

## A diet of natural fibre

Piers Maclaren<sup>1</sup>

Wool has a lot in common with wood. They are both natural fibres, used since the dawn of human existence. Even prior to spinning and weaving, skins clothed people and covered the floors of wooden huts. In a hundred years will we find both fibres only in museum dioramas?

When I worked on sheep farms 30 years ago, it seemed to me that stealing the natural insulation off an animal's backside was a strange way to keep ourselves warm in this modern technological era. But my farming friends, clothed in wool from their ties to their underpants, assured me that the stuff was magic and could never be duplicated by a chemist with a test-tube. It was hardwearing, anti-static and flame-resistant. Since then, wool technology has progressed far, but not at the speed of chemical science.

In the backcountry "you must always wear wool next to your skin" because it stays warm while wet. But not one of my multi-sport friends now chooses wool for this purpose. Polypropylene is universal. My cupboards are full of sweaters, lovingly knitted by mothers, aunts and wives. They are heavy, baggy, itchy and scratchy, and can't be thrown in the automatic washing machine. The moths love them, but I rarely take them out. For many requirements, wool is both inferior to and more expensive than synthetics. When you lose the race on both counts, the writing is truly on the wall.

Sheep have a future on our hillsides for many years to come, because there's not a lot else we can do with some of that land. Also, it will be a long time before your average Arab becomes a vegetarian. But the wool revenue now barely covers the (partly) wool-induced costs of tailing, crutching, dipping, dagging, shearing and fertiliser. I predict that self-shedding sheep breeds, like the Wiltshire and the Dorper, will become increasingly common.

I know, I know, there's a wonderful snob-market for the very best Merino Italian suits. And, likewise, no trendy home would be without wooden toilet seats, breadboards, or fruit bowls. But let's focus on mainstream industries. There was once a time when a New Zealand house was made entirely of wood, from the totara piles to the cedar shingles. With great fascination I've watched the growth of steel framing, aluminium doors and windows, synthetic stone cladding, and plastic-coated kitchen joinery. The new construction on my neighbour's section contains hardly a stick of timber. Not only are the new products vastly superior to the old wooden versions, they are often cheaper too. For a start, they often economise on labour - which is a major component of the cost of a building. As for non-construction uses for timber: wooden ladders, telephone cross-arms, and even pallets and beer crates are joining motorcar dashboards and wagon wheels in the museum. Was my pessimism regarding wool, and optimism regarding wood, just a form of prejudice in favour of my chosen profession?

There are three reasons why the lessons from wool may not apply to wood. The first is that wood is a bulk commodity. It is a major feedstock of the human race, world consumption amounts to about 3.5 billion m<sup>3</sup>/yr.

To make any difference in demand for wood, enormous quantities of cement, steel, aluminium and plastics would need to be produced instead. The pressure on the wood-substitutes would force up their price, thus exerting a braking effect on the rate of substitution.

At least, that was an argument I often used before reading the excellent and unfairly maligned *The Skeptical Environmentalist* by Bjorn Lomborg (being a self-employed consultant gives me the inclination and time for leisure reading). He has convincing graphs to show how the costs of all of these substitutes have continued to decline over the last century.

The second reason relates to the environmental consequences - including Greenhouse issues - of large-scale manufacture and disposal of wood substitutes. The simple truth is that wood is (relatively) environmentally benign, and its rivals are not. But none of this will help unless there's an impact on retail prices. My strong guess is that Kyoto will be a fizzer - and, incidentally, the New Zealand forest industry shot itself in the foot on this one - with the result that environmental virtue will go unrewarded. Incentives for such things as FSC compliance are even further down the line.

So is it all doom and gloom? There's one last wild card in the pack. Wood, from seedling to finished product, requires very little fossil fuel energy whereas wood-substitutes require a huge supply of cheap (mainly fossil) fuels. If oil gets scarce, its price will rise, and wood will once again be cost-competitive. The price of oil would have to skyrocket before I preferred a woollen singlet to polyprop, but the prices of coal and oil are critical to the competitiveness of concrete. Are there hidden seas of oil out there? Lomborg says yes, but Kenneth Deffeyes in *Hubbert's Peak* (more holiday reading) says no. As a retired professor of petroleum geology, he argues convincingly that world oil supplies will peak sometime between 2003 and 2009.

The real issue may not be a world shortage of oil *per se*, but the realisation that so much of it comes from the volatile Middle East. Appreciating the vulnerability of the U.S. to Arab pressure or chaos, President Bush has decreed a crash programme to develop fuel-cells. These hydrogen-based batteries would, at first, be charged with natural gas or coal and would power a fleet of electric vehicles. Eventually, it is entirely possible that the hydrogen in such cells could be generated by the solar panels on your roof, the windmill in your backyard or by pyrolysis of wood.

I would love to calculate how many top logs of (otherwise useless?) farm-grown radiata pine would be necessary to power the clean, quiet, electric-powered vehicle fleet of New Zealand. It's an exciting prospect.



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