Australasian Society for Phycology and Aquatic Botany

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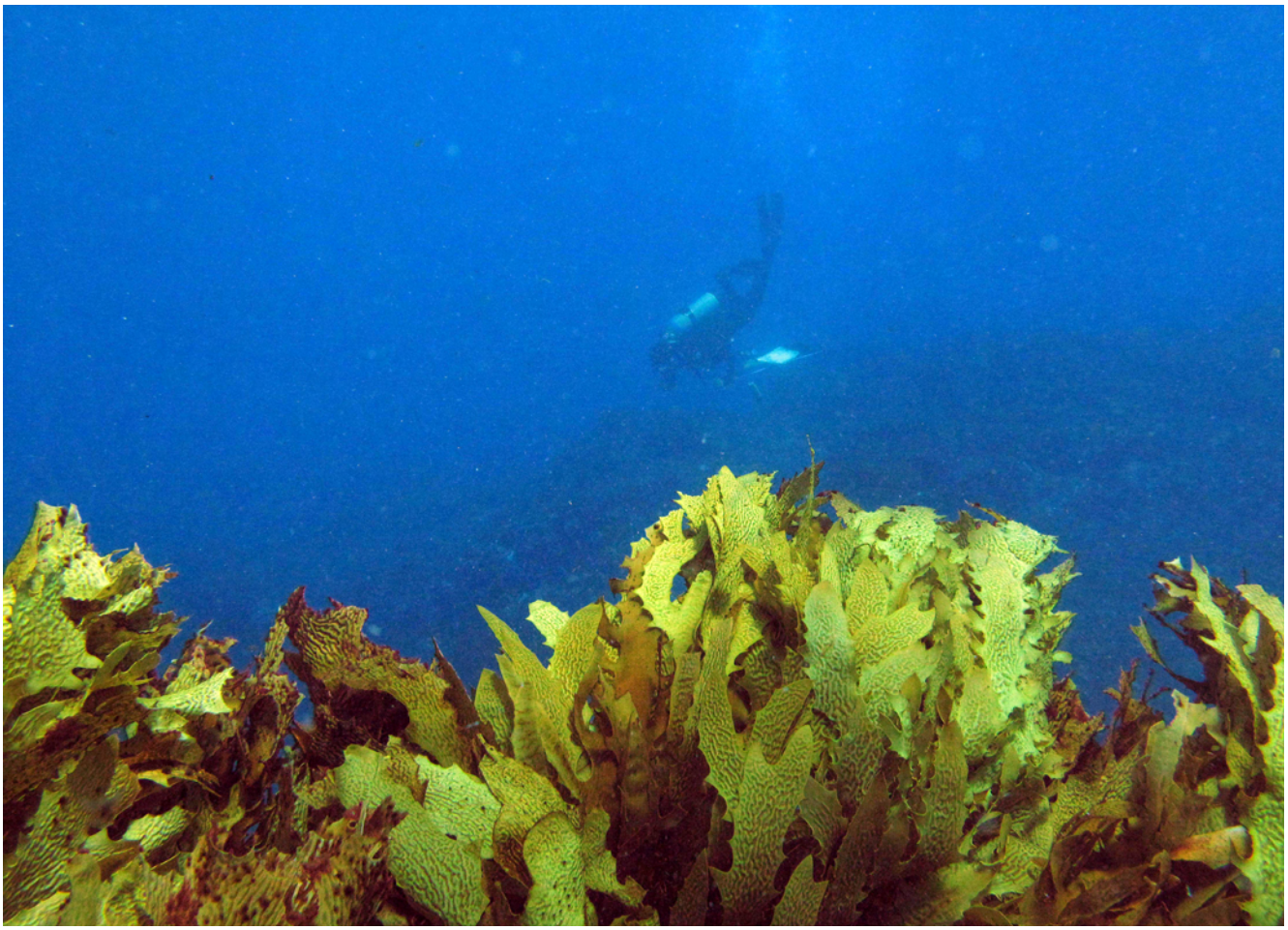

Sampling at Rottnest. Photo R. Dixon

Inside this issue:

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Editor's Corner

Kyatt Dixon

Hi folks. We're back, just in time to pull out the togs and sunscreen and hit the pristine shores of Rottnest Island in November at the upcoming ASPAB meeting. Our Western Australian colleagues, namely John Huisman, Di Walker, Kieryn Kilminster and Rainbo Dixon, have been putting their hearts and souls into making this a memorable conference for all. I have no doubt that it will be an exceptionally good time, with a great spread of themes covering phytoplankton, macrophytic algae and aquatic vascular plants as well as numerous local and international phycologists confirmed, including Professor Gary Saunders from the University of New Brunswick, Canada. I can't wait.

Quite a lot has been on the boil over what was a pretty cold and moist winter for many of us. But did that ever stop a real phycologist braving brain-freezingly cold waters in the name of science? In this issue Gareth Belton gives us the answer, along with insights into other penetrating and universal questions like "Why does Brazil produce so many talented F1 drivers", in his tales from the Bight. Also inside are some cracking seaweed recipes from our returning president Alecia Bellgrove (a big welcome back), notes from AMSA 2010, and reviews of two new aquatic themed books from CSIRO publishing.

Happy reading.

President's Message

Alecia Bellgrove

Hello again. Firstly I would like to again thank Judy Broom for stepping up whilst I was on maternity leave. I am now back and enjoying getting stuck back into research, with my teaching responsibilities also looming on the horizon.

Well it has been an interesting time politically in Australia with the hung parliament and negotiated government formed by Julia Gillard. FASTS (Federation of Australian Scientific and Technological Societies) has been active throughout this process advocating on our behalf and pushing the research and higher education agenda with the appropriate people, and they will continue to work with the newly formed Gillard Ministry.

Some interesting (and sometimes sobering) reports have been released in recent months that I think should be of interest to our NZ members as well as Aussies:

- Despite Australia finally catching up with New Zealand to have our first woman prime minister, the results of the 2009-10 APESMA Women in the Professions Survey are not promising (http://www.women.apesma.org/). The survey indicated that "67% of women thought taking maternity leave would impact on their career, 71% of respondents with children stated that this has had an impact on their career, 38% claimed discrimination and 20% sexual harassment, and a quarter expected to leave their profession within three years. The results are consistent with findings in FASTS Women In Science report. Over the next 6 months FASTS will continue to work with research organisations and government to try and reverse these unacceptable trends".
- Results of the Science Literacy Survey were also disturbing with 30% Australians believing dinosaurs co-existed with humans and 28% thought it took one day for the Earth to move around the sun (and I don't think they were all from Melbourne!). The full report is at: http://www.fasts.org/images/News2010/science%20literacy%20report%20final%20270710.pdf
- The Australian Academy of Science released The Science of Climate Change –Questions and Answers report that "aims to address confusion created by contradictory information in the public domain. It sets out to explain the current situation in climate science, including where there is consensus in the scientific community and where uncertainties exist." The report can be found at www.

science.org.au/policy/climatechange2010.html
These are challenging but exciting times that we are living in!
I'm looking forward to the upcoming ASPAB conference at Rottnest Island and would particularly like to encourage our student members to attend. Don't forget that there are travel grants available to assist with some of the costs (application in this newsletter).
And also another reminder to submit your publications for the ASPAB Prize for Publication Excellence (see info in this newsletter and on the website www.aspab.org).
Enjoy this edition and I look forward to hearing of any modifications to the Phycuisine recipes using local species! I can feel there's a cook book waiting to be written…

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The Great Australian Bight: land of few trees but plenty of (sea)weeds

Gareth Belton

After driving for days one gets the impression that the Great Australian Bight (the GAB) is a seemingly endless stretch of coastline without a single road leading to the beach. If you are into cliffs and sand dunes, it is your kind of place. Geographically, the GAB runs between Cape Pasley, WA and Cape Carnott, SA. At the head of the GAB lies the Great Australian Bight Marine Park (GABMP), which at around 19,700 km2, is one of Australia's largest marine protected areas and includes a Benthic Protection Zone that extends due south from the mainland for approximately 200 nautical miles.
The region is also home to the mighty Bunda Cliffs, an unrelenting 220 km stretch of 60-meter high cliffs, and numerous "sandy patches" – see pictures.

The Bunda Cliffs. Photo: G Belton

Only 165 species of macroalgae have been recorded from the region, which is truly surprising when one considers that southern Australia has over 1,400 known species. Is this the true story or is the low number of recorded species due to the remoteness and lack of beach access? As part of my PhD at the University of Adelaide I am surveying this area to understand whether the region is truly species poor or the lack of known species is due to a lack of surveys. I am planning on using a number of methods to assess the true diversity of the region: boat based surveys (thanks to SARDI), land based surveys and checking herbarium records.

It's a very long walk with a full bucket of weed. Photo: R. Dixon

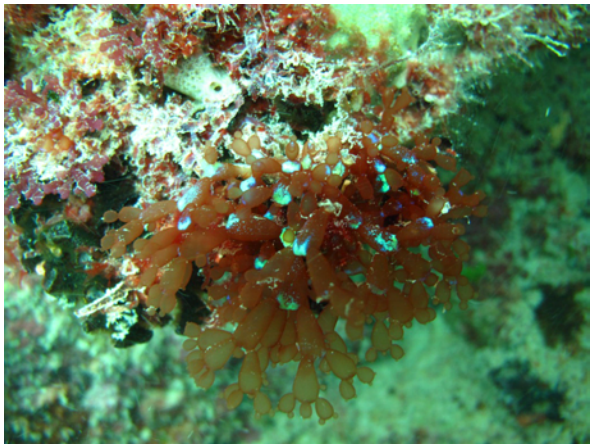
At least Rainbo can smile after walking up a huge dune. Photo: G. Belton

We (Fred Gurgel, Maria Marklund and myself) undertook our first trip to the region in February this year. After a two-day drive from Adelaide and many missions to get down various tracks to the beach, we were fortunate to have some spectacular weather and spent plenty of time in the water. We had a few days at Wilson's Bluff on the SA/ WA border, a few days at the head of the GAB and a week in the Coombra region. The vehicle can only get to within about 500m of the beach at Coombra and from there you have a serious walk over dunes. However, once you arrive at the beach, the expanses of rocky ledges and deep pools makes you quickly forget tired muscles and heavy gear, and for some, wonder why you did not bring any fishing tackle.

Fred showing his skills as a beach mechanic (see his previous job with the sideview mirror and band aids). Photo: M. Marklund

The reason Brazil has so many Formula 1 champions. Photo: M. Marklund

Over a two-week period we added at least 40 macroalgal species and two seagrass species to the list of species known from the region. Most of the reds from the trip have yet to be identified (yes I am getting to that Fred), so I am confident that there are many more known and unknown species to add.



Coelarthrum sp. (one of the many I still need to ID). Photo: G. Belton

A second trip was undertaken in July this year with Rainbo Dixon to collect intertidal and drift specimens, no snorkeling or diving is allowed between May and October due to the presence of Southern Right Whales and their associated friends. We were pleasantly surprised to find a very diverse high intertidal macroalgal community, which during my previous trip in summer was barren.

What happens when you forget your wetsuit, you no longer warm. Photo: R. Dixon

Due to some unfortunate weather and wind direction we had little luck in sampling the low intertidal, which left us plenty of time to see whales and explore potential spots for future diving and collecting. The newly developed whale-watching centre at the head of the GAB is worth a trip if you have not been there. We were greeted by over 10 mother-baby pairs of whales within stones throw distance of the viewing platform. The cake is made daily and it's a good spot to check out various trailers and camper vans for when you retire and want to buy your own to travel Australia. You will also be told that a large school of White Pointers swam by earlier, but don't ask for too many details as you may find some holes in the story.

The general feeling at the head of the Bight car park. Photo: G. Belton

Better get sorting. Photo: R. Dixon

Gareth staying warm during the winter trip. Photo R. Dixon

We plan to undertake two additional trips this summer followed by a large offshore expedition with SARDI later next year to dive in regions inaccessible by road as well as dredge below 30 meters. I am looking forward to what these trips will bring up.

Thanks to Fred, Maria and Rainbo for their help as well as Aude Loisier, the Dept. of Environment and Natural Resources, Caring for Country, and the Alinytjara Wilurara NRM and Yalata people for both logistical and financial support.

Phycuisine

Alecia Bellgrove

Simmered Hijiki

Ingredients

35g dried hijiki (*Hizikia fusiformis*) available from Japanese supermarkets (but I have also been wanting to give this a go with Sargassum)

1 cake of thin deep-fried tofu (*usuage*) – you can buy this or make it yourself if you can't find it (slice a tofu block in three flat slabs and drain as much water out as possible before frying)

10g dried gourd shavings (*kampyo*), scrubbed, reconstituted in water and cut into 2cm lengths

2.5 cm carrot, julienned and parboiled

Cooked soybeans can be added as an optional extra

Simmering stock

3.5 tbspn *shoyu* (Japanese soy sauce)

2 tbspn sugar

2 tbspn *sake* (cooking *sake* is available at asian supermarkets and some normal supermarkets)

1 2/3 cups water

1 tsp vegetable oil

1/3 tsp salt

1.5 cm ginger, peeled and sliced

Method

Wash *hijiki* and rehydrate in tepid water for 30mins. Pour boiling water over *usuage* tofu to remove excess oil. Cut *usuage* tofu into 1cm thick strips. Place *hijiki*, *usuage* tofu, *kampyo* strips and carrot in a medium sized saucepan. Add simmering stock and simmer over medium heat until *hijiki* swells and its aroma is strong, about 15 mins. Cool in the pan. Serve at room temperature as an accompaniment to fish and rice or any Japanese dish. Keeps 1 week in the fridge.

Miso Soup

Ingredients

Approx 750ml – 1 L water
2 sticks Dried dashi kombu (*Laminaria*)
6 Dried *shitake* mushrooms
1 small pkt *Katsuo bushi* (dried bonito fish flakes) – optional
Approx 3 tspn *Miso* paste (comes in white and red varieties; red is stronger. I prefer the white for soup)
2-3 pinches dried *wakame* (*Undaria pinnatifida*) washed and rehydrated in water – it swells heaps
Fresh silken tofu chopped into small cubes
Chopped spring onions (including the green bits)

Miso soup garnished with a squat lobster. Photo: K. Hind.

Method

Wash *shitake*. Place water, *kombu* and *shitake* in a saucepan and bring to the boil. Remove from heat and let stand for approx 20 mins to allow *kombu* and *shitake* to rehydrate and flavour the water. This is the basic vegetarian soup stock (*dashi*). If you are using fish flakes as well place in a colander and submerse in the saucepan, return to heat and boil for a few minutes until the stock aroma is strong. Discard fish flakes. Remove from heat and mix miso into stock by squishing through a sieve to ensure no lumps. Taste and add more miso if needed. Never boil the soup once the miso is added. Add *wakame* and tofu and return to a gentle heat until tofu heated through. Serve in small bowls and garnish with spring onions. Serves about 4

Instead of tofu and *wakame*, other good combinations are pumpkin cubes and *wakame*, potato and thinly sliced onion, *enoki* straw mushrooms and tofu, sweet potato and *wakame*. If adding vegetables cook in the stock before adding *miso*. This can also be used as the soup for *udon* noodles with vegetables added.

Extra yummy *Sushi* rice

When making rice for sushi, wash the rice thoroughly until water runs clear. Cook in a rice cooker or using the absorption method, using slightly less water than recommended. Place a piece of dried *kombu* (*Laminaria*) on top of the rice when cooking for better flavour. Once cooked remove *kombu*, turn into a big bowl and fan to cool quickly whilst adding the required amount of sushi vinegar. Whilst mixing and fanning try not to crush the rice grains. Once cool the rice is ready to use to make sushi.

Tip for keeping *nori* (*Porphyra*) sheets crispy

If you open a pack and don't use the whole lot, store them in the freezer rather than the cupboard for longer life and better flavour. If your nori is no longer crispy you can woft it over a gas burner to re-toast it. Don't get it too close and only for a few seconds.

Nori rolls made with sushi rice, crisp nori sheets and topped with salmon roe. Photo: K. Hind.

Phytoplankton at AMSA 2010

Shauna Murray

At the AMSA 2010 Conference, held at the University of Wollongong from July 4th – 8th, a special session on Phytoplankton was convened by ASPAB secretary Martina Doblin and Leanne Armand. The aim of the session was to showcase breaking frontiers in research, and to highlight the central role of research on phytoplankton in regulating the global climate system and as indicators of change in that system.

Speakers in the session covered topics ranging from remote sensing as a tool for observing long term phytoplankton community changes, to environmental changes causing morphological phenotypic change in phytoplankton species, molecular genetic monitoring tools, pigment analyses for reconstructing past communities, oceanographic drivers of plankton production and range extension and community changes in response to environmental change.

Thanks to Martina for all her hard work in highlighting the central role of phytoplankton research in this age of the changing climate.

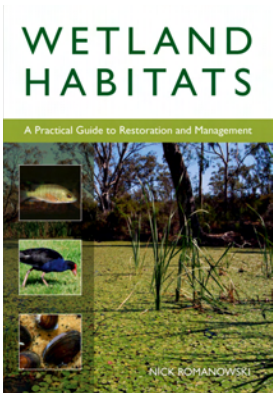
Book Reviews

Two books relating to the field of phycology and aquatic science were recently puclished by CSIRO Publishing. Sarah Hamsher and Kyatt Dixon give you a sneak peek inside their covers.

Wetland Habitats – A Practical Guide to Restoration and Management

Nick Romanowski

Review by Kyatt Dixon



Australian wetlands include an incredible diversity of habitats, ranging from highly saline mangroves and saltmarshes to alpine bogs, seasonal inland lakes and even puddles in forgotten corners of dairy farms.

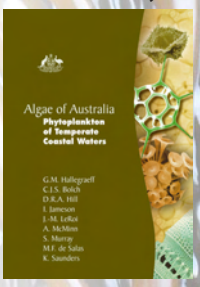
This new book focussing on the management of wetland habitats not only recognises this diversity but also the complex interactions that occur among the plants and animals that inhabit them, and thus the unique problems and challenges facing managers. Romanowski begins by expanding our horizons about what we should consider a wetland "habitat", highlighting the ecological importance of areas that many wouldn't consider worth mentioning. He then details the roles many organisms (including, of course, humans) have played in degrading wetlands throughout Australia.

Although Romanowski spends relatively little time discussing the practicalities of increasing the ecological value of both natural and man-made wetland systems, he provides some valuable advice about restoration techniques and highlights the importance of certain features (e.g. biological and genetic diversity) over others (e.g. presence of transient waterbirds). Overall, Romanowski's Wetland Habitats is an enjoyable read, even to a marine enthusiast such as myself, and opens the door to the rich yet often overlooked ecosystems that are our wetlands.

Algae of Australia: Phytoplankton of Temperate Coastal Waters

GM Hallegraeff, CJS Bolch, DRA Hill, I Jameson, J-M LeRoi, A McMinn, S Murray, MF de Salas, K Saunders

Review by Sarah Hamsher



Hallegraeff *et al*. have completed an important flora of the phytoplankton of temperate coastal Australia. The introduction provides an overview of the history of phytoplankton research in Australia, a map of the phytoplankton provinces, and their sample collection and processing methodology. In addition, the introduction includes a checklist of the taxa encountered during their surveys. Each chapter of the book details a group of organisms and provides valuable descriptions and plates of the phytoplankton the authors encountered. Taxonomic groups represented include: planktonic and benthic diatoms (2 chapters), benthic and recent dinoflagellates (2 chapters), scale-bearing nanoflagellates, Coccolithophorids, Raphidophytes, Dictyochophytes, and Cryptomonads. Each chapter's organization is based on hierarchical classification (order, family, genus, species) that makes known species easier to locate, even if the groups, in some cases, are not phylogenetically supported.

The plates include diagnostic light microscope images for reliable identification. Additional TEM and SEM photos are presented for some especially difficult taxa. Descriptions include the taxonomic authorities, synonyms, basionym, additional references, and distribution information. The end of each chapter also contains a list of references cited. Overall this book is well written and organized for phytoplankton identification. The information presented is valuable to the seasoned taxonomist or a new researcher just getting their feet wet with phytoplankton identification.



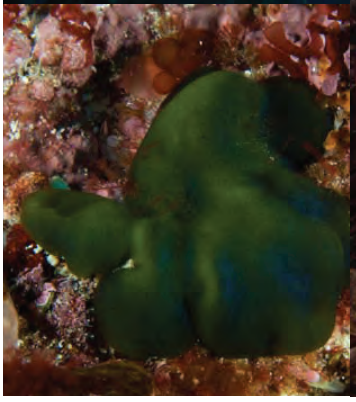
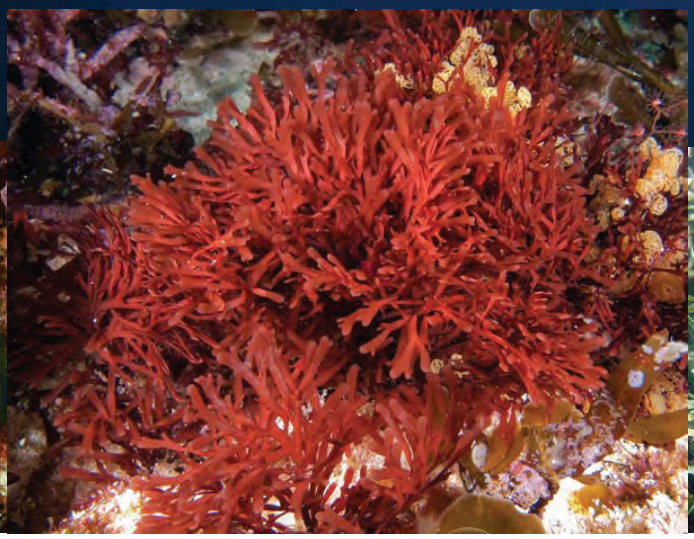
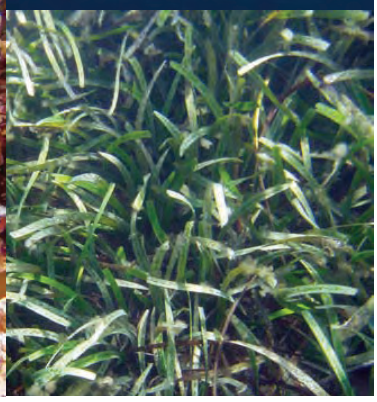

ASPAB conference 2010

Rottnest Island
Western Australia
15th-18th November

Themes are: Phytoplankton and oceanography
Progress in algal biodiversity
Submerged angiosperms
Interactions with environment

www.aspab.org/conference2010.htm

ASPAB

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Abundant drift on the sandy shores of the Great Australian Bight. Photo: Gareth Belton

AUSTRALASIAN SOCIETY FOR PHYCOLOGY AND AQUATIC BOTANY

APPLICATION FOR STUDENT TRAVEL GRANT TO ASPAB CONFERENCE

Student name:

Are you a financial member of ASPAB?

Student Supervisor:

I _____declare that the

_____is a student at

_____

Student Address:

Title of presentation:

Cost for attending conference (please attach photocopy of receipt):

(send this form to the ASPAB Conference organizing committee)

AUSTRALASIAN SOCIETY FOR PHYCOLOGY AND AQUATIC BOTANY

APPLICATION FOR STUDENT OVERSEAS TRAVEL GRANT

Conference, Workshop, Herbarium, Laboratory

Student name:

Are you a financial member of ASPAB?

Student Supervisor:

I _____declare that the

_____is a student at

_____

Signed:

Date:

Student Address:

Outline reasons why this travel grant is being requested (at least 250 words)

Title of presentations (Conference, Workshop):

Herbarium/Laboratory to be visited:

Dates of Conference, Workshop, Visit:

Cost of travel (please attach photocopy of receipt):

Return to, with all accompanying documentation, ASPAB secretary

MEMBERSHIP and RENEWAL

(For all members and applicants. Please return with membership application or renewal)
Renewals are due 1 July

(delete whichever does not apply)

Name: Dr/ Ms/ Mr/ Mrs _____

Affiliation: _____

Postal Address: _____

Country: _____ **Postal Code:** _____

Preferred email address: _____

Tel: _____ **Fax:** _____

Signature of Applicant: _____

Date: _____

Current membership Fees:

	AUSTRALIA (incl. GST) **ABN 86 508 002 420**	NEW ZEALAND
Full Member:	A$33	NZ$30
Student Member:	A$11	NZ$10
Retired Members:	A$11	NZ$10

AUS members, please send renewals to the ASPAB Treasurer, Dr. Joanna Jones jo@jokain.net

All other renewals should be sent to the NZ Convener, Tracy Farr ASPAB@niwa.co.nz