



BETTER BIOFUELS

Geoff Covey explores the prospects and challenges of a biofuel future.

There are a number of major difficulties associated with the production of renewable energy. Analysis suggests that three particular difficulties are:

- ◇ The scale of the problem – world annual energy demand is equivalent to 10-15% of the fuel value of all the biomass produced each year.
- ◇ The mismatch between when renewable electricity is produced and when it is required. This is particularly true of wind and solar energy, and to a lesser extent wave power. The wind does not blow reliably - as a result although Denmark has massive wind farms (everywhere you look) it has been unable to shut down any of its thermal power stations. This is tied in to our inability to store large quantities of electricity.
- ◇ For transport fuels there is no real alternative to hydrocarbons – railways can be electrified and batteries can be used for town cars, but for heavy road transport, ships and aircraft hydrocarbons are the only identifiable fuel.

Hydrogen is often spoken of as a possible fuel, but there are at least three major problems with it. Firstly, it is very difficult to contain, it is of such low viscosity. Secondly, storage requires very large volumes and/or pressures. Thirdly, at the moment it is largely made by reacting carbonaceous fuels with water – it might help overcome the shortage of natural liquid fuels, but it is of less help in reducing carbon dioxide emissions.

Making transport fuels from biomass also has its problems.

- ◇ The area required to sustainably replace 80% of the current transport fuel demand would require fuel cropping an area equivalent to Argentina.
- ◇ If ethanol or fuels such as tetrahydrofuran are made, fairly complex processing is required and only the carbohydrates are converted to the required form (although the lignins can be burned to generate electricity).
- ◇ Fast pyrolysis is a comparatively simple process and can use the whole biomass, but the product is of low heat of combustion, highly acidic and immiscible with conventional mineral oils.

It is comparatively simple to hydrogenate the fast pyrolysis liquids to produce a liquid that is compatible with mineral oils and which can be processed in a conventional oil refinery. But this requires a source of hydrogen and gets us back to the problems of sourcing this hydrogen.

Perhaps there is a solution in combining sources of renewable energy.

- ◇ Biomass can be processed by fast pyrolysis to produce a liquid that is of limited value in its initial form, but which is easily stored.
- ◇ Wind power can be used to electrolyse water to hydrogen whenever there is 'surplus' wind. The hydrogen can be stored in moderate quantities at or near its point of generation.
- ◇ This wind-power hydrogen can be used to hydrogenate the fast pyrolysis oil to something more useful that can be fed to existing oil refineries.

We are a long way from this being practical on a large scale, and even further from it being economic – but perhaps it does offer a way forward? ☺



ALSO IN THIS EDITION

*In France
Math Challenges
1 in 200,000
No Bull
In Estonia*

Items of interest from Covey Consulting

Geoff Covey recently was an invited speaker at Pira's 4th Annual Conference on Biorefining for the Pulp and Paper Industry, held in conjunction with their 3rd Biennial Fibre Engineering Conference in Barcelona.

Geoff's presentation was **"Starting Points for Biorefining—an Australian Perspective"**

A large group of delegates from around Europe and the rest of the world gathered for a very full program over the two days with a range of papers on latest developments and future directions for bio-fuels and fibres.

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Dennis Shore will present as an invited speaker at the 30th FAPPI Conference in Malaysia on 20th October at the Putrajaya Marriott Hotel. The presentation will be on the topic of **"A Low or No Effluent Paper Mill can make Good Business Sense"**.

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Please contact John Trewick to learn more about our authoritative publication — Radiata Bulletin



- In this issue:**
- Tas Forestry package
 - Aus carbon farming
 - Vic native logging
 - More mill closures
 - SA forest sale
 - Sison core purpose
 - NZ carbon Counting
 - FEA wins time
 - ANZ timber awards

Tas forestry package

Australia's Federal Government announced a A\$22.4 million assistance package for Tasmania's forestry industry. A\$17 million will be available for contracting and cartage businesses to leave the industry and A\$5.4 million to help concerned about their ongoing welfare and livelihood, especially those in the silviculture and plantation development areas," he said. Australian Greens leader,

"...there are a range of people... concerned about their ongoing welfare and livelihood..."

money for the industry. Some estimates indicate that up to two thirds of the 90 or so contractors involved in native forest logging may want to leave. Federal Forestry Minister, Joe Ludwig, said the aid grants were capped at A\$750,000 per business. Applications will close on 13 December. The assistance package will not be available to sawmills or contract employees. The scope of the package was criticised by the Forestry Industries Association of Tasmania with

spokesman Julian Ames believing it should be made available to other sectors of the industry. "I think there are a range of people within the industry who are not in the haulage sector who are also concerned about their ongoing welfare and livelihood, especially those in the silviculture and plantation development areas," he said. Australian Greens leader,

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A stroll in France

It might seem that our otherwise hard working staff have surrendered to the soft life. In this edition we have not one but 2 travel articles. But as you will see both have a higher purpose! Firstly Geoff Covey records his perambulations in France.

In May this year work took Bronwyn and me to Europe, so we took our two youngest children as well. I had a conference in Barcelona, Bronwyn had work in Lund, and in between we fitted in a week of walking in France. It had long been on both our wish lists to walk through rural France or Spain in areas where there were plenty of mediaeval buildings to see. Unlike Bruce Allender doing it tough in Portugal [recorded in Covey Consulting News, December 2010], we decided to go with one of the self-guided walking tours. The arrangement is the tour company books you into hotels each night and arranges for your luggage to be moved on, while you set off with just a light day pack (heaviest item being a bottle of wine for lunch) maps and walking notes.

There were a number of choices to be made before booking.

Firstly the style of accommodation. You can stay in 4-5 star hotels, but to us this did not seem consistent with the idea of walking from village to village (it can also be pretty expensive!) At the other end there are back-packer hostels, but travelling as a family, and being on holiday, we felt this was a bit too basic. We settled for a tour using 2-3 star hotels. This suited us perfectly, the feeling was definitely French (rather than international) and being France the food was very fine even in these cheaper hostleries.

Also we had to pick our route. We were walking with a thirteen year old

(Continued page 4)

The Joys of Timetabling in a Secondary School

Joan Harvey, spouse of Reg, demonstrates that challenges in industry, as difficult as they are, are perhaps just child's play compared with some!

Many secondary schools operate on the basis of 6 periods of 50 minutes per day. This produces 30 periods per week or 60 periods per fortnight. The advantage of compiling a fortnightly timetable is that it is possible to devote an odd number of periods per fortnight to subjects and allows more flexibility and creativity. It is incredibly difficult to arrange fractions of periods if the school has a weekly timetable.

This actually is the first hurdle to overcome – should there be a weekly timetable, a fortnightly timetable or a 5 day (or 6 day or even 7 day) timetable that takes into account those annoying public holidays. For example everyone knows that there are more public holidays on Monday, so a weekly timetable disadvantages those subjects that are on Monday. The more numerate among a staff (these are surprisingly often Mathematics teachers) count up the number of Mondays that are “out” because of public holidays or even professional development days and conclude that there will be x% (where x is a number between 1 and 100, but in practice between 1 and 5) less periods available to a subject that is timetabled for Monday. They then translate this to the number of minutes per year that a particular class may miss.

The part time staff marshal their forces against this argument, especially those who have traditionally managed to somehow wangle Friday as their day off. Part time specialist teachers who also teach at another

(Continued page 6)

Are you “one in 200,000” ?

Roger Canty is known by some as rather one-eyed and perhaps the following report explains why!



As you worked your way through another busy day, solving the world’s problems, perhaps you, like me, had wished for a kindly voice to whisper to you “You really are one in a million”.

Well I can claim to be one-fifth of that, though for all the wrong reasons!

Recently a little spot of blurred vision in one part of my left eye was diagnosed as a melanoma, very slowly growing in the choroidal layer behind the retina (that’s the vascular layer which supplies nutrients to the eye).

As melanoma is one of medicine’s rude words, it was fear and panic for all to see (no pun intended). But I was reassured that this type of melanoma is very slow growing and it doesn’t break off into the bloodstream as do skin tumours (If this isn’t a strictly correct descriptor, forgive this old engineer).

So came the treatment options. In reverse order of chronology and invasiveness: laser treatment involving a light sensitive chemical, a radioactive plaque inserted behind the eye for 5 days or removal of the eye. All were claimed to be equally efficacious, which shows the general level of humour of my oncology ophthalmologist! And certainly revised my definition of efficacious!

Now, the whole point of this article is to indicate the rather marvellous strides in medical innovation.

In this case, the laser treatment was lateral thinking from the treatment

for macular degeneration. It uses a light sensitive chemical in conjunction with laser (or bright) light.

The chemical apparently attaches to young blood vessels feeding the melanoma and indeed young blood vessels all around the body) and the application of light causes the chemical to react and close (seal) the blood vessels thus causing the melanoma cells to die from starvation of nutrients.

So the treatment is in trial phase with an objective of 50 patients Australasia-wide (I’m number 31, after two years since trial commencement). But I guess 1 in 200,000 doesn’t lead to hordes flooding the surgery!

Of the 30 preceding me, 29 have had total success with the tumours shrinking to single-cell-layer status, which is apparently good enough!

Perhaps up to 6 treatments are required, but even after my first I have better vision though an ultrasound shows no change in the size of the tumour (apparently associated swelling and fluid have decreased so that I have moved from an inability to read the top line of the standard eye test chart to reading the fourth & fifth (with some guessing, I will admit!)

Can’t wait to be able to read the bottom line; you know the one that says “Printed by J. Smith & Son, Birmingham”.

So, full marks to my ophthalmologist and his colleague for their innovative approach. Worthy Covey Consulting Associates if ever there were!

Downsides (apart from the excitement of waiting in public hospitals!) is the need to avoid daylight for 3 days after treatment (skin will burn and sunscreen is useless), so I tended to look like a “certain type

of person known to police” dressed in wide-brimmed hat, sunnies, gloves and long sleeved clothes when returning home.

And despite questions along the lines of “Is it due to excessive red wine, golf, computer use or sun exposure?” the answer is “Just bad luck”. (Whew!)

I am pleased to be living in this era where a simple treatment is available. Many of our fellow citizens are still waiting for successful treatments for their ailments; may medical research be supported to the hilt by Governments & philanthropists alike, for the benefit of all.

You may now get back to work! I’ll be keeping an eye on you.

(Sorry, just had to use that one!) ©



Recent tragic events involving dogs would suggest we all have a lot to learn about dogs. Covey Consulting demonstrates yet another specialty. Ross Patterson reports (with help from Anne Connors)

All dogs are dangerous

Check out your best friend's teeth. Watch him shred a set of lamb-rib-bones in seconds. Ask your vet how often he has been bitten by his clients, but remember that a bite by an angry Bull Mastiff is more memorable than a nip from a Jack Russell.

If there is a simple solution to the problem of dangerous dogs, it is to make the owners responsible in law for the damage their dogs cause. (Continued page 7)

who is not particularly fond of walking and a ten year old who hates it.

We were selfish enough to insist on one week out of our eight away being for the adults, but we decided to pick some easy walking. After some consideration, we decided a walk following a river should avoid too many hills and make for easy travelling, and the Dordogne seemed to satisfy our wishes for the nature of the country and architecture. What we did not consider was that the river runs in a deep valley and several times we climbed up out of the valley and then back down again.

Finally, to choose the tour company. After some research we decided on La Caminade as offering good value tours of the type we wanted (www.randolacaminade.com). We were delighted with our choice and can recommend them to anyone wanting try a similar tour.

Our walk covered the section of the river from Soulliac to Bretenoux – about 100km. We generally set off between 8 and 9 in the morning and we reach journey's end by about 4pm. Not strenuous walking, but enough when done day after day. Usually there were stops along the way to visit buildings or scenic spots.

My expectation, based on visiting France more than forty years ago, had been that each village we came to would have a café, bakery and/or general shop and that we could stop at each one for refreshment. Alas, now that everyone has a car there are no shops in the small villages anymore and nowhere to re-provision during the day. The only other problem was that there were often attractions at the towns of our overnight stops, but we usually set off before they were open in the morning, and were about to close when we arrived at our destination later in the day – apart from us walking faster I don't see what anyone

could do about this.



(Soulliac – a fine open air café for lunch)

As one would expect in France, our meals were magnificent (even in our two star hotels). The area is a major foie gras region and also many ducks are raised. After a couple of days we would ask ourselves “I wonder how the duck will be cooked this evening.” However, there are a lot of worse things than duck to grow tired of!

I don't propose to bore you with a blow-by-blow account of the walk, just mention a few highlights and ‘typical’ features.

All of the towns we stayed in were old – let's call it medieval – and even the new buildings were built in the old style. Some of the towns were very old and many of them contained a twelfth or thirteenth century abbey or similar.



(Carennac - another impressive old town)

Most of the towns and almost all of the roads that we walked on were very quiet during the day at least. At one point we had to cross a motorway – we saw it, but we crossed where it passed through a tunnel through a hill and we were on a


quiet foot-path.

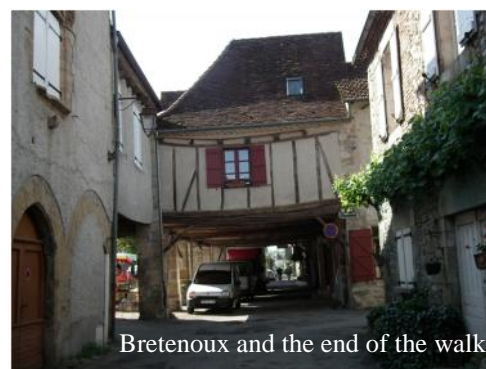
We were in the area in early June – the wettest month of the year but we only had one day of rain. What we gained from the time of year was pleasant walking temperatures and an abundance of butterflies & wild-flowers. One afternoon when everyone was tiring we came across a small patch of wild strawberries (the first I had seen in very many years). There were only enough for three or four each, but this was enough to give us all a boost.



Gouffre de Padirac

We also saw very many birds, but not so many animals - an occasional deer or rabbit and one day a pair of foxes who were rushing (I nearly said haring) along the narrow foot-path towards us – no doubt trying to escape something. With their minds on what was behind instead of in front, they nearly ran into us & then suddenly took to the bushes.

Much of our walk was along old pilgrim ways, and every so often we would find a well for travellers or a cross in the middle of nowhere to guide the way. *[Editor's note. Perhaps this walk did not have the spiritual significance of recent pilgrimages by Bruce Allender, but at least the effort was made!]* 



Bretenoux and the end of the walk

Tallinn, Estonia

Nafty Vanderhoek is passionate about education but reminds us that education is broader than books.

They say that travel is an education, and so my wife Martha and I take every opportunity to become “more educated”. Our trip this year included the Scandinavian countries, the city of St Petersburg and Tallinn, the capital of Estonia.

Estonia has had a chequered history, being at one time or another part of Sweden, Germany, Poland, Russia or Denmark. Its strategic position as the gateway between the east and the west makes it a valuable and desired country.

Estonia was part of the Swedish Empire until 1721, when it was ceded to the Russian Empire. Estonia declared its independence in 1919, but was illegally annexed to the Soviet Union as a result of the Molotov / Ribbentrop pact around 1939-1940. In 1941 it was occupied by Germany and in 1944 by the USSR until it gained its final independence in 1991. In 2004 it joined the European Union, and economically, socially and tourism wise it has not looked back.

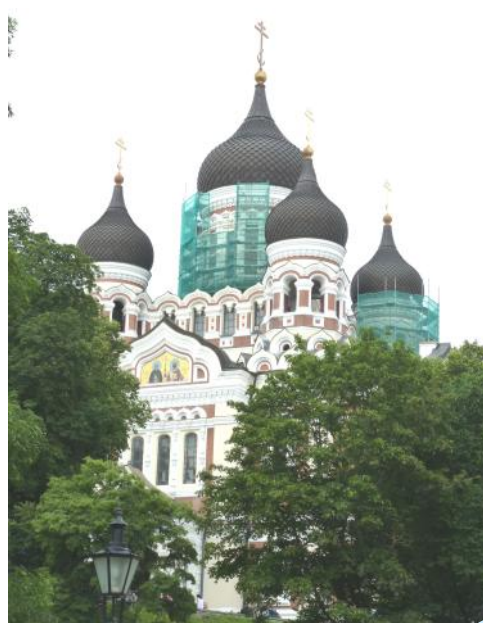
We spent two days in the charming old town of Tallinn that reminded me of a miniature Prague. The city is full of winding old cobbled streets that are difficult to walk on.



The surrounding old wall varies greatly in height & there is a pleasant walk around the outside walls among manicured gardens and interesting sculptures. The town is full of cafes, restaurants and shops selling anything from souvenirs to typical clothing from the area made from linen. Another item that seemed popular was jewellery made of amber. Luckily my wife did not like any of it and we were subsequently told that it was actually imported just for the tourist trade.



Of course there were the usual Churches – some Roman Catholic and others Lutheran.



Tallinn is a city that is booming. During our brief stay there was an Environmental Conference for Youth. At the official opening that

was held in the main town square and to our disgust, we heard one young man say that it was up to his generation to fix the problems created by the “previous generations “ – meaning us !) On the following day we saw the opening ceremony of European Youth Athletics games that had representatives from 46 countries.



By European standards, Tallinn is relatively inexpensive and has become a popular place to hold such events. People come from far and wide to be part of the festivities.

Tallinn (and indeed the whole of Estonia) has another great advantage. Alcohol is cheap and so many Finns and Danes come for the weekend to stock up on supplies. On our ferry to Helsinki the next day we saw people with almost no luggage, but trundling along with trolleys full of alcohol.

On the outside Tallinn is sparkling, bright, gay and bustling with life. However, on a walk outside the old city we saw many grey buildings needing repairs. Surprisingly, we saw very few people outside the old city at 10 am in the morning.

As we were leaving the old city at the end of the day, two old ladies were standing near the gate, selling two pairs of homemade baby booties.

Obviously not everyone is doing well ☹

(Continued from page 2)

school stridently speak out against straying from a weekly timetable. Teachers who rely on Child Care rally in support of a weekly timetable because of the difficulty of getting a place and the need to book a year ahead.

The amazing feat of mathematics by the maths teachers bewilders so many and they all understand and sympathise with the child care problem so the staff generally end up with a majority voting for a weekly timetable.

That settled then the number of periods per subject need to be worked out. Now it is obvious to all those who have worked in a secondary school that not all subjects get given the same number of periods per week. In fact to make it even more complicated a particular subject, such as science for example, may have 3 periods per week in the junior classes (Grades 7 and 8), 4 in Grades 9 and 10 and 5 in Grades 11 and 12. By a process of intricate mathematics balanced with much discussion, cogent arguments and educational rationale this is all decided.

Then things get even more complicated – a full time teacher with no extra responsibilities teaches 24 face to face periods per week. In a big school there are a surprising number of teachers who have “time release” for administration duties such as Faculty Head, Grade Coordinator, Sport Coordinator, careers, etc etc. So only half the staff have a total of face to face of 24. Management do not like teachers to be “under load”, nor do they like having a class or two without a teacher rostered to it. (Actually it does not comply with the education act.) Equally management do not like small classes so they dream up ideas such as Grade 9 and 10 combining for French because the numbers are not viable otherwise.

Finally teachers are assigned to particular classes. I forgot to mention that this also involves trying to accommodate each teacher’s preferred classes. This is often tricky as there are always those classes that are not in high demand. Then the really tricky problems start to emerge. If it is a big school and there is only one kitchen for the Food classes (called Cooking in years gone by) and there are 28 periods of Food to fit into the kitchen per week. Clearly for those brilliant mathematicians reading this these classes have to be allocated first and the whole school timetable revolves around them. One of the things about Food classes is that they cook things and generally want 2 hours. The most they can get is 2×50 minutes. They then insist that they will need either period 1 and 2 (before recess) or periods 3 and 4 (between recess and lunch) so that they can creep into the break time. They definitely cannot have periods 5 and 6 because the buses come straight away and there is no extra time. This seems quite straightforward to the 2 Food teachers. They have to have all their cooking classes (a total of 28 remember) before lunch. Unfortunately there are 20 periods per week before lunch and 10 after lunch. It is very difficult for the food teachers to see that this presents a problem. However they get the general idea that they will have to have some classes in the afternoon, so they depart muttering darkly.

The maths teachers present evidence from many reputable studies that indicate students should do mathematics each day and that students perform best if they have mathematics early in the morning – afternoon lessons are not an option for mathematics and the early periods before recess are really what they want. (This means only single

periods, no more than once per day, no afternoon periods and no periods on Monday!!) Maths teachers don’t even bother with the mathematical problems associated with this as they all know that there are such things as negative numbers, zero, even complex numbers and infinity and anyway the timetabler, usually a maths teacher, will understand and support their case!!

The MDT (Materials, Design and Technology or for the older readers Woodwork, Metalwork etc) teachers suddenly realise they may have left it rather late to put a case for “special consideration” & rustle up support from the Food, Textiles, Art, Music and Drama teachers. They cannot have more than 18 in their classes as they are practical classes. They talk about OH&S, the onerous task of supervising practical classes and the need for double periods. They overlook the fact that class groups are not multiples of 18 and that the OH&S limit is in fact 25.

In amongst all this in Grades 9 and 10 students elect certain subjects and there are usually half a dozen who want to do an unusual group of these elective subjects that are all being programmed at the same time. Naturally neither the students involved nor their parents can understand why the grouping of subjects cannot be changed to suit their child instead of the other 130 in the Grade level. They reluctantly accept the situation and choose a couple of other subjects, often to mutters from the parents such as “I wanted you to do that subject anyway” or “what you have now chosen will be much more useful”.


At this stage the timetabler is ready for a nervous breakdown or solitary isolation for several weeks in order to come up with a timetable that is workable and fair ☺

(Continued from page 3) If you chose a large powerful dog of any breed **YOU** have a responsibility to turn the puppy into a reliable well behaved citizen. (See appendix). I would like to see licences for breeders and dog owners. That is not at all likely but every neglected puppy would agree.

Fighting dogs

The web site for the Salt-Water-Croc Breeders Association, would probably assure you that these critters make ideal family pets. Be a little cautious with people that are trying to sell you something.


Dog fighting has been around for centuries. The dogs fight to a bloody death, while the sub-human audience screams encouragement and places bets. And don't let's kid ourselves; it is still with us, God forbid.

The many "Bully" breeds do not exist because of their handsome faces and affectionate personalities,  although they certainly possess these qualities. They were generated by natural selection. The winners reproduced and the losers died.

Research shows that a strict regime of natural selection quickly stamps selection criteria onto the genes. What is not clear is how many generations are needed for a particular trait to fade to insignificance, when the criteria are changed.

When does the risk vanish? That's the key issue.

Beware

Think what is needed to win a deadly serious dog fight. 

1. First, give no warning.
2. Then rip in for the kill
3. Clamp, shake and tear until your opponent moves no more.
4. No quarter is to be given. Your DNA is shrieking "life or death". When the dog is your family pet and his opponent is your neighbour's sweet little toddler, then you have a tragedy

your hands.

Never complain if your dog growls. Most domestic dogs have a well-developed series of escalating warning signals which allow us to co-exist: body language, growling, teeth displays, fake lunges. Beware of the quiet dog with a funny look in his eyes.

Guarding breeds such as Shepherds and Rotties can be a serious problem of course. They are powerful and assertive by design, but they were never encouraged to kill. They will normally make you very much aware of their feelings if you break their rules.

Pit Bulls?

Tabloid TV implies that there are simple solutions, but if you raise the IQ horizon a little, various practical issues appear.

► You can't stop a dog in the street and demand to see his papers. This is not trivial. The courts like some evidence if they are asked to have the dog destroyed.

► Bully breeds range from snuffley old bulldogs to sweet silly boxers. And most are delightful, reliable dogs.

► Many other breeds have some awful offences on their rap sheet.

► I suspect that most dog-offenders are no-name brands with a sad history behind them. This so-much reflects the situation in our human prisons.

In South Australian we have various "dangerous dog provisions" in the legislation, including restrictions on Pit Bulls. I discussed these recently with our local Dog Control person (as part of an assignment). Let me share the essence of his comments:

► I react to reported problems. I don't patrol the streets looking for dodgy dogs.

► How would I know if a dog was a certified Pit Bull?

► Aggressive dog problems are not

limited to any specific breeds.

► It is usually not worth the considerable cost & effort to take owners to court, so there is often little we can do about a problem dog.

► The striped yellow "dangerous dog" collars are not much used. [I suspect they are messy to police.]

Utes and Spiked Collars

We tend to associate Pit Bulls with young males, utes, bull bars, and spot lights. But of course that's just another pigeon hole.

The only local dog that scares me is an old black lab with a bad attitude, & the last dog to bite me was a Shih Tzu that objected to my sitting on her couch.


Sorry to be trite, but **YOU** the owner are the problem. Dr Ian Dunbar is the guru of puppy socialisation, and his advice is that your puppy has to be taught that his sharp little puppy teeth must never touch human flesh. This has nothing to do with "dominance" or other such Hollywood nonsense. It is simply a learned behaviour pattern.

Caring for a dog is a responsibility. Don't take it lightly.

Appendix

Puppy Socialisation is vital for bully breeds & guarding breeds, but excellent for all of our furry friends.

It does not mean just being comfortable with other puppies. He has to be relaxed around his "normal" environment:- cars, kids, prams, bikes, toddlers, visitors, vets, whatever.

You have a narrow learning window of around 16 weeks where a puppy's behaviour and social skills can be easily shaped. After that period it just gets harder, but not impossible. Get your puppy to a qualified positive trainer. Check out <http://www.apdt.com.au/> 



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