



The Wanderer

MARION ISLAND 67TH OVERWINTERING TEAM



South African
Weather Service
Suid-Afrikaanse
Wêreldwye
Wêreldwye

Monthly weather statistics

Ave Max Pressure	1012.8 hPa
Ave Min Pressure	998.8 hPa
Ave Pressure	1006.4 hPa
Max Pressure	1030.4 hPa
Min Pressure	980.7 hPa
Ave Max Temp	6.7 °C
Ave Min Temp	2.5 °C
Ave Temp	4.6 °C
Max Temp	9.6 °C
Min Temp	-2.5 °C
Ave Humidity	83 %
Max Humidity	99 %
Min Humidity	52 %
	35.9 m/s
	129.2 km/h
Max Wind Gust	69.8 kt
Total Rainfall	187.6 mm
Highest in 24 Hours	27.8 mm
Total days with rain	28
Total days > 1mm	20
Total Sunshine	57.2 hrs

From the editor



Here we are once again. Another month has flown by, and it is difficult to imagine that in a few days, the Agulhas will have cleared the waters between us and sunny SA. As many may know, Marion will also play host to a construction crew for the next four months. Even the most cynical team member will have to agree that, however strange it will be to suddenly share this place with a new group of people, it will be nice to see a new face or two around here, especially our two new M67 team members, Greg McClelland and Hugh Purdon.

I am very happy to introduce a new section to this newsletter entitled "Dear Jean", where any team member has the opportunity to express their sorrows to our very own lady sealer, Jean. Incidentally, Jean and our new team member Hugh are brother and sister, and will be the first siblings to work together as sealers, as well as the first brother-sister team members on Marion.

Apart from the regular contributions to the newsletter, "Route of the month" takes a look at the daily activities of a meteorological observer, or Metkassie. Where and when this title originated will hopefully be discussed in future issues. Also included in this issue is a page dedicated to photographs taken by team members. Please feel free to contact us on Marion Island (after working hours, of course). We are a mere phone call or e-mail away, and really appreciate news from family and friends.

- Cobus Cronjé

July 2010

Marion Base
telephone number

021—405 9460

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Marion Landscapes

Fluvial erosion of bedrock

- Barend van der Merwe

The Wanderer

Although the title of this month's article can inspire the mind to quickly scurry away like a moose who was spotted dining on the last bag of bacon kips, it is merely a formal way of describing how flowing water (in geomorphology lingo processes or landscapes associated with the action of water are referred to as *fluvial*) can break down and remove bedrock.

On Marion there are numerous river systems distributed across the island with the majority of them occurring on the eastern coast of the island. These river systems show classic dendritic characteristics although the number of tributaries associated with each is small. A dendritic drainage pattern refers to a pattern made in the landscape by the river and its tributaries that resemble branching similar to that observed with tree branches. Just like a tree has a single stem from which all the branches originate so too does a dendritic drainage pattern have a single point where water leaves the river system and enters another water body usually, but not exclusively, the ocean.

Now anybody who has ever been to the Drakensberg and stopped to enjoy a nearby river would have noticed that the rocks inside the river tend to have different shapes than those found higher on the mountain slopes. In 1919 a geologist named Chester Wentworth conducted an experiment to quantify how the shapes of pebbles change during transit within a stream (Wentworth, 1919). He used a simple tumbling barrel (similar in concept to those used on construction sites to mix concrete) and placed marble cubes inside the barrel which rotated at 27 revolutions per minute to simulate transport downstream (Wentworth, 1919). What he found was an increase in the roundness of the cubes (in other words they became more spherical/ellipsoidal) as the distance of transport increased up to a certain point beyond which the pebbles became more angular (Wentworth, 1919). The actual physics of this process, though interesting, falls outside the scope of this article. Suffice it to say that the continuous action of these pebbles crashing into and scraping against each other leads to the

systematic breakdown of the shape of the pebble. As you can imagine all of these actions impact directly on the surface area of the pebble and, here is a taste of the physics, the amount of surface area exposed relative to the overall size of the pebble is therefore reduced. This is why the pebbles tend towards spherical/ellipsoidal shapes.

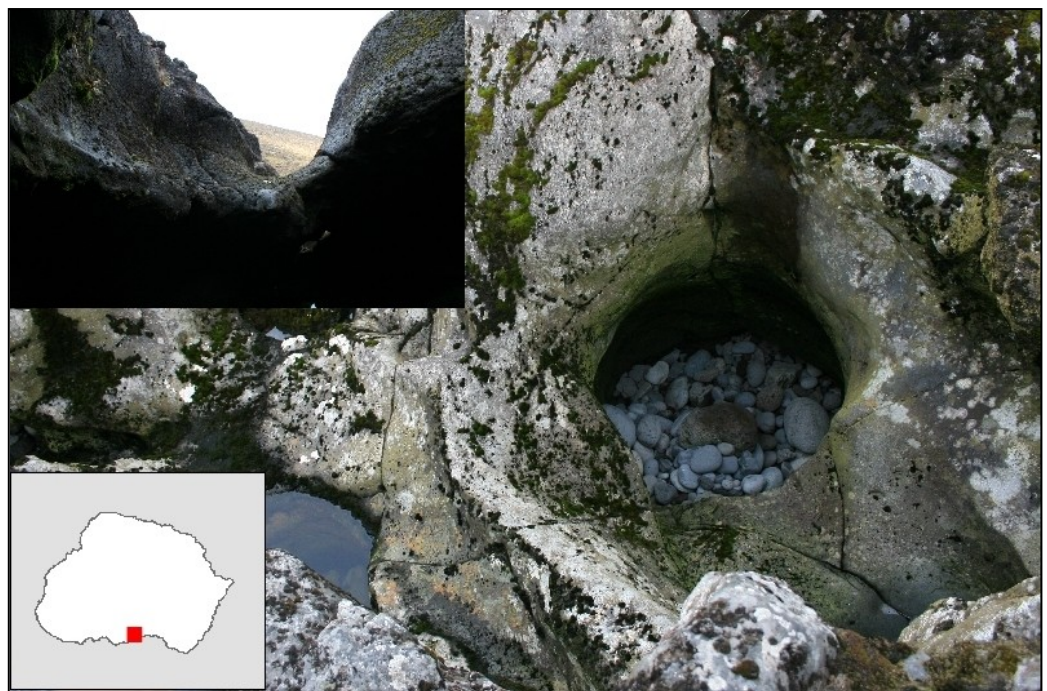
What about the bedrock channels themselves? How do these landscape features come to be? Well there are three main ways in which incision (another fancy science word meaning cutting into) into bedrock can occur, namely corrosion, abrasion and the hydraulic action of water (Summerfield, 1991). Have you ever noticed the rusted barbed wire fences so common in South Africa? Rust is a chemical alteration that occurs within the metal. Therefore corro-

sion of water can cause the breakdown of bedrock by detaching loose particles (Summerfield, 1991). Next time you're close to a river system try standing in an area where the water flows faster than in the pools. If you have done this already you can attest to the force of the water trying to pull your legs out from under you. This is simple evidence of the power of flowing water.

A process associated with this hydraulic action of water is that of cavitation which refers to the implosion of air bubbles that in turn emit tiny jets of water that can contain enough energy to fragment rock (Summerfield, 1991). This tiny jets of water which travel at incredible speeds (up to 130m/s or 468km/h) (Summerfield, 1991) can exert enormous forces on bedrock. Abrasion refers to the wearing away of bedrock through the action of particles being transported

they are being transported down. Summerfield (1991) states that the effectiveness of this action is dependant on the following factors namely the concentration, hardness and kinetic energy of the particles as well as the resistance of the bedrock. Now a lot of this is stating the obvious, similar to saying that the extent to which tree branches bend outside in the garden is dependant on the wind speed and the resistance of the branch to bending, but it still is central in understanding the landscape features we are talking about.

Let's talk about those controlling factors (I apologise, but some physics will have to come in here at this point). The concentration of particles simply refers to the amount of particles within the stream (remember that concentration is expressed as the amount of a sub-



Examples of fluvially eroded bedrock at Watertunnel, Marion Island.

sion as means of incision also refers to a chemical alteration of the bedrock (Summerfield, 1991) this, of course, being a gross oversimplification of the concept. The hydraulic action of water refers specifically to the force of the movement of water itself (Summerfield, 1991). A famous quote by Bruce Lee refers to water being both soft and hard and it is this 'hard' aspect

within the water (Summerfield, 1991). Go and pick up a registration form to study geomorphology if you mentally linked this process with the discussion of Wentworth's experiment, you obviously have what it takes. Just as those cubes used by Wentworth wore each other down by bumping into each other, so too do they wear the bedrock of the stream within which

stance within a volume of another substance). Therefore the more pebbles there are (i.e high concentration) crashing into the bedrock the more of a combined effect they will have on the breakdown of the bedrock. Kinetic energy, and here we delve into the recesses of high school physics that most people swore never to revisit, is quite simply the energy that an object has due to its movement.

The faster the pebble moves the more kinetic energy it possesses. Now when this pebble crashes into the bedrock some of this energy is transferred (remembering that energy cannot go lost) and is used to do work, which in this case is the breakdown of the bedrock. To best visualize the effect that different levels of kinetic energy can have remember a game played in primary school in which a group of kids run around while one tries to throw a ball at one of them. The harder the ball is thrown (i.e the faster it moves and consequently the more kinetic energy it possesses) the more it hurts when the ball hits you. Who said physics can't be fun? Hardness of the pebble is also of extreme importance. It makes sense that the softer the pebbles the more likely it is to break upon impact and the less likely it is to break down the bedrock. Therefore the harder the pebble, the more potential damage it can do. By analogy it is the same principle as shooting an object with a normal paintball vs. as frozen paintball the latter of course being considerably harder.

Lastly, the resistance of the bedrock also comes into play. Quite obviously the more resistant the bedrock is to the physical impacts of the pebbles, the more difficult it is for the pebbles to break down the bedrock. The opposite is therefore also true with least resistant bedrock being worn down much faster. When these fluvial features are observed within the landscape their origin is therefore subject to variety of processes acting simulta-

neously. We have discussed, for example, the consequence of increasing the speed of a pebble on the bedrock but what causes this increase in speed? What factors lead to an increase in the concentration of particles within a stream? These are just two examples of how larger landscape scale processes can influence smaller scale changes.

Essentially what this all boils down to is that geomorphology is a landscape scale science where the changes 'outside' your study zone can have an influence on that which you are studying. In that sense Marion Island is particularly beneficial for South African geomorphologists since landscape scale processes are easier to account for. For example the rivers are not hundreds of kilometers long as is the case back in mainland South Africa, which in turn makes the study of sediment loads on the island easier. Marion Island is therefore truly a gem for the earth scientist.

References

- Summerfield, M.A., 1991: *Global Geomorphology: An Introduction to the Study of Landforms*, Pearson Prentice Hall, Harlow.
- Wentworth, C.K., 1919: A laboratory and Field Study of Cobble Abrasion, *The Journal of Geology*, **27**, 507-521.

Breaking news

A new mammalian species has been found on Marion Island. We had to sedate him with coffee. We sampled hair, stool and blood for genetic testing. The mammal has been identified as *Woekii pierrensis subsp. trompani*

It's believed that he spends most of his time in the radio room of the base, occasionally wandering around outside. We took video footage of his behaviour and sent it off to a world-famous zoologist.

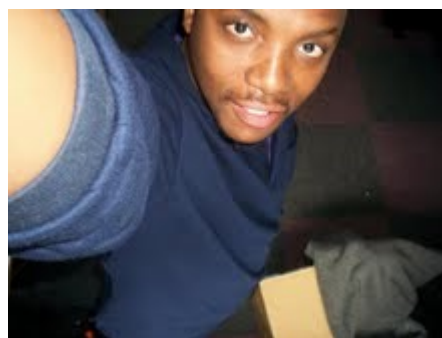
The feedback is as follows:

"This type of behaviour has never been documented in any mammal species. Good luck. I suggest you feed him Mrs Ball's chutney to pacify him, as we found copious amounts of it in the stool samples."

Keep safe

- Lourens de Lange

Profile of the month



Name:	Karabo Mokwena
Age:	23
Hometown:	Ga-rankuwa (North-West)
Designation on Marion:	Meteorological observer

Occupation in South Africa:

I have a diploma in IT-networking, but haven't really worked much in that field. I'm currently working on going into business with my girlfriend when I get back to South Africa. I just want to explore all my capabilities. Right now I'm a little short of a few hundred thousand to reach my target of hitting my first million in the bank by 27 or 28. It's a promise I made to myself, and with the ideas running in my head and the positive energy I have, I'm pretty sure I'm gonna make it! Forbes here I come!

Favourite past time on Marion: I watch movies and go to the gym a lot.

Favourite pastime in SA:

Picnics with friends at the park in my area, going to Cofi lounge in Hatfield, and occasionally reading a book or a newspaper.

Favourite Marion dish:

It has to be Jacqui's pork ribs! She marinates them in this heavenly sauce that would make you lick your fingers to the bone.

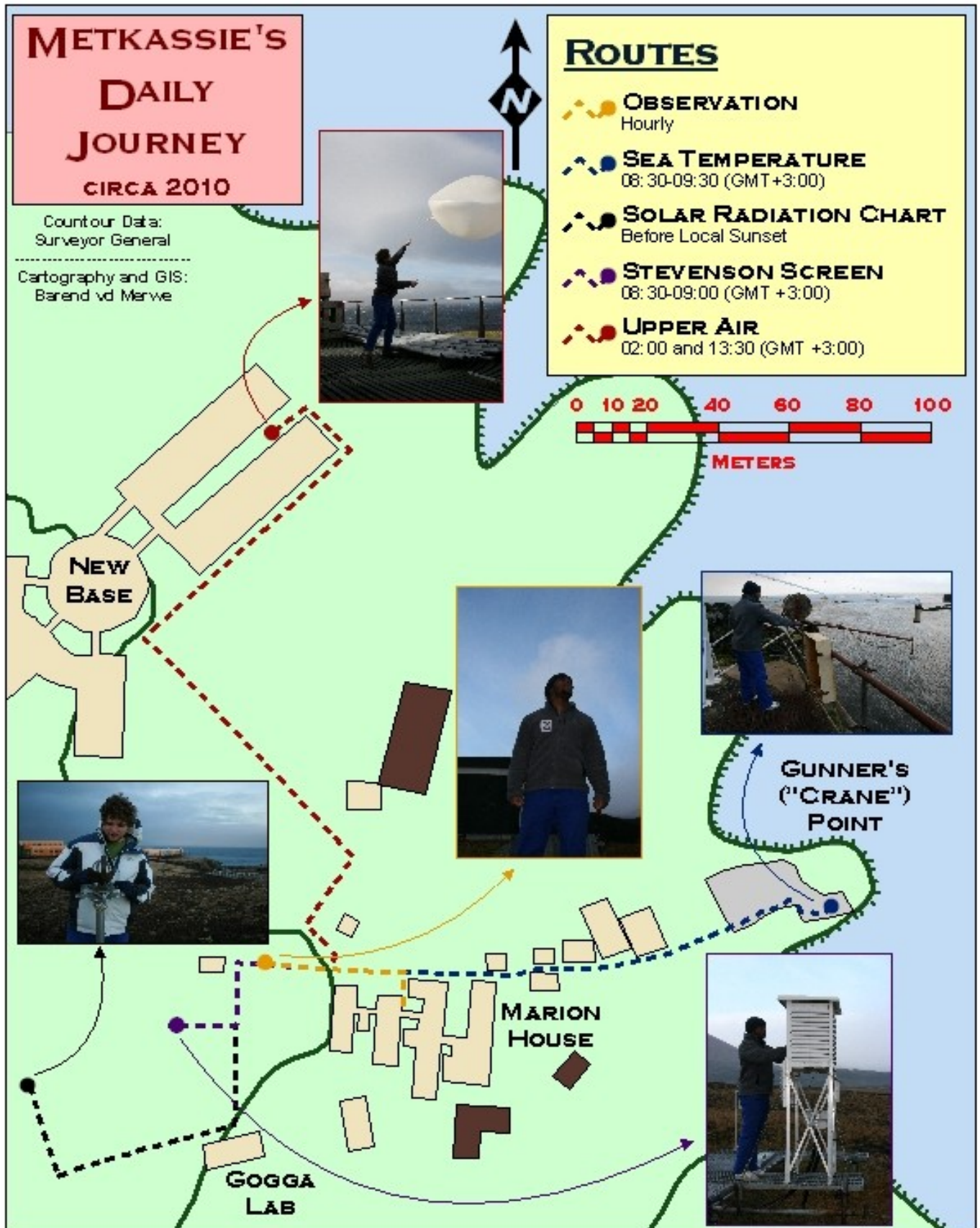
Relationship status:

I'm dating the most incredible girl in the world. We are the ultimate team! I get teary-eyed just thinking about her!

Best movie ever:

'Law-abiding citizen'. The 'Transformers' movies are also in my best movies book. I actually enjoy a lot of fictional movies: 'Spiderman', 'Fantastic Four', movies like that.





A familiar voice with a message from the past

- Jacqui Davis

The Wanderer

Snow streaming through the cold air outside, I sit comfortably on the bed and enjoy a favoured pastime – reading through the old hut book entries – as I settle down for my first night in the new Grey Headed hut. Although I have passed by this lovely piece of paradise many times, sometimes popping in for a quick coffee or meal with past team mates, my last night was spent over three years ago in the old hut. Paging through the hut book, I linger on my previous team's (M64) entries. I take a heartfelt walk down memory lane, reliving some good memories and having a laugh at my friends' stories and classic quotes. One entry in particular catches my attention which, until now, I have never read. The untidy and almost illegible handwriting is unmistakable, and three years later I know exactly who wrote it without having to read the name signed in slanted script at the end.

Dated the 25 September 2007, the entry is entitled *"To the tired, lost (confused) traveller"*, and I want to share it with a broader audience:

In the wise words of Johann (Jammies), beloved friend and team mate, *"This Island, with its stark, harsh beauty, is tough and it expects a lot from you before it gives you something back. But what you are given back is something that you will treasure and hold dear to you for the rest of your life."*

If you try to conquer it you will fail, terribly! There is a deeper underlying force that governs everything here - the animals know it and they accept it, their hardships and suffering and also their circumstances. You don't see them complaining nor do you see them worry. They have accepted that there are some things they cannot change. All you must do is accept and admit there is something greater than you – the distance...the wind...the island. Accept it and everything is fine, and this place could turn out to be an Eden, a lost paradise. If you do not, the island can break you. Admit your weaknesses and everything will turn out fine. Remember – we lose the one's we care for, things don't always work out as planned and life goes on. Sometimes it is good to be reminded that all any of

us should expect is some heat in a little hut. Beyond that everything is up to larger forces.

People have their differences, not everyone is necessarily wrong and not everyone are necessarily right, so let people be. 'There are many ways up a mountain, but when we get to the top we all have the same view'.

So, tired traveller and adventurer, wherever you many be on your road, just remember the best way to go is to go forward. 'The journey of 1000 miles begins beneath your feet'. You will always be on the right path when you walk to your own life's drumbeat. Just listen to your heart, become quiet and still and you will start hearing your life's beat. March to it! Don't compare or compete and everyone will respect you. Sometimes it is hard to hear and it becomes faint but it is always there entwined deep within the core fibres of your being. Start listening to yourself and you will hear the most beautiful tune imaginable! I'm not writing all this because it sounds nice, deep and profound, but because I believe it."
Johann Jamneck (1984-2009)

Everyone, not only Marionites, have felt tired, lost and confused along their travels in life or on the

Island. Especially in these overcast days of winter, the Island can seem ever more tiring. Marion demands much from a weary Islander, and she will push you sometimes close to breaking, but if you persist and struggle through and make it to the other side – of whatever it is that is your challenge here – she will reward you beyond your imagination. Of course this is a gross personification, but, mind willing, we have the opportunity to learn and gain a great deal from the experiences we have, and the more unique the experience the more unique the lesson.

Marion's challenge is threefold – there is the obvious physical aspect, but there are the mental and emotional challenges too, which can be just as tricky to overcome. From my previous year, and having spoken to many others, I know that you leave Marion a different person than when you arrived. And with all you go through here, how could you not? The interpersonal relationships, the endless introspection, the bodily and mental challenges of extreme environmental conditions, and the emotional trial of being isolated from family, friends, and society for a prolonged period of time are just a few of the challenges facing a Marionite.

Although a Marion experience differs from person to person, you can gain much – you will learn more about yourself after facing new and unusual challenges and situations; you will learn more about life; you will see life differently; and you will realise that you are capable of much more than you ever thought possible. Something I have learnt is that your mindset will determine if you see the rain, or the rainbow on this island. Accepting the things we cannot change allows a shift in mindset, and we are able to view our world and circumstances with a new and better perspective, which makes all the difference.

Since the day Jammies immortalised his thoughts in a remote hut, much has changed. And, although I've heard it said that the only constant in life is change, perhaps there are some truths that stay forever constant. Lying ready for an eager reader, to live on through them; to remind them of something they might have forgotten; to guide them; to comfort them; or to teach them, even long after the author's own lifetime has passed. And perhaps many of these constants can be found in the most unlikely of places...like between the pages of an old hut book.



Dear Jean

- Jean Perdon

Being a sealer one typically portrays an attitude of total invincibility. However, this is not the case as last year's sealers will point out. Seals and catwalks may puncture your tough exterior, but the seals may even eventually worm their way into your heart and sabotage that tough impenetrable emotional side.

With this in mind I "jumped" at the idea of "Dear Jean", which was suggested by a fellow M67 member. It would entail all problems of the emotional and physical kind encountered on the island from M67 members, with hopefully an appropriate helpful response. I thought: what better place to put to use our hardcore experiences on the island and come up with some helpful solutions.

The first two questions received are definitely of the emotional kind. This may have something to do with the 3-month jitters, as we have only seen 16 other people at the most everyday, and therefore trivial matters become important.

Like for instance why are fire engines red? This came from our team leader and Medic Simon Avis! Well for such a serious question one can only expect a serious answer. Well, they are red because they've got 8 wheels and 4 people on them, $8+4=12$. There are 12 inches in a foot and one foot is

equalled to a ruler. There was a ruler named Queen Elizabeth and also a ship named the Queen Elizabeth that sails the seas. In the seas there are fish and on a fish there are fins. The Fins fought the Russians and the Russians are red. That's why fire engines are red, because they are always Rushin!!!! No seriously fire engines are red because Henry Ford was a cheap-skate and made all his cars black. In order to make the fire engines visible to the public they were painted red.

The next question asked (from Matt) was why is what you deposit into the view brown? One response

by an M67 member was that, well, if you mix all the colours in a rainbow you get brown and that's what your intestines do. In all seriousness, bile which comes from your gall bladder and helps digest food is metabolised by bacteria in your large intestine. A by-product, stercobilin, is left behind giving it a brown pigment. This, in conjunction with dead blood cells that released iron which is subsequently converted into bilirubin also adds to the customary healthy brown colour found in the view.

One should remain mindful that health and certain food stuffs may alter the colour of the bottom of

the view. Beetroot is renowned for this and as it is plentiful supply on the island, do not be alarmed if things go all red on you. This is because beetroot contains pigments known as betacyanins which gives it its red colour. Indulgence of this root may have its benefits and one has to look past the horrifying fact that it all may just end up red in the view! For those of you suffering from stress injuries, beetroot has a glycaemic index of 64 and is easily digested, causing a rise in blood sugar levels. After strenuous activities it ensures that muscles remain energetic and replenished. It is also rich in antioxidants and vitamins K and C. So before the boat arrives with tons of germs from the mainland get your daily dose of vitamin C from your beetroot jar! This may also benefit you in your later years (now that dementia may be acting up for some of us) as it is also thought to prevent Alzheimers and Dementia, among other things.

So that all for this month, keep sending in your problems to mixed pickle via radio at 6 pm every night or via sealer mail A thank you goes to Wiki answer for all its help and until next month, keep a look out for the big eles coming home as breeding season is about to start!



The previous facilities at Mixed Pickle hut

Mafia Wars

WARNING

NOT FOR SENSITIVE READERS

During the past months on Marion I witnessed and even willingly took part in acts bizarre and unthinkable: The violation and invading of children, and now moving over to babies in the near future.

Shocking, I would say.

What is driving us to such behavior you ask? Pure love and dedication, and the physical contact, the smell and the marble eyes of these young ones. We get some resis-

tance from their parents, but they are not even able to save these young ones from the Mafia members controlling these attacks. If they do they are caught, reprimanded, and given a tag and tracking device so that their movements can be monitored. The children are then also tagged and checked twice a day for their behavior and positions.

Once a month these children are chased, their personal space invaded, caught, their sex determined, weighed and marked, only to be released and wait for the next time.

And all of this for only pure love for these amazing mammals called seals.

We love you guys and may you live long

- Simon Avis



The Wanderer

On Marion Mooses

Marion is host to the house mouse. A horrible creature if you ask me! Forced to survive where they do not belong has resulted in much unfortunate mess. The mice (or 'mooses' as we call them here) burrow into *Azorella selago*, which often kills this very slow growing cushion plant. Besides eating the indigenous flightless moth and countless other invertebrates they have also been known to eat holes into Albatross chicks, who ignorantly sit on their nests unable to defend themselves, and literally get eaten alive!

My dislike for the Marion moose extends to its interaction with me - having a mouse (or in our case - mice, or would it be *mooses* or *meece*?) in our house is not only unhygienic (I am sure), but also destructive. They chew things - well, everything - the most destructive of which being electrical wires, especially computer cables. As a result we are all rather 'moose-mad' here, and try our level best to 'moose-proof' everything! We make sure all doors are closed properly and have extra metal strips nailed to the floor in doorways to prevent the little squishy creatures from slipping inside. We



are paranoid about keeping food securely boxed away and tightly sealed.

Our defences are not watertight, however, and they are continuously breached. The crafty creatures have an untold number of unknown entrances into our warm home full of food. We set traps all over the place, and the killing of mice is actually a competition at times (who can trap the most) with the best moose hunter's name listed on our kitchen blackboard alongside the month's kill number. Besides planned trapping, there exist the opportunistic hunts that can be rather comical. Whenever a moose is spotted, people change -

discussions are immediately discarded - and the hunt begins! At times slippers or shoes are thrown (with surprising accuracy), sticks are grabbed and a general pandemonium breaks forth with a frenzy of people jumping, running, stomping, banging, crashing and an occasional squeal or two thrown in for good measure! It can be quite entertaining at times with seemingly normal individuals abruptly erupting into a crazed slapstick comedy routine! Of course, I do feel bad killing the mooses, it isn't their fault they are here, but then I think of all the damage they do, and I think of the Albie chicks, and then I feel better for helping the birds at least.

I had an unfortunate incident a few days ago which only strengthened my dislike for *mooses*. I was on the verge of sleep, nice and cosy in my bed, when I felt a tickling sensation on my cheek. After a few short moments, I brushed my cheek as one does in such situations, and a little fury blob came tumbling down onto my pillow! Of course I was shocked and shrieked in disgust and tried to grab it, but it quickly slipped off my bed and was lost to me. The cheek of it! (Pardon the pun) I stormed off to find a trap, came back with two but to no avail. My neighbour, however, Matt, spotted a moose in his room later that day, and Barend, whose room is just down the corridor, attested to having killed a moose in his room the following day. So I hope it was the sneaky, cheeky moose that met his end! If there is one place that needs to be truly moose-free it's my bedroom - and at least my bed!

- Jacqui Davis

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Elusive Wallace the Wombat - down and out?

This little fur ball is proving to be a cunning escape artist. Although spotted occasionally, the wombat fast disappears leaving no trace, save for a few snapshots. This month Wallace roamed Base getting up to mischief. Spotted at a party with friends is one thing, but passed-out in party confetti - is Wallace on a downward spiral? What should we expect next?





Clockwise from the top left: Matt, in obvious pain, getting an injection on Long Ridge (Kari); A snowy view of base, taken when the wind chill was -16°C (Lourens); Fur seal pups swimming (Lourens); Sleeping elephant seal pup (Lourens); The three wise men, a.k.a the Good, the Bad and the Ugly (Simon).