

## **The Cicerone Project Inc.**

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### **NEWSLETTER No 18**

February 2002

**May you all have a Healthy and Prosperous 2002**

### **CICERONE FARM WALK**

**Wednesday 13<sup>th</sup> February at 1.00pm**

**meet at the Cicerone Yards**

(enter the Cicerone Farm via the CSIRO back gate on the Big Ridge Road (opposite the Lockheed Martin Satellite dish entrance) and then turn left after about 100 metres.

**See the differences that are emerging between the three farmlets.**

**Discuss our stocking rates... have we got it right?**

**See the differences between the 2001-drop lambs in the mulesing trial.**

**The Cicerone Farm is YOUR enterprise ... please come and take some ownership, have some input!!**

### **More Dates for your diary**

Local show dates Check out [www.agshowsnsw.org.au/](http://www.agshowsnsw.org.au/) for a full list

Armidale 22-23 Feb 2002

Sydney Royal 22 March – 4 April 2002

Check out their excellent website at [www.greataustralianmuster.com/](http://www.greataustralianmuster.com/)

Cicerone Mulesing Day 2 will be in March or April, date TBA

**WOOL EXPO May 2<sup>nd</sup> to 12<sup>th</sup> and will include our seminar “Learning from the masters” and a Farm Walk ... I’d like your suggestions for speakers please (phone 6778 3871)**

## Contents

<b>Dates for your diary</b>	<b>Page 1</b>
<b>Contents</b>	<b>Page 2</b>
<b>The antibiotic of the future</b>	<b>Page 2</b>
<b>To compare the growth rates of various cross bred meat sheep</b>	<b>Page 3</b>
<b>Bill Gate's advice</b>	<b>Page 11</b>
<b>Thanks to the Waridale Sheep Society</b>	<b>Page 12</b>
<b>More web sites</b>	<b>Page 12</b>

**Miss out on the middle pages?**

**Please join us and then you'll receive the complete newsletter!**

## The antibiotic of the future?

Part of a small virus that attacks only bacteria acts like an antibiotic to destroy *E. coli*, researchers with the Texas Agricultural Experiment Station have found.

This research provides a new approach for designing drugs to combat many serious bacterial diseases including *E.coli*, pneumonia, staph infection, ear infections, Lyme's disease and cholera in humans, as well as bacterial diseases in pets, livestock and crops. So say Tom Bernhardt, biochemistry doctoral student and Ing-Nang Wang, a lead investigator on the project.

Many disease-causing bacteria have developed antibiotic resistance, reducing the number of medicines available for treatment. Researchers fear continued resistance could result in epidemics of diseases once thought controllable.

This research found that a protein within the small virus, known as "phage" in scientific circles, does the same thing to bacterial cell walls as antibiotics. It blocks the ability of the cell to make its tough outer wall so bacteria blow up or destroy themselves rather than divide into more cells. Dead bacterial cells mean an end to the illness.

The research team expects pharmaceutical companies to further explore phages for new types of antibiotics. The small bit of protein involved could be mimicked by a pharmaceutical company. And a drug could be made to be general against many bacteria or specific against a certain pathogen. Even

better it could easily be changed to overcome resistance.

Phages – which are not the same type of viruses that infect humans, animals and plants – are basically dormant bundles of DNA or RNA in protein coats until they come into contact with bacteria. They then replicate within the bacterial cell and within a few minutes, explode it.

Now with worldwide concern about antibiotic resistance, phages are finally gaining attention. Small phages appear to be a gold mine for protein antibiotics.

This is the second small phage found to make a protein antibiotic. Each of these phages makes a different type of cell wall poison, making each a potential new model for an antibiotic.

The team hopes to find new small phages and use them to identify more protein antibiotics that could be developed into practical medicines by the pharmaceutical industry.

Acknowledgment: Research Roundup in **Beef** October 2001, page 58 ([www.beef-mag.com](http://www.beef-mag.com))

## To compare the growth rates of various cross bred meat sheep

By Caroline Gaden and Justin Hoad  
The Cicerone Project, Armidale

The late 1990s brought a number of new breeds of sheep into Australia, offering sheep producers the possibility of income diversification into sheep-meat production. The South African sheep were mainly imported to Western Australia and Queensland where research trials showed promising results, particularly in the drier areas. This trial, suggested by some of our members, was to look at the growth rates of these breeds crossed with local Merino sheep and see if they were suitable for income diversification in this area.

### METHOD

Macquarie Artificial Breeders inseminated 250 Merino ewes with semen from 9 different sires representing 5 breeds of South African Meat breeds of sheep. Sires used were **Afrikaner** (0231-99), **Damara** (867 and 5-75) and **White Dorper** (Blue 220 and Blue 305) the fat tailed breeds, and **Dohne Merino** (98-067 and 98-069) and **South African Meat Merino** (Hillcrest 132 and 133), two dual-purpose wool/meat breeds.

The Afrikaner sire ... look at the width of the tail!



An Afrikaner cross lamb



AI took place on 3 May 2000 when the ewes were colour and number ear-tagged according to the sires used, red for Afrikaner, yellow for Damara, white for Dorper, green for Dohne and blue for SAMM. Border Leicester rams were used as back up for the AI program and they ran with the ewes from 22 May to 7 July.

The ewes were run on the Big Ridge site, not on the Cicerone Farm. The pasture was not of high quality and superphosphate had not been used for several years. The ewes were given supplementary feed of lupins starting at 250 grams per head per week from 28 April and building to 1050 grams per head per week in the week prior to lambing.

For two weeks over lambing, the ewes were separated into plots according to sire lines. Lambs were born in late September and most lambs had their birth weights taken.

After the two weeks the ewes and their lambs were again boxed together as one mob and any Border Leicester lambs were then born with no birth weights being recorded.

Approximately 45 lambs of each South African breed were born, with the Border Leicesters (around 60) arriving two weeks after the others.

Lambs were marked on 7 November 2000, when all lambs were eartagged, all males were castrated and the Dohne, SAMM and Border Leicesters were all docked. All lambs were treated with Click to help prevent any post-marking fly strike. Lambs were weaned on 28 December 2000 and given 5ml MaxiPro with I and 2ml of Weaner Guard. Wool lambs received 16 ml Click at this time. On 15 March 2001 lambs were drenched with 8ml Rametin and Nematet and on 8 June they received 10 ml Seponver.

All lambs were checked for fly strike at each weighing, especially the fat tailed breeds with their long tails.

After weaning the lambs were deliberately run on unimproved pasture as their home environment of South Africa is very harsh.

All lambs were weighed at four to six week intervals until July 2001 and an average weight calculated for each breed every time.

We looked for any fleece contamination on ten ewes with brown Damara lambs. The method used was a direct count of fibres as suggested by Queensland DPI. Ewes were placed in a tipping cradle and examined at eight different sites on their right side using a magnifying glass and a wire grid.



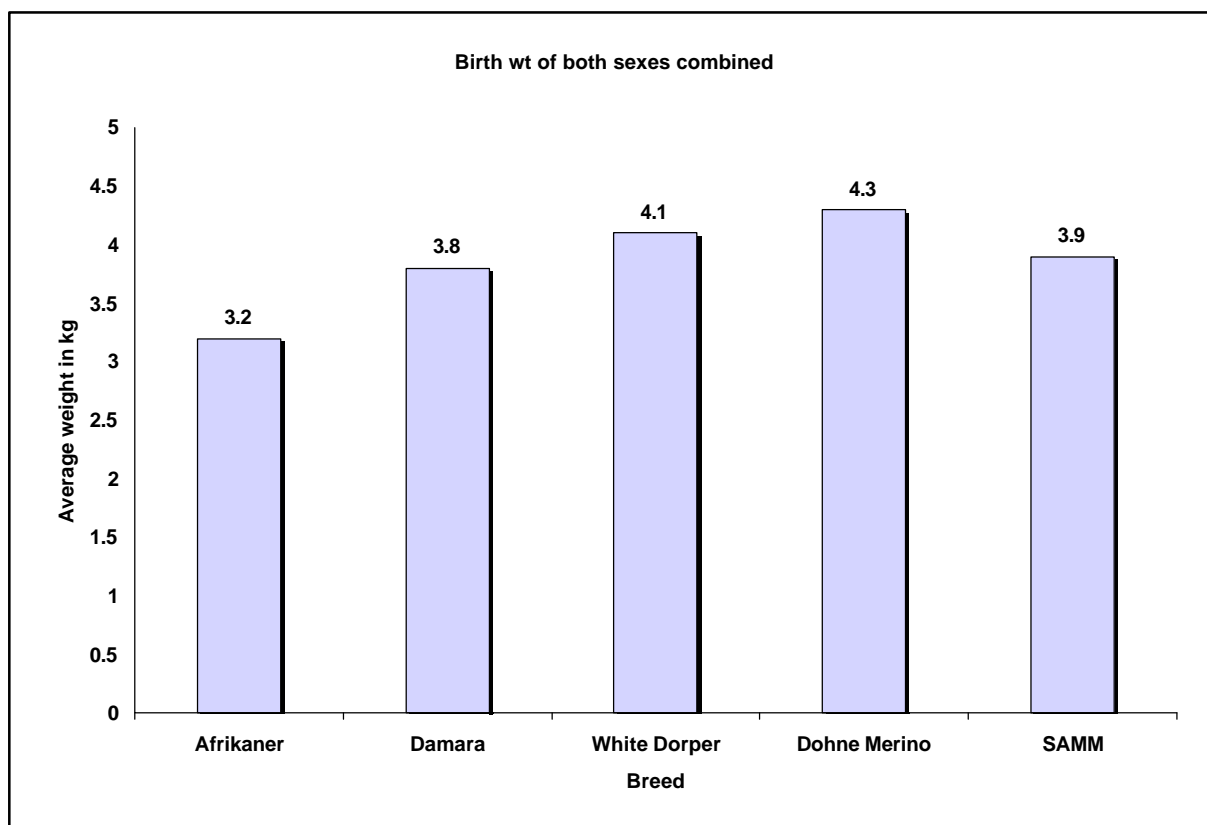
## RESULTS

**Birth.** The AI, shown above, was done on 3 May 2000. There was some variation in birth time, with the Dorpers being the first lambs to arrive from 25 September, 3 days before the others, then there was a rush of Damaras (28 Sep) followed by the Dohne (30 Sep) and SAM Merinos (30 Sep). The Afrikaner were scattered throughout the week.

Generally the Afrikaner were the smallest and finest boned of the lambs born, suggesting they would be easiest for lambing. They had a very strong survival instinct in contrast to the larger Dohne and SAM merino lambs that were more likely to 'throw in the towel'. We pulled four of the bigger lambs, a 6kg Dohne, a 6 kg SAMM and a 5.8kg Dorper and another large unweighed SAMM.

The Afrikaners were white lambs with no colour, the White Dorpers had some coloured (light grey) patches on the body. The Damaras were generally dark brown or had patches of dark brown and we had neighbours ringing to advise that dogs were chasing the lambs when it was the lambs themselves playing. The Dohne and SAMM looked like the merino lambs they were.

Graph 1



**Fibre Contamination** When the sheep were brought into the yards for lamb marking, ten ewes with yellow ear tags were inspected for signs of fleece contamination from their brown Damara lambs. We used a magnifying glass held over a metal grid with an area of

10cm by 10cm to examine the fleece at eight different sites. Any hair fibres found were counted. (See Table 1) Some contaminating hairs were found on the surface of the ewe fleece, but they were white, not the expected dark brown of the lambs. At a subsequent examination at weaning in December we found no contamination. From this small study we cannot say that contamination of the ewe fleece with the brown hair of their Damara lambs was a problem pre-weaning.

Ewes were sold at weaning so no further contamination of their fleeces was studied. Lambs were examined each weighing and the non-wool breeds certainly did shed some fibres which could be a contamination issue. It was interesting that the very dark brown colour of the Damara cross lambs faded considerably as they grew older.

*Table 1*

Number of contaminating hairs in whole grid area found at each site

<i>Visual assessment of ewe fleeces for contamination</i>									
<b>Date</b>	<b>Ewe</b>	<b>Site 1 neck</b>	<b>Site 2 withers</b>	<b>Site 3 back</b>	<b>Site 4 hip</b>	<b>Site 5 shoulder</b>	<b>Site 6 middle side</b>	<b>Site 7 rump</b>	<b>Site 8 belly</b>
7-Nov	Y138	12	9	7	2	0	2	4	2
	Y241	2	9	2	1	0	0	6	5
	Y131	4	3	1	2	5	2	0	1
	Y99	2	2	0	0	1	2	0	0
	Y54	1	0	0	1	0	1	2	0
	Y167	1	0	1	5	1	4	3	2
	Y004	0	0	0	0	0	1	1	0
	Y151	2	2	0	5	2	1	7	1
	Y100	0	2	2	2	1	3	5	0
	Y66	0	4	0	1	5	1	0	2
28-Dec	Y 055	0	0	0	0	0	0	0	0
	Y 101	0	0	0	0	0	0	0	0
	Y 123	0	0	0	0	0	0	0	0
	Y 138	0	0	0	0	0	0	0	0
	Y 168	0	0	0	0	0	0	0	0
									Etc.

**Behaviour.** Initially the small Afrikaner lambs did manage to find any holes there were in fences between the plots leading to some not finding the way back to their mother. Three Afrikaners were taken home as poddy lambs, as was a large Dohne merino lamb that was also abandoned by its mother. The tiny Afrikaners, half the size of the Dohne, survived but the merino did not. It was found as they grew that the Afrikaners tended to eat hedges and vegetation higher off the ground rather than the lawn. They were returned to the flock in November.

The behaviour of the Border Leicesters was noted to be the most 'wild' at weighing time. The Afrikaners were the most 'gentle' in the weighing crate

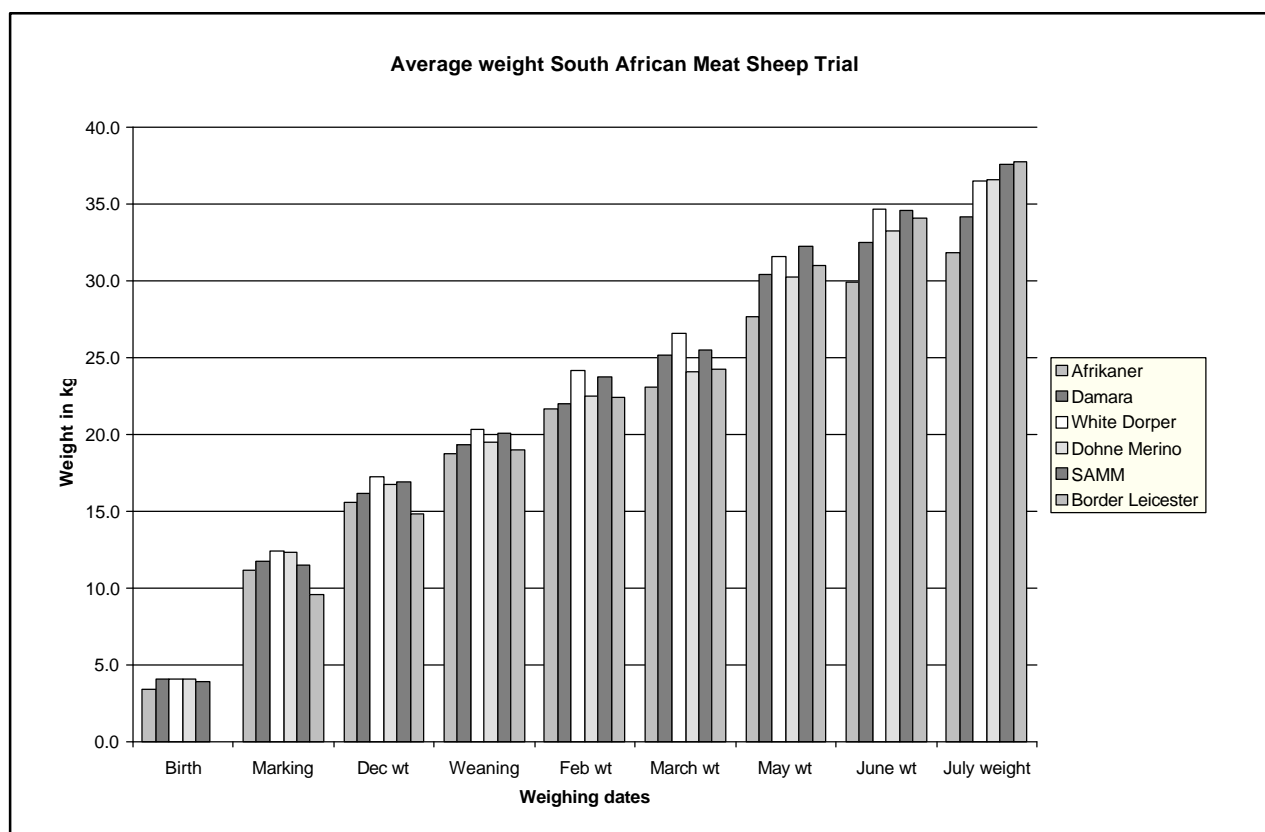
**Fly strike** The wool breeds, the Dohne and SAMM lambs were dosed with 16 ml of Click in early January. The non-wool sheep were not treated at this time. All lambs were

checked for fly strike as they went through the weighing crate. The undocked tails of the fat-tailed breeds were of particular interest, however these tails have no hair or wool underneath, much like the underneath of a horse's tail and there were no problems with fly strike.

## Growth rates

Graph 2 shows the average weights of the lambs throughout the year. It can be seen that the smaller, finer boned Afrikaner lambs remained the smallest throughout. (The poddy lambs were weighed but their weights excluded from the calculations for average breed weights.) The Damara growth rates were also among the lowest. The White Dorper lambs initially had the best growth rates but by July both the Dohnes and SAMMs had topped them. Despite being a couple of weeks younger, the Border Leicesters eventually outperformed the imported breeds.

**Graph 2.**

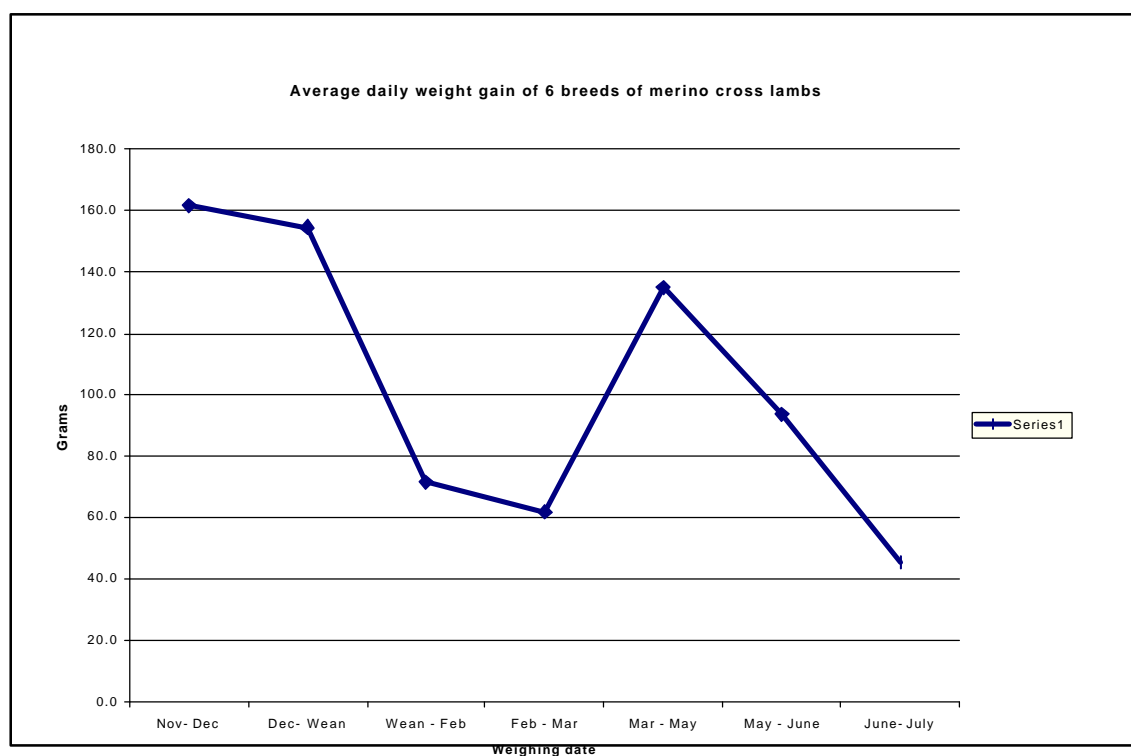


In late May the faecal egg monitoring revealed an average count of 264 from each of 10 samples, showing the presence of Black Scour and Barber's Pole worm. In early June, following the drench with Seponver, the lambs were monitored each week to ensure the drench had worked satisfactorily. The lambs were also started on a supplement of lupins with 400 grams per head per week initially and increasing to 873 grams per head per week by 27 July when the top 50 Border Leicesters were sold. Over the next few weeks the remainder of the animals were sold, some went to studs as far away as Dubbo, some

went to local schools to continue with the growth rate comparison, and some went to the district saleyards. We had organized a direct sale to the abattoir so we could obtain some carcass feedback, but the truck failed to collect them, the driver claiming he could not get in through the gate. We saw no evidence of him trying, and other semi-trailers have driven in, albeit with some careful manoeuvring, so we wonder what happened.

Graph 3 shows the average daily weight gains of the combined lots of lambs and it shows an important result of this trial. The daily weight gains were close to 160 grams per day prior to weaning, but weaning was a real set back to the lambs with daily weight gains dropping to half that figure and it took several weeks before their growth rate started to improve again.

**Graph 3**



### **CAT Scan carcass evaluation**

It had been hoped to run CAT scans of several lambs at the UNE Meat Science facility. We wanted to look at carcass composition and do a carcass evaluation to compare any differences between the breeds but lack of PIRD funding meant this was not done.

### **Fleece characteristics of the Dohne and SAM merino lambs**

Prior to their sale in August, side samples were taken from the fleeces of the Dohne and SAMM lambs. The results showed an average micron of 21.2 for the SAMM (range 18.9 to 25) and an average micron of 18.6 for the Dohne merino (range 16.9 to 21). As the maternal ewe flock had averaged 21 micron, it seems the two Dohne sires had the more beneficial effect of reducing the wool micron in these lambs.

As the Afrikaner, Damara and White Dorpers are grown for meat, not wool, and generations after the first cross are not shorn but shed their fleeces, we did not do any fleece measurements on these breeds.

## CONCLUSION

The lambs were deliberately run on unimproved pasture as their home environment of South Africa is very harsh. The lambs did not do as well as we expected from results obtained in Western Australia and Queensland. It may be that the merino part of the cross 'diluted' the growth rate. It may be that our pasture was too lush and they would have thrived better in the much drier environment of the western division of NSW, WA and Queensland. In the New England environment, the Border Leicester lambs proved to have the best growth rates but with all the crosses we needed to supplement the unimproved pasture with lupins to finish the sheep for selling.

We encountered some opposition from a number of local producers and wool classers for running the trial. The Afrikaner, Damara and Dorper breeds were greeted with great suspicion on their media reputation alone, whether or not people had even seen them. The perceived problem of wool contamination has become an issue of increasing political importance. There is not a ready meat market in this area for these breeds of lambs, there is no boat trade to the Middle East and there are no meat buyers who buy for the ethnic market in the Sydney or Brisbane. Local producers would have to think through all the consequences of running the Afrikaner, Damara and Dorper breeds in this traditional fine-wool producing district.

The set back in growth rate at weaning was evident over all the breeds. This suggests that producers of all sheep should pay particular attention to the pasture onto which lambs are to be weaned. They may also need to consider supplementary feeding at this time to help lambs maintain good growth rates.



Dohne Merino ^    Damara X Merino ^

South African Meat  
Merino >



<White Dorper X Merino

### Acknowledgments

We would like to thank the following people for their encouragement, help and advice:  
 Dan Cloonan, Queensland DPI, Longreach  
 Bronte Gardner, Ida Vale, Kojonup WA, breeder of Afrikaner sire  
 Matthew Young, Agriculture Western Australia, Geraldton

### References:

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 Queensland DPI Research Schedule for Fibre Studies 2000

## BILL GATES' ADVICE

Here's some advice Bill Gates recently offered at a high school speech about things not taught in school. He suggests feel-good, politically correct teaching has created a full generation of youngsters with no concept of reality and how this concept can set them up for failure in the real world.

**RULE 1** Life is not fair - get used to it.

**RULE 2** The world won't care about your self-esteem. The world will expect you to achieve something BEFORE you feel good about yourself.

**RULE 3** You will NOT make 40 thousand dollars a year right out of high school. You won't be a vice president with a car phone, until you earn both.

**RULE 4** If you think your teacher is tough, wait till you get a boss. He doesn't have tenure.

**RULE 5** Flipping burgers is not beneath your dignity. Your grandparents had a different word for burger flipping - they called it opportunity.

**RULE 6** If you mess up, it's not your parents' fault, so don't whine about your mistakes, learn from them.

**RULE 7** Before you were born, your parents weren't as boring as they are now. They got that way from paying your bills, cleaning your clothes and listening to you talk about how cool you are. So before you save the rain forest from the parasites of your parent's generation, try delousing the closet in your own room.

**RULE 8** Your school may have done away with winners and losers, but life has not. In some schools they have abolished failing grades and they'll give you as many times as you want to get the right answer. This doesn't bear the slightest resemblance to ANYTHING in real life.

**RULE 9** Life is not divided into semesters. You don't get summers off and very few employers are interested in helping you find yourself. Do that on your own time.

**RULE 10** Television is NOT real life. In real life people actually have to leave the coffee shop and go to jobs.

**RULE 11** Be nice to NERDS, chances are you'll end up working for one.

Acknowledgment: **National Business Bulletin**, September 2001, page 19  
([www.nationalbusiness.com.au](http://www.nationalbusiness.com.au))

**Congratulations to Hugh and Cathie Sutherland on the  
safe arrival of Sophie Elizabeth**

Many thanks to Waridale Sheep Society for their generous donation of close to \$1000. The Society has been kind enough to donate their 'winding up' funds to the Cicerone Project. Many thanks to the four committeemen who made this possible:- Ron Shaw, Arthur Gates and Philip Rose of Armidale and Mr. G Salmon of Bathurst.

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Newsletter Editor: Caroline Gaden, Executive Officer of The Cicerone Project Inc.  
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#### WEBSITES

**Australian Wool Innovation** is located at [www.wool.com](http://www.wool.com)

**The Cicerone Project** is at [www.northnet.com.au/~cicerone/](http://www.northnet.com.au/~cicerone/) but will be moving soon to [www.cicerone.org.au](http://www.cicerone.org.au)

**An educational resource hosted by the RAS** for Agriculture related studies  
[www.agriculture.asn.au](http://www.agriculture.asn.au)

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**Australian Careers Directory** [www.careers.gov.au](http://www.careers.gov.au)

**Time Management Skills** [www.mindtools.com/pages/main/newMNHTE.htm](http://www.mindtools.com/pages/main/newMNHTE.htm)

**Interested in Family History?** Check out [www.familysearch.org](http://www.familysearch.org) for the International Genealogical Index and [www.genuki.org.uk](http://www.genuki.org.uk) of UK information