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# The Stewards of Terra.

Book One.

## The Watchers.

A tale of snakes, strawberries and the end of the world as  
we know it.

by Eddie.M, [eddiem.com](http://eddiem.com)

Let us hope that it remains fiction.

The book is complete but there may be corrections or revisions.

They will be posted to -

<http://www.eddiem.com/fiction/The%20watchers/Watchers.html>

To contact me visit <http://eddiem.com/contact/contact.htm>

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So if you know someone who would be interested in my work - share it.

Ciao Eddie.M.

Eddie Matejowsky 2004-2006

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## Navel Gazing.

Date - Sunday, 28'th of November, 2004.

Place – Australia, East coast.

Time – 11:59 PM.

Sally's bruises were hidden by the bath foam. It was forty hours since her accident. She ached all over from the day's walk. She had pushed herself a bit too hard in order to make a point and was now paying the price. Her body was tired and in need of rest but her mind was not about to let it happen.

Bath time was generally a high point in the day, a time to relax, make plans and fantasize. Not so tonight. For the first time ever - she wondered about the impact her indulgence was having on the world. She saw a little pile of coal which belonged to her alone, it was being fed into a power station a long way away and little puffs of smoke rising into the sky.

She was just one person, one of billions, what difference could it make?  
“Does it really matter?” she asked the ceiling.

She let her mind become still as she had been learning to do and looked out in front of her.

Mist rose from the toes she saw poking through the froth. It was joined by more mist rising from the bubbles. The streams of mist coiled around each other like strands of rope and began to spin. They rotated rapidly for perhaps five seconds forming a column almost a metre tall. Then it began to wobble, it broke apart and disappeared.

“How subtle was that?” she said to the fern.

“Not very!” she replied to herself. If that was an omen it was not a good one – cyclone, hurricane, tornado.

She wondered if she'd gone crazy, but what she really feared was that she was sane. If she was sane then the things she'd learned during the past week were probably true, the world she had believed in was a lie and the future looked extremely scary and dangerous.

Tomorrow she was supposed to be at work again but she would ring in sick. One look at the colour of her ribs would convince anyone she needed some

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time off.

As soon as she was able she would be writing down what had happened, she might even start tonight. First she would go over it again in her mind. Where should she start the story?

Should she start with how the trap was set by Coral and the others?

How Carol had introduced her to Jo? Carol was someone she had served at the library where she worked, she had become a friend of sorts. Carol raved about the intensive workshops Jo ran, they were live-in, one on one type things that she ran on a limit basis – it was all bunk.

She thought she'd probably leave it out, it wasn't that important and she already had a lot to write.

Or how she wanted to run away after her fight with John? How he went off on another trip and wouldn't say where. How he acted more like a secret agent than a geologist? How she thought he was with another woman? It didn't seem to matter now.

Or that fake interview Jo gave her?

Jo's office reminded her of an alchemist workshop she saw on a poster. Da Vinci might have felt at home here – except for the computer. She would have thought Jo arranged her office like this just for effect but the whole house and some of her yard had the same flavour to it. Bits and bobs and bits of string. Gizmos and gadgets, tools and instruments, art and craft. She was into everything. Her library was in keeping with the rest of the house, everything from hard science to mythology, there was science fiction and fantasy, home renovations and cooking – the list went on, her collection of pulp fiction was somewhat limited.

Jo was confident and obviously quite bright, good looking in a rugged sort of way, with eyes that didn't back off when they perhaps should have – yes she was intense. Jo's questions were probing but she was so business like about it that Sally complied.

“Sally” she said, “You've probably figured out I don't do this for a living. The deal is you pay your expenses and at the end of our week together you may wish to make a donation to me or to some other worthwhile cause which we will discuss in the coming week. I'm also open to donations of labour. You might want to help with the garden or something like that. The content of my lessons won't be given to you in advance. It will probably be

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quite different to what you are expecting. I think I can promise you the world will look different when we are done.”

She also said, “pack light, bring old clothes and good walking shoes.” She didn't really know why. Jo promised Sally she would reveal all when the time was right. She really did want to run away for her life for a while and she figured she could cope living with Jo for a week, it might even be fun.

In hindsight it didn't really matter either.

No, she thought she would start with how she walked straight in and swallowed the bait, hook line and sinker. She did that a week ago when she walked into Jo's lair with suitcase in hand and wearing walking shoes....



## Day One.

Monday, 22<sup>th</sup> Nov 2004.

“Good morning Jo.”

“Good morning Sally, I was beginning to wonder..”

“Traffic was bad and I don't do mornings well.”

“We have a big day ahead, ready to go?”

Sally assumed Jo would now show her to her room or something but stepping into the house that fantasy was dashed. Lying in what had been the clearest patch on lounge room floor - were two backpacks along with a pile of Jo's clothes and camping stuff. This was no picnic she was planning.

Sally felt physically ill for a few moments.

“Intense” or “in tents” - both were uncomfortable, the latter was worse than the former and the two combined would be unbearable. Camping yuk, that's for poor people who can't afford “real” accommodation. She thought “I don't wanna do this, really don't wanna do this. She can't make me, no, no no!”

“I don't do tents” she said flatly.

“I don't like them either” was the reply “I prefer the stars”.

“Let me see if I've got this right. You want *me* to carry *that* on *my* back and sleep on the *ground* in a *tent!*”

“Its *not that* bad, you *can* sleep on a *mat*”, Jo mimicked the emphasis Sally had used.

“Backpackers get murdered all the time, it isn't safe”

“They get murdered hitching not hiking, around here serial killers don't hike – they drive – like you do. The percentage of psychos out there is quite small, the chances of meeting anyone nasty on the track is slim. Anyway I've got my running shoes on.”

“You think you can out run them?”

“I don't have to, I only have to out-run you!”

“That is *not* funny!”

“Sorry, I couldn't help myself” then “**I will protect you**”, in a macho voice, Jo took up a pretend karate pose. Milla Jovovich she was not, an older sister - perhaps.

“I don't want to do this, why can't we drive and do day trips?”

“Because the journey is important, it isn't about arriving somewhere, we have to go off-road and cover a lot of ground on foot to look for plants and

things. I've spent hours getting our stuff ready. I can't make you go but you should. I've been doing this for decades, you don't know what you've been missing.”

“Yes I do, a sore back, insect bites, cracked heels and smoke in my eyes.”

“It is worth all that, stretch yourself”

“Can I take chocolate?”

“Only if you share it, so you're coming?”

“I didn't say that”

“I'll thrown in a stop at the coffee shop and a free set of steak knives!”

“Only if there is steak to cut with it! Can we take meat?”

“If you must... so we're planning meals are we? Fresh meat is a problem, not my thing, I wouldn't. Preserved, dried or tinned will work but go as light as you can.

I have something to show you. Happy snaps from my latest trip.”

Jo pull a slim box of paper out of a pile on one of the many tables in the room. Her 'happy snaps' were large photographic prints which could pass as having been done by a professional. It now dawned on her that the prints hanging around the house were Jo's own work.

Sally was genuinely impressed. In particular the sunsets got to her, she really did want to be there. Maybe Jo was right and she should stretch a little before she got too much older. Jo clearly knew what she was doing. One step at the time and she'd get through somehow.

“If I go with you and really can't do it, you will take me home won't you.”

“Yes, just do your best”

“Promise?”

“I promise, Promise you will do your best to complete the walk?”

“Hmmm, fair enough I guess, OK, what next.”

“Packing, then shopping, then we go bush.”

“You promised coffee!”

“OK, we'll try to fit it in but really, we are running late. We've got to cut that lot down to a few kilos”, Jo pointed to Sally's suitcase.

“One set of warm clothes, three T-shirts, one or two pairs of shorts, all that underwear, 4 pairs of socks.” And so on, Jo quickly reduced the contents of the suitcase to a quarter the original size. She also brought out some small plastic bottles and decanted Sally's shampoo and conditioner into them. It didn't seem enough but Jo's shampoo bottle was even smaller so she said nothing. Jo sorted out things that had to be kept dry and placed them in a plastic bag before putting them in the pack. Jo split the camping gear and food items roughly into two and packed half in Sally's pack.

“Ok” said Jo “Decision time for you. One tent or two? I don't usually snore but no promises, they are small, you can have your own tent but you've gotta carry it, it weighs about 3 kilos, it is the smallest I have. Take it or leave it?” Sally thought that being alone at night was pretty scary, “I'll share.”

Jo packed her own gear, she lifted the two packs to compare the weights and seemed satisfied they were equal. “I'm taking 2 kilos of camera gear. I carry that.” A camera bag was waterproofed and packed away and small tripod strapped the outside. One self inflating mat was strapped to each pack. Now they really looked the part.

“Anything else you gotta take, Sally?”

“My phone?” Jo took the phone, looked at it and said - “I don't think it will work after we cross the first ridge, it is light, take it if you want but it is safer here. Mine works, you can give my number to anyone who needs to contact you but it isn't for chatting on – it is for emergencies. John perhaps?”

“No, that seems to be over and I have to move on.”

”Sure?”

”Yes.”

“So if you're finished with him can I have his number?”

Sally looked shocked.

“Gotcha” said Jo, “it isn't over for you. I have a feeling things could still work out OK for you two, if that is what you want.”

“What make you say that?”

“I sometimes seem to know things I shouldn't, we'll see.

You can park in the garage behind my van.”

“Aren't we going shopping?”

“Yes, isn't far, easier to walk.”

Jo filled water bottles while Sally parked and then helped her put on the pack. She helped adjust the straps the got Sally to help her with her own. Hat, sunnies, sunscreen, Jo locked the house and they hit the road.

### **Shopping.**

So far so good, Sally felt a little silly, for starters the pack wasn't her color. She was surprised at how quickly she began to feel hot, her back was already feeling damp and they'd only gone a block. It was late spring but cool for that time of year, it was 9 AM, this was going to be a long day. The air conditioning in the shopping centre was most welcomed, how was she going to manage without it. Jo lead the way to the supermarket, dumped both packs onto trolleys and shopped like she was on a mission. She counted apples and oranges, and grabbed some fresh dates. She didn't take much fresh fruit at all. Into the trolleys went dried peas, beans, onion and potato

along with flat bread, pasta, rice, packet soup and flour. The dried fruit and other sections were all dealt with in a brisk manner. Sally made sure the chocolate wasn't forgotten. They haggled about meat and settled for a tin of ham and some salami. Jo pointed out all the ham was imported and insisted the ham they bought was as local as possible. Sally wasn't sure what the fuss was about. New Zealand was the closest they could find. Jo would normally have complained about the fat in the salami but when you are carrying your food - hi-joule foods are appealing. Jo sized up the amount of food and once satisfied headed out through the checkout. The checkout chick who in this case was boy, freaked out at the packs, then took a token look inside said "thank you". The shopping was scanned and for paid in cash – no flybuys. Then Jo took them to a bench and proceeded to remove all the excess packaging and throw it into the bin, she obviously didn't approve of the way things were done. Normally she would have packed the eggs inside the flour but not wanting to make a mess in public she packed them in with her clothes.

Sally didn't have cash for her share and offered to get some from an ATM. Jo said to leave it for when they got back.

"You promised coffee?"

"OK, but we may run out of daylight if we don't get moving soon.

Jo took them to the nearest coffee shop and ordered and paid for both of them, she had steered Sally towards a lot fat muffin but ordered apple pie for herself - no cream.

Jo looked around thoughtfully as she sipped her coffee and ate her pie. "It is really sad how strangers won't talk any more. One upon a time people gathered in public places to meet, talk, argue play games or whatever. Now there's a cute guy over there (Sally nodded) and a cute girl over there. Both single lonely and bored, even their star signs are compatible. Both are introverts. No way they will sit together and talk. They'll both go home and try to find love on the net."

"You are making that up aren't you?"

"Of course. *It could* be true though.

Anyway - Coffee you can buy, conversation is always BYO"

The woman at the next table got up and left, leaving half a plate of lunch behind.

Jo rolled her eyes in the direction of the wasted food, "Some of that stuff came half way around the world in so it could take up residence in our local landfill. Mind my pack please Sally."

Jo went off to the restroom. Sally took the liberty of lifting Jo's pack, as she

suspected it was quite a bit heavier than her own. She also made quick call to her mother. Her mother fretted about what Sally was going but hopefully got the message that phones don't work and not to worry. Jo returned before had she hung up and motioned to her that it was her turn to go. Sally didn't offer Jo's number but said she call if she got the chance.

They hadn't left the car park yet and Sally was already sweating, it was just before noon and the hottest part of the day was yet to come. Some clouds were forming in the distance so they might get some relief from the sun later on.

"It is so hot" said Sally.

"All this doesn't help," Jo pointed to the black bitumen, "Did you know it is all imported too?"

"The car park is imported?"

"The bitumen is, Australian crude oil is too light to make tar easily. All imported. Imagine how much road we have in this country."

Sally wondered why was Jo telling her this. She could feel the heat coming off the road, they were walking towards the sun. Her shoulders were starting to hurt already, she wondered how far they had to walk today. Part of her wanted to ask and another part didn't want to know the answer. She shifted the pack one way or another but nothing helped. She tightened the hip strap and managed to ease the discomfort for a few minutes then she gave up and tried to think of something else. Jo seemed focused on walking and nothing was said till they arrived at a small park at the edge of the forest some half an hour later.

"This is really quite uncomfortable, Jo."

"Sorry, but it is about the get worse."

"What?"

"This is were we fill up with water"

She thought things couldn't get much worse and now they had.

"I know its heavy" said Jo "This is the worst part, as we use up our food the packs will get lighter, today is shorter walk than later for that very reason."

Did she say "shorter walk?", Sally though she might make it after all.

They helped each other drop their packs near a tap. Sally lay down in the shade and watched Jo fill the empty bottles and repack them. She drank deeply and then soaked herself from head to toe, hat and shoes inclusive.

"You too" she commanded.

No complaints about that, Sally did likewise and stood there dripping. Jo then produced two sarongs and soaked those as well, she handed one the Sally and wrapped the other around her own neck. Sally did the same.

Packs on backs they continued east into the bush. Sally's shoulders began to hurt even more than before but at least she now felt cool. She managed to get the lenses of her sunglasses wet so the world looked a bit blurry, she could see well enough to walk. Civilization now behind them they walked side by side along what was now a dirt road.

They walked past a new land development. Roadways had be bulldozed into the scrub and pink ribbons were tied to the trees which were destined to be chainsawed.

Jo started to speak. "I want to talk about risks now. Hiking out here is reasonable safe if you take care and know what you are doing, it is quite dangerous if you don't. I know this part of the world very well, you don't, I couldn't get lost here if I tried, you could get lost very easily. Don't wander off on your own. There is a whistle and a small torch in the top pocket of the back, keep them with you. In case we need help my phone has coverage for most of the way, I have a both map and GPS to report our position. Later I'll show you how to use them if you are interested.

Our lives depend on water, drink often but don't overdo it, we have enough water to reach the camping ground plus a safely margin. We also have some fruit for extra moisture and sterilizing tablets if we have to resort to dirty water – we'll call for help before we get to that stage. We have no plans for climbing so we aren't at risk of serious falls. We are at risk from snake and spider bites so be really careful. There may also be leaches or ticks"

Jo continued her safety briefing as they crossed a creek into a burnt forest, everything was black or brown. There was a strong smell of burned leaves and grass. The temperature went up from the blackness and reduced shade. "Why do there have to be snakes" she thought, "I hate snakes".

Sally was glad when Jo finally stopped but this was just a pause for breath. "Now" Jo continued " I need to tell you about some things much more serious. Risks which threaten you and I are important to us and our loved ones, the risks threatening our entire species are enormously more important."

Sally thought "A fine Sunday afternoon walk this was turning out to be – a greenie nutter. I was looking for a guru, not this!"

"You mean like global warming and stuff?"

"That is an important part of it, it is only one part of the picture. Let me start with, what are, in my opinion, the least likely events. Let me start with planet-X."

"Huh?"

“Planet-X is also called Nibiru. Almost 30 years ago Zecharia Sitchin wrote a book called “The twelfth planet” he believes he decoded the ancient myths and that they tell of a large planet with an elliptical orbit of 3600 years. He believes it to be inhabited and these aliens are the gods of old. Planet-X is expected to return any time now. It is said to cause major disruptions to our solar system and earth if we happen to be near it. The planet-x theory has a large following, it also has a large number of nay-sayers. It sounds pretty unlikely and I won't be losing any sleep over it.”

“I've never heard of it, I obviously lead a sheltered life.”

“You do! While we are on the space theme we have asteroid impacts. From time to time earth gets whacked by something large crossing its path. It might happen in the next minute or not for a million years. A large impact within our lifetime or ending our lifetime is unlikely, it is quite possible though. In particular Asteroid 4179, also known as Toutatis is thought by some to be the rock with our name on it. It is a potato shape asteroid measuring 2 km by 2.3 km by 4.5 km which missed us by 1.5 million kilometres earlier this year. It is not expected to come that close for another 500 years. Unless something serious happens to it to change its orbit – like a piece breaking off or an encounter with another celestial object – we have nothing to worry about. We could be hit by something sometime. If our leaders knew an impact was going to happen they might not tell us and that might be just as well.

The sun has been acting strangely. Jim McCanney thinks its because of a highly charged object approaching our solar system, possibly Nibiru. Richard Hoagland thinks it is because of a hyper dimensional alignment. He says that all the planets in our system are being affected and that this is also the reason for global warming. I think human activity is the main cause of the warming but variations in the sun or other factors may play a part.”

Global warming or not, it was hot, Sally was struggling a little to keep up. Their clothes were beginning to dry and the cooling effect was wearing off, the clouds were building but still a long way off. Jo pointed to the shadiest patch of dirt she could find indicating it was rest time. They dropped their packs and had a drink. She studied Sally carefully to see how she was coping. Sally was a little flushed and sweating. Reaching into her pack Jo took out a pair of oranges. After handing one to Sally she bit into hers to start to peel it. Sally was about to ask for a knife then decided to copy Jo, then looking at her hands said “Germs don't frighten you do they.”

“As a matter of fact they scare the crap out of me. Not these germs though”

she replied holding up a finger. Then continued "There are thousands of scientists at work modifying germs to make them more deadly, some do it unintentionally but many do it on purpose. Some people think that AIDS and SARS are products of a germ lab, I'd like to think not. Naturally occurring germs are bad enough. Russians scientists are predicting an epidemic of avian flu any time soon, they are estimating one billion people will die – that's a billion with a 'B'. The 'World Health Organization' has similar but less dire warnings of it's own. If any of these germs reach Australia, I think sitting out here eating oranges with dirty fingers is where I want to be."

"I guess I asked for that, is there any chance of talking about something else?"

"Not yet, this is important, please hear me out. I don't like it either, it is too important to ignore any longer. Let's go a bit further before we have lunch." Sally forced herself to get up and bear her burden, almost instantly she was hot and sore again. Her legs were doing fine, it was the back and shoulders which were complaining.

"Our gallant leaders have involved us in an ugly war, that we ,the populace didn't want. It remains to be seen if our country commits further troops to the coming conflicts. Based on how eager Canberra is to please Washington, and our failure to change our mis-government at the last election - I expect our wishes to again be brushed aside. Terrorism is not a direct risk to humanity, the war on terrorism is."

They came to a railway crossing, or at least it used to be a railway crossing. Jo indicated that this was the path to follow. The tracks had been removed and most of the wooden sleepers had rotted or burned. Re-growth was reclaiming the bed of blue-metal the line had rested on. Mostly it was OK to walk on, they had to weave back and forth to avoid the encroaching bushes, Jo stayed beside Sally as much as possible so she could keep talking, she raised her voice on occasion to let herself be heard over the crunch of blue-metal underfoot.

"Do you know, Sally that the world consumes more food than it produces?"

"No. How is that possible?"

"By running the stockpiles down. For the last five years the world has been eating more than it grows. We already have millions if not billions of hungry people, expect it to get worse."

"Time to stock the pantry?"

"That may help you through a short term shortage, as long as no-one steals your cache. Of course if lots of people stockpile food it will make things

worse for everyone else.

The root of all this is over population. A growing population will hit a limit at some point, if it isn't food or water it will be something else. If you introduce bacteria to a petri dish they reproduce till all the resources are consumed, the last generation before the crash consume half the total supply of resources, then 98 percent die!"

There was rumble in the distance, the clouds were taller, darker and closer. There was just a hint of green in the cloud. Occasionally a bullet of wind came through whipping up the ash and fallen leaves. Brown leaves from the tree-tops were dislodged and fluttered or spun their way down to the black carbon covering the ground - lunch might have to wait.

"It will be interesting to see if we get violent weather too this year. I don't know if you know this; the rate of CO<sub>2</sub> increase took a big jump for the last two years. People like to think this is a glitch caused by an increase in bush fires. Chances are the acceleration is here to stay and so are the fires. It is likely some of the earth's carbon sinks are failing, not only failing to absorb more CO<sub>2</sub> but actually releasing some of the carbon which has been bound up. One prime example of this is the melting permafrost in the northern polar regions. The meltdown is causing huge problems for the locals with buildings sinking and trees falling over, it is also releasing bound carbon as the vegetation rots. The permafrost alone is estimated to contain three times as much carbon as the atmosphere. Excuse me for stating the obvious – more CO<sub>2</sub> means more melting means more CO<sub>2</sub> and so forth.

Worse still is the fact that some of the carbon is released as methane which is a more potent greenhouse gas than CO<sub>2</sub>.

The ocean is another major carbon sink, rising temperatures could mean it too will release carbon. Volcanoes release huge amount of CO<sub>2</sub> and have been blamed by some for the increases. The rate of CO<sub>2</sub> increase measured during our lifetimes is unprecedented in the climate record. Every year since 1958 when CO<sub>2</sub> began being monitored in Hawaii, the level has gone up. Until recently the increase per year correlated with carbon burned by humans, now it is worse. Do volcanoes alone cause global warming – I don't think so."

Jo tried to be brief in order to complete her rant before the rain muted her, she continued.

"Global warming could increase to the point where most of earth is barren. The heat could also trigger a new ice age. A slow onset brought about by the stopping of the gulf stream would cause a major human migration away from the northern parts of the global. A 'super storm' scenario as depicted in

'the day after tomorrow' might not allow people to escape.

The gulf stream not only warms the northern regions but it also cools the tropics. If it slows or stops then the warmer tropical waters will feed extremely intense hurricanes.



The biggest risk humanity faces is lack of easily obtainable oil, this will most likely result in the end of civilization as we know it. It appears..” she stopped as the first heavy drops started to fall. She already had two flimsy looking plastic ponchos in easy reach. She unwrapped them and helped Sally put one on, covering pack and all. She struggled with her own and with Sally's help got in on. The air was cool now, it was still steamy under the plastic. They had only gone a few meters further when the drops become solid. They were both caught be surprise. They would have risk the lightening and sheltered under a tree except there were none large enough within reach. Jo reached under Sally's

poncho to retrieve the camping mattress. Sally did likewise. They unrolled them and used them as shields against the hail. First pea sized hail and becoming larger till they were slightly smaller than golf-balls. The ice fell for several minutes. The hail,rain ,thunder and wind were deafeningly loud. Nearby a tree fell in the forest, the sound was not heard. The hail stopped almost instantly, heavy rain came down. They trudged along the track some more. Sally lagged behind a little, she slipped on a slippery sleeper and fell heavily. Her palm was bruised and the side of the poncho torn. Jo didn't noticed and pushed on. Sally was pissed off, really pissed off. A few hundred meters along the rain subsided in light drizzle, a hundred meters more and Jo stopped inside the mouth of an old railway tunnel.

By the time Sally caught up Jo had removed her pack and was starting to unpack it. She noticed Sally's torn poncho and asked if she was hurt. Sally offered her hand for inspection. “You'll live, this looks like home for the night.”

“You have got to be kidding! You *really* got to be kidding! I was expecting to be taken somewhere nice, you know green trees, clear streams, red sunsets, warm water and friendly neighbours with wine to share and so on. Instead I'm a mule for a day, I get lead through burnt out scrub in the

stinking heat, I get hailed on and starved. To top it off I get to sleep in a cave, a very smelly cave at that. Has something died in here? I want spiritual insights not a rant about our collapsing environment.

Tomorrow, you are taking me back to that road and you are calling a taxi for me and I'm going back to the sane world! This is all crazy talk, things just can't be as bad as you make out! I'm sore, hungry, pissed off and I want to go home – you promised I could.”

“If that is what you want, so it shall be. If my crazy talk is flawed please tell me where. Wishful thinking is not part of good planing. I wish the world was different, however it is not.

Now I have to make us some food. Now that the rain has stopped I suggest you go for a little stroll while I cook. Don't go too far. Chew on this to keep you going.” She handed Sally a piece of chocolate. This took the edge of the hunger. She took off her pack and poncho then removed her shoes. She walked back into the open and mentally added the need to pee to her list of complaints. She could take care of that and hoped this was the only urge she would have to deal with out here. She felt some much lighter now with the strain removed from both shoulders and bladder. It was then she noticed for the first time that the bush to the south east of the track was not burned. She had walked past this during the rain, she had seen very little then apart from the track and the back end of Jo. This patch of green invited exploration and Sally decided to make the most of the brief time she would have to herself.

The cloud blocking the sun moved on.

Perhaps it was co-incidence, had she walked into a b-grade script were metaphor was being badly abused, or had Gaia just winked to her.

This is what summer storms do, they come suddenly, they beat the place up and they leave just as quickly.

The sun had become orange, the warm light on the freshly washed leaves was breathtaking. The granite on this north western slope had been baking in the sun all day, the rock was still warm despite the downpour. Dense plumes of mist were rising from the dampness. Sally confessed to herself that seeing this made up for the discomfort she had felt, she would keep that feeling secret. Jo appeared briefly and snapped a few pictures then went back to work. Sally was drawn towards the mist. Still wary from her earlier fall, she was very careful on the



wet rocks. Amongst the mist she found water was still trickling down the slope in parts and some had collected in rocks pools not far from the bottom of the slope. One pool was almost as large as her spa at home, the water was warm. All that was missing was someone to wash her back, she missed John. She pushed that thought aside, stripped and got in. She watched the clear stream of warm water running into the pond and realized three of her wishes had already been granted. The water was so clear that even Sally was game to drink some. It was good, she drank deeply, it felt like it was doing her good already. She was really enjoying her little splash pool when Jo called that dinner was ready. The sun went behind a cloud bank, the show was over. She got out, wiped as much water off her body as she could with her bare hands, dressed and walked back.

Not only had Jo cooked but also she had strung two hammocks in some trees on the green side of the track. They lay in the hammocks and ate. Dinner was a simple meal of pasta, boiled vegetables, a small amount of salami and some baked beans thrown in for good measure. Sally told Jo about her bath and having drunk the water. She had hoped to hear Jo's approval.

Instead, Jo pulled a face and said “Yuck, its full of wallaby shit.” Sally's eyes opened wide and she looked ill.

“Sorry Sally! I should stop teasing you like that, the water is fine, I'm going to have some too.”

Jo left in the direction of the pool taking the empty bowls with her. The red sun dropped below the cloud, wish four was granted.

The wallaby comment was not without merit, as Jo neared the pond she disturbed a pair of 'pretty faced' wallabies, they hopped past Sally in the last rays off sunlight.

She also found out what the bad smell was, a stream of bats spewed out of the tunnel! What a day!

Jo then walked past, wet, naked, carrying washed bowls and rinsed clothes. She hung the later on the remains of an old fence to dry, then dried herself and put on a track suite – always practical was our Jo. She began making some tea. It occurred to Sally that she could offer to help, she pushed that thought aside as well, she was just too tired to move. She knew there was a tent to pitch and she should get changed and all that, she just wanted to lay there.

Jo repacked the food into one of the packs and hung it from a rat line she'd attached to a tree, her poncho covered the pack in case it rained. She made two trips over to Sally. One to bring some camping pillows, sleeping bags

and insect repellent then another to bring tea. She also gave Sally a small keyring torch and instructed her to clip it to her clothes. It was getting dark now.

Sally complained that it wasn't much of a torch. "You're not scared of the dark are you?" asked Jo lowering herself into the hammock while holding her tea in one hand.

"No, I'm scared of what is *in* the dark."

"When I was small I had trouble sleeping because I was scared. I wasn't scared of the dark either I was scared of the ghostly patches of light I saw. I was under 4 years old because I was still sleeping in the kitchen at that time. I had a tiny bed beside the refrigerator. We lived in a 3 room brick structure, I wouldn't call it a house. My parent immigrated a few years before I was born. We were poor. There was always enough to eat at least. My father was prone to losing his temper with me for no good reason and beating me up. To top it off some of the kids at school were really nasty creatures. A poor kid with a foreign accent was fair game. At that point I was scared of the days not the nights.

I had an unhappy childhood, I told myself to be strong and just waited to grow up so I could leave home.

It wouldn't be too much of a surprise if I grew up a little crazy."

"I didn't say you were crazy, I said it was crazy talk. I have a feeling I'm going to have to take that back, I'm still trying to work it out. Why do you do this? Why did you tell me that, in a nut-shell – we are screwed?"

"I want you to be able to make informed choices; that if you choose to survive the crash; that you have the skills to put the odds in your favour. I intend to survive and I would like to do it in good company.

I haven't finished explaining the problem yet, not tonight though, you already have enough to digest."

"So, you think there *is* a chance of survival?"

"Absolutely, the crash may not happen, it just isn't looking too hopeful the way the world is headed. If it does happen I expect some people will survive. I think many of those will wish they hadn't, a rare few will thrive. Don't you want a break from this bleak stuff?"

Sally decide to change the subject, "Sorry, I didn't help you with dinner and stuff, I'm so tired I can hardly move."

"I'm pretty tired myself. Let's rest a while and we can put up the tent if you want it."

“What is Jo short for? Joanne?”

“Jo has nothing to do with my given name, it is a nickname I picked up and decided to keep. My given name is Dorothy, I've never felt like a Dorothy. The nickname came about when I wore army surplus clothes to work one day and the guys thought calling me “G.I. Joe” was funny. I didn't fancy the “G.I.” part but “Jo” felt right. The others must have known this too because they started to call me 'Jo' and I never complained.”

“Maybe I need a new name too”. I haven't found one I like. I'm a 'Sally-Anne', I don't like it or “Sal” either, nothing wrong with it, it just isn't my name.”

The color had left the sky, a half a moon hung high in the west. All the clouds had gone and stars were plentiful. Jo pointed out a satellite moving across from west to east, they counted satellites as they talked. As usual Jo did most of the talking. Sally spotted seven satellites to Jo's five, most going east but two went north. She felt a little smug bettering Jo at something. It got a little cool and Jo demonstrated using a sleeping bag in a hammock. It was comfortable enough, the breeze was nice and the moon turned orange as it neared the horizon. Sally started to drift off and found it annoying to be woken up repeatedly by Jo's chatter. Eventually Jo noticed Sally wasn't responding and she stayed quiet. Sally was vaguely aware of Jo getting up and doing something near the tunnel, maybe she was getting the tent ready. The moon set and it was quite dark. Jo returned and snored a few times as she fell asleep, then all was quiet except the odd insect chirping or a boo-book owl in the distance.

Sally had not intended to sleep under the stars, it just happened. For a time images of the day's events replayed themselves inside her head. She saw black forest and storm clouds, she saw hail, rain and mist. As one part of her mind watched these images another part heard Jo's warnings of dark times ahead. After a time she fell into a dreamless sleep. When thoughts began to form again, she felt John beside her, he was telling her something but she couldn't make out the words. She felt a wave of affection for him and tried to reach for him. She woke and took a moment to work out where she was, she was not used to waking up and seeing stars overhead. She thought about waking Jo and asking for help with the tent, she thought about trying to put it up by herself, she thought about cleaning her teeth. She thought she had gotten up but then discovered she had fallen asleep again and dreamed it. She gave up and went back to sleep again.

## Day Two.



Tuesday, 23<sup>th</sup> Nov 2004.

She woke again to the sound of birds, the colour was coming back to the sky. Dew had settled, the outside of her sleeping bag was wet. Something felt different, a kind of calm feeling had come over her, it was as if something had been resolved during the night but she couldn't remember what. Sally had no memory of most of her dreaming, there was just a feeling.

Then she dozed some more till a falling twig woke her, a bird was thrashing about in the leaves above her head. It was quite light now but the sun had not risen. She was a little thirsty and felt a craving for toothpaste. Maybe she could make some tea, for no apparent reason she felt like making Jo 'breakfast in hammock'.

The camping stove was unfamiliar and she wisely decided she shouldn't mess with it. Maybe making breakfast wasn't such a good idea after all. She took care of her various bodily needs, put on fresh clothes and went back to bed.

Some small clouds above caught the first rays of sun, the dark band across the western horizon shrank until it was gone. The sun was up, the slope to the east would keep it hidden for a half an hour longer.

Jo stirred in her hammock, rubbed her eyes and looked around, when she saw Sally she said "Looks like the world is still where I left it! How are you?"

"I'm coping, my back is a little sore."

"Sore back and no fond memories of how you got it, how sad."

“Careful, I'm a bit sensitive about that. I had this strange dream, John was here, it was like – I don't know – like he was watching over me.”

“Maybe he was.”

“I was going to make breakfast but I wasn't sure how the stove worked.”

“Yes, I should have warned you not to touch it till I showed you how. When I am awake, I will teach you.”

Jo had some needs of her own to attend to, then went down to the tunnel. She had improvised a shelf for cooking and a seat the day before. Jo demonstrated how the shellite stove worked. There was a pump, an air hole and a valve which had to be open at just the right time to let the flame ignite without flaring up. Jo measured out the correct amount of water and put the billy on to the flame. She went outside a washed out a cup, returning started to open the coffee.

“Jo, did you wash both cups?”

“No, I only washed one.”

“You really could have washed mine while you were at it, you know I like things clean!”

“Yes I know, that is why I washed *your* cup, I don't mind a little culture.”

“Oh, sorry, I should have known.”

Jo put a heaped teaspoon of coffee in each cup.

“Jo, that's ground coffee, did you mean to buy instant?”

“I never use instant, I used to muck about with filters and one cup plungers when I went camping. One day I learned they are quite unnecessary, it only take five minutes for the grounds to settle and you just have to remember to not drink the last mouthful.”

While the coffee settled, Jo opened jam and flat bread. Sally found Jo's coffee making method worked as advertised and she watched Jo enjoy her morning cuppa.

“Jo, one of the many things which puzzles me, is how you can be so cheerful when you believe the things you do?”

“Like I should be trembling in a bunker somewhere waiting for the end? What a waste of life that would be. Are you familiar with koans?”

“With co-whats?”

“I'll take that as a 'no'. Koans are short stories or riddles which demonstrate some facet of Zen philosophy. There is one which comes to mind, it has several variations. The basic plot involves someone, sometimes a traveler, sometimes a monk, getting themselves into a pickle. In the end they are about to die, usually by being eaten by a tiger. They attempt to avoid this fate but once it is clear they can not escape this unpleasant end they stop

wasting time trying to fight it. They then notice a strawberry growing within reach and in typical Zen fashion they eat the strawberry.

We are not in that situation yet, we can still try to change the outcome and we can plan to survive. Even if our doom was certain we should enjoy life as much as possible right up to the end.”

“Is this Zen thing why you wear that thing around your neck?”

Sally was referring to a green plastic Buddha which Jo wore on a thick leather strap. Sally thought it was quite out on character for Jo to wear something so tacky.

“Oh, this? I have a yen for the yin and yan, that isn't why I wear this though. To understand that question you would need to understand the Buddha nature of this pendant, not that it has one. You are not ready to understand such mysteries yet my young apprentice, in time you will and not too soon I hope.”

“You are making that up aren't you?”

“Of course my child, but it is none the less true. Let me just say I wear it for insurance.”

“You mean like insurance against evil spirits or something.”

“Yes, something.”

It was clear Sally was not going to get a sensible answer to the true nature of the Buddha today.

“What do you suppose started the fire?” asked Sally.

“A petty destroyer.”

“A what?”

“An arsonist. I can't say for sure, it could have had one of a number of causes, my guess is a petty destroyer.”

“Burning a forest like this doesn't seem that petty to me!”

“It is compared to what an arch-destroyer or a team of destroyers can do. They destroy cultures, nations and in time the globe. You've seen what one twisted mind with a match can do. It is nothing compared to what a group of twisted minds with nukes, armies and trillion dollars budgets can and will do. The petty destroyer usually acts alone and gains nothing but perverse pleasure, a sense of power perhaps. The arsonist, the malicious virus writer and the anthrax guy, they all do serious harm but this could get much worse when gene and nano-technology tools reach the home user.

The middle of the road destroyers don't get much either, grapes in heaven at best. The big destroyers get rich. The lesser destroyers must hide themselves in order to survive, big destroyers are in plain view because they are too

powerful to fear enemies.

You would think that they, the big ones, wouldn't destroy the earth on which they stand, this does seem to be their intent. Some may believe in 'The Rapture' and that they will be taken to heaven, fat chance. Others may think their nice cosy bunkers will be comfortable enough. Maybe they just want to destroy so badly they accept death as the price. Destruction is not always evil, in this age mostly it is.

There is another group I call "the Creators". The creators create for the good of the earth and humanity. They act in good faith but their creations are often perverted by the destroyers. What was created as medicine is made into poison, advances in physics just make better bombs, new communication channels are use for propaganda. The creators themselves are often destroyed. The creators are the inventors, writers and artists who live to make the world a better place. They are beautiful people in their special way, they try to illuminate the darkness, the darkness is immense.

A third group I call 'the Watchers'. In this age the watchers live in the shadows and look to the light. Before this age they may have favoured the dark. They are a balancing force, the swinging voter of the triad. They are guardians of knowledge, they expose the falsehoods, they shake the sleepy and say 'wake up!.'

"Do the watchers really exist?"

"I can't say, they work in secret after all. Some believe a group of watchers exist in Canada, that they are descendants of the "Knights Templars". Some may exist in other orders such as the masons. There was also believed to be a group of watchers that existed until recent times, they were devoted to preserving the 'Kolbrin'."

"The what?"

"Its hard too explain, a bible sort of thing. You're a librarian, look it up when you get back."

"I have a lot of things to look up when I get back."

"People are a blend of these three forces."

"There is a fourth group which sits inside the triad"

"And what are they?"

"They have very little power, they are what I call sheep. The sheep are trapped by the forces around them which they cannot comprehend, many get slaughtered."

"And what are you?"

Jo looked at her sheepishly and said "Baa", then she put on a serious

expression and watched Sally carefully.

“How come I've never heard any of this before?”

“Because I just made it up right now.”

“But it is true just the same?”

“Of course.”

“I see.”

“Very good, you are catching on.”

After finishing a breakfast of omelet and tea. They packed up, refilled water bottles from a clear pond and were ready to go. “Which way? Back to the sane world?” asked Jo. Sally shook her head, “I've got to get to the bottom of this stuff, I hope I can prove you wrong but I don't have enough information yet.”

“Good!” said Jo, she took a marginally bigger torch out of her pack and handed it to Sally. They donned packs and were going in. Jo instructed Sally to wrap her sarong to cover her mouth and nose.

The tunnel was perhaps a hundred meters long, it was straight and the other end was visible. They walked slowly into the gloom. “It is hard to find a tunnel like this left in the wild” said Jo. “Most have been bought for growing mushrooms in.

Imagine if you wanted a place to shelter a hundred people or so. Shoo out the bats, block off the ends and presto - instant survival shelter.”

“Is that what you want to do?”

“Probably not, I can't discuss my plans at this point, maybe later.”

As they neared the middle the bats took flight and flew to the far end in a swarm. They were repelled by the light and the swarm bounced off the opening and came back towards the invaders. They could hear and feel the flutter of wings. Sally felt moist drops of something on her exposed skin, she tried not to think about it. The cloud bounced off the other end and as the hikers had now advanced past the colonies roost, the bats circled under the area and did little somersaults in the air in order to find toe-holds to suspend themselves from.

Sally and Jo came out into the light again heading north. The track ahead veered east. This side of the ridge was not burnt. Jo took both sarongs and placed them in a plastic bag, then she produced a bottle of blended essential oils and rubbed into her hands and exposed shin. She offered some to Sally. “What's this?” Sally asked.

“It a natural oil blend which has anti-viral properties.”

“Why?”

“Because bats can carry lyssaviruses.”

“Now you tell me! Shouldn't you have warned me first!”

“Maybe I should have, the risk is small, if a warned you of every minor risk we take I'd be at it all day. The sugar we had at breakfast is bad for you, the burnt bits in the dinner are carcinogens. The drink bottles we are using may leach phthalates into the water and so on. We are exposed to all kinds of risks we are not told about. We are continually told things are safe by 'them' when in fact 'they' don't know or 'they' know the opposite is true. Take our former communications minister, publicly humiliating a scientist who said mobile phones are a health risk when that is in fact what the evidence suggests. Will he be held accountable when people get cancers from them? Probably not, if he uses his mobile phone enough then there could be some poetic justice one day.

Also remember the recent media coverage of the polio vaccine scandal.

Children were injected with a vaccine known to be infected with SV40. This is a risk we eventually found out about, I'd guess there are plenty we never discover. Fortunately, I am just young enough to have missed out on that jab.”

“I guess you may as well tell me the rest of the bad news,” said Sally, “I believe you were talking about oil when the rain hit us.”

Jo took a deep breath, “Its a big subject, I'm not sure what order to explain it to you. I guess we can start with how much have we got left. The short answers is we don't know, there are many differing opinions. It is not just about running out of oil, it is about running out of cheap oil. You need to know about the Hubbert peak. Marion King Hubbert found that production from oil wells, tended to have a characteristic shape – the Hubbert curve. It is similar in appearance to the standard distribution curve – a bell curve. It has also been found that the combined oil production for a region – say the USA follows the same curve. Hubbert predicted in 1956 that the USA would peak in oil production in 1970, he was correct. It can be expected that the global production will also fit this curve, we won't know for sure till well after the event. There is no agreement about when the peak will happen, it may already have happened. It may have happen as early as the year 2000, it is unlikely to be later than 2020.

When we have reach the peak, we have extracted half the oil and half is still in the ground. This may not sound to alarming but it is for two reasons. The first reason is that the first half is easy to extract, that means cheap.

Extraction the rest is expensive and at some point more energy may be required to extract it than the oil contains. The second reason for alarm is oil consumption continues to rise. The point at which consumption exceeds production happens long before the oil is gone, it could even happen before the peak is reached. When this happens consumption must be reduced.”

The weather was cooler today and a breeze from the east made the walking a little easier. The track was mostly in the shade of the gum trees. They seemed to be walking a little slower today. Sally's shoulders were hurting, in theory her pack should have been a little lighter today but it didn't feel that way. She was trying to keep up with Jo's lecture and hoping she could find fault in her argument, no luck so far. It kept her mind busy at least and distracted her from the discomfort.

Jo continued. “There is an alternative theory – it is called 'Deep oil'. The proponents of this theory say oil is not a 'fossil' fuel at all, it is made deep underground and sometimes migrates upwards into what we call oilfields. They think oilfields will renew themselves if production is slowed enough or the deep oil can be found if one drills deep enough, say ten kilometres or more in depth.

Are you with me so far?”

“I think so, we are running out of cheap oil sometime soon or some time later or not at all.”

“That sums it up nicely. My money is on the first scenario though.

You have to understand oil is more than something used to make petrol for your car. If personal transport was the main issue here we could solve the problem fairly easily.

Cheap oil is the basis for just about all aspects of our modern lifestyles.

Most oil is used for transport, we move ourselves, goods and raw materials over large distances. It is used for growing food both as a power source and in the manufacture of agricultural chemicals. It is the basis of most plastics and so on. Without oil or a substitute we are stuffed.

Still with me?”

“I think so. If the oil peak is real we are stuffed.”

“It's more complicated than that I'm afraid.

There are other possibilities. It is unlikely that there are large undiscovered reserves, it is possible that there are undisclosed reserves. There are plenty of rumours about oil finds which are capped and left, I don't know if they are true. If we keep on our present course a larger reserve only delay the problem a few years. It could give us time to address the problems, I don't

think this will happen.

What could be happening is that the 'peak' we are hearing about is artificial, like many other things we hear about. An artificial shortage will drive oil prices up making the rich even richer. Understating the reserves would also mean that it is less likely someone will try to take it from you. You can also starve your enemies of energy to the point where they can't fight you any more, maybe even kill them off without the expense of war.

An artificial shortage should reduce demand, this sounds like a good thing but again its not that simple. A shortage of oil will force a change to alternatives, most alternatives are worse than oil in terms of CO2 release. We have lots of coal, coal is harder to extract, it not as convenient as liquid fuels are. Coal is mostly carbon so when you burn it you get a lot more CO2 per joule than when you burning a hydrocarbon like oil. If you process the coal to produce liquid or gaseous fuels the situation gets worse. Another alternative is oil made from tar sands. A lot of energy goes into the mining and extraction these compared to conventional oil, so again CO2 release goes up.”

It was rest time at last. The ground was not inviting to lie on so Sally tried to stretch out on a log. She was fairly comfortable until some ants decided to taste her. She sat up and moved to the other end of the log. She swatted a march fly which landed on her ankle and gave it to the ants. She watched it being carried away as she continued talking to Jo.

“We have gas don't we?” ask Sally.

“That's from last nights beans.”

“You know what I mean, natural gas?”

“Gas is good as far as fossil fuel goes, a little difficult to store, it burns cleanly and has good hydrogen to carbon ratio so it produces less CO2 than oil. The problem is we have a limited supply which we are exporting as fast as we can. This might be just as well, if we had lots and didn't share it, someone might come to liberate us!”

“What about the renewable energy sources I keep hearing about?”

“Again, we have a complex issue. We already use power from renewable sources, just not very much of it. The main problem is these alternate energy sources usually use fossil fuel in their creation. They are also rarely without some negative impact. Most sources are intermittent or unreliable.”

The fly was gone, the ants still scouted around foraging for more. It was

time to move on again. There was road crossing just ahead and they left the old railway route and took the road to the north-east.

Jo continued, “Most of the world may have left it too late to change over. Let me give you an extreme example. Let's assume a PV (photo voltaic) panel takes five years to generate as much energy as went into it's manufacture. This estimate may be wrong because the manufacturing techniques change with time, so does the longevity of the panels. If we wanted to change everything in the world to being PV powered – we would need five years worth of energy up front to make the panels. Then we would need even more energy to make the storage and power conversion systems to run our electric devices. We might also run into a resource issue making the storage systems. In a world experiencing an energy crisis we don't have spare energy to make a lot of PV panels. Supplementing our existing coal fired generators with some PV might make sense but my feeling is the energy payback is just too long. I personally prefer low tech solutions, preferably decentralized as well.”

“Did you see the thing on TV the other day about a process for making cheaper panels.”

“I don't watch TV, but yes, I know, we've been hearing that story for a long time. If they succeed then it is very good news but I've given up on waiting for a PV breakthrough.

Solar is good for providing low grade heat, this is why flat plate collector solar hot water systems are so popular.”

“What is low grade heat?”

“Just low temperature heat. For example you only need low grade heat to warm your house but you'd need a higher grade heat to run an engine and higher again to melt steel.

Anyway, flat plate collectors are fairly low tech devices which take a considerable load off our power plants. These only make things, like water, hot, they're not much good for making electricity.

What we need to use, is a renewable with enough return on energy investment that we can make them breed. For example we want to make wind generators using renewable energy not fossil fuels.”

It was lunch time at last, they stopped where the road crossed a small creek. Sally helped Jo unpack food from the packs onto a convenient log and they

sat facing each other with the food between them. They made and ate flat-bread sandwiches. Jo showed no concern that they had drunk almost half their water, so Sally reckoned they must be getting close to a water source. She was making a game of trying to guess where they were going without asking. She was hoping they might reach somewhere at least half civilized before the rumble in her belly got to bad. The thought of a bush toilet was not appealing but she might have to cope with much worse if the Jo's talk of gloom had anything to it. Nothing was more said about energy during lunch. They cooled their feet in the water, it was too shallow and muddy to swim in, small fish became brave enough to nibble their skin. Their feet dried quickly in the dry heat. It was quiet apart from the buzz of flies and the occasional crow call. Putting a pack back on to sore shoulders is not appealing, you have to though if you're going to make any progress and progress had to be made.

Sally resumed the thread that was left hanging before lunch. "What about these new hybrid cars?"

"That largely depends on how long we have till the energy crunch. I know this may sound monotonous but replacing all our cars, trucks and other transportation vehicles requires a huge amount of energy and resources up front. In the case of low use vehicles the energy saving don't justify replacement of the fuel-guzzlers. Most people here don't buy new cars and it would take decades for the hybrids to filter down through the second hand market. When fuel becomes expensive enough it will make sense for people to borrow money to replace their cars. The low income earners won't be able to afford the repayments nor will they be able to afford fuel for their old cars. Hybrids have been on sale for a while now but I haven't seen many on the road, I'd say they are not selling too well.

It is logical to replace the high use vehicles ASAP, that is taxis, delivery vehicles and so on."

They seem to be nearing a populated area, there were only a few houses to be seen, earlier there were none.

"Hydrogen?" Sally asked hopefully.

"Not useful unless we have a good way to make the stuff. It is a little hard to store or transport without leakage. There are some interesting ways to make it besides electrolysis of water. One is a thermo-chemical process which can be nuclear powered."

"You're not suggesting nuclear power is an option are you?"

“If we want to increase the amount of energy we use and if it preforms as advertise then it is probably our only option.

These are two big 'ifs'.

If we have enough energy, those who run the world, both inside and outside of government will go 'whoopie! let's see how many this planet can really hold!'

There would have to be a rational, independent analysis of the risks and benefits.”

“But, but, but – radioactive waste for a zillion years and all that!”

“That isn't such a big problem if you use the right type of reactors. Light water reactors like the famous ones at Three Mile Island and Chernobyl should never have been built. They are dangerous, inefficient and produce huge amount of long lived waste. Studies suggest they are actually energy negative, they produce less energy than is used in their construction.

Do you know the difference between thermal reactors and fast reactors?”

“Err, remind me.”

“Thermal reactors use slow neutrons the maintain a chain reaction. These are usually light water reactors where the water moderates the neutrons. The advantage of slow neutrons is you can use fuel with only a few percent fissile material, this is usually uranium 235. When you refine uranium from ore there is only about 0.7 percent U235, the rest is mainly U238. Heavy water reactors can use this directly but light water reactors need processed uranium where the amount of U235 has been increased to around three to seven percent, this process is called enrichment. This means some uranium has had it's U235 removed to some extent and this is what we call depleted uranium or DU for short.

Got that?”

“I'll catch up!”

“So, let's throw some three percent enriched uranium into a reactor. The U235 slowly fissions, that is splits, becoming lighter atoms, neutrons and releasing a lot of energy. Some of the neutrons cause other U235 atoms to split maintain a chain-reaction. Some of the neutrons collide with U238 converting it to U239 which eventually coverts to Pu239, this is a plutonium isotope. Pu239 is fissile and some of it is used as fuel by the reactor. Some Pu239 converts to other plutonium isotopes.

Now this is the important bit – plutonium is produced at a slower rate than U235 is destroyed, so the fuel has to be replaced long before all the energy is used up. In fact less than one percent is used and even with recycling of

the fuel only two percent of the energy is utilized. The spent fuel contains three percent radioactive waste, one percent plutonium, one percent U235 and ninety five percent U238.

The inefficient use is why there is so much nuclear waste, the presence of plutonium is why it remain dangerous for so long.

Still with me”?

“U – two – three – something, neutrons, collisions, plutonium, lots of nasty waste.”

“That's about it.

The other class of reactor is 'fast', because the neutrons are fast. The term 'fast' often sits beside the word 'breeder' but not all 'fast' reactors are 'fast breeders'. In a 'fast' reactor we get rid of the moderator. Fast neutrons are not as good at splitting atoms so the fuel core has to be more enriched, it can also be plutonium. Fast neutrons are better at transmuting U238 to Pu239. In a 'breeder' configuration, U238 is changed to Pu239 at an equal or faster rate than the U235 is consumed. If the plutonium production is fast enough the excess plutonium can be used to kick-start another reactor, this can take ten to twenty years. With correct fuel management practically all the energy can be extracted from the fuel making the reactor two orders more efficient than thermal reactors. If all the plutonium is fissioned, the waste has a much shorter half life, the recommend storage time is hundreds of years not tens of thousands of years.

Once the breeding process is working the reactor can use waste from thermal reactors as fuel. I presume it could also use DU.

Are you keeping up?”

“Yes, just don't test me at the end. Can the plutonium be used to make bombs?”

“Not easily, it is very hard to make a plutonium bomb without 'weapons grade' plutonium. Plutonium comes in twenty one flavours or isotopes. Bombs require relatively pure Pu239. The plutonium made in the reactor is called - surprise surprise - 'reactor grade' and is not pure enough. Separating isotopes is a difficult process, it is beyond the scope of terrorists to accomplish and governments wanting weapons would have easier ways to get them.

There are a number of breeder reactor designs. One of the most interesting is one called the 'integrated fast reactor' or IFR. The idea of the IFR originated at Argonne National Laboratory. Basically the IFR is a liquid sodium cooled fast reactor which reprocesses spent fuel on site, so around

99 percent of the energy extracted and the waste has a short half life. Unfortunately the small prototype was cancelled in 1994 for political reasons before testing was complete.”

“So you think we should build IFRs here?”

“Maybe, maybe not. Globally it does seem sensible to burn up the stockpiles of waste. Locally we don't have much nuclear waste as far as I know. We have uranium in the ground and it should stay there. I don't think we could build reactors in a useful time frame even if we wanted to. Here again is the problem of energy and resources needed for construction. Of course the reactors have to be energy positive and safe to be of any use in the energy crisis.

Before contemplating new reactors, the sums need to be done, if they haven't already, to work out the true costs involved. Do they produce more energy than they consume and if so how much?

Globally we are likely to see more reactors come online but they probably won't be IFRs. Of the six 'generation IX' reactor designs only one is thermal and this one seems to be becoming popular. The design I speak of is the 'pebble bed reactor'. China is considering them in a massive nuclear program. Unless the waste from these can be processed by something like the IFR I think its a bad move.

Be careful not to shoot the messenger. I'd like to see our population controlled to the point where renewables can provide our energy needs but this isn't likely to happen voluntarily.

A nuclear accident or terrorism is a very bad thing but so is a major change in our weather systems.”

“I think we've come back to 'we're stuffed' ”.

“It seems that way doesn't it. It seems unlikely we will find our way out of this muddle, unlikely events do happen though.”

Jo pointed to a gate which said

“One tree forest co-operative

Private property – no entry!”

She indicated this was the way.

Sally thought that it didn't look too inviting.

Jo lifted the sign revealing a key pad concealed beneath. She punched in a number and lowered the sign again. There was a click, a whirl then the gate slowly opened. They walked through. On the other side was a small box

with a solar panel and a push button. Jo pushed the button and the half open gate began to close again.

“Is this someone's farm?” Sally queried, her hopes of staying somewhere civilized suddenly boosted.

“This is a community, it is owned by a group of people.”

“And they are friends of yours? With a name like that I'd guess so”

“Some are friends and the rest tolerate me. You'll get to meet some of them, the rest are either antisocial or absent. My ID number at the gate announced my arrival to everybody, I'm no stranger here.

Back to the question of is there hope. There is hope. We could solve these problems if all the people of the earth got on with it.

If we stopped using our resources to make weapons and fight wars we would have an instant energy surplus.

If we worked less, made fewer goods and consumed fewer goods we would also have a surplus.

If we improved the efficiency in our use of resources we would buy some time.

Now that we had solved most of the world's problems we can go home.

There are hundreds of alternative energy sources and storage systems being developed. I doubt we will have the luxury of a single or even small number of solutions. I feel we will need a diverse system.

We are nearly 'home', I want to talk about some of the more ambitious Australian projects first. We have about one kilometre to go, see that shed over there with the bamboo tower? That is home for tonight.

One kilometre is also the height of the solar tower planned for the Mildura region. It is a low tech idea built on a massive scale. It is just a large greenhouse, a chimney and a turbine. The sun heats the greenhouse and warm air goes up the chimney spinning a turbine which is coupled to a generator. Maybe it is a good idea maybe not, I don't know for sure. It is a billion dollar project for a two hundred megawatt peak generator. This means it is five dollars a peak watt. This is not much, if any, cheaper than PV. The difference is the greenhouse stores enough heat to provide useful power at night, this is very good. The down side is 700,000 cubic meters of concrete are required to build it, it takes a lot of energy, probably coal, to

make that much cement. I don't know the lifespan of the system or the maintenance required, these things are important. I also can't help but wonder if lighter structure using a mountain for support might be a more resource efficient way to go. Do you follow me?"

"I think so, what's that tower about?" she pointed to the bamboo.

"I was going to leave that till tomorrow but since you ask.

It is an attempt to build a low embodied energy wind-mill. We used naturally grown bamboo, by that I mean no energy was used in fertilizer or irrigation. We have a tower which needed virtually no fossil fuel in it's creation. We bought the hemp rope to bind it together and linseed oil to seal it, there was no doubt fossil fuel used for these. In theory we could make our own rope and linseed oil.

Instead of metal or plastic blades this prototype will use wood and fabric. We still need a generator, this will contain some iron, copper and most likely neodymium. Even so we've reduced the petroleum and metal content to the point where, assuming we have wind, we think the embodied energy would be recovered in a few weeks, not years. We could have made the tower out of a wooden pole. Bamboo was used because we have some handy and it is light enough to erect without much effort or machinery."

"That make sense. I can't help but notice this place looks a bit like your house, is it yours?"

"You mean messy? No this isn't my place. This is a weekender used by an amateur inventor friend of mine. We call him "the professor", not that he is a real professor. I think he barely made it through high school but he's doing alright now. He has too many ideas to follow them all through alone, I help him as much as I can. I learn a lot from him"

"Hmmm, my teacher's teacher, do I get to meet him?"

"Not this time, maybe another day if you are still interested."

The professor's weekender was just a rusty old farm shed. It was nothing special, if it wasn't for the solar panels on the roof and various half built projects scattered about you would have no idea anyone ever used it. The front door had seen better days and hung crooked on rusty hinges.

"Does the professor know we are here?"

Jo revealed another keypad hiding under a loose piece of tin. She punched in her code again and said, "he does now."

The shed was fairly large and a mezzanine floor had been added at the far

end. This was a bedroom of sorts, below this was a simple kitchen. To the right was a table some chair and a lounge. The rest of the space was used as a workshop. Jo turned on some switches on the way in.

Sally inquired where she might find a toilet and was pointed to a door behind the lounge. She braced herself for what horror might await her there. Climbing a few stairs she found a fairly conventional flush toilet, complete with a long list of what not to flush down it and threats about what would be done to you if you did.

When she returned, Jo had emptied most of the pack contents onto the bench, put the perishables in the fridge, water was boiling and tea was being made. While the tea brewed Jo ducked out the back door and Sally browsed the professor's books, he needed some pulp the round off his collection as well.

"Isn't it a bit hot for tea?" asked Sally.

"We can go somewhere cooler, grab your cup and follow me."

Jo open the door to the left of the kitchen, she went through, turned right and followed a short path down to the creek which was not more than 20 meters away. Sally followed and as she walked down the earth stairs she notice the temperature drop considerably. The water was completely shaded and flowed between rocks and boulders in the a pool again to the right. This was much more inviting than the water they paddled in at lunch time.

"You can swim if you want, clothes are optional around here, suit yourself, or un-suit yourself."

"Err, I think I'll just paddle again."

Sally had managed to arrive with most of the tea still in the cup.

She found the least uncomfortable rock to sit on, put the tea on the ground, took off her shoes and watched her feet sink into the silty gravel. Jo did the same beside her. Small shrimp crept closer to pick through the disturbed muck.

Jo pointed at Sally's feet, "See the shrimp with the long arms? Its a *Macrobrachium Tolmeru*, the adults grown to be 100 mm long and should be good to eat. Hard to find the big ones around here. Lots of tucker about if you can catch it. Some of the weeds along the bank are good to eat as well but I don't want to digress now, maybe tomorrow we'll get into that."

"What do you want to tell me about now?"

"Hot rock."

"And I thought you'd be a classical music girl!"

"No not that kind of 'rock'. This kind of rock", she tapped the rock Sally was

sitting on, "But much hotter and deep underground.

We aren't blessed with hot geothermal springs suitable for large scale power generation but we do have hot dry rock. In fact we have so much, that if we were able to extract the energy and we didn't increase our electrical consumption, we could cleanly generate all Australia's electrical power for many centuries to come."

"Sounds good why aren't we doing it?"

"It is being worked on, it seems grossly underfunded. The rock is a long way down, three to five kilometres down. You have to drill deep holes, that is expensive. Once you have the hole you have to fracture the rock in such a way that you can pass water through the rock to extract the heat. The water boils and comes back to the surface, the heat passes through a heat exchanger, boils a working fluid which and spins a turbine. The cooler water is literally recycled.

The cost estimates are that it is economical, it may be slightly cheaper than the solar tower per peak watt. It can operate around the clock at full power regardless of sun shine so the overall cost per watt should be much lower. The technology is unproven but pilot power plants can be small so you don't have to spend a billion dollars to see if it works. Hot rock pilot plants are being constructed in other countries as well so we may have some answers in the near future."

"Why is the rock hot?"

"Because it is slightly radioactive, just like the rock you are sitting on."

"Really?"

"Yes, but it is not very much, it takes radioactive decay in something like 30,000 tons to give off a single watt of heat. The rocks are huge and have been heating up for millions of years. If you can tap into a cubic kilometre of rock which is at three hundred and fifty degrees you've got a lot of energy."

"Doesn't it cool down and stop working?"

"Yes, after several decades you have to move on. The radioactive decay in a cubic kilometre might generate a hundred kilowatts of thermal energy, it will take a long time for the rock to heat again."

"It sounds promising though doesn't it?"

"It sounds very promising!"

"I should ask John about it, if I see him again."

"You should, you will."

These two projects are on a scale which can't be built by us amateurs.

Tomorrow well talk about things we might be able to build – or at least dream about. Having said that, the professor was talking about ways to build a small scale solar chimney up the side of that hill over there. The rest of the property owners were not thrilled about the idea and we've managed to bribe him into trying to finish some of the half built stuff you see around here.”

Sally had finished her tea and was trying to catch shrimp in her cup. She seemed to be in good spirits. “Is the water safe to drink?” She asked.

“Not a good idea. Particularly for a city girl like you.”

“Why and why.”

“Not a good idea because it flows through farms upstream. In particular the neighbour has a duck pond which flows into the creek, ducks along with other farm animal can have nasty germs in their crap.

Secondly, most people with a typical Aussie lifestyle don't have a healthy population of intestinal flora. This makes it easier for a nasty bug to get established. Chemicals in food and drink along with drugs and a zillion chemicals used to wage war on all bacteria, also kill off the good bugs we are meant to have inside us. No doubt you have heard stories where a group of people are sharing meal together and a few ending up in hospital with food poisoning while the rest aren't affected at all – this is one reason why some people are more susceptible than others....”

“Miss, miss - my brain is full!”

“If you stop asking questions – I'll stop answering them!”

“Deal.”

Sally held her lips closed with her fingers and Jo splashed water at her. Sally scooped water up in her cup and poured it over Jo's bare knees. Jo retaliated and soon there was a good natured water fight in full swing. Once they were both soaked Jo went onto the far bank where a rope was hanging from a tree and dangling over the water. She used it to launch herself into the centre of the pool. Sally waded in and despite being fully clothed she swam out easily and dunked Jo. At that point Jo requested a truce. They swam back to shallow water and waded back to where they had been sitting and got out.

Jo lead the way back up to the shed leaving a trail of water on the dirt as she went. She then showed Sally where the shower was, it was out the back near the toilet. Jo explained she had a choice of showering indoors or outdoors. Most of the regulars preferred the outdoor shower except when it was cold, visitors usually like walls around them.

Sally chose to shower indoors this time. There was hot water available but the cold water was quite warm enough. She found the water to be very soft and needed very little of her shampoo ration to wash her hair. When she was done she partially dried off and put on fresh clothes.

Back inside Jo had gotten changes and had put her wet stuff into a plastic drum along with yesterday clothes and the sarongs. She motioned for Sally to add all her washing as well. She added a teaspoon of powder and hot water from the kettle. The drum was sealed with a lid and placed on a set of rollers which set the drum rotating. Jo explained that she often rotated it by hand but it was hot and she was feeling lazy. The rollers were originally set up for mixing clay, plaster and other materials but it turned out to be a handy little washing machine.

The machine was left washing for a while then Jo lifted the drum off the rollers and discarded the washing water. She rinsed the washing a few times, rung the clothes out by hand and then with Sally's help hung it on a line to dry.

“What's wrong with a real washing machine?” ask Sally.

“No much, depends on whether you use hot water and how you heat it if you do. We just haven't needed one here. Drying the clothes just as important. Doesn't seem strange that people would use coal fired electricity from far away to do what the sun can do for free. Dryers may have a place on wet days but there could be interesting alternatives – such as using desiccants to dry things on wet days and drying the desiccants when the sun is shining.”

“Oops, I did it again, didn't I.”

“What?”

“I asked a question.”

“So you did.”

“What are we going to do now?”

“And there you go again!

Lessons are over for today, have a nap, go for a walk, look for platypus, read a book, eat chocolate...”

“Chocolate! How could I have forgotten.”

“In fact I think we should eat a double ration.”

“Why?”

“That's a question I'll answer tomorrow!”

“I have a bad feeling about this...”

The chocolate was in the fridge, it was hard but somewhat bend out of

shape. They were both feeling tired so they had a second cup of tea on a bench outside under a tree. It was getting late in the afternoon. The moon was a little fuller today and was overhead in the east. They watched the sun set and the sky become orange, a flocks of ibis settled into a tree for the night. A pair of channel billed cookoos called as they flew overhead. In the west a rusty old 'southern cross' windmill slowly pumped water as it had done for the last sixty years.

Mosquitoes started to bite and the pair went back inside. Jo turned on some lights, they were some of the newfangled white LED types that are starting to come onto the market. It was a odd juxtaposition, a rusty shed with the most modern lighten system.

Jo accepted Sally's offer to cook. Sally piled their stock of food onto the table, "I don't think we have enough here to last the rest of the week".

"We can make it stretch."

"By making us shrink no doubt."

"Trust me, we won't starve." Jo stepped out for a few minutes and came back with a few dozen cherry tomatoes cradled in the front of her tea shirt and a fist full of herbs.

"These will help", she said dump the lot onto the chopping board.

"Tomato with pasta coming up."

Sally prepared the ingredients which included a quarter of the tinned ham they had brought. "Looks like a regular gas stove."

"You will find it is a little different but quite easy to use. Just turn it on like this." There was a whirling sound and the crackle of sparks for a few seconds and the burner was alight.

"With all your talk about running out of energy I'd better be really careful not the waste any gas."

"Don't worry about it too much, the rules are different here."

"Do I smell hypocrisy?"

"No, if anything you smell hydrogen sulphide!"

"Why?"

"Tomorrow!"

"I think you are going to make my brain hurt some more tomorrow!"

"I'll try!"

The rest of the night was uneventful, after dinner they were both starting to yawn. Jo slept on the lounge as she often did here and Sally got to sleep "upstairs" in the professors bed.

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“Good night Sally.”

“Good night Jo.”

Then all was dark and quiet except for the moon light coming in and the sound of frogs.

“What does hypocrisy smell like?” Sally wondered and she drifted off.

## Day Three.



Wednesday, 24<sup>th</sup> Nov 2004.

She was standing in the creek with water up to her chest. She realized she was dressed and her purse was in her pocket, so was her phone. The phone would be ruined, what a stupid thing to do, how could she have been so absent minded.

Then no, she wasn't fully clothed, she was in her bikini or naked. It wasn't important now. She started to swim with the current. She had gone too far, her friends would be worried, she couldn't turn back, she was a long way from home, the water was taking her there. There was a junction ahead, she must have gone over a small waterfall because she was in the air, falling, below were rocks, she was going to be smashed onto them. No, the rocks passed under her and she fell into water again. She swam on, with the current, towards home. When she kicked hard she rose out of the water like a speed boat, when she pushed down with her arms she became airborne for a time, then she would touch down with only her arms and legs touching the water. She skipped along at great speed.

She noticed she wasn't becoming fatigued, how strange, she felt she could do this for hours and reaching home was a certainty. The landscaped looked prehistoric, the people in the river could have been from any time. Naked children playing in the water have looked much the same for eons. She

moved too fast to see them properly. They totally ignored her. No buildings, no sign of anything human made. Where was she? She feared that if she stopped she would not be able take-off again a second time. She flapped her arms like a bird and rose higher. She saw the river, now brown from the rain run-off, flowing to the sea like one enormous snake. It's large head biting into the blue sea.

Then it was all gone, she fell back into her body with a jerk.

There was loud tapping noise coming from the roof a arms length away. It took a few seconds for her to get her bearings and guess, correctly, that a bird was pecking at something on the rusty iron roof. She could also hear the sounds of claws on metal as the bird hopped about. Bloody bird, just when the dream was getting interesting.

She looked down and saw Jo was awake but still lying down.

“Morning Jo, want some tea?”

“Err not till I tell you the rules for today.”

“Rules, I've got that bad feeling again, what rules?”

Jo remained lying down with her head towards Sally, she tilted it back so she could watch her as she spoke, “First the good news – you don't have to carry a heavy pack today.

Now the rules. I want us to play a little game today, it is called survival. It goes something like this, let me paint the picture. The shit has hit the fan, the infrastructure has collapsed. Supermarket shelves and petrol pumps are empty, everyone has lost confidence that supply will be restored. Big, nasty, hungry people with guns are looting what they can. You live here but you hid in the bushes till the looters left. They took anything they recognized as food, if they were smart they'd have stolen the solar panels and a bunch of other stuff as well. That is if they had a vehicle to take it away in.

Doesn't that sound like fun?”

“Just thrilling!” was the sarcastic reply, “that explains the double chocolate ration.”

“So the rules are we don't eat or anything that we brought, we don't raid the gardens unless it is for something the bandits wouldn't take. We obviously don't do anything illegal like kill a kangaroo, not in the game anyway – if it was for real some wildlife could end up in a pot.”

“I don't like being hungry!” Said Sally patting the padding she had on her

tummy.

“Me either, we shouldn't get too hungry, its a game, if it goes badly we can stop playing. We can bend the rules a bit as long as you learn the lessons. Now wasn't it lucky you had two tea-bags in your pocket when you hid in the bushes or we'd have none now,” she winked, “They took all the sugar though. There is some stevia growing just outside if you want a sweetener. Let's have tea and let me wake up some more and we'll hunt for breakfast.”

While Sally made tea, Jo took out a map and spread it on the table. As they drank, Jo explain the basics of map-reading. She orientated the map using a magnetic compass while explaining the metal in the shed would throw if off a bit. She showed Sally the property boundary and roughly where she intended to go today.

The tea was finished and it was time to go hunting. Jo took a bucket and last night's dirty plates. Sally put on her shoes, Jo went barefoot.

“Isn't it hard on your feet going barefoot?”

“Yes, but its softer on the ground.”

They went down to the creek, a little upstream from where they swam the day before. Jo put the plates into the water and left them there. High up on the bank, a little further upstream, Jo showed Sally a wild strawberry bush bearing small orange/red fruits .

“They are hardly worth eating,” she explained. They ate some and Sally had to agree, they weren't something you'd go out off your way for. If this was the best thing on offer, it was going to be a miserable day.

Jo lend them up the bank where a number of trees stood. Some were full of cherry size blue fruits, others had less.

“These are a type of Lily-Pily,” Jo explained, “ I've found that the fruit on some trees is sweeter than others, that's why they have less fruit left on them.”

Sally tried some, they were quite crunchy and had a small seed inside them which was about the size of a pea. “Not bad, they taste a bit antiseptic but a big improvement over those berries.”

“Will this do for breakfast or do I have to find you something else?”

“I think these will do, who knows what you'll try to feed me otherwise.”

They spent ten minutes or so eating all the fruit within easy reach. They had

pretty much eaten their fill and Jo lead them back the way they had come.

Jo didn't miss the opportunity to get philosophical again. "The low hanging fruit is easy to get. When there are just two of us to feed we can eat low hanging fruit. When there are too many of us we have to pick higher up the tree and it becomes hard work. We've already picked all the low hanging fruit of the planet. We've dug up the shallow coal seams, drilled the shallow oil and farmed all the fertile soil. Now we have to go up the tree, we are digging two kilometres down for minerals, drilling ten for oil and pumping the sterile soil with chemicals to make things grow.

Look mushies. I only know two types of mushroom, these and the happy mushrooms we get in the paddock. I need to learn more."

The mushrooms were the common flat mushroom you could buy in the shops. A half a dozen were growing in a grassy patch. Jo picked them and put them in the bucket.

Jo told Sally to move slowly and quietly as they approached the pond where the plates were soaking. Creeping up to the water she peered in.

"Good," she said, "have a gander."

Through the milky water Sally could see four or so crayfish helping themselves to last night's food scraps. They were dark coloured and looked about ten centimetres long, it was hard to judge the size through the water.

"Do you know these critters Sally?"

"I'm not sure, they look a bit like the yabbies we used to use for fish bait but these are bigger."

"These are orange-fingered yabbies, they are very common. They are in most dams, creeks and waterholes. Yummy to eat, do you fancy some for lunch or shall we leave them alone?"

"I think I'll pass, they seem too small to be worth the trouble."

"There are enough in this length of creek for quite a few meals.

Apart from the obvious, which is fish, there are other things to catch here. Almost every river, creek and dam on this side of the dividing range has eel in it. If you are hungry enough there are four species of terrapin, (which most people call turtles) they are edible. We shouldn't have to resort to platypus. There are also ducks but they might be too hard to catch. Some of these things may be illegal to catch but if you really are starving the laws aren't going to stop you. There is one other food here, I'll show you."

Jo waded into the water and seemed to be feeling about with her feet. "There's one," she wriggled about a bit then lifted her foot out of the water revealing a banana shaped mussel between her toes. "There are plenty of these. Want to try some? We can always get some later." "Maybe later."

"I see you aren't hungry enough yet. Well come back to pick some of this salad later", she made a sweeping gesture to indicate the weeds on the creek bank.

They headed back to the shed but before they got there Jo started to look under rocks, bits of cement and other hiding holes. She found what she was after and showed Sally where the garden snails hang out. Sally screwed her face up "I guess you aren't hungry enough for these either. More for me next time. You'd pay a fortune to be served these in a French restaurant but everyone just squashes them. You should feed them a little flour to clean them out before cooking them. The bandits took our flour so we'd have to improvise.

If we'd caught everything we've found so far we'd just about have enough for lunch. That would be too easy, we'll go for a longer walk before lunch and see what else we can find."

Back inside, Sally noticed a glass jar with a bubbling mass of leaves in it. She had seen it on the previous day but hadn't asked about it. Now after her breakfast hunting trip she thought she recognized some of it. "What's this foaming stuff in the jar?"

"I don't know what to call it. It is a bit like Kimchi and a bit like sauerkraut except it is made from edible weeds not cabbage and so on. It is just a fun thing to try, if it worked it might be useful to know. I guess I could call it weedchi."

"How do you make it?"

"Sauerkraut is just chopped and crushed cabbage left to ferment in it's own juice. People usually add salt and spices as well. Naturally present *lactobacillus* convert glucose into lactic-acid. This preserves it up to a point. Kimchi is much the same ,except a greater variety of vegetables are used and water is added so you don't have to crush it. The weeds weren't very

juicy so I needed to add water.”

“Is it working?”

“I think so.

Fermentation is a lot more useful than you might realize. Apart from the obvious use in making alcohol, it is used to make a wide variety of foods. For example fermented foods include - cheese, yogurt, tempeh, soy sauce, vinegar, salami, even coffee and chocolate.

There is more, fermentation can make fuel and organic solvents. These include ethanol, butanol, propanol, acetone, methane. The complete list is long. Fermentation can even be used in mineral processing.

A Canadian company called Iogen are making ethanol from cellulose, this comes from cereal straw. They use enzymes to break the cellulose down into sugars which are fermented into ethanol. They claim no fossil fuel is used in the process. Cars are being made now which can run on a variety of fuels including a 85 percent ethanol/petrol blend called E85 – of course they call petrol, 'gasoline' over there. This could have huge impact on oil demand.”

“A ray of hope”

“A very bright ray at that.

Now I have something to show you, come this way.”

Jo lead Sally to a metal shelter behind the toilet block. Inside was a fibreglass tank of sorts, it was perhaps four metres long, one metre wide and a metre high. Instead of a lid there was a flexible sheet which looked like it might have been a recycled water-bed bladder. There were a number of pipes going into the tank in various places and what appear to be a drain of some kind.

“I'm afraid to ask.” said sally ”What is it?”

“It - is a methane digester, we called it 'the pig' because it eats just about anything.”

“Why do you want to digest methane?”

“It doesn't digest methane. It digests – stuff – and makes methane. The methane is kept in a bag behind that cement wall just in case.”

“In case what!”

“In case we've totally screwed up and it explodes. That is pretty much impossible but we like to play it safe. You can have a look if you want.”

“I don't think I need to.

And that pipe comes from the toilet doesn't it? The gas goes to the stove? So

I cooked spaghetti using poo-gas and didn't know it. I don't know how I feel about that. It sounds so – unclean.”

“The gas is clean.”

“How clean?”

“Most pathogens die in here. If any get into the gas they have to get through two blow-back arrestors and a filter. Nothing will live going through the flame so it is only the fraction of a second during the ignition phase that anything could get through alive. We could sterilize it more but it seems pointless, you are in more danger of pathogen contact being in the company of someone with flatulence.”

“I guess if helps save the planet I can get used to the idea.

I dread to think what other surprises you have in store for me!

Are you hoping everyone will get one of these?”

“Not at all. They are hard to run on such a small scale and require specialist knowledge. Having said that, I pay about four hundreds dollars a year to the council to have my home toilet connected to a sewer. This could be enough to pay someone to come and maintain a methane digester or a composting toilet for that matter.

Digesters have a number of problems, one is getting just the right amount of gas for your needs, not more, not less. You can't just add more feed stock to it when you run low on gas, it takes months to ramp up production. The production rate can be varied a little by changing the temperature or chemistry but it is not a simple matter.

We have it for experimental purposes. It has been supplemented with a number of other feedstock, for example you can feed it grass. We have a lot of grass here, with a big digester we could make a lot of gas.

We also want to experiment with processing the gas. The gas has a number of names including 'bio-gas'. Bio-gas is not pure methane, it contains up to forty five percent CO<sub>2</sub> and up to ten percent hydrogen, usually the concentrations are much less than that, there are also small amounts of N<sub>2</sub>, O<sub>2</sub>, CO and H<sub>2</sub>S. The latter is the hydrogen sulphide I mentioned last night. The H<sub>2</sub>S makes the gas smell bad, this is good for warning you that you have bio-gas in the air.

We would like a cheap easy process for removing the CO<sub>2</sub>. This would increase the energy content of the gas, we have some ideas about that. Less CO<sub>2</sub> would increase the energy density and make it a better fuel for running vehicles. It is also possible to “reform” it to produce hydrogen. We haven't had time to get very far with this research.”

“I'm not surprised, I can see you have a lot of other things to do. Do you really think it is worthwhile spending your time on this when there are large research facilities which can do this sort of thing?”

“Absolutely, an individual or small group can make rapid progress on small projects like this if they are focused. In a large organization there might be six levels of management above the person doing the work. There are also office and other support staff such as cleaners needed to support the 'worker', this all needs to be paid for. The workers spend a large percentage of their time with red-tape. They have to attend irrelevant meetings, undergo performance reviews, attend health and safety briefings and so on. There are patent searches to do and patent protection to pay for.

These organizations tend to be very market focused so the 'what if' experiments tend not to proceed. We don't have to justify our plans to anyone, if we get an idea we just go for it. We don't rule out patenting something but chances are we will give away our ideas for free. We aren't doing anything particularly new here, we just try to do things in a greener way and to demystify the processes.

Unfortunately back yard inventors are sometimes hoaxers, bad observers or just plain deluded. I'm sure there are still lots of things left to discover and some of these discoveries will be made by amateurs. Someone may try something for all the wrong reasons and make the discovery of the century.

Not all discoveries are 'things', often it is using existing tools in new ways or putting some old knowledge into a new setting. For example, take the simple idea of raising chickens in a banana plantation. The chickens control the weeds and fertilize the ground. The banana plants shelter the chickens. Chickens aren't a new idea, nor are bananas but putting them together was.

Let's go inside and have some mint tea then I'll show you around some more.

Jo made tea and now that Sally knew where the gas had been, she paid close

attention to the flame. She decided that gas was gas, if it was sterile and didn't stink it was good enough for her.

“What about the water, it is very soft, rainwater?”

“Mostly. We catch rainwater, also have spring water and at a pinch we can make potable water by filtering creek water. We can also run un-potable water to places like the loo, flushing drink water down the loo has always seemed a dumb thing to do.”

“And the lights and power are solar?”

“Some solar, some wind and a few other things I'll show you later.”

Tea in hand Sally was ready for more, “OK what next?”

“Let's start with this,” she said leading her to what was obviously and engine.

“OK, this doesn't look too unusual to me, what's it for?”

“It is for testing alternative fuels. You're correct, it isn't particularly unusual, just a diesel generator. What we do is run different fuels in it and measure the energy content. Here's a change over tap so we can start and stop it on diesel or run our sample in this tube. There is also a heater to let us run more solid fats. We should even be able to run it on bio-gas. We've run a variety of veggie oils but what we are mainly interested in is grass-seed oils.

Over here is our seed press. Nothing fancy just a converted car jack, it is enough to let us press the tiny bit of oil we need for our tests. Grass does not have a high oil yield but it grows by itself and no-one is going to steal it, not our kind of grass anyway. Some algae is high in fat too, some can even make hydrogen but that is another story.”



Sally looked at the next piece of gear, it looked like a steel gas bottle which had been in a fire. “This looks like a boiler of some kind?”

“Close, it is for pyrolysis experiments.”

‘Err, help me out here, pyrowhat?’

“Pyrolysis, take organic material, heat it while keeping oxygen away and catch what comes off. Easy to do, hard to do well.

We are beginners, we've only pyrolysed wood. When you do this liquid and gaseous products are given off. Both can be used as fuel and for other purposes. There are probably hundreds of different chemicals given off. We aren't very sophisticated and our yield of liquid fuel is fairly low. A well designed unit might produce as much as forty-five percent liquids, even more when catalysts are added. We have a long way to go in improving the efficiency of this device. We could also try to put the waste heat to good use.

There are a large number of variables involved which affect the outcome. Obviously the material you are pyrolysing will make a difference, so does the pressure, temperature, rate of heating along with the presence of water, catalysts or other chemicals. You need over 250 degrees C to get started, maybe up to 500C, high temperatures tend to produce more gas and less liquid.”

“OK, sounds simple why aren't we doing it?”

“Mostly the same old reason – cheap oil. When oil runs short you can expect pyrolysis to make a comeback. It can also take a lot of energy to run the process. The main use for pyrolysis today is for making charcoal and this is also one of the reasons we are interested in it. Traditional charcoal making is an inefficient process. We aren't particularly interested in more gas - so we burn it the fuel the process. We end up with some liquids and a low grade activated charcoal. The charcoal has a lot of uses, for example - it is a fuel for blacksmithing, a catalyst and a material for filtering air and water. We could possibly even use it to process the other products of the pyrolysis.

If we burn fuel to power the process we release CO<sub>2</sub> and if we burn the fuels we produce we also release CO<sub>2</sub> but because the process is based on wood it is a renewable resource.”

“I'm sure this is a dumb question but, hey, I'm new around here.

CO<sub>2</sub> is CO<sub>2</sub> isn't it? Why does it matter what fuel it comes from?”

“It isn't totally dumb, there are some subtleties a lot of people seem to miss. Releasing CO<sub>2</sub> is bad yes, but this CO<sub>2</sub> would probably be released anyway and if we re-grow the wood we used we will remove the same amount of CO<sub>2</sub> from the air – in other words it is carbon neutral.

The process of plants taking CO<sub>2</sub> and building organic compounds, which eventually break down releasing the CO<sub>2</sub> again, is perfectly natural. As far as CO<sub>2</sub> goes, it doesn't matter too much whether the wood is burned, decays or is eaten, the carbon is released. Burning wood may release other chemicals that decay doesn't, removing trees may deprive animals of homes and so forth but that is another subject. A mature forest does little to lower atmospheric CO<sub>2</sub> levels. The way plants can reduce CO<sub>2</sub> levels is if they are preserved. For example plants falling into water and becoming peat is one way carbon can be removed from the cycle. Growing new trees is still a good thing to do but they won't bring CO<sub>2</sub> levels back to normal by themselves. Trees can also release some undesirable chemicals so it isn't quite as straight forward as you might expect.

Anyway bottom line is pyrolysis is a useful process not just for making fuel but also for making useful chemicals. There is another process which could be argued to be a type of pyrolysis and this is called 'thermal depolymerization' or TDP. It is also called 'thermal conversion process' or TCP. One company researching this is 'Changing World Technologies' or CWT. CWT have developed a process for efficiently converting wet biomass into light crude oil and other products. A pilot plant was built to process the waste from a turkey processing plant into oil. They claim the efficiency is 85 percent, in other words fifteen percent of the energy in the turkey offal is used to power the process. The process produces about 39 percent oil from the turkey remains.

TCP on plastic bottles is said to produce 70 percent oil and even sewerage sludge yields about 26 percent. So while our “pig” takes months to convert poo into gas this process take hours and converts it into a more convenient fuel.”

“Are you going to try it?”

“No, not for sewerage anyway, we don't have enough of it for a system like this. I think we will leave it for the professionals.

Things haven't gone smoothly at the pilot plant. There were complaints about odours – which were later found not to be from the plant, this closed it for a while. The other setback was the price of turkey offal was expected to fall due the changes in regulations regarding using offal in animal feed. The price didn't fall and oil from the pilot plant ended up being too expensive to compete with the stuff in the ground. When oil prices go up and TDP costs come down they will be in business.”

“Do you think we can supply all our fuel this way?”

“I wouldn't think so, processing all our wastes including things like lawn clippings we might produce a good percentage of our fuel. The danger is in desperate times we could loose our forests into these plants.

Maybe we could do something radical like grow algae or weed in our large dams. At the moment they try to keep them clear and the sunlight falling on them is largely wasted. If you could get enough fuel out of weeds it could be worthwhile running the filtration plants that may be needed to make the water safe to drink. TDP does produce some purified water so you are part of the way there, it also makes charcoal which can also aid in filtration”

Sally moved on to the next piece of apparatus, “TCP still sounds good - and what is this?”

“Its a barbecue Sally, we use it to cook steak.

Let's have some more tea, I have a couple more things to show you outside and we can go look for some lunch.”

While Sally made tea Jo put on her shoes and got a couple of cane-knives out to take on the walk. She also found a couple of cloth shoulder bags and some simple tools. The last item was her camera bag along with a plastic bag to protect it in case it rained.

They drank tea quietly, Sally was still mentally processing everything she had learned so far today. She was a little worried about what Jo had planned for lunch, if she had a plan that is. She had a suspicion that Jo actually planned very little, she just made it up as she went along.

“Ready for more?” asked Jo.

“I guess so.”

“This is for you” she said handing Sally one of the knives.

“What is this for?”

“We might chop a few weeds along the way or we might need to cut through some lantana.”

Jo lead the way to a large box attached to the outside of the shed. Inside was a row of twelve rectangular batteries each about the size of a small briefcase. Thick copper cables connected them all together.

Jo put on her best tour guide voice, “Ladies and gentlemen our first point of interest on this tour today is the battery box.” Then she went back to her normal voice. “This is what powers the electrical system of the house when there isn't enough power generated by the solar panels and other power generators about the place. Batteries are a problem, they have very limited life, especially if they are worked hard, they are expensive to replace. These are lead-acid batteries much like the battery in your car. There isn't enough lead on the planet for every house to have a set like this. It pays to use them as little as possible, this is partly why there is diverse array of power generators used, we will see a few more soon. Moving right along...”

The next stop was another shed right beside the main one.

“This -”, said Jo unlocking and opening the door, “is our big project.”

Inside was a shiny metal thing. One end was almost a half a cylinder the other end almost a quarter of a sphere. It almost looked like the underside of a dinghy except the seems all went the wrong way. A metal pipe ran underneath.”

“OK, I need some help here, I haven't a clue.”

“Maybe that's because it is upside down so it stays clean on the inside.”

“No, that doesn't help much.”

“It's a solar furnace.”

“And that is a good thing?”

“Yes, every self respecting mad scientist has to have one.

But far as I know this one is unique. You see we couldn't decide whether to make a dish or a trough so we made a hybrid. The professor wanted to make a dish with curved glass mirrors. He had a plan to make the glass pieces in a furnace on a centrifuge. The rest of us wanted to make a trough out of

polished metal. In the end we tried to bribe him by promising to mow his lawn for a month. He haggled and we threw in some home cooked meals, then he helped us with this.”

“So what do you want it for?”

“To make things hot, very hot. There are a lot of processes that need high temperatures. I've already hinted at a few.

One is making hydrogen using a thermo chemical process, that needs high pressure as well and we will probably give it a miss. It could make water gas from charcoal and water. It can make steam to drive a steam engine – the list is long. You can even melt most metals with it.”

“So what have you actually done with it?”

We've made steam and burnt marshmallows.”

“Marshmallows?”

“We're allowed to have fun too you know!

We don't take ourselves too seriously. All this stuff is a finger in the air or a toe in the water, so to speak. Once we know what is possible that is enough at this stage.”

“So this is all for 'after the crash'?”

“Not necessarily. The things we need to survive ATC may be the same things we need to prevent the crash. If the crash can be averted let's do so, we're just not feeling that optimistic.

Energy is still too cheap for us to put a lot of personal effort into making our own fuels, at some point it will become worthwhile. Our little team here all have other work to do, but things can change. If we all end up unemployed, things will progress a lot faster, until we run out of materials at least. Because we are looking to do things with minimal resources we can keep working without spending much money. It also tends to be stuff that might be useful in developing countries.

In practice they might be teaching us a thing or two about surviving a shortage. Take Cuba for example. When they suffered an energy crisis they reverted to using animal power. They farmed wherever they could including the roadsides and survived. It will be poetic justice if their enemies who imposed the embargo suffered the same fate.”

They left the shed, Jo locked up and lead the way along the creek bank. Heading upstream Sally was now in new territory. Jo pointed to a patch of bushes about three meters tall with large 10 pointed leaves and hairy looking seed pods about the size of large cherries. “Do you know what these are?”

“I've seen them before but no, I don't know, I don't have to eat them do I?”  
“Definitely not! They contain one of the most toxic substances know to man, in small quantities fortunately. These are castor oil plants, they grow all over the country side, usually along creek and river banks like this. As you might have guessed you can make castor oil from the beans. Apart from being used as a laxative it is an excellent engine oil. The oil can also be polymerized into a soft plastic.”

Continuing upstream a small weir came into view and a faint sloshing noise could be heard. The source of the sound was a waterwheel on the end of the weir right next to the bank. As they got closer the whir of gears could be made out as well. A pair of thick cables came out of a box which was attached to the shaft the wheel was driving. The wheel seemed to be made of aluminium. On the other side of the weir was a fish ladder made of ten or so 'steps'.

“This is some more of our fun,” said the guide,”it is also one of the most valuable sources of power on the property. Apart from times of extreme drought this produces a half a kilowatt or more. During the night when most people sleep this has almost enough capacity to run the ten houses that share the power. That is for the refrigerators mainly. It takes a huge load off the batteries. If only it gave a little more power.”

“Can't you just put another one beside it?”

“No it doesn't work that way. The power it can generate is limited by the amount of water flowing and how far it falls. We might be able to build another one somewhere else along the creek but we don't want it to be too far from the users. The absolute limit is governed by the amount the creek

drops as it crosses the property and the flow rate. We do have some other water sources and I'll take you to another one now.”

They turned right onto a track running perpendicular to the creek. It crossed a grassy paddock and led to the base of a steep gully which ran up the side of a steep hill covered with rain forest. Just to one side of this was a small structure about the size of an old style telephone booth. Beside this was a pool of clear water. From the back of the 'box' emerged a piece of thick black hose which went underground. You could still make out where it had been buried and it went straight up the hill beside the gully. Once again thick wires came out of the box and headed back towards the houses. What looked like a small antenna poked up through the roof, she had seen a lot of these around the place. There was no door and inside were more wires, pipes and things Sally couldn't name. The heart of the device was a sort of a paddle wheel attached to what looked like a motor. A clear cover was fitted over the wheel.

“Explain,” invited Sally.

“I'll do better than that, I'll demonstrate.” Joe turned a switch marked 'manual override'. There was a loud thump and water spurted out of a nozzle aimed down along the edge of the wheel. The wheel started to spin and fling water onto the inside of the cover. The water then ran into a pipe which went to the pond outside. It made a sort of a buzz – like a lawn sprinkler on overdrive. Jo pointed to one of the gauges, “Almost a kilowatt, let's not waste it”. She turned the switch off again.

“This” she continued, “is probably the most valuable power on the property.”

“Hang on, it is just electricity isn't it. Isn't it all worth the same.”

“No, I've misled you a little by implying power was all the same, I wanted to keep things simple and not overwhelm you, but no it isn't all worth the same. I don't want to get too deeply into it now because we will have other fish to fry.

It is an issue of supply and demand. The water to drive this comes from a dam about 100 meters higher than here. The dam is filled by a spring and also rain. What is significant about this generator is we can turn the water off and save it for a rainless night. It is a little like a trickle charged battery,

it can supply reasonable amounts of power on demand but only for a limited time. It is the only power source on the property that can do that apart from the fuel driven generators. We can't save wind by using it less any more than we can save the sunlight by turning off the solar panels. The big bad power grid has the same problems, it can't operate without some way to match the grid output to the demand. Gigawatts of solar panels would still need a backup system for dark times.”

“I think I've noticed something strange. The water comes down through this huge pipe but the nozzle is no bigger than one you'd find on a garden hose. Couldn't you just have run a hose down here, it would have been a lot cheaper.”

“Well spotted and a good question. You could use a garden hose but you would lose most of the energy overcoming the friction in the hose. Its a lot like electrical resistance but I suspect that doesn't help you much. I can try to show you. Look at this gauge over here, see the needle is at about 150, that is the water pressure. Now watch when I turn the generator on, see it drops to about 135. If it was a frictionless pipe it wouldn't have changed. We can see we are losing ten percent of the energy in the pipe.”

Jo could see Sally's eyes glaze over.

“Oh, never mind, big pipes waste less power is the gist of it.”

“I think I sort of get it. Those paddles look like spoons”

“They are spoons, we're not the first to do it that way. Why re-invent the water wheel? This style of turbine is called a pelton wheel.

That's probably enough power talk for this morning, seen enough?”

“Enough.”

They started out on a path that went off to the left climbing the slope at a gentle gradient. They hadn't gone very far at all when Jo pointed to a patch of wild goose-berries. They ate a good few and collected the remaining ripe berries complete with their papery little covers. Sally tasted prickly pear for the first time but didn't like it much. There were a good number of sandpaper figs fruiting, they only collected a few.

Jo explain that some lichens were edible and then went on to talk about eating insects. She said moths were good but butterflies were often poisonous. She also said cooked orb spiders tasted like pate' but Sally thought her leg might be being pulled. There were several native passion fruit vines within easy reach of the track and after eating a few Sally felt her

belly was getting full.

The sounds of falling water became louder as they headed deeper into a gully. Ultimately the track ended at a pretty little waterfall. At the base was a clear pool which drained into a mass of boulders and disappeared underground. The waterfall seemed to have a number of tiers, she could make out three but couldn't see beyond the third as it sloped back out of view.

Jo put her camera gear behind a rock where it was protected from the spray. She took off her shoes then piled her clothes on top of the camera bag for extra protection. She hesitated for a few moments then took off her pendant and sat it on top of the pile.

The pool was quite deep in the middle, she waded around the edge where it was shallow, pause to catch and drink some of falling water then climbed right into the torrent. The force of the water was strong and she had to hold the jagged edges of the rocks tightly to avoid be washed away. After a few minutes fatigue set in and she backed into the deeper water and let the current carry her back to where Sally waited.

Very little sunlight reached the floor of the gully and she had to climb a little way up the side to reach a sunny perch on a rock. Her skin was covered in goose bumps and water was still streaming off her now matted hair. The water ran down her upper arms in little riverlets which snaked back and forth and eventually dripped off her elbows. Shivering slightly she rocked back and front waiting to warm up again.

“Nice spot, Jo.”

“I like it too.”

“One of your power plants would work well in here.”

“It would”

“Are you going to build one here?”

“No.”

“Why not?”

“Because it is a long way from the houses, because it is hard to do but the main reason is because it is a nice spot.

If expanding our generating capabilities means wrecking this waterfall then we won't expand.

All our little projects have some side effects. Our water wheel might restrict the movement of fish and other creatures up the creek. The windmills can frighten or injure the birds. The little hydro system I just showed you robs the trees in the gully of water. There is usually some negative impact, we have to decide what the priorities are. There is only one waterfall in this part of the valley, we all think it is worth keeping it as pristine as possible.

Sally didn't swim she settled for a wash. The water didn't seem all that cold, Jo obviously felt the cold more than she did. Jo had less padding and the running water seemed to be more chilling than the still water. She watched the water for a while then lay down on a log and watched the wispy clouds fly past in the blue sky.

They didn't stay very long it was already past midday and Jo seemed to have a lot of things on the agenda for Sally. On the way back they collected native ginger which Jo dug up using a small spade she pulled out of her tool bag. When they were out of the rain forest and back amongst gum trees, Jo showed Sally the sugary "bells" on the leaves and explained they were secreted by Lerps, which are insects belonging to the family *psyllidae*. The bells she claimed were edible and so were the insects if you were that way inclined.

They then collected wattle seeds. Jo rattled off a bunch of uses for the plant. The gum which oozed out of some plants and set hard also had its uses. The green seeds could be cooked like beans but today there were only mature hard seeds which they could grind up to make a sort of flour. Jo explained that most species were thought to be safe to eat except *acacia ligulata* and *A. adsurgens*. The former was said to make your hair fall out. Sally suggested rubbing it on her legs, Jo just rolled her eyes.

They were out off the bush and heading back onto the flat paddock when there was sound in the grass to the right of the track.

Sally felt a pull on her shirt and heard the words "Stop,stop,stop!". She obeyed and scanned the surroundings. Her body reacted before her brain had time to put a label on what she was seeing. Adrenalin was pumped into her veins, she stood there shaking, tightly grasping her knife with white knuckles.

She heard a calm quiet voice say, "Isn't she a beauty, I think she's the biggest I've ever seen."

"Tell me its harmless," came out in a shaky voice.

"Eastern brown, one of the deadliest snakes on the planet. Also harmless if you treat her right."

The snake looked like it was about two meters long and was poking about in some short grass, when the walkers appeared she slid into the nearest clump of tall grass and poked her head out just enough to watch them."

"Shouldn't someone kill it?"

"No, definitely not. For one thing it is illegal to kill it unless it attacks you. People ignore that, or would claim she was going to bite when clearly she is not. Trying to catch or kill her is the best way to get yourself bitten."

"But you said yourself she is deadly."

"The deadliest snake is not deadliest creature, there is a far more deadly creature in these parts."

"Where? What?" She asked becoming even more agitated.

"Right here Sally - you! She hasn't done anything to threaten you and you want to kill her. I'm glad you're not in charge of our armed forces.

Stop waving that thing around, you are frightening her."

The snake had retracted into cover, when Sally stood still, it inched forward again peering at them with black lidless eyes.



"I'm frightening her? What about me?"

"Calm down, look she is hiding, she just wants a us to go away. She just wanted a nice patch of sun and some lizards for lunch when two great thundering humans barge in. Then the blond one starts waving a weapon around. She is the queen of this domain, please show her some respect.

I haven't handled venomous snakes, I have handled lots of pythons. They become tame very quickly, it really pisses them off to be startled. If you

took your time and made friends with her, she would probably let you pick her up and stroke her. I don't suggest we try though. This sort of diplomacy is for experts.”

“No chance of that, maybe she could be de-fanged.”

“Now you are being silly. She isn't going to hurt us. She isn't even doing her karate pose.”

“Her what?”

“When they are going to strike they rear up with a sort of an “S” shape. It just reminds me of a karate stance. If they had a voice, they would yell at you in Japanese as they struck!”

Then Jo addressed the serpent, ”You are beautiful, we are sorry we startled you. We just want to pass through and you can go back to you're snaky business. Forgive the other one, she just doesn't understand, yet.”

She forgives you Sally, she says her name is Glorious and she is very hungry because she has eggs growing inside her. She promises to stay where she is if we quietly walk by. She asks us to go now and please not too scare away the lizards. Especially not the skinks, they are her favourites.”

“I wish you'd been more serious sometimes.”

“I am being serious, you can stay on the left if you like. One step after another. I'll watch to make sure she keeps her promise.”

Glorious watched them pass then came out to hunt some more.

Jo went on to say, “They have the most gorgeous babies, they often have light and dark bands on their bodies for the first few years. Their little bodies can stand up like cobras, very cute, very venomous.

You can see why we locals call this 'snake range'.

Where were we again?”

“I believe I was being scared shit-less and you were being blasé, or did you mean before that?

What now?”

“I'll show you some houses on the way back to the shed.”

There were a number of houses built where the hill met the flat land. Most had their back yards (or was it a front yards) between the house and the hill.

An old looking house was actually on the slope. A gravel road ran in front (or was it behind) the houses on the other side, that is the side facing the creek.

Jo began, "the first house is made of straw, spare me the wolf jokes. Straw bales are stacked and pinned then covered with wire mesh and in this case rendered with mud. Dry cow manure is an ingredient for a nice render if you are that way inclined, not your style I would guess. The straw is a good insulator and the thick walls result in those deep window sills which I'm rather fond of. It has a fairly conventional steel roof as do most of these houses. All in all less imported material is used than in a 'normal' house. The materials which were brought on the property were mainly steel and a little cement.

The second house is a pole house made from timber cut on the property. The walls are 'wattle and dob'. This is basically sticks woven together and rendered with mud. This method is used world wide and was common in our pioneering days. Again a fairly 'green' way to build.

The third house is made of mud brick. I think the owners would agree that building in mud brick is a lot of work. Using rammed or poured earth is much easier. Notice the roof has a lot of overhang to protect the walls from rain. Again mostly local materials"

"Yes I see, and the fourth house looks like plain old brick, what special about it?"

"Absolutely nothing. Not everyone shares the dream. They have the right to build however they choose.

The last house in this cluster is stone. It is the oldest house, you probably wouldn't get a building permit to build on the slope these days."

"It must be hard working out how to build these unconventional houses."

"Not really, there are plenty of ways to build a low cost environmentally sound home. The hard part is the paper work. It is hard enough to meet the council requirements for a conventional house, anything out of the ordinary is a night-mare.

I'll give you an example of a dumb rule we have to obey. All the gray water

has to be treated. By gray water we mean water from the kitchen, laundry and bath – basically soapy water. The waste water here drains into a cow paddock, note the drains are a long way from the creek . We can have hundreds of cows peeing and pooping wherever they want. We can legally pour tonnes of fertilizer, pesticide and herbicide onto the ground. But we can't pour gray water there.”

“Why not?”

“My guess is that they, the council, are rule driven. Common sense has no place there. Often the field officers, that is the inspectors, agree the rules are stupid but they have to obey just the same.

My guess is the waste water rules were created with small suburban blocks in mind. They make perfect sense in built up areas, particularly in highly populated, treeless areas. This property is about five thousand times the area of a small suburban allotment. Our houses on average have less than two occupants per house. We also don't have 'town water' so water is used more sparingly therefore there is less waste water. All in all the rule should not be applied here at all - but it is.

Christopher Alexander (et al) put it rather well in the book 'A Pattern Language' when he said something to the effect that councils should only control the land and infrastructure connecting the private land together. Their jobs should not be to protect us from ourselves. We should have the right to manage our own risks. If we pollute the creek that is a council matter. If we pollute the air it is a council matter. If we light fires which escape our borders it is a council matter. If we want to live in flimsy huts that could blow over or get burnt down in a bush fire that should be none of their business. The rules....”

Jo was interrupted by a man who had come out of the brick house and down to the road. He looked in his mid fifties and looked like he had a stiff back or something, he swayed from side to side as he walked.

“Good to see you Jo, as always.”

“Joe, this is Sally, Sally this is the other Joe.”

Sally said “hello”.

“I've got plenty of milk and cream to spare if you're interested”, said Joe.

“Uhhh, I'd love some but Sally and I are playing survival today so I'm afraid I'll have to pass. We were just talking about the council rules.”

Joe swore then apologized.

“Sally, Joe runs a small dairy herd here.

Joe we can't stop now we've got to catch some dinner.”

Joe looked a little disappointed, “You need to take it easy sometimes.”

“You can talk, you've worked pretty hard until recent times.”

“Yeah, I know, I never had time for the wife and kids and now that I've got time I'm alone. Just drop by if you want some milk and I must say that cheese you made was pretty good.”

“If I wake up early enough I might come past in the morning.”

“Any time, I'll be up with the sun.”

They said their good-byes and continued. As soon as they were out of earshot Sally said, “He fancies you.”

“Yeah, probably. He's nice enough but I don't fancy him and he's not one of 'us', he thinks we're just paranoid.”

“And he thinks you like cream.”

“I do like cream.”

“But you didn't in the coffee shop?”

“What they serve in a coffee shop isn't what I'd call cream. It probably isn't even a dairy product, if it is it has been pasteurized, in other words ruined. Joe has real cream.”

“How do you know its pasteurized?”

“Because that's another rule, the general public can't legally buy raw cream, raw milk or fresh eggs for that matter.”

“Why?”

“I'm not sure, perhaps its a real concern for public safety or there could be other agendas. Either way we should have the right to buy fresh raw produce if we choose too. If there was a big health risk and us weirdos who drink fresh milk were dropping like flies or clogging up the health system then one could justify government intervention. That isn't the case, I grew up drinking milk almost straight from the cow udder.

There have been problems with diseased herds in the past but nothing to justify pasteurizing milk for ever more. Milk like most foods should contain live bacteria, if harmful bacteria find their way into milk they are much more likely to thrive if they have no competition, as is the case in sterilized/pasteurized milk. The pasteurization also destroys the vitamins

and enzymes that are good for us. We don't need more empty, fatty, kilojoules.”

They were almost back at the shed, the road had curved to the right and passed through pasture. Jo detoured slightly to pick a few lemons from one of the many bush-lemon trees which were scattered throughout the farm. She still had a lot more to say.

“Whether it is deliberate or not, the other effect this rule has is to make it hard for the small producer. Farmer Joe can't sell Sally milk, he has to let the dairy companies skim off some of the profit. Instead of healthy product going to a local market with minimal energy expenditure, the product is denatured in a process involving energy in processing and transportation.

People have been inventive in getting around these silly rules. Customers forfeited their usual customer protection by drinking raw milk sold as pet milk. People used to consume pet food because it was cheap, but they consumed pet milk because it is healthier than milk sold for humans. You could also buy raw 'bath milk'. I believe these loopholes have now been closed.”

Sally remembered her own problems with bureaucracy, “So the bastards have won again.”

“Not entirely, you can still legally buy raw milk products by being a member of a co-operative like this one. No doubt they are working on stopping that as well.

Most of the people involved aren't bastards, they are people who really think they are doing the proper thing. However, I do have the feeling there are more than a few players that really do fit that label.”



They arrived back at base and after a brief rest and loo break, Jo grabbed her gardening spade and took Sally behind the shed where the ground was damp. She started to dig and pulled out one of the large leafed flowering plants and removed the tuber, she collected earthworms as well.

“This,” she said, “Is a Canna lily, this is a canna root and this is a canna

worm.”

She then sang the worm song she had learned in scouts some thirty years previously.

“Nobody loves me everybody hates me, I think I’ll go eat worms!  
Big fat juicy ones, teeny weenie tiny ones, see them squiggle and squirm.  
Chop their heads off suck their juices, throw their skins away.  
Nobody knows how I survive, on worms, three times a day! YUM!”

By the time the song was finished Sally was looking incredibly worried. Jo laughed, “Relax, are you any good at baiting a hook.” Sally now looked much relieved, “I did a little fishing in the surf when I was a weed.”

The fishing gear, as you might expect, was minimalist. It consisted of a couple of hand lines on plastic spools and floats made of wine corks. Jo took them to a dam not more than five minutes walk away and they sat on a log which had obviously been placed there in the shade of some trees opposite the dam wall. A wooden pole had been driven into the ground in front of the log, it was about a metre and a half long and had a V cut into the top. Sally wondered what it was for but didn't get around to asking.

Soon two corks were bobbing in the water and through the lines they could feel the small fish nibbling on the bait.

“No rules against fishing?”, ask Sally.  
“Not yet, we're on private property, fishing in a private dam which was privately stocked with fish. Give it time and 'they' will find some way to interfere if they can.”

“You're obviously not a serious Buddhist if you kill worms.”

“If I was a serious Buddhist I wouldn't be fishing at all.”

“So what are you?”

“I'm a Frisbeeite.”

“A what?”

“A Frisbeeite. We believe that when we die our souls get stuck on the roof and no-one can get us down. We're similar to the Kiteites except they get stuck in trees and power lines.”

“In other words your not going to tell me.”

“Not unless it becomes necessary.

I clearly don't have a belief system which requires me to convert anyone. I also don't believe the destruction of the world is God's will and we should just let it happen.

Does that narrow it down?”

“Maybe, you do have a thing for Zen though?”

“Somewhat, since I'm also not a moralist, I lean more toward the Tao.”

“I probably shouldn't ask, moralist? Tao?”

“We live in a moralist society. Moralists believe people are born evil and society has to have laws and law enforcement along with plenty of threats of punishment and graphic examples of law enforcement in action to keep people in line.

Taoists say people should be free to do whatever they want.

The moralists say you can't do that because everyone will run amok and do terrible things. To this the Taoists say no, people are good and if they are treated well and not subjected to laws, threats and fear they will choose to do good instead of bad.”

“And you believe that?”

“Up to a point. I think there is a small proportion of the population who are defective and will need to be contained, call them mentally ill if you like. Perhaps a few are genetically programmed to be anti-social. For the vast majority of people, if they are properly cared for and educated, they will be good.

If law enforcement totally disappeared the majority of us would not go on a rampage despite the wrongs which have been done to us. A small percentage of people would. In a world where everyone's needs were met that element would become vanishingly small.”

“But you will still need some way to deal with the 'ill' as you put it.”

“Probably but nothing like what we have now. Note that in our society we don't treat the insane the same as everyone else. When an insane person commits what we would normally call a crime they are treated as sick not evil.

Sally's cork started to jump about energetically, then it disappeared under the water and the line went taut. The line then moved around erratically. Sally struggled a little to wind the line onto the spool. Jo took the spool

from her and with one smooth motion positioned the taut line into the groove in the upright post then simply walked away from the water taking the reel with her. In no time a small silver perch (which was black) came sliding up the bank and landed at Sally's feet. Jo came back winding on the line as she walked.

Jo killed the fish because she didn't like to leave them to die slowly. She then put it in a bucket of water to keep it cool and discourage the ants. The fish was too small to feed both of them so Sally re-baited her hook and Jo pulled her line in to find her bait missing. Soon both corks were bobbing about again.

Jo then resumed her monologue, "The legal system is just too complex and expensive. It certainly isn't just that an innocent person can be made bankrupt defending themselves from a false accusation. It isn't just that people with money can deliberately ruin someone's life by using the law as a weapon. It isn't just that innocent people are gaoled and in some countries executed because they are too poor to hire a good lawyer. That is what we have though.

One clue that some of our laws are wrong is that they aren't universal. You can legally smoke dope and take other drugs in Holland and other places. You can legally build temporary dwellings in Ireland and other countries. Porn is illegal in Singapore. Alcohol is illegal in Bangladesh, tobacco illegal in Bhutan. Many laws are arbitrary, someone somewhere got it wrong. When in doubt let us decide for ourselves.

We are in the era of Orwellian doublethink, where more often than not - justice is unjust, our defense forces are used for offense and the public service is a public hindrance.

Halakhah, Jewish Law has as its base the 613 Mitzvot or rules, this is more than most people could grasp.

Then there are the ten commandments. Much more concise. It is a great pity the Christian nations worked around number six in order to wage war.

The modern pagans have it down to one sentence, 'do as though wilt and harm none.' Easy to say much harder to do."

“What do you mean?”

“We rarely know whether our actions will do harm. Taking no action could also do harm. In the end we can only try our best and hopefully our good will compensate for the harm we do.”

Sally had another bite, this time she knew the drill and landed the fish by herself. By the time she wound the line up Jo had the second silver perch in the bucket and was winding her own line in so they could go 'home'.

On the way back Sally asked, “Do you think we will ever see a Taoist world?”

“No I don't, unless the whole world changes together, any large Taoist groups will be destroyed by people with more aggressive philosophies. I see no path from this world to that world. Small groups may be able to live as Taoist communities but only as long as they are overlooked by the powers that be.”

“I can fillet those fish for you.”

“No!”

“Did I say something wrong?”

“Sorry if I was abrupt, if you fillet them you waste far too much fish.”

“I'll clean them then.”

“OK thanks, I'll show you which bits to keep.”

It was getting dark outside, Sally cleaned the fish and Jo went off to collect weeds. She returned with dock leaves of some sort, nettles and herbs from the garden. She carefully stripped the nettle leaves from the stems using gloved hands and then removed the “stems” from the dock leaves. Then she ground the wattle seed into a coarse flour. While she worked she sang a little song. Sally didn't recognize the language, it was very guttural and resonant.

“Hine matov umanayim Shevet akim gom yokad.”

“What is that you are singing.”

“Oh I forgot I had company. Something I picked up somewhere. I like the old languages, the words have a power to them. Hebrew, Sanskrit and ancient Greek, they can give me goosebumps down to the toes. I think this is something about people living in harmony.”

After all the ingredients were prepared Jo went over to the bench where the diesel engine sat. She returned with a small bottle with two circles drawn on it with felt pen.

“Lucky the bandits didn't steal all our fuel samples,” she said opening the bottle and pouring good dose into a large wok.

“I'm afraid to ask, what is that?”

“Good old olive oil.”

Jo browned the whole fish then added the ingredients one at a time. Before too long the smell was making Sally feel hungry. To take her mind off her stomach she tried to make some light conversation.

“You really enjoy this alternative stuff don't you. Being independent, catching food, catching energy from nature. I figure it might be a little like how I used to feel about sailing. Feeling the wind hit the sail and having the boat surge forward, using your skill to harness the wind while the petrol heads just turned octane into noise. Do you think so?”

“I think you've got it, I really do.”

“I can see the appeal but I really don't know I could give up all my toys and mod cons. I like my TV and all that.”

“We can have most of that here, we can even have broadband. If and when the shit hits the fan our mod cons will be working long after the city is blacked out. That reminds me I have something else I wanted to show you.”

Jo took her to a computer which was partly buried in junk. She booted it up and Sally was not too surprised to see it didn't run windows. Jo clicked on something and screen which looked lot like a control panel of some sort came up.

Jo explained, “This is a diagram of our little power grid. These are the generators, these are the users. Blue is power generated, green is energy stored and red is power being used. We can see how much power each generator is producing and how much power the users are consuming. See Joe is being greedy again. We can see the charge in every battery bank and the water level in the top dam.

This is us here, I can look at our usage over the day, see the jump when we turned the light on. Another thing it shows us is how much power was wasted because the batteries were full and we couldn't store it – useful for planning.”

“How do we know all this?”

“You might have notice little antennas all over the place. Every part of our grid is part of a wireless network. So are the burglar alarms and the front gate. We can even send simple text messages through it – like local SMS except it is free and doesn't use any telephone company networks. The fish is calling us.”

Jo shut down the computer and served dinner. Sally thought it was quite good except the canna was a bit bland. Jo volunteered to eat the heads sparing Sally the experience. They really ate a bit too much.

“That was really good Jo.”

“See it isn't hard to feed two people for a day in a place like this at this time of year. With more people, a different season, less land or a different place it could be really tough. Now you probably know more about wild food than 99 percent of civilians. Falling asleep in front of 'Bush tucker man' doesn't count.”

It wasn't all that late but Sally had had a big day. She helped wash up and went to bed. She thought about how good the meal was and felt a little disappointed that they didn't go the rest of the way and press there own cooking oil. She liked to see things finished off not left half-done like Jo and her friends did. She thought Jo's weirdness might be contagious, she would have to be careful not to catch it.



## Day Four.



Thursday, 25'th Nov 2004.

A large crowd had gathered on the hilltop. The tail of the snake was coiled around the spring. The sculpture was huge. The snake was perhaps a metre or two in diameter and hundreds of metres long, clearly it was not to scale. The body of the snake was an open trough-like structure which carried the water to the sea in the east. The body curved left and right several times in big lazy 'S's. Along the centre line a straight footpath crossed four small bridges and ended at the back of the head. The bridges were closed to traffic today because they had been transformed into small altars. Baskets of flowers, coloured stones, statues and other items had been placed there. Polished wooden planks across the water allowed the bridges to be bypassed. At the spring and at the snake's head, there were also altars, this made six in total. The snake was dark in colour, small coloured mirrors were embedded in the surface causing it to sparkle. The mirrors near the spring were all bright red.

It was early morning and the sun hadn't risen yet. Nearby in the west were jagged mountains, to the south, Sally could see the tops of stone buildings in the local village. The hill was a hundred metres high and a grassy slope extended down to the beach. The beach was narrow with a prominent strip of beach-rock at the waterline. Beyond this was a colourful reef in clear red/blue water which became violet further out.

Sally had never see red/blue before, wasn't that supposed to be impossible?

Red and blue usually blend into a purple/violet colour but here it was, blue water, red reef one superimposed on the other. She also saw this and other strange colours in the bright clothes of the villagers, the ones who wore clothes that is. This race dressed for warmth and style not modesty. It was a warm morning and displays of flesh were ample. They were a brown skinned race, slightly stocky in build, not fat at all, just solid.

A ripple of excitement went through the crowd. Sally heard the sound of horse's hooves coming from the direction of the village. Two horses led a small procession of people in ceremonial costumes.

The white horse slightly lagged behind the black one. Its rider was a lean man, he wore something resembling a short leather skirt which was decorated with feathers. A leather pouch hung on a silver coloured chain around his neck. His body was painted with the image of a rainbow serpent. A few small feathers hung from his long, dark, slightly greying hair. His eyes were extremely clear and grey in colour.

On the black horse was the star of the show. She was clothed only in gold and jewels, a small crown sat on her dark head of hair. It was clear to Sally this was not make believe, the rider really was the queen of this land. The queen looked somewhat younger than her companion. Her eyes were also clear but extremely dark in colour. Sally couldn't take her eyes off her, nor could the other spectators. She was good looking but there was some other quality present, an energy, a life force, a radiance. All the people seemed to possess this, she seemed to have a double helping.

The procession arrived at the first altar. The rider of the white horse dismounted and came forward to symbolically help the queen dismount. Still holding hands the pair stepped onto a small platform so the crowd could see them better. The man turned to her, bowed and kissed her hand. The crowd followed the cue and bowed as well. The queen responded by bowing to the crowd. The people in front of Sally parted and she was propelled forward. From her new vantage point she could see the queen take a flower from a young girl in the front row. She beckoned her onto the stage and lifted her up for the crowd to see. They clapped and cheered. The resemblance was plain, this was a family. The girl disappeared back into the crowd and the man helped attach the flower to the queen's hair.

Then it happened, the queen spotted Sally, both flinched like they'd been zapped by a spark. The queen looked away and gave a meaningful glance to

her companion, who looked at Sally with a look of disbelief on his face. He tried to smile but he was still stunned and it looked more menacing than friendly. Sally wonder if they were about to call security to have her taken away. The couple regained their composure, then both remained still as if waiting for a cue to proceed. They didn't look at Sally again.

The queen gestured to the people to be quiet. From a basket on the altar she took a small cloth bag. She held it in front of her pelvis and closed her eyes. Opening them again she held the bag up in front of her and muttered something Sally couldn't understand. She kissed it then poured a fine dark powder into her right hand. The audience become tense waiting for the next step. Stepping forward and once more muttering strange words she slowly poured the powder into the spring.

The water turned the colour of blood. Many of the people who were close enough, touched the water, some splashed it on themselves while others collected it on small bottles and jars. In a few minutes the entire stream was red all the way to the sea.

Now the gray eyed man stepped forward. He carried a long staff, holding it vertically he banged the bottom against the wooden platform and flame appeared at the upper end. With a smooth motion he rotated the staff like a baton and plunged the flame into a cauldron. The contents ignited with a bright red flame that produced dense red smoke.

The couple stepped back from the smoke, turned and together, now side by side, slowly walked long the path down the hill to the next altar. Sally was again propelled forward and arrived near the front of the group of spectators who had followed the couple as they walked. Their steps seemed somehow metered, again there was a pause waiting for some subtle cue before continuing the ritual. The body of the snake glistened with orange flecks.

The actions were here were almost identical to what Sally had already seen except the queen held the powder just below her navel this time and when she released it, the water turned bright orange. The flames and smoke were also orange.

The ritual repeated itself over and over as everyone proceeded down the hill. Always the sense of precise timing, why this was so Sally hadn't figured out yet.

Finally they arrived at the head of the snake. The head was quite realistic except there was hint of human features in the eyes and lips. The water ran

into the back of the head which was closed at the top and it flowed out of the mouth which was mostly submerged in the sea. People were kept at a slight distance.

The queen now removed her crown and placed it on top of the head of the snake. She also removed most of her heavy gold jewelry and draped it across the snout.

Almost naked now she stood in the water where it flowed inside. When the time was right she repeated the ritual this time holding the powder to her forehead. She transformed the water into violet ink. The baton was lit and she looked a little anxious. There was a glance to her mate and a slight nod.

She turned and faced the sea. The baton touched a point just outside the edge the water. The fire was at least ten times as large as any before, the flames completely surrounded the little pond in which the queen stood and the intense smoke completely hid her from view.

The crowd was tense and there was a collective gasp when the smoke cleared and the queen was no longer there. It was obvious this was not something the crowd had expected. Gray-eyes pointed out to sea and Sally somehow knew he was saying "behold she swims", all eyes looked out. It seemed there was something out there moving, then it was gone.

The crowd had not recovered from the surprise when a seventh fire appeared on the eastern horizon. Some, including Sally were clearly impressed by the performance and keen to see the next act, now the need for exact timing was clear.

As the fire rose higher the people began to chant. Only the most observant noticed that the water pouring out changed from the now fading violet into an intense indigo.

Just as the sun left the ocean, the queen's head emerged from the sea not ten meters from the shore. Her wet hair glistened as she smoothly rose up and walked forward till the water was only waist deep.

Then she spoke for the first time. The language had the same resonance Sally had heard in Jo's singing the night before. It stirred something inside her, something was very familiar about it, like a smell that takes you back to early childhood, this voice was taking her back somewhere, far back. Somehow she understood what was being said.

It was -

“I Arayra, queen of Raa welcome you all.  
I welcome the people of the village.  
I welcome the people of the mountain.  
I welcome the visitors from across the waters.

Last moon, we fished the sea and planted the fields.  
Next moon, we will reap the harvest.  
This moon, we will sing, dance, feast and make merry.

Raa is the best land in the known world.  
Together we have all made it this way.  
Now go and enjoy the fruits of your labours.

Today and for the next five days it is festival time.  
The morning feast will start shortly in the village, enjoy, enjoy enjoy!”

She then raised her arms into the air with water spraying from her finger tips and let out a shout, this was echoed by the crowd.

The show was finished now but the crowd was waiting for more, she simply pointed to the village and said with a grin, ”Now! Go! Eat!”

She walked back to the shore where her mate gave her an informal hug and they chatted happily about how well everything had gone.

Sally had walked a short distance along the beach to the north and was standing near the grassy slope where a small path climbed the slope.

A small group of fans and well wishers still persisted and the queen said to them, “I will join you all at the feast shortly, first I have an important meeting. I must go now, alone.”

She started to walk in Sally's direction and Sally's heart started to beat hard. When she was a short distance away Sally moved to the side so she would be well out of the way. The queen instantly changed her course to intercept her. Sally now felt mild panic. Was she in trouble? She hadn't meant any harm.

Arayra looked quite nervous. When she reached the spot where Sally stood, she spoke. To Sally's surprise she now spoke in English, a little shaky and with an accent she couldn't quite place, a hint of Indian perhaps.

“Welcome to our land, my princess, it is a great honor to meet you at last.” Sally felt a tremendous desire to embrace her, she stopped herself, she felt

unworthy in the company of this radiant woman, if she was, in fact, a mortal woman.

“There must be some mistake. I don't know where I am or how I got here. I'm just a lost little girl. I don't mean to be any trouble. You must have mistaken me for someone else. I don't want to keep you from your important appointment.”

“The important appointment is with you!” Arayra hugged her and Sally felt herself melt into her.

“There is no mistake. I have seen your face in a faded photograph, you were a little older but the likeness is unmistakable. I have studied your story in great detail, I even see you in my dreams. You have played and will play a vital role in our existence. I would give you all the riches in our world but alas this can not be. All I can give you is my love, a little time, information and perhaps advice.”

“Are you certain? I'm not important or anything, I'm just a librarian.”

“I am certain, your vocation is in part why you are important. Seemingly ordinary people play vital roles in the unfolding of history. We have little time before you must return to the dying world. There is much I wish to tell you now.”

“So it is dying? Jo says there is still a chance everything will be alright.”

“Jo is wise, she is a distant ancestor of mine. The Jo you know can't see your future. I can because it is our past.”

“Jo is a bit old to be starting a family, I can't see how you can be her descendant?”

“Jo already has a family.”

“Oh, but wait, I know about this time travel stuff. If you are from my future you're not supposed to tell me anything because the time line gets screwed up and everything will be wrong!”

“Now (and then), you are mistaken, I am meant to tell you some things, this meeting already exists in our history, if I don't, the time line will be, as you put it, 'screwed up'. Time is not what you think it is. Like a sail flapping in the wind, some threads need to be tied back to make it stable. Objects rarely travel back in time but information often does.”

“Doesn't that mean I'm stuck here?”

“It does not, you will return.”

“But why is this happening to me?”

“You were chosen. No more of this, this is a brief portal, we must hurry.

I will not tell you of your future, you have to discover that for yourself.

I will tell you that after the chaos subsided and the waters rose, my ancestors were custodians of one of the three sets of archives containing a summary of the science, history and events of your time.

With the ending of the age of deception, the old ways were not entirely erased, we now battle the remnants of the forces you are/were being overwhelmed by.

I wish to tell you about four islands in this region. Once they were mountains connected by lowlands, now they are not.

This is the island of 'Ra', 'Raa' in our tongue. To the north-west is 'Kaa', in the west is 'Ataa' and the largest island of all sits in the midst of these, it is the island of “Ba”.

You have had a glimpse of Raa, the island of the sun, we are proud of what we have here, we care for our land and people. We are the keepers of the scrolls which we, that is our ancestors, transcribed before the records faded. The people of the village live as one big family, this is a little crowded for some, hence some choose to become mountain people.

The people of Ataa are our dearest friends, they are artists and craftspeople. They came from a small hippy town which was already outcast from mainstream society. We have shared our knowledge with them and they with us. Our blood lines are intermixed and we are always welcomed to visit or live amongst them.

Many of the city folk who survived the turmoil ended up on Baa. We, that is my ancestors, helped teach them survival and for a time they prospered.

Everything would have been good except for the Kaa. These folk were the government survivalists. They were fully aware of upcoming collapse and secretly used public resources to build underground shelters. They have their own set of records which are different from ours, for a time they had the most powerful of technologies, in this region at least. Fortunately their hi-tech weapons failed after a time and they went back to their old faithful – deception.

For generations the Kaa ignored us and looked to the islands further north,

life was good for a time.”

“So what happened?”

“We had a loose trading system in place, a flexible barter system, it worked well. With the Baa becoming prosperous and the people of the north waking up to their exploitation by the Kaa, the Kaa began to look south. They invited Baa officials to visit the palaces they had built while pillaging the north. The Baa were impressed and the Kaa convinced them that our primitive economy was holding them back. To really prosper the Baa were told, they should sell resources to the Kaa in exchange for money. With enough money the Baa could buy anything they needed. With enough money the Baa wouldn't have to work anymore, people would pay interest to borrow their money and everyone would be happy.

The Baa distanced themselves from us and began stripping their lands to sell timber, food and other goods to the Kaa. They worked hard for three generations and thought they were rich. They now had lots of 'shils', which is the currency printed by the Kaa.

Then they hit a snag. The shil devalued to the point where repairing their small fleet of boats bankrupt the island and they went into debt.

They didn't have enough food, wood for heating, cooking or building and nothing of value to trade. Neither the Ataa or Raa wanted shils, nor did we want to strip our forests.

The Kaa convinced the Baa that we were the problem. Somehow we were unfair and the Baa should declare war and take what they deserve.”

“And did you give the idiots what they deserved?”

“Not in the manner you are implying. A small group of brave and wise Baa, (two unusual traits for Baa I'm afraid), stole a boat and came to warn us. On hearing the news we invited the Baa heads of state to a banquet. The Baa king feared we would kidnap him, he declined, he did send his ambassador and assistants.

After their bellies were full we made it clear that we were confident we could repel an army which outnumbered us ten to one, as the Baa do. We pointed out the Baa fleet could only carry a fraction of their number. The ill equipped underfed soldiers would soon be defeated and the fleet destroyed leaving the rest of the Baa cutoff and without the ships they badly needed for fishing.

The ambassador hinted that the Kaa would help them. We told him the Kaa

would never fight for someone else, they always sent others into battle and watched from afar. We offered to teach them to repair their damaged land if they cut ties with the Kaa and remain peaceful.”

Sally was enthralled. She found the subject interesting, even if she hadn't she would still have basked in the presence of Arayra. She felt she could happily stay there for eternity. There was something about Arayra which could have made listening to the recital of a shopping list a profoundly moving experience.

“Did they accept?”

“When the ambassador left two days later, we were confident that we had him convinced. We just hoped he could persuade his king. As a display of good faith we gave him one of our finest signalling mirrors and some simple codes to inform us of the outcome. It may seem strange to you that our mirrors are the state of the art in communications in this time. On a clear sunny day we can send messages to the other islands in a matter of minutes, a letter carried by boat could take days. Clearly they have military importance, one would not normally give them to an enemy, it was a risk that was worth taking.

We waited ten days before we saw the flashes, they had accepted our proposal. Both our people and theirs had made preparations while awaiting the decision, so it was only a matter of hours before boats began to sail. We sent one hundred teachers to Baa, this number was matched by our friends the Ataa. Once again we would teach them to survive and this time we would not let them forget their history. One hundred Baa apprentices came to study with us and the same number with the Ataa.

We now hope for a good crop and mild winter, it will be a hungry time for many. It will take many years before they are prosperous again.”

“Won't the Baa become a more serious threat if they become prosperous again?”

“It is hard to say. Even if it were so we would not keep them in poverty. A strong ally is better than a weak enemy. If they remain weak they could be conquered by some sinister forces who pose a more serious threat to us. What would we do then?”

“What will you teach the Baa?”

“Mostly common sense, which is of course never common. The Baa do some really stupid things, for example they dump sewerage into rivers and the ocean, they treat it like it has no value. They often use fire to do what could be done with sunlight. Their buildings aren't insulated and are badly positioned with regard to warming sunlight and cooling breezes. When they prepare food (and other things) they waste a great deal. What they call weeds are often neglected source of food, medicine, rope and building material. They just don't know how to do things properly. They also have a strange notion that a large population is somehow a good thing.

In the short term they will have to live more communally to improve efficiency. We can help them find new food sources and waste less of what they have.

In the long term we'll show them better farming and building techniques but ultimately it won't help unless they limit and ideally reduce their numbers.”

“This sounds familiar. Can they expand into new territory?”

“I hope not, they would just wreck it. As far as we know all the fertile lands are occupied. If they want to reclaim desert they already own one.”

“Don't you feel funny about having a feast while they are hungry?”

“Should we? We didn't cause them to hunger. I'm sure the Kaa are feasting at every opportunity. Unlike the Kaa, our feasts are modest and not wasteful. Hunger is a useful teacher, it will help them realise how they got into this mess and not be so easily misled next time. We couldn't feed them all even if we had the will. We may choose to tighten out belts and help them later but that decision hasn't been made yet. For now hunger will motivate them to learn the lessons and work hard to put them into practice.”

The parallels with her own world were obvious and she needed to know what brought her era to an end.

“So, what did us in?”

“You already know the dangers.”

“Yes, but which one of them eventuated?”

“It wasn't one thing, it was most of them. I think you would call it a 'cascading failure'. You were hit by everything except rocks from space, well not till much later at least. Greenhouse runaway was much worse than you suspected. The climate went crazy, crops failed people starved and the weakened population fell to disease, nations fought over crumbs. You were among the few who were prepared.”

Sally looked at the snake, a quirk of the wind blew the smoke of the dying fire inside the head so smoke now came out of the mouth and nostrils.

“What's the deal with the big snake?”

“It serves many purposes, one of them is a marker for the 'chamber of records'.”

“The what?”

“Directly below the central path is the tunnel where our copy of the records was originally placed, they still reside there now, along with some of our works. What was once the main entrance and the lower chambers are now submerged. The upper entrances have been sealed. If we happen to perish, the archaeologists of the future will find clues to the existence of the chambers, looters will not. Perhaps one day the oceans may retreat and the passages revealed to all.

It is also a sign for other record keepers who may pass this way. There are codes within the sculpture which uniquely identify this site. For example the back is higher than the head and there are two scales between the nostrils. The serpent may just be a self-fulfilling prophecy. We built it after we read about it in the records which now lie beneath it.”

“If you have records from our world why have you not used our technologies?”

“Risk killing our world as well, that would be most foolish. In time perhaps we will become competent to handle such power, till then stone, wood, horses and bows will be our way.

If we are attacked we will fight with swords and arrows. Death by sword is horrible, though no worse than most of the weapons of your time. Some veterans will eventually die from injuries or be maimed for life. Weapons from your world continue to kill centuries after the battle has ended. Killing you enemy with sharp pointy things is barbaric, weapons which kill millions are horrid, killing unborn generations with mines, germs, toxins and radioactivity for centuries is unspeakably evil.”

“You have pure intentions , I know it, I am sure you would not do this.”

“I think so too, things can change. Can I be sure of those who take my place. What would our enemies do with this power?”

“Well, don't give it to them!”

“It is a grave mistake to think your enemies are all stupid. In time they will

acquire our technology, they always do.

If we became vastly superior, it would destabilise our world. Our neighbours might fear us and try to destroy us before we become too powerful. They might lose their culture while trying to imitate us. Destruction of culture is a serious matter, even when it is a culture you don't approve of. We could also be overrun by immigrants seeking better lives here. We must all advance together, slowly and wisely."

"Would you destroy the Kaa culture?"

"We might, if so we'd be serious about it."

"You are so fortunate to be in a position where so many people love, admire and respect you. They even bow to you."

"Yes I am. If you think this is because I am the queen you are mistaken. Everyone here is loved, admired and respected. I also bow to them.

My role is as a leader, diplomat, peace keeper and sometimes judge. I am the best person in the whole domain to fill this role.

Am I also the best baker, clobber or juggler? I am not. Our baker bakes much better bread than I and we all love him. We do our best to see everyone's needs are met, even the ugly, sick and the insane. This is who we are, if we as a people abandon even one of our number, we can no longer call ourselves 'civilised'."

"How did you get this, um, job?"

"Like you, I was chosen."

"Were you elected?"

"No, not elected, I was the only candidate. Elections are possible here but it is rare that the chosen candidate is ever challenged."

"Who choose you?"

"The 'council of the wise.'"

"The what?"

"They were once called the 'council of elders'. Elders are not always wise and the wise are not always elderly. The new name is truer.

When I was small girl, it was noticed that I had compassion for the people and animals around me, I was also very intelligent. This was brought to the attention of the council by an anonymous source. They watched me for a number of years. At the age of seven I was select for training. As well as the schooling all able children receive, I was tutored by the best in the land. We

all learned our history but I was also taught the languages and customs of the other tribes in the region, this is why I can speak English, which is also the tongue of the Kaa. I learned science as best I could and gained a working knowledge of every trade known on Raa.

At fourteen I began to accompany the king and was taught how the society really worked. At my twentieth birthday party, which was an island wide celebration, quite unexpectedly, at least to me, I was crowned. The king decided he wanted to be a sculptor, his skill is still seen in the serpent. He was unable to attend today because he is visiting the Ataa.”

“And what of the man with the grey eyes, your husband I presume?”

“He is my man, my mate, yes, magnificent isn't he. Sol was my tutor in spiritual matters.”

“A priest? You looked the part of priestess and priest today.”

“Yes he is, but I am not. This morning was make-believe, I am a queen, I am not a spiritual leader. Choosing Sol was the best thing I ever did, I don't share his religion though.”

“Isn't that a problem for you?”

“Not at all, beliefs are not provable, that is why they are beliefs. We do share a belief in peace, love, happiness, truth and freedom – this is enough. We are both, I believe, good people. If there is an after-life and we are judged there, I don't believe we will be punished for lack of faith in one god or another. If I were the judge I would think more highly of those who choose to do good by their own nature than those who were good for fear of punishment.

I don't expect to know the answer, not in this life at least. But sometimes, be it in a deepest slumber or when two thousand people shower me with love, I feel a great presence. I know not whether it dwells in me or somewhere else, it shall remain a mystery.

I feel our time together is drawing to a close, you have much to do when you return.”

“Must I go, please let me stay, I don't want to go back.”

“I would love nothing more than to have you stay and to show you my world and to hear your stories. But alas this can not be. I can no more grant your wish than I can stop the sun rising higher in the sky.

Things are not what they seem to be. The footing you stand upon is a veneer over treacherous quicksand. You will be swept away by powerful forces you

can not fight. When caught in rapids never swim against the current, look for calmer waters. You have friends who would risk their lives for you, protect them. Don't judge them too harshly for their failings, they mean you well.

I have something for you. This will help you recognise your allies.” In her left hand Arayra held out a ruby the size of a grape. I was shaped like a heart, not the classic love-heart shape but shaped like the actual human organ.

“How will this help me?”

She said nothing.

Sally reached for the jewel with her left hand. She had almost grasped it when the golden snake around Arayra's forearm appeared to move. Recoiling quickly, Sally looked at the snake. It was inanimate, just gold. She forced herself to reach forward again until an irrational fear stopped her. Part of her tried to advance while another retreated, the world began to turn and she felt herself falling.

Bracing herself for impact, she kicked the sheets, then looked up at the loose insulation under a tin roof. The world she arrived in was much duller than the one she had left. The sun had just risen. It's light was warm but the world looked somehow pastel. After staring at the ceiling for a long time she looked down at the room below. Jo was gone, Sally felt the loneliest she could ever remember. She felt weak, she desperately wanted to go back, she felt she didn't belong here any more.

After a time she felt strong enough to climb down and look around. Jo came in through the front door as Sally stood beside the table. Holding out her right hand Jo offered Sally a large shiny red strawberry.

“This one is for you, it is fit for a princess.”

She had never noticed before how much a strawberry can resemble a heart. Sally felt her knees turn to jelly once more, she grabbed the table for support.

“What did you call me?”

“Princess', seemed nicer than 'dopey looking blond chick with blood-shot eyes. You don't look so hot.”

Sally let herself collapse onto the lounge and started to sob uncontrollably.

“I'm sorry Sally, I was only joking. If you don't like strawberry I'll eat it myself.”

“I wuv stwawburry,” she sobbed, “ I need som time ta think.”

“Maybe, I should take a walk and give you some space.”

“NOOO! Doan live me ere alone. Stay, no talk fur a bit, I ned to wok out whea I um.”

“You're...Never mind, let me know if you need me, I'll be close by.”

Jo put the strawberries, cream and milk on the table then some water on to heat. By the time the water was boiling Sally had stopped sobbing.

She walked into Sally's view and pointed to her cup.

“Yes, please, coffee, about a bucket-full.

I have to ask you something.”

“Go.”

“I've just been on a very strange trip, could I have been drugged?”

“If the question is 'did I drug you', the answer is 'no'.”

“It wasn't an accusation. It would rather learn I'd been drugged than I'd lost my marbles. If it was drugs, it would be hard not to ask for more. What about those mushrooms?”

“Nope, I'm told our gold tops are second to none but the type of mushroom we had is not going to get you high.”

“Anything else I might have eaten?”

“Doubt it, some plants here contain DMT, the wattle is one of them. The DMT is usually in the bark and not orally active. If you had a DMT trip I would expect it to be immediate, not the morning after, assuming that is when you had this err – experience.”

“DMT?”

“Sorry - Dimethyl Tryptamine – sometimes called the spirit molecule. Noted for intense trips often resulting in positive life changes.

Look, I ate all the same things you did. Maybe you reacted differently to something but I really doubt it.

Have you ever done 'acid'? If so it could be a 'flash back'.”

“Nope.”

“Have you ever had, um, any mental health issues?”

“Nope.”

“Maybe, it was just a dream after all. You should write it down before you

start to forget it.”

“I will never, ever, forget it! I'm not even sure I can write at the moment.”

“I tell you what, if you want to share it, I'll write it down for you.”

“OK.”

So Sally, drank coffee and narrated the dream while Jo took notes. On occasion Jo would laugh at something for no reason Sally could see. Sally opted to keep the last part, the part about friends to herself. She also drew a couple of little maps of the island as she remembered it. By the time she had finished she was starting to feel a little bit more normal, just a little.

“Did you know you were dreaming?”

“I didn't have a clue, I thought it was real.

The thing that bothers me, is that I've never felt those emotions in real life. My hottest emotions now seem so lukewarm by comparison. I felt so loved, accepted, admired and important. I totally trusted Arayra and let all my shields down. I don't feel that way about John.”

“Is the problem with him or with you?”

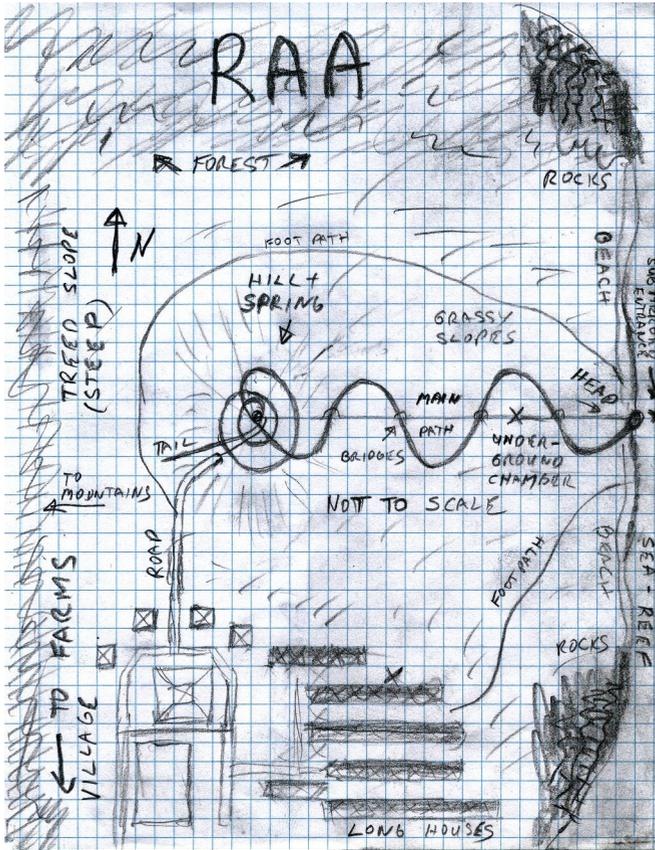
Now you know that you are capable of more than you previously thought. If you can feel that way in a dream it must be possible to do so when you are awake. Perfect people are rare if they exist at all, don't throw everything away to chase a fantasy. Giving and receiving love is good for you, even if your partner is imaginary, like Arayra.”

“So you think this was just a dream?”

“Of course I do, some would say you went on an astral journey, to another place, another time or whatever but I'm not into that stuff.”

“Then where did all this come from, I'm not bright enough to make it all up.”

“Of course you are, or your subconscious is at least. It is mostly a rehash of what I've been telling you. The ritual is all standard new-age stuff you could have picked up anywhere. It is all inside you, I'm glad that you've been listening.”



“Do you have any kids?”

“Sure, you've seen his picture in my lounge room.”

“I didn't realise.”

“Adam is twenty two, a greenie, he's one of us.”

“I see. So what do we do next?”

“If you're not feeling well then maybe we should just go home.”

“What, leave the walk unfinished? Why am I not surprised?”

“If you end up needing professional help we won't find it where we were heading.”

Maybe you've had enough of my lessons for a time?"

"Where were you planning to take us today?"

"Just a short hike to the beach."

"Sounds good, I don't want to go home, I don't want to be alone, walking might clear my head."

"OK then, I need to make some calls, we need to tidy up a bit and get packed."

It was almost lunch time and Sally's appetite was returning. They ate their strawberries and cream, then had another cuppa. Then they made and ate a couple of pita-bread sandwiches. Jo went outside to make her calls and Sally tidied up a bit. She kept working when Jo returned and did all the packing for both of them.

It was now early afternoon as they headed back towards the front gate. There was fork in the road with one road veering right across the bridge and the other going just slightly left. They hadn't quite reached the fork when Sally heard a noise behind her, a mix of rattling and whirring. She didn't want to turn and look because of the pack on her back, they both moved off the road.

A vehicle drove past a few meters and stopped on the road. It looked like it might have been a mini-moke at one point in it's life but now it was hard to tell. The hood, mud guards and wind-screen were gone. The motor was electric and the rear tray was full of large batteries.

The woman behind the wheel spoke to Jo, "How's it going, running flat so I can't offer a ride. Charging up now, rain due in a day or two, might flood." Jo introduced Sally to Barbara, the owner of the stone house. Barbara looked a little rough. She looked in her mid thirties and was in work clothes topped off with a broad brimmed hat.

Jo kept the chat to a minimum and promised to visit her next time, which she expected to be early next week.

Barbara drove off, took the left fork and drove another hundred meters or so to a car port of sorts near the creek. Another vehicle was already there.

"I don't see much point in a car like that! You obviously can't drive it on the public roads."

Sally expected be taken back across the bridge but Jo followed the moke instead and headed across a cattle grid.

“On the contrary, I don't see the point of rattling a road car to pieces on these dirt roads. The residents here spend more time on dirt than the tar. What you may not know is the property owners on this side of the creek have an agreement to share their roads. Co-operation is a rare thing but we managed it somehow. We will be walking all the way to the beach on private property. We have almost ten kilometres of private road on seven properties. The road connects to a shop at the western end and the sea at the eastern one. It passes the back of the school, an engineering workshop and a service station.

Some of the kids even drive themselves to school on occasion. Farmers can drive unregistered farm equipment between farms, to the mechanic and Barbara can buzz around in her e-moke.”

Barbara plugged her car in and began to walk home and gave the pair a nod as she passed.

Jo continued, “Here is another bit of co-operation. This is another water powered generator. It is actually on the neighbour's land, we built it and we – that is the members of these two properties, get priority in using it. Power lines haven't been run to the buildings because it isn't worth the effort. We don't want to waste the power either so when we've had enough we let anybody else use it for free. Sometimes the workshop's electric forklift gets parked here for the weekend. The downside is it floods every year or two so we have to careful.”

Sally didn't seem to be paying any attention.

Jo then said “She's a hard act to follow. A charismatic leader, they can really motivate people and unite them. Often they become corrupt but Arayra seemed beyond that. She's a far cry from most of the clowns running the world now.

So would you really decide to stay there if you could?”

“In a heart beat.”

“Yesterday you were a city girl who couldn't be without her mod cons!”

“Things change, I'd get used to it. What I felt there was far beyond the pleasure I can get from modern toys. I hope Sol has a little brother who's single and looking for a girlfriend.”

“You know research has shown that people are happier talking to friends or playing cards than they are watching television or shopping. So if our leaders wanted us to be happy they'd encourage us to visit friends and play cards. That wouldn't increase the GDP though so when we're not producing we're encouraged to be good little consumers. If we were not consuming we should be glued to the screen learning what to consume next and to listen to propaganda.”

The farm they were on now looked more conventional, none of the professor's projects or funny houses here, just overgrazed pasture and broken machines scattered about.

“I like the bit about mountain people,” Jo added.

“Pardon?”

“The mountain people. On Raa they recognise that people are diverse and they provide different kinds of spaces to live in. Our government does the opposite, they want to make everything the same. Our co-op is mainly composed of mountain people, we just want to be left alone to do our stuff. Instead we are forced to pay for supervision we don't want or require.

And another thing, she reminds me of the kings of old.”

“Come again?”

“If Raa went into battle I think Arayra would be there in the front line. The old kings, like Authur, would lead their troops. You don't start a war for no reason if you are going to be in the front line. Somewhere along the line the kings began to stay home and do whatever kings do when they stay home. Kings, presidents, prime ministers could now start wars and send their generals out to dodge swords or bullets on their behalf.

Now the generals stay home as well, or at least stay out of the fighting. Mostly the children of the rulers stay home too, much easier to pick a fight when you have peasants to do the fighting for you, or you can fire a missile from safe distance, or drop bombs from a great height.

The latest obscenity is robotic soldiers. The US and allies, who still think its OK to kill anyone they can remotely call an enemy, think this is a clever idea. They don't seem to consider that other countries can make robots at a fraction of the price that they can. If they were really clever they would have pushed for a treaty banning such devices.

The Raa understand the arms race and resist it even though it places them at

risk in the short term.”

Sally tried to pay attention but her thoughts kept drifting back to Raa.

“You can't live there, any more than I can go and live with the elves. If you want it that badly you might have to see if you can find somewhere like that on earth. Maybe on a pacific island, a tribe on a mountain somewhere or start a cult or something.”

“That's not funny!”

“It wasn't meant to be funny. Cults have been build around visions much like yours. Others share your dream, so to speak.

If you're lucky this will never happen again.

If you're luckier it will.”

Sally drifted back to Raa and Jo gave up trying to talk to her. The pain in Sally's shoulders was not as bad as on the first couple of days and it brought her back to earth once in a while. They stopped for a break every kilometre or so and gradually the landscape began to change.

The soil became quite sandy and Jo took off her shoes. More and more banksias grew along the road, which now ran beside a saltwater creek. Mangroves grew along the opposite bank.

Suddenly there it was, the Pacific. They both dropped their packs and cooled their feet in the ocean. Little was said. Jo took the lead again and headed north along the hardest sand she could find. After a while they came to a rocky headland and followed a path amongst the rocks and boulders. When they reach sand again there was a national parks sign. It had the usual list of no-nos and said the camping ground was five hundred meters away.

The camping area was right on the beach front, it was small with little more than a pair of picnic tables and a toilet. The latter was a source of relief for Sally, who still dreaded the idea of 'dig it yourself'. There was one small tent with no sign of owners. The pair dropped their gear beside the table which was furthest from the tent.

Jo said there was no hurry to set up camp so Sally went for a swim while Jo wandered about with her camera. Sally wore her stinger suit which Jo had let her take along. There was a brisk onshore wind and Sally tried to body surf. The beach was a little too sheltered for good waves to form but the water brought her back to earth. She used to spend all her spare time swimming when she was younger, now she rarely saw the sea.

She dripped salt water all the way back to the picnic table where she found Jo sorting through the food. The professor's fridge had kept most things in good shape but a few things had become bruised along the way.

“Want a tent tonight?” asked Jo, “probably our last chance to sleep under the stars before the rain comes.”

“Sleeping on the beach does have a certain appeal.”

“Not on the beach tonight, it will be a very high tide.”

“You checked the tide, that was clever.”

“No, I looked at the moon, maybe it was.”

“If not the beach, where then?”

“Hammocks over there in the trees beside the beach, we want some breeze to keep the insects at bay but we don't want to be too visible from the passing boats. Is that ok with you?”

“Yeap. But I'll want to check out our neighbours first.”

“They both prepared dinner. It was nothing fancy, everything which needed to be used was cooked, this included the remains of the ham. It was padded out with cooked rice. Two cups of tea completed the meal which they carried down to the beach. They sat on log, ate, drank and watched the sun set.

Their neighbours finally turned up. They were a young German couple who said 'hello' but were in a hurry to get to the tent while there was still some light left.

“Ok,” said Sally, “they seem harmless enough. Hammock it is. The tourists always know the best spots don't they.”

“Tourists and crazy people.”

“I wasn't crazy before I met you!

Shall we clean up now?”

“No, the show isn't over yet.” Jo pointed to the dark band slowly growing on the eastern horizon.



Then Sally saw it. For a few seconds she wasn't sure what she was looking at. There was glowing red saucer sitting just above the horizon. It rose a little higher and she realised it was the moon. It became a full disc but remained red for a while then changed to orange and then white as it climbed higher in the sky.

“Top show, Jo.”

“Even better than TV?”

“Yes, even that.

But I'm still damp, I'm getting cold, I'm going to get dry.”

Sally left Jo to sit a while longer and went back to the table. She thought about finding her torch, then it dawned on her that she didn't need it. She got changed in the darkness of the shadows. The washing could wait for the high tide, so she tidied up a bit, found the bedding and got the ponchos out just in case.

Jo returned and hung the packs on a line in case of rats and put the loose camping gear under the table. Jo was the whiz with knots so she strung the hammocks while Sally ferried all the bedding to the site. This time she remembered to clean her teeth before retiring.

They talked about nothing in particular for an hour or so then Jo's end of the conversation started to lag then stopped. It was only nine o'clock and Jo had crashed. The bed was comfortable enough, there was a stiff breeze but it wasn't cold.

Sally looked for satellites, watched the moon, listened to the waves in the distance and waited for sleep. She thought about the week, the day, her life, her future and John but mostly she thought about Raa. Sleep didn't come so she would go over it all again and again.

The moon got higher, a few clouds blew in, the sound of surf got closer. She thought some more. The moon reached it's peak and started to descend

again. The wind got stronger, Jo snored. It sounded like the waves were right beside them now and she felt a few drops of salt spray.

She got the munchies and got up to find some chocolate, relieve her bladder, have a drink, sit and watch the sea for a while and then try sleeping again. She wondered over and over whether she would visit Raa again. This didn't seem likely unless she could sleep.

The moon sank lower, the sound of ocean retreated and there was just a hint of daylight in the sky when finally but all too briefly she slept.

## Day Five.



Friday, 26<sup>th</sup> Nov 2004.

“Oh shit! I'm awake again,” was her first thought when the rays of morning sun woke her. Her eyes felt scratchy and her mouth dry. She knew she wasn't going to sleep again any time soon and she didn't want to lay there any longer. She felt tired and a little queazy in the stomach.

She splashed a little water from the water bottle on her face and drank the rest. Her eyes hurt so she found her sunglasses, then put them on along with her hat and shoes. Jo still seemed to be asleep.

The sea was rough and a strong breeze was blowing. Walking north up the beach a little way she found a sign which told her that there was a lookout a little over a kilometre away. A brisk twenty minute return walk by her estimation and the path was appealing because took her out of the sun.

A hundred meters on, the path started to climb steeply, she hadn't anticipated that. Rough steps became more and more frequent, she was not far along the way, she was already breathing heavily. It wasn't hot yet but it was quite humid and she was dripping sweat. She considered turning back but decided the risk Jo's wrath, she might still make it back before Jo got up.

The path then left the shade, the hill ahead blocked the breeze, Sally was now getting quite uncomfortable. She hoped the lookout would be worth the effort. After a good half hour of exertion, the top of the hill came into view.

The trees on the crest were trashing around in the wind. Sally's hat was blown off and she had to lean into the wind to prevent being blown over.

The difference ten paces made was remarkable, a minute ago she was hot and sweaty and now she was starting to feel cold. A quick look out at the ocean and she had enough. She found a rock which was partially sheltered and facing the camping ground. She could rest there a while without being blown about.

From her perch, she had enough height to see over the low hill to the south of the camping area. Far in the distance over the ocean, just a little east of south, a dark mass was visible.

It felt to her like she was the only person in the world who could see the storm approaching, perhaps she was. She felt the urge to warn those below. Was this what it felt like to be in Jo's shoes?

A few minutes more and she would head back.

The banksias were in flower and a small honey-eater flew past Sally, then danced about on the waving branches and lapping up nectar with its long brushlike tongue. Jo would no doubt strike up a conversation with it, she wondered what it would say.



“Hello pretty bird, is the nectar good today?” Sally asked shyly.

“Yes, princess. Sorry, but I'm too busy to chat.”

It eyed the sky and added, “There's a storm coming and I have to fill my belly, feed my chicks and make my nest strong. I hoped we all survive the night. You should go and get your nest in order too.”

“Yes I should. You know you remind me of someone I know.”

“Sorry, I really have to go.” It took to the air and was gone.

She headed back down the hill at a fast pace and stopped about half way down to catch her breath again.

A small black and white bird, a wiggly wagtail, sat on a branch nearby.

“I'm Sally, who are you?” she asked the bird.

“I'm a cute, sweet, pretty little bird.”

“There is a storm coming, are you ready for it?”

“Cute, sweet, pretty little bird.”

It launched itself into the air and grabbed a passing moth in its beak. Then it turned on the spot and landed on its perch again with the moth still sticking

out of its mouth. A couple of gulps and the moth was gone.

“Cute, sweet, pretty little bird.”

“That moth didn't think so!”

The bird looked offended, turned away, flicked its tail a few times and flew away to sing its mantra from another tree.

“You don't like warnings of gloom do you. You remind me of someone I know as well, but maybe she's changing.”

Sally hurried back and found Jo sitting very quietly on the sand looking at the sea.

She remained standing and said, “There's a storm to the south, I think it is coming this way.”

“How do you know that?” Jo inquired.

Sally hoped she could bait Jo for once, “A little bird told me.”

“What sort of bird?”

“A honey-eater.”

“Then it must be true, honey-eaters are smart and honourable. Not like those currawongs.”

This wasn't going well. A part of her knew she should turn flick her tail and leave. Another part wanted keep playing this game.

“OK. I'll bite, what's wrong with currawongs?”

“They are smart but they will lie to you straight faced just for fun,” she said straight faced, she looked like she was having fun.

This wasn't going well. One more try.

“How do you know that?” Sally inquired.

“A tree told me.” Jo replied with a gesture that Sally could complete the circle.

“What sort of tree.”-“A gum tree.”-“Then it must be true!”

They both laughed.

“So how did you learn to talk to trees?”

“I didn't say I talked to them, they talk to me.”

“How do you hear what they are saying.”

“By being very quiet and listening very carefully.”

“And where did you learn their language?”

“With knowledge most people don't know.”

“Where do you find this knowledge?”

“It is nowhere and everywhere. To find it you must meditate.”

Now Sally didn't have a clue whether Jo was being serious or not, she tried to offer what little she knew about the subject. “I went to a meditation class

once. We learned stuff, like closing our eyes, relaxing and imagining were were in a beautiful place in nature..."

Jo interrupted, "Such as being on a beach watching the waves."

"Yeah, I guess so."

"That's what I'd call visualization, not mediation. It is useful but that's not what I do."

"OK, so what do you do?"

"I do nothing."

"Cool, I'm good at that."

"Some people are, most people aren't. When their bodies are still their minds keep thinking."

"But you can't stop thinking, unless you're unconscious, can you?"

"You can be conscious and not thinking, I can guarantee it. I've done it for extended periods but only on rare occasions, usually it is only for a few seconds at a time.

There are lots of different methods people use to still the mind. Its like there is stuff happening that isn't noticed because we are always thinking too loudly. The thoughts are a little like chatter at a party. There are little quiet gaps between the words and bigger gaps between the sentences. If you focus on the silence instead of the noise you can notice what is being said in the background. If you focus on silence enough, the chatter sometimes stops.

"And what happens when you don't think?"

"You can enter a space where there are no thoughts or words but there is information. You see things, some from eyes or memory, some are not, some are useful, some are not.

Lots of things happen but some are subtle. You see things as they are and not how you assume they should be. You notice new things.

I don't know what you would experience. It is like walking outside on a dark night for the first time. You might be in awe of the beauty of the stars, or you might be scared shit-less by the shapes in the shadows. Don't go looking for stars until you ready to confront the monsters!

I often get strange, illogical associations between things - for example a tree might remind me of a person or idea. It sounds silly but you'll know what I mean if it happens to you."

"It may already have happened, I'm not sure."

"I guess it could have."

Sally now thought Jo was being serious after all.

"You're seriously weird Jo, tell the truth, that green thing around your neck."

Jo tensed up for no apparent reason.

"Its a little light sabre isn't it?"

Jo relaxed again, "Yes Sally it is, Jobi Wan at your service!"

The conversation was interrupted by the sound of a quad-bike approaching along the beach. It was being ridden by a young man wearing a park ranger's uniform. He rode right up to where they were, stopped the engine but remained seated. So did Jo.

"Good morning," said Jo to the man with 'Wayne' written on the shirt pocket.

"Hello," replied Wayne, "I presume one of you is Jo Tiller."

Jo raised her hand, "If you know that, I presume you know I paid for permits by phone."

He reached back and pulled some papers out of a saddle bag. "Yes, here's your copy but that isn't why I came.

Do you know there is some bad weather coming this way?"

Jo grinned at Sally, "Yes, a little bird told us. How bad? How soon?"

"Not bad enough to evacuated you unless you want to go. We're expecting strong winds but not gale force. After the front passes it will probably dump quite a lot of water though. The trough is moving quite slowly at the moment, at current speed it won't be here till mid afternoon. With any luck it will be gone by tomorrow but you never can tell. I wouldn't stay here near the beach but I believe you were planning to move anyway."

"Yes, just to the next camping ground. What do you think Sal, do you want to go home now?"

"I'm not made of sugar, if it is just rain and your tent is dry I'll probably sleep through it anyway."

"Looks like we're going to rough it."

"Don't camp too close to the creek. The camping area is safe except in 'hundred year' floods but we've had three of them already this decade.

Maybe that means we won't have any more for three hundred years."

"I don't think it works that way."

"Me either. If it gets too rough the toilet block is cyclone rated. You wouldn't be the first people to shelter there. No rangers are on duty

tomorrow, I expect the roads will be closed to two wheel drives for a day or two. If you can't walk out for any reason and need help give me a call, I guess you have working phone."

Jo nodded and he gave her his card.

He continued "If you can't ring out, I'll be back the next day. You've got food for an extra day?"

Jo nodded again.

"Are the other campers still here?"

Jo pointed down the beach "No, they went that way."

"I'd better go and see that they are OK."

He hit the starter, waved goodbye and rode in the direction Jo had indicated.

"Looks like there's no chance at having a nap."

"Never mind, it is only a short walk today, you can sleep when we arrive."

"I just remembered, my poncho its torn to shreds."

"You can have mine, I'll wear a garbage bag if I have to. But I'm not going to walk in the rain without coffee first. How about getting some water from the tank over there and I'll start to pack up."

Jo retrieved the hammocks and put together something resembling breakfast. They still had ingredients for pancakes but Jo didn't want to waste any time cooking or washing.

They sat and ate, Jo drake coffee, Sally had tea. Sally regretted she didn't get the have another swim, there wasn't time and the sea had become uninviting.

"What will become of the ocean?" she said partly to herself but loud enough for Jo to hear her.

"I'm sure you already know the sea is in bad shape. Overfished, polluted, warming, rising. The pH is dropping as more CO2 is dissolved in it. Even mainstream science and media are saying we will loose most of our corals within fifty years – so expect it the be ten or twenty. Animals that make shells using dissolved calcium are not going to be able to continue to do so when the water becomes too acidic."

Jo changed tack to a more positive direction. "Shells are interesting things, do you know how a shellfish, say an abalone, makes it's shell?"

"Not really, I guess it grows out, like fingernails."

“No, they secrete a special protein which causes the calcium carbonate to crystallize out of the water and onto the surface. Every so often another layer of protein is spread across the growing shell and the process repeated until a thick shell is formed. The alternate layers of calcium carbonate and protein make a very durable laminate.

Wouldn't it be neat if we could do that. What if we could grow some of our building materials that way. I'd love to have a roof made of white shell tiles - made without using lots of energy or nasty chemicals. Nature is full of useful but benign processes, we need to learn to mimic them.”

“You think we have a lot to learn from nature don't you?”

“Of course. There are a lot of parallels between systems in nature and what people do. Take that gum tree over there,” Jo began as she pointed to an old tree growing a few hundred metres inland.

“That tree produces millions of tiny seeds each season. In a good year a high percentage will germinate. Over the course of it's life it might have thousands, if not millions of seedlings. The important thing to note, is that on average only one seedling per tree will survive to maturity. An individual tree may have more or less than one offspring.

In the short term, the average replacement rate for the entire population may deviate, but not for long. Even a small deviation from unity over a long time period would cause the species to become extinct or so plentiful that they die from over crowding.

There will always be something to limit the population, there always is, always. Now with forests in decline, the average will be less than one. Chances are that tree will be the last of it's line.

The same rules apply to all living things on this planet and elsewhere. That tree has little choice but to produce as many offspring as possible and let the bulk die. I doubt the tree feels grief as each seedling withers and dies.

The tree may not feel grief but for our species at least, mothers and fathers do. Yet many people behave like that tree, bearing perhaps a dozen babies and watching ten of them die. In many places, having children to look after you in your old age, is the only form of social security. Large families appear to be answer there, when in fact, they are the problem.

In the short term many countries have been able to sustain a large growth

rate. This is about to end, one way or another.

Stop me if I'm stating the obvious here, anyway..

Let's assume for instance, that we have a population doubling with each generation and a generation spans say twenty five years. It take less than two dozen generations to grow from a population of three hundred individuals, to the six billion we have now. With this, a modest three percent per annum growth rate, it only takes six hundred years to go from a small tribe to over-population, the next stop is probably decline.

Some fools think we can just go into space! Even if we had cheap, fast, space travel and a billion empty earth like planets to colonise. With a growth rate like this, they too would be full in seven hundred and fifty years.”

Jo gave Sally her poncho and put a plastic garbage bag in her pocket for easy retrieval. The packing was fairly quick and untidy but with most of the food now gone there was plenty of room.

They headed inland past the tree Jo had pointed to earlier. They followed a dirt road which climbed slowly and went west north west diverging to the right from the track back to the farm. Sally noticed her pack was either noticeable lighter or she had become fitter. Just the same she was already a little sore from her earlier walk and hoped this leg of the journey was as short as Jo had said. To pass the time and distract herself from the discomfort she pulled level with Jo and continued the discussion.

“Jo, what do you think the ideal population for earth is?”

“Hard to say, it depends on what you value. Probably somewhere between zero and a billion.

What if we just let the population shrink until natural diversity started to improve again and re-assess the situation.

Or maybe we could try to maximize happiness. Maybe come up with some sort of mathematical formula which give us a measure of how we're doing.”

“What sort of formula? What would it measure”

“Maybe quals.”

“Marsupial cats?”

“No they're Quolls. A qual is a measure of quality of life. They are used, experimentally at least for things like deciding who gets donor organs.

Imagine you were a doctor with two patients and you could only save one.

Say one was an otherwise healthy, happy, young person with a bright future. The other was - well - not. If the latter had no hope of ever leading a happy

life again, I think you would treat the former. To aid in making decisions like that there is a formal method to estimate the expected quality of life for an individual.

Now imagine we did that for everyone on the planet and added all the numbers up, in other words we integrated it – we'd end up with some number of giga-quals. If we repeated the process on a regular basis, would that number go up or down. My guess is it is going down. My guess is that despite the fact that the number of people is rising the average quality of life is declining at a faster rate.

There are variations we could try, we might want to give more weight to the suffering than the happiness. Is it right for some people to suffer to make others happy, if so how much. These are hard questions no one will ever agree about.

Then to make it really complicated we'd have to take into account the quality of life in the future. Is it right for us to maximize the our quality of life at the expense of future generations, I would think not.

I doubt there will be agreement on how the situation should be assessed, but I think any sane assessment will say our numbers are too high now. Until the population trend reverses we don't need to worry about number becoming too low.”

They had climbed high enough that they could look back and see the rain in the distance. It was still sunny and quite warm but the breeze made hiking bearable. They continued the journey and Sally continued the conversation.

“But why are we are told growth is good?”

“Yes, we are repeatedly told that, it simply isn't true.

I've asked the same question many times and no-one has ever giving me a good answer.”

“I was told it was because we run on borrowed money. Because interest is paid on the loans the amount of wealth in the system has to increase to pay for it, or something like that.”

“I heard that too and I disagree. The problem isn't that interest is charged, the problem is not enough of it is returned to the people.

If for example our co-operative had a fixed amount of money and assume we use that money for internal trade - Joe sells milk, I sell tomatoes and you

cut and sell firewood and so on. We could keep the money circulating forever without inflation and without growth. Someone could even be a money lender who charges interest.

There is something which would break the system and that is someone hoarding money. Whether it be someone overcharging or someone just producing too much and consuming too little to keep the balance. If someone hoards all the money the system fails.

Like in the game of 'Monopoly', in the real world, money, wealth, power or whatever you want to call it, ends up concentrated in the hands of a small number of people. Unless the 'poor' have the sense and ability to stop playing the game, the 'rich' can manipulate the rules to become even richer.

The invention of money was probably a good idea. Before we had money – someone wanting to 'buy' a sheep might have had to pay for it using a cow instead of cash and might have had to take the change in chickens.

Now it's been taken to a level of abstraction few people can comprehend. The value of money changes over time, sometimes rapidly and so does the value of the things it buys. We have things like stock market shares with values only loosely coupled to the real world. When stocks soar or crash, it often has little to do with anything in the real world.

We have 'futures' and derivatives, stock and bonds, interest rates, exchange rates and inflation. We have money circling the globe at close to the speed of light and nobody knows what it is really worth. Like the people of Baa most people simplistically look at the numbers in their bank accounts as a measure of how well they are doing and how secure they are.

In a world where things are becoming more efficient and less labour intensive you would expect working hours to be reduced. The idea of people being idle or doing things other than 'work' seems to be offensive to some. In a stable or contracting society people don't have to work as hard as in an expanding one. If you mishandle the situation you have unemployment and poverty. Managed properly people are mostly better off. Some of the people at the top of the food chain would be worse off and they call the shots.

For example if our population stopped growing the housing market would collapse. Builders would mostly do maintenance and renovations so some builders would have less income. Housing on the whole would be cheaper and on average people would be better off.

If people want to continue working at the same pace, they can work on making the place better instead of just bigger. We do *not* want an expanding economy!”

By now they had begun to descend again and looking west in the distance they could see a wiggly line made up of trees. The trees marked the creek they would be following to the camping ground. The creek snaked into the west and it forked many times as it reached the hills where most of its catchment lay.

The rain was getting closer and on occasion the rumble of thunder could be heard in the distance. Sally would have liked a break but she didn't suggest it because she knew it could mean another walk in the rain. She hoped it wouldn't hail this time. She wanted to distract herself from thinking about the approaching storm as well.

“So your not anti-economics just anti-growth.”

“Economics based on reality is a great thing but that isn't what we have!”

“What on earth do you mean?”

“If the economics are done right, people naturally do the right things. If the cost of things reflect the true costs of design, production, distribution, disposal, side effects and so on - then the best value items will generally also be the most environmentally sound. For example an item requiring a huge amount of energy to produce will be expensive.”

“Such as?”

“Aluminium is one example.”

“What do you mean by 'side effects'?”

“Things like effects on health of the consumers, producers or others. These can be positive as well as negative. They can be hard to put a value to, like what does noise pollution cost?”

It is all very complicated to work out. There may be hundreds, if not thousands of factors affecting the true cost of an item. If at each step a realistic price is placed against each part or process involved, then we can do a lot better than we do now at estimating true costs.”

“So why isn't this happening.”

“There are lots of reasons from straight out price fixing, profiteering and other scams to plain stupidity. There is also legal market manipulation, often executed by governments using arbitrary taxes, duties, tariffs and subsidies. Also there is what is commonly called 'false economy'. “

“I think I need some examples.”

“OK - lets start with an example of false economy. We go back to the touchy subject of nuclear power.

Earlier I explained the reason we have so much waste is because there are and have been, a large number of thermal reactors in use.

If breeder reactors had been used there would be comparatively little waste to deal with and it would be comparatively short lived.

The reason for using thermal reactors was not about weapons proliferation. As stated earlier, regular (as opposed to weapons reactors) faster breeders don't produce weapons grade plutonium and if the fuel is properly recycled produce no plutonium waste (unlike thermal reactors).

The reason thermal reactors were built is because they appeared cheaper, even though they use much more fuel and usually it has to be enriched.

The reason they appeared to be economical was because uranium was cheap and the cost of the disposal of the waste was never properly accounted for – if it had been, breeders would have been used all along. If the true costs had been worked out it is likely that far fewer reactors would have been built.

Of course there could also have been some pressure to go thermal by the uranium industry – having breeder reactors would have been very bad for them - especially if they could be fuelled with thorium instead of uranium.”

“How about something a little close to home?”

“Hmmm. Not insulating your home because of the price. Even though the energy savings would have paid for it in a few years. So it ends up costing you lots over the life of the house and you're increasing CO2 emissions needlessly.

Speaking of housing this is another problem – owners of rental accommodation have little incentive to make these homes energy efficient.”

“I think I follow, so far at least. What about an example of a scam?”

“Most printers for home computers.”

“Printers?”

“Yeap and also an example of a subsidy.”

“Keep talking, I don't get your point yet.”

“Its pretty simple. Many printers are sold cheap in order to make people dependant on expensive consumables. Most but not all of these are inkjet printers. A set of ink cartridges for a cheap printer often costs more than the

printer. The printers usually come with ink but often not very much. Printers could be made just as cheaply to use bulk ink but by selling ink in cartridges the user may be forced to pay ten times as much for it. Often special chips are added to the cartridges to make it difficult for the average person to refill them. If the total cost of owning and using these printer was made clear up front - a lot of people would be saying 'no thank you'.

As a result of this ploy there are many unhappy owners out there and many almost new printers unused or even discarded. Also adding these ink chips and the printer circuitry to read them increases the overall price which ultimately has to be paid for and it all eventually ends up in land fill.”

The road they were following reached the end of the decline and began to level out. The flat terrain was less sheltered than the slope had been and the sun was hot on their backs. The hill blocked the breeze. Sally had already drunk most of her water but was confident there would be plenty more on the way. She noticed the cheap plastic water bottle was beginning to crack.

“So you say cheap items should be environmentally sound.”

“I think I said 'good value', it goes something like this.

Under normal circumstances an item must cost more than the cost of production etc.

If it took a lot of energy, labour or raw materials (particularly scarce ones) to produce it then it has to be expensive. This gives the message to the buyer to consider an alternative. Price manipulations such as subsidies or profiteering distort this message.”

Other factors such as company liquidations, run out sales can also distort the price but that isn't what I'm talking about.”

“In your ideal economic system wouldn't the price of to similar items end up the same?”

“Nope. Let say you and I both make and sell say, for example, wooden chairs. We both need wood and other materials, labour, energy, a workshop and a market. Let's say we buy from the same suppliers and sell to the same market to keep it simple.

Transportation costs will vary with type of transport and distance so our location will affect the price. Location will also affect the cost of our factory. We might use different construction methods so the labour cost is different and we may have vastly different energy costs. The total list of factors is quite long.”

“Why can the cost of energy vary so much.”

“I’ve been avoiding this subject to keep things simple but I guess its time.”

“Is it that bad.”

“Maybe. In the past I’ve used the term 'energy' as if all energy is equal and the same value, this is far from true.

For example - on a sunny day the farm has something like a Giga-watt of energy falling on it in the form of sunlight. It is free. In summer we have more sunlight than we really want and it does damage - so you could argue some of it has a negative value.

A Giga-watt of electricity on the other hand might cost – let me see – a million kilo-watts at say ten cent a kilowatt hour – I make that to be \$100,000 per hour.

So, I dry my varnished chairs in the sun and you use an electric drier, my energy is cheaper, yours might be more reliable and convenient. While energy is cheap and labour is expensive it may not be cost effective for me to use the sun. This may change as the energy crunch hits home.

Low grade heat is usually cheaper than high grade heat. You’d expect the price of electricity to fall somewhere in between.

Heat, electricity, artificial light, chemical energy (batteries), mechanical and so on, all have different costs. There is also a supply and demand factor.

If my chair factory is in a remote location and is powered by a diesel generator and yours has cheap power from a wind farm, then the optimal way to work may be quite different and the true cost of our chairs may be quite different as well.

You and I competing in the furniture market might not be the best example. Imagine instead one of the factories is in China – currently it has cheap labour, affordable power and transportation. The factory might get its wood from South America and sell goods to Australia. An increase in transportation cost alone could bankrupt it.

The Chinese are not stupid and one of their interests is in pebble bed reactors - pebble bed reactors can power ships.”

“I think I get it, now what about subsidies, are they always bad?”

“Not always. The useful subsidies are usually short term with a clear goal for changing society in a positive way. The bad ones are long term band aids

for a broken system.”

“I guess you'd say the subsidy for solar hot water is a good one.”

“Yes and no. If the power industry already wasn't subsidized, the cost of power would be higher and solar hot water would be such an obvious choice no subsidies would be required.

Power subsidies are common both here and overseas. Governments provide cheap power to attract industry and encourage the growth they covet so much.

If power is cheap then it makes sense for the user to use cheap inefficient equipment. This is not a good thing.

If you want to encourage an industry, let's say a factory of some kind, it is better to do it some other way – even just a cash handout. That way it makes sense for the factory to install equipment taking into account the true cost of power.”

They came to a fork in the road. The road going right went over a low bridge and went north west. They took the one on the left which went west along the creek. It didn't hug the creek precisely, the road was much straighter than the creek and met up with it on the bends.

Jo could see Sally was looking hot and exhausted and announced they were half way there and suggested a short break. They dropped packs, stretched then lay in the shade. The clouds finally reached the sun, this made it more pleasant but also warned them they were running out of time. They soon resume the journey and the discussion.

“So not everyone pays the same for power?”

“Not at all, for example you don't pay the same for power as a business would. Electricity is strange in how stable the price is and how much the price varies for different people. Stranger still is one person pays different prices for it at the same time.”

“Huh?”

“I have a solar hot water system with an electric booster. The booster is connected to off peak power which is known here as tariff-33. When the booster is working, the electrons flowing through my fuse box either go left into tariff-33 meter or right into the tariff-11 meter. The ones going left could cost me a whole lot less than the ones going right.

I'm not necessarily saying that is a bad thing.

But to top it off there is a minimum charge for tariff-33, in effect I'm

charged for ten times more power than I use so really those left hand electrons are very expensive.”

“I guess I've never thought about it before. Yes it does seem odd, what do you think should be done?”

“Maybe nothing, because it would be very expensive to change all the meters to allow the price to be varied as needed.

With modern technology we could have meters which are remotely controlled to vary the price as supply and demand change. We should also take into account the true cost of sending power to remote locations.

It does cost more to power those places at the end of long power lines and that is subsidized.”

“But what about the poor country people who would have big power bills?”

“They raise the prices of their produce accordingly. Giving them cheap power gives them the message to use it. If their power is expensive they will seek ways to reduce consumption. If it is very expensive they may decide to use a RAPS, that is a 'remote area power system'.

If you really need to support them you can give them cash directly and let them decide what to do with it.

If we are talking about a farmer, the best thing is to give them a good price for their produce. If they can't compete you have to ask why. The answer may be the farm isn't really viable or it could just as well be because their competition is being subsidized in some way.

Farming expenses are going to soar anyway as oil gets expensive. Food prices must rise and the economic system has to find a new balance.”

“You didn't explain this power pricing thing?”

“The cost of electricity is a strange thing, it is very stable with time. This is largely because of the way it is metered. While we are mainly using fuel driven power stations what we are doing is probably good enough.

However, if we ever add significant renewable sources, such as wind power to the grid, this will change. Unless you have some sort of large energy store in the system you need a way to tune demand to supply. Price is an obvious way to do that.

Not only must the price vary rapidly but it must be easy for consumers to monitor and it must change significantly enough that they respond.

Devices using significant power might be made smart enough to take advantage of power when it is cheap. For example most of us might end up

using electric cars that a smart enough to wait till after the energy 'peak hour' to charge themselves.

It has to be quick and easy or it costs too much for consumers to manage it.”

“Why does it cost anything? They just do it themselves don't they?”

“Yes, but everyone's time is worth something.”

“Even when you're doing nothing.”

“Especially when your doing nothing!

If you're a worker, as you are, unless you're desperate for money, which you're not – you would expect to be paid a penalty rate for working extra hours – so I'd argue your time at home is worth even more than your time at work. It is your time, if you want to do nothing that is your right.”

“I've never looked at it that way before.”

“If people thought about what their time is worth they might be more upset by the amount being stolen from them.”

“Stolen by whom and how?”

“By lots of people in lots of ways.”

“For example?”

“I can give you plenty but we don't have time - ironic I know.

For starters - my phone company, every time they stuff something up I have to ring them and fight with an automated system that puts me on hold. My time is relatively cheap, but on average ten or twenty dollars of my time is wasted every time I have to talk to them.

Think about how much time you spend waiting for service of one sort or another. The time spent waiting for late deliveries, trades-people, time at checkouts, banks queues and on and on.

Of course you see the other side of that as well at work. I'm sure you also make people wait sometimes.”

“Guilty as charged.”

“Then there's the spam and junk mail, not just the electronic kind either. If we could charge the spammers for our wasted time the practice would cease. There are computer viruses and spy-ware to clean up. Sales people at the door or on the phone, uninvited, unwanted expecting the be listened to for free.”

“Maybe I should charge my friends for my time?”

“If they are good friends be thankful they aren't charging you.“

“Then there's another big time waster – advertising - demanding your attention everywhere, it is not a good thing.”

They were starting to climb again but very gently. It was becoming hilly and they were following a small valley. From time to time there would be a small cascade or waterfall as the water course gained elevation. There were many large boulders in and around the water.

Sally remarked. “It is just part of being in the rat race.”

“You don't know how apt that expression is. Yes it is, you are just so conditioned to accept it you don't even consider what it is doing. Some advertising might be alright but the majority isn't.

First there is the huge amount of people's time wasted by it – many people spend hundreds if not thousands of hours a year watching or listening to ads. Very few are even relevant to the victim.

Ads are rarely for the benefit of the audience. If there is a product being sold it often not in the best interests of the buyer. Advertisers have no qualms in encouraging things like - drinking, smoking (if they are allowed), gambling, eating unhealthy food and so on. They also encourage people to spend beyond there means. Then to top it off the ads need to be paid for and generally it is paid for by the people buying the product, they pay higher prices.”

“I see.”

“There's more. The people making the ads are often quite talented and their time is wasted doing negative work.”

“Negative work?”

“Work which is on the whole bad for society or the world. Most work has some negative impact. Farmers use fuel and other resources in order to work, this is negative. If they grow good food this makes up for it. Many jobs don't have any such redeeming qualities.”

“So you think everything should come down to dollars?”

“Not at all, it is just something everybody understands. I'd be happy to give up on money all together but it isn't practical at the moment.

Lots and lots of work is done for free. Parents don't charge their children for care and feeding. Many people do free work for clubs, community service and on and on. My problem with it is that is taken for granted. If someone donates a thousand dollars to their club it is appreciated more than that fact

the treasurer has donated two thousand dollars worth of her time keeping the books.

Not everybody works for money. The computer operating system you saw running at the farm was written by volunteers who have a vision which is not about making money. Particularly now with the aid of the Internet a lot of people and groups of people are giving away work for free. Let's not talk about it today, maybe another time.

Instead - let's talk about us racing rats.”

“Rats?”

“Rats. Do you know what rats do when their food supply is restricted? By that I mean they are going to be very skinny but wouldn't normally die of starvation.”

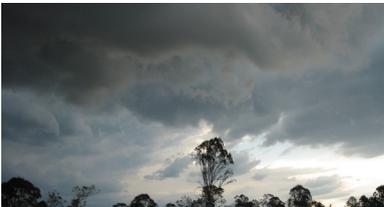
“I don't know, eat each other?”

“No, given the opportunity they run.”

“I guess that makes sense because they want to run to a new territory with more food.”

“Yes, that would make sense. But they don't know that, they just get the urge to run. They will run even if it is in a treadmill going nowhere. They will run till they burn up all their available energy and die. If they acted on intelligence instead of instinct they would be passive and conserve what energy they have and hope for things to improve.

Like rats we're entering a period of energy starvation. We can't escape the cage of earth so we run around in circles as if it is somehow going to help us. What resources are left should be conserved and spent building a greener infrastructure.”



It had become still now, the dreaded calm before the storm. Sally wondered how she had gotten into this situation. She knew what to expect but had continued regardless. They didn't have much option now but to push ahead and hope this toilet block wasn't too

far away and it was as strong as Wayne had said. There was no other shelter anywhere in sight and she didn't think Jo's little tent was up to the task out here in the open.

If Jo was scared, she didn't let it show and right now Jo's calm voice helped keep the panic at bay. She brought her mind back to the topic and tried not to sound frightened.

“Why isn't the government doing anything about it?”

“That's a good question and I can't say I know the answer. Firstly we have to remember the government is not one consciousness. It consists of many people, many facets. You can't assume the views held by the leaders reflect those of the lower ranks. You also can't assume the leaders know as much as the lower ranks. Maybe they do maybe they don't.

Firstly we have to ask, 'are we right?' Are we a bunch of nutters and there really is nothing to worry about. I obviously don't hold that view.

We also have to ask, 'Do they know?' I would think the answer is yes, unless they are really stupid. Stupidity can't be ruled out and would explain a lot.

So if it is real and they know it? There are too many possibilities to explore them all. Maybe I can invent a few scenarios for your consideration.”

“I'm game, do your thing.”

“OK, how about this one...

They know it is true but they have a plan to save us all, or at least they think they do?”

“A plan they don't have to tell us about or seek our co-operation?”

“Maybe the time isn't right, when the excrement is about to hit the ventilator, they whip out secret plan-A and save us all. Maybe a new energy source, some way to modify the weather or something like that?”

“I'm not so sure about that one.”

“How about things have deteriorated faster than expected. 'They' thought they could maximize profits from oil while they could - then unveil an alternative at the last minute. But they screwed up by taking us past the point of no return before they knew it or before they had a solution.”

“I don't know, I guess it is possible.”

“What about this one....

They know there is a problem but they hope that somehow we will muddle through. A sort of fingers crossed plan. Maybe they fear the reaction to the truth. Maybe they just hope the world will hang together long enough to get to the next election term.”

“What sort of reaction?”

“For starters 'we' (the people) are going to be really pissed off that the leaders allowed this to happen - more so if it was done knowingly and if we were lied to.

After that we may behave in ways which trigger a social collapse, a collapse which might be avoided if we wait and find a solution to our problems.”

They were inside the camping ground when a gust of wind came through and few heavy drops fell like warning shots and then stopped again. The roof of the toilet block could be seen a few hundred meters away. She could hear the sound of heavy rain approaching. She figured she could probably manage to run the rest of the distance and a loud clap of thunder made the decision to try easy for her. She ran ahead but was overtaken by rain with fifty meters to go. By the time she ducked under cover she was somewhat wet.

A few minutes later Jo arrived looking soaked to the bone. She said nothing and open her pack and fished around for something. She found the soap and shampoo she was after and placed it on the concrete out of the rain, then without saying a word stepped back out into the torrent.

Jo removed one article of clothing at a time rung it out a few times and draped it over a convenient railing to rinse some more. Then she came back for soap and washed herself in downpour.

Sally realized that she could do with a shower as well and couldn't think of any reason why she worked so hard to try to stay dry. There clearly wasn't another soul for kilometres around so when Jo teased her by saying, “Come on out the water's fine!”, she found her own soap and joined her.

The toilet block had a waiting area which shared the main roof but had no front wall. It was fitted with a bench seat against the back wall. Now that the wind had eased the rain didn't reach that far.

Sally put on some dry clothes and Jo put on her sarong. Jo thought the rain and wind would soon slacken to the point where they could move out to one of the sheltered picnic tables and make lunch there. They agreed to sit and wait for a while and see what the rain decided to do.

There really wasn't much to do, so Sally resumed the conversation by

asking. "What sort of behaviour were you alluding to before we got wet?"

"The extreme case would be civil war. A good reason to disarm the public."  
"Which is being done?"

"Let's not go down that path.

Let's take it to a what is obviously a ridiculous extreme.

Let us pretend for the sake of the discussion that it becomes apparent to everyone the world is going to end. All the news services report that there is total agreement among all the scientists, politicians, priests and fortune-tellers. There is proof that the Mayan calendar is correct and the world will end on December the twenty-first, 2012. On that day simultaneously - the sun will go nova, one hundred comets (really big ones) will hit us and a worm hole will eat the debris - lights out, game over with no lives left. What would you do?"

"I'd retire very early and spend my life's saving seeing the world while it is still 'round."

"You probably wouldn't!"

"How do *you* know what I'd do?"

"Because a few hundred million other people would have the same idea. You couldn't get your money out because there isn't enough real money left to pay everyone. If you did get your money, you'd find the travel agents, pilots, tour guides and most other people you'd need have all retired as well."

"Maybe."

"People would demand access to the superannuation funds they would not normally be able to cash in till they are old and refuse to pay any more towards retirement and so forth. Things would run down and towards the end of 2012 (if not earlier) farmers wouldn't bother planting crops.

If you were immoral - the sensible thing to do would be to borrow as much money as you can, because you know you'll never have to pay it back!"

"That sounds like U.S. fiscal policy to me!"

"It does but let's not go there. You might also want to settle the score with people you don't like..."

"That's allied military policy... I know - 'let's not go there.'"

"... and generally rape and pillage..."

"Sounds like.. Oh never mind."

“On December 21<sup>st</sup> a lot of old wine is consumed and everyone wakes up on the 22<sup>nd</sup> with a hangover saying - 'Oh shit! We're still here and we're in deep dodo'.

That announcement will never come and if it did most people wouldn't believe it anyway.

More believable is one that says that things are serious, the developed world's primary energy source is becoming scarce, the weather is changing and we can expect severe shortages of many things including fuel, food and water. We don't know exactly when, we don't know if people will die as a result or how many and we don't really know what we're doing.

What would you do then?”

”I'd stick close to Jo.”

“There isn't enough Jo to go around and I might not even manage to save myself. What is everyone else going to do?”

“Beats me what will they do.”

“I don't know either. I'd guess a number would try to hoard supplies and they would create premature shortages. There would be others who's plan is to steal from everyone else. I'd hope that a good number would try to pull things together and change our course in a more positive direction.

If we can't stop the collapse delaying it will most likely make it worse. So there is a chance the rulers know this and are allowing the wheels to fall off now in the hope it lessens the overall suffering and give the survivors a better chance of picking up the pieces and rebuilding. We just don't know.”

“Do you think we'll make it through?”

“There are two related but separate issues. One is survival, survival without much oil and survival in a world where the weather is more severe and the prospect of importing food unlikely.

The other is trying to fix the problem.

If we fail at the former and our numbers crash or we go extinct then we will probably succeed at the later but this isn't my preferred outcome.

If we ignore the later we might survive but with a terrible cost to the planet and the other life on it. I think this is the likely direction we will be lead in.

Doing both is beyond the capability of our governments, neither locally or globally.

Maybe there is a false sense of security in that we have never experienced a global catastrophe of this nature. The fact that we haven't become extinct before does not mean we can't do so – no more than you having stayed alive this long is evidence that you are immortal. If our history is vaguely correct we've never had this many people on the planet before or damaged our environment to this extent. We are in uncharted territory and our leaders are totally unqualified to get us through it. There are almost no scientists at the top. We have a bunch of lawyers and businessmen in charge and they don't have a clue.”

The rain had eased off and the strong wind gusts had died down. The main storm front had clearly passed. Sally donned her poncho, Jo didn't bother. They moved out to a table where Jo improvised a wind-break by tying the torn poncho to the steel posts which supported the roof over the table. Jo made hot drinks from water which was caught from the roof and Sally put the dirty dishes (which they'd carried with them) in the rain and then cleaned them while Jo made lunch.

It was starting to become slim pickings in the food department. It looked like there would be just enough food and fuel to last, the menu was going to be very limited, salami looked like it might become a staple. Jo assessed the situation and made fried salami, eggs and some sort of flat bread. Simple though it was, lunch tasted pretty good to hungry Sally.

They were reasonably comfortable and Jo said she'd rest a while longer and then set up the tent.

Sally had been thinking about what Jo had said earlier and wanted to clarify something.

“Jo, these fools you say are running the show – why did we vote them in.”  
“I didn't vote them in. Most of the damage is being done by foreign officials we don't get to vote against.

At home we are out voted by people who are being lied to by experts.

Representative government has been a failure from my point of view. No candidates represent my views.

We write a few numbers on a ballot every so often. The people named on

the ballot make us promises that are not binding. Our only real retaliation is to write different numbers three years later. Even if the voters united - it is a slow way to steer a country. I predict the number of election terms left before things get really grim can be counted on one hand and the chances of having a good government in place when we most need it is slim at best. Even if you believe rule by majority vote is the best thing it can't work in the present situation.

For the system to have any hope at all we need honest unbiased mass media. Media willing to report the truth even when it is unpopular with the sponsors, the government or the public. It would also help if the public looked beyond short term mortgage interest rates and saw the bigger picture. They should also stop voting for people who are proven liars. The cynics will say they are all liars but this would change if they learned that honesty really is the best policy.“

With the choices we are given, people are voting for the 'lesser evil' instead of the greater good.”

“I don't know what they think about all this, I think I'll have to think about it a bit.”

“You do that and let me know what you think. I think I've covered just about everything I wanted to. You probably need to catch up on some sleep, maybe in the next couple of days we can talk about what to do about it all. If you are interested that is.”

“Sleep sounds good. I'll see how I feel about it all tomorrow.”

Jo 'borrowed' the good poncho and had the tent up in ten minutes. They moved the bedding, Jo's camera and Sally into the tent. It was cool enough for Sally to get inside her sleeping bag as long as she didn't zip it up. She wrapped her towel in her borrowed sarong and used it as a pillow. The rain made a crackling noise as it fell on the tent and Sally listened to it as she thought about not thinking and promptly went to sleep.

She woke when Jo came to check on her just before dark. The snooze had done her good and she got up to see what Jo had been up to.

It was drizzling. There was the smell of food mixed with the smell of smoke because Jo had gathered discarded newspapers from the wheelie bins, burned them in one of the BBQs and cooked the dinner over the flames.

Jo had sorted out what was left of their supplies pretty much planned the remaining meals. After dinner there would be two more breakfasts and lunches and one more dinner. Above the table under the centre of the roof she had hung the packs on a rat line which was strung diagonally though the shelter.

Dinner was something resembling 'bubble and squeak' made from whatever ingredients they still had enough of. As expected it contained a lot of salami. The portions were fairly small. Sally wasn't particularly hungry, so it was just the right size.

They ate, drank tea and chatted till it was quite dark. It was getting quite cool and rogue storm cell was approaching so they secured the supplies and got ready for bed.

The tent was very cramped with two people in it but there didn't seem to be much alternative. The moon had probably risen but the cloud cover was heavy and it was quite dark. Thunder rumbled in the distance.

They lay awake in the dark for a while, then Sally spoke.

“Jo?” - “Yes Sally.”

“Have you ever thought of writing a book?”

“Me write? I failed English at school, I always hated writing. I've still not figured out what; a semi-colon is for and I'd be inclined to (what do you call those things again?) split infinitives.”

“But it doesn't matter if there are some mistakes in the grammar, what matters is the content.”

“I'd probably have to give it away for free to get anyone to read it.”

“Well that's OK too, put it on the web and it won't cost anything to publish, you can even add colour pictures at no extra cost.”

“Maybe I'd like to do something set in the time after the crash, the problem is by the time I got around to it, it might be history and not fiction.”

“Why don't you just write down the things you've been teaching me, just write down the story of our trip together.”

“Yes! I can see it now!

‘It was a dark and stormy night. Our two heroes lay in the dark plotting to save the world!’.”

“Well, if you're writing for peanuts, one would expect something like this.”

“Don't you think it would be a bit, well boring, like nothing exciting has

happened.”

“OK then, use some artistic license, add some more nudity, sex, danger, drama and adventure.”

“Well maybe, I think I'd like to keep it a bit tame, not that I'm a prude or anything. Nudity in a novel, why would you bother?”

“Well some sexual tension at least, some unrequited love.”

“Unless you want us to be gay that would mean adding some extra characters.”

“Then make it so, and another thing.”

“Yes?”

“Can you make me a bit smarter and less wimpy? ”

“You are OK the way you are.”

“OK and I want figure John out and *maybe* get him back.”

“Be careful what you wish for!”

“Or find someone better. How about some gadgets?”

“You mean like James Bond?”

“I was actually thinking you could be like Lara Croft.”

“In that case I'll give myself bigger boobs as well.

You're like a kid writing to Santa, anything else?”

“Yes, put this conversation in the story as well.”

“That would be just too corny, gimmicks like that rarely work. It is the sort of thing Douglas Hofstadter would do.”

“Yeah, he's the guy who wrote 'Godel, Escher, Bach – an eternal golden braid'.”

“You know that?”

“Of course, I'm a librarian, we know these things. Librarians are smart and important people you know. Look at how our sisters and brothers helped out Michael Moore and opposed the US patriot act and all that. We fight for free speech and the right for ordinary citizens to access the information they need.”

“You sound like a good candidate to be a 'watcher'.”

“So are the 'watchers' real or not?”

“Its a secret, if they were real would you join them?”

“In your story yes, in real life I don't know.

You know you might want to use a creative commons licence for the book”

“A what?”

“Its a compromise between totally giving up the rights to your work and

tying it up with standard copyright.

For instance you can say it is ok for people to make copies of the book but not to sell it. There are quite a few variations to choose from.

Now with the US free trade agreement coming into force our leaders have agreed to toughen up our copyright laws. This is mostly bad. In conjunction with copy protection technology my job is getting harder. Many Australians are now criminals for doing what should be our right, like making MP3 files of music we have bought.

The mainstream record companies say they need tough laws to protect their artists, I don't believe this for an instant. The artists get a pittance for their work. We don't need record companies any more. When the phonograph was first invented they filled a need. That need no longer exists.

So a few alternative recording label have started up that take advantage of the Internet and home computer technology. There is no need to press CDs when people can burn their own or listen to music on other media. There is no need for expensive advertising if you have a good web site.

The music becomes cheaper for the end user and the artist usually get a much better deal – they might get half the money the customer paid instead of a only few percent. Many people copy the music for free as is often the case with copyrighted material but enough want to support their favourite artists by buying their music.

You know it is just like what you told me about Taoists and moralists.

The old style record labels are the moralists, they want laws to keep these evil customers in check. The creative commons style companies and artists are the Taoists who think people will do the right thing and support them.

If we want to watch movies, we still need a movie industry, but they had better take note too. They are playing the same games and there could be a backlash.”

Jo couldn't see the devilish twinkle in Sally's eye.

“You never know Jo, one day Peter Jackson might make you an offer too good to refuse.”

“Yeah, sure.”

“And he could recycle the cast he had in New Zealand.

I think Miranda Otto would make a great Sally and she's a nice local girl

too.”

“Yes, I can see that could work.”

“Ian McKellen could be the professor.”

“I don't think the professor would agree.”

“I'm not sure Cate Blachett or Liv Tyler are quite right for the role of Arayra but they'd do.”

“And Gollum is perfect for at least three of our world leaders.

So who get to be me?”

“Hugo Weaving, Hugo Weaving with *really* big boobs! He might still have a pair laying around.”

Sally struggled not to laugh out loud.

“Be nice! That's no way for a princess to behave, get out of my tent, you can sleep in the rain!”

“Sorry, I couldn't help myself.”

“Hugo might not want to be me, he might want to be a Queen again.”

“I don't think Arayra would approve.”

“You're obviously feeling better, maybe you should write this book not me. Now that you've dragged the tone down to this level, its time to sleep. Good night Sally.”

“Night, night and please try not to snore.”

*(Hugo Weaving, the actor who played Elrod in “Lord of the rings” also played the role of a drag queen (Mitzi Del Bra) in “The Adventures of Priscilla, Queen of the Desert”.)*



## Day Six.



Saturday, 27<sup>th</sup> Nov 2004.

There was no salami in the breakfast pancakes and the weather was improving rapidly, this pleased our princess.

It had rained heavily in the early morning. Now it had stopped and the sun was trying to make an appearance but hadn't quite succeeded.

“Have you thought about what I've been saying over the last few days?”, Jo asked while balancing her cup on her knee as she was inclined to do.

“I've thought about it, I'll have to do some research and talk to friends about it before I decide whether I agree with it or not.”

“Fairly enough, that is a wise thing to do, any questions?”

“Yes, is it too late to fix the world?”

“I don't know, I fear it may be but I don't know anything for sure.”

“What if everybody pulled together, what if every person on earth did everything they could?”

“Even then it might be too late. I think so little has been done because most people assume it will just be gradual changes and we will always have the option of fixing things at the last minute, fixing it once we are sure of everything.

It is unlikely to be like that. In the extreme case we will have a catastrophe. We have a bunch of expressions to describe that sort of event- one is 'the straw that broke the camels back'.

If you pile straws onto a camel one at a time - at some point it will collapse.

Until it collapses you have the option of stopping and preventing it but once it starts to give way it is too late. Catastrophe in this context implies a sudden, irreversible, change of state, the actual collapse is rapid.

We are just as likely to have a scenario where a system failure becomes unavoidable even though it happens slowly. If you play with matches and start a fire in the bush, while it is small you can stop it but after a certain point it becomes uncontrollable even though it may be spreading quite slowly.

There may be a 'point of no return' or a 'tipping point' at which we lose control. After that, if we stay on top of things we might at least save ourselves and do the best we can in the changed circumstances.

The fact that the earth changes are happening more rapidly than expected is a very bad omen. I hope I'm wrong but I think we're sliding on a slippery slope near a precipice.

The sun is shining, there is nice lighting, I want to take some photos.”

Jo grabbed her camera from the tent and went in the direction of the creek. Sally tagged along. The creek had risen considerably but hadn't broken its banks. It was quite angry looking and a little way downstream water could be heard churning through rapids and going over a small set of falls.

They came to a sort of terrace which had a low fence separating it from the grassy slope leading down the water. A large, flat, roundish stone, some two meter across, was just over the fence and perhaps twenty meters from the water. It was fairly level. While Jo had her lens focused on some small thing with her back to Sally, Sally hopped the fence and stepped onto the stone.

She was near the edge when Jo saw where she was, “I don't think you should do that, it doesn't look safe.”

“It isn't slippery and I've got a good sense of balance, I won't fall off,” she said ignoring the warning and going out to the edge.”

“It might topple!”

“It is a big stone and I'm only little, look 'hang ten!'”

She stepped back a pace and started to turn around. The rock began to move. She thought she felt it and a look at Jo's expression told her she had seen it move as well. Ever so slowly it was sinking at her end, then there was

sudden drop which almost sent her flying.

It didn't seem all that slippery when it was level but now that it was inclined the footing was becoming treacherous. If she tried to walk up it she might fall and end up under it. There were too many choices and she froze on the spot while trying to figure out what to do. The rock now began to slide. Instinct took over and she turned towards the creek and rode it down the slope.

The rock sped up and time slowed down. It skewed a little to the left and Sally crouched and put her hands down to steady herself. Her options weren't improving. She was still riding it when it reached the bank and instinct took over once again. As the rock tipped forward she dived as far as she could into the water ahead. She felt the splash behind her and felt a little push from the wave, but she was unharmed, so far at least.

After surfacing she looked up the bank and tried to scream out "No!" She couldn't because she hit a submerged log and was sucked under. What she had seen was Jo dropping her camera onto the muddy ground and taking a running jump onto the slope.

She went under the log and swam to the surface again. The current was strong and there didn't seem to be anything to grab or any obvious place where she could exit the water. The water near the middle looked much calmer and she reached it in a few strokes. There was a small island ahead, this consisted of a very large boulder and the dirt it had anchored in place. She aimed for it and climbed out at the apex.

Jo soon reached her, she was swimming with all the grace of a pair of underpants in a washing machine. She almost reached the island but Sally had to grab her and swing her into the shallows. Sally hung onto her with one hand and the boulder with the other until Jo could haul herself in.

Once she had caught her breath Jo exclaimed, "That was a stupid thing to do!"

"Which thing, me 'hanging ten' or you jumping after me?"

"I was trying to save you!"

"Jo, I'm a trained lifesaver, you can't swim to save yourself. There is no way on earth you will ever save me in water. In case you haven't noticed we are now trapped on a rock in fast flowing water just up from a waterfall. There is no-one around to help us and chances are no-one will come this way for

quite some time. To top it off the rain that fell on the catchment hasn't reached the watercourse yet – our little island will probably go under in the next hour or two. If you'd stayed put you could be doing a lot to save me now. Have I missed anything?"

"I couldn't just stand there and watch you perish."

"If what you've been saying is true you can expect lots of people to perish – you'd better get used to it, if we manage to survive the morning that is, that seems unlikely right now."

"But I promised to protect you, that makes a difference!"

"It was a nice gesture but it wasn't helpful. There is a chance I could go over the falls and survive to get help. This seems our best chance, other wise we will both get washed over when the water rises and your chances aren't real good."

"I don't want you to risk it."

"Then there only one thing left to do." Sally began pretending to look for something amongst the rocks.

"What are you looking for?"

"Strawberries."

"This isn't a time to be funny."

"There isn't anything better to do!"

"Actually there is," Jo looked at her pendant and said, "I hope this really *is* water proof."

"Jo, you've lost the plot, we are in deep shit and it doesn't matter if your lucky charm got wet! A wash won't hurt it"

"I didn't say it was a lucky charm, I said it was insurance. I'm afraid things might get a bit weird for you shortly."

"They already are weird, are you going to invoke some spirit to save us?"

"No weirder than that, I'm going to call the cavalry."

Sally seriously considered slapping her.

Jo flipped over the idol and blew the water off it, she looked in the direction of the picnic table, the roof was just visible. There was a soft spot on the back of the pendant the same colour as the fake jade the body was made of. She stood and held the idol as high in the air as she could.

"Pray," she said.

"To whom?"

"Tesla, Marconi and Maxwell."

Sally was none the wiser.

Jo pressed the button and kept pressing it.

Exactly five seconds later the pendant made a small beep. Jo held her breath, a few seconds later it started to beep again in what was obviously Morse code.

Jo kissed it and said “Thank you Geoffrey.”

Sally seriously wondered if she might be dreaming again or if she had just gone mad.

“Seriously weird Jo, you seem to be developing an unhealthy relationship with a beeping Buddha named Geoffrey!”

“No, Geoffrey isn't a Buddha, he's too skinny for that, Jeff made this, he's good at this sort of thing,” she said holding up the green guy. “That was an auto-reply, a sort of Morse 'we can not take your call right now'. If things are working as they should be, we'll have someone's attention by now.”

A phone could be heard ringing, obviously Jo's, this was the first time it had rung. “Yeap,” she added, “someone's heard us.”

Now let me concentrate, I'm new to this and it is still hard work”.

Sally just stared as Jo began to push the Buddha's button in Morse. She pushed in silent dots and dashes for a minute or so then held it over her head again.

“What are you, a foreign spy or something?”

“I'm not foreign, and not a spy, I guess that makes me a 'something'. I have to listen”.

The Buddha started to talk again.

Jo translated, “Rescue is on the way, should be here in twenty minutes.”

“They must be close then, unless they can fly.”

“I don't have Lara's money, we're too poor to have helicopters, they'll be driving.”

“Who's going to rescue us?”

“I'm not sure.”

“You must have some idea!”

“I do but we'll both know soon enough. When we are both on that side of the water there will be plenty of time to explain.”

“But we've got nothing better to do while we're waiting.”

“I need to rest. How are you?”

“I hit a log and my ribs hurt apart from that I'm fine.”

“I don't think there is time for an elaborate rescue, I think we'll just get

thrown a rope and we'll get across as best we can. Can we tie a rope around here without hurting you too much?" Jo indicated that the rope would go just under the armpits.

"I guess that will have to do."

"Now if you'll excuse me I have to catch my breath, you should do the same."

Jo seemed very worried about something and Sally didn't think it was the coming rescue, she wondered what it could be. The water has risen noticeably in the few minutes that they were there, perhaps that was it. She also remembered Jo expensive looking camera was laying in the dirt, that could explain it.

"I hope you're camera is alright."

"It isn't important, it is only a camera."

"It might be a good time to talk to the water."

Jo didn't bite, she still looked worried, the water rose a little more and they both inched up the rock.

They waited and at last Sally heard a vehicle, it sounded familiar. Then her name was being called. She knew the voice.

"DOWN HERE!!!

What the f...! What is he doing here?"

"He loves you Sally, don't do anything rash, we'll explain everything."

Sally mind was racing, this must be what Jo was worried about, it might explain a few other things as well.

"You know each other! Did you set this up so he could come and play hero?!"

"No, this wasn't planned, you fell into the creek without my help!"

"I guess I did."

"Focus on getting of this rock."

John came down to the water's edge.

"You've got some explaining to do mister!"

"Yeah, I know. How did you end up there?"

"I surfed."

John looked to Jo.

"She surfed," she confirmed.

"Why didn't you surf back?"

"My surfboard sank."

"Yes it did," nodded Jo.

"What are *you* doing there?" he asked Jo.

“I'm saving her.”

“Yes, I can see that, now how long have we got to save you?”

“Water's rising pretty fast, maybe half an hour.”

“We don't have time to drive around and string a flying fox, we probably don't have enough rope anyway. Maybe well should call the police and see if they can send a chopper?”

“Just throw us a rope, make sure it is anchored well and be ready to haul us out any way you can.”

“We've got some climbing gear. I think Jeff is getting already it, we'll work something out.”

“Sally might have some broken ribs so we'll have to be as careful as we can.”

Right on cue and slim man who looked in his mid to late forties came down the slope carrying a long length of rope and some other paraphernalia.

“Jeff meet Sally.”

“Let's skip the formalities till we have you both safe.

John, go back to the truck and grab any string you can find, get some bungee cords and if you see something heavy-ish to toss across if we need it – a hammer or something.” John's land rover was usually called ‘the truck’ by everyone except John.

John scrambled up the slope and Jeff set to work attaching the harness to the rope. He adjusted the rope so the two ends of the rope were the same length then tied a series of knots along one length. He took the unknotted length and tied it to the closest tree.

By the time he had finished John stumbled down and looked like he might end up in the drink as well. He dropped everything near Jeff and managed to stop himself in time.

Jeff took one of the bungee straps and wrapped it around the harness to make a small bundle. He coiled up as much doubled up rope as he could and held it in his left hand then swung the bundled end around with his right and released it in the direction of the island. The bundle landed in the water just upstream and Jo reached out and grabbed it as it washed past.

Jo untangled it, “You first.”

“Why me.”

“You're hurt, I'm not. You need help putting this on and I don't, no time to argue about it just put it on.”

Sally did as she was told and Jo did up the straps.

Jeff gave the knotted rope to John and told him to take it around the tree, hang onto it and pull if necessary. John was the obvious choice because he was somewhat heavier than Jeff.

“Jeff - she's hurt be careful of her ribs! Are you two ready?” Jo shouted.  
“Go!” Jeff shouted back.

The water was almost covering the island. Sally walked in let the water take her. She faced the current and had no trouble crossing the five meter stretch of water. Jeff was there to assist her but she didn't need any help and climbed out by herself.

She wondered whether Jeff liked what he saw, she was aware of the wet t-shirt look she was sporting. She thought he seemed to be staring at her chest and he seemed to be having trouble finding the words he was looking for. After an uneasy few seconds she said bluntly, ”Is there something wrong with my chest?”

“I don't know, but we need that harness now. Do you want help to take it off or not?”

Sally now remembered Jo was still out there and realised Jeff was not actually fantasising about her breasts at that moment.

“I don't know if I can do it, you'd better help me.”

Jeff undid the harness, it dropped to the ground and Sally stepped out of it. He took it without saying another word and went back to Jo as fast as he could without risking slipping on the muddy ground. Again he made a little bundle and Sally could see he was concentrating on working as fast as he could.

By now Jo was in knee deep water and when Jeff's throw was a little short of the mark she dived out and grabbed it. Her passage was clearly uncontrolled and she arrived at the bank coughing. Jeff passed Sally to help Jo. The water had broken the bank by now and Jo, who was still desperately clinging to the rope with both hands was a little stuck getting up over the lip.

Jeff stomped his foot to make some foot or hands holds in the soft dirt. He knelt facing upstream, leaned into the slope and grabbed Jo by the back of her shorts.

“Got you. Let go with your left hand and dig it into the mud... Got a hold?”

“Think so.”

“Loose the rope, same with right hand. Climb.”

Jo crawled out on all fours, went a few meters up the slope then rolled over and lay supine on the muddy grass, she was still breathing hard.

“Thanx, I'll be alright now, I just need to lie here for a while.”

Sally went and retrieved Jo's camera from the dirt and took it back to the camp site. She looked down to see what was happening and saw Jo slowly get up and begin to walk towards her. Jo stopped before she made it to the camp site and sat on the ground with her back to a tree.

The guys were still untying the knots which had become tight during the rescue.

Sally went to see if Jo was alright. She was surprised to find she was hugging herself and crying. Sally wasn't sure whether she should hug her or hit her so she did neither. She sternly commanded Jo to look at her. Jo meekly complied. After checking her pupils and deciding Jo wasn't in shock. Sally just left her and went back to the camp-site.

It was John who came and sat with Jo and soon they were having an intense conversation.

Jeff walked past them and came to where Sally was standing.

“Sorry if I was abrupt down there but things were pretty serious for a while.”

“I totally understand, I was holding up the show.”

“I'm Jeff as you probably know by now.”

Jeff held out his hand to shake Sally's when he remembered it was bleeding and he withdrew it again. He seemed to be wondering what to do next when Sally asked to see his hand.

He held it out for inspection. In the red Rorschach pattern in the middle of his palm Sally could clearly see a heart, a heart complete with veins and arteries.

She felt weak again and her unsteadiness showed.

“You OK?” queried Jeff, “is it the blood?”

“Its complicated. I can dress that for you if you like.”

“It looks worse than it really is, its just a scratch, some of those trees have thorns!

What about you, do you need a doctor?"

"No, I'm just a little bruised, I'm sure nothing is broken. If you have any ice that might help."

"There is some in the fridge, we can get it whenever you want."

"You look a little familiar, have we met before?"

"I've been into the library. You've slept in my bed a few times."

'Wishful thinking', she thought to herself. "You must be thinking of someone else."

"Two nights ago to be exact."

"Oh! You're the professor! I was expecting someone older."

"Professors can be young but I'm not a real professor anyway. It is a secret code name that Jo shouldn't have told you yet. I guess it shows she was impressed with you."

"Secret code? What is this about? How do you know I slept in your bed?"

"Haven't you figured it out yet? We are a secret group and you are here because John wanted us to invite you to join us. You are a special case, normally we only invite people who have already demonstrated they understand the situation the world is in. You didn't, so Jo was bringing you up to speed.

Yes, Jo has been keeping us informed."

"I'm not exactly thrilled about that, I thought I was getting away from John and she's been reporting back to him."

"We were just being cautious, we've been taught to be cautious. If she hadn't been calling in, we might not have found you in time today and there'd be two corpses floating in the Pacific about now."

"This is bizarre, John never said a word about this group."

"That's the point, if you can tell people you belong to a secret group – then it isn't a secret."

Sally showed Jeff the trail the rock had made and explained what happened.

"Sally, not many people have ever done anything like that. What a story!"

She pointed at the other two who were still talking in serious tones. "What are they so intense about?"

"I'd call it a crisis meeting."

"What sort of crisis."

“John's in crisis because you are mad at him. Jo's in crisis because she blames herself for your splash. We're all in crisis because this could be the end of our group. We screwed up, we didn't want to place you or anybody else in danger. We have to ask ourselves whether we should continue. If you blow our cover then the point is moot.

There is also a legal risk for us, we have all signed secrecy agreements and could be sued by the others for telling you too much without approval.”

“How can a secret group sue someone.”

“By not being a secret group any more.”

“What can you tell me?”

“We will tell you pretty much everything. First let's get Jo warm and make all of us comfortable enough for a long talk.

I'll drag John away to get some chairs and such. Can you get Jo into something dry and drinking something hot?”

“I can do that.”

Jo obeyed when Sally handed her a towel and dry clothes and suggested she get changed. She still looked dazed as she stripped, dried herself and dressed in dry clothes. Sally went back to the camp site to make coffee and Jo made no move to join her, instead she resume her position sitting with her back to a tree.

Coffee was almost ready when the men returned with an esky. They had already brought three chairs on the first trip from the truck. John slumped into one of them and watched the water to stop himself staring at Sally. Sally ignored him. Jeff went and got Jo and sat her on John's left. Sally put a cup in Jo's hands and Jo held it in front of her and stared into space.

Jeff indicated to Sally the remaining seat on Jo's left was for her, he gave her ice for her bruises and sat on the esky. He got up again to make himself tea and John helped himself to a glass and wine from the esky. When he sat down again Jeff broke the uneasy silence.

“I've given Sally a quick summary of who we are and why she is here. It might be best if you, Sally, just ask questions and we answer them.”

She had plenty of questions and without any delay she began. Sally applied the ice.

“The first thing I want to know is why John's here when he's supposed to be on a field trip?”

Jeff almost answered for him but stopped himself.

John defended himself by saying, "I am on a field trip, or at least we were until we got Jo's distress call."

"So what were you doing?"

"I don't know I can say too much..."

Jo, still staring into the space above her still full cup, cut him off. "Tell her," was all she said.

"We were doing lots of things. We checked out some old underground mines in the area, we'd locate them, see if they are open and what condition they are in. We did some prospecting for minerals and I was looking for certain types of strata."

"What sort of strata?"

"The sort which would be easy to tunnel and require adding a minimum of roof support. Jeff has also made some home brew geophysical instruments and a coring tool. We did some test holes on the farm after you left."

"Why do you want to tunnel?"

"To make a survival shelter, in case things go badly and we need to hide."

"So you're a sort of doomsday cult?"

"No," interrupted Jeff. He took over from John. "Doomsday cults are usually intense, religiously based groups who are dangerous for their members and the public. They often don't value life. They want to save the soul, not the body. We value life and regret having placed you in danger, it was not our intention."

"OK a survivalist group then."

"Not quite. Survivalists tend to think in terms of having shelter, food and weapons in order to survive for a time. Eventually they expect to come out and be looked after by someone else.

We are planning for the second worst case scenario. In the worst case we are all dead and there is no need for a plan. Next worst is a total collapse of civilization. We want to be prepared to help rebuild the world if the need arises."

"OK, you are survivalists with a plan."

"Maybe but there is more to it than that. We would like to save ourselves but our primary mission is to save information. We live in a world where increasingly everything is kept on digital media requiring computers or similar devices to recover the data. The life of these media is quite short compared to ink on paper or markings on stone. It is assumed technology will continue to exist in order to copy data onto new types of storage. There

is no plan for saving data in the case of a collapse of the society which is needed to maintain the high technology required.

And there is another thing. History is full of cases where information has been deliberately destroyed. History is also full of tales of scrolls being hidden in caves and other places to preserve them for future generations. That task could fall on us if this country get invaded or an even more repressive regime comes into power.

Also realize we import most of our technology, imagine if those supplies were cut off by, say, a long war”

“I get the point.

Do you have a name? Are you the watchers?”

“Jo likes to call us that, but no, we just refer to ourselves as 'the group' most of the time.”

“How many of you are there?”

“Twenty three, you'd be the twenty fourth.”

“Do I know any of the others?”

“Most of us have checked you out at some point. The only other you know fairly well is Carol.”

“Gee, she set me up for this and I thought she was my friend.”

“She is your friend, we are all your friends but she is also one of us.”

Jo had finished her coffee and got up to rinse her cup. When she returned she filled it with wine from the cask which sat on the ground beside John. She place it between them for easier reach next time. John poured his second one.

“So you really think its going to get that bad?”, Sally asked no one in particular. The two drinkers seemed happy to leave the question for Jeff. “We don't know, we hope not, it is possible. I think we would rate the chance of a total collapse as unlikely but not insignificant. Even if it was as low as a one in a thousand chance, which it isn't, someone needs to prepare for it. We don't see it happening. Perhaps there are secret government or other private plans in place but we can't assume that. Even if there are, an extra team will improve the chances of success.”

Jo offered Sally some wine, Sally had been wanting alcohol for days but under the circumstances she decide to stay sober. She declined.

“So, do you all have code names like the 'professor' here?” asked Sally nodding in Jeff's direction.

“Streaker,” replied Jo, “for obvious reasons.”

“Rocky,” replied John, “also for obvious reasons.”

“Yes, because you're a horror!” came the cutting remark.

John looked hurt and drank deeply rather than defend himself.

“So what would mine be?”

John and Jo both looked like they might have had a suggestion and it probably started with a 'B', but they chose to remain silent.

“Jo, told us about your dream, maybe it could be 'Princess', the 'Princess Prophet'.

“No! I don't think so!”

“Why not?”

“I'm not going to be called 'PP' by anyone, not even my friends!”

Then how about 'Princess Sally' ” Jeff suggested, “you were a bit of an after-thought.”

“That would be silly!” Jo stated flatly.

Jeff beat the others in asking why.

“Because Sally means 'Princess'. It is a variant of 'Sarah' which means 'Princess' in English, French, German, and Hebrew. So 'Princess Sally' would mean 'Princess Princess' - which would be rather dumb!

I'm sure you knew that already that, Princess.”

“I must have forgotten for a little minute,” the Princess replied.

She paused then continued, “Have you guys got any spare food? We're down to salami and not a lot else.”

“We've got plenty. How about we make some lunch now and we can continue this later if you want.”

“Good idea, let's eat.”

Sally followed Jeff to the rover and found the camping fridge well stocked. She brought back as much food as she could comfortably carry and Jeff carried some as well. He also carried a folding table.

Soon everyone was helping themselves to the goodies on the table but Sally seemed to be the only one with a really big appetite today. After they had all finished eating, Sally and Jeff made themselves coffee and the other two packed the remains away.

When they returned and everyone was seated again, Sally resumed her questioning. "So what's with the all secrecy? Its like the 'secret seven' for grown-ups."

Jeff again assumed the role of spokesperson, "That was for girls, I was reading 'Biggles' instead.

We are still debating whether it was a good idea or not. We didn't really plan it that way from the start. A bunch of us got together and were kicking around a few ideas about what would happen and what we should do about it. It was all out in the open.

Then a some planes flew into some towers and the world went crazy. We still don't know what really happened that day but we knew within days that the official stories didn't make sense. Bullshit was coming thick and fast and some people even believed it. Almost overnight the US government declared war on us. If we didn't support their illegal wars, and their harassment of people everywhere then we were their enemy. Somehow pacifist now meant terrorist. Anyone who didn't tow the government line was in danger.

Governments sought powers to legally conduct secret arrests, detention, donkey trials and in some case executions. They could even have secret laws.

Our government simply did whatever the US told them and the citizens views were ignored and treated with contempt as they usually are. Right or wrong we went underground."

"Isn't that sort of cowardly?"

"Quite the opposite, it took a lot of courage. A secret group can be snuffed out and no-one will ever know.

A bunch of people die or disappear, if no one else knows we are a group no one will even suspect what really happened.

There is no 'How the run a secret society' manual that we know of so we had to work it out for ourselves and maybe we got it all wrong.

We needed to minimize our risks and we came up with a few simple strategies.

Firstly we would not provoke the authorities or otherwise attract attention to ourselves. So although most of us despise some of our politicians with a passion, we keep a low profile about it. We will protest with the crowd but we won't stick our heads up too high. Anyone coming under close scrutiny for any reason could jeopardize the rest of the group.

There is also the current paranoia about terrorism so we have to be careful not to trip those alarms either. We don't research explosives even though they could be handy for other uses. Jo has also stopped photographing bridges.

With modern data mining it isn't hard for anyone in the know to work out that we are a group of some sort. Our telephones are all automatically monitored and these mobiles can be tracked to within a few meters.

The authorities possibly knew that you, Jo and John all knew each other even when you didn't! We're not even sure of all the tricks they use to work out social networks but chances are that at some point they would figure out we belonged together in some way - so we needed a believable cover.”  
“What did you do, register as a swingers club or something?”

“Interesting idea but no, we registered a co-operative.”

“Do you mean the farm?”

“No, a different one. Our stated purpose is to be a non-profit food co-operative.”

“Isn't it a lot of work pretending to be an operating co-op?”

“It is a lot of work but we aren't pretending. We really do run a food co-op or to be more accurate - Jo does.

As I said before, phones are monitored to some extent so we never discuss any group business by phone and certainly not email.

Jo is our grape vine. She makes her deliveries and sees everyone on a regular basis. As she does the rounds she also delivers group related news, strictly by word of mouth of course.

The co-op gives us an excuse to meet. We think it is working.

If the trend reverses and the world becomes sane again we might go public but we really don't want any publicity.”

“Why not.”

“The best we could hope for is bad press. The media would most likely paint us as bunch nut jobs and misconstrue what we really are. What would be worse is if they took us seriously.”

“Why?”

“Because then people might want to join us and we really don't want to start a movement. There are already enough environmental groups, backyard inventors and political activist groups. People interested in that aspect should join one of those. We have enough people already to pursue our core activity of preserving the 'know how' that makes our world work.

If we do build a shelter of some sort the last thing we need is to have it printed on a tourist map. Imagine what would happen if there really is a collapse and thousands of people turn up on our door step.”

“So you want to keep it a secret so you can all sneak away and disappear?”

“It isn't that simple. Most of us have friends and relatives we wouldn't want to just abandon. We could take in a few extras but a some point we'd have to close the door. It will be hard.

We're not sure how many of us would actually decide to hide out, we will have to wait and see.”

“Aren't you being elitist trying to exclude the general public?”

“Maybe we are, I think we should be allowed to keep it a private party.

When you meet the rest you might change your mind about us being elite.”

“Well if I'm allowed to join you can't be too fussy.”

“We have standards and you have passed.

Is there anything else? You and Jo could probably do with some rest, John and I can look after getting some wood and starting the BBQ. If John can still walk that is.”

John responded by getting up and demonstrating that he could walk and went over to his land rover and waiting for Jeff. Jeff hopped behind the wheel and they drove off to collect wood.

“Jo, are you up to tying some knots for me.”

“Where?”

“Hammock, down there, the water is going down,” she said pointing to some trees which had just escaped being flooded. They were quite a bit upstream from where the rock had slide and the ground here was much more level. A

walking track passed between the trees and the creek. It had been flooded and was just becoming exposed again.

“Wouldn't you rather be a bit further away from the creek?”

“Not really, just make sure you tie it really well.”

Jo did as she was asked without talking and Sally took a chair down to use as a bedside table. She washed her feet at the toilet block and made the last trip carrying a pillow and wearing shoes to keep her feet clean. Taking them off one at a time she put them in a plastic bag and onto the chair. Jo was nowhere to be seen.

Lying on her right side proved to be the most comfortable because it didn't apply pressure to the bruises.

She figured now would be a good time to practice her 'not thinking'. She relaxed and tried to let her mind go blank. Images from the morning intruded - the view riding the rock, Jo jumping the fence, the bloody palm and Jeff's face. No matter how hard she tried to still the mind, eventually she would find herself thinking about Jeff.

She concluded it this meditation thing wasn't working and let herself think about Jeff some more. He had left quite an impression, he was obviously very intelligent and she seemed to find that attractive. Jo had said that he was her teacher, she hoped he would teach her as well. She wondered if he fancied her too and drifted into a pleasant snooze.

The smell of smoke and cooking was in the air when she awoke. Putting her muddy shoes back on was a chore but she managed it. Jeff was cooking and the others looked on. It looked like the dregs of the supplies they had carried were being cooked along with some lemon pepper kangaroo steaks and some green prawns. Someone had already prepared the salad and the smell of frying onion was making Sally's mouth water.

The group all agreed the meal was excellent. Jeff had helped finish the wine and the atmosphere was pleasant apart from the tension between Sally and John. They kept the fire going despite Jo's hint that they were wasting wood. Mostly Jeff did the talking. Sally managed to boil some water over the coals to make herself some hot chocolate using supplies from the truck.

After dark they took it in turns to tell a jokes or funny stories, after a couple of rounds of this it was Jeff's turn. “You know there are bunyips in these parts don't you?”

“Yeap sure,” someone replied.

“You can tell by the tyres lying beside the road.”

“What do tyres have to do with bunyips?”

“You see bunyips like to eat cars, they eat them people and all, but they don't like rubber much. So they eat the cars and leave the tyres.

When they are really hungry they will start eating the tyres as well but they rarely finish them. This is why sometimes you see only pieces of tyre left.”

There was a collective groan then Jo took over.

“When I was a scout, there was this skinny girl in our group, she might have been thirteen or so. She had buck teeth and bug eyes and no-one would have accused her of being pretty. Her nickname was Roger, as in Jolly Roger – the skull and bones. We were cruel, we'd tease her a lot but she took it in her stride.

On her first camp, the older kids, mainly the boys thought it would be fun to frighten her a little bit. They were sitting around the camp-fire as we are now and they began to tell ghost stories. When they thought they had her good and nervous they topped it off with a long story about a bunyip, not eating cars though, just eating cows and people. Satisfied that she was good and scared they announced it was time for bed.

When Roger was in her tent the rest of us snuck out again. Two of the boys improvised a bunyip costume from some old hessian potato bags they found. They topped it off with a cows skull and stuck some glowing twigs from the fire into eye sockets to make glowing eyes.

As they approached Roger's tent we called out to her, “Roger! There's a bunyip coming the eat you!”

Roger poked her head out and her eyes bulged even more than usual. She disappeared back inside the tent and we started to giggle. We didn't giggle for long because just as the bunyip reached the tent, Roger burst out of it wielding her new hunting knife. Roger swore loud enough to wake the dead. It was lucky her knife was blunt and the bags thick or Peter would have had more than a bruise on his bum.

Roger chased the wounded bunyip into dark forest. She stopped chasing it when it mysteriously spilt into two parts which ran away in opposite directions.

From that moment on no one in the group ever told bunyip stories again but the story of the brave Roger was told at every opportunity. We never, ever, teased her again.”

There was long pause then Jeff spoke. “Good story Jo, I know when I'm out classed. It might be time for us to go home. It will be a bit of a squeeze but we'll manage.”

“No!” said Sally bluntly.

“Why not?”

“Firstly I don't want to. Secondly I'm the only one not pissed and I can't drive John's truck.”

“You have a point there.”

“I'm sleeping in the hammock I'm sure you three can figure something out. I could do with a decent torch, some pain killers and some rags to keep the mud under control.”

“You can use this torch and pills and rags are in the truck. Should I get them for you?”

“Thanks but I think I can find it myself.”

She got what she needed and left the others watching the embers and put herself to bed. After a time the sound of voices faded as the others all found places to sleep. The moon was up but it was still quite dark under the trees.

She thought about Jo's bunyip story and monsters in the dark. She could easily have died this morning and the world had been turned upside down by the day's events. She had more serious things to worry about than shapes in the shadows.

Then she heard a noise, faint, a shuffling sound. It seemed to be getting closer. She wondered if her 'friends', if that is what they were, could be playing a joke on her. It seemed unlikely, they'd be too worried about having her blow the whistle on them to try something like that. They wouldn't hurt her either, they might be a bit strange but she was pretty sure they weren't evil.

Then there was the sound of breathing, the sound of something fairly large moving through the undergrowth. It was upwind from her and a foul smell hit her nostrils, a sour rancid smell. If the devil was coming to get her it could well smell like this.

She lay still and aimed her torch in the direction of the noise and turned it on. Eyes, a snout, black bristles and then trotters, the bore skidded to a stop

and tried to turn and run. It fell and squealed, got up and ran on the spot trying to get enough traction in the mud to escape. It sent clods of mud in Sally's direction and a couple bounced off the hammock.

The bore disappeared in the direction it had come from and the sound of it barging through the vegetation became fainter until it was gone, leaving the stench of wild bore hanging in the air for a minute or two.

Sally knew that pig would not be back again and gradually her heart rate returned to normal and she started to drift off. She was still holding her torch at the ready.

“Well,” she thought as she began to fade, “to a pig in the dark, I'm a really scary monster in the shadows.”



## Day Seven.



Sunday, 28<sup>th</sup> nov 2004.

The first thing Sally did after rising was to walk to the amenities block. All the signs about the place caught her attention. Yellow and brown signs, they warned, advised and threatened. They told her that there could be venomous 'Bullrout' in the waters below the falls. They told her that diving into the creek was forbidden - she didn't think her dive was what the sign writer had in mind. You couldn't do this, shouldn't do that but should do some other things. She wondered what ever happened to common sense and realised she hadn't possessed much of it herself on the previous morning.

The others were still walking on eggshells and offered to make breakfast. She accepted and therefore she had a little time to herself. From the picnic bench she watched the others a short distance away. She tried stilling her mind once more. It almost seemed to work until something grabbed her attention again. The 'something' was the way Jo moved when she was near Jeff. Sally couldn't quite put her finger on it but there was something flirtatious about it. An uneasy feeling crept over her and she recognised it as jealousy. After telling herself to behave, she gave up on meditating again and went and joined the others.

As breakfast was being served she asked Jo if she could see the map. Jo brought it to the table and Sally studied it as she ate. The others made polite small talk which she ignored. When she started measuring distances using her thumb as a crude ruler the onlookers curiosity showed.

“I didn't even know you could read a map,” John commented.

“Jo taught me.”

“Going anywhere in particular?” Jeff asked.

“Home.”

“We know the way home.”

“But I didn't or how far it is.”

“About half an hour's drive.”

“I'm not driving, I'm walking. I make it to be about twenty five kilometres.”

“You can't walk that!” said John.

“I don't see why not.”

“Because you're hurt!”

“My ribs are hurt, I don't walk on my ribs. I walk on my feet and they are fine.”

“But the pack will hurt your ribs,” added Jo.

“I don't need a pack, just a bit of food for lunch and some water. With this rain there will be water along the way.”

“But that's two days walk, we've lost a day and we all have to be back tomorrow.”

“Without a pack I'm sure I can walk twice as far in a day.”

“Why do you want to do this?”

“You made me promise to try to finish the walk, I don't see any reason to break that promise. I don't like leaving things unfinished.

Are you coming with me?”

Jo, didn't answer.

“I can go with you,” offered John.

“Sorry, but I don't think you can make the distance.”

“I can,” said Jeff.

Sally's tummy momentarily filled with butterflies.

“I'll go,” came Jo's belated reply.

The feeling of butterflies departed and were replaced by a mixture of relief and disappointment.

“What can we do to help?” enquired Jeff.

“If you don't mind you could finish packing up after we've left and maybe help us make some lunch,” Sally responded.

“And charge my phone for me,” requested Jo.

“You can use my battery, its already charged,” Jeff offered.

“Whatever.”

The team busied itself getting the women ready and they were almost done when a land-cruiser pulled up.

“Good morning folks,” was Wayne's greeting, “I see the big rock is gone, do you know when it fell?”

“Yesterday about this time,” Sally informed him.

“Did you see hear it go? Did you see it?”

“I was standing on it at the time.”

“Are you kidding?”

“No, I have the bruises to prove it, look see. I rode it all the way into the water. My friends here rescued me from the island.

I've been know to surf stoned before but I've never surfed a stone before.”

Wayne ignored Sally's little joke and turned pale, he seemed very concerned. Jo noticed this and tried to reassure him everything was ok.

“She's not seriously hurt, I don't think she going to sue anyone.”

Wayne didn't look at all comforted.

Sally took a stab in the dark.

“That isn't what he is worried about.”

All four of them were watching her.

“He's worried because there are thousands of big rocks in these parks and if this story get out, it will be his job to put warning signs on every single one of them.”

“I didn't know I was so transparent.”

“I tell you what. We were about to go, maybe you should forget we were here and tell no-one what happened.”

“But I should make a report in case you really do sue us. Maybe you are more hurt than you know.”

“Sue, not likely.”

“Why not?”

“Because if I lost the case the legal fees would bankrupt me, it happens everyday.”

“Well, I think I need to go clean the toilets and do some other chores. I'll come back in an hour or so and fill out a report. If I can't find you then I guess I won't be able too.”

“I'd guess not. You do have a weather forecast for today?”

“Nothing much expected, mostly cloudy, maybe a sprinkle or two but nothing serious.”

“Thanks Wayne. We need to finish packing.”

Wayne left to do his chores and the others busied themselves so the women could depart as soon as possible. The hurriedly made sandwiches which Jo put in a small day pack and Sally filled her pockets with fruit and other snacks. Jeff produced a couple of army style water canteens which Sally could hang off her belt and a small shoulder bag she could carry without hurting herself. When she realised what she must look like she hoped they'd arrived after dark so she wouldn't be seen by too many people.

Without much ado they hit the road heading west and walking briskly. "Jo, if I read the map properly all we have to do is follow this road and it pretty much takes us back into town the same way we left it. This is the same road that took us to the railway line on the first day?" "That's correct, it looks like you don't need me to guide you any more."

The road was descending slightly. With the cooler, cloudy weather and no heavy loads to carry, they could maintain a much faster pace than on any other day. Sally felt like running but she knew they had to pace themselves. Jo seemed to be lagging behind a little.

The dirt road skirted around a series of foothills, so for the first leg of the walk there were wooded hills on the right side and mostly grasslands on the left.

After a couple of hours they came to the beginning of a range on the other side of the road. Sally knew this was "snake range". She knew the the farm was on the other side and also that at the other end of it, was railway tunnel they camped at on the first night. They had walked almost a quarter of the distance back to town and Jo wanted to stop for a rest. They continued till they found a nice grassy spot under a tree and sat down.

"Jo, how long have you known John?"

"About fifteen years."

"That's a lot longer than I have. So, were you ever, um, close?"

"If you're asking if we were lovers, then - no. If you're asking if we were close then - yes. I thought we might have become, well, closer, but it never happened. He got a better offer from a younger woman - some blond. We were close and still are. If I didn't care about his happiness I wouldn't have agreed to come out here."

Jo absent mindedly pulled the a grass stalk out from a clump and chewed the end. She then glanced at her phone to see if they still had reception.

Sally watched her. "It is lucky you have the same phones so you can swap

batteries and the like,” she commented.

“It isn't luck, we planned it that way. Just like it isn't luck most of us live in the same neighbourhood.”

“Oh, I didn't realise that.

Why did you bother with the phone when you have your Morse gadget thingy.”

“I didn't bring it, it wouldn't be much use here.”

“Why not, it worked before?”

“It worked because the packs were nearby. The pendant only has a short range, it was one of the radios built into the frames of our packs that did the long distance stuff. That is why I always made sure a least one of the packs was in a good position for radio reception. The rat line was just a good excuse to hang them high somewhere.”

“Jeff made all that?”

“He designed and programmed it, I helped put some of it together.”

“You're an electronics whiz too?”

“No, I just follow instructions, I don't understand it. Jeff's system seems quaint but is advanced. It is advanced in being a digital network using modern signal processing to achieve long range. It is quaint in being slow and able to use Morse code as a user interface. It allows slow simple communications over considerable distance without the use other networks. In other words it will still work when the phone and satellite networks are dead. We can't send voice or pictures but we can send a message like 'get me off this rock'.”

“Is it legal.”

“I believe so, it uses frequencies that don't need licenses. It transmits at low power levels.”

“But don't you need high power for long range?”

“There are tricks you can do with signal processing to extend the range. It works because we send the data slowly. I'm not real clear on the maths, you'd have to ask Jeff.”

“Well it was lucky you had this stuff with you.”

“There's the 'luck' thing again. It wasn't luck, it was planning. I needed my backup team in case we met an axe-murderer on the way.”

“But you said.... Oh, never mind. Do you think Jeff would teach me how it works?”

“I think Jeff would like any excuse to see you again. I think he prefers young blonds too.”

“Is it that obvious?”

“Yes Sally, it is.”

“You seem to fancy him yourself, I'd be on your turf.”

“He's not mine to possess or give away. He doesn't seem to have figured out I'm a woman yet despite all the evidence I've presented over the years. I think I'd have more chance with him if I was a machine. You might have better luck.”

“So, I'm still welcomed to join the group even if I leave John?”

“We can't tell you who to sleep with. What we expect is that you keep our secrets. That make relationships with outsiders difficult – as you already know.

You also understand we can't give away our secrets by writing a book about our trip.”

“What if we use a nom de plume, we can pretend it was written by some geek somewhere and it is totally fictional. It could all be some guy's fantasy.”

“You *are* at least one guy's fantasy, no-one seems to fantasize about me any more! Maybe I look too much like Hugo.”

“Look, I'm sorry about that joke, I thought it was funny at the time, maybe it was the lack of sleep.”

“It was sort of funny, I'm just worried it might be true.”

“Of course it isn't true. You're doing quite well for your age.”

“Would you like to removed your foot from your mouth now?”

“Sorry, I didn't mean it like that. Let's talk about something else. You don't think we should write the book do you?”

“I think it would be a good idea for *you* to write one, you just can't publish it. Publishing it wouldn't do any good anyway. Everything I've taught you is already in the public domain. Those who are interested can already find it, those who aren't will just call you names. I say write it as an internal record for the group, if things change you can always release it later. It can be part of our archive and maybe someone in the future will gain something from it.”

“I guess I can do that, a secret book seems a little silly somehow.”

“So, you've decided to join us?”

“No. I haven't decided anything. I need to let it all sink in. I'm still pretty pissed off with what you lot did but I'll probably get over it in a few days.”

Sally was keen to get moving but Jo looked like she could do with a little more rest.

“Jo, what so you actually do for a living?”

“Like Jeff said, I run the co-op.”

“And the group pays you for that?”

“Not quite, they are more like customers.

A few years ago I was looking for work. This was also when the group decided that having a secure food supply was one of the most critical issues if we were to survive a crisis. We were uncomfortable with how removed we were from the food production and distribution process.

Jeff had his usual nack for joining the dots and suggested I give some thought to the feasibility of suppling food to the group. He suggested to the others that it could be worth paying extra now in order to develop closer links with the food growers and bypassing the supply chain we were using.

What we didn't realize then was that they didn't need to subsidize me at all. It turned at that I could buy direct from local farmers and in some cases markets, I could sell to the members at supermarket prices and still make enough money to live off. I don't make a fortune but I feel like I'm making a worthwhile contribution to a worthwhile cause.

Generally I think we are eating better than we were before. The farmers like to chat so I've learned a lot in the process. They give me advance warning when things are going to run short and I can often get some bargains on 'seconds', that is stuff which is fine to eat or preserve but has some cosmetic damage. As time goes on I'm growing more of the food myself. I'm also learning to preserve food by various methods such as fermentation, this includes making cheese. I also grind flour. There just isn't enough time to cook and bake bread for everyone though. Maybe with some help I could fully cater for everyone some day.”

“What are they going to do while you are out here?”

“Some of the others have learned to fill in for me. I need a break sometimes and it is good for them to know what to do in case I'm not around.”

They set off again. The range got higher on their left and the hills on the right were replaced by more grazing lands. Sally slowed down a little for Jo's sake and after an hour they passed the highest part of the range and Sally knew the railway line couldn't be too far away.

After another half an hour she thought she could recognize the hill where they slept on the first night. She could also see blackened ground and trees ahead on the right and she knew this must be the other side of the fire damaged area where they got caught in hail. She remembered the green tinge in the clouds just before the ice fell. She now saw a green tinge on the black ground.

When they reached the burnt area Sally could see that the green tinge she saw wasn't imaginary.

“Well! Will you look at that!” she said excitedly to Jo.

“What in particular should I be looking at?”

“The grass, it's growing!”

“Yes, grass does that, haven't you noticed before?”

“I didn't know it comes back so fast after a fire!

Let's go out into the field for a better look around.”

“We'd end up black.”

“I don't care.

OK, I'll go by myself and you can rest for a while.”

“If you like.”

The fence was broken and she wandered out in the field. She noticed that every new blade of grass looked perfect. No insects or other animals had returned to eat it yet.

A hundred metres away she noticed a pile of rubble that didn't look natural and she went to have a closer look.

As she approached, it became apparent the rubble was the remains of a building of some sort. Whatever it was in was small, probably no more than two or three rooms. The concrete looked like it was either poorly made, was very old or both. On the far side there were the remains of a stone fireplace.

There was a small mound a few meters to her right and something glittering there caught her eye. She investigated. The mound appeared to be a old rubbish heap which was mostly overgrown with grass. The glitter was from the broken remains of bottles which had been exposed by the rain.

She knelt down and used one of the larger pieces of glass to excavate the top few centimetres of the pile. The rubbish looked quite old and seemed to be cemented together with ash. A few items could still be identified. There was a bone handle that might have once been part of a butter knife, some bottles,

small pieces of crayon, the remains of what appeared to be a rag doll and a charred piece of wood. Further digging showed the wooden object was a toy gun, it was mostly rotten but she had the impression it was home made.

The dig had lost it's appeal so she got up and went and sat on some of the rubble and watched the grass grow some more. All was still apart from the buzz of flies and a crow calling in the distance.

She wondered who had settled here and what it was like. On closing her eyes, the pastured disappeared and she was in a tall eucalyptus forest.

The railway line was gone but the dirt road was still there winding amongst the trees. A young Welsh couple with a horse and cart came along the road and stopped a short distance away. They were both excited to have reached the place they would come to call their home.

The shack they made was very modest. Cement was still a novel material in these parts and it was used sparingly to make foundations. The frame was made using bush poles and it was covered with corrugated iron. Windows were unglazed and propped open to let in the light and air. It was very humble start but there was no time or money for anything more elaborate. Before they could build a proper house they had to establish their farm.

They had ten years to completely clear one quarter of their forty acre property or it would be taken back by the crown. This was no easy task. The modern chainsaw hadn't been invented yet.

There was no mains power – even in the cities. There were some telegraph services but no telephones. Radio was still experimental. Synthetic plastics would not come into use for decades.

The commonwealth had formed. The auto mobile had been invented along with the aeroplane but they would not be seen here for quite some time. No one even imagined - nuclear power, nuclear bombs, satellites, home computers, mobile phones and so forth. The gramophone was the state of the art in home entertainment for those who could afford one.

Occasionally he worked with a gang building the railway line in order to make ends meet. Mostly he cleared the land. His wife helped when she could. They sawed, chopped, ring-barked, poisoned and burned. This was what settlers were expected to do. In this era there was no thought given to - erosion, soil salination, toxic run off, species extinction, the introduction of feral animals and plants and so on. Wilderness had to be destroyed as

quickly as possible to advance civilization.

She helped little with the land improvement because she already had plenty of work to do in supporting her husband. There were none of the modern conveniences like washing machines to help with the house work. There was no running water to water the garden. Wood had to be chopped for heating, cooking and making hot water. The fences had to be maintained and animals cared for. For the first year there was never enough to eat and they relied heavily on bush meats which he would hunt and she would butcher. They also relied on her gardening skills to grow vegetables.

One of her few selfish acts was to spend a little time growing flowers. Native gardens were foreign to her so everything she grew was exotic. Flowers from her homeland did not fare well in the heat and dry, it was the south American plants which grew best. She grew flowers such as the rain lily. Another plant she grew, one with pretty flowers, was called lantana.

Her life became even harder when their baby daughter arrived shortly followed by their son.

As the ten year deadline approached they fretted about the possibility of losing everything because the land improvement might not satisfy the crown inspector. An unexpected solution appeared. World war one began and they were granted an extension so he could enlist.

The war years brought a slight improvement to the family members that remained at home. There was a regular income and less work to do. Other families complained of rations and shortages but this family was a little better off. That changed when the soldier returned home seriously wounded.

He was lucky to have even survived the long trip home. It took almost a year before he was well enough to return to the job of slowly clearing the land again. He never fully recovered from his injuries. He also had horrid nightmares for the rest of his days.

It took another decade before the land was fully theirs and they began building a real house at the other end of the property. When this was completed the little shack was suddenly abandoned.



Sally opened her eyes, “What an interesting day-dream,” she thought, “I didn't know I remembered my history lessons that well.”

The sun came out and she got up with the intention of walking around the other side of the rubble and then returning to where Jo was. When she got to the other side, what she saw stopped her in her tracks.

All the chatter in her mind stopped as she stared at what she saw.

On the eastern side, partly sheltered by the remains of the fire place were dozens of white rain lilies swaying together in the breeze.

She knew these were the survivors from a garden long abandoned. She knew that they were planted by a Welsh woman almost a century ago.

These white settlers, in their black surroundings, had not multiplied and destroyed the land around them.

To her they looked like people for some reason. Most were in small groups, like little families. They stood together and watched over the field.

They had watched the forest fall.

They watched the railway built for steam trains, then diesel, then abandoned. They watched the road grow from a dirt track for bullocks trains into a road for logging trucks and then milk tankers.

They watched a family through some happy time and many sad ones. Then they watched them leave and the walls beside them crumble.

Given a little rain and allowed to live in their tiny corner of the world, they would also watch and see what becomes of human kind.

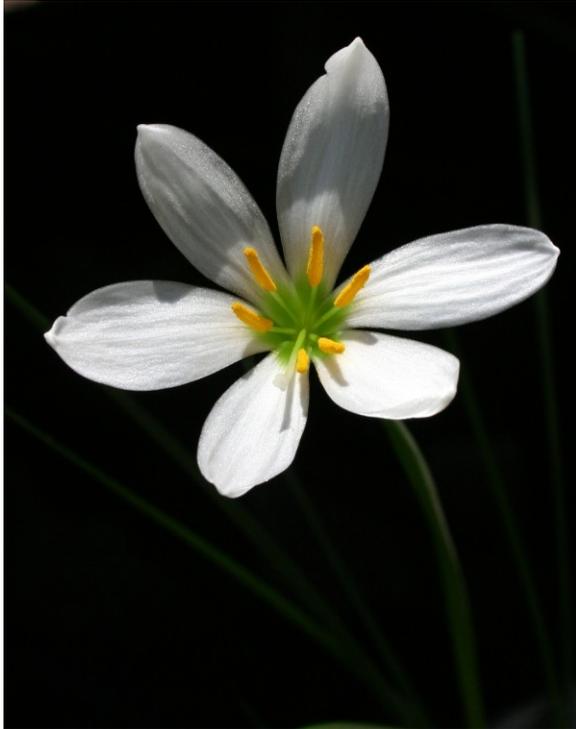
Today, they watched with joy as life emerged again from the ashes.

These were also “Watchers” and Sally knew in her heart that she would be one too.

Then she remembered a line she'd learned in Sunday school.

It was - “Be as the lilies of the field.”

This time though, the words held an entirely new meaning for her.



*Zephyranthes candida.* or Rain Lily.

The end of book one.