..



The Session Presenters, 1996

From left: Denis Ryan, Bob Pigott, Walter Bravo, Chris Tuckwell, Vessa Playfair, George Jackson, Nick Veltjens, Robert Mulkearns, Jenny Jones (AAA National Administrator), Cameron Holt, Brad Smith, Karen Timm, Andrew Paxton-Hall, Carol Hosking, Mike Safley.

Photographs courtesy Australia's Exotic News

INDUSTRY UPDATE

JUDGES PLAN WORKING WEEKEND

An informal meeting of a number of accredited judges was held during the Seminar weekend in Queensland. It was chaired by Allan Jinks who has taken over the chair of the Show and Breed Standards sub-committee.

It was agreed that work should be done on a number of issues relevant to judging. One of these is the selection of judges for Royal Shows, the subject of a recent motion of a National Committee meeting. Those present agreed that Allan write to the AAA on behalf of the judges present expressing the view that suitable judges for Royal Shows be submitted for selection on the basis of merit and judging experience.

A 'Weekend for Judges' will be held at a property in Victoria at about the time this issue of *Alpacas Australia* goes to press.

A number of issues are likely to be considered by AAA judges during the weekend including:

uniformity of judging standards and procedures; fleece judging; judging of solid alpacas with a tiny spot of a different colour; uniformity of show formats and classes; junior judging competitions;

junior handler classes.

A report on outcomes will be published in the December issue.

POOQS AND ANIMAL HEALTH

Geoff Hargreaves and Allan Jinks recently prepared a paper setting out some issues of concern regarding the approval of Privately Owned Offshore Quarantine Stations.

The criteria and processes regarding POOQS are apparently not final and, to some extent are being developed as the need arises.

The approval process contains no requirement for owners of POOQS to document and have agreed quality assurance programs with respect to testing, animal welfare and operation.

Jinks and Hargreaves consider that, as a minimum, a set of principles based on AQIS requirements and practices at Cocos should be incorporated into specified and agreed quality assurance programs for POOQS.

The quality assurance statement should include descriptions of both the nature of and standards for the testing for all nominated diseases. These should be agreed by the Animal Health Council (the Chief Veterinary Officers of Australian States and Territories) and the AAA.

Other conditions that should apply for approval of POOQS and import licences should include:

- the presence of an AQIS/AAA approved veterinary practitioner at the POOQS for the entire period of quarantine;
- facilities for treatment of alpacas suffering from heat stress;

- the POOQS manager experienced in alpaca husbandry;
- the purchase and storage (under approved conditions) of regular and emergency feed supplied prior to commencement of quarantine;
- alpacas entering Australia from a POOQS in a country known to have TB or JD to undergo 12 months on-farm quarantine (consistent with current requirements for imports from USA).

The relationship between diseases and their insect vectors; the seasonal timing (with respect to life cycles of vectors) and location of pre-export quarantine stations in Peru should be an important consideration in granting approval for shipment to a POOQS.

An example is a host country that is free from Blue Tongue, but which contains Culicoides midges (the Blue Tongue vector). If an alpaca in the shipment were to be infected with Blue Tongue in Peru (the likelihood of this varies with location), the vector could be responsible for spreading the disease throughout the alpaca herd as well as wild and domesticated animals in the host country. This would have the additional effect of creating a persistent reservoir of the disease around the POOQS.

This paper also raises important animal welfare concerns. AQIS has advised countries considering allowing POOQS on their territories that they may wish to address the welfare of animals if the quarantine process collapses.

The authors believe that importers must have both a plan and funds to deal with animals satisfactorily and humanely if a shipment is not accepted into Australia. This should be an important consideration in both assessment of applications for POOQS approval and in approval for shipments.

They also believe there should be clear indication from the host country that it will deal with welfare contingencies, including humane disposal of animals, if the quarantine process collapses and the operator cannot act.

The paper proposes that these matters be negotiated with AQIS.

Subsequent discussions have been held with both policy and operations officers of AQIS. AQIS appears to be hampered on welfare issues by legislation that concentrates on prevention of disease importations. It has no jurisdiction in welfare in other countries where the POOQS would be located.

However, the AAA will continue to pursue issues of concern about alpaca welfare and control of diseases such as Johnes Disease with AQIS and through its membership of the National Farmers' Federation.

AUSTRALIAN CAMELID VETERINARY NETWORK

A very successful ACVN 1996 Annual Seminar was held on July 13 and 14 in Melbourne. Now with a membership of over 100 vets, the ACVN reports the roll-up to the conference was excellent with 42 registrants.

Among the guest speakers were Drs Brad Smith and Karen Timm from USA who presented papers on topics including practical anatomy/necropsy; cria and immunoglobulins and obstetrics. Other highlights included a report from G. Judston (Primary Industries, S.A.) on the RIRDC funded Australian alpaca project.

The ACVN also held its Annual General Meeting and elected Dr Richard Potter as its President for 1996/97. Other office bearers include: Dr Adele Feakes (Immediate Past Pres.); Dr Leigh Coghlan (Treasurer) and Dr Neil Jackson (Secretary).

ACVN membership is limited to veterinarians only. Any vet wanting more details about the network should contact Dr Leigh Coglan, Box 148, Kyneton Vic 3444.

THE SURIS ARE COMING...

but not in this issue!

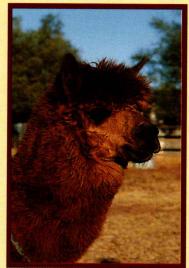
There is still work to be done to finalise details of the Suri Breed Standard. Although advertised for this issue, the Breed Standard will now appear in our December issue.

WYONA CHIPPER

Australia's Most Successful Show Winning Male Alpaca.

Senior Male Champion, Sydney RAS, 1995.
First 2 Yrs & Over Male, Sydney RAS, 1995.
Reserve Champion Male, Gulgong, 1995.
First 2 Yrs & Over Male, AAA National Show, 1994.
First 2 Yrs & Over Male, Melbourne RAS, 1994.
Reserve Champion Male, Sydney RAS, 1993.

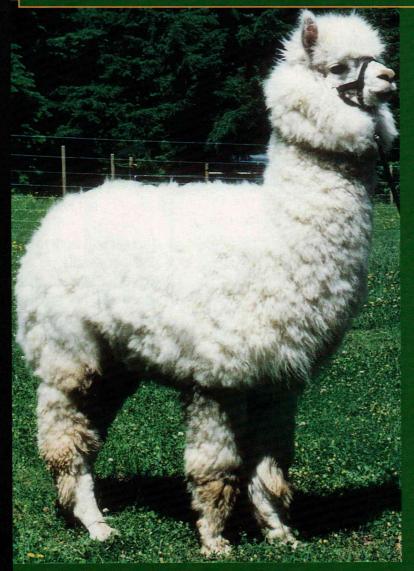




Never Beaten in Class at show at Junior or Senior Level. Solid Dark Fawn - Throwing Solid Fawn Offspring. Excellent Fleece, Confirmation and Size. Certified Breeding Male. Fleece Tested.

Standing at Wyona Alpaca Stud, Thuddungra, NSW, 2594. Phone Karen & Andrew Caldwell, Ph. (063) 833 531 Fax: (063) 833 578.

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Standing at Stud in NSW

> Service fee \$2,000 Return service if male cria born

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Peruvian El Jéfe (The Boss) was bred in Peru and comes to Australia direct from the USA

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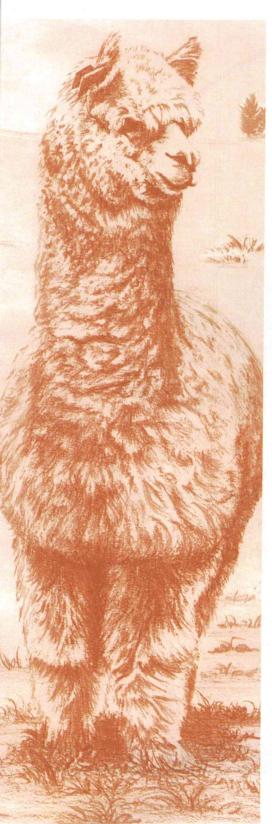
Mobile: 015 911 292

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1996 NATIONAL SHOW & SALE

2 & 3 NOVEMBER 1996

THE NEW SHOWGROUNDS EXHIBITION CENTRE, MELBOURNE



his superb venue, situated in the Royal Melbourne Showgrounds, is due to be opened during the Royal Melbourne Show. The AAA will be one of the first organisations to utilise the Centre's excellent facilities.

A special feature of Saturday's Show Day is a series of nonstop, short lectures on a range of interesting alpaca topics. Saturday night's dinner carries on the informal theme of the day and promises a chance to catch up with old friends and new whilst partaking of good food, wine and entertainment.

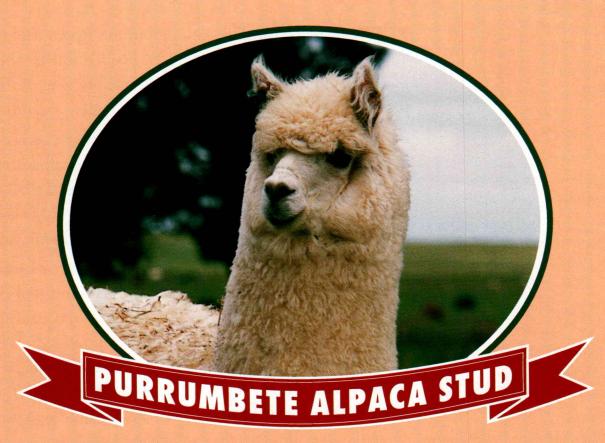
Sunday is Sale Day — the day as an industry we promote ourselves to the world. This year, in recognition of the elite nature of the sale, only ten of the thirty animals accepted as sale entries will be auctioned. These ten, judged on the day of the auction as the most saleable animals, will represent the best the industry has to offer. The remaining 20 will be offered for sale through a written tender bidding system immediately following the auction.

A new feature of this year's event will be the selling of Stud Tables. These tables, available for the duration of the show and sale, promise the best seating in the house, constant food and refreshment and the chance to promote your stud to your customers and the industry. Each table will prominently display the name of the stud booking the table. With only 25 tables of 10 available, they will be sold on a first-in basis.

PUT THE DATE IN YOUR DIARY!
START SELECTING NOW!
THIS PROMISES TO BE OUR MOST WELL
ATTENDED NATIONAL SHOW AND SALE YET.

Further information will be forwarded to members shortly. In the meantime any queries should be directed to Jenny Jones at the National Office.

HALDANE ALPACAS BREEDING FOR EXCELLENCE



We fell in love with these beautiful animals and like obsessed collectors we had to have some.

After seven years on the Alpaca trail the fascination never ends.

Benefit from our years of experience in selecting and breeding the finest Alpacas.

CLYDE AND ROGER HALDANE

HALDANE ALPACAS

PHONE: (055) 94 7374

FAX: (055) 94 7363

P.O. Box 82

CAMPERDOWN

VIC 3260

THE CRIA KIT

Developed by Carolyn Jinks, the kit is an assortment of items designed to cover most eventualities in the process of caring for crias.

- 1. *Cria coat.* This one is a Drizabone type. Ensure it doesn't cover the tail area.
- 2. *Petroleum jelly.* Use it to soften anus area if the cria is straining
- 3. Marsupial teat and Pet Nurser bottle. The teat is long, just right for a cria. Be sure to cut off the top to ensure the cria gets plenty to drink quite quickly. The Pet Nurser is available from your vet. Ask for kitten size. It's a flexible bottle enabling you to squirt milk into the cria's mouth. The idea is to sustain the cria without giving sucking satisfaction. In most cases, the cria will obtain that from mum.
- 4. Flutter teat (for older cria, 1 to 2 weeks). This will be needed if the dam dies or if it is not possible for the cria to feed from its mother..



(Available from Bellarine veterinary clinic, imported from New Zealand).

- 5. Betadine ointment and solution. Rub ointment on ear tags; spray solution on umbilical cord to prevent infection.
- **6.** *Haemostat* for clamping the umbilical cord in the case of haemorrhage.
- 7. *Thermometer.* This is a digital model that beeps when the temperature has been recorded.

- 8. *Di-Vetelact* powdered milk substitute.
- 9. *Lectade* (Vy-trate is an alternative) can be used for replacement of electrolytes in case of scouring.

Carolyn has these kits for sale, or you can easily make up your own.

N.B. Don't forget the most important cria requirement: plasma. Know where you can obtain some quickly if it is required.

Book review: by AAA Librarian, Riki Marten

The Life of Charles Ledger

The Life of Charles Ledger (1818-1905): Alpacas and Quinine Gabriele Gramiccia, Macmillan Press, Great Britain 1988

Rookwood Cemetery in Sydney must be a vast place, but it would be a great endeavour if any of our Sydney alpaca friends, could track down (somewhere in the independent section) the grave Charles Ledger. Years ago in WA, on Kipling's birthday each year, we (a congenial mob of librarians) would gather at an Indian restaurant, down vast amounts of curry, beer and wine and read selections from Kipling's verse and prose. It was a great way to remember a great writer. I have a hope that something similar may be done in Ledger's memory: that Rookwood Cemetery might become a place where 4 March 1818 might be celebrated by Australian alpaca breeders as the birth of Charles Ledger, or 19 May 1905 be remembered as the closing of a brave man's life.

I am very thankful to Macmillan'for publishing what must have been a risky manuscript, but disappointed that the cover design is one of the worst I have seen in years. I can imagine sales of this book would have been greatly improved by something as simple as an exciting design. As it is, the bland — not to say boring — cover leaves the

reader quite unprepared for the compulsive read that follows. It's not an airport book nor a fast read, there are far too many details to absorb. It is one of the most compelling books I have read for some time. Professor Gabriele Gramiccia is a renowned malariologist, now living in Italy. It was his interest in the discovery of quinine and cinchona trees that sparked his interest in Ledger. How fortunate for us that at least one 'life of Ledger' exists. The author explores, in a book crammed with incident and detail, the two great themes that entwined themselves about the life of Charles Ledger for almost seventy years — alpacas and quinine.

There may be some who do not know of Charles Ledger or why he should be of interest to Australian alpaca breeders. He is remembered in medical circles as one of the men who gave the world quinine. He is less well known as the unfortunate man who gave Australia its first alpacas. I use the word 'unfortunate' with deliberation. The landing of alpacas on the shores of Australia was the only still point at the centre of events.

On 28 November in 1858, the Salvadora berthed in Sydney from the port of Caldera in Chile after a voyage of 87 days. It unloaded, ironically, the very first Peruvian and Bolivian alpacas to set foot on this alien land. A total of 243 animals disembarked, 80 had died on the journey. There were 84 pure bred alpacas, 110 female llamas, 43 cross bred alpacas, 5 vicuna and one llama gelding.

However, what lay behind them was a journey of such epic proportions and heroic endurance that one needs to reread the tale to come to terms with the magnitude of the undertaking. What lay ahead — bureaucratic bungling, betrayal, incompetence and lack of vision - was to cripple Ledger's fortunes and destroy his dreams.

Gramiccia has meticulously documented the life of Charles Ledger from the eager young Englishman, setting out to seek his fortune in Peru in his eighteenth year, to the impoverished, embittered pensioner buried in an unmarked grave in Sydney. Ledger kept copious notes and diaries and, like many of the Victorian era, was a prolific letter writer. These resources have given Gramiccia a rich source of material from which to draw his portrait.

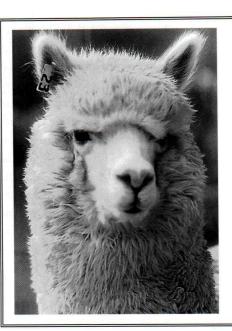
Charles Ledger walked his flock of alpacas from Peru, across the Bolivian altiplano down to Argentina, through the high Andean passes and across the deserts to the coast of Chile, a journey of several years and thousands of kilometres.

The book abounds in memorable incidents. Some are heartbreaking in their simplicity and pathos. On finally crossing into Chile, the animals were too weak to travel the 20 km necessary to reach water. A man named Benito Colque and his family, carried water to the animals in every available receptacle: pots, pans, buckets and bowls. The alpacas were finally able to walk on after a long rest. Ledger's diary notes, 'the poor people cried to see the state in which the flocks were - here we lost five...' There is a marvellous depiction of the incident by 'Santiago Savage', whose dreamlike watercolour landscapes illustrate the book.

Another harrowing incident, earlier in the journey is only briefly reported but, on reflection, seems deeply significant. Some 40 women had followed the flock for days, travelling 450 km from their homes. They were mourning the loss of their alpacas, sold by their menfolk, as they might mourn the sale of their children. After begging Ledger to be kind to their animals they finally turned back. The book is studded with such small treasures and each re-reading is amply rewarded, uncovering yet more in the vast panorama of detail and experience. This is a vivid portrait of Peruvian life 150 years ago, describing aspects of alpaca husbandry, the surprisingly large European market for alpaca fibre and the mysterious world of cinchona and quinine. There is excellent material available here for any intending novelist, playwright or script writer and the bibliography is extensive.

I would have enjoyed more detailed maps of the South American journey and any map of his travels in Australia.

This is not a one-off read, but a book to own and cherish, to scribble in its margins and mark with dozens of bits of paper. The AAA has obtained the remaindered copies of the book. I would urge readers to buy as soon as possible.



Peruvian Alpacas

The first shipment of Peruvian Alpacas direct from Peru have now completed a considerable part of their Australian quarantine.

These superb animals were selected by Dr. Walter Bravo from the World's top Alpaca Studs such as Don Julio Bareda (Accoyo), Rural Alianza, Sollocota and Kenamari.

We can now offer these outstanding alpacas to discerning Breeders and Investors.

You are invited to see our video and photos of the animals prior to leaving Peru and from our recent trip to Cocos Island.

*We currently have an excellent range of Chilean and Australian born females for sale. Some packages with female cria at foot. **Superb males at stud.

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CAREFLIGHT TO BENEFIT FROM 'TULIP TIME' ALPACA FAIR

In 1994, when she was just 17 months old, Rebekah Russell drowned. That she was successfully resuscitated is a miracle and that she has since shown no obvious ill effects is even more miraculous. Although she had been revived, she urgently needed child life-support facilities not available in her home town of Bowral. Careflight air ambulance made the emergency flight and delivered Rebekah safely to hospital in Sydney.

Rebekah's parents were members of the Australian Alpaca Association. Although living in England for the time being, the family farm, stocked with a few alpaca wethers, remains 'on hold'. Rebekah's aunt is Kim Kime of Heath-ray stud in Mittagong.

Along with other Association breeders in the area, Kim belongs to NSW Southern Region which embraces Camden, south along the NSW coast, then west through Canberra and into the Riverina.

The Region decided some months ago to hold a spring fair designed to give visitors a taste of alpaca lifestyle. Bowral seemed a good choice. It had an ideal venue in historic 'Annesley' with five acres of beautiful gardens; and the annual Tulip Time Festival would be in full swing.

The group decided to donate part of the fair proceeds to Careflight, whose personnel had been instrumental in saving the life of young Rebekah, and an organisation on which this largely rural regional community has come to rely in cases of accident and emergency.

The Fair will feature alpacas — a marquee full, at least — and involve them in all sorts of activities and demonstrations.

Visitors will also be able to buy badges and balloons, have their photo taken with an alpaca and enter a number of competitions for some great prizes.

The region is catering for the fair, so there will be excellent home made food available. What better place for some good, old fashioned Devonshire Tea than 'Annesley's' superb garden setting!

A special highlight will be 'The Cria Pen'. Here children will be able to touch, lead and learn about alpacas and talk with other youngsters whose families are alpaca breeders. There will also be face painting, games and special competitions.

For the grown-ups, an invitation to meet and talk with alpaca breeders and learn first hand about these amazing animals and their superb fibre.

The Alpaca Fair will be held 28 and 29 September, between 9.30 am and 4 p.m. each day.

S.A. FIELD DAYS

1996 will see the second year of field days, with the Adelaide Hills region participating on 13 October and the remainder of the state holding theirs on 27 October. This initiative had a very successful inaugural beginning last year and 1996 promises to be even better, so write the dates in your diary now!

The field days are organised by the SA Region of the Australian Alpaca Association. The Region provides the framework and it is then up to each participant to build upon that, if they wish.

Overall, the aims are to gain maximum exposure for the industry as a whole and for individual participants, to encourage animal sales and to educate the public about alpacas.

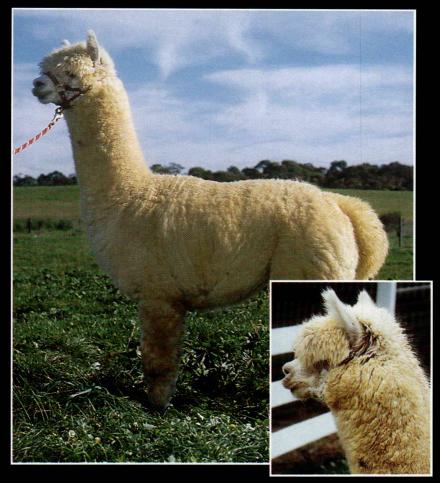
For both the alpaca enthusiast and for the 'uninitiated' the field days will provide excellent opportunities to see a variety of animals. Not only will the public gain valuable exposure to these appealing animals and their luxurious fleece, existing breeders will be able to view stock, including stud males, and see how other alpaca operations are run.

This year's field days co-ordinator is Jane Wray, who invites everyone, 'from established breeder to the just plain curious, to come and share our fascination with these animals'.

Anyone who would like detailed information on participating studs can call Jane on (08) 8388 7604, or write to PO Box 333, Hahndorf 5245.

AAA National Show & Sale, to be held 2 & 3 November. See page 37.

ALPACA STUD EST. 1993



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by Dr Andrew Turner Armadale Veterinary Eye Hospital, Vic

CAMELID OPHTHALMOLOGY

Introduction

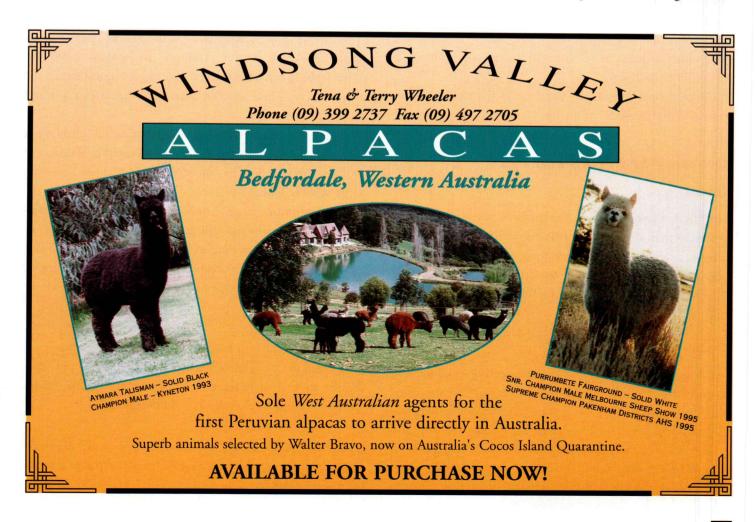
The past five years have seen the rising popularity of alpacas and, more recently, llamas as alternative primary production animals and also as small herd animals for hobby farmers.

The need for a thorough eye examination has become increasingly important, especially as congenital eye conditions have been reported, including tear duct blockage, malformation of the eyelid, small eye and persistent pupillary membrane (strands across the pupil and on to the cornea).

With the high prices being paid for breeding stock, potential purchasers expect more rigorous prepurchase examinations and insurance companies will come to expect more than just a cursory glance at the camelid to be insured.

Examination of the Alpaca Eye

Pre-purchase and insurance checks and examination for eye disease should entail a thorough and methodical examination. Examination in quiet surroundings with reduced light is ideal.



I have resorted to covering the head with dark curtain material but care must be taken as an alpaca may swing the head rapidly sideways and may also spit with accuracy. It is preferable to use a specially designed chute or race. Chemical restraint is occasionally necessary. Your veterinarian will be able to administer the correct type of sedative.

Initial examination should be some distance from the animal, noting the relationship of the eye to the facial structures such as the eye socket and the eyelids.

The eye socket, eyeball and surrounding structures should then be felt gently to check for such conditions as bony rim fractures and tumours.

The eye itself is then carefully examined starting with the lids, third eyelid, cornea, iris, anterior chamber and lens. Magnification is essential for this procedure. Magnification, such as a Voroscope or binocular loupe and a small strong focal source or, better still, a slit lamp (usually only used by a veterinary eye specialist) should be used. Various eye reflexes are tested at this time.

If eye infection is a problem, swabs for cultures may be taken at this time before any drops are placed in the eyes. Conjunctival and cornea scraping for staining and microscopy can be taken after instillation of topical anaesthetic. Taking tissue samples or deep scrapings can be performed at this point.

Examination of the back of the eye (retina) is performed using either a direct or indirect ophthalmoscope through a previously dilated pupil.

Other tests to consider include checks that tears are adequate and measurement of the intraocular pressure.

Anatomy of the Alpaca Eye

Cornea

Apart from a few exceptions, the anatomy of the alpaca eye is similar to that of other livestock. Alpacas have large eyes in relation to their head size and hence have prominent eyes. This is especially evident in the cria. The relatively large cornea adds to this prominent appearance and the eyelids normally fit tightly to the eye ball.

Eyelids

The bony edge of the eye socket of the alpaca goes all the way around the eye (unlike the dog which does not have this complete bony rim). Long eyelashes are often a conspicuous feature on both upper and lower eyelids.

The lack of fat gland openings on the eyelid margins is an unusual feature of camelids. The camel possesses fat glands in the corner of the eye and from one pathology post mortem sample I have had processed it appears that the alpaca is similar to the camel.

The third eyelid may be pigmented or unpigmented, and the latter can suffer sun damage. The cartilage and gland of the third eyelid are easily recognisable especially when the eyeball is pushed in gently. Pushing the eyeball prolapses the third eyelid and exposes the front of the third eyelid for examination.

Tear ducts

Upper and lower openings to the tear ducts are situated inside the lids close to the inside corner of the eye. Studies of the tear ducts in llamas have found the duct to be even in diameter (2-4 mm) along its course to its end point where it tapers.

The tear duct exists within the nose and can be seen while manually opening the nostril. The tear duct opening is just inside the nostril. Your veterinarian can show you the duct opening which is around 2-3 mm in diameter.

Iris

Iris colour varies in the alpaca from dark brown to unpigmented or 'blue eye'. Some darker eyes have lighter streaks, a startling and unusual feature not seen in other domesticated species.

Deafness has been associated with some blue-eyed llamas. The exact nature of inheritance is unknown. There may be some similarities with a syndrome in humans called the Waardenburg syndrome which also has its equivalent in the dog and cat. These animals have white fur, a pale iris and deafness.

The long axis of the pupil is horizontal enabling a panoramic view, an important feature to avoid predators.

The pupil margin has an interesting structure featuring large vertical folds of pigment. These are equivalent to the brown bodies or granulae iridica in horses. The pupil constricts in very bright sunlight and the folds intermesh significantly reducing the amount of light falling on the retina. This may offer important protection to intense UV radiation at high altitude.

Fundus

The fundus (retina, or back of the eye) lacks the brilliant eye shine seen in dogs and cats but may elicit a strong red reflex similar to that of humans. The appearance of the fundus varies according to the pigment of the animal.

'Camelid Ophthalmology' will be continued in our December issue. In the second part, Dr Andrew Turner will deal with eye diseases in camelids.

Pièce de résistance

By Bridget McIntyre



Looking back now at the history of our family, I guess the attraction to and involvement with alpacas was almost inevitable.

Over the past 30 years my parents Ern and Maria McIntyre could be found at their farm mustering sheep and cattle, drenching, marking or ploughing the paddocks. Their passion for the country life was ever present.

My earliest childhood memories are connected with agriculture in some way. Although the family has always resided in the city, our weekends were spent on our grazing property 'Woor-abinda' at Stratford in East Gippsland, Victoria. Attending school in the city, I'm sure my time in 'Show and Tell' would have been a real eye-

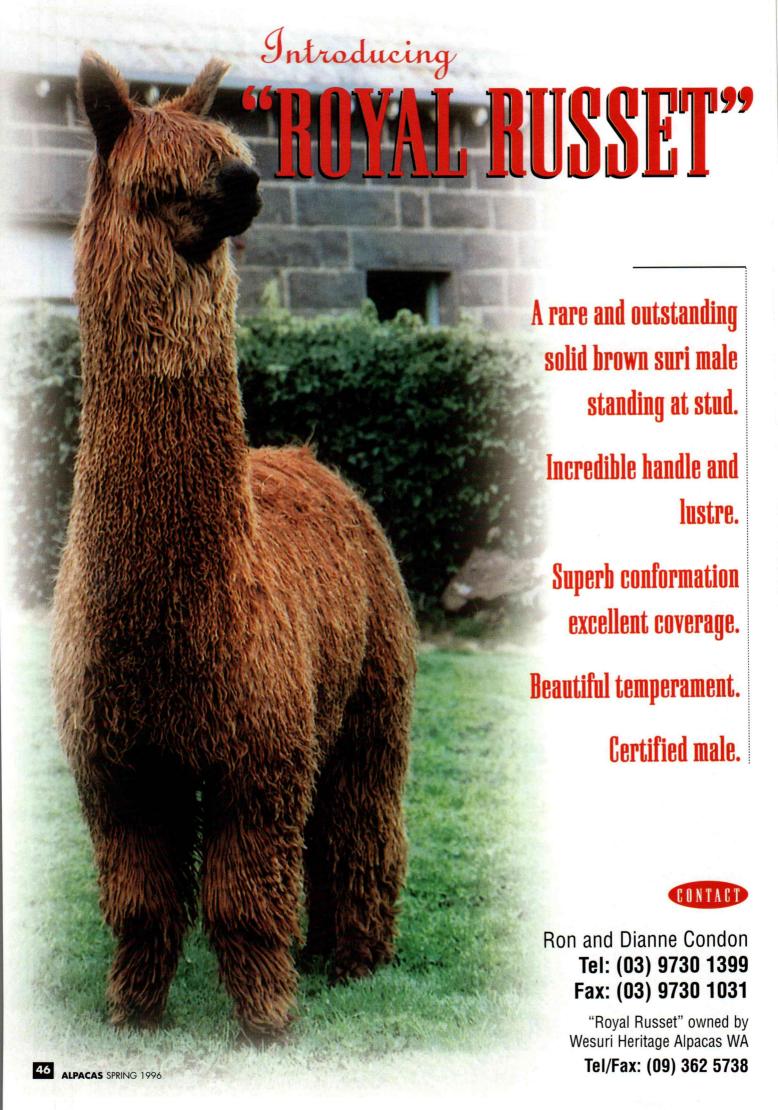


Bridget McIntyre and 'Pinaroo Barn Escobar'.

(Photo courtest of the Sun Herald)

opener for the other children, as our weekend activities differed greatly to those of my classmates.





In 1983, we children had reached an age where school commitments prevailed. We left our Gippsland property to live at a farm my parents had purchased in the Buxton area, a leisurely hour and a quarter from Melbourne. My parents also took into account the property's close proximity to water skiing in summer at Lake Eildon and cross country skiing in winter at nearby Lake Mountain, hopefully to maintain our interest in the farm as we grew older.

Our first exposure to alpacas was in the early 90s through our friends Brian and Jenny Worcester of Acheron Valley Alpacas. My mother's obvious fascination was initially ignored by Dad, who was concerned we knew little about them and suggested we concentrate on our cattle and horses.

Keen to learn all she could about these unusual animals, Mum attended many seminars and shows and gradually gained a substantial knowledge of the breed and its origins.

In September 1994, Brian and Jenny travelled to the USA to purchase a line of alpaca, born and bred in Peru — a male that would improve the quality of their existing herd. They agreed to purchase a young female for Mum, as a gift from Dad for her birthday in September. Over the years she had often received animals as

Christmas or birthday presents — usually a stud cow; one year, a beautiful Palamino filly. The alpaca was to be the *pièce de résistance!*

Having purchased their male the Worcesters set about finding two young females: one for our family and one for Mike and Sue Snow of Alexandra. This turned out to be not such a simple task. Hundreds of miles were travelled before they finally selected two outstanding young girls with all the right attributes. The result for us was picture-perfect 'Peruvian Bridal Lace' — pure white, outstanding conformation and super fine fleece.

So began the waiting game. The two little girls and their male companion were required to undergo a lengthy quarantine — first in the US and then followed by a 12 month stint in Australia.

The first visiting day to Mansfield Quarantine farm saw my mother champing at the bit. She had waited such a long time for this day — videos can only show so much. She was delighted with what she saw.

Whilst in quarantine 'Bridal Lace' was joined to 'Peruvian Poderio', an exceptional white male, with massive fine fleece. Confirmation of the pregnancy brought with it great expectations of an improved breeding program for the future, and a new and

exciting direction for my mother. She was now 'An Alpaca Breeder'.

In March of this year the anxiety of the previous year's events came to an end. The wait was over. 'Bridal Lace' packed her bags and moved to her new home at Acheron Valley Alpacas where she would live under the constant care of the Worcesters.

On Monday May 27, on a foggy cold morning, over the mountains at Narbethong, Victoria's first Peruvian huacaya alpaca was born to 'Bridal Lace'. A beautiful, healthy 8kg boy. What excitement!

That evening the folks made a hurried exit from Melbourne for the special viewing and celebration dinner. It had been a long time coming and noone was disappointed.

The little guy is growing like a mushroom; he doubled his birth weight in a month. and 'Bridal Lace' is a wonderful mother.

He has been named 'Pinaroo Farm Escobar'. Pinaroo was the name of my Grandfather Murphy's thoroughbred horse stud and has special memories for my mother. Escobar is also a prominent name in the alpaca world.

Mum is dreaming of the day she and Dad can retire and move to the farm permanently, taking the alpacas with them, and becoming full time farmers at last.

ALPACAS AUSTRALIA

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Editorial to Carol Hosking

If possible, all editorial contributions should be typed. Visual material can be colour photographs or transparencies. We will endeavour to return all photos and slides.

Advertising to Suzanne Hines

Rates and specifications are available on request. We can accept camera ready material or will produce advertising material to specification. We cannot guarantee inclusion of late advertising material

For further information, on both editorial and advertising matters...

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x: (03) 9428 2728 during business hours.

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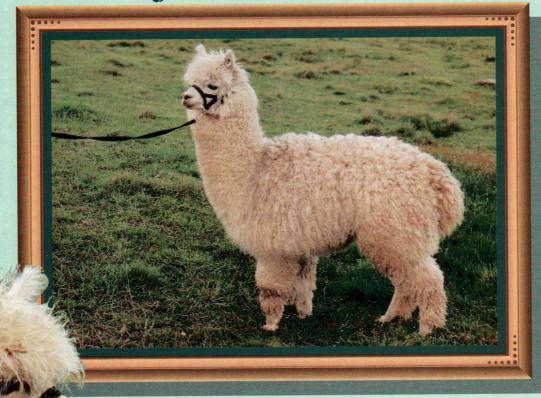
DEADLINE NEXT ISSUE

Issue 17 — Summer Due: December 1996 Deadline: Friday 18 October



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Open Day at Jolimont Alpacas

After three days of solid rain, the weather was kind for Pat and Rosa Viceconte's Jolimont Alpacas Open Day on Saturday 13 July.

An excellent attendance of around 300 visitors took the opportunity to inspect the stud and its alpacas. In the brightly striped marquee, they were treated to a series of presentations by an array of top line speakers.

AAA President Gray Morgan was the first. He provided a keen analysis of the industry and pointers to its future directions. He also noted that AAA revenue from Jolimont's Peruvian shipment (some \$180,000) would provide funds for marketing and promotion initiatives on behalf of alpaca breeders by the Association.

Dr Walter Bravo, in Melbourne after speaking at the AAA 'Feel The Warmth' Seminar in Queensland, was next. Part of a team responsible for selecting Peruvian alpacas for the Jolimont shipment, Dr Bravo talked about the breeders from which selections were made: Accoyo, Don Julio Barreda, Rural Alianza (a 4-farm co-operative in the Puno region); Sollocota, another co-operative made up of 160 families; and the Kena-



A bright marquee was erected for Open Day at Jolimont Alpaca Stud.

mara group. He also discussed methods of selection and criteria: fleece, conformation and the ability to reproduce.

Dr Tony Foreman, a specialist veterinary microbiologist, talked about his work on exotic disease, particularly the control of foot and mouth in many parts of the world.



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Helen McPartlan, a research scientist from the Victorian Institute of Animal Science, described the Institute's pedigree verification service for a range of domestic and farm animals. She reported that DNA testing is up and running. Jolimont is providing financial help to develop this service for alpaca breeders.

Denis Ryan, well known Torquay vet and AAA seminar speaker, talked about his viewing of the Jolimont shipment on Cocos Island, and his report on the animals.

Time then for lunch — and what a lunch! Visitors dined in style in a bistro setting and were treated to a selection of roasted meats, chicken, salads, pastas and fruit. There were juices and wines and, for desert, mountains of pavlova.

Then, back to the marquee to hear Jane Vaughan, the specialist alpaca vet who has looked after the Peruvian shipment since joining it in Peru. Her presentation, complete with slides, showed the heavy workload necessary to maintain such a herd, beginning at 7 a.m. and ending with a final nightly check on the animals at 10.30 pm.

Max Caithness from AQIS provided an excellent insight into how Australia's high standard of health status is maintained and the role of AQIS in controlling the import and export of animals.

Fibre expert, Cameron Holt has recently returned from a trip to Canada and the USA. He reported on the impact of

Peruvian alpacas in America and discussed implications for the Australian herd.

A new marketing initiative was announced on behalf of Jolimont by Dennis Paul of Rural Industry Development Pty Ltd. Details can be obtained from Pat and Rosa Viceconte.



Dr P. Walter Bravo, a guest speaker at Jolimont Alpaca Stud's Open Day, with Rosa and Pat Viceconte.



SHELLEY O'BRIEN IS 'ARTIST IN RESIDENCE'

By Carolyn Jinks

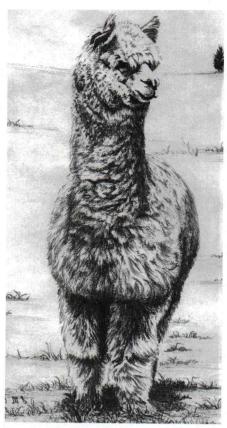
Although we have always preferred to manage our own stud with occasional help, the time came when we needed a full time assistant. We decided to advertise. What a task, sorting through all the applicants!

One, however, particularly interested us. She had been brought up on a 200,000 acre sheep station near Broken Hill, educated by School of the Air and then had attended boarding school and agricultural college. Shelley O'Brien's application displayed knowledge obviously acquired by years of experience. When dealing with animals, credentials can help, but there is no substitute for natural instinct and practice. We decided to employ her.

Having been accustomed to mustering sheep and cattle by small plane and motorbike, taking over a day to reach distant boundaries, Shelley couldn't imagine why we would need help on a farm where boundaries can actually be seen! What ever could we do all day? Although she had seen alpacas at Orange Agricultural Days and was intrigued by them, she had never expected to be involved with them.

Shelly has now been with us almost a year. Her touch with alpacas reflects her love and respect for the breed and her animal husbandry skills complement the standard we hold.

At the end of the working day, however, Shelley retreats to her art.



Two sisters and her mother are all talented artists in various media, including oil and pastel, but Shelley's speciality is black and white pencil sketching. She particularly enjoys copying photographs. Needless to say, it was not long before she decided to attempt sketching alpacas.

We believe the results are truly impressive. You can almost feel the character of the fleece in her work. She will take an animal from a photo, add some background, sometimes from another picture and, hey presto! a masterpiece.

Shelley is currently developing a group of six different alpaca pictures which will be sold in packs of gift cards
— a unique and original present.

We needed an assistant and were lucky enough to find an artist, too!

Any alpaca owner wanting a sketch can contact Shelley O'Brien c/- Benleigh Stud by phone on 052 502 737 or fax 052 503 447.

[Ed. The sketch above is to be used in material for promoting the AAA Show & Sale. You would have seen a coloured version on page 37. Thank you Shelley!]

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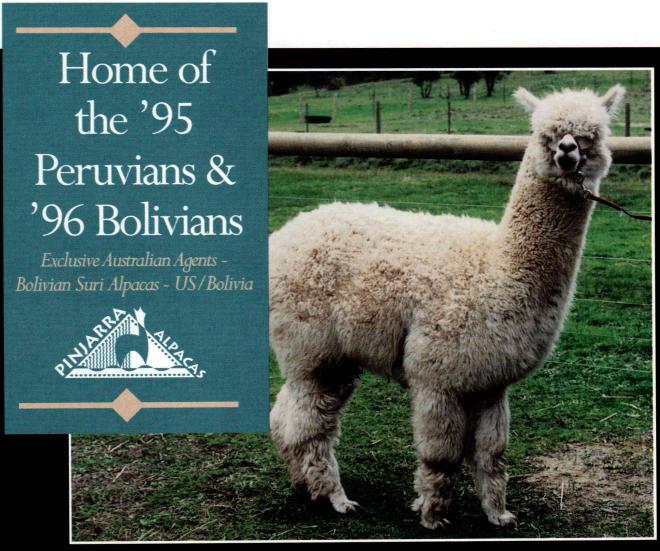
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Please address all letters to: The Editor, *Alpacas Australia*, C/- PTW Desktop & Design Unit 9, 663 Victoria Street, Abbotsford Vic 3067.

We've heard a story that we are involved in selection of animals for an importation into Australia.

We would like to take this opportunity to inform AAA members that neither of us are involved in any process of animal selection for any Australian person or stud. Just how this rumour got started is quite beyond us, but we want to

let everyone know that it is just that — a rumour. Thanks for the compliment, whoever you are. It's good to know we're considered a selling point. But we take a rather dim view of our names being used, especially as nobody asked us!

Cameron Holt, Victoria Maggie Kreiger, Saltspring Island, Canada

Vale Aloha Barnes

On the eve of the Seminar in Queensland, members were saddened to hear of the sudden loss of one of our members, Aloha Barnes. Aloha gave a lot to the industry in a very quiet way. She had many friends and she was recognised for her artistry, her dignity and her humility.

I do not recall ever having known anyone with the humility of Aloha. She was a brilliant cellist. Her loved husband is a noted French horn player.

Her funeral, held at a historic church, 'Bishopthorpe' at Sydney's Glebe, was a fitting tribute to her. Throughout the service, chamber music and singing relaxed those who were there to mourn a loved person and I am sure Aloha was there to listen too.

Those of us who share so many memories of her will remember her love of nature, her crafts, her animals and her family. To Campbell, our thoughts are with you.

To mark all that she gave to the industry, the award for the Champion Hembra Class at NSW RAS from 1997 will be named in her honour. 'Aloha', by the way, means 'love'.

> Pauline Nugent Kangaroo Valley NSW

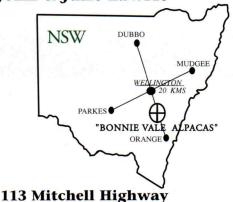


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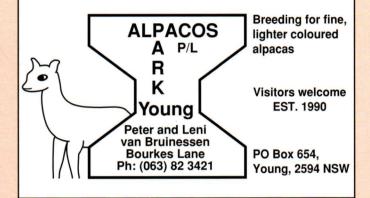
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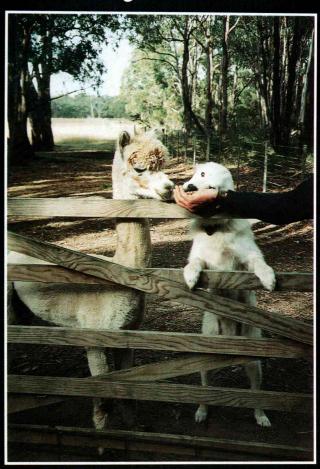
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TTEAM Trailer Training

In the course of teaching clinics, I have seen alpacas arrive in all manner of vehicles. Many of these animals have been loaded the morning of the clinic and experienced motorised travel for the first time. I believe that travelling, for an alpaca, is much more frightening then we realise. There are ways to ease an alpaca's fear and ease the stress of travel without investing an unrealistic amount of time.

The conveyance

Just because your alpaca will fit into it doesn't mean the conveyance is appropriate. A feeling of safety and security is very important to an animal under new and frightening circumstances.

Ideally, you are hauling your alpaca in something he can stand in (even if he must keep his head down). It is natural for most alpacas to lie down when they are travelling. However, when an alpaca is lying down, he has a small area on which to balance and little opportunity to create a stable platform. Nature has not designed alpacas for balancing while lying down in a moving vehicle.

You can help your alpaca relax more fully while travelling if you consider his balance. Car seats, uneven flooring and wide expanses of flat area all pose problems. Orienting your alpaca at an angle to the line of travel will help. Using hay bales or partitions will guide him into lying down in a way that contributes to his balance as well as giving him something to lean against.

If you must transport your alpaca in the back seat of a car, fill up the leg room area with some sort of firm filler: foam covered with old towels or flakes of straw wrapped in a tarp. Your alpaca will feel better if he doesn't have to worry about falling off the seat.

Noise, wind and sudden movements will all contribute to a feeling of anxiety. Wrap metal parts that clank and bang with cloth or duct tape and drive with awareness of your passenger. To understand what is like for your alpaca to be transported the first few times, imagine yourself being hustled into a new carnival ride — a roller coaster, for example. Imagine riding it



for several hours. Ideally, your alpaca's first trip is going to be very short — up the driveway and back

home. First impressions are really important. Your alpaca will learn to relax while travelling if his first few excursions are short and sweet.

Comfort is obviously important when it comes to your alpaca's attitude about riding. Dense padding is probably the most important factor that will contribute to a comfortable ride. An alpaca's legs and under belly are designed to rest on the ground for long periods. However, under normal circumstances, the ground wouldn't bounce and shift, nor would your alpaca be denied the opportunity to stand up and move around. In addition, many trailer floors are much harder than the ground. Thickness is not the same as shock absorption. Density is much more important. A two inch dense rubber mat will provide more in the way of comfort than a ten inch piece of non-dense foam.

Wind is another factor. Asking your alpaca to endure hours of an 80 km wind in his face is a bit much. A wind screen is a fairly easy addition to most conveyances. If you are bedding with vegetable matter, wind is a particular problem. Chaff blowing is no good for you animal's fleece nor his eyes.

Alpacas feel safer with another alpaca around. When possible, take at least two animals. If you are delivering an alpaca to a new home and you have room, take three and bring two back. Ideally, one will be an experienced traveller and will transmit this to his more inexperienced companions.

Loading

In an ideal world, we would all have time to train each alpaca to understand how to step or crawl into his particular chariot. The reality is that, many times, we just have to pick them up and put them in.

There are many times when it is necessary to physically put an alpaca into a vehicle. There are several ways to approach novice loading that make it much easier. Back your vehicle up to the barn or pasture opening. Creative use of panels will compensate for a lack of help. Try and create an aisle that leads into the vehicle then herd from the back. Most alpacas would rather not get in a confined space with a human. They will load much better if they can get into the trailer by themselves, without being led in. Look at your watch and be prepared to wait 15 minutes. You would spend that much time haltering an inexperienced alpaca and dragging and fighting him into the trailer. Time is a funny thing. It seems to go by faster when you are busy fighting than when you are waiting quietly for your alpaca to figure out that the thing you want him to climb into is a safe bet. Generally, an inexperienced alpaca will gladly jump in a vehicle with another alpaca that knows how to do it. You can off load the one you don't need.

Pulling an alpaca in from the head is almost always going to take longer and may result in injury. His tendency is to either lie down (you have now just taught your alpaca to lie down instead of load) or to throw all his weight to the rear quarters and balance off the lead rope. When your alpaca is physically organised in this way, it is not possible for him to jump forward. His only physical option is to rear up and back against the lead. If you are quick, you may be able to pull him forward into the vehicle when he is balanced on his two rear legs. This is not particularly safe for you or your alpaca and is a very scary way for your alpaca to find himself in a strange place.

Try it yourself. Hold on to a lead rope and lean back against pressure provided by a second person. Instruct your helper to keep steady pressure on your hands and then try to jump forward while you have your weight against the rope.

If you are loading a reluctant alpaca by leading him in from the front, try this. Work your way close to the trailer. Use your lead rope only to keep his nose and attention oriented toward the trailer — other than that, no pressure on the head. If your alpaca tries to back up, set your hand and resist. As soon as possible, slacken off the line.

Look at your watch and wait a full minute between giving signals to the head. And, be quiet! Your alpaca needs time and quiet to think about the trailer. Every time you let loose with 'Come on! You can do it!', you just distract the animal.

Back to the ideal world. You want to teach your alpaca to load into a trailer. You have time to create a few lessons. Perhaps you arrange a trailer loading party and get some friends together.

In the next issue of Alpacas Australia, I will demonstrate a fun and interesting way to both teach your alpaca to load and to trust you in the process.

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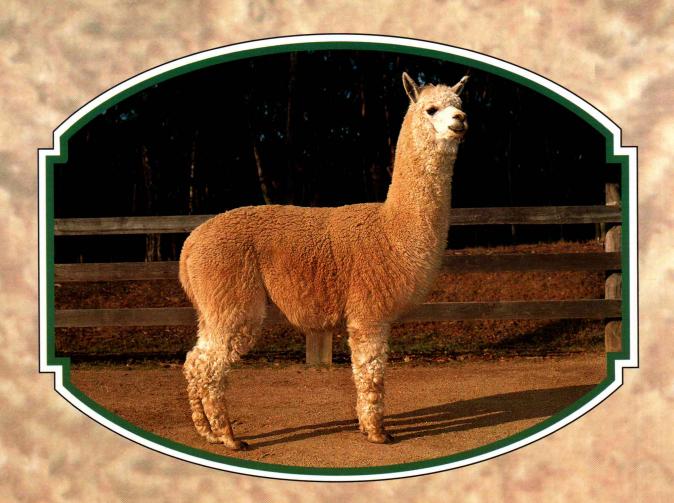
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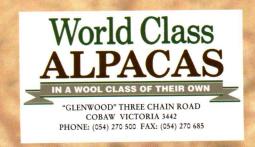
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