CASH MIRROR

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The monthly magazine devoted to cashmere goats and their fiber

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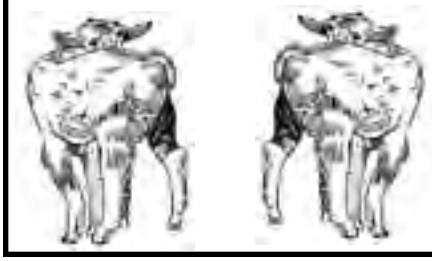

CASHMIRROR

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Legal Drivel

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The *CashMirror* welcomes contributions of articles and photographs. Submissions may be made by mail, fax or e-mail.

No responsibility will be taken for material while in transit or in this office, although we will certainly be real careful.

Cover photo by Linda Fox
Newborn!
A great photo like this is not hard to take—you just lie on your stomach in the barn, get as close to the baby as you can and try not to think about what you're lying in.

The Kids Are Here! The Kids Are Here!

Photo Captions

Below are captions for the photos on this page. It is your mission, should you choose to accept it, to match the correct caption to a photo:

1. Christopher Dobson and his daughter, Vita, meet Raven.
2. Question: How many kids fit under a milking stand? Answer: 9 (under this one)
3. "Yea, we're white, we have wattles. We're some of the favorites!"
4. How many kids can dance on the head of a pin?
5. Where have all the flowers gone?

Reflections

by Linda Fox

Our granddaughter, Samantha, came for a visit to the farm. She's a Phoenix "city kid" and just turned four years old last month. We took special care to broaden her horizons—show her the important things in life—like goats and fiber.

She learned lessons about wearing your new yellow barn boots out to do chores (which she convinced Grandpa to buy her at Walmart) rather than your fashionable town tennis shoes. The barn boots can be swished clean with a hose (city kids like to keep their boots clean between excursions to the barn) rather than the extended time that you have to wait in the boring house while your tennis shoes get cleaned in the washer.

We finished ear tagging the kids during her visit. She wasn't too thrilled with idea of punching holes in their little ears (and neither are we), but when we compared their tags to earrings for people, she decided it wasn't too bad. Before attaching the tag, we warned her so she had time to cover her ears. Some of them cried briefly and some didn't, but she seemed to find the process more tolerable when the sound was muffled.

We also taught Samantha how to sex goats—the boys have a tag in their left ear and the girls have a tag in their right ear. (More detailed sexing instructions are best left to the parents.) We spent a lot of time asking her if a specific goat was a girl or a boy. She didn't seem to catch on that you needn't check the tag on a goat nursing kids. One lesson at a time.

The tetanus shots (for kid bucks to be wethered) were a more difficult explanation. Having apparently experienced shots herself and having a vivid recollection, she recognized the tools and the danger at once. We explained that these were shots so the goats didn't get sick. We helped her survive this by giving her the job of handing Dr. Grandpa the cotton balls for the alcohol and the little green cheerios for the bander. We banded the boys out of her sight—we didn't want to have to get into an explanation of that procedure.

She also learned that baby goats are fun to hold, it's exciting to climb on hay bales, there's always pop in the barn refrigerator, and you don't kick at a goat who is nibbling your new boots. We learned that the several trips to the bathroom after all that pop interrupts your goat chores.

"Heh! I'm almost making something!"

Being a typical four year old, Samantha wanted to try everything and do everything by herself. She wanted to learn to spin. I thought it would be too frustrating for a toddler to try to keep the wheel going, let alone worry about drafting the yarn. It is certainly frustrating even for new spinners who are adults! I explained to her that spinning was very hard to do and that when she was five I would teach her to spin (figuring she'd forget and I could then tell her she'd have to be six.) She told me she couldn't wait two weeks until she was five and had to learn now. So, not wanting to tackle the resolve of a four year old, I let her sit in front of the wheel and pump on the pedal.

She said, "Heh! I'm almost making something!" I had to agree that she almost was. She changed directions on the wheel from time to time and had to use both feet to keep the wheel turning, but she was happy—for a while.

Then, she noticed that she didn't have any fiber and really *wasn't* quite making anything. I was in trouble. I predrafted a bit of fiber and let her feed it in, explaining about waiting until it was twisty, but not too twisty, before you let some slide in. Of course, at this point, she could no longer concentrate on her feet anymore and pushing on the pedal became hit and miss. So between drafting and retrieving the yarn from the spindle when it broke, I snaked out an adult foot from time to time to give the pedal an extra shove.

Fortunately, four year olds become masters of their subjects in five minutes or less so she had soon spun all the yarn she wanted.

She proudly proclaimed, as I quickly plyed her rather lumpy accomplishment (before she noticed that this might be another thing she could do), "I spun yarn! All by myself!" She put her ball of yarn in her travel bag, no doubt to impress the city kids back home.

When Readers Talk...

To the Editor:

This year there will be an Open Class Cashmere Goat Show at Crook County Fair. Several people have worked very hard to establish this show, and we hope cashmere producers from the northwest will support their efforts.

July 15 - 19, 1998 - The Fair
July 17, 4pm - The Cashmere Show
At Crook County Fair, Prinveville OR
Premiums paid through 4th place
Entry fee $2 per head

For more information, entry forms and premium books, contact:

Crook County Fair
PO Box 507
Prinvelle, OR 97754
541-447-8675

Having been involved with this fair for several years, I can tell you this is a fun fair, conducted in the spirit of fun and education. We will also be the first group to use the new livestock barns.

Cynthia Heeren
Hokulani Farms,
May 28, 1998

Linda and Paul,

I found this article recently (see "Poison Wood", page 12) and felt that it was important to pass along. I am guilty of ignorance concerning pressure-treated wood and its safe handling and have now taken actions to prevent any unnecessary exposure to my goats AND myself.

I did some additional research on the web and confirmed the information in the article. There are several web sites relating to EPA warnings concerning pressure-treated products.

I hope you will find room in one of your up-coming issues to print it. I would hate to have ANYONE lose a goat or other animal because of just not knowing!!

Thanks so much.

By the way, just an update from the Waggin' Wheel Ranch: Our six does gave us four sets of twins and two singles just a couple of weeks ago. Three of the sets of twins were from first-time yearlings! The Kapok Kid from SMOKE RIDGE CASHMERE sired all. (We call him Elvis!) The Kapok Kid just happened to take National Champion at the January Denver Livestock Show. Congratulations to Yvonne.

I was gone at work in Alaska for almost all of the arrivals. My wife, Cawnii, was midwife! Another first-timer (remember the article last year, "The Buck Stops Here or Who are You Kidding?" -- *December 1996 CM issue*) She did great! And now we are planning on buying seven more does to increase our herd. Amazing what in impact these little critters have!

Pictures and perhaps another article to follow in the near future.

Thanks again.

Pete Peterson
Waggin' Wheel Ranch
332 Cherry Creek Road
Thompson Falls, Montana
406-827-3011
email: wwranch@montana.com
May 19, 1998

Readers Talking...Continued on next page

Readers Talking Back
Continued from previous page

Hi Linda!!

...I'd also like to purchase a couple of miles of your "force field fencing." Remember a couple of issues ago when the old buck and young buck were discussing getting in with the does? Well, the conversation here would be something like this:

Young buck says to old buck..."Heh! There's a doe cycling in the next pasture. Let's jump this 6 foot fence and go breed her."

Old buck replies..."Take it easy lad. We'll just smash through this fence and breed the whole herd."

Actually (touch wood) I don't have a problem containing the goats however our guardian animals are a whole other story (one that I plan to write one day and send you).

Hope all is well in Oregon and the new house is comfy. Thanks for the monthly chuckles and enlightening articles.

Talk to you soon.

Pat Fuhr
Giant Stride Farm
Onoway, Alberta, Canada
May 24, 1998

What to Do With a Male (Goat, that is)

What do you do with all those cute, but definitely male, kids? Alas, the need for bucks is limited to a few (or one!) buck for a few minutes (seconds!) in the fall. Is there a market for stud bucks? Not enough to begin to keep up with the supply, unfortunately. So, we wether and/or sell for pets, meat, or whatever, the excess supply of males.

Having males around the house (barn) is more trouble than most of them are worth. They seem interested in practicing to breed at only a few days old and they can breed mom or sisters, starting at three months of age and lasting for (seemingly) forever (no Viagra needed!)

Keeping a whole herd of the big, smelly things is not usually feasible or desirable. They often need special fencing for starters. And they could use better manners. Keeping them out of sight of youngsters and from those with "delicate constitutions" is a must, given their disgusting habits.

Watching them posturing, butt heads and do other macho stuff is entertaining for an afternoon or two, but what then? Same old stuff, day after day, after day, after...

We put up with them 11-1/2 months of the year, caring for them in anticipation of their few weeks of glory, laying on their butts, eating and drinking (accompanied by related odors). At least they don't seem to have a relationship with the television remote control.

While keeping a wether around for his fiber sounds OK, at this stage of the market, it doesn't pencil out for most of us. So, what *do* you do with a male?

The Potential of Cashmere Production In South Africa

by S. Herrmann

Introduction and general information about the South African cashmere project

Three years ago a project for the establishment of a cashmere-producing industry was launched in South Africa. Within the Reconstruction and Development Programme of the new South Africa, the development of a cashmere industry can be seen as one possible opportunity for creating work for subsistent, predominantly black farmers, who belong mainly to the poorer, less educated and marginal groups in society. Additionally, a small cashmere-clothing industry can be developed, which can promote regional tourism opportunities leading likewise to benefits in terms of job creation.

Boer goats from the Adelaide Experimental Farm—These will be used for cross-breeding with Australian cashmere goats. Photo by S. Herrmann

The last three years were mostly used to create the basis for a successful development of a cashmere industry. The main parties involved in the process are the Grootfontein Agricultural Development Institute (GADI) in Middelburg, the Döhne Agricultural Development Institute in Stutterheim and the Agricultural Research Council in Pretoria, in which the research work is carried out, and the CSIR Division of Textile Technology (Textek) in Port Elisabeth, which serves as the fibre evaluation centre and which will later develop the necessary processing and marketing structures.

In an initial study, the down production potential of goat genotypes available in South Africa were studied. The breeds or strains, respectively, which were interesting in terms of a cashmere breeding plan were the South African Boer goat, the Savannah, indigenous goats and the Gorno Altai goat. Investigations on fleece quality and quantity were carried out for 400 animals in 1995 and 1600 goats in 1996. The animals studied in 1995 belonged to the Grootfontein Agricultural Development Institute in Middelburg, the Eastern Governmental Agricultural Institute in Adelaide, the Döhne Agricultural Development Institute in Stutterheim and to one commercial farmer, whereas the investigations in 1996 additionally included 1100 goats from 110 subsistence farmers and 360 animals from 12 commercial farms. In the evaluation of the combed material, the fleece characteristics such as raw and scoured fleece weight, down fibre weight and yield, down fibre fineness, fibre colour, presence of intermediate fibres, down fibre diameter profile[1] and fibre diameter ratio between down fibres and guard hairs[2] were considered.

The initial project phase also incorporated an information and mobilisation period. To coordinate the activities efficiently, the so-called Cashmere Working Group (CWG) was established in January 1996. Table 1 (next page) summarises the different organisations and institutions and their functions in that group.

To enhance the distribution of information and to motivate the farmers, especially in the Eastern Cape Region, where most of the goat farmers are located, different activities to announce the project tasks and goals were introduced at

Continued on next page

[1] The down fibre diameter profile is defined as percentages of fibres in the following ranges: I: <10 µm / II: 10-20 µm / III: 20-30 µm / IV: > 30 µm

[2] To enable easy dehairing, it is desirable that the guard hair to down fibre diameter ratio should be ≥ 4 and that the guard hairs have a mean diameter of > 60 µm (Smith et al., 1985).

South African Cashmere

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Organisation / Institution	Function
Emerging Disadvantaged Farmers Union (EDFU)	Support during fibre harvest; establishment of central fibre collection points in rural areas; transport of harvested material to Textek/CSIR
Agricultural and Rural Development Research Institute (ARDRI)	Dissemination of information; training courses; collection point during fibre harvest.
Döhne Agricultural Development Institute	Research
Eastern Cape Development Agency	Financial support for consultation work and information dissemination
Farmers Union of the East Cape	Representatives for farmers in rural communities; information dissemination; consulation work
Grootfontein AD	Research
CSIR / Textek	Research; establishment of a central evaluation, processing and marketing point; consultation work
Boer Goat Breeders Association	Consultation work
Fort Cox Agricultural College	Training courses and workshops, collection point during harvest; training of the governmental Extension Officers

Table 1: Structure and functions of the Cashmere Working Group

the beginning of 1996. Information leaflets and brochures were developed, in different local languages, translated and distributed. Furthermore, workshops about cashmere production were held for subsistence farmers in rural communities. Additionally, a few weeks before the fibre harvest started, representatives of the CWG organised consultations for interested farmers in which potential problems with cashmere production were addressed and discussed, and combs and plastic bags for the harvest were distributed. The harvested fleeces were afterwards collected and transported to the evaluation centre (Textek) and were evaluated concerning down fibre quality and quantity.

Another important issue consisted of the training of the governmental Extension Officers. The Extension Officers, who play a key-role in the cashmere project, have to act as consultants in terms of production and breeding problems and have to organise the annual fibre harvest and collection in the rural areas.

A database of all interested farmers and parties was set up which will be extended in the course of the project. This database will be the basis for the rapid identification of farmers or farmer groups for the realisation of future breeding and production goals.

Breeds or strains available in South Africa

The **Boer goat** is an animal of mixed blood with contributions from goats owned by Namaqua Hottentots, animals raised by local South African black tribes, a goat breed from Nubia in North America and goat lines originated from Europe and India (Barry & Godke, 1994). The Boer goats are characterised by a good confirmation, fast growth rate in kids, high fertility and fecundity, uniformity towards colour and type and hardiness along with adaptability. Another specific characteristic is a complete white animal with light to dark red head, ears and neck with colour pattern stretching not further than the shoulder blade. The skin is poorly pigmented.

The multipurpose Boer goats are normally kept for meat production by South African farmers. It was observed that especially the animals which are kept in the colder regions produce a certain amount of underwool which is shed during the months of July to September. The first precise indication of the existence of cashmere-type down on SA Boer goats was provided by Couchman (1988). References to the Boer goats as producers of very fine down fibres were made in popular reports by Teh and Gipson (1993) , Cunningham (1994), Sim (1994) and Paterson and Newmann (1995). It was indicated that the Boer goat fleece is characterised by down fibres of acceptable quality but in quantities too low to be commercially acceptable.

The **Savannah goats** poses the same body, fertility and meat production characteristics as the Boer goat; the main difference being the pigmented skin and the complete white coat colour.

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South African Cashmere

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Indigenous goats are mostly from the cross-breeding of the ordinary Boer goat and/or other breeds or strains. They are weak in conformation and vary in colour, which is sometimes related to the culture of the tribe. They are mainly used for meat production and ceremonial purposes.

The **Gorno Altai goats** originate from the Gorno Altai region in Siberia. In 1992 Gorno Altai goat embryos were imported from Scotland and a herd was established at the Rondebult Research farm / Sentrachem near Pretoria. The Gorno Altai goat is characterised by quite coarse, brown down fibres and a high down fibre production potential.

Summary of the evaluation of the down fibre production potential

A short summary of the down fibre characteristics of the different goat breeds or strains is given in Table 2 (below).

The **Boer** and **Savannah goats** showed an average down fibre weight of about 25 g with a high coefficient of variation (55 %) which indicated a considerable variation in down weight within these two strains. The mean down fibre diameter was 17.4 µm, with a coefficient of variation of about 20 %. From the animals investigated at the research farms, about 77 % of the animals had a down weight of between 10 and 50 g, 17 % between 50 and 100 g, 4.5 % between 100 and 150 g and 1.6 % between 150 and 200 g. Considering only the yearlings, it was observed that about 11 % of the females and nearly 23 % of the males have a down fibre production potential of more than 50 g. A certain number of yearling bucks and does showed a mean fibre diameter of less than 16 µm. These more productive goats are interesting in terms of future cashmere breeding (Herrmann et al., 1998).

Although the down are generally characterised by good crimp and style, an appropriate down fibre and guard hair diameter ratio and a good diameter profile without any indications of intermediate fibres, there remains an important lack in terms of down fibre length. With a relaxed length of approx. 20 - 31 mm the fibres are too short for a successful dehairing. During initial dehairing experiments, carried out by Steve Hachenberger /Castle Ranch, it was found that the down fibres act as a "second cut", i. e. most of the material was lost on the floor which results in a down fibre yield of only 5 - 10 %. Another potential problem would be processing these short fibres into high - quality yarns.

The **indigenous goats** were found to posses very fine and short down fibres with good crimp and style characteristics although the down fibre weight was commercially unacceptable.

Most of the fleeces tested from the **Gorno Altai goats** consisted of downs which were too coarse to be classed as cashmere although the down fibre weights were generally commercially acceptable. The harvested material, however, showed fleece characteristics resembling intermediate fibres and poor down crimp and style which indicate a possible cashgora influence.

Perspectives for the establishment of a cashmere industry in South Africa

To increase the down production potential of the available breeds or strains, a within breed selection has to be carried out which would include the identification of genetically superior animals and their use as parents for the next generation. Most of the cashmere characteristics are highly heritable and have large coefficients of variation which indicates that selection for a single trait would lead to a rapid genetic response. The positive correlation between fibre diameter and weight, however, indicates that the simultaneous improvement of both characteristics is likely to be

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	Boer Goats	Savannah	Indigenous Goats	Gorno Altai Goats
Down diameter	16.0 - 18.5 µm	16.0 - 18.5 µm	14.0 - 16.5 µm	18.5 - 19.0 µm
Down length	20 - 31 mm	20 - 31 mm	15 - 30 mm	28 - 31 mm
Down crimp	good	good	good	poor
Down style	good	good	good	poor
Down weight	10 - 50 g	10 - 50 g	5 - 15 g	100 - 500 g
Down yield (combed fleeces)	50 - 70 %	50 - 70 %	-	50 - 70 %
Down colour	white, white/colour	white	white, white/colour	brown
Other comments	-	-	-	silky handle, very matted, intermediate fibres

Table 2: Down fibre quality and quantity in South African double coated goat breeds or strains

South African Cashmere

Continued from previous page

slow. A within breed selection is most successful in breeds where the down fineness or the weight is extremely good and most of the emphasis can be placed on the other trait (Bishop, 1993).

Nearly none of the breeds or strains available in South Africa show clearly superior characteristics in terms of the important cashmere characteristics. Although the Gorno Altai goats are distinguished by high down fibre quantities, the quality is not acceptable for fibres marketed as cashmere. Cashmere is currently sold at two price levels depending upon the fibre diameter, hosiery (<16.5 µm) and weaving quality (< 18.5 µm). The down fibre diameter of most of the investigated Gorno Altai goats exceeded 18.5 µm. An intensive selection could theoretically reduce the down fibre diameter. The cashgora characteristics, resembling intermediate fibres, poor crimp and style, however, are undesirable in cashmere and it is difficult to select against them.

Whereas the indigenous goats posses no appreciable down quantity, in the Boer goat and Savannah population a certain percentage of animals having a fluffy coat cover, i.e. down weights of 30 - 150 g, are observed. Animals possessing such a higher down weight and having an acceptable down fibre diameter have to be selected and used as the basis for the cashmere breeding project. Besides the important traits of down diameter and weight, the length of the fibres have to be taken into consideration to enable successful dehairing and processing of the material.

Because of the fact that a within breed selection in the Boer goats and Savannah, involving the three characteristics of down weight, length and diameter, would result in a very low genetic success, it was decided to introduce a high - productive cashmere goat into this population. A crossbreeding project was launched at the beginning of this year which aims at the optimisation of the down production potential without sacrificing the meat production ability whilst selecting within the available Boer goat population and conducting crossings with Australian cashmere goats.

The breeding project is being funded by the German Volkswagen Foundation; the main parties involved being the Grootfontein Agricultural Development Institute in Middelburg, the CSIR Division of Textile Technology in Port Elisabeth and the Institute of Animal Breeding of the Humboldt University in Berlin / Germany. At the Grootfontein Agricultural Development Institute the crossbreeding and selection work will be carried out. Two lines of Boer goats, a selected line for down production potential and an unselected one serving as a control line, were established at the beginning of the year. The cashmere goats from Australia will be imported in August 1998 (5 bucks and 60 portions of semen) and firstly used in the mating period in November / December 1998. To secure a broad selection basis, it is planned to produce a F1- and F2-generation of crossings between Boer goats and Australian cashmere goats. The superior animals, i. e. the animals with the best combination of down fibre and meat production potential, will be selected and combined in an elite herd which will serve as a gene pool for further multiplication and dissemination of these genotypes. In the course of the project, performance tests on the meat and down fibre production of the different lines will be regularly carried out and phenotypic and genetic parameters will be calculated as the basis for the development of selection indices, taking into consideration the specific correlation between the production characteristics.

The Institute of Animal Breeding serves as the project coordinator and will be involved in the genetic studies.

At the Division of Textile Technology - the fibre collection and

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Boer goats at Adelaide Experimental Farm. Photo by S. Herrmann.

South African Cashmere
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evaluation centre - the annually harvested fleeces will be tested and evaluated, which includes also the development and establishment of fast and accurate procedures for the determination of down fibre characteristics. Furthermore, processing and marketing structures will also be created there.

A period of about 3 years will be required to develop a genotype which produces cashmere of a high quality and quantity and which can then be used to upgrade the now available goats. To ensure the availability of this superior breeding material to local farmers it is planned to set up buck stations in rural communities which should be run by the chief of the respective kraal.

Meanwhile all farmers who are interested in this way of agricultural diversification can conduct a within breed selection within their own flocks and can send the harvested raw material to Textek where the material will be tested in terms of down fibre quality and quantity and further processing and marketing will be organised.

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Susanne Herrmann was a scientist in the Institute of Textile Technology (Textek) / CSIR in Port Elisabeth, South Africa (7/96 - 6/98) working on the establishment of the basis for a cashmere industry in South Africa. Previously she was a scientist in the German Wool Research Institute of the Technical University of Aachen, responsible for the "Fibre meterology & physics" within the EU-project "Reseearch on the production of high quality cashmere from goats and its potential for agricultural diversification" and organisation and evaluation of international round trials on fibre testing facilities within the EU-project "European Fine Fibre Network: Coordination of research activities in the development of animal fibre production systems. Her Doctoral thesis was "A contribution to the methodology of animal analysis and investigations about the influence of breed or provenience and selected factors for fleece."

What is CSIR?
(And TEKTEK)?

The CSIR was formerly known as the Council for Scientific and Industrial Research and is now just known as CSIR. It is based in Port Elizabeth, South Africa and is Africa's largest scientific and technological research, development and implementation organization.

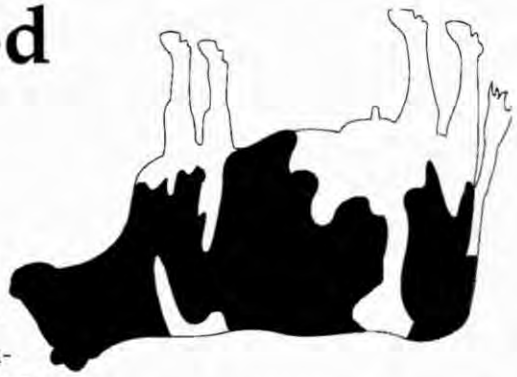
The Textile Technology (TEXTEK) Division of CSIR provides integrated, multi-disciplinary textile, clothing and related technologies which are aligned to national priorities. TEXTEK provides a wide range of technological products, services and solutions to the primary producers, processors, and end-producers in both the development and industry arenas.

The facilities and technology portfolio of this small-scale and vertical textile plant cover most aspects of the mechanical and wet processing and utilization of textiles and clothing.

TEXTEK adds to the greater and more cost-effective production and utilization of natural and synthetic fibers through world-class R&D. It aims to improve the competitiveness of companies in southern Africa through the development and implementation of specialist services concerned primarily with quality and productivity improvements.

TEXTEK participates with Government structures, industry and developing communities to improve the quality of life of urban and rural communities, and to assist micro, small and medium enterprises through innovative technologies and business development. In the longer term, Textek is instrumental in the facilitation of emerging fibre-based industries such as flax, silk, cashmere and their by-products which conform to national and regional policies for growth, employment and redistribution.

Poison Wood



Ashes are Hazardous!

The following important information was submitted by Pete Peterson, Waggin' Wheel Ranch, Thompson Falls, Montana.

The spring and summer building season is firmly upon us and the following is a timely reminder of the hazards associated with a commonly used building material.

Among building materials, wood is ideal: beautiful, strong, easily shaped and renewable. Its one big flaw is vulnerability to decay and insects. In the 1930's, scientists found a way to infuse wood with a solution that included copper (toxic to the fungi that cause rot) and arsenic (then the most common insecticide). To ensure the protection would last and that builders and the environment wouldn't be hurt, they also added chromium which triggered a chemical reaction that locked the pesticides into the wood.

A single 12 foot long 2 by 6 contains more than an ounce of arsenic—enough to kill 250 adults, were they to ingest it. Chromium and copper kill plants and marine life, but arsenic presents the gravest danger to humans and animals.

Bill Hinkley, a top official with the Florida EPA says, "It can leave you dead at high doses. It can kill you at moderate amounts over a period of time, and it's a carcinogen at low levels."

Dairy farmers Peggy and Jim Janson of SackRapids, Minnesota had to replace 18 Holstein heifers after a thunderstorm spooked them over a fence and into a neighbor's farm. Jim retrieved them, but they all died within four days. State Investigators determined that the cows died of internal bleeding and liver failure caused by arsenic poisoning. They traced the arsenic to ash dumped on the neighbor's land after someone burned scraps of pressure-treated wood to heat a house. Preservatives made the ash taste salty which attracted the cows. Mike Murphy, a University of Minnesota veterinary toxicologist, found that 5 tablespoons of the ash had enough arsenic to kill a 1,100-pound cow; a single tablespoonful could kill a 150-pound human. "I don't think people really understand how dangerous pressure-treated wood can be when it's burned," Murphy said. In 1988 the EPA outlawed the incinerating of pressure-treated wood.

Some homeowners, unaware of the danger, burn pressure-treated wood to heat their homes. In 1984, the Journal of the American Medical Association reported the fate of a Wisconsin family who heated their house this way for four winters. Mysteriously, they lost their hair and suffered nosebleeds, skin rashes and extreme fatigue. "Headaches were frequent, and the parents complained of 'blacking out' for periods of up to two hours followed by feelings of disorientation. The two children had multiple seizures described as grand mal" the journal reported—all because the family breathed arsenic-laden dust. The family's houseplants and fish were less susceptible to arsenic, but they died anyway, victims of copper poisoning.

The message here is clear: Pressure-treated wood products can pose significant hazards if not properly handled. The following guidelines should be followed when using pressure-treated wood products:

Scraps should NOT be burned but should be disposed of as ordinary household trash.

Young children should NOT be allowed to play with wood scraps or near sawdust.

When working with these products, wash your hands prior to smoking or eating.

Keep these products and ashes AWAY from all livestock and animals.

There are alternatives to wood treated with arsenic. Ask your lumber supplier for details.

Pressure Treated Wood = Arsenic + Copper + Chromium

Dracula's Goats

By Linda Fox

In Romania, animal breeding is an ancient occupation. Since the early Neolithic Age (4,000 BC or so) when the local folk were primarily nomadic, goats were one of the first common livestock. Cattle, sheep and other livestock became more common as people traded their nomadic ways for stationery living. First there were crude huts, then stone or mud buildings and finally a satellite receiver on every grass rooftop. We call this civilization.

Trading documents from the Middle Ages (14th and 15 centuries) mention animal breeding as the mainstay of Romanian medieval agriculture. Ancient trading documents regarding exported products to the south of the country (at the Danube) mention trading of animal hides including sheep, ox and goat.

Although it is indicated that goats were raised in all sections of Romania, the most goats were raised in the districts along the Carpathian Mountains, especially in the southern and eastern Carpathians.

During the last 10 - 15 years in Romania, the number of goats has changed differently from the preceding years. The number of goats increased to over a million between 1989-1991, and then decreased by 1995, down to 745,000. During the last few years, a change has occurred in the average number of goats held per producer. Before 1989 - 1991, the average number of goats owned per breeder was 3-10. Since 1993, the number has increased up to 100 - 300 per breeder. Fewer people are owning goats in Romania, but those who do keep goats, keep more of them.

Research papers mention the "Carpathian breed" which is the label given the goat bred in Romania. They also mention the "white of Banat" as the variant of the Carpathian goat, improved through crossbreeding with specialized breeds such as the Saanen and German Noble.

As a result of studies on goats in different areas of Romania, it has been concluded by the scientists of the Laboratory for Improvement and Genetics (a division of the Institute of Montanology) that there is a large variation between goats raised in different areas of Romania. Because of these differences, the scientists are avoiding the use of the term "Carpathian breed." They note that there are great numbers of goat populations "more or less Carpathian" well adapted to the local conditions (plain, hill, mountain).

The primary characteristics of the "Carpathian" goat are:

Weight: 35 - 45 kg (77 - 99 lbs.)
Size: 63 - 81 cm (25 - 32 inches)
Milk production: 140 - 400/liter/head (37 - 106 gallons/ head)
Color: Mono-colored (white, brown, black, grey, reddish)
Kidding rate: 125 - 200%

Romania and surrounding countries and used-to-be countries.

The variability of the goats' characteristics indicate a lack of selection for a "pure" breed. Goats are bred for local preferences, often based on ancient inherited tradition, for color, presence or absence of horns, ear length, hair length and other desirable traits.

Most of the year, the goats graze on native feed, but ration may be supplemented in the winter, or during lactation and for milk production stimulation, with concentrate forage or hay.

The modern Romanian breeder realizes the importance of improving his herd through breeding, using different breeds brought into his own herd for improving his stock. Breeds used to improve local stock include the Saanen and French Alpine.

The above information was derived (with difficulty) from a rough English translation on an internet page from the Institute of Montanology (Cristian - Sibiu) at http://www.world-goat-centre.com/UK/Goat/Romania/CARPATHE_ANGLAIS.HTM
The photographs of their goats look much like our own cashmere goats. They are horned and hairy and vary in color.

The Carpathians

European mountain range, about 900 miles long, running from Czechoslovakia through Poland, the USSR and Romania. Though an extension of the Alps, they are much lower. The North Carpathians are densely forested, with isolated valleys inhabited by the Slav and Magyar peoples. The South Carpathians, also known as the Transylvania Alps, are more accessible.

Book Report

By Linda Fox

Books to *NOT* Read

(An Anti-Book Report)

Over the past years, I've mentioned several books I thought were worth reading. In a search for good books, you often run across not-so-good books. Not being one often accused of focusing on the good and ignoring the bad, I'd like to pass along my list of books I'd recommend **not** reading.

The reason these books are on my recommended not-to-read list is because of their poor attitude toward goats.

At the top of the list has to be James A. Michener's 1963 book "Caravan." A quote from the book concerning goats is as follows:

> *"Goats. Those damned goats are the curse of Asia. God gave us a fertile land, covered with magnificent trees and soil rich enough to feed all men. But the Devil got even by giving us just one thing. Goats. And they took care of the forests. Ate all the young trees. And the rich fields. Ate the cover off and turned them to deserts. Probably the most destructive animal ever created. Much more dangerous than the cobra."*

I believe that Michener is saying here that he does not like goats. And I should write him and complain, if he's still alive. When an author of his stature slanders our beloved species in a major work of this sort, read by millions of people already and sure to be read by generations more, there will no doubt be an effect on scores of potential goat owners. Don't read this book. If you've already read it, don't read it again.

A more recent book with a poor attitude towards goats is "Relic," the 1995 book by Douglas Preston and Lincoln Child. Even though the book jacket proclaims it as a New York Times Bestseller and The Major Motion Picture, you should avoid it.

"Relic" features a huge, hairy monster who regularly slaughters (human) victims and eats out their thalamus glands. This, I don't mind. My objection is that preceding the entrance of the monster, the future victim always mentions a "horrid, goat-like stench." This advance smell warning is used in the book much like the "dum-Dum-dum-Dum" music in the movie "Jaws." If you hear the music, watch out for the shark! If you smell the goat stench, here comes the Relic!

Apparently the authors are referring to the pungent odor of a buck in rut at close range, but they do not make this distinction in the book. A goatless reader is likely to be convinced that all goats smell bad. Don't read this book. I'd recommend avoiding the movie as well—for two reasons—the goat thing and it's a disappointing film.

Another series of books by Laurell Hamilton entitled "Lunatic Cafe," "Bloody Bones," "Dancing Corpse," and others with similar gruesome titles, should not be on your Book Club list. The modern-day heroine, Ms. Anita Black, aka Vampire Slayer with an attitude, uses goats for ritual slaughter on a regular basis to assist her in raising zombies and other undesirables from the dead in the alternative time line portrayed in the book. Ms. Blake and her werewolf boyfriend, Richard, battle the forces of evil in the City—which usually turn out to be vampires with attitudes. Fortunately for you, I was able to track down the whole series on special order and read them all so I can tell you with authority than you shouldn't read any of them.

Well, maybe you could read just the first book, "Lunatic Cafe," because it's a real kick except for the goat thing and you could just skip over the bad goat parts. However, you should definitely show your resolve by not buying the succeeding volumes!

For at least 20 years, I have been verbally non-recommending the book "Five Acres & Independence," written by M. G. Kains, B.S., M.S. in 1935. I believed that the book's only mention of goats was a one-liner: "Goats have no place on a small farm." After locating my well-used copy of the book and finding the suspect reference, on page 114, I find that the quote is "*Sheep* have no place on the small farm." The paragraph following this reference highly recommends goats for a few acres. Never mind...

Another undesirable book which Paul just finished reading is entitled "The Reality Dysfunction", written by Peter F. Hamilton. I don't even need to read this one to not recommend it. Paul's warning is good enough for me. We looked up some of the bad goat references in the book to let you know how bad they were, but they were too awful to print, so you'll have to take our word on this one.

And lastly, I feel I must bring up the big one—the Bible. Do you know what it says about goats?

(....CRASH...Sizzle...sigh...)

Publishers Note: I arrived home to find this saved file on the computer and a small pile of ashes in chair at the computer station. That was last Thursday. Has anyone seen my wife?

GOAT MILK VERSUS COW MILK

From the GOAT HANDBOOK
By G. F. W. Haenlein and R. Caccese
University of Delaware, Newark

To most people today, especially in the more developed countries, the term "milk" is synonymous with cow milk, as if cows alone possess a singular ability to produce mammary secretions. Perhaps nowhere has the feeling been more prevalent than in the US, where over 10 million cows are maintained to provide an abundant, clean source of nourishment and refreshment to our country, producing more than 125 billion pounds of milk annually. Yet, on a world wide basis, there are more people who drink the milk of goats than from any other single animal.

Over 440 million goats (world wide) produce an estimated 4.8 million tons of milk that is predominantly consumed locally, or processed into various types of cheeses.

Here in the US, which historically has been one of the staunchest denigrators of the "stinking" goat, there are approximately a million dairy goats actively producing milk. Most of the upsurge in goat popularity has been the result of a growing trend towards attaining some measure of self sufficiency on the part of many people, for both economic and aesthetic purposes. A goat will eat little, occupy a small area and produce enough milk for the average family (a good milker will produce about a gallon a day); whereas the prospect of maintaining a cow in a suburban backyard is usually more than the homeowner is willing or able to cope with. Hence the growing popularity of the "poor man's cow".

As the interest in dairy goats and their products continues to rise, it is apparent that many misconceptions, discrepancies and exaggerated claims are being perpetuated. A comparison of cow and goat milk seems to be in order, so that some prejudices against goat milk may be erased. Also, while goat milk is somewhat unique, it is certainly not a magical elixir.

Also, while goat milk is somewhat unique, it is certainly not a magical elixir.

One of the primary misconceptions concerning goat milk is that it has a peculiar "goaty" odor or taste to it. This effect is produced by the presence of the buck, whose scent glands are rather odoriferous and may indeed cause the "goaty" type of milk people object to if he is present among the herd, especially at milking time. Does, however, do not have the powerful odor of the buck and milk produced in the absence of a buck should bear no objectionable odor.

Diet also plays a large role in the palatability of goat milk, as well as cow milk. While cows are usually rather closely regulated as to what they may eat and when, goats are often allowed to consume a great variety of materials at any time, including browsing. This kind of feeding may allow a certain "off" taste or smell to be transferred to the milk, just as cows may produce a "garlicky" milk from some spring pastures. What holds true for the cow also holds for the goat; i.e. what comes out is based on what goes in! If goats and cows are similarly managed, the smell and taste of both milks are quite comparable.

Goat milk is similar to cow milk, in its basic composition. In both cows and goats, there are considerable differences between breeds, and among individuals of a breed. There are 6 breeds of dairy cows in the US, and 6 breeds of dairy goats producing milk.

The Saanen is best known as the Holstein of the goat world, producing a high quantity of milk with somewhat low fat levels. At the other extreme is the Jersey of the goat world, the Nubian. This breed produces a lesser amount of milk with a high fat content. The Toggenburg, LaMancha, Oberhasli and Alpine fall somewhere in between.

However, there are also differences that give goat's milk a place for special purposes.

Allergies appear to be more common than formerly thought, especially in very young children. In an allergic type reaction, the symptoms are produced by histamines,

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Goat Milk

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which are stored in body cells. Histamines are released when triggered by a local stimulus. Antibody-antigen type reactions that manage to find an anchorage on cell walls trigger a release of histamine and produce the allergic symptoms. Such a release brings on a congestion of the capillaries and a flooding of the intracellular spaces by the lymphatic glands. The stimulation of local nerve endings also occurs. People who display an allergic reaction are usually more sensitive to the release of a given amount of histamine and also tend to produce greater numbers of antibodies to certain proteins.

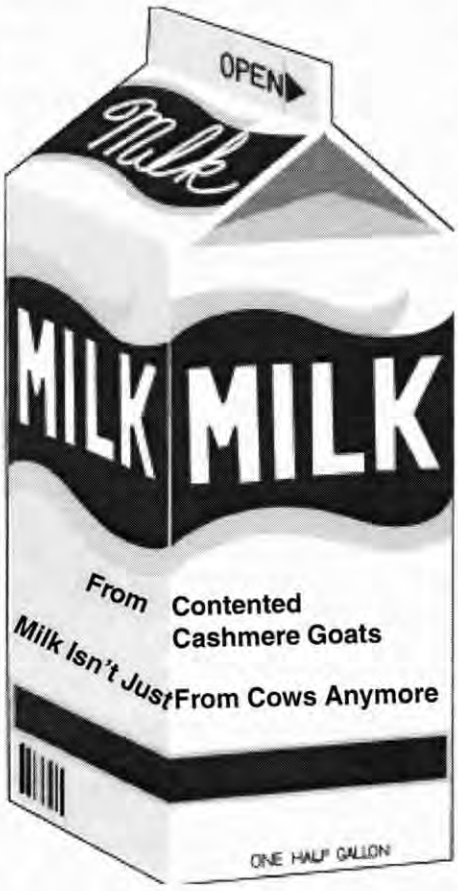
Some of the so called "sudden deaths" of infants seem to be related to allergic type responses, resulting in anaphylactic shock. Of the infants who suffer allergic responses to cow's milk, some are reacting only to the bovine serum present in cow milk. Most infants are allergic to various constituents of cow milk which may also be present in goat milk. Individuals who are allergic to bovine serum in cow milk will undergo also an allergic reaction to a variety of dairy products that are made with cow milk.

Other types of digestive upsets can result from milk due to a lack of the lactose digesting enzyme. While the presence of lactase is universal in infants (up to 3 years), the presence of this enzyme in adults is somewhat irregular and genetically determined.

Fat

One of the more significant differences from cow milk is found in the composition and structure of fat in goat milk. The average size of goat milk fat globules is about 2 micrometers, as compared to 2-1/2 - 3-1/2 micrometers for cow milk fat. These smaller sized fat globules provide a better dispersion, and a more homogeneous mixture of fat in the milk. Research indicates that there is more involved to the creaming ability of milk than merely physical size of the fat globules. It appears that their clustering is favored by the presence of an agglutinin in milk which is lacking in goat milk, therefore creating a poor creaming ability, especially at lower temperatures.

The natural homogenization of goat milk is, from a human health standpoint, much better than the mechanically homogenized cow milk product. It appears that when fat globules are forcibly broken up by mechanical means, it allows an enzyme associated with milk fat, known as xanthine oxidase to become free and penetrate the intestinal wall. Once xanthine oxidase gets through the intestinal wall and into the bloodstream, it is capable of creating scar damage to the heart and arteries, which in turn may stimulate the body to release cholesterol into the blood in an attempt to lay a protective fatty material on the scarred areas. This can lead to arteriosclerosis. It should be noted that this effect is not a problem with natural (unhomogenized) cow milk. In unhomogenized milk this enzyme is normally excreted from the body without much absorption.



Another significant difference from cow milk is the higher amount of shorter-chain fatty acids in the milk fat of goats.

Furthermore, glycerol ethers are much higher in goat then in cow milk which appears to be important for the nutrition of the nursing newborn. Goat milk also has lower contents of orotic acid which can be significant in the prevention of fatty liver syndrome. However, the membranes around fat globules in goat milk are more fragile which may be related to their greater susceptibility to develop off-flavors than cow milk.

Protein

The protein composition of cow and goat milk is fairly similar, although the typical major alpha-s-1- casein in cow milk is absent in goat milk and the formation of casein curd under rennin action is different. The quality of curd is judged on two criteria:

1. Curd tension - a measure of the hardness or softness of the curd. The softer the material, the more easily digestible it is. This tension is largely a breed characteristic. Holsteins generally have the softest curd in the bovine family. Cow range = 15-200 g, avg = 70 g. Goats range = 10-70 g, avg = 36 g.

2. Relative size of flakes - formed by the addition of strong acid to

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Goat Milk

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milk, causing curd flakes to precipitate. It can be seen that goat milk forms finer flakes more rapidly than cow milk, which tends to form large lumps and more slowly. This test tends to duplicate reactions that occurs in the stomach, and demonstrates why goat milk is more easily and rapidly digested.

Vitamins

Goat milk has greater amounts of vitamin A than cow milk. Also, goats convert all carotenes into vitamin A, creating a white type of milk.

Vitamin B levels are a result of rumen synthesis in goats and cows, and are somewhat independent of diet. Goat milk is higher in B levels especially riboflavin, but vitamins B6 and B12 are higher in cow milk. Niacin levels are also higher in goat milk.

The milk levels of vitamin C and D are low and roughly the same for cows and goats.

Lactose

Cow milk is higher in lactose levels, although the difference is minor.

Ash (Minerals) and Buffering

Goat milk is higher in the minerals, calcium, potassium, magnesium,
phosphorus, chlorine and manganese; but it is lower in sodium, iron, sulphur, zinc and molybdenum.

Cow and goat milk is slightly on the acid side, with a pH range of 6.4-6.7. The principal buffering components of milk are proteins and phosphates. The good buffering capability of goat milk appears to make it ideal for treatment of gastric ulcers.

Goat milk has also less of certain enzymes, ribonuclease, alkaline phosphatase, lipase and xanthine oxidase. Thus, some differences exist but their nutritional significance in human nutrition have yet to be researched and documented.

The goat probably will never replace the cow for commercial production of milk, but there seems to be a great potential for diligent efforts in practice and research to improve production and marketing of goat milk and its products.

The value of goat milk as an alternative food for children and sick people, because it is easier digested, extends also to feeding animals, young dogs, foals, even calves. Experience in the field indicates that calves can consume large quantities of goat milk while similar amounts of cow milk may result in scouring calves. Goat milk can, therefore, have a value not only for growing veal but also for raising valuable dairy replacement heifers, which will benefit from the high milk intake and show superior growth.

Milk
Goat Herders' Summary

When they talk of the six breeds of goats who produce milk in the US, they don't count cashmere—they also produce milk, sometimes a lot.

More people in the world drink goat milk than the milk of any other animal.

The "goaty-flavored" milk rap is most likely caused by a nearby buck or a flavorful diet, although the membranes around the fat globules are more fragile than a cow's and may make goat milk more susceptible to picking up odors.

Goat milk is whiter than cow milk because goats convert all carotenes into Vitamin A.

Goat milk is more digestible than cow milk due to smaller-sized fat globules. Also, when acid is added, as in digestion, goat milk forms finer flakes, more quickly than cow milk.

Recipe!

Southwest Leg of Goat

From the Texas Agricultural Extension Service Publication, "South Texas Recipes"

1 leg of goat (5-7 lbs), boned
1 c wine or vinegar
1 c vegetable oil
2 cloves garlic, whole
1 bay leaf, crumbled
1 t rosemary
1/2 t crushed pepper
2 t salt
1 t sage
3 large potatoes
3 onions
3 large chiles
2 garlic cloves, skins removed

Combine vinegar, oil and seasonings and pour over goat. Cover and marinate in refrigerator 12 to 24 hours, turning often.

Remove goat, strain marinade and reserve. Quarter potatoes and onions and place in shallow roasting pan along with chilies and garlic and pour 1/4 cup marinade over vegetables. Place goat on roasting rack over vegetables. Pour 1/4 cup marinade over goat.

Roast at 325 ° F for approximately 25 minutes per pound of goat. Baste with 1/4 cup marinade every 20-30 minutes before carving.

Serve with vegetables. Use drippings for gravy if desired.

On the Cover of the Rolling Stone...sort

The summer, 1998 issue of Spin-Off magazine, which is pretty much the magazine for spinners has a cover story on our favorite subject, cashmere. The article was written by Judith MacKenzie, Montana resident and noted spinning instructor and fiber artist. Judith will be an instructor at SOAR '98, the Spin-Off Autumn Retreat September 6-13, 1998, at Lake Tahoe, California. Judith is the creator of several spinning video tapes including "Spinning Exotic Fibers & Novelty Yarns."

In addition to a great story about cashmere by Judith from a spinner's viewpoint, the article is delightfully set off by photos of cashmere goats from Marilyn Ackley and Anne Repaske, provided by the Eastern Cashmere Association.

You should get this article to read. Whether you agree with all it has to say is immaterial. Judith presents cashmere from a spinners point of view—and a major spinner at that. If the market for your cashmere is spinners or as a fiber person yourself, this article contains useful information.

In Judith's view, the ideal length for cashmere for spinning is between 1-1/2 and 2-1/2 inches. I have never heard someone say that cashmere can be too long before. Judith explains that longer fibers tend to organize themselves (clever little fibers) in the spun yarn in a parallel fashion (worsted form) and this prevents the yarn from becoming fluffy during fulling.

Judith states that the price of cashmere can range from $96 to $250 per pound ($6.00 - 15.63 per ounce) in the current market. She warns spinners to beware of cashmere that looks like dryer lint as this is the "shoddy" left over from the combing process.

She also warns spinners to beware of "scurf", which she defines as little pieces of skin flakes that look like dandruff. She has attempted to remove scurf by combing, carding, scouring and boiling without success and, she says they look unattractive in a finished garment.

The article explains that quality cashmere is readily available to a spinner as commercially-prepared top, direct from the goat at local farms (don't let the goats keep the money) and in a blended form, often mixed with fine merino, silk or other exotics. One of Judith's favorite blends is natural brown cashmere, silk and Montana-grown qiviut. She describes a garment made from this blend (finely spun and lacy knit) as a "luscious, warm cloud."

Her instructions for spinning include directions for encouraging the fibers to turn on their edge when spun. The goal is to produce an interlocking web, rather than a string of parallel fibers. The web enhances cashmere's natural ability to provide warmth without weight, by trapping air in the yarn. Judith recommends teasing the fiber into a fluffy mass before spinning or intentionally taking apart the cashmere top, layering it and rolling it lengthwise into a rolag. She also suggests rolling a small section of top around a stick (I use a knitting needle.)

to make a puni.

Cashmere is best spun using the woolen method, letting the twist into the web. But, Judith explains, the true woolen method is often difficult to achieve as the cashmere fiber is fine and silky. She recommends the next best choice as the modified long draw or the semi-woolen method of spinning.

Judith recommends setting your wheel tension light, your scotch brake light (if you have one) and using the highest ratio your wheel will allow. The cashmere will need to have a moderately high twist.

She recommends always plying your cashmere, unless you have a good reason not to. She also suggests, plying two, two-plyed strands (called cabling—ply in the opposite direction that the singles were plyed) which produces a great yarn for socks.

Judith explains the fulling process for cashmere. Fulling is necessary to enhance the character of the cashmere. Don't faint here, but fulling cashmere is accomplished through heat, lubrication, friction and shock. After you have carefully harvested, handled and stored your cashmere to prevent the dreaded FELTING, after you carefully spin the fragile stuff and gently ply it into its exquisite little skeins, Judith suggests that, before you knit it, you pound the heck out of it in hot soapy water with a bathroom plunger. The exact process, as she describes it is as follows:

> Fill your sink with the hottest water you can get from the faucet and lots of Dawn dishwashing soap.
> Pound the yarn vigorously in the sink with the plunger.
> Squeeze out the water and plunge into ice-cold rinse water.
> Remove as much water as you can, either by using the spin cycle on your washer or putting the skein in a towel and standing on it.
> Then, whack the skeins good and hard on the edge of the table or countertop.

This abuse will fluff up your yarn considerably and, as Judith claims, the yarn "blooms and softens before your eyes." Yarn to be hand-knitted is fulled at the yarn stage; yarn to be machine knitted or woven is fulled at the finished product or fabric stage.

Current Research Projects Involving Cashmere-producing Goats

Courtesy of USDA, CRIS

ACCESSION NO: 0177810
SUBFILE: CRIS
PROJ NO: TEX08559
AGENCY: CSRS TEX
PROJ TYPE: HATCH PROJ.
STATUS: NEW
START: 09 MAR 98
TERM: 08 MAR 03

INVESTIGATOR: Lupton, C. J.; Huston, J. E.

PERFORMING INSTITUTION:
SAN ANGELO-TAMU AGR RES CNTR, TEXAS A&M UNIV
COLLEGE STATION, TEXAS 77843

CONCURRENT PRODUCTION OF HIGH VALUE FIBERS AND MEAT USING LAMBS AND KIDS

OBJECTIVES:
1. Determine if the genetics are available in the U.S. for production of exceptionally high value wool, mohair, and cashmere.

2. Establish the breeding, feeding, housing, animal and range management, fiber preparation, and marketing practices required to produce and sell exceptionally high-value wool, mohair and cashmere.

3. Establish the economics of producing exceptionally high-value wool, mohair, and cashmere under various management regimes.

4. Determine if high-value animal fibers can be profitably produced concurrently with highly desirable, lean carcasses for the U.S. meat market.

APPROACH: The objectives will be met by first surveying U.S. Rambouillet and Merino sheep, Angora and Cashmere goat flocks to identify and subsequently obtain livestock having the genetic capability of producing superior, high-value fibers. Male offspring from these superior animals will be evaluated in two production systems (on range and housed), with and without protective coats, to establish the numerous genetic, management, nutritional, and financial variables required for profitable production of high quality fibers and lean carcasses.

2. ACCESSION NO: 0175600
SUBFILE: CRIS
PROJ NO: OKLX-9703206
AGENCY: CSRS OKLX
PROJ TYPE: SPECIAL GRANT
PROJ. STATUS: NEW
CONTRACT/GRANT/AGREEMENT NO: 97-38814-4150
START: 01 SEP 97
TERM: 31 AUG 00
GRANT YR: 1997

INVESTIGATOR: Litherland, A.; Sahlu, T.; Coleman, S.

PERFORMING INSTITUTION:
AGRICULTURAL RESEARCH, LANGSTON UNIVERSITY
LANGSTON, OKLAHOMA 73050

SEASONAL MANIPULATIONS TO IMPROVE CASHMERE AND MEAT RETURNS IN GOAT

OBJECTIVES: To quantify the natural seasonal cycle of cashmere growth. To quantify the response, in fiber growth and breeding cycles of two methods of melatonin treatment applied in April in the US. To determine whether shedding, following the cessation of spring melatonin treatment, can be prevented by the suppression of plasma prolactin concentration.

APPROACH: Eighty cashmere producing does will receive in March either no treatment or melatonin treatment orally at 3 pm (3 mg) or by a single continuous release melatonin implant (18 mg, Regulin,

Who says there's no research going on about cashmere goats?

effective for 6 weeks). Plasma concentration of prolactin and melatonin will be determined by radioimmunoassay. Stretched down and guard hair fiber length will be measured on four sites of the goats at two weeks intervals. Skin samples collected at the start of melatonin treatment, at the cessation of treatment and at monthly intervals for three months will be processed for histological measurement. Data will be analyzed using SAS procedure of repeated measure in time.

3. ACCESSION NO: 0169216
SUBFILE: CRIS
PROJ NO: TEXR-9502583
AGENCY: CRGO TEXR
PROJ TYPE: NRI COMPETITIVE GRANT PROJ. STATUS: EXTENDED
CONTRACT/GRANT/AGREEMENT NO: 95-37500-1950
START: 01 SEP 95
TERM: 31 AUG 98
FY: 1996 GRANT YR: 1995

INVESTIGATOR: Xu, B.

PERFORMING INSTITUTION:
HUMAN ECOLOGY, UNIV OF TEXAS, AUSTIN, TEXAS 78712

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Research

Continued from previous page

CHARACTERIZATION OF NATURAL FIBERS BY IMAGE ANALYSIS

OBJECTIVES: This proposed research is to create an image analysis system for measuring properties of natural fibers. The project will consist of four main tasks: develop image processing algorithms effective for enhancing various types of fiber images, define measurable terms for characterizing important fiber properties (e.g., staple length, fiber diameter), create a database containing specifications for grades of natural fibers, and develop classification methods for automatic fiber grading, develop a software package in a PC compatible computer to build a system that can be commercialized.

APPROACH: To construct an image analysis system, we will use a color scanner and a CCD camera as image input devices, an imaging board as a frame grabber and display adapter, and a PC computer. The CCD camera will be equipped with a zoom lens or a light microscope to gain different magnification. A software package running under the Microsoft Windows environment will be developed with Visual C/C++. New image processing algorithms will be explored to overcome common difficulties in correcting the uneven background of an image, enhancing the low contrast, separating touching fibers, and extract boundaries and skeletons of fibers.

Fiber properties that are measurable by the system will be divided into two groups: general and specific. General properties include: fiber staple length, diameter, cross-sectional shape and color, while specific properties include mohair medullation, cotton maturity, trash content in cotton, coarse hair content in cashmere and wool crimp. All these terms will be mathematically defined and the algorithms for computing the terms will be designed. Based on the measurements of the properties, discriminant analysis methods will be employed to classify and rate fibers.

PROGRESS: 1996/10 TO 1997/09
During the reporting period, we focused on three principal tasks. Firstly, we designed a new fiber spreader that can uniformly distribute fiber snippets on a slide for the microscopic image analysis. The spreader is a high-pressure-air-blowing device that scatters and collects fiber snippets. A special circuit was designed to adjust the pressure of the air and the duration of the blowing for the optimal spreading results for different fibers. The spreading action takes less than a second and yields much more uniform distribution than the previous means.

Secondly, we developed a fiber diameter measurement program that locates edges of fibers and measures the distances across the two edges of a fiber. Each fiber is scanned only once, and touching/crossing portions and extraneous objects are automatically detected. The program reports the statistical data and the distributions of fiber diameters after all fibers on a slide are scanned. Thirdly, we created a new object segmentation algorithm for separating touching fibers in the fiber cross-sectional analysis. Touching fibers are eroded while the distance to the skeleton is registered so that a distance curve along the skeleton can be obtained. The minimal distance indicates a possible touching point on theskeleton. The criteria for locating the touching points of various shapes have been established. Once the touching point is determined, the separation of the touching fibers can be made by drawing a line through the touching point and perpendicular to the skeleton. Unlike the watershed segmentation algorithm, this algorithm does not need the thickening and connection-checking procedures. This algorithm can be applied to the seg-

"Did we hear someone say 'goat research'?"

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Research
Continued from previous page

These progresses make this fiber measureing system more practical and acceptable to the industry.

PUBLICATIONS: 1996/10 TO 1997/09

1. Xu, B. and Ting, Y.L., Fiber Image Analysis, Part I: Fiber Image Enhancement, Journal of Textile Institute, UK,87, 274-283, 1996.

2. Xu, B. and Ting, Y.L., Fiber Image Analysis, Part II: Measurement of General Properties of Fibers, Journal of Textile Institute, UK, 87, 284-295, 1996.

3. Xu, B. Fiber Image Enhancement in an Automated Fiber Measurement System. The proceeding of the NSF Design and Manufacturing Grantees Conference, 193-194, 1997.

4. Xu, B. Algorithms for Determining Fiber Diameter in An Automated Measurement System, the proceeding of the NSF Design and Manufacturing Grantees Conference, in press, 1998.

4. ACCESSION NO: 6000245
SUBFILE: CZARIS
PROJ NO: CZ9500247
START: 00 JAN 01
TERM: 00 JAN 12

INVESTIGATOR: RIHA J; CUNAT L

PERFORMING INSTITUTION:
MINISTERSTVO ZEMEDELSTVI CESKE REPUBLIKY |a VYZKUMNY USTAV PRO CHOV SKOTU
VIKYROVICE, RAPOTIN
VIKYROVICE, CZECH REPUBLIC 788 13

Biotechnological methods of controlled reproduction in mohair, cashmere and dairy goats (Rozvoj biotechnologickych metod rizene reprodukce v chovu koz (moherove, kasmirove, mlecne))

OBJECTIVES: To work out intrauterine laparoscopic insemination, stimulation and superovulation, laparoscopic or laparotomic embryo recovery and laparoscopic embryo transfer. To improve the methods of embryo cryopreservation and micromanipulation (splitting, transgene embryos etc.). To start experiments with the aim to overcome the seasonal character of goat reproduction.

Goats Produce Drugs

FDA recently issued guidelines for drugs produced in the milk of genetically changed animals. Transgenic goats, for instance, can make certain proteins in their milk that can change people's lives.

One such protein is factor VIII, which controls bleeding in hemophiliacs. Another is TPA, which breaks down blood clots during heart attacks.

These are enormously expensive because they are either extracted from human blood or grown slowly in laboratory cell cultures. Genetically changed goats can produce the proteins 10 times faster in their milk at a much lower cost.

Approximately 15 companies are looking into this way of making human drugs. One company, Genzyme Transgenics, plans to start testing this year.

Sound farfetched? Already researchers are going a step farther, genetically altering pigs in hopes these farm animals will evenutally provide replacement organs and blood for humans.

Dispute over Kashmir Province Intensifies

The world once again seems on the brink of disaster as India and Pakistan continue their fighting over the Kashmir Province, now by taunting each other with nuclear weapons, with China's presence in the region looming over all.

Could this mean we may end up with some of the only non-radioactive cashmere-producing goats in the world? The only cashmere that doesn't glow in the dark? Talk about a luster problem!

Laura Hawkins Grevel models a cashmere shawl at the 1996 CaPrA Wyoming conference fashion show.

NorthWest FiberFest
Cashmere Fleece Competition
Results
May 15, 1998

Although three places were awarded in each category, only the first place winners are listed below.

SHORN FLEECES

Doe, 1 year old (5 entries)
WFF 971 Anise, Marti Wall, Wallflower Farm

Doe, 2 year old (4 entries)
SUN Feather, Colleen McCrory, Sunnyhill Cashmere

Doe, 3 year old (3 entries)
SUN Pepper, Coleen McCrory, Sunnyhill Cashmere

Buck, 1 year old (1 entry)
WFF 9721 Beau Brummel, Marti Wall, Wallflower Farm

Buck, 2 year old (2 entries)
FAM R0010 Genghison, D. Maier, Breezy Meadow Cashmere Farm

Buck, 3 year and older (3 entries)
WFF 9516 Ivanhoe, Marti Wall, Wallflower Farm

Doe, 1 year old (11 entries)
GK Celtic Lady, Carrie Spencer, Foxmoor Farm

Doe, 2 year old (5 entries)
WFF Alice, Ashley Lynch (4-H)

Doe, 4, 5 & 6 year old (4 entries)
AF R78 Solo, Lisa Zietz, Moonshadow Farm

Buck, 1 & 2 year old (? entries)
GK 24 Dark Warrior, Carol Spencer, Foxmoor Farm

Buck, 3 year old & over (? entries)
AF R73 Max, Lisa Zietz, Moonshadow Farm

Wether, 1 year old (? entries)
SWC 23 JJ, Diana Mullins, Still Waters Cashmere

Wether, older (? entries)
SWC Bullwinkle, Kris Mydske (4-H)

COMBED FLEECES

Best of Show

BEST SHORN BUCK
WFF 9516 Ivanhoe, Marti Wall, Wallflower Farm

BEST SHORN DOE
SUN Pepper, Colleen McCrory, Sunnyhill Cashmere

BEST COMBED
GK Dark Warrior, Carol Spencer, Foxmoor Farm

Calendar of Events

June 4-7, 1998
Estes Park Wool Market & Fiber Animal Show
Estes Park Fairg4rounds, Colorado. For information contact Estes Park Wool Market, Fairgrounds, PO Box 1967, Estes Park, Colorado 80157
Phone 970-586-6104

June 6-7, 1998
Big Sky Fiber Arts Festival
Ravalli County Fairgrounds, Hamilton, Montana, Animals shows, demonstrations, workshops, vendor booths, For information contact Diana Hachenberger, 406-961-3058.

June 19-21, 1998
Black Sheep Gathering
Lane Country Fairgrounds, Eugene, Oregon. Sheep and Angora goat shows, workshops, talks, demonstrations, wool and mohair show and sale, trade show. For info: 25455 NW Dixie Mtn. Rd., Scappoose, OR 97056, 503-621-3063.

July 17, 1998
Open Class Cashmere Goat Show, Crook County Fair, Prinveville, Oregon, Friday, 4pm, Premiums paid through 4th place. Entry fee - $2/head. For info, entry forms, premium books, contact Crook County Fair, PO Box 507, Prinvelle, OR 97754.
Phone: 541-447-8675

August 1, 1998
Open Class Cashmere Goat Show, Washington County Fair, 872 28th St., Hillsboro, Oregon, 503-648-1416 or Lisa Zietz, 503-324-0910, email: moon@hevanet.com

September 26-27, 1998
Oregon Flock & Fiber Festival
Clackamas County Fairgrounds, Canby, Oregon
Cashmere, Pygora, Angora livestock and fiber shows and sales. For more info contact Brandy Chastain, 30881 SW Bald Peak Rd., Hillsboro, OR 97123, phone 503-628-1205, email: wstlstop@gte.net

Association Contacts

American Meat Goat Association
W. E. Banker, President, 512-384-2829

Cashmere America Co-operative
Joe David Ross, Manager, 915-387-6052
fax: 915-387-2642
Wes Ackley (Maine) 207-336-2948
Marti Wall (Washington) 360-424-7935

Cashmere Producers of America (CaPrA)
Marilyn Ackley, President
Phone/fax 207-336-2948
ackley@megalink.net
CaPrA office: 512-452-5205, fax 512-452-5521

Colorado Cashmere and Angora Goat Association (CCAGA)
Carol Kromer, Club Contact, 719-347-2329

Eastern Cashmere Association (ECA)
Ray Repaske, President, 540-436-3546
cashmere@shentel.net

North West Cashmere Association (NWCA)
Pat Almond, President, 503-632-3615
razberi@teleport.com

Professional Cashmere Marketers' Association (PCMA), Tom and Ann Dooling
406-683-5445
ann@MontanaKnits.com

Pygora Breeders Association (PBA)
Darlene Chambers, President
phone: 541-928-8841, fax: 541-928-0246
email: dchambers@proaxis.com

Texas Cashmere Association
Dee Broyles, President
806-489-7645 office, 806-489-7959 home

Wild Goat Women
Debbie Walstead, Chairperson, 719-495-2962

BREEDERS DIRECTORY

ARIZONA

RANCHO VERDE
Christine Acridge
15419 E Rio Verde Drive
Scottsdale, AZ 85255
602-471-3802

CALIFORNIA

Sherry McVickar
1662 Dwight Way
Berkeley CA 94703-1804

Sunrise Cashmeres
Melody and Jeremy Driscoll
PO Box 245
Blocksburg, CA 95514
707-926-5430

COLORADO

BV CASHMERE GOATS
Bert Appell
29165 Oak Leaf Way
Steamboat Springs, CO 80477
970-879-2160
Fax: 970-879-8701
email: bert@cmn.net

PEACHDÄTTER FARM
C.J. Prince
23676 County Road 73
Calhan, CO 80808
719-347-2510
Fax: 719-347-2696
email:cjprince@bewell.net

ROLIG GOAT RANCH
Cashmere Producing Goats
Steven or Ellen Rolig
8435 CR 600
Pagosa Springs, CO 81147
970-731-9083, email:
roliggoatranch@pagosasprings.net

KENTUCKY

CANAAN LAND FARM
Theo S. Bee
700 Canaan Land Rd.
Harrodsburg, KY 40330
606-734-3984
1-888-734-3984 (toll free)
http://www.bbonline.com/ky/canaan/

MAINE

BESSEY PLACE CASHMERE
Wes and Marilyn Ackley
RFD #1 Box 2610
Buckfield, ME 04220
207-336-2948
email: ackley@megalink.net

BLACK LOCUST FARM
Yvonne Taylor
PO Box 378
Washington, ME 04574
207-845-2722
email: Lance@airs.com

HARDSCRABBLE FARM
Hattie Clingerman
PO Box 682
Winterport, ME 04496
207-223-4211

MARYLAND

MIDDLETOWN FARM
George and Barbara Little
8123 Old Hagerstown Rd
Middletown, MD 21769
phone & fax: 301-371-8743
email: glittle640@aol.com

MONTANA

CASTLE CRAGS RANCH
Diana Hachenberger
894 Pheasant Run
Hamilton, MT 59840
406-961-3058
Fax: 406-961-4770

PMF CASHMERE COMPANY
Tom and Ann Dooling
3299 Anderson Lane
Dillon, MT 59725
406-683-5445
Fax:406-683-5567, email:
ann@MontanaKnits.com

SMOKE RIDGE CASHMERE
Yvonne Zweede-Tucker
2870 Eighth Lane NW
Choteau, MT 59422
406-466-5952
Fax: 406-466-5951

NEBRASKA

AIRY KNOLL FARMS, INC.
Richard & Harriet Jensen
76460 Road 424
Cozad, NE 69310
308-784-3312

HI-PLAINS CASHMERE
Julie and Alex Becker
160482 County Road C
Mitchell, NE 69357
308-623-2627
email: ajbecker@PrairieWeb.COM

SANDHILLS CASHMERE
Mark and Karen Crouse
Box 595, East Point Drive
Bingham, NE 69335
308-588-6248
fax: 308-588-6236
email: fibergoats@aol.com

NEVADA

ROYAL CASHMERE
Eileen Cornwell
419 Centerville Ln
Gardnerville, NV 89410
702-265-3766
Fax: 702-265-1814
email:cashmere@sierra.net

NEW JERSEY

BLACK FEN FARM
Virginia Hinchman/Kevin Weber
117 RD 2, Rt. 46
Hackettstown, NJ 07840
908-852-7493

NEW MEXICO

DOUBLE EYE FARM, INC.
Sanford Bottino
PO Box 218
Ojo Caliente, NM 87549
505-583-2203

OHIO

TAMARACK RANCH
Bob and Ann Wood
12000 Old Osborne Road
PO Box 567
South Vienna, OH 45369-0567
937-568-4994
email: annwood@erinet.com

OKLAHOMA

TEXOMA KIDS & CASHMERE
J. D. and Karen Chandler
Rt 1, Box 37
Mannsville, OK 73447
580-371-3167
fax: 580-371-9589
email: jkc@flash.net

OREGON

ABORIGINAL FIBRE
razberi kyan (Pat Almond)
PO Box 899
Mulino, OR 97042-0899
503-632-3615
email:razberi@teleport.com

BLAUW DAK RANCH
Bill DeJager
10640 Freeman Rd.
Birkenfeld, OR 97016-7226
Voice & fax: 503-755-2005
pager: 503-229-2776
email: blauwdak@3dwave.com

CASHMERE GROVES
Pat Groves
16925 S. Beckman Rd.
Oregon City, OR 97045
503-631-7806
email: pgroves@europa.com

Breeders Directory - Continued

CHEHALEM CASHMERE
Heidi and Paul Sullivan
21605 McCormick Hill Rd.
Hillsboro, OR 97123
503-538-9791

FOXMOOR FARM
Carol and Carrie
1178 N.E. Victor Point Road
Silverton, OR 97381
Phone: 503-873-5474
Message: 503-873-5430
email: foxmoorfarm@juno.com

GOAT KNOLL
Paul Johnson/Linda Fox
2280 S. Church Rd.
Dallas, OR 97338
503-623-5194
Fax: 503-624-1704
email: goatknol@teleport.com

HARVEST MOON FARM
Guy and Karen Triplett
63300 Silvis Road
Bend, OR 97701
541-388-8992
email: harvest@bendnet.com

HAWKS MOUNTAIN PYGORA'S
Lisa Roskopf & George DeGeer
51920 SW Dundee Rd.
Gaston, OR 97119
503-985-3331
Fax: 503-985-3321
email:hawksmtn@teleport.com

HOKULANI FARMS
Cynthia and Karl Heeren
22260 East Highway 20
Bend, OR 97701
541-388-1988
email: hokulani@bendnet.com

MCTIMMONDS VALLEY FARM
Janet and Joe Hanus
11440 Kings Valley Hwy.
Monmouth, OR 97361
503-838-4113
email: janhanus@open.org

MOONSHADOW FARM
Lisa and Jerry Zietz
46080 NW Levi White Rd.
Banks, OR 97106
Voice & fax: 503-324-0910
email: moon@hevanet.com

NORTHWEST CASHMERES
Carole Laughlin
19025 SW Hillsboro Hwy.
Newberg, OR 97132
503-628-0256

OCTOBER FARM II
Dick and Dottie Gould
Rt 1, Box 63
Baker City, OR 97814
541-523-9859
Fax: 541-523-9436
email: octfarm2@eoni.com

OVER THE RAINBOW FARM
Deb Miller
95150 Turnbow Ln.
Junction City, OR 97448
541-998-3965
email: Llama@teleport.com

ROARING CREEK FARMS
Arlen and Cathy Emmert
27652 Fern Ridge Road
Sweet Home, OR 97386
503-367-6698
email:cashmere@proaxis.com

SOMERSET CASHMERE
Julie and Jim Brimble
12377 Blackwell Rd.
Central Point, OR 97502
541-855-7378
email: brimble@cdsnet.net

SUNSET VIEW FARM
Jean Ferguson/Carolyn Bowser
4890 Sunset View Ln. So.
Salem, OR 97302
503-581-9452
email: carolbow@open.org

WILLOW-WITT RANCH
Suzanne Willow and Lanita Witt
658 Shale City Rd.
Ashland, OR 97520
541-890-1998

PENNSYLVANIA

PHEASANT HILL FARM
Ralph, Jan, Ryan & Steven O'Banion
5935 Pidcock Rd.
New Hope, PA 18938
215-598-7627
email: phcashme@voicenet.com

TEXAS

BAR Y RANCH
James Barton
PO Box 915
Sonora, TX 76950
915-387-5284
email: bar-y@sonoratx.net

UTAH

HEIDI'S FARM
Heidi J. Smith
7980 Long Rifle Road
Park City, UT 84060
801-649-3856
email: heidi.smith@genetics.utah.edu

KANARRA KASHMERE
Ron and Jan Gerrity
PO Box 420186
Kanarraville, UT 84742
435-559-9472
fax: 702-242-9436
email: GerrityGroup@EMail. Msn.com

VERMONT

CRR CASHMERE
Tia and Peter Rosengarten
PO Box 37
Weston, VT 05161
802-824-8190
Fax: 802-824-4072

VIRGINIA

RANEY DAY KIDS
Craig and Lucy Raney
3627 Va. Ave.
Goshen, VA 24439
540-997-1121
Fax: 540-997-1124

STONEY CREST FARM
Anne and Roy Repaske
570 Paddy's Cove Lane
Star Tannery, VA 22654
Phone/fax: 540-436-3546
email:cashmere@shentel.net

WASHINGTON

BREEZYMEADOWCASHMEREFARM
Douglas and Roberta Maier
810 Van Wyck Rd.
Bellingham, WA 98226
360-733-6742

BROOKFIELD FARM
Ian Balsillie/Karen Bean
PO Box 443
Maple Falls, WA 98266
360-599-1469

GLACIER VALLEY CASHMERE
Jim and Josie Baine
9817 381st St. E.
Eatonville, WA 98328
360-832-4442

KELLERS KRITTERS
Kay Keller
11030 Grandview Rd.
Arlington, WA 98223
360-435-6123

LIBERTY FARM (NLF)
Cliff and Mickey Nielsen
1505 Nile Road
Naches, WA 98937
509-658-2502

Continued on next page

Breeders Directory
Continued from previous page

STILL WATERS CASHMERE GOATS
Diana Mullins
PO Box 1265
Twisp, WA 98856
509-997-2204/509-421-3107
email: dmullins@methow.com

WALLFLOWER FARM
Dan and Marti Wall
1667 Beaver Marsh Road
Mt. Vernon, WA 98273
360-424-7935
Fax: 360-428-4946
email: cashmere@sos.net

WINDRIDGE FARM
Becki and Jim Belcher
202 Clemans View Rd.
Selah, WA 98942
509-698-3468

CANADA

GIANT STRIDE FARM
Pat Fuhr
RR #3
Onoway, Alberta, Canada, TOE IVO
403-967-4843
email:103600.1332@compuserve.com

TRAILTREE FARM
Brian and Julie Snyder
979 Linden Valley Rd.
RR #1
Woodville, Ontario, Canada KOM 2TO
1-705-374-5527

MEXICO

EL MORO
Fidel Florez B.
Tecnologico #58 - APDO. #31
Parral, Chih, Mexico 33800
Phone: 3-06-02

Updated URL

http://www.world-goat-centre.com/INDEX_ANGLAIS.HTM
The World Goat Center (Centre) in France has updated its page. We used to have a link, but it didn't consistently work. It does now, so here it is. Included are links to "Goats Races" (breeds) and "Organisms" (Organizations). A good European link, with minor translation problems.

Classified Advertising

CashMirror back issues 7/96 - 4/98 $3 each or a whole dozen for $20. Back issues 10/89-6/96 $2 each or $15 for a dozen. We'll pay postage just to get them out of our attic. Most issues available. A good reference source about cashmere goats and history of the industry. Index for 11/89-4/96 in May 1996 issue, index for 7/96-6/97 in July 1997 issue. 7/97-4/98, you're on your own! (or ask us).

CashMirror Volume 10, Issue 1 is approaching. Something is coming. Something wonderful!

Maremma Sheepdog Club of America, Maremma Livestock Guarding dogs, PO Box 546, Lake Odessa, MI 48849, 616-374-7209. Free information and Breeder Directory.

Yocom-McColl Testing Laboratories, Inc. for individual animal and core testing.
Ph: (303) 294-0582
Fax: (303) 295-6944
Email: ymccoll@ix.netcom.com
Website: http://www.ymcoll.com

Error

In Simple (Yet Elegant) Scarf Pattern

For you struggling beginning knitters who found the pattern in last month's issue and, after breathing a sigh of relief, dug out those dusty knitting needles as you'd finally found a pattern you could use for your cashmere without going totally insane. And then, after we promised you it would be truly simple (and it certainly looked simple) you found that you ran out of pattern before you ran out of stitches! Before you put your needles back into the dust bin, read on.

Nora Ahlen (Wisconsin) found an error in the pattern. Fortunately, she is an experienced knitter and figured it out. She is knitting her prototype in alpaca.

So, the correct pattern is:

Row 1: Knit 2, knit 2 together
Repeat this until there are only 11 stitches left: Knit 3, yarn over, knit 1, yarn over, knit 3, knit 3 together.
Last 11 stitches: knit 3, yarn over, knit 1, yarn over, knit 3, **knit 2 together**, knit 2.

Row 2: Knit all the way across.

We had instructed you to knit 3 together in a place that should only have been 2.

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Dallas, OR 97338

Annual Subscription is only $25 for 12 monthly issues! ($35 Canada, $50 outside US other than Canada).

Breeders Directory listing for full year $30.

Noteable Quotes

"A few years ago cashgora was tried out—cashmere goats and angora rabbits???"

...Tom Cole

"It is useless for sheep to pass resolutions in favor of vegetarianism while wolves remain of a different opinion."

...William Ralph Inge, D.D. 1860-1954

"The high mountains belong to the wild goats; the crags are a refuge for the coneys."

...Bible, Psalm 104:18

The Deadlines:

Articles, photographs, advertising and other information submitted must be received by the 20th of the month prior to magazine issue date.

If you need assistance designing or laying out a display ad, or fine-tuning an article, earlier is appreciated.

Lisa's business card ad

Serving northern California, Idaho, Nevada, Oregon, Washington and western Canada

Membership includes: NWCA Quarterly Conferences and optional CaPrA membership

Northwest Cashmere Association

Annual Dues: NWCA only $25 or $37 to include NWCA membership and CaPra (Cashmere Producers of America) Participating Membership and *Concerning Cashmere*
Cynthia Heeren, *Membership Coodinator*, 22260 East Hwy 20, Bend, OR

2280 S. Church Rd.
Dallas, OR 97338

Bulk Rate
U.S. Postage
Paid
Permit #011
Dallas, OR
97338