ARTICLES FROM THE LAUNCESTON NATURALIST

VOLUME XL No 5 June/July 2007

Sir Henry Somerset Lecture: Speaker Patricia Vickers-Rich, Palaeontologist - 18 May

Three members from the LFNC travelled to Burnie to attend this lecture. Margaret Kinsey gave a short talk on Sir Henry and then introduced Patricia Vickers-Rich.

"SALINE GIANTS", COLD CRADLES AND THE PLAYGROUND OF EARTH was the title of this very interesting lecture by Pat, a palaeontologist from Monash University. Pat was involved in a UN project on the origin of animals and has written a book on the subject.

Pat started by describing an 'animal' as multicellular, mobile, does not produce food, diploid and triploblastic. The animals she described did not look much like animals as we know them today but Pat believed that they met her definition.

It was once thought that animal life began with a bang in the Cambrian explosion about 540 million years ago. Since 1946, fossils predating the Cambrian have been found in Australia, Namibia, England, Russia and Newfoundland. The Pre-Cambrian era is now officially the Ediacaran era, after the Ediacara Hills in South Australia, where the first of these fossils were scientifically described.

Ediacaran life forms became widespread quite quickly about 600 million years ago. This coincided with a period when glacial melting had made the oceans high in oxygen and low in salt. Pat's theory is that they had developed in local low-salt, high-oxygen sites such as river mouths and the change due to the glacial melting let them spread across the oceans.

Although Pat has visited and studied Ediacaran fossils sites around the world, she concentrated her talk on a place in sub Arctic Russia. This site was on the White Sea (off the Barents Sea) a good hike from a small fishing village (maybe Suzma) and the closest town was Arkhangel'sk.

She interwove a tale of the journey, the people and the place with the ever changing story of this new class of early animals she is now studying. The last part of the journey included lax airport security and flights in ex Russian military helicopters held together with parts from broken down aircraft and finished with a boat, horse cart and hike carrying all gear and supplies to the remote site.

The talk on the animals started with pictures of the fossils from this rich site and possible explanations of what they may have looked like. In some cases they were compared to analogs, present day animals that look like these creatures

but are not known to be related. Many of the fossils were preserved by mud slides that also left the impressions of the creatures movements through the slime on which they were feeding adding greatly to our knowledge of their nature.

Pat's most graphic projections showed drawings of the fossils with a colour picture of how the creatures may have looked in their natural setting.

We stayed for the light supper which followed the interesting and very informative lecture and arrived home just after midnight. NM

General Meeting 5 June: Members Night

Helen Jones showed slides taken on a trip to the West Coast. Scenes of Arthur River from its entry to the sea, the heavily wooded riverbanks as the cruise made its way inland, sea eagles on a branch, an adult bird and two juveniles, the latter showing immature brown feathers among the white. The landing place, the dryness of the area and the lack of water in forest places where it is always wet and because of the dryness only one species of fungi, a tiny red mycena, was photographed. There were no leeches though!

Pieman River was next seen from on board the newly restored 'Arcadia'. The reflections on the river were superb. Many species of different coloured fungi were beautifully photographed in this area.

Alison Green entertained us next with her short talk that she referred to as a serial about an insect found on Queens Domain in Hobart in 1995. It was called a 'leaf running cricket' and it must be important as a walking track had been closed to protect it. The insect is about 5 mm long and is rare in Tasmania and is referred to in one publication as a 'small grass cricket'. We will hear more about this one later.

Bob Mitchelson took us on visits to Mt Field National Park, walking around Lake Dobson with lovely shots of a number of tall pandani trees (*Richea pandanifolia*), snowberries (*Gaultheria hispida*), mountain berries (*Leptecophylla juniperina*) and native currant (*Coprosma quadrifida*). This was followed by photographs taken at Russell Falls on different occasions, shots of the falls from different angles and some of mostly bracket fungi in a variety of colours.

Liffey Falls was also visited, again with little water flowing in the river. Some lovely shots showed the falls, both top and bottom, with more of rainforest, tree ferns, bracket fungus and lichens and finally a photograph of Joanne on top of Quarmby Bluff playing her pan flute.

We welcomed home Jeff Campbell from Queensland and enjoyed his images taken in several national parks he has visited with Glenys. Close-up shots included a blue-headed honeyeater, a pied butcher bird, a very large hairy huntsman 'spider' and some flowering shrubs that had taken his eye. There were

several views of Carnarvon Gorge where half the park is closed to visitors because of flood damage and some shots of aboriginal art sites, some ferns and unusual rock formations in very steep cliffs. A colourful butterfly at another national park with a dry waterfall and only one photograph of an orchid, a greenhood (*Pterostylis daintreana*) was included, as well as two King Parrots (male and female), a brown cricket and a skink.

A really interesting evening with lovely images. All presentations were applauded by members and at the end our chairperson Elizabeth Montgomery thanked all concerned. MJS

Excursion 9 June: Meander Dam

The original concept of club members visiting the Meander Dam was raised several months ago when the first date had to be deferred due to inclement weather. Weather has seldom deterred us before, but it was reported that the mud around the site would have been a real problem. Fortunately for us the Site Supervisor Gary Evans was very understanding and it was no problem securing a new date.

We decided to travel by members cars as the number committed to travel (14) was too small to hire a bus. We departed independently, meeting at Meander at 10 am. After a brief stop we continued on to the dam office site only a few kilometres further on to the west, just past the end of the existing bitumen road where Gary was waiting for us. After the protocol of identifying ourselves he guided us back to the security entrance to the Meander Dam site and we followed him along the site road to within a few metres of the actual dam structure.

There is no doubt that few of us were prepared for the view of the dam structure. It had progressed further than any media reports had prepared us for. Gary described in detail every aspect of the history, the engineering and normal construction problems. Also, the political arguments concerning the economic and conservation viability of the project in the lead up to the decision to commit to it, the advantages to agriculture and conservation and protection of the environment, quantities and local production of aggregate and concrete and the use of Tasmanian subcontractors. The area which will become the upside lake was easy to see across the valley and from above the dam wall near where we stood, and it was apparent that it will be of considerable depth when full. Currently the Meander River flows through a coffer dam control in the dam wall. This will continue until the dam is completed in about November this year. The river will continue to flow through the structure, but the repeat of the seasonal flooding and waste of water will be just a memory of past problems.

The dam wall will be 47 metres high and 170 metres wide between abutments. The up stream side is faced with precast concrete panels and 3060 panels on the downstream spillway side, all manufactured in Launceston. When filled the

eventual lake will have a capacity of 43000 megalitres (ML) and cover an area of 364 ha. This will provide irrigation water of 24000 ML per year. The construction is by the compacted concrete method. The concrete is pumped to the wall, spread by bulldozers and compacted by rollers.

Gary described the processes by which the power generated by the turbine to be located at the foot of the dam wall will be distributed to local consumers and, how the surpluses will be linked into the state power grid producing further income to the system. He also described how the water for downstream needs will be enhanced by the dam control. His estimate of the short time that it will take to fill the dam assuming a reasonable rainfall during the coming months surprised all of us; about 3 to 6 months. No doubt we will be revisiting to see how accurate his predictions are. He described how 5 subsidiary streams flow into the area and that they had all been chemically examined to determine their levels of purity. Another plus for the system is that the lake will be available for tourism and water sports and will be stocked with trout for sport fishermen. There did not seem to be any questions from the members that Gary could not answer in a way that everyone could follow and it was a most successful and educational event. It was apparent that care for the environment and conservation of natural features has been a critical part of the planning of the project and its effect on the region and the community.

After about 2 to 3 hours at the dam site some members departed for home. The remainder of us left to visit the mountain homes of Neil and Jenny Drury and Bob and Elizabeth Montgomery up at Quarmby Bluff. We left our cars at the Meander Park and they both drove us up to their retreats in their 4 wheel drive vehicles. Most impressive was their installations of solar equipment for heating and electricity, and their "innovative" tapping of pristine streams for their water supply. We had a late lunch with them and departed for home arriving back in Launceston at about 5.30 pm. A thoroughly delightful day. AP

Outing 7 July: North Esk River Restoration Project

To follow up on his talk on the North Esk River Ribbon of Blue project Gus Green escorted members to the sites along the Esk River where his work with the North Esk Landcare Group commenced in 1991.

Gus and Mrs Green were joined by 7 club members for the tour along the banks of the river from Hoblers Bridge to near Henry St, a walk of about 3 km. The track is an all weather raised surface, some of which was laid on sawn trunks of willow removed during the reclamation process and covered with gravel. Some of it is a constructed boardwalk.

Gus showed us his photographs of the work program where the river had been almost completely choked by willows, where the crews had commenced work, to demonstrate the intensity and difficulty of the project, exacerbated by flood levels and intense cold in which they had to work during the only periods of the

years when labour was available. There were 20 men with 2 supervisors using 6 chainsaws involved at any one time. A difficult and uncomfortable operation working under such conditions.

We walked from the first activity by the Hoblers Bridge, where the work commenced in 1991 and where the Lions Club members actually tried to find the real river course using old pruning and bow saws. This was the first site of the willow removals from the river banks by hand in December 1991. It was obvious how difficult this must have been from viewing Gus's photographs. As the work progressed using better equipment and finance much wood was chipped and stored in large bins made of milled willow. This was later transported to areas where mulching was needed around the city. A temporary dump was also made of sawn willow logs where members of the public were able to remove it for home heating purposes. It was also in this area where the remnants of the old bridge were visible. The difference between the conditions when the work commenced shown in Gus's photographs and that of now is quite remarkable.

We progressed to an interpretation site where Gus showed us sheltered panels established to show the public where and how the river banks were reclaimed. They are extremely interesting, particularly to those of us who had not been involved. We then progressed along the walking track to about level with Henry St and under the railway bridge. The track is an all weather placed material maintained by the Launceston City Council, and along it has been planted indigenous trees which have made excellent growth during the years since planting during 1993 and 1999. The whole area has become a most attractive park land, which no doubt will be of increasing value and interest to the public and an enhancement to the Launceston City recreation areas.

Gus remarked that this was an excellent time to view this new landscape that only just a few years ago had been just a dream. However there is still much work to do continuing the reclamation of the river and eradication of the damaging willow infestation. Gus and his North Esk Landcare Group are to be congratulated for the past work and future work to be carried out as time and finance become available and to the gangs of unemployed workers who had the time and interest to work on the project. It was such a pity that so few club members were able to join us on a day that commenced with rain threatening, but which did not eventuate. An excursion well worthwhile and so close to home.

AP

DEVIL FACIAL TUMOUR DISEASE - Lecture 2, 25 July THE DISEASE AND THE DEVIL'S IMMUNE RESPONSE

Steve Smith introduced another interesting talk on the Tasmanian Devil Facial Tumour Disease by restating some of the basics. The disease is a rare

communicable cancer that was first noticed at Mt William in 1996 and there is a very real possibility that the devil will become extinct.

The main insurance for the future of the devils is having a disease free population in off shore zoos. Other methods to save them include culling of diseased animals on the Forestier Peninsular to keep the Tasman Peninsular disease free, looking into various treatment options and selective breeding.

There have been great advances in our knowledge of the biology, physiology and genetics of devils since the study into the disease began and one animal lived much longer with the disease than is the norm.

Anne-Maree Pearse is an expert in human cancer cytogenetics and dasyurid biology and her talk centred around genetic errors, that is chromosomes replicating with errors. She went on to explain that cancer is such an error which causes uncontrolled cell growth and then gave details of the specifics of the devil cancer. This became too technical to note all the details so I can only give other generalised information from her talk.

The genetic makeup of DFTD is very similar in all animals although there does appear to be 4 strains. In fact so close that the cancer cells in 10 diseased animals are more closely related than the normal cells of the 10 individual animals. This is why the disease is believed to have started with one animal in the NE and spread from there. One hope for a successful breeding program is that some devils have a mutation in gene 5 which may point to those with either greater immunity or greater susceptibility to the disease.

The battle to save the devils is beset with many problems including introduced predators, our small island with its limited population of devils, wildlife epidemics always being difficult to treat, females devils breeding only once instead of the usual 3 or 4 times and the impossibility of vaccinating all wild animals.

Her talk detailed the spread of the disease including that the west coast and Tasman Peninsular are disease free and considering its proximity to diseased areas the Narawntapu National Park is also disease free.

We are not alone. Another team member, John Hamilton, stated that there are 2 to 3 enquires about the disease every week and most are from large organisations or large media outlets and many are from overseas.

Go to www.tassiedevil.com.au for more information and donation options for the devil project. NJM