

'Geo-Log'

2008



Journal of the Amateur Geological Society of the Hunter Valley

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President's Introduction.

Hi members and friends,

Another very successful year and thanks go to all those members who contributed in various ways. Most of our outings continue to attract good attendances and even after 30 years we still manage a variety of interesting activities.

Unfortunately the year got off to a sad start with the passing of our enthusiastic member and past president Carol Lawler on 20th February after a long battle with cancer. Even right to the end she was deeply involved with the geology group. We all miss her outgoing and cheerful nature.

Our outings again reflected the wide range of interests within the group, from a tour of Maitland Jail with an inmate who left us all agape with his stories of Ivan Milat and other inmates he had shared time with, to a weekend looking for evidence of a Devonian continental collision along the coastline at **Port Macquarie where some of the world's rarest rocks were found.**

The trip to Kangaroo Island led by Barry Collier was hugely successful and venturing off the tourist tracks revealed some astonishing scenery and more than a few interesting rocks. Our search for fossils at Emu Bay near Kingscote left one member in particular at odds with the State Heritage Commission when photographs of suspected Cambrian fossil poo he collected were sent down to the South Australian Museum for verification by yours truly. Fortunately a carefully worded email to the Museum averted a fine and prosecution. This shows just how sensitive fossil sites can be, despite a lack of any indication of heritage status.

Very special thanks go to those who opened their homes for special events, Ron and Ellen Evans for the 30th Anniversary barbecue and slide night, and Vic and Leonie Mills who provided the venue for the Christmas meeting. Special thanks go to the Social Committee for their often unrecognised organisational expertise at these and other events.

Finally, thanks to the trip leaders who contributed to this journal and especially to our Life Member Ron Evans for his sterling efforts in putting together another superb edition that we can all be proud of.

Very best regards,

Brian.

Grossman House and
Maitland Art Gallery
Saturday 19th January 2008

Leader: Halina Turnbull.

Attendance: 33.

Thirty-three people assembled by 10.30 a.m. outside the mirror-image historical houses known as Grossman House and Brough House to begin an anticipated delight - a morning tea followed by a guided tour by members of the National Trust. We were greeted by the manager, Alan Todd, and shown into Brough House for a morning tea prepared in true country-style, with savouries, sweets and fruit. Even those with special dietary requirements were catered for.

Over morning tea, Alan provided us with an historical account of both buildings, starting at 1871 to their present status. The houses were commissioned by two friends who were wealthy Maitland merchants. Isaac Beckett owned Grossman, whose original name was Entcliffe. His business partner, Samuel Owens erected Brough House, as a mirror-image of Beckett's dwelling. By the time Beckett and Owens moved into their homes, they were already elderly, and Maitland, which was close to the heart of local



Alan Todd giving a talk on the history of Grossman House.



Grossman House Church Street Maitland.

navigation at Morpeth, had become Australia's largest inland town and the commercial heart of the region.

Grossman House remained in private ownership for only two decades. In 1893 the Department of Public Instruction acquired the properties to provide a permanent home for Maitland Girls' High School. Fifty pupils were enrolled when the Headmistress, Jeanette Grossman, together with her mother and sister moved into the upstairs rooms of the grand home. The ground floor was turned into classrooms, and first term started in 1894.

Under Miss Grossman's legendary leadership the school became one of the most respected institutions in the community. In 1914, she was transferred to North Sydney Girls' High School. Brough House was acquired in 1919 as a hostel for students living outside the immediate area, and structural changes were made, but overcrowding became a serious problem. In 1963, Maitland Girls' High School moved to new, purpose-built premises in East Maitland. Five of our **numbers were past students at Maitland Girls' High School**, and Ethel was able to share her experiences as a boarding student.

In 1964 The Department of Education granted permissive occupancy of Grossman House and in 1972 of Brough House to the Hunter Regional Trust. Grossman House was developed as a house museum of the Victorian period. Brough House was leased to Maitland City Council between 1974 and 2004 for use as the Municipal Art Gallery.

The Grossman and Brough Houses are examples of mid-Victorian, Regency style townhouses. Grossman House is presented as an accurate reflection of the lives and lifestyles of its inhabitants. With donations of items acquired by the Hunter Regional Trust, it focuses on how rooms would have been used and how they would have looked. Following a grant from the Commonwealth Federation Cultural and Heritage Project Program in 2000, considerable restoration was undertaken inside and out, and the building is now considered to be one of the jewels of the National Trust.

After Alan Todd's historical account, we divided into three groups to tour the building. From all accounts, the three guides provided many insights into how the affluent lived in the late 1800's. Stories were associated with numerous items in each room, and sometimes we enjoyed participating in "What's this, and how was it used?" The tours completed, we dispersed to several venues for lunch before attending the Maitland Regional Art Gallery at 2.00 p.m.

A special viewing and guest presentation of the 51st International Salon of Photography at the Gallery had been opened to the public, and enthusiasts apart from us attended. Afternoon tea with snacks was available from the time of arrival. Jim Thompson, a world renowned photographer of nature, told us, in his Scots brogue, how the thousands of International Salon entries are judged and the final hundred are selected for exhibition in the Gallery. "You could cry when you see the quality of those that were not selected". However, they are always exhibited at the Maitland Show.

The Maitland Salon keeps breaking new ground in the standards for international photography competitions. This year, a class for digital photography was introduced. Results and images of all entries (close to 2,000) are available on the web several hours after judging is completed on the Sunday afternoon of the weekend when teams of three experienced judges spend a couple of hours at a time scoring entries according to predetermined criteria. The Gallery exhibition of



Jim Thompson.

a hundred comprised four categories - nature, open, monochrome, portraits. It is hoped that when the gallery extensions are completed next year, the digital prints will also be on exhibition. Everyone was impressed by the exhibition, although one of our members was heard to say that he had seen better landscapes at the Soup and Slide Night.

Jim then entertained us with a humorous account of his experiences as a nature photographer for more than thirty years. In the process he revealed his enthusiasm and dedication in the long and meticulous preparations of photographic and other equipment such as ladders, camouflage tent, waterproof clothing and waders for use in swamps and creeks as well as in trees during downpours. He has spent a lot of time getting to know the birds to be photographed, not only their habitats. His endurance and persistence in the face of adversity which may have lasted for days at a time, is inspirational. He laughed at occasions when things went wrong, for example, when after days of patient waiting for the perfect shot, he rushed home to develop his photos, and on opening his camera found that it had no film in it! Jim's account of his experiences also revealed that it requires time and skill to obtain an award-winning shot. Jim's talk was certainly appreciated by all who attended, and made viewing of the nature exhibits more meaningful.

Report by Halina Turnbull.

Maitland Gaol and
**Brian England's Mineral
Collection**
Saturday 23rd February 2008

Leaders: Sue Rogers and Brian England.

Attendance: 24 + 5 visitors.

After a short meeting in the John Street car park we followed our tattoo clad ex-inmate tour guide, Big Dave, through the sandstone gates into the longest continuously operating correctional institution in Australia. Dave gave us a quick rundown on the history of the complex. The foundation stone was laid in 1844 and the work was supervised by Mortimer Lewis Jnr. Built using local sandstone, the south-east wing, the gate lodges and the enclosing wall was completed in 1849. The first prisoners entered the confines in 1848. The second stage, built 1861-73 under James Barnet, included the north-west wing, the watch towers, the warders' quarters and the Governor's residence which was the two storey building that contained a chapel and a school room on the first floor and workshops on the ground floor. In 1881 the Mounted Police barracks commenced and in 1883 the Eastern extension commenced. Construction on the eastern extension was completed in 1900. Work included perimeter walls, watch towers, women's cell **range, workshops and female warder's quarters.** The gaol was one of Colony's principle prisons for women. In April 1996 the closure of Maitland Gaol was announced as part of an overhaul of



With our Guide 'Big Dave' McGarry at the entrance to 'B' Wing.



Examining 'B' Wing.

the NSW prison system. The gaol's accommodation and working conditions were no longer considered appropriate in the context of the Government's plans for correctional facilities and on 30th January 1998 the gaol was closed. Maitland City Council now has a 50 year lease on this historic site.

Dave then gave us the details on the various hangings that have taken place. 16 men were executed at Maitland Gaol between 1843 and 1897 - all for rape or murder. Executions were open to the public until 1861. The last man executed was Charles Hines in May 1897 for raping his stepdaughter. Hangings are believed to have taken place at the main gates and the back corner of the gaol. In 1905 the last corporal punishment in the State was carried out at Maitland Gaol.

We then followed Dave to the notorious B Wing with its three landings. Many of us explored the cells wondering how human beings could live in such conditions. How could four men spend so much time in such a confined cell? What would be their state of mind after such imprisonment in these harsh conditions? The guide explained many of the pranks that went on but also interesting tidbits such as the respect that the younger inmates had for the older ones. He also told gross stories on what the wardens would do. We then traversed up and down the stairs of B wing peering into various cells on the way. We then moved out to the exercise yard which contained an outside toilet that offered little privacy. Here we learnt how the inmates would pour Brasso through bread to filter it and then drink the resulting alcohol. Also how cut tennis

balls containing drugs would be thrown over the stone walls.

Our next stop was the shower block which was a vocabulary lesson for the majority of us. Prisons apparently do not house just males and females but everything in between as well. We were told more tales including how razor blades would be embedded in the soap. In 1977, 7 prisoners including Russell Cox escaped through an exhaust vent in the shower block. They were all back inside in two hours after a massive police hunt.

We then walked into C wing which originally held female inmates and their young children. In later years it held serious offenders as well as protection and strict protection inmates. These inmates had to be protected against themselves and other inmates in the gaol, because of the crimes they had committed. Cell 1 is the suicide watch cell. Inmates would be stripped down to their underwear and placed there for 24 hours to make sure that they did not harm themselves. We saw the outside segregation cells that were used as an exercise yard for the inmates of C Wing. Gangs of up to ten inmates would be in these cells, regardless of the time of year or weather.

We then walked through S Wing which was built in 1993 at a cost of \$3.4 million as a high-security cell block designed to house inmates who had committed heinous crimes or crimes against other inmates. S wing inmates had no contact with anyone at all. These inmates had their own exercise yards, which contained a shower. They were allowed in there for only an



Latrines in yard outside 'B' Wing.



One of the Guard Towers Maitland Gaol.

hour per day. This cell block housed a clinic designed to treat inmates who had swallowed razor blades or drugs.

Dave gave us a rundown on the six watch towers that were originally staffed 24 hours a day. This ceased with the introduction of razor wire, electronic fences, sensor systems and video surveillance cameras. Tower duty was the most tedious job within the prison system. It was a five hour shift during which warders were not allowed to read, write or do anything that may distract them from their jobs.

Our final stop was the Visitor's Centre where we could rest our weary legs in the open seated area. Visitors had to show ID, be photographed and fingerprinted before passing through a metal detector. Visitors were physically searched if they were suspected of carrying contraband. Before visits, inmates would put a special suit on over their underwear. It had a zip at the back and ties at the neck, wrist and ankles to stop contraband being hidden.

We then headed back through the main gates and over to Morpeth for lunch.

Report by Sue Rogers.

Dunn's Swamp

Friday 7th to Sunday 16th March 2008

Leader: Barry Collier.

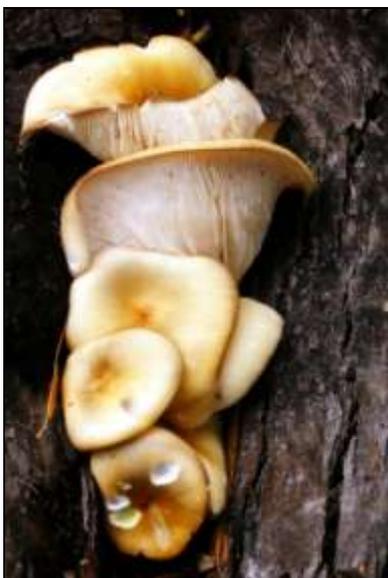
Attendance: 12..

Dunns Swamp is not a swamp, but an artificial lake, set in a landscape of sandstone weathered into pagoda formations. A concrete weir, approximately 30 metres high, was constructed on the Cudgegong River in 1923 by the Kandos Cement Works. After the creation of Wollemi National Park, the cement works offered the Dunns Swamp area to the NPWS on the condition that they could take a certain amount of water annually. In spite of the recent drought conditions, the water has remained within a metre of full capacity.

Narrabeen Sandstone dominates the area. In many areas between Lithgow and Rylstone, this sandstone has weathered to create a spectacular landscape, dominated by pagoda-like domes, perhaps none better than in the vicinity of Dunns Swamp.

Friday 7th March

We traveled via Lithgow, arriving mid afternoon. Ron and Ellen traveled via Mudgee and



Luminous fungi.

we arrived within 5 minutes of each other. The forecast said chance of a thunderstorm and one **went past just as we arrived, so we thought that's OK.**

Later that evening, we were regaled with some spectacular lightning displays so we decided to batten down just in case. At around 11 pm, we were struck by a storm with not a lot of rain or wind, but with some amazing thunder and lightning.

Saturday 8th March

We woke to total cloud cover, ideal for a trip to Mount Corricudgy, but after the storm we thought the roads might be a bit wet, so we decided to head over to Currant Mountain Gap and have a wander among the pagodas on the western side of the gap.

Currant Mountain is a basalt capped peak, a few kilometers south west of Dunns Swamp. The area between Currant Mountain and Dunns Swamp contains probably the most spectacular area of pagoda formations. While the geology is remarkable, this relatively small area contains at least two species of plants even rarer than the Wollemi Pine.

The road to Mt Corricudgy and Dunns Swamp passes through the main ridge off Currant Mountain. It does so by passing through a narrow canyon, known locally as Currant Gap and by the Royal Botanic Gardens as Currant Mountain Gap. At this point another canyon runs off to the north containing a steep, densely vegetated saddle.

After a very pleasant hour and a half we decided to head for the actual gap for morning tea and while there, discovered a clump of luminous toadstools. I was very keen to go up onto the main ridge, to the east of the gap, but I knew Brian wanted to go there so we decided to wait for another until the next day. However, I did a bit of exploring and found a much shorter route to the top.

After morning tea, I decided to explore the western ridge where I had never been. After crossing the saddle we found an easy route up, but the ridge was only about 100 metres long, as opposed to around 1.5 km on the east, so we had a wander, found some threatened plants, and headed back to camp for lunch.

In view of the dull conditions and rather hectic day before, we decided to have a rest afternoon. Jan arrived mid afternoon and after tea we headed back to the gap to look at the luminous toadstools in the dark.

Sunday 9th March

We woke to clear air and a cloudless sky and decided to head for Mount Corricudgy for the day. But first, I headed down to the lake for some photos of the reeds and reflections in the early morning mist. A gate key had to be collected from a local resident, Gay Summers. We came across her photographing a tree which had virtually exploded after a lightning strike on Friday night.

Mount Corricudgy, at 1270 metres, is the highest point on the Great Dividing Range within many kilometers of Dunns Swamp and is an elongated mountain, running several kilometers north-south. It is also the source of the Cudgegong River and Widden Brook. The western side of the mountain has been retained as State Forest.

The road up the mountain was quite good and in a couple of places was being renovated by a bulldozer. Unfortunately the bush was still re-



Spectacular Pagodas Currant Mountain Gap.



Morning tea stop on Mount Corricudgy.

covering from a severe fire 18 months before. As a result of the recovery from that fire, in the denser forest, the ground was covered by a green carpet, mostly of two species of Pennyworts and a native Geranium. Four species of orchid were also found. In the more open forest there were some magnificent displays of Everlasting Daisies.

After wandering around the summit of the mountain and a very pleasant lunch break, we felt that Terry, Laurel and Brian should have arrived at the bunkhouse, owned by Gay, so we headed back down the mountain for a look at the bunkhouse. We were very impressed indeed, so much so that Elaine and I decided we would return in spring for a short trip and stay there.

Meanwhile, back at camp, Stan and Dawn had arrived and set up, so the numbers for the first half of the week were now complete.

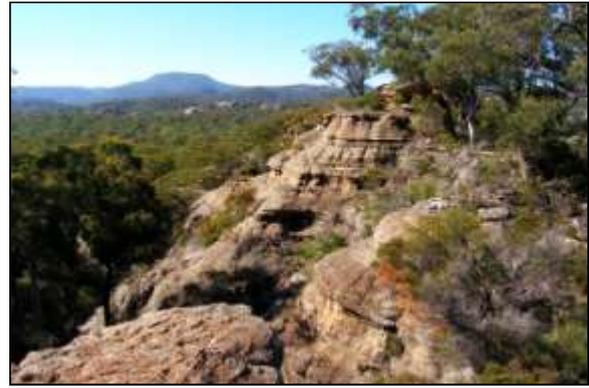
Monday 10th March

Another glorious morning with no wind, no clouds and mist rising from the lake. Elaine and I went for another pre-breakfast walk before we all headed off to the bunkhouse to collect the others and head off down the Army Road, in Corricudgy State Forest.

Our first stop was along the Glen Alice Trail, where we parked at the Wollemi NP boundary and walked down to an amazing cliff overlooking a spectacular canyon. The trail followed the base of the cliff and allowed some great photos of the spectacular cliff and interesting rock formations.



Spectacular cliff seen along the Glenn Alice Trail.



Amazing Pagodas. Mt. Corricudgy in distance.

We then adjourned to the junction of the Army Road for morning tea, before heading off for what we hoped would be a successful ascent of Mount Darcy. As it turned out, the road was quite good, but very steep in places. So much so that Terry required three attempts to get up one section, but we all made it to the summit where the views were a little disappointing. In spite of it being a sandstone mountain, there were no cliffs, so all we could see were burnt trees, with little gaps through which we could see some amazing scenery, but no gaps big enough for photos.

After looking in vain for a supposed clearing, we decided on lunch on a pleasant, rocky ridge before heading back to camp. It was decided that provisions were needed, so some of us headed for Rylstone. On our return, the weather was so fantastic that I walked down to the eastern boat ramp and took some of my best ever photos of Dunns Swamp.

Tuesday 11th March

Once again we woke to the most magnificent morning. I thought it was time to tackle the main ridgeline off Currant Mountain Gap as this **was Ron and Ellen's last full day. So Ron, Ellen, Brian, Terry, Stan and I** headed off to the gap, while Elaine, Jan and Laurel set out to explore the isthmus between the Pagoda Lookout and Platypus Point.

The girls had a marvelous morning, with the water surface like glass until nearly lunch time. On returning to camp they met up with Tony, the proprietor of Wollemi Afloat and were

able to organize some canoes for the next few days.

In the meantime we had a marvelous couple of hours climbing pagodas with crystal clear atmosphere and a cloudless sky. Brian and I ventured right out to the end of the ridge while taking all the side spurs as well. Just short of the end of the ridge was a steep saddle, leading onto the ridgeline that contains the Pagoda Lookout, but **that was a full day's walk and could wait for another day.** The others followed most of the spurs and waited about 200 metres from the end of the ridge while Brian and I continued our exploration.

We had intended to go to what I call the east spur after lunch, but we were all starting to feel the heat and we now had canoes, we decided that they could ferry us across to the former property, Snake Gully, where there was some interesting former habitation.

The reeds along the river appeared impenetrable, but the canoe pilots managed to force their way through. Surprisingly, after picking up a passenger and forcing their way out, you couldn't see where they had been. On the other side they decided to ignore a break in the reeds and land on a rock, but it was very slippery below the surface and Jan went for an unplanned swim. Apparently Ellen was very keen to sample the water and went for a swim while they were originally launching the canoes.

After Jan fell in I decided enough was enough and headed for the break in the reeds

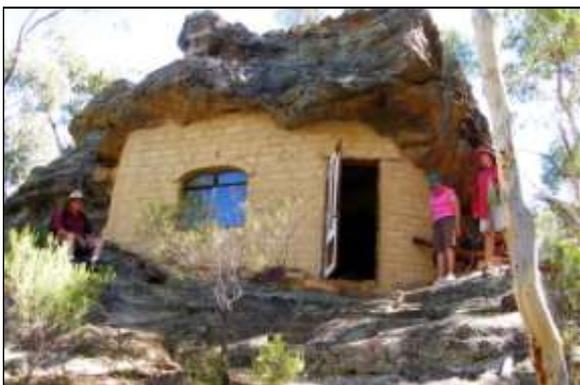
and grassy bank. From then on we had no trouble. Once the canoes were moored we headed for a break in the pagodas and at the top of the gap was a cave which had been bricked in with mud bricks, including a door and two windows. Inside were a bed and a bench.

We then walked along a trail to the remains of a bush dwelling, or maybe the framework of an uncompleted one. A bit further on was a mud brick structure which looked like it was going to be a mini castle, but was never completed. There was even a native orchid growing in the floor of the structure. From there it was back to the canoes and back to camp to relax for the rest of the afternoon, before adjourning to the bunkhouse and a group barbecue.

Wednesday 12th March

Another glorious morning, but we had arranged to meet the bunkhouse group at the east spur at 10am, so there wasn't much time for canoeing. However, the conditions were so good that Elaine and I headed out to the shore immediately opposite the camp where we were able to take a surprisingly large number of beautiful photos.

After breakfast we headed off and arrived at the start of the walk at exactly the same time as the others. The east spur as I call it, about halfway between the bunkhouse and Dunns Swamp, is the easiest pagoda walk I have seen. A fallen tree meant four steep steps to get onto it, but before the tree fell there was just one easy step. Once on it, there is a gradual increase in height,



Improvised house constructed by bricking in an erosion cave under a Pagoda.



Transporting people through the reed beds.

with a couple of steps and a little prickly scrub.

At the end of the walk is a huge overhang on what was once a giant pagoda, but erosion of joint planes has created a group of three pagodas, with a fascinating chimney-like structure on the middle one. Access to the top of the furthest one was easy, but the others provided a real challenge, however, we made it to the top of each.

A walk around the base of the pagodas revealed two caves, one with a huge abandoned wasp colony and the other with some beautiful shades of pink. We then headed back to camp where we hoped Vic and Leonie would be set up.

They were, and after lunch we all headed off to **Gay's property, Inglewood, the property on** which the bunkhouse is erected. Gay has produced maps showing walks and drives around her property for the benefit of guests. At the **homestead we met Gay's husband Terry, a keen** bushwalker, and spent quite a bit of time chatting with them.

They have a beautiful golden retriever, which got a bit excited with all the attention and charged into Leonie, knocking her over and temporarily dislocating her knee. Fortunately it popped straight back and Leonie was able to **continue, albeit gingerly, with the rest of the trip's** activities.

We drove down to the river and followed it to her boundary, with several stops at beautiful pagoda lined waterholes. By that time we felt a bit short of time to tackle some of the other trails,

so we headed back for another chat with Gay and Terry and then returned to camp.

Thursday 13th March

Almost boring! Another absolutely glorious morning greeted us. The others are meeting at our camp at 10am as they want to go canoeing. Elaine and I took off in a canoe before breakfast. To give some idea of the conditions, Elaine took 247 photos before our return for breakfast.

After breakfast, Elaine, Terry, Laurel, Brian, Stan and I took off to explore the vicinity of the Pagoda Lookout. There were a few delays along the way, with cloudless skies, clear air and water like glass, meaning there were quite a few photo stops. We tried just about every spur and accessible pagoda before heading back for lunch.

After lunch a group of us headed for town, planning to explore Lake Windamere and the Clandulla region. We decided to have lunch in Rylstone, but we were a bit late getting away and the service at the bistro was lacking to say the least, but the food was good and Brian gave top marks for the iced coffee.

Once lunch was out of the way there was **n't a lot of time left. First stop was Lake Windamere**, but in spite of the wet summer, it was only 20% capacity, so we decided it was hardly worth pursuing and decided to head back to camp.

On the way home, surprise, surprise, clouds. We had just about forgotten what they looked like, and then one started to leak, but by nightfall the skies had cleared once again.

Friday 14th March

Boring! Clear skies, no wind and mist rising off the water, but at least there were some clouds near the southern horizon which cleared away very quickly. Elaine and I decided to take a canoe upstream from camp, not really expecting much as all the pagodas would be back lit. Thankfully we were pleasantly surprised to find

some really great photos and rated the trip a huge success.

At 10am we met the others at the eastern boundary of this section of the park and Brian, Terry, Laurel and I headed off to explore a group of pagodas which had attracted my attention for quite some time. Access to the summits proved quite a challenge, but the rewards of spectacular views made the efforts really worthwhile. Brian claimed to have gained some of his best ever pagoda photos.

With the continuing hot afternoons, we decided to have a lay afternoon and just potted around the camp. At one stage I headed off to the lake edge for some photos of dragon flies and returned very quickly with some great photos. Ian and Sue turned up unexpectedly and because of the hot conditions received a full welcome.

Saturday 15th March

Yet another magic morning and we were off to Glen Davis. As we headed out, we came across patches of fog and also some high cloud and by the time we got to Glen Alice, the air was extremely hazy from the clearing fog. By around 11am the air was quite clear and there was very little high cloud, so our photos came out quite well.

The intention was to go on a tour of the Glen Davis works at 10am, but when we arrived it had been changed to 2pm. As we were all heading for home that afternoon, the tour was off. A very disappointing outcome to what should have been an interesting tour.

Back at camp the conditions were fantastic, with the sky so blue and clear and no sign of any clouds. Ian and Sue headed off to explore the Pagoda LO, the weir and Long Cave. By Hawkesbury Sandstone standards the cave was nothing out of the box, but as the name suggests, it was quite long. A cave of that size in Pagoda country is really remarkable and visitors not used to bushwalking in Hawkesbury Sandstone would be no doubt impressed.

We then packed up and reluctantly headed for home, this time via Bylong and while doing that, Sue headed off to explore the track to the river gauging station, a small weir specially constructed so that the volume of water traveling down the river can be easily calculated.

We had good reports of the road through Bylong, which proved to be correct. The trip was 10km shorter than through Lithgow with far fewer hills. In retrospect, we certainly did the right thing, as our clutch collapsed without warning only a few days later. Had we gone through Lithgow we probably would have ended up stranded along the Bells Line of Road.

While we were recovering at home on Sunday, Ian and Sue packed up and headed for home via Ferntree Gully. This is quite a large reserve on the escarpment of the Central Tablelands. The best known feature of this park is a spectacular sandstone canyon, leading into a beautiful Coachwood forest. Two walking trail circuits have been constructed. One goes down the canyon to a boardwalk along the edge of the Coachwood forest and then up a valley/gorge to a lookout quite close to the carpark. The other follows the edge of the escarpment around to the lookout. Both tracks are really beautiful.

Report by Barry Collier.

Thirtieth Birthday Celebration And Slide Night Saturday 29th March 2008

Organisers: Social Committee.

Attendance: 36 + 4 visitors.

Members and guests enjoyed a social **night in Ron and Ellen's shed to celebrate the Amateur Geological Societies Thirtieth Birthday.** The Social Committee organised the evening.

The shed was decorated with streamers, **balloons and a "Happy 30th Birthday" Banner.** Photograph albums of past society activities had been provided by members and much enjoyment was derived as people browsed through them.

Two tables had been set up in the backyard and nibbles provided for guests on arrival. Much talk occurred around them while Social Committee Members organised a large table in the shed containing salads, bread rolls, serviettes and so on. Ron (with helpers John, Bob and Ian) was then given the task of cooking steak and sausages and onions for all to enjoy.

After the meal, retired Treasurer Jill Bagnall was presented with a vote of thanks and a gift in appreciation of her many years as Treasurer of our society.

For the benefit of newer members, Life Member Ron then gave a brief talk on the history of the society from its inception in 1978. He then



Members and guests socializing before dinner.

showed a selection of slides taken from 1978 to 1985. The slides showed many of the original members of the society together with early activities.

Brian followed Ron showing slides of later activities before Barry and Leonie projected digital photographs showing recent activities and safaris.

To conclude the evening, the Birthday Cake was cut in a combined effort by five past Presidents. The cake was then enjoyed by all present with a 'cuppa' before leaving.



The 'official' birthday cake.



Left to right: Past Presidents John Cater, Ron Evans, Jan Harris, President Brian England and Past President David Atkinson cutting the cake.

Report by Ron Evans.

Monarch Museum and Fighter World Saturday 12th April 2008

Leader: John Cater.

Attendance: 20.

We visited the "Monarch Museum" and "Fighter World" as a change from Geology and rocks as a purely social occasion and day out at something a little bit different.

Some 20 Members attended on the day and **our first call was "Fighter World" where there were lots of aircraft old and not so old to inspect, some we were able to actually sit in (we were not allowed to fly any of them unfortunately) An interesting array of examples including mostly fighter aircraft, older jets and WW2 aircraft, namely a Spitfire and a German Messerschmidt. There were also examples of armaments, rockets etc to peruse.**

Following on from the displays, we adjourned for a nice lunch in the café and enjoyed the food and coffee and scintillating conversation.

After a satisfying lunch we adjourned, practically next door, to Monty and Dorothy Wedd's **Monarch Museum.**

Monty met us at the door and welcomed all and we spent the next hour or so investigating their huge array of items, including old cameras, suits of armour, a huge array of models and literally hundreds of interesting museum items.

I think everyone enjoyed the day as a different form of entertainment, and interests, that we not normally would have participated in.

Report by John Cater

Port Macquarie
Ophiolite and Blueschist
Friday 16th to Sunday 18th May 2008

Leader: Lynne Monkley and Brian England.

Attendance: 18 + 1 visitor.

Background to the Geology

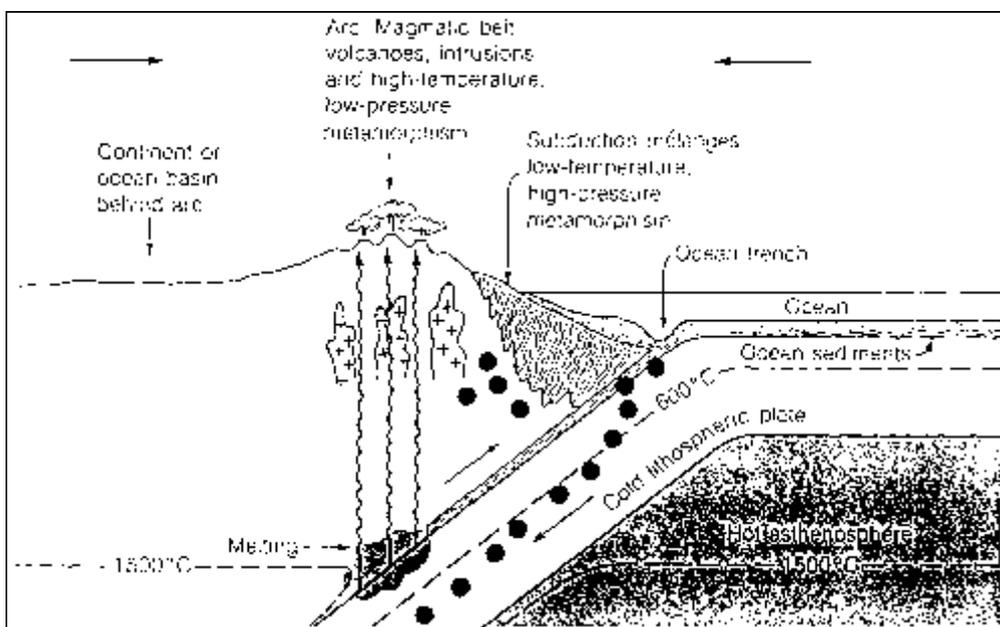
Rocks exposed along a narrow strip of coastline between Town Beach and the Tacking Point Lighthouse, 6 kilometres south of Port Macquarie, represent a strongly dismembered ophiolite (ocean crust) sequence derived from a deep ocean floor environment. The occurrence of ophiolite on land can only result from a major collision of tectonic plates. Ultrabasic rocks from the mantle region beneath the ocean floor have been hydrated and strongly sheared during this process to form serpentinites, by far the most abundant rock type along the Port Macquarie coastline. Within the serpentinites occur blocks of a wide range of rock types including blueschist, a very colourful and extremely rare regional metamorphic rock which can only form in subduction zones where ocean trench sediments are subjected to very high pressure at relatively low temperature. The Port Macquarie blueschists have been dated at around 470 million years old, indicating that a destructive plate margin was active here around Middle Ordovician times. Subduc-

tion ceased when a small continental mass riding on the subducting plate slammed into the east coast, forcing a section of the ocean floor and adjacent ocean trench melange (highly distorted sediment wedge) up onto the land surface along the line of collision.

The most likely explanation for the juxtaposition of high pressure blueschist rocks and ophiolite material is the collision between a small continental mass riding in on the subducting oceanic plate and the east coast of the Australian continental landmass. This collision would have occurred along the subduction margin (convergent plate boundary), resulting in a jumbled chaotic mixture of high pressure / low temperature metamorphic rocks from the ocean trench and dismembered ocean floor material along the line of collision. The resulting geology is extremely complex and remains to be fully explained.

The Port Macquarie outcrops lie at the south eastern end of an extensive discontinuous zone of serpentinites extending to the west as far as Nundle and then north through Barraba to Warialda. This is known as the Great Serpentine Belt and has been a source of a range of economic minerals including chromite, magnetite, chrysotile asbestos, plus ores of iron, manganese, nickel, and cobalt.

The Subduction/Collision Mechanism



The subduction process is explained in the diagram opposite.

In the situation illustrated, any continental mass riding the oceanic plate towards the trench/subduction complex is unable to subduct because of its much lower density compared to the ocean floor material. So when it reaches the subduction zone the only

possible outcome is a collision between the incoming continent and the leading edge of the continental mass above the subduction zone on the adjacent plate. This results in a section of ocean floor being sheared off and squeezed against the high pressure subduction complex between the two merging continental masses.

As a result of this collision, subduction ceases along the old destructive plate margin but may appear again behind the accreted continental mass as the ocean floor again fractures and begins to dive beneath the newly-formed continental margin. Much of eastern Australia has been built up by such an accretionary process. The New England Fold Belt in particular contains a number of subduction/collision complexes, which decrease in age from the southwest to the northeast and date back to the Carboniferous.

Blueschists – Evidence for Destructive Plate Margins

In subduction zones, ocean floor and trench sediments (melange) are dragged down to depths of as much as 30 kilometres by the subducting plate and are raised to extreme pressures so rapidly that there is not enough time for temperature to increase significantly. This results in rocks containing high concentrations of the mineral glaucophane $[\text{Na}_2(\text{Mg}_3\text{Al}_2)\text{Si}_8\text{O}_{12}(\text{OH})_2]$, a high pressure member of the Amphibole Group with a distinctive lilac-blue colour in transmitted light. The glaucophane may be accompanied by lawsonite $[\text{CaAl}_2\text{Si}_2\text{O}_7(\text{OH})_2 \cdot \text{H}_2\text{O}]$ to produce rocks known collectively as blueschists, which are indicative of subduction melanges. Blueschist rocks must be brought to the surface rapidly in order to be preserved and the best way of doing this is through island arc / continental mass collisions along the subduction zone. If blueschists are heated by frictional or other metamorphic processes, then greenschists (actinolite-rich rocks) and amphibolites are formed. There are greenschist inclusions in the serpentinites at Port Macquarie (such as those exposed on Shelley Head) which probably formed by the heating of blueschist rocks, adding to the complexity of the geological history of this terrane.

Ophiolite – the Ocean Floor comes Ashore

The term ophiolite comes from the Greek 'ophis', a serpent, in allusion to the snakeskin-like rock we know as serpentinite which forms one of the major components of ophiolite outcrops. It was introduced by Steinmann in 1905 to describe an alpine association of pillow lavas, serpentinites, cherts and ultrabasic rocks which had apparently been emplaced without any sign of contact metamorphism. While this association remained an enigma for many years, we now know that the presence of ophiolite on the land surface represents the destruction of ocean basins as continents collided.

The Present-Day Ocean Floor and the Role of the Mid-Ocean Ridges

The volcanic rocks making up the ocean floor can only have been formed at constructive plate margins, or what we recognise as the mid-ocean (spreading) ridges. The process is described below.

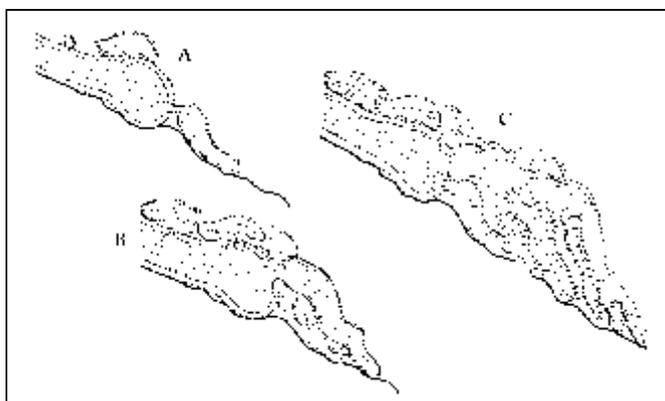
A thin veneer of marine sediments (Layer 1) overlies a layer of pillow basalts extruded from the centre of the spreading ridge. Towards the bottom of the submarine volcanic sequence the pillow lavas are cut by abundant vertical dykes of basalt and below the base of the lava pillows the rocks consist almost entirely of this sheeted intrusive material (Layer 2). Study of the dykes within this sheeted zone indicate that later dykes are intruded along the central portion of earlier dykes as the new-formed ocean floor moves away from the ridge. These dykes acted as conduits through which the magma that formed the submarine lava pillows passed.

Below the sheeted dyke complex are coarser grained gabbros which represent the more slowly cooled plutonic equivalents of the overlying dykes and pillow lavas. Beneath the gabbro layer are ultramafic rocks composed almost entirely of pyroxene and olivine (peridotites, lherzolites, dunites, etc.). These are upper mantle materials. It is thought that only rocks from Layers 1 and 2 in this section are rep-

resented in the Port Macquarie sequence. However the presence of abundant serpentinite, forming the matrix in which the other rock types are chaotically scattered as phacoids (tectonically-rounded boulders), suggests that a considerable amount of upper mantle material (peridotites and dunites) from the lower part of the ophiolite sequence was also involved. Serpentinite forms by the hydration of these olivine-rich rocks.

The Formation of Pillow Basalts

Pillow lavas are produced wherever basaltic magma erupts under water, whether the environment be marine, lacustrine or fluvial. The eruption begins with a central feeder tube which provides a conduit for lava from the vent. The lava then extrudes from cracks at the front of the feeder tube to form pillows, which may themselves become secondary feeder tubes. The pillows are usually extruded downslope to form a **set of "foreset" pillows**. If the feeder tube fractures at the top, bulbous pillows are formed, as shown in the series of drawing below.



Some of the Latest Ideas on the Origin of the Port Macquarie Sequence

The regional geology along the Port Macquarie coastline is still not fully understood and work is being continued by a number of researchers. Recent work has shown that the various components of the sequence exhibit a wide range of ages, metamorphism and tectonic affinities, so that a genetically related origin appears unlikely (Aitchison *et. al.*, 1994). Other authors (for example Leitch, 1980) have suggested that

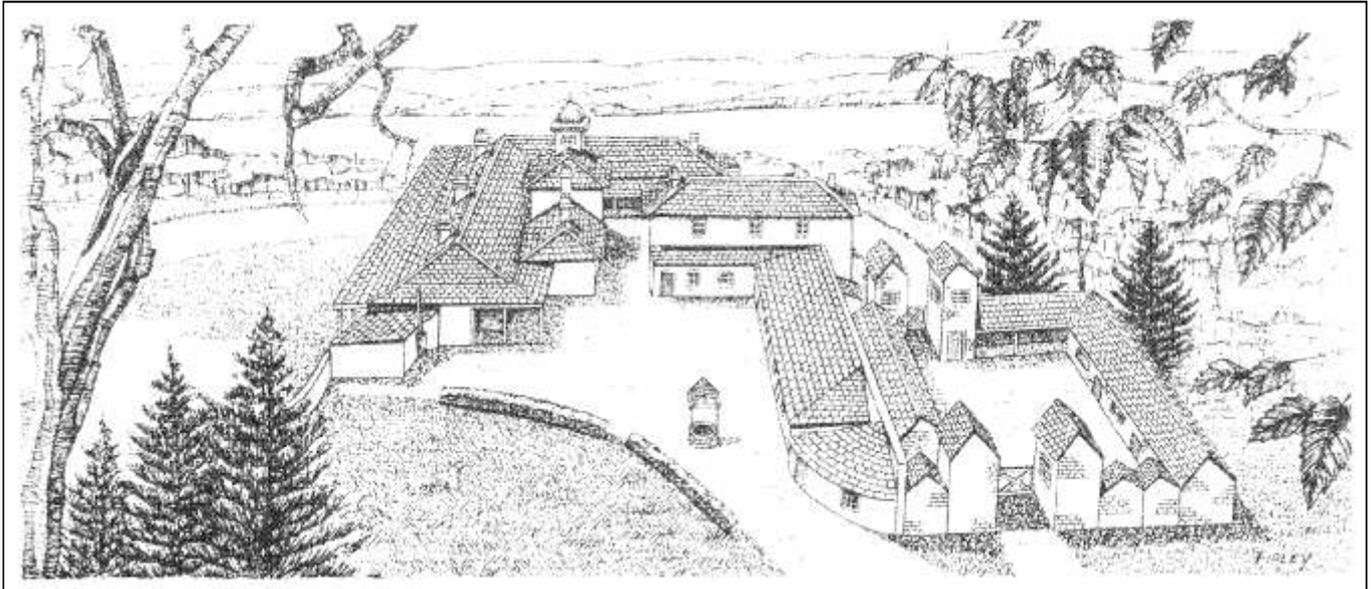
the complex was formed along a transform fault which occurred above the subducting oceanic plate and within the accretionary prism at the continental margin. Hence the geological history of the melange may be infinitely more complex than currently realised and the final truth may be quite different from the scenario given in these notes. Maybe we will never know the fully story.

We can only be sure of one thing. Along the Port Macquarie coastline we are looking at an infinitely complex chaotic jumble of rocks formed or influenced by a diverse range of geological processes over a vast period of time.

Our Exploration of the Local History and Geology of Port Macquarie

A total of 18 members and one visitor assembled at the Flynn's Beach Caravan Park at 2pm on the Friday and prepared to set out on a guided tour of the Lake Innes Ruins arranged with Sue Phillips from NSW National Parks and Wildlife Service by Lynne Monkley. The site lies adjacent to an area of 2900 hectares enclosing Lake Innes and Lake Cathie which was dedicated at the Lake Innes Nature Reserve in 1984. However, although the ruins of Lake Innes house were purchased by NPWS in 1922, it will not be added to the reserve until concurrence of the Department of Primary Industries has been granted. The ruins are totally enclosed by private lands and can only be visited by arrangement with NPWS.

We met up with Sue at the Gate at the end of Ruins Way and followed her another three kilometres to a large cleared park-like area on the side of a hill overlooking Lake Innes, which occupies a shallow depression in heavily forested countryside a few kilometres to the west. Sue proved extremely knowledgeable on the history of area and the ruins, now lying as a jumble of bricks and partly dismembered walls nestled into the side of the hill. We were at once dismayed at how little was left of this once magnificent country mansion, which had been such an integral part of our convict and colonial history.



Reconstruction drawing of the house and stables, from the east, as they would have looked in the 1840^{'s}.

Lake Innes House was the home of Major Archibald Clunes Innes, a colonial entrepreneur who acquired substantial land holdings and businesses throughout the Hastings and New England areas during the 1830s and 1840s, and whose name has been immortalised in the town of Glen Innes. He had originally come to Port Macquarie as commandant of the penal settlement in 1826 and a few years later he and his wife were to become amongst the first free settlers in the area, taking up a parcel of 1036 hectares adjacent to the then freshwater lake that was to later bear his name. Innes had also been granted 100 convicts with brick-making, carpentry and agricultural skills, which he was to make good use of in building Lake Innes House and conducting his local business.

The house was built in various stages between 1831 and 1848 with most of the work completed by 1843. Over 750,000 bricks made from

local clay derived from weathered serpentinite and fired in kilns on site using convict labour were used in the construction. However many of the bricks were of inferior quality due to the swelling characteristics of the contained montmorillonite clay. Sandstone for the construction was brought from Sydney. Innes was mistakenly convinced that Port Macquarie would arise as the gateway to nearby coastal lands and the New England hinterland, but the port proved too dangerous for shipping and this role was eventually taken over by Newcastle and the Hunter Valley. But despite this, Innes prospered during the 1830s, supplying the local convict garrison with hay and food as well as hospitality to passing dignitaries. It was only during the 1840s that general economic downturn and personal miscalculations brought him close to insolvency. This **period in Australia's history was one of great social change**, with Lake Innes House one of the principal social centres lying at the edge of white settlement.



Lake Innes House ruins.

Archibald Innes and his family moved to Newcastle in 1853, where he died a few years later. After that the house was occupied by a number of different people, but by the end the 1890s was lying derelict and overgrown. Natural decay, vandalism and theft of building materials soon took a high toll on the structure. Then in 1906, major damage was done by a suspicious fire that took out the wooden flooring and timber

supports to the walls, which then collapsed inwards.

The weather had turned out perfectly for the afternoon and a pleasant hour or so was spent wandering along the raised board walks throughout the ruins before heading back into Port Macquarie. Unfortunately time did not permit visits to the nearby manganese mines or the Star talc mine, but we were to see similar outcrops elsewhere.

On Saturday morning the group assembled at the very respectably hour of 9:30 am and set off for the parking area adjacent to Oxley Beach, the starting point for our exploration of the coastal geology along the cliff line north of Rocky Beach. For the first hundred metres or so we followed Doctors Walk, a magnificent well-constructed coastal path cut into the top of the cliffs to provide access to coastal habitats. Apart from the path, this area of coast line remains totally undeveloped and a haven for naturalists.

From the very start we found ourselves walking amongst interesting geology. Beside the path lay our first encounter with the ubiquitous serpentinite, highly sheared and showing the typical silky surface texture due to numerous slickensides. Then, set into the path beneath our feet were cobbles of blueschist, worn smooth and polished by thousands of pairs of boots to reveal the surprising blue colour that gave the rock its name. The walls holding back the soil above the path had been constructed of a local conglomerate showing the effects of high overburden pressure on the rock texture. Here we observed numerous examples where quartz pebbles had be-



Outcrop of Serpentine showing slickensiding.

come indented by other pebbles as the quartz in areas of high contact pressure had dissolved out to be redeposited elsewhere in areas of lower local stress. Unfortunately the source of the conglomerate is not known. Above the retaining wall lay a small remnant of the 4-5m thick laterite profile developed over the weathered serpentinite. This laterite is rich in the iron hydroxide mineral goethite, rich enough to be mined as iron ore from an open cut now reclaimed by the nearby sports field just across the road from which 130,000 tonnes were produced between 1903 and 1965 to be used in gas purification. Further south along the track the laterite vanished, and so did the underlying serpentinite from which it had been derived by weathering.

About 100 metres along Doctor's Walk it was time to leave the comfort of the track and venture off into the rugged coastal outcrops. Some took one look, decided it was all too much, and headed off towards Flynns Beach, but the majority of the group ploughed on down the steep, slippery grassy gully towards one of the many tiny secluded sandy beaches along this stretch of the coast. Passage was far from easy, and quite challenging in sections as we clambered up and down steep muddy ravines, crossed over sharp ridges covered in greasy serpentinite scree, slid down grassy slopes on our backsides and generally had a great time. But the geology was astounding, changing again and again, often within metres, as we examined the huge variety of rock types and terranes, each showing its own specific weathering patterns and residual materials.



Walking towards Rocky beach.

For the most part the coastal outcrop here consists mainly of serpentinite and its weathering products, which X-ray Powder diffraction (XRD) has shown to comprise mainly opaline silica and the iron oxides magnetite/hematite. The weathered material is restricted to the cliff tops at the base of the laterite profile, with relatively fresh dark green material exposed just above the high water line. The serpentinite contains rounded boulders (phacoids) of a variety of rock types from both the ophiolite sequence and the trench sediment wedge, varying from a few centimetres to many metres across. In fact at least four melange types have been identified in this one section of coastline, with the phacoids comprising peridotite showing various stage of serpentinisation, rodingite, orthopyroxenite, chert, volcanoclastic sedimentary rocks, eclogite, marble, slate, mafic volcanics, siltstone and of course blueschist, to name just a few. All are chaotically jumbled throughout the serpentinite like plums in a pudding.

Several of the blueschist phacoids are amongst the purest and most pristine in the World, with XRD showing them to consist almost entirely of glaucophane with only a little muscovite (white mica). Such rocks are rare indeed. But this area also has a diverse mineralogy, particularly in the weathered profile overlying the melanges.

In several areas of platy weathered serpentinite we came upon thin seams and pods of a heavy sooty black mineral known as manganese wad. This consists mainly of the manganese mineral todorokite and has been mined in the past at several nearby locations for the nickel and cobalt it contains. The wad formed in the weathered serpentinite along the base of the laterite profile and represents insoluble material left behind by the weathering process. Not surprisingly, chemical analysis of this material shows high levels of nickel (around 3.5 weight percent NiO) and cobalt (around 6.2 weight percent CoO), as well as around 54 weight percent manganese dioxide, making these outcrops some of the richest known deposits of nickel and cobalt in the World. But they are too small in extent to be economically



Rare outcrop of Blue Schist Rocky Beach.

viable, at present. What is surprising though is the presence of up to 4.2 weight percent cerium oxide, making this material virtually unique. Tunnels in the cliff face below these outcrops were probably dug to explore the vertical extent of these deposits, but there are no existing records.

A large area near the top of the steep slope above the wad deposits appears bright purple due to an outcrop of halloysite, one of the clay minerals in the Kaolinite-Serpentine Group. The halloysite contains a significant amount of fine disseminated magnetite which XRD analysis shows has partly oxidised to hematite, hence the purple colouration. Inter-layered with the purple halloysite are bands of pure white kaolinite.

While crossing one of the many small ridges nearby we came upon a yellowish outcrop of soft clayey rock which was immediately recognisable as a small outcrop of highly weathered pillow basalt, with the outline of many of the original pillow structures still visible. Lying completely enclosed by serpentinite, this outcrop demonstrated the completely chaotic nature of the geology.

The beautiful clear morning we had started out with was now rapidly deteriorating and it seemed the forecast foul weather was rapidly approaching. Exploration further to the south had to be curtailed and we beat a hasty path back up the cliffs to the road and then on to the southern end of Rocky Beach, taking the steep path down to the rock platform then proceeding along the beach to its northern end. Here we found a jum-

ble of bright blue boulders eroded out of the serpentinite, more blueschist and perhaps even **more colourful than we'd already seen!** Some even contained areas of small garnet crystals.

Now the rain began to set in, forcing a brisk walk back down the beach to the road and our cars. Some took temporary shelter in a deep cave eroded back into the large outcrop of pillow basalt that formed the low headland between Rocky and Flynns Beaches. Here lies probably the best outcrop of pillow basalt in the region, but we were more concerned with negotiating the slippery basalt boulders now wet with rain than looking at the geology. Back near the car park behind the Flynns Beach pavilion a final surprise awaited us. Perhaps only recognised because it was now wet with rain, the road cutting revealed a section of weathered pillow basalt, the individual pillows altered to yellowish clay and delineated by pods of white kaolinite.

Back at the caravan park we dried off, ate lunch and rested until clearing skies encouraged us to set off once again in pursuit of geological knowledge and adventure. This time Tacking Point Lighthouse was targeted, but our timing was way out. We arrived at the site to be confronted by a wedding in full swing and parking space almost non-existent! But we managed, clambering down onto the beach and walking up towards its rocky northern end.

While still in rocks associated with the Ordovician-Late Devonian destructive plate margin, the geology here could not have been more different to that we had seen in the Rocky Beach section yesterday. Half way up the beach and



Large Serpentine outcrop Shelly Beach.



Banded Chert Tacking Point.

marooned at the mid tide mark like some beached ocean freighter lay a huge block of thinly bedded chert (layer 1 of the ophiolite suite) displaying the most beautiful folding and cut on one side by later basalt dykes. On the beach nearby lay a long thin N-S trending dyke of what appeared to be diorite, which to the north became more prominent and more granitic in composition. Then just over a low sandy saddle lay a small rocky bay, with more of the granite/diorite forming a very rough coastal platform. Here the granitic rock contained subparallel and sometimes dismembered lenticular masses of pyroxenite as well as a single spectacular enclave of thinly bedded black chert. There is a PhD here in sorting out the geological history of this few metres of coastline!

The wedding party had dispersed by the time we got back to our cars and we quickly retreated to the caravan park to clean up and dress for dinner at the local Bowling Club.

During Saturday night the wind howled, tree branches flew, and the rain pelted down so as everyone snuggled down for the night we fully believed the forecast bad weather had really set in. Tomorrow was destined to be a really foul day, so a meeting time of 10am was set when we would make the decision to continue to explore or slowly make our way home.

Only the insomniacs rose early on the Sunday morning. There appeared to be little reason, although a few early birds had ventured off to the local markets before breakfast. When the remainder finally ventured out of their swags, they

looked outside to find a perfectly clear and crisp morning! Packing up and booking out was achieved in near record time for some and everyone made the designated meeting time.

What was left of the morning was spent in leisurely fashion exploring the rocky headland on the southern side of Shelley Beach. Here we found similar serpentinite melange to that we had seen north of Rocky Beach, but the phacoids were much smaller and consisted only of dense serpentinised peridotite and greenschist rocks. However criss-crossing the serpentinite outcrops were thin veins of cross-fibre white quartz associated in places with thin films of bright green transparent antigorite, one of the serpentine minerals. Back in the late 1960s, when our family lived in Wauchope and I had spent most of my weekends exploring the rocks of the Port Macquarie coastline, I had come across a few specimens of magnificent deep green water-clear antigorite large enough to cut gems from. But this material eluded our group on this trip despite an extensive search. However the thick vein of talc which I had found way back then was still there and provided a few chunks to those that wanted samples.

Further around the headland we found several thick and highly contorted basalt dykes and a lot more serpentinite, but all too soon it was time to head off home and after a quick lunch most of the group had departed by around 12pm.

Report by Brian M. England.



Tacking Point - off to look at more rocks.

For Further Reading

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Soup & Slides

Saturday 14th June 2008

Twenty six members attended the evening. This year in a departure from the using a members home for Soup and Slides, the Community Hall at Pacific States Estate at Munmorah was the venue. This proved to be an ideal location as there was plenty of space with tables and chairs provided. The kitchen made food preparation easy and a sheltered area outside was able to be used to heat the soups.

As usual, the Social Committee organised the evening with four soups (pumpkin, pea and ham, lamb and vegetable, chicken and rice) being prepared by members.

The evening commenced with a display of photographs entered in the photographic competition. While the soups were being heated, members viewed and voted on the photographs while **enjoying a selection of Hors d'oeuvres.**

After soup, the slide viewing commenced with four people presenting slides:

- Terry Kingdon - New Guinea Highlands (1976-77)
- Vic Mills - Nepal (1979), a trek to Mt. Everest Base Camp
- Brian England - Patagonia (2007)
- Ron Evans - Around Australia Trip (2007), Outback Queensland, Kakadu NP, The Kimberly & Hamersley Ranges.



Chefs in action; the 'Soup Minders'.

The winners of the photographic competition were then announced. The results were as follows:

- *Landscape:* Ron Evans, Terry Kingdon, Leonie Mills (all equal first)
- *Humorous:* 1st Jan Harrison
2nd **Terry Kingdon**
3rd **Leonie Mills**
- *People:* 1st **Leonie Mills**
2nd **Leonie Mills**
3rd **Ron Evans**
- *Geology:* 1st **Ron Evans**
2nd **Terry Kingdon**
3rd **Terry Kingdon**
- *Miscellaneous:* 1st **Ron Evans**
2nd **Jim Grey**
3rd **Terry Kingdon**

A selection of digital photographs was then shown by projecting them onto the screen.

- Jim Grey: A DVD presentation of photographs from Capadocia in Turkey.
- Ethel Raine: Belgium, France and Italy from a trip in 2005.
- Elaine Collier: Patterns in the Landscape taken during South East Victoria Geological Safari 2007.
- Barry Collier: **Dunn's Swamp 2008.**

Supper followed before all present helped to clean the venue. An excellent evening with a fantastic variety of interesting photographs presented.



It tastes better with bread!

Wallsend Historical Walk Saturday 19th July 2008

Leader: Bob Bagnall.

Attendance: 21 members + 6 visitors.

My eyes scanned the 'dog-eared' menu card for at least two minutes. "The \$10 luncheon specials are always great value for money at the Colliery Inn Wallsend", a voice said.

There were twenty four of us around a long rectangular table made up of eight card tables pushed together. "Ok, I'll have the pasta", I told the craggy-faced waiter who hovered at my elbow. As I looked around I found that the famous 'Longbar' made from 1875 railway sleepers was less than two metres from where I was sitting. We would have to order our drinks from there I thought.

The Colliery Inn has a proud history and not just for selling ale. In 1860 it was just a calico tent. In 1861, a slab hut with bar was built on the site. The Inn was the first secure building to be constructed in the town and for 54 years it was used as a pay office for the Newcastle/Wallsend Coal Company. The 'back room' of the building was also Wallsends first morgue.

A chemist from Cornwell, Mr. Mark Fryer became the District Register for Births and Marriages and was the first owner of the slab-hut Colliery Inn, a vocation his descendents carried out with vigor for over 100 years.



Present day Colliery Inn, Wallsend.

This one building has so many 'claims to fame' in Wallsends early history. As an example, miners needed high protein food to carry out their backbreaking work, so shops traded with local aboriginals at Minmi for kangaroo meat. This was smoked and cured on an open verandah attached to the rear of the Colliery Inn and then stored (in the morgues cellar) ready for distribution.

The miners also needed vegetables. These were grown alongside Ironbark Creek and the produce taken to the Colliery Inn for storage and distribution. Competition arose between growers to produce the 'biggest and best'. This led to the Wallsend Horticultural Society being formed in 1862. It was the forerunner to the Division of Newcastle and Sydney's Royal Easter Show. So big was the support that Mark Fryer opened Wallsends first shop alongside the Colliery Inn in 1862.

Support was also big for our walk which was encouraging because the day before had seen Barrington Tops receive its first dusting of snow for the season and the evening before was the coldest night for six years.

Our afternoon stroll started in the historical heart of Wallsend and we ambled around churches and buildings until the chill of the night air convinced us to return to our vehicles.

Following is a overview on early Wallsend which might answer some of the many questions asked on the day by interested participants.



Participants enjoying the \$10 lunch specials.

The Beginnings.

- ◇ Members of the First Fleet were unable to find coal in the Sydney Basin.
- ◇ In 1800 the colony was stagnant. No coal meant any industrial productivity.
- ◇ In 18034 coal was found in Newcastle, loaded into longboats and taken to Sydney.
- ◇ By 1825, surface coal was getting scarce and hard to find. Convicts wheel-barrowed coal from an area west of Newcastle known as **'Nikkinba' to Newcastle Port, a journey of two days.**
- ◇ **By late 1820's convicts were moved from Newcastle to the more secure penal settlement of Port Macquarie.**
- ◇ At this point it was found that the colony was very dependent on coal. However, the convicts had been moved so no labour was available to carry out coal collection.
- ◇ **In the 1840's and 1850's Australia conducted a huge immigration campaign to induce selected groups free settlement in Australia.** Land grants were made as payments for goods received as no currency was freely available in the colony.
- ◇ The majority of the Wallsend area was controlled by two land grants.
- ◇ To the north by the grant given top the Colonies Senior Surgeon, a veteran of the Napoleonic Wars, Mr. George Brooks.
- ◇ To the south the land controlled by the Australian Agricultural Society, some 8,000 acres,



St. Nicolas Orthodox Church.

was sold to the newly formed Newcastle/Wallsend Coal Company, the director of which was Alexander Brown Esq.

- ◇ Alexander Brown was born in Northumberland and it is reputed that he stated that the coal at Nikkinba was of similar quality to that **of the coal found at the 'end' of Hadrian's 'Wall'** in his native England. So the name *Wallsend* came into being.

1859 to 1865.

- ◇ This period was towards the end of the bush-ranging era. **The local bunch, 'The Jewboys',** had been hiding in the bush just outside Wallsend and were caught near the river at Maitland. All seven had a public hanging at Newcastle Jail in Parnell Place.
- ◇ 1860 saw a large influx of Cornish and Welsh miners. (hence Cardiff etc.) A new colliery, **'A' Pit, was opened in bushland west of the present township of Wallsend.** It was extremely hard work. The young colony had no decent equipment so pick, shovel and wheelbarrow were the main tools used for mining.
- ◇ By 1863 a tent city, similar to the ones in the goldfields, had been erected around the colliery. **The village was called 'Pit Town',** a name still used today by the old folk of Wallsend.

1865 to 1875.

- ◇ A period of massive expansion in the settlement. Quarries were opened and local **'Siltstone' was used to construct the village.**
- ◇ New hotels, shops, schools, churches, Town Hall, Masonic Hall, School of Arts and



The Alter St. Nicolas Orthodox Church.

government buildings were erected.

- ◇ In 1875 Wallsend/Brookstown and Plattsburg boasted a standard of living second to none **in the colony. It was a classic 'boomtown'.**

1875 to 1885.

- ◇ **A new 'B' pit was opened following a mining disaster that took 21 lives.**
- ◇ The worlds first privately run co-operative coal mine was opened at Brookstown, adjoining Wallsend.
- ◇ The Lemon Tree Estate (50 acres) was sold to provide land for Wallsends new shopping center.
- ◇ The Wallsend Gas and Coke Company formed to provide street lighting for the suburb.
- ◇ The Wallsend/Plattsburg Municipal Council was formed to maintain public facilities.
- ◇ Train lines were eventually laid to carry coal and people from Wallsend to Newcastle city.
- ◇ Four blacksmiths shops and three brickworks opened in the town.
- ◇ **Wallsend Soccer Club, 'The Red Rovers'** formed: colours red and white.

1885 to 1900.

- ◇ Steam trams carried passengers from Newcastle to Wallsend and mine workers to new mines at West Wallsend.
- ◇ A branch line at Young Wallsend (Edgeworth) took patrons on a trip to Speers Point and then by steam boat all around Lake Macquarie.
- ◇ Apart from water traffic through Swansea Heads (Reids Mistake) the steam tram was



History of St. Nicolas being explained.

the only way to get to Lake Macquarie.

- ◇ Wallsend was the home of the colonies richest man one William Walker Johnston. He owned the steam tram lines and the boats that met steam trams at Speers Point. William Johnston is reputed to have opened up Lake Macquarie to the world. He also owned scores of companies and sawmills that provided all the timber to mines in the area.

1900 to 1914.

- ◇ Another mine disaster led to the Newcastle/Wallsend Coal Company providing five acres of land in Longworth Avenue Wallsend, and then paying for the construction of **Wallsend Hospital. The 'fitting-out' of the hospital over one hundred years ago, cost the company almost a quarter of a million pounds.**

1914 to 1925.

- ◇ Records show that 82% of eligible men from Wallsend signed up to fight for King and **Country during the 'Great War'. This led to 617 enlistments of which 119 paid the ultimate sacrifice and over 360 were so badly injured that they were sent to hospital in England. Over twenty bravery awards and two Victoria Crosses came back to Wallsend.**
- ◇ After the war in 1916, water was laid on into **the town. The sewer didn't arrive until after World War II.**
- ◇ Wallsend bicycle track was constructed in 1920 using government unemployment grants that were provided during the great depression. The track consisted of a large circular banked Olympic sized course that was twenty feet wide and half a mile around its inner circumference. It was used as NSW state training track for five Olympic games **during the 20's, 30's and 40's.**

1925 to 1950.

- ◇ Wallsend Racecourse, originally the first completed steeplechase racetrack in the colony in 1865, closed due to lack of interest and funds in 1930. The racecourse was reported to

be “the finest example of racetrack layout in the Empire” by the London Times of 16th May 1879.

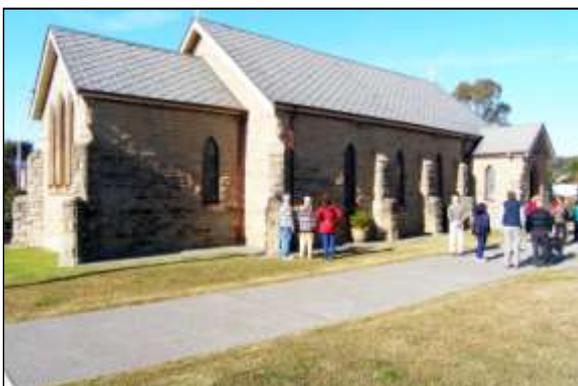
- ◇ On most weekends when races were held, thousands of folk would arrive by whatever means and descend on Wallsend. The whole town would have a carnival atmosphere with streets full of side-show tents, jugglers, amusements and patient medicine quacks dispensing cures for all types of aches and pains. It was a marvelous time for Wallsend.
- ◇ In 1939, a lot of manpower from the mines was lost due to enlistments for World War II. This loss of manpower caused a downturn in the mining industry in Wallsend.
- ◇ Wallsend RSL established a strong following in the town, and in 1955 became the first premise in Australia to receive a licence to move from 6pm closing to 10pm.
- ◇ After the war, Mullins Brothers and NSW Aerated Watters set up their main cordial factories at Wallsend.
- ◇ A newspaper called “The Miners Advocate” was produced by the Poganoski family in 1869. The first edition sold 28 copies. Then in 1876 the family printed “The Herald” published on Wednesdays and Saturdays from hand operated presses in Bunn Street Wallsend. In 1890 it published weekly a local village paper of four pages called “The Wallsend and Plattsburg Sun”. The rights to The Miners Advocate and Herald were purchased from Poganoski by Newcastle Newspapers.
- ◇ In the 1920’s and 1930’s, ‘Wirths Circus’ was a regular visitor to Wallsend. On 17th December 1930, a huge gale blew the ‘Big Top’ down during a performance. There were

more than two hundred people attending the show when the main support poles fell into the lions cage smashing it open. People ran for their lives not knowing whether the lions were free or still trapped.

- ◇ After the incident, Sephtons shoeshop in Nelson Street Wallsend had a display in their front window of ladies and gentlemen’s hats, various ‘flapper’ items, fox furs and two gentlemen’s toupees that had been picked up amongst debris after the show. A sign in the shop window invited owners to collect their lost property. A newspaper report did not confirm whether anyone collected the toupees.

1950 to 1980.

- ◇ In past years, Wallsend was renowned for its great movie houses. Daddy Pheland was the person the original ‘Picture Show Man’ story was written about. He had shown his magic lantern shows in a tent in Nelson Street to provide folk visiting the racecourse an evening’s entertainment. The Empire Theatre in Nelson Street boasted a visit in the late 1950’s from Max Bygraves and Barbara Windsor to promote British films.
- ◇ All Wallsend Cinemas were dismantled in the 1960’s to make way for carparks and shopping centres.
- ◇ At its height in the 1950’s, Wallsend boasted thirty two tennis courts. Australian Davis Cup representative Harry Hopman was born in Wallsend where his father was the headmaster at Wallsend Public School.
- ◇ Although not generally known, Wallsend



St. Luke's Anglican Church, dedicated on 12th December 1880.



Magnificent Organ St. Luke's Church. The church was constructed from ‘Lambton Siltstone’.

provided the world's first bowling club for disabled people in 1962. It was located alongside Ironbark Creek in Wallsend Park. The disabled club, registered, opened for business in November 1962.. It lasted seven months before closing due to lack of interest.

- ◇ In 1963, the club was taken over by a group of independent ladies and renamed the **Wallsend Women's Bowling Club**. The new club lasted eleven months before closing again due to lack of interest. The building was dismantled in 1964.

1980 to 2008.

- ◇ Over the years, Wallsend has ebbed and flowed with the fortunes of the mining industry. Its career has been chequered and in some ways it still clings to the strong morals and family values laid down by its pioneering forefathers.
- ◇ It is the only suburb in Newcastle that has a **beautiful central village green and the town's magnificent rotunda** is still used as a meeting point by young folk.
- ◇ With the opening up of vast tracts of land to the west of the town for housing, its future is almost assured.
- ◇ To the old folk who sit on park benches and **reminisce about 'times gone by'**, Wallsend can seem like a paradise.
- ◇ As Lennon and McCartney so aptly wrote all those years ago, **"I'll get by with a little help from my friends"**.

Wallsends like that!

Report by Bob Bagnall.

Stockton Sand Dunes Saturday 9th August 2008

Leader: Barry Collier.

Attendance: 16.

Members and guests met for a picnic lunch at Grahamstown Dam before heading off to Anna Bay in bright sunny conditions, but with a cold westerly blowing. The weather was great for the outing, but somewhat chilly for the picnic.

As the outing was partly within Worimi NP and we had to traverse the NP to reach the outing site, we worked out how many vehicles we needed to fit every one in and bought a permit for each of those vehicles, while the other vehicles were left at the start of the access track.

The Stockton Dunes extend from a little south of Williamstown to Anna Bay and consist of a huge system of dunes which have not contained significant vegetation within European historical times. I spoke to the ranger who looks after the area a few days after the outing and he said that in view of recent weather conditions, the dunes were in the process of changing from south west / north east alignment to south east / north west alignment.

This resulted in the huge slip faces we saw on the outing and was responsible for the uncovering of areas of wet sand with the most amazing patterns in them, something I had never seen in



Barry Collier

Walking towards the ocean after traversing the freshwater ponds.

many visits to the area. With both the sun and wind coming from the west, the wind ripples in the dry sand were particularly obvious.

We parked our cars at the boundary of an area of private land, which the ranger thought was probably owned by the Worimi Land Council, and headed by an irregular route towards the sea. Shortly after reentering the national park, we came to a chain of freshwater ponds caused by the ground water table rising above the sand.

There is a law of physics which states that liquids of different density will repel each other unless they are physically stirred. Nothing stirs the liquids under the sand, so freshwater from rainfall, being lighter, sits on top of sea water which has seeped in from the sea.

We found a way through the ponds and made our way to the sea, before returning by a different route. Everybody seemed to thoroughly enjoy the outing until we returned to the other cars and found three had been broken into. Fortunately the police caught the offender, who still had all the stolen articles in her possession, but the unfortunate owners still had to meet the expense of repairing their cars.

We thought the cars would be perfectly safe, close to a main road and on a regularly used track. The ranger was quite perturbed as he knew of no break-ins in that area since he has been responsible for the park.

Report by Barry Collier.



Barry Collier

Huge slip faces on sand dunes.

Winney Bay Walk Saturday 30th August 2008

Leader: Brian England.

Attendance: 9.

This excursion was arranged at relatively short notice, as the planned trip to the Mount View copper mine had to be abandoned due to unforeseen circumstances. Originally it was to be led by Barry Collier, but with Barry nursing (and cursing) a sprained ankle, it was left to Brian to lead this excursion examining sedimentary structures exposed along the cliffs around Winney Bay, located between Avoca Beach and Copacabana. Brian had recently visited the area on two occasions as part of the National Parks Discovery Program.

Thanks to Barry we had the key to the gate blocking the head of the access track down through the bush to the beach, thus eliminating the one kilometre walk in to the site and, more importantly, the walk back out which is uphill all the way.

Most of the group had arrived at the water tower beside Cape Three Points Road by the allotted time and only the trip leader and his passengers had to explain their considerable lateness, a result of the time it took to collect the key from Barry and exacerbated towards the end by a geographically-challenged navigator! Down at the end of the track we parked the vehicles on a reasonably large flat area that had been cleared from the bush to establish a market garden some years ago. From there it was only 50 muddy metres or so down along the bed of a small creek to the rock platform, separated from the cliff line by a classic cobble beach.

The rocks exposed along the coast here belong to the Terrigal Formation (formerly the Gosford Formation) which lies at the top of the Triassic Narrabeen Group and immediately below the Hawkesbury Sandstone. The sediments in the

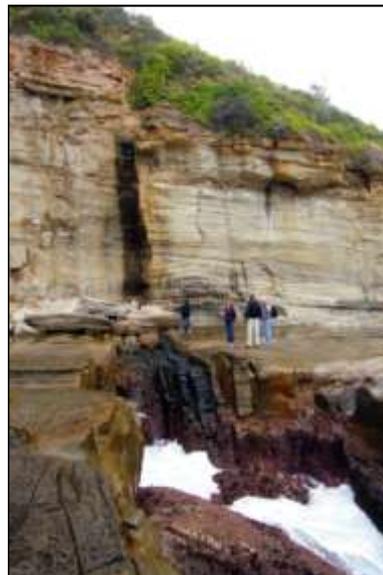
Terrigal Formation were laid down as a series of overlapping river channel and overbank (floodplain) deposits.

We had planned the trip to coincide with low tide and out on the rock platform we were confronted by the first of many astounding examples of sedimentary structures which seemed to abound along this section. Large areas of flat platform were patterned by excellent examples of trough cross bedding, particularly one isolated raised area near the low tide mark which provided superb vertical cross-sections through this rarely seen feature. Unlike normal planar point bar cross beds, which build up over a relatively flat surface, trough cross beds are laid down in erosional troughs from a few centimetres to many metres across, with the individual layers concave towards the down current direction. Layers of dense massive even-grained sandstone adjacent to the trough cross beds showed the unusual small scale potholing commonly seen along the central coast, each hole enclosed within a raised rim like a miniature volcanic cone.

Further south along the coastal cliffs the group was able to examine several superb examples of normal cross bedding, as well as channel fill deposits of even-grained fine sandstone which indicate the position of former stream beds cutting across earlier deposited sediment layers. There were also many examples of fragmented lake bed muds disrupted, transported and re-deposited during sudden inflows of water associated with floods, the mud clasts now lying in a matrix of flood sands. Many of the muddy layers when split along their bedding planes showed scattered shiny flakes of detrital musco-



Cross-bedded point bar deposits.



Basalt dyke and erosion trench.

vite mica, preferentially aligned with their flat surfaces parallel to the bedding plane (at right angles to the direction of overburden pressure) and adding to the ease of splitting of the rock. No fossils were found, apart from a few carbonised woody fragments.

A few hundred metres south of our entry point, the group was able to examine one of the best examples of a basalt dyke exposed on the central coast. Close to a metre in width, the dyke cuts across the rock platform leaving a shallow erosion trench and then lies fully exposed in the adjacent cliff face. The dyke shows pronounced columnar cooling joints at right angles to as well as prominent planar joints lying parallel to its boundaries. There is also a thin heat affected zone in the sediments adjacent to the dyke and the sedimentary layers on either side show slight displacement, indicating that some movement had taken place along the host joint either before or during the intrusion of the basalt. The basalt in this dyke is unusual, containing small vesicles caused by out gassing of the magma and indicating that the basalt may have been emplaced quite close to the ground surface, where confining pressure was considerably reduced enabling the dissolved gases to be released like the bubbles in a freshly uncorked bottle of lemonade before the magma hardened to basalt. This dyke also clearly shows the effects of marine erosion, to which basalt is largely resistant, compared to land-based

chemical weathering where the minerals in the basalt have been largely converted to light-coloured clays above the water table, making the top section here almost impossible to distinguish from the enclosing sandstone layers. No radiometric dating has been carried out on this dyke, but it is assumed by most geologists to be around 100 million years old and associated with the opening of the Tasman Sea, when stretching of the sedimentary layers resulted in deep open joint systems extending down to the mantle region.

We continued south along the rock platform to a small raised bench. Here, in the cliff face, lay the most intriguing of the sedimentary structures seen along this section of coastline. A result of soft sediment failure, this dyke-like structure had the geologists in the group more than a little perplexed and, to prevent a heated argument developing, several photographs were taken for later scrutiny. However, stretch features in the finer sediments leading into the structure, zones of vertical sediment in-filled fractures in the more competent coarser layers, and infilling of the cavity by draped fine sediments all suggest that it may be a crevasse caused by partial river bank collapse and sediment overtopping during a major flood event. Nearby sandstone cliff faces showed beautiful examples of incipient honeycomb weathering.

Further safe progress barred by a vertical cliff face falling directly into a rock pool many metres below on one side and a high overhanging rock wall on the other, we returned to the cars for lunch, after which members made their way home.

Report by Brian M. England.



Rock platform Winney Bay.

Gloucester Weekend Friday 14th Sunday 16th August 2008

Leader: Ron Evans.

Attendance: 11.

Participating members arrived at differing times in Gloucester Friday afternoon. Three of the 'boys' decided to play golf while the 'girls' thought a wander down the street followed by coffee a more gentele activity.

We all met in the caravan park for 'happy-hour' and discussed possible activities for Saturday. If the weather was fine, then a day drive up to the Barrington Tops was the agenda.

Brief Description of the Barrington Tops.

Barrington Tops is a dissected plateau located at an altitude of 1200 -1500m. The oldest rocks in the region comprise sedimentary deposits of the Devonian-Carboniferous periods, which were intruded by granitic magma during the Permian. Some residual basaltic caps on the plateau remain as evidence of the area's volcanic activity during the Tertiary period.

The plateau is the source of numerous rivers, those flowing west and south being tributaries of the Hunter River, while those flowing east, including the Barrington River, are tributaries of the Manning.

The relief and variety of landscapes have enabled a diverse patchwork of plant communities to flourish. Tall eucalypt forests and rainforest dominate the plateau, with the exception of the high sub-alpine regions where Snow Gum woodland dominate. Mature old growth forests occupy more than 70% of the park.

Cool Temperate Rainforest occupy the misty heights above 900m and are dominated by Antarctic Beech (*Nothofagus moorei*) which is at its southernmost limit. Soft tree ferns (*Dicksonia Ant-*

arctica) crowd the understory over a ground cover of ferns and mosses.

Warm Temperate Rainforest, between 600 and 900m, is scarce around Barrington Tops. It is characterised by Sassafras, Crabapple and Rosewood - but not Coachwood.

Subtropical Rainforest grows at around 300 to 600m and is best developed on or close to valley floors. Yellow Carrabeen, Thick-leafed Laurel, Bangalow Palms and Cabbage-tree Palms are indicators.

Eucalyptus forests occurring on the Barrington Tops are also impressive. Major areas of intact *sub-alpine Snow Gum woodland* interspersed with Black Sally and Mountain Gum are found at higher altitudes. At lower to mid altitudes tall Sydney Blue Gum, Messmate, White Topped Box, Tallowwood and Manna Gum tower as emergents over the rainforest canopy along with Turpentine (not a eucalypt).

The *sub-alpine swamps* of the region such as Poll Blue Swamp constitute the largest area in the state after Kosciuszko National Park.

Saturday 15th

The weather was fine, so Ron and Ellen, Terry and Laurel, Michael and Jenny, Ross and Glenda decided to chance the weather and spend the day on the tops. Vic, Leonie and Jan elected to look around scenic places closer to Gloucester as Vic was unable to take his dog into the National Park.



Morning tea Honeysuckle Rest Area.



Antarctic Beach walk Honeysuckle Rest Area.

The drive to Barrington Tops took us over Copeland Tops State Conservation Area before starting the climb after passing the property of Twin Rivers.

First stop was Cobark Lookout (approx 1000m) where Ron outline planned activities for the day. We continued climbing until we reached Honeysuckle Rest Area (approx 1300m) for morning tea before undertaking a 1km loop walk through a stand of Antarctic Beach trees (Cool Temperate Rainforest) growing along the southern edge of an escarpment. A beautiful walk spoilt somewhat by small hungry leeches that found our feet & legs irresistible. They really liked Terry.

Back in the cars we drove a short distance west, parked & walked into Thunderbolt's Lookout. A spectacular view south towards Mt. Carson over the Moppy River Valley (called Devils Hole) greeted us. The flat top on Mt. Carson and other visible parts of the plateau were the result of basalt flows that occurred during the Tertiary period. Snow gums grew along the top of the escarpment.



Honeysuckle walk - inviting the leeches to bite!

Terry Kingdon



Ellen Evans

Thunderbolts Lookout - Mt. Carson in distance.

Next stop was Poll Blue Swamp for lunch. By now it started to rain lightly so we took over a sheltered BBQ area. Rain or no rain, a walk around Poll Blue was agreed on after lunch. National Parks is upgrading the walking trail by constructing bridges over creeks and boggy areas as well as upgrading the track. It stopped raining when we were about half way around our walk and the sun came out highlighting yellow flowering Scotch Broom.

Scotch Broom is a major threat to the Wilderness integrity of Barrington and currently infests about 10,000 ha of private property, State Forest and National Park on the plateau. About 30% grows in impenetrable thickets over 2m high, taking over existing vegetation and providing a rich food source and shelter for feral pigs. The plant is spread through feral animal, horse and stock droppings, vehicles, on the boots of bushwalkers and down streams.

Upon leaving Pool Blue, we detoured around Dilgry Circle on the return to Gloucester. This enabled us to drive through an outcrop of Granodiorite emplaced during the Permian pe-



“The Rock”.

riod. Of particular interest was an outcrop called “The Rock”. It has an interesting shape when viewed from the northern side. On walking around the outcrop, it became obvious that it had formed when well jointed granodiorite underwent exfoliation leading to boulder formation. Of particular interest were two obvious ‘waves’ in the northern face. They can be seen on the right side of “The Rock”. When the rock was buried, chemical weathering eroded rock below the surface more rapidly than rock above ground. Subsequent erosion exposed the waves.

Last stop was a visit to a set of cascades on the Manning River reached by driving along the Gummi Trail to the river crossing and then taking a short but steep walk upstream. Well worth the effort.

It was then back to Gloucester for ‘happy-hour’.



Terry Kingdon

Intrepid Poll Blue Swamp walkers.



Scotch Broom flowers, Poll Blue Swamp.

Sunday 16th

Ron had organised a visit to Hilldale Herb Farm for a BBQ lunch and guided tour at around 12:15pm. To fill in time before lunch, we visited Copeland Tops State Recreation Area so we could stroll around the Hidden Treasure Walking Trail.

The major feature of the trail is that it passes through a large tract of dry rainforest. The dry rainforest hosts trees such as Shatterwood, Yellow Myrtle and Grey Myrtle. Fringing more protected gullies, there is a taller subtropical rainforest component containing Giant Stinging Trees, Moreton Bay Figs, Red Cedars, Red Carabeens and occasional Sydney Blue Gum. Vines, epiphytic orchids and ferns were also found. A wonderful walk although it took a little longer than expected.

At the herb farm, our host Karen O'Brien provided a wonderful lunch of locally produced herb sausages, chicken wings marinated in fresh herbs, green salad and herb bread washed down with herb teas.

She then walked us around her herb farm showing and explaining the herbs she grew as well as the herbs uses. Before leaving, many of us purchases pots of herbs, herb sausages and herb products.

The last stop on our way home was at Alderley Creek Wines just north of Booral. Ron had organised a wine tasting. We were welcomed and our hosts explained the history of the property and described the wines on offer as we tasted them. A bonus was a guided tour of our hosts home, a convict built house recently renovated. After the purchase of several bottles of wine, we all headed home after a great weekend.

Report by Ron Evans.

References:

National Parks maps & brochures.
Gloucester Visitor Information Centre leaflets.



Cascades, Manning River.



Hidden Treasure walking trail.



Buttress roots of a large Strangler Fig.



Karen O'Brien describing herbs and their uses.

Christmas Social Evening Saturday 13th December 2008

Organisers: Social Committee.

Participants: 30.

Our annual Christmas celebration kindly hosted once again by Vic and Leonie.

Our wonderful Social Committee organised the evening (as usual). On behalf of our members, a special thanks goes to Leonie Mills (convenor), Janet Cater, Elaine Collier, Ellen Evans, Jenny Green, Jan Harrison, Sue Rogers and Halina Turnbull.

After meeting at Vic and Leonie's, tasty **Hors d'oeuvres were handed around while some of us socialised as the 'workers' organised our dinner.**

The main course consisting of cold meats, salads & bread rolls followed.

After dinner, a series of digital photos was presented by Elaine (patterns in nature, Dunns Swamp), Barry (Kangaroo Island trip), Leonie (Remarkable Rocks, Kangaroo Island) & Terry (Barrington Tops). Ron then showed a DVD on wildflowers of Western Australia. To finish the presentation, Vic showed slides taken in 1975 when he & Leonie travelled through the Philippines.

We then tackled the beautiful deserts which were washed down with tea or coffee.

Clean-up followed before we all said our farewells & passed on best wishes for Christmas.

A special thanks goes to Vic & Leonie for hosting the evening.

Report by Ron Evans.



Elaine, Ethel, Sue and Ellen preparing dinner.



Socialising while waiting for dinner to be served.



Vic announcing dinner.



What a spread!

Kangaroo Island - Geological Safari 2008

Friday 19th September to Tuesday 7th October 2008

Safari Leader: Barry Collier.

Participants: Barry and Elaine Collier, Ron and Ellen Evans, David and Jan Atkinson, Ian and Sue Rogers, Stan and Dawn Madden, Terry and Laurel Kingdon, Michael and Jenny Green, Jim and Helena Grey, John Eccleshall, Brian England, Anne Clarke, Vic and Leonie Mills.

Brief Geological History of Kangaroo Island.

Neoproterozoic (545-1000 mya)

- ◊ The oldest rocks exposed on Kangaroo Island are Neoproterozoic rocks formed in the Adelaide Syncline and exposed only on Dudley Peninsula.

Cambrian (490-545 mya)

- ◊ In the early Cambrian, Kangaroo Island lay beneath a shallow sea and was covered by marine sediments.
- ◊ Faulting along the Cygnet-Snelling fault uplifted basement rocks above sea level.
- ◊ As highlands to the north of the fault eroded, rivers carried sediments onto a shallow marine shelf forming rocks of the Kangaroo Island Group (conglomerates, sandstones and limestones).
- ◊ South of the fault zone, water depths were generally deeper and silts and sandstones of the Kanmantoo Group were formed in outer shelf, continental slope and ocean basin environments.
- ◊ Abundant marine life flourished in the Cambrian seas. Many have been preserved as fossils such as trilobites and worm burrows.

Cambrian-Ordovician (298-490 mya)

- ◊ Deposition of sediments stopped in the late Cambrian to early Ordovician with the onset of the **'Delamerian Orogeny'** (mountain building cycle). Several episodes of compression, metamorphism and granite intrusions occurred.
- ◊ To the north of the Cygnet-Snelling fault zone, deformation was generally weak with good preservation of sedimentary structures and fossils.
- ◊ To the south, deformation was more intense. Complex fold patterns, intense metamorphism, melting and granite intrusions occurred within the Kanmantoo sediments.

Carboniferous-Permian (298-251 mya)

- ◊ Following the Delamerian Orogeny, Kangaroo Island was subjected to a prolonged period of glacial erosion (Australia, still part of Gondwana, had drifted within 12° of the South Pole).
- ◊ Glaciers carved deep valleys into bedrock, principally in Backstairs Passage and the Pelican Lagoon Area. Polished and striated bedrock indicate the glaciers flowed northward. Huge glacial boulders (erratics) were dumped across the land surface. Such evidence can be observed at Christmas Cove, Penneshaw.

Jurassic (140-205 mya)

- ◊ As well as intense weathering and sedimentation, the middle Jurassic was a time of volcanism in response to the initial breakup of Gondwana. Basalt flows infilled a river valley near Kingscote and a small area on the Dudley Peninsular. The basalt sheet, less than 12 m thick, exhibits excellent columnar jointing.

Tertiary (1.6-60 mya)

- ◇ The final separation of Australia from Antarctica opened a major seaway across southern South Australia. Periods of high sea levels resulted in the Dudley Peninsular and western Kangaroo Island being separate islands.
- ◇ Considerable controversy surrounds the interpreted age of the prominent and widespread laterites that cover much of Kangaroo Island.

Quaternary (0-1.6 mya)

- ◇ The Quaternary is characterised by increasing aridity coupled with global climatic oscillations that resulted in repeated transgressions and regressions of oceans around Kangaroo Island intermittently separating it from the mainland.
- ◇ The fossil bearing rocks of the Point Ellen Formation mark two episodes of high sea level.
- ◇ Each episode of high sea level was accompanied by the building of large coastal sand dunes (Bridgewater Formation) that migrated well inland covering much of the western and southern parts of the island.
- ◇ Dudley Peninsular was joined to the main part of Kangaroo Island when transgressive sand dunes infilled much of the Pelican Lagoon area.
- ◇ About 8900 years ago rising sea levels separated Kangaroo Island from Yorke and Fleurieu Peninsulas with the present sea level reached about 7600 years ago.



Caravans had to be backed into the centre section of the ferry, an interesting exercise.

Kangaroo Island Safari 2008.

The following account of the Kangaroo Island Safari is an extract from Barry Collier's diary record of the trip. It outlines activities from when participants embarked for Kangaroo Island on the Sealink Ferry on Saturday 20th September to departure from the island on Tuesday 7th October.

I was given the job of leading an outing for the Amateur Geological Society of the Hunter Valley to Kangaroo Island in South Australia.

Saturday 20th September

The wind picked up at about 4am and we woke to cold windy conditions with a few light showers around. After packing up, we decided to go for a walk downtown for a coffee, in spite of having to return into the icy wind.

After that, we made our way leisurely to Cape Jervis. Loading the vehicles onto the ferry was really something to behold, talk about sardines. The crossing was much rougher than I expected, probably because we were heading almost straight into the wind. Apparently there was quite a bit of seasickness aboard, but those who were worried about the possibility were **asked to go to the rear, so we didn't have to view** any of it from our perch right on the bow.

Once off the ferry at Penneshaw, we stopped at the information centre for our park passes and then headed for camp. I am sure that it is a different place to last time as we are at least a two km from the shops, and the toilets are quite roomy. I spoke to the owner about the changes and was told nothing had changed in 40 years ??

He then said that, in fact, we had never been there before. Back in 2000 there were two caravan parks and we had obviously stayed in the one closer to Kingscote. Since then it had been taken over by a greedy developer, who took advantage of the location and views and subdivided it. The locals thought it was a great joke, **because he didn't check Council regulations**

properly and found out that building was not permitted on the newly created lots, but because the lots had been created, he was now paying so much in rates that if he reverted to a caravan park it would not earn enough to cover costs.

Sunday 21st September

We woke to a beautiful clear morning. Not **a cloud in the sky, but it didn't last, although**, mid morning the clouds did clear again until late afternoon. It was, however, quite windy all day. John and I set out early to check out Rolls Point and not only found the fossil shoreline, but also a very good track so it will be added to the itinerary.

At 9 o'clock the others turned up and we headed for D'Estrees Bay. Where the road reaches the bay, there is just a long, narrow, sandy beach, backed by a limestone escarpment between one and two metres high. Last time we were fascinated by little grottos and fossil tree roots, but this time there were piles of rotting seaweed, so we gave it a miss.

At Cape Gantheaume Conservation Park, headlands of up to 30 metres high begin to appear. The first tapered into a narrow peninsular, **with an Osprey's nest at the end. How it stays** there is a mystery. One would expect it to be washed off during each of the regular winter storms, but such is obviously not the case.

Our first stop was just past the peninsula **with the Osprey's nest on it. We walked down to the beach and down to the peninsula** where we

found some fascinating fossil roots and tree stumps.

Morning tea was taken at the next camp ground, where we were able to walk up onto a headland with some great views, but returning to the cars into the wind created quite a problem. **We couldn't see where we were going without opening our eyes.** If we did, they were immediately filled with grit.

We then drove out to the end of the road, where there were some huge swells coming around the corner, and, being Sunday, a lot of surfers taking advantage of them. A lot of photos were taken of them before we walked out along a track for some beautiful wildflower displays.

So far all the headlands had been limestone, but at the end of the road there were a lot of Cambrian rocks around the bases of the headlands. Most walked down to the rocks and got some great photos of the tilted strata and rock patterns, but my leg was not up to clambering around those rocks.

Some of us walked about a kilometre along the track through the wildflowers, to where a steep track led down to a spectacular junction between the Cambrian rocks and limestone. Unfortunately my leg would not allow me to descend to the shoreline, so I missed out on a great photo.

The only place we could find for lunch, with some shelter from the wind was where we had morning tea, so we headed back there. After



Limestone headland near Wreck Beach Cape Gantheaume - Osprey nest on the point.



Angular unconformity between tilted Middleton Sandstone (Cambrian) and Pleistocene limestone.

lunch we stopped off at the northern view point **of the peninsula with the osprey's nest and this** time we could see the osprey sitting in the nest.

Next stop was Murray's Lagoon, where we walked down the Timber Creek Track. Last time the water was over the track, but this time we had trouble seeing any. Eventually we found a reasonably sized pool, full of dead trees. The area had been severely impacted by the bushfires last December, but the dead trees had no fire scars on them and appeared to have died from increased salt levels. No national park officer I spoke to during the rest of the trip could (or would) confirm or deny that.

We then decided to detour home via the Salt Lagoon, but it was on private property, with no public access, so we adjourned back to camp.

Monday 22nd September

A gale and thunderstorms blew up at around 4am, but not enough rain to colour up Red Banks, so we have all had a free morning for shopping, sightseeing etc..

As we drove to town it was 10°, with frequent, light showers, so there was little time spent window shopping. After shopping we went for a bit of a drive and discovered some really nice areas to the north of the town.

After lunch we headed to Cliffords Honey Farm, where there was a lot of honey products on sale, but little else, so we tasted 3 types of honey, bought up and headed for Island Pure



Murray Lagoon very low - note the Holocene lacustrine marl showing mudcrack patterns.

Sheep Dairy. There we had an excellent video presentation, followed by tasting of a considerable variety sheep milk products, then a talk about, and an inspection of, the milking process.

Some people decided we should go to the Eucalyptus distillery, so we did, only to find it was closed. From there it was back to camp to settle down for a cold night.

Tuesday 23rd September

We woke to clear skies and no wind, so John and I decided to go for an early morning drive. We finished up driving out to Emu Bay, which was as uninspiring as I had expected. After driving around the town, we headed off to South Bay, which turned out to be equally uninspiring, except that there was no public access to the shore.

Not far from South Bay, we found an old farmhouse with false castle walls and battlements constructed around it, including a tower on top of a tree. Quite a sight.

After breakfast we headed off to Red Banks, which still had a some colour in them from the recent showers. It was a fascinating structure of clay cliffs which one would expect to **wash away in a very short time, but it didn't look** any different to what we saw eight years ago.

From there we went to Rolls Point, near camp, to look at some amazing fossils and a dramatic fossil shore line. After that, we headed **across to the other side of Kingscote, to Murray's**



Red Banks - Quaternary aged calc-arenites oxidized to red-brown colour. Fossiliferous.



Lunch at Cape Willoughby after undertaking a guided tour of the lighthouse.



Cape Willoughby is formed from coarse grained middle Cambrian Cape Willoughby Granite.

Quarry, a disused basalt quarry which contained some amazing jointing and equally amazing patterns in the broken rock. A bonus was that we could look over a ledge and look down onto a nesting Osprey in her nest on top of a telegraph pole.

After lunch, in a very nice park, some headed off to Emu Bay to look for trilobites, while I drove Elaine, Laurel and Dawn on an almost fruitless search for galleries. One gallery was open, on the road to Emu Bay. That was **Shep's Gallery** and we were very impressed with his work.

As we were well on the way to Emu Bay, I decided to take the girls out past Emu Bay and the "castle". We then went to the community gallery in town and then had a coffee before retiring for the day.

Wednesday 24th September

John and I went out before breakfast, but stayed around Kingscote for just a few photos.

After breakfast, we all headed off to Cape Hart and struck problems by following a road **which wasn't there last time. By the time we realized** what had happened we decided we had lost enough time and headed off to Cape Willoughby. We had morning tea beside the cars in a freezing wind and then set off on the lighthouse tour. This time our guide was excellent and we thoroughly enjoyed the outing.

From there we did the lighthouse grounds hike, something we missed out on last time, and found it very pleasant. Cape Willoughby is near the northern end of a large granite outcrop and was our only chance to look at more or less typical granite formations on the island. We were to see small granite intrusions at Point Ellen, but too small to impact the landscape, while the granite at Remarkable Rocks is anything but more or less typical. The lighthouse grounds hike was on a gently sloping hillside, with boulder beaches and low rocky outcrops along the foreshore section of the hike.

The headlands to the south of the lighthouse provided quite a contrast, with towering cliffs of beautiful, pink granite. Lunch was then **enjoyed at the top of the Devil's Kitchen**, a sharp gorge beside the lighthouse and then we wandered all around the two headlands to the south of the lighthouse where a lot of photos were taken.

From there we headed for Flour Cask Bay, with a stop to photograph a stunning daisy, which turned out to be Azure Daisy Bush, endemic to mallee on limestone on Kangaroo Island.

A short detour was made to a former salt mine. Apparently Gypsum was mined here in the past, but apart from a broad trench on the edge of the lake, little evidence remained. Brian said that if we waded into the water and dug up some of the mud we would find Gypsum crystals, but nobody wanted to take him up on it.

Flour Cask Bay is part of an extensive limestone escarpment, in places more than 100 metres above sea level and with gradients of around 70-80%. At each end of the beach were incredibly rugged limestone platforms, while more extensive platforms extended well out to sea, just below low tide level. On the track to Flour Cask Bay, we found an enormous mound of pink *Lasiopetalum*. Something I had never seen from any species of *Lasiopetalum*. Immediately above the beach we found some small caves with the best specimens of fossil tree roots Brian had ever seen.

Down on the beach it was close to low tide, so we were able to have a good look at the amazing limestone rock platforms at either end of the beach. With my gummy leg, I was not prepared to climb up to the spectacular cave I found last time and nobody else wanted to give it a try. Eventually we all made it back to the cars and returned to camp where Elaine and I decided on take away for tea and had some really nice grilled Snapper and chips.

Thursday 25th September

We were booked in to Seal Bay for a “bus” tour at 9 o’clock. Google map said it would take an hour, so we set out with 1 ½ hours to spare, but it only took ½ hour, so we had time to look at Bales Bay. This was somewhat similar to Flour Cask bay, except that the beach was bigger and the escarpment behind the beach only fractionally as high.

For the seals (really Australian Sea-Lions),



Seal Bay Conservation Park.

we had an excellent guide and the ¾ hour trip finished up closer to 1 hour. Australian Sea Lions are listed as endangered and there is talk of listing them as critically endangered. It was interesting **to learn that the sealers couldn’t gain access** to the beach because of reefs offshore and the dense vegetation onshore and the sea lions always return to the beach where they were born.

After a wander along the boardwalk, we adjourned to a nearby restaurant for coffee and while waiting found some interesting information on Kangaroo Island around the restaurant walls.

On the way home we stopped for some **wildflower photos of species we hadn’t seen** before on this trip and then had a rushed lunch before heading out to White point to look for trilobites.

After a reasonable walk and very steep descent, we came to a Cambrian coastline where two particular strata were supposed to have trilobites. The descent had me concerned because of my leg, but I made it. A few trilobite tracks were found, but no actual trilobites. However, it was a nice walk and quite a few photos were taken.

Friday 26th September

Certainly the best day of the trip to date, with cloudless skies and no particularly strong wind. The temperature reached 25°C at Kingscote, but with a moderately stiff breeze **coming off the water it didn’t feel that warm.** John, Brian, Elaine and I headed off to Prospect Hill and climbed the 512 steps to the lookout. The



Australian sea lions on the beach.



Rugged limestone cliffs (Pleistocene Bridgewater Formation) Hanson Bay.



Incredible limestone formations along the cliffs Hanson Bay. Note cross bedding in the pillar.

view was quite good, certainly extensive, but hardly worth the effort.

From there we went to Pennington Beach, which was absolutely magnificent in the prevailing conditions. Pennington Beach was also a bit like Flour Cask Bay, with a lower escarpment behind the beach and a much larger beach. The escarpment beyond the beach was as high and spectacular as Flour Cask Bay and looked magnificent in the morning light. Pennington Beach was situated in a bay caused by an outcrop of Cambrian Rocks to the west, which had not eroded as quickly as the limestone escarpment. We also found some caves with even better examples of fossil tree roots than those I saw above Flour Cask Bay.

As this was Friday and it was after 10am, we decided to have a look at the M. B. Stonor Glass and Bead Gallery. What an eye opener. The art work was absolutely magnificent. We never spend money at those sort of places, but we left \$135 poorer and John also spent \$85.

He stated that he had given up the goblets, glasses etc. and decided to concentrate on smaller, genuine works of art. His marbles and pendants were absolutely magnificent and we bought one of each, but his insects, spiders etc. were unbelievable and he said he only has half an hour to create each one. Most were not for sale because they were so delicate that they could not be wrapped or handled without breaking, but what amazing works of art.

We then decided to head for Red Banks via America River and took a gravel road along the foreshore of Pelican Lagoon instead of the main drag. A little north of the village of Munston we found a parking area beside a monument, which recorded the visit of the American ambassador about 20 years ago. There was a picnic shelter, not sheltered from the wind, so we set up chairs in a sheltered area and enjoyed lunch with only a pair of Pied Oystercatchers for company.

After lunch we continued to Red Banks, which was magnificent with the backdrop of clear blue sky. Needless to say, a lot of photos were taken before we finally headed back to the car and back to camp for final cleaning up and shopping, ready for our changeover tomorrow to Western KI Caravan Park.

Saturday 27th September

Once packed, we headed off, with John behind, towards Western KI. The weather was beautiful and sunny, so I stopped and suggested we detour to Point Ellen. John said he wished we had mobile reception or he would have rung us with the same suggestion.

Originally we were all to go out there and have lunch, then proceed to various camp sites after 2pm, when cabins would be available. 8 years ago there was plenty of parking for all of us. Unfortunately Vic had already been there and he said there was only room for about 2 vans to park, so we hurriedly contacted everyone and changed plans to have lunch at camp and go to



Morning tea at Harveys Return carpark. Supplies for Cape Borda lightstation were landed here.



Early Cambrian grey biotite-laminated lithic Metasandstone along the cliffs Harvey's Return.

Hanson Bay in the afternoon.

Imagine how I felt when we arrived at Point Ellen to find sufficient parking for about 22 vans and the most glorious conditions, but without mobile reception, there was nothing we could do. We were soon joined by Terry and Laurel, Brian and Ron and Ellen, so we had a bit of a look around, followed by morning tea, and headed for camp. The rock formations around Point Ellen were really amazing and we all looked forward to a more complete outing in the next few days.

During lunch the clouds arrived, as expected, but there was really beautiful light for photography, so a small number of us headed out to Hansons Bay and had the most incredible outing. Just around the corner from the beach were the most amazing limestone pillars and cross sections of fossil tree trunks.

We walked over a kilometre along clifftops, almost to the next beach, which was below the awesome looking Great Southern Lodge. All along the walk there were the most amazing limestone formations and in the uniform light we could really appreciate the succession of huge sea caves along the escarpment. Those who made the walk rated it as one of their best coastal walks ever.

From there it was back to the house where the non-campers were staying, for afternoon tea, then back to camp after an incredibly amazing day.

Sunday 28th September

As expected the day started off cloudy with a few showers, but they were gone by the time we left. We decided to head up West End Highway and then across to Harvey's Return, but there were a lot of narrow strips of bushland along the road, which had escaped the fire, so we had several wildflower stops along the way.

Once on the Playford Highway, we had gravel surface, lots of dust and very wide fire-breaks, so we motored non stop to Harvey's Return. At Harvey's Return carpark we had morning tea before descending to the bay. Harvey's Return is a small bay where supplies to the lighthouse were unloaded. They were then winched up a very steep slope before being transported to the lighthouse. We followed a fairly steep track to where the winch was situated, then almost climbed down the remain of the steep railway up which supplies were winched.

The whole of the bay consists of steeply tilted Cambrian rocks. As in all areas of the island where these rocks are exposed, there has been so much folding and faulting within the individual layers that the eroded surfaces contain some fascinating patterns. However, a little to the west is a layer of rock about 10 metres thick, called zebra rock. This layer consists of alternating layers of pale grey quartz and black mica. Those layers vary from 1 to 5 cm in thickness and in this case the eroded surfaces contain the most extraordinary patterns.

We left there just in time to make the 12.30 tour of Cape Borda Lighthouse. Cape Borda lighthouse was the last of the three lighthouses to be constructed on Kangaroo Island. By that time, funds were short and as the headland was so high, a small, square lighthouse was constructed instead of the usual circular, tapered building that is best able to survive winter storms. That tour was considered a must, because during that tour, each day, a cannon is fired. The guide must have been impressed with such a large group as the normally ½ to ¾ hour tour took almost 2 hours.

To fire the cannon, a volunteer is selected from the audience, given ear muffs and a small control panel. At the appropriate time a button is pushed and the cannon goes off. On this occasion, Stan was selected, but the guide forgot to switch the control pattern on. Someone counted down – 10 – 9 – 8 and at zero nothing happened. As Stan scratched his head all sorts of advice were shouted until Stan noticed an on off switch. He switched it to on and there was a loud bang and some hilarious videos were completed.

After a very late lunch, we walked the Clifftop Hike where there were lots of interesting wildflowers and a lookout platform with quite a good view of the towering cliffs below us, but not of any of the surrounding scenery.



Remote Cape Borda lighthouse is situated on a high cliff.



View of the north west coastline and high cliffs from Scott's Peak lookout.

Next stop was Scott's Peak LO with a similar length walk, but a much more extensive view of the remarkable north west coastline, which includes South Australia's highest sea cliff.

A little further down the road was the lighthouse cemetery, which contained quite a number of graves and more wildflowers.

From there it was back to camp, but along the way we saw the result of an accident in which a car had rolled several times, fortunately with no serious injuries. There was a National Park ranger on site and almost immediately we met fire brigade, ambulance and police all heading to the accident.

Back at camp the weather had closed in with heavy cloud, light showers and cold wind, so we all got stuck into our evening meals and settled in for the night, hoping for better weather tomorrow.



Stan after finally firing the canon at Cape Borda lightstation after turning the switch on.

Monday 29th September

We woke to clear skies and no wind, but the atmosphere was very hazy and there were ominous clouds on the southern horizon. I set off to do the **Becky's Lagoon walk and got some good photos** at first, but the increasing clouds and movement of waterfowl on the lagoon soon put paid to more decent photos.

John and I then did the Koala Walk and saw three Koalas, none of which were in photogenic positions, although I did get some good wallaby photos. By now there were a few clouds appearing, but the day stayed very pleasant, with lots of blue sky.

After breakfast we headed for Kelly Hill Caves. Eight years ago I was quite impressed, but this time our guide was a bit ordinary and the lighting inside the cave was terrible.

We then adjourned to a picnic shelter for morning tea and then took the Burgess Hike, through some very nice bushland, with a lot of stops for wildflower photography. In fact the supposedly ½ hour walk took well over one hour.

Eventually we made it back to the cars and back to camp for lunch. After lunch we met at the gate to Grassdale and after a reasonable walk through open forest, then mallee, we came to the former paddocks of the Grassdale property. There we came across a lot of Kangaroos who allowed us to get reasonably close and capture some really good photos.



Limestone formations Kelly Hill caves.

From there it was a short walk to the former homestead, which was surprisingly small and had only two windows and front and rear doors. Either glass was very expensive or they liked living in the dark.

Amongst the first group of trees to the north of the cottage was a collection of old farm machinery, which could almost pass as an outdoor museum. Then, further north was the most amazing collection of giant Yaccas (Grass Trees) and all the while we walked past groups of quite tame Kangaroos.

Back at our cars, we decided to head for the park headquarters for coffee. Apparently Dick Smith is a regular customer and he must have good taste because the coffee was delicious.

On our arrival back at camp there was quite a bit of excitement as two Koalas, both with young, were about to change trees. One actually walked more than 50 metres, with an entourage of kids and photographers.

Tuesday 30th September

After a cool night, we woke to crystal clear sky and rather heavy frost. John and I picked up Brian and Jim at the house and we headed for Hanson Bay. As we arrived, the view was obscured by mist as the cold air from the land hit the comparatively warm sea. The mist soon cleared and we had a ball collecting early morning photos.

A meeting was held after breakfast and in view of the conditions we decided to head for



Giant Yaccas (grass trees) Grassdale.



Remarkable Rocks - weathered granite of middle Cambrian age forming fantastic shapes.



Ellen Evans

The orange colour is due to lichen growing on the surface of the granite. Cape du Couedic in distance.

Remarkable Rocks and didn't they live up to their name with the bright blue sky as a backdrop.

The remarkable rocks reminds me of the sculptors gallery on a hill near Broken Hill, but this time one artist and no interpretive boards. They sit on top of a perfect dome of granite and how they remain there during the winter storms goodness only knows.

All of the tourist information photos show the biggest rocks, but it was the smaller rocks which caught my attention. They come in all shapes and sizes and some sit on only three of four small points. No doubt the best individual photos are taken at sunrise and sunset, but in view of the shapes of the rocks and their alignments, the best collection of photos would be

taken mid morning, the time we were there. Unfortunately that is the best time to see people, so a lot of time and frustration was expended in keeping people out of the photos.

From there we headed to Cape du Couedic and morning tea in a sheltered clearing near the lighthouse. Cape du Couedic lighthouse is the most attractive of the three lighthouses, being of similar shape and design to Cape Willoughby, without surface rendering, showing the colours of the rock from which it was constructed.

It was then down to Admirals Arch and the New Zealand Fur Seal colony, where lots of photos and videos were taken. Admiral's Arch has been formed by the weathering of the limestone covering over the Cambrian sediments. The underneath of the residual limestone is a mass of what appear to be irregularly shaped stalactites, giving the arch quite a bit of character.

A large colony of New Zealand Fur Seals occupies the Cambrian rocks in the vicinity of the



Ellen Evans

Sue walking towards Cape du Couedic lightstation.



Weirs Cove - storage facilities for lightstation supplies

arch and their anticls provide quite a bit of entertainment to the many visitors to the area. We then followed a track adjacent to the cliffs, to the lighthouse, past two great lookouts and left Elaine at the lighthouse while John and I headed back to the car.

Next stop was lunch at Weir Cove, where supplies were unloaded for the lighthouse. The supplies were winched up an even steeper railway than was the case at Harvey's Return and there was no way members of the public were to be allowed access to that slope.

It was then decided to do the Snake Lagoon Hike down the Rocky River to where it enters the sea. My car had been playing up after breakfast, so we decided to leave the walk to the others and go and ring David, our mechanic. Hopefully, we were able to fix the problem, while the others really enjoyed the walk.

Although the area had been burnt, the second half of the track followed the Rocky River over Cambrian rocks with many rapids and a small waterfall just before the sea. Above the bay was the only coastal cave I have seen on the island with working stalactites, stalagmites and columns, but only Brian and Sue ventured up to the cave.

By 3 o'clock, the forecast clouds began to really roll in, so there was no temptation to return to Remarkable Rocks for the evening light.



Snake Lagoon Walk - Rocky River mouth.



Ellen Evans

Point Ellen. Middle Cambrian granites are highly metamorphosed, deformed and intruded by pegmatite dykes.

Wednesday 1st October

A reasonably warm night, but at around 4am we were hit with a gale which lasted all day, although it was mostly sunny in the morning.

We decided to go to Point Ellen, but only about half turned up. Elaine was not well, so she stayed home as well. Out near the light the wind was quite a problem, but further west, near the big pegmatite dykes, we were sheltered a bit and conditions were quite pleasant.

Just west of the carpark, on the rock platform were two pegmatite dykes, more than a metre wide and consisting of a mass of feldspar, quartz, mica and tourmaline crystals. In some areas sections of the dark grey, adjoining rock had been broken off by the forming dyke and formed fascinating patterns within the pale coloured dykes.

Because the crystals, which make up the dykes, are so hard, excellent crystal patterns could be observed in many boulders which had been broken away by the weathering seashore. The coastline here was capped with limestone and at the far end of the escarpment we found the best fossilized tree roots of the trip.

After morning tea we decided to head back to camp for lunch, then take Elaine shopping to Parndana. It was decided to do a circular trip, past Vivonne Bay and back via the Playford Highway.

The Rustic Blue gallery was a temptation, so we stopped for a look and all finished up buying something. I wasn't impressed with the art work, although others chose to disagree, but the craft work was really beautiful.

A bit further on we stopped at Little Sahara and walked up to the first dune, but compared with Stockton Bight, it was pretty ho hum.

Parndana was a disappointment. The range of food in the supermarket was generally very poor and in the meat department, appalling. However, we managed to get enough and headed home with a stop at a wood turning gallery, Roo Lagoon, which was ordinary at best.

Thursday 2nd October

The day started rather cloudy, but the clouds soon broke up to reveal probably the best day, weatherwise, of our trip. Overnight we were woken at around 3am by two Koalas having a barney right next to our van. My goodness they can be noisy individuals.

It was decided to head for the north coast and so a convoy was organized to King George Beach. From there it was up to everyone to wherever they liked. As we drove down to the beach, a pair of Glossy Black Cockatoos swooped in front of our car, then, just before the beach we were greeted by a dog chasing its tail in the most energetic fashion I have seen.

After morning tea on the beach, John, Brian and I headed onto the headland to the east. From



Snelling Beach where Middle River enters the ocean.



King George Beach. Tilted early Cambrian red-brown to orange Stokes Bay Sandstone results in a spectacular section of coastline.

there we got superb views to the east and west. To the east were a succession of bays with apparently spectacular headlands. Eventually I found a route down and we had a ball looking at rock formations and some spectacular caves which included some fossil boulder beaches.

Eventually Ron caught up to us and he and John continued around the shore to a private beach and then returned to the cars. Brian and I headed back the way we came and met up with Elaine near the top of the track. Elaine and I continued around the headland till we got good views of the private beach and then headed back to the cars.

We had lunch at the beach, while others headed to Snelling Beach and Stokes Bay. It was our intention to explore the coast to the west, but we were blocked by a cliff, so we headed for Snelling Beach, where we met up with Dave and Stan. Just before the turnoff to the beach we came **across a Rosenberg's Goanna, the only species on the island, but extremely rare in NSW, so quite a few photos were taken.**

When we drove through here in the morning there was total cloud cover. Now there was clear blue sky and bright sunshine, so before going down to the beach, we returned to the two lookouts we had found in the morning, which were good then, but great now.

There were supposed to be trilobites at Snelling Beach. Prior to our arrival Stan and Dave had a fruitless search at the western end

and were heading for the eastern end when we arrived. Unfortunately, there was too much water in Middle River to allow us access without getting wet, so we gave up on that idea.

John, Brian, Elaine and I then headed for the National Park Visitors Centre for coffee and then headed out to Remarkable Rocks for the late afternoon light. We got some good pictures, but the shapes of the rocks were such that most good photos would be obtained in morning light.

From there it was back to camp after yet another great day.

Friday 3rd October

The forecast was for areas of light rain and **it didn't disappoint, with rain starting to fall** around midnight. However, the rain was very light and eased considerably in the afternoon.

We decided to head for Vivonne Bay and detoured via Mt Taylor Conservation Park. We found the park, with parking for two vehicles (both taken) and no apparent walking trail. Our correspondence indicates that Mt Taylor protects a very rare *Stylidium* and has limestone caves, but no formal walking tracks.

At Vivonne Bay we stopped at a little beach which Stan and Dawn raved about. The beach was very interesting, with lots of fossil tree roots and an amazing limestone headland at the northern end. We decided this would be great before breakfast on a sunny morning and added it to our list of things to do.

Next stop was the Eucalyptus Distillery.

We had been warned, but Elaine wanted to see for herself. Talk about a tourist trap. Products were for sale at higher prices than the Kingscote supermarket and it cost \$3.50 for a self guided tour which could be easily done in 5 minutes.

Oh well, we have seen for ourselves and now headed for Kingscote as the rain was a little too persistent for Beyeria Conservation Park. It was lunchtime when we got there so we decided to try the pub bistro. Nothing on the lunch menu appealed to Elaine or John, so they paid more than twice what Brian and I paid for our meal and got half as much food for their trouble.

We tried for coffee at two shops, but could not find a vacant table in either, so we then did the shopping that initially brought us to Kingscote and then headed to Stokes Bay. A road to Cape Cassini was observed, so we gave it a try and finished up at a gate to private property about 400 metres from the cliff line, but we did pass through a forest unlike any other we had seen on this trip, so all was not wasted.

At Stokes Bay we had a coffee at a new shop and then headed for the famous tunnel entrance to the beach. The tunnel was really a gap between the cliff and a huge, fallen boulder, while the beach was just a strip of sand between two low headlands.

While we were there we thought we may as well walk to the Cambrian rocks at the far (eastern) end of the beach and received a double surprise. First was a pair of Hooded Plovers. There are supposed to be 200 left on the island, so we were able to photograph 1% of the total



Entry to the beach at Stokes Bay.



Stokes Bay with its beautiful beach.



Grassdale Lagoon.



Morning tea stop with photographic opportunities.

population.

The other surprise was the tessellation of **the rocks on that headland. It's hard to compare** those with Redhead because they are so different, but apart from Redhead we had never seen better. The only problem was access to the rocks.

As an experienced rock fisherman, I thought I was au fait with slippery rocks, but these were deadly, especially as many of the **slippery sections didn't look slippery, even to someone** as experienced as myself. If my physiotherapist knew where I was taking my gummy leg, I am sure she would have immediately wiped me from her books.

By this time, especially after taking more photos of the beautiful little Plovers, we decided to **"put on the blinkers" and take the quickest** way home.

Saturday 4th October

Another Koala disturbance overnight. The trees around camp that have been seriously denuded by Koalas have sheets of tin around them to stop Koalas. At least that is the theory. Some Koalas just see that as a challenge and one made a hell of a racket last night trying to negotiate the tin. Apparently getting back was just as difficult and John got some good photos of it retreating just before breakfast.

The weather turned out glorious for our last planned activity, the Hanson Bay Hike, so we all turned up at Hanson Bay, took photos, and

piled into three cars for the trip to Kelly Hill Caves. The walk of 9 km goes from the caves to Hanson Bay.

The first few kilometers were through the same sort of bushland we had become used to and varied from limestone, to ironstone, to sand, at various intervals and required several stops for flower photos. As we approached the halfway mark, we suddenly found ourselves in the same beautiful forest as we had found on the Cape Cassini road, then, just as suddenly, we were on the shore of Grassdale Lagoon.

The rather large lagoon, several kilometers in length, is flanked to the south east by a limestone hill and to the north west by the low, flat land used for farming, such as the adjacent former Grassdale property we had been in a few days before, although, apart from Grassdale, it was still clothed in natural vegetation.

We then wandered along the north east side of the lagoon, sometimes at water level and sometimes on ridges up to 100 metres above the lagoon and shortly before leaving the lagoon, had some marvelous views of the former Grassdale property.

At the 6 km mark, we descended to the southern limit of the former grassdale property and walked through very short grassland on the flood plain of the South West River, which occasionally came right up to the track.

We then entered captured dune country, which continued to the small promontory, just

east of the Hanson Bay carpark, which provided some spectacular views in the glorious conditions.

Not far into the walk, Elaine twisted her ankle, but it did not seem serious and she continued the walk without any problems. Once on the beach, however, it suddenly reacted to the soft going and by the time we got to the cars she was in a good deal of pain.

For some reason, the majority of the group wanted to leave the amazingly beautiful coastal scenery and go back to the caves for lunch, so we squeezed into the remaining cars and headed for the caves. After sitting still for the duration of **lunch, Elaine found she couldn't put her foot on the ground, let alone walk, so we had to half carry her to the car.**

Our plan was to have a BBQ at the house, which turned out to be a very pleasant evening and a great finish to a marvellous day.

Sunday 5th October

The day started out a bit cloudy, after a rather cool night. Although clouds persisted over most of the island, there were few out to sea off the north and west coasts, where the weather was delightful.

Our first stop was Western River Cove, half way around what must be the most beautiful drive on Kangaroo Island. At a camping area at the end of the road, a track goes down to a bridge over Western River. Some dunes immediately above the bridge gave marvellous views of the



Western River Cove west of Snelling Beach.



Western River beach where a Hooded Plover was seen feeding along the wave line.

Western River valley.

The beach was quite picturesque, but only small and the headland at the western end looked very interesting, but by the time we were **blocked by a cliff, we still couldn't see around the corner.** However, from there the coastline to the east looked just as good as that to the east of King George Beach, but, as with Snelling Beach, access to the eastern headland was blocked by a river. A bonus was another Hooded Plover, so more photos were taken and we have now photographed 1.5% of the population on the island.

On the way out we obtained even more spectacular photos of the valley and the coastline to the east of the bay. Once away from the views the road became lined with some of the most attractive trees we had seen on the trip, so more photos. Then another bonus. Yellow Sun Orchids. Our first Sun Orchids of the trip.

It was then decided to have lunch at the picnic area near the visitors centre. At the centre there were cars everywhere and inside the centre



Canola crop near Western River Cove.

people everywhere. Did we make the right choice? When we got to the picnic area, one picnic shelter was occupied by a bus, while the rest were vacant. Amazing.

We then set off to West Bay and in spite of the marvellous conditions, we saw one car on the way out and had the bay to ourselves. Quite a few stops were made along the way to photograph fire regeneration and flowering Yaccas.

From the end of the road a track went off to the left to a lookout, while a boardwalk led down to the beach. There was not enough time to inspect the headland at the northern end, so we wandered around the southern headland, where there was a spectacular junction of limestone and Cambrian rocks. There were several spectacular caves in the limestone, including one with a Cambrian base and a magnificent fossil shingle bed.

We then headed for home, with more stops for regeneration photos and a stop for a pair of Cape Barren Geese with two chicks.

Monday 6th October

A front went through at about 2am, with gale force winds and a few showers, but fortunately the camp site was sheltered from the wind. By breakfast time the showers had disappeared, leaving around 50% cloud cover. After



Sun Orchid near Western River Cove.



Sealink Ferry Terminal Penneshaw.

sleeping in and a leisurely breakfast, we joined John on a trip to the Stokes Bay Bush Garden. What a place. Unfortunately only about a third were numbered, but that constituted a lot and just the walk through the garden made the trip worthwhile.

By the time we had finished there, it was after lunch, so we drove down to the Rockpool Café, where we had so enjoyed coffee the other day. After explaining that Elaine was coeliac, the very obliging staff suggested they grill her some fish, so we ordered grilled fish and salad for Elaine and a cone each for John and I.

The cone contained 2 large fish fillets, two large pieces of Calamari, two crumbed scallops, one beautifully cooked prawn, salad, and **copious chips. I finished mine, but John just couldn't fit in the last few chips.** What a difference from the bistro at Kingscote.

From there we just headed for home and started packing for the early takeoff tomorrow.



Glacial scratch marks in Cambrian Metasediments Christmas Cove.

Tuesday 7th October

We set the alarm for 5.30 and woke in pitch dark, to total cloud cover, trying very hard to rain, but not quite succeeding, although we did get some very light rain on the way to the ferry.

John, as he had hoped, was at the front of the line and I was right behind him. He was first on and I was the last on the outside circuit. This time the sea was quite calm and we had a great trip, especially as we were all together, rather than on two different ferries as before.

Once the ferry had docked in Cape Jervis, we all went our separate ways as we had said our farewells on the ferry.

A very big thanks goes to Barry for both organising and leading our marvellous trip on Kangaroo Island.

Report written by Barry Collier.

Introduction on the geology of Kangaroo Island written by Ron Evans.

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