THE MALACOLOGICAL SOCIETY OF AUSTRALASIA

MSA NEWSLETTER

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Diving deep off Western Australia on-board *RV Falkor*

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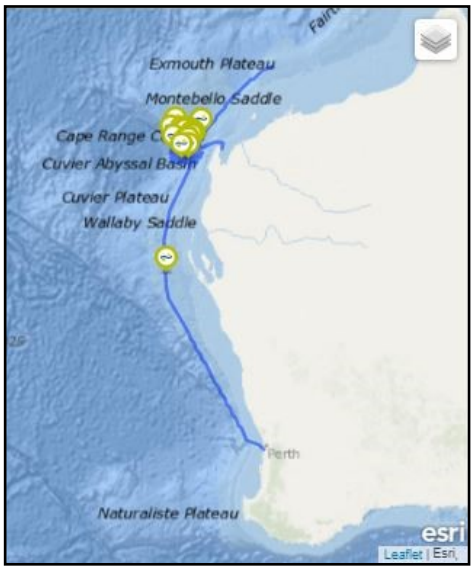
Scientists from the Western Australian Museum led a deep-sea expedition with a focus on biodiversity discovery to two marine canyons in the Gascoyne Marine Park off the mid-coast of Western Australia in the eastern Indian Ocean in March of this year.

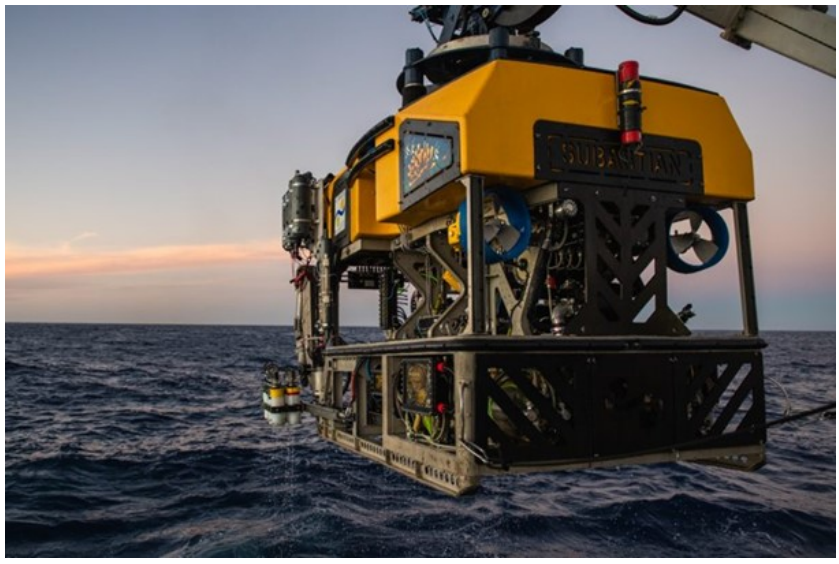
The main focus of the work was to better understand the biodiversity in the Cape Range and Cloates Canyons. To this end, the team completed 20 remote operated vehicle (ROV) dives (19 on station) and investigated a total of 16 stations over 5 weeks at sea. Twelve stations were visited in Cape Range Canyon, the first canyon we explored and the main target of the expedition, and four at adjacent Cloates Canyon.

The work was carried out aboard the *RV Falkor* supported by Schmidt Ocean Institute (SOI) and utilized the ROV SuBastian. To extend ROV specimen capture, fish traps and lobster traps were deployed using landers. Over 1000 samples were made during the expedition and these have been registered into the WA Museum databases that included data on locality, imagery (both in-situ and in-vivo) and preservation, including tissue subsampling for genetic analysis.

Highlights of these collections include the deepest fish records for WA (4,470m), first giant hydroids collected in Australia, significant communities of glass sponges discovered in Cape Range Canyon and probably the longest animal (siphonophore) in the world. This latter discovery led to a media storm but the final measurements still need to be completed.

(cont'd on p.3)





Left: Voyage map and sampling regions. Right: Retrieving SuBastian after a day of sampling off the Ningaloo coast. Both images © Schmidt Ocean Institute / Western Australian Museum.

The MSA's sister society is The Society for the Study of Molluscan Diversity (SSMD). Further information about SSMD can be found at: http://marine1.bio.sci.toho-u.ac.jp/md/index-e.html

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Secretary: Michael Lyons, 19 Banksia Street, Blackburn, VIC 3130. Phone (03) 9894 1526 or Email: Michael_lyons1@bigpond.com

Meetings are held at the Melbourne Camera Club, corner of Dorcas and Ferrars Streets, South Melbourne, on the third **Tuesday** of the month. In 2020, no meetings in March, May, June, July, September or December.

(Note: due to coronavirus restrictions, all meetings now cancelled until further notice).

Membership fees 2020

Includes *Molluscan Research* (published four times per year), the MSA Newsletter (electronic-only publication since Number 158), and discounted registration at the triennial MSA conferences.

Ordinary members (worldwide)	$AU 70
Institutional membership	$AU 100
Student member/concession	$AU 45

Membership fees can be paid (preferably) via the Society's website. Otherwise, send subscriptions via mail to: Malacological Society of Australasia, c/o Matt Nimbs, National Marine Science Centre, PO Box 4321, Coffs Harbour, NSW, Australia, 2450.

Newsletter

Editor: Platon Vafiadis
Email: newsletter@malsocaus.org
The deadline for articles for the next issue of the Newsletter is Friday 22 January 2021.

MSA website: http://www.malsocaus.org

Facebook: http://www.facebook.com/groups/Malsocaus

Note: This publication is not deemed to be valid for taxonomic purposes — see article 8.2 in the International Code of Zoological Nomenclature, 4th Edition. Also, opinions expressed within articles in this newsletter belong to the author(s) and are neither necessarily shared nor endorsed by the MSA.

***Bedeva paivae* positioned on (and presumably boring) the bivalve *Katelysia rhytiphora*, lower littoral zone, Cleeland Bight, Phillip Island, Victoria, 2 November 1998. (Photo: P. Vafiadis).**

Bedeva paivae (Crosse, 1864) (Muricidae) inspecting *Katelysia rhytiphora* (Lamy, 1935) (Veneridae).

The southern Australian muricid *Bedeva paivae* is a frequent predator on oysters and mussels. Here it is showing some interest in a *Katelysia rhytiphora* bivalve. This raises a broad question about how big a prey can be tackled by predatory gastropods relative to their own size. The boring of *Haliotis rubra rubra* Leach, 1814 shells by *Bedeva baileyana* (Tenison Woods, 1881) illustrates that the size difference can be considerable (although whether this process inevitably kills the abalone is doubtful, owing to the frequent observations of shell repair in the form of internal nacre blisters beneath multiple drill holes in beached *H. rubra* shells). The egg capsules and development of *Bedeva paivae* are described in Black (1976).

Further reading:

Black JH (1976). Spawning and development of *Bedeva paivae* (Crosse, 1864) (Gastropoda: Muricidae), compiled from notes and observations by Florence V. Murray and G. Prestedge. *Journal of the Malacological Society of Australia* 3 (3-4): 215-221.

P. Vafiadis

Diving deep off Western Australia on-board RV *Falkor*,
by Lisa Kirkendale & Nerida Wilson (continued from page 1).

Along with new distribution and depth records of known species, this research also led to the discovery of an estimated 30 new species of marine animals.

The deployment of 5 autonomous reef monitoring structures (ARMS) in Cape Range Canyon at five sites was noteworthy because it is the first time ARMS have been deployed at abyssal depths. They will yield future biodiversity returns when they are retrieved and extend our research through sampling of small, cryptic fauna not captured by other means.

Another aim of the expedition was to screen water for environmental DNA to broaden biodiversity sampling using traditional methods. To this end, 10 CTD instruments (measuring seawater **c**onductivity, **t**emperature and **d**epth) with 150 fired Niskin bottles and 57 ROV Niskin bottles were collected, enabling filtration of 2,070 litres of water (1,500 litres via CTD and 570 litres via ROV) by Georgia Nester, a Curtin University PhD student supported by SOI.

Scientists at Geoscience Australia led by MSA past president Dr. Rachel Przeslawski, focussed on transect surveys and sediment sampling during the cruise. This initiative resulted in 20 push cores sampled for grain size. Twelve deep-sea video transects were completed in Cape Range Canyon, which will serve as an important trial for monitoring marine parks in Australia.

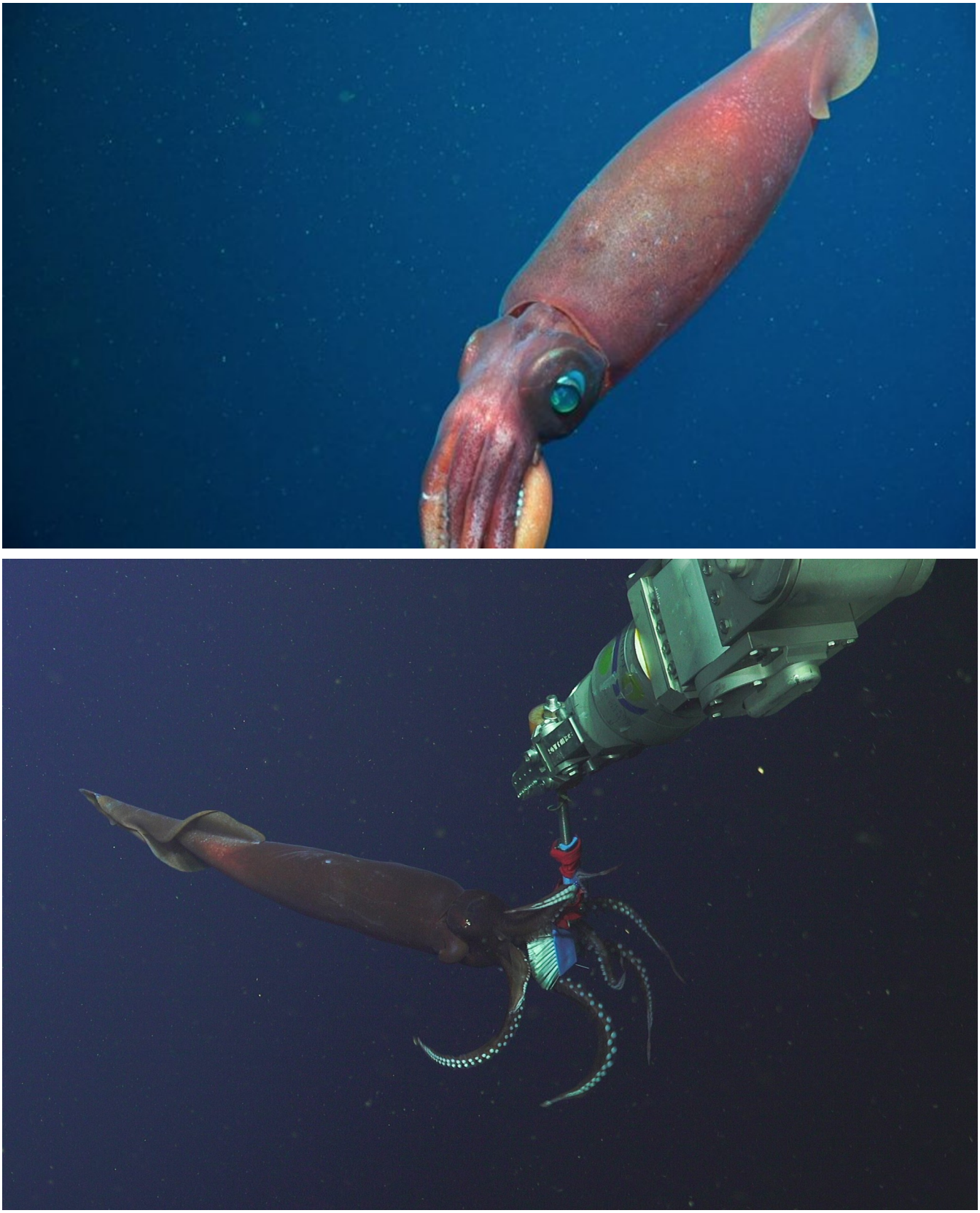
SOI staff, led by Deb Smith, contributed to enhanced mapping of the area with 11,318 km^2 of multi-beam bathymetry completed, providing new data for this special deep-sea marine park.

Providing student opportunities was another goal of the expedition and three doctoral and one high school students participated in the voyage. The inclusion of an indigenous high school student, Liam Cook, from Geraldton Senior High School and supported by the Follow the Dream program, was an important experience as a high school student has not participated in a *Falkor* cruise before.

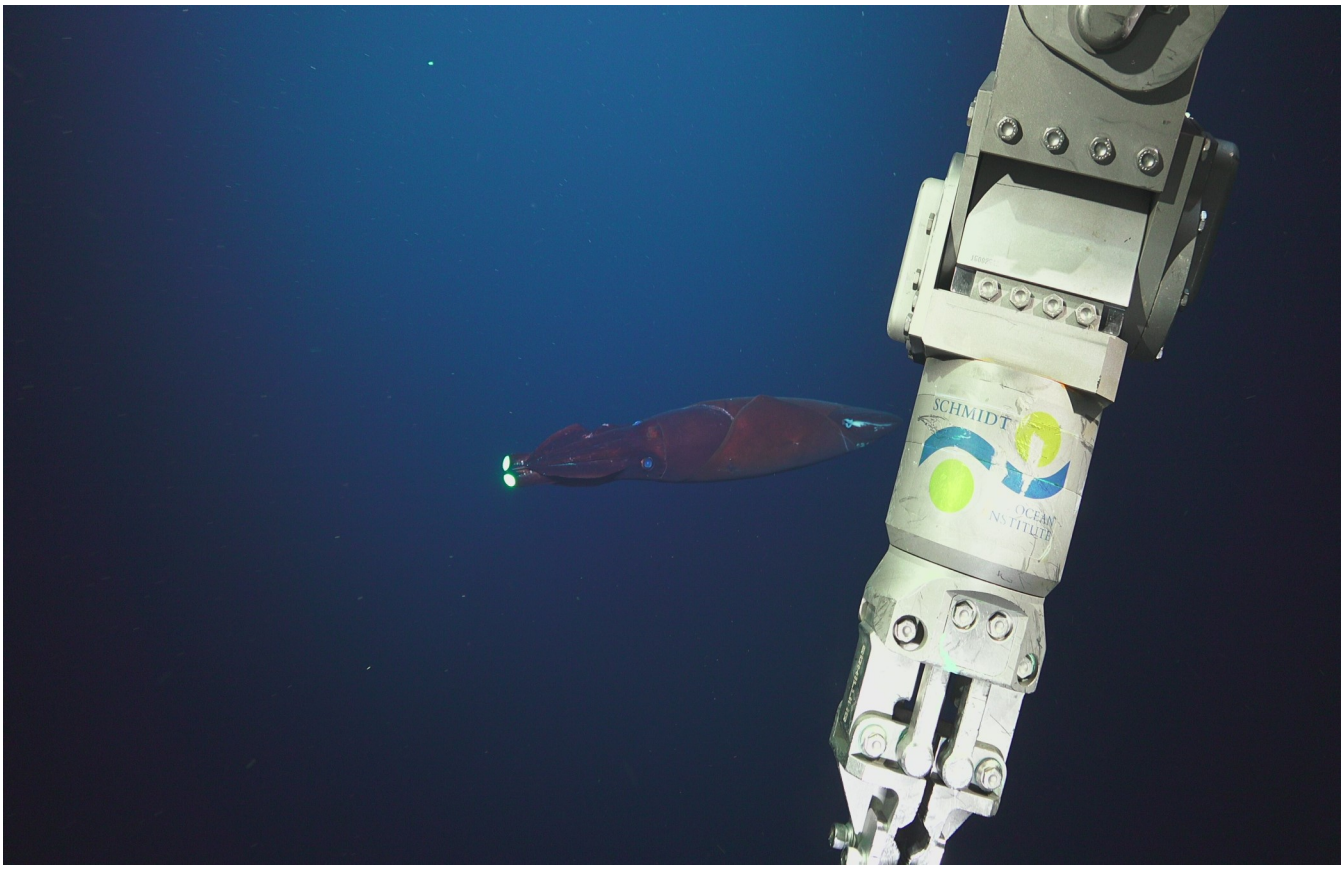
The skill and ingenuity of the ROV team coupled with scientific need for new tools led to several other noteworthy occurrences and these deserve mention, especially because of their success in sampling molluscs! Deployment of the **Kitchen Brush of Science** (KBOS) was a new method to attempt non-invasive genetic

Dr. Lisa Kirkendale (left) and Dr. Nerida Wilson (right) in the control room on-board RV *Falkor,* selecting specimens to sample. Image © Schmidt Ocean Institute / Western Australian Museum

sampling of cephalopods and resulted in 1 unsuccessful and 4 successful sampling events. Simply put, a kitchen brush was held out by the ROV arm to entice interaction with passing squids. Their curious interactions grappling with the brush meant that they left mucus and skin cells behind, which we will now use to try to extract DNA.



Above: One of many close encounters with squid in the blue zone.
Below: KBOS in action as ROV SuBastian uses it to sample a squid.
Both images © Schmidt Ocean Institute / Western Australian Museum



***Taningia danae*, the Dana octopus squid, flashing past and emitting light from photophores on its arms. Image © Schmidt Ocean Institute / Western Australian Museum**

Overall, the focus on blue-water squid encounters during ROV transit time was probably the highlight of the expedition. The surprising diversity of squid encounters we had was an absolute treat. Unfortunately, Dr. Mandy Reid was not able to join us on the expedition as planned, due to covid restrictions, but she is helping to work on a paper describing the diversity of cephalopods we encountered. The 4K imagery was so good that she is able to observe details of key characters usually only made possible by examination of specimens. One, if not the most, memorable squid 'meetings' was the appearance of the spectacular *Taningia danae* or octopus squid swooping past us with its cloak of velvety carmine-red and flashing photophores - it literally took our breath away.

One main molluscan aim of the expedition was to sample a site that previously yielded a rare specimen of monoplacophoran. This amazing creature was captured on a geology cruise in the area by Geoscience Australia some years previously. Needless to say, we hoped to find and re-collect another specimen, and hopefully learn more about their ecology and life history. But sadly, there was no sign of this critter anywhere.

The expedition resulted in huge media reach including 148 news articles, videos or radio stories from over 26 countries, including The New York Times, The Guardian and BBC World Service. Combined social media impressions were estimated at around 5 million. You can enjoy highlights of the expedition here: https://schmidtocean.org/cruise/illuminating-biodiversity-of-ningaloo-canyons/

Two past MSA presidents, Rachel Przeslawski (left) and Lisa Kirkendale (right), working together on-board RV *Falkor*

Editor's note: The team recently won the 2020 Premier's Science Award in the category of Chevron Science Engagement Initiative of the Year. This is a wonderful and well deserved achievement - congratulations to you all!

Notice of the Malacological Society of Australasia 2020 Annual General Meeting

Date: Thursday November 26, 2020
Time: 12:00pm AEST (1:00pm AEDT, 3pm NZDT)
Venue: The conference will be hosted via Zoom. Please read the information below and choose your preferred way to join the meeting room. If you have any questions, please contact Priscila Salloum (MSA Secretary) at psal591@aucklanduni.ac.nz

Direct link: https://auckland.zoom.us/j/91936402006?pwd=UG1zMldrMHIxNWRWbHpzdHZteDIwUT09
Meeting ID: 919 3640 2006
Passcode: 431479

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91936402006@130.216.15.175

Join by H.323
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Please forward any agenda items, nomination forms or proxy forms to Priscila Salloum via email by the **16th of November**. If you cannot participate in the meeting and would like to appoint a proxy, please complete the form provided and nominate a person **who will be participating in the meeting** to vote on your behalf. If no suitable nominee is available, I as secretary can act as your proxy. Please contact me prior to the meeting to discuss your voting preferences.

Nominations are sought for MSA council positions (please use the following form, self-nominations will be accepted).

If you would like to receive a copy of the agenda for the meeting and proposed council nominees, please contact me by the 16th of November.

Yours faithfully,

Priscila Salloum (MSA Secretary)
psal591@aucklanduni.ac.nz

Nomination form for council positions of the Malacological Society of Australasia 2020–2021

Nominee: _____

Position: _____

Nominated by: _____ (name) _____ (signature)

Seconded by: _____ (name) _____ (signature)

(* nominations may also be seconded by participants during the meeting)

Proxy Form

I, _____, hereby appoint _____ as my true and lawful proxy to vote on my behalf at the Annual General Meeting of the Malacological Society of Australasia to be held via Zoom (Meeting ID: **919 3640 2006**) on the 26th of November, 2020.

Signed: _____ Date: _____

William Legrand: the sesqui-centenary of his 1870 *Catalogue of Tasmanian Land Shells*

Robert Burn, Malacological Society of Australasia, Victorian Branch

William Legrand (?1816-1902) (figure 1) self-published a little molluscan work under this title in Hobart in June 1870. Hitherto only one copy was known - that listed in the Natural History Museum Library, London (Holloway, 2008, 2011). Recently, another copy was discovered among molluscan reprints in the Invertebrate Department, Museums Victoria, Melbourne.

Like the two editions of his somewhat better known *Collections for a Monograph of Tasmanian Land Shells* (1871) (Tenison Woods, 1879; Iredale, 1958; Kershaw, 1971), Legrand self-set the type, self-printed the pages on one side of the paper as if on a hand-operated galley -proofing press, and self-published his first contribution to Tasmanian conchology. The print run was of not more than fifty copies, for private distribution only. Collation of the Museums Victoria copy is: 22 unpaginated sheets printed on one side only, small octavo 222 mm high by 142 mm wide, covers thin blue card with yellowish paper pasted on each face, cotton stitching through three, approximately equally spaced holes; title page (sheet 1), preface (sheet 2), species entries (sheets 3-22). An ink inscription on the front cover (figure 2) indicates that Legrand sent this copy to Melbourne book-seller and publisher Ferdinand François Baillière (1838-1881) (Clark, 2005), who in turn either passed or sold it to Frederick McCoy (1817-1899), Professor of Natural History, The University of Melbourne and Director of the National Museum of Victoria (now Museums Victoria). McCoy's pencilled signature is still faintly visible on the top right corner of the cover.

Sequence of pagination is maintained by the sequential numbering of the species listed within each genus. Sheets 2-11 and 18-22 are undated. The title page (sheet 1) is dated 1870 (figure 3), sheets 12-17 have the subscript June 1870. It would seem that Legrand's original intention was to put together a 16 page booklet of those land shells ascribed to Tasmania by James Charles Cox (1834-1912) in his *Monograph of Australian Land Shells* (1868). The species descriptions on sheets 3-11 and 18-22 of Legrand's *Catalogue* are exact copies of the Tasmanian species descriptions in Cox's *Monograph*, plus the addition of some few short remarks by Legrand himself, these each marked by the initials 'W.L.'. Sheets 12-17 list 36 manuscript species names, again with occasional brief remarks by Legrand initialled 'W.L.', of Tasmanian species collected and recognised as undescribed since publication of Cox's *Monograph*. Twenty six manuscript names are attributed to Cox (for which, according to the preface, there was the promise of descriptions and figures), and ten to John (William) Brazier (1842 - 1930), whose

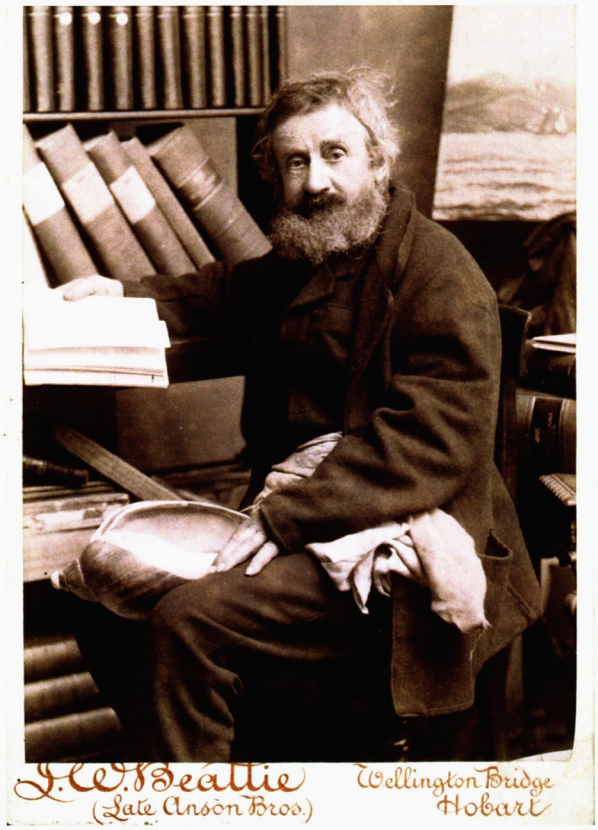

Figure 5. Beattie, J. W. Mr. Legrand, Bookseller, Hobart. ca. 1895. W. L. Crowther Library, Tasmanian Archive and Heritage Office. AUTAS001126073469.

Figure 1 (at top): William Legrand, circa 1893-1895, in his bookshop, Collins Street, Hobart (as published in Joan Holloway's 2008 paper and 2011 thesis).

Figure 2: Cover (upper part) of Museums Victoria copy of 1870 *Catalogue*, with ink dedication to Ferdinand Baillière and pencilled signature of Frederick McCoy.

CATALOGUE

OF

TASMANIAN LAND SHELLS

BY

W. LEGRAND.

ELIZABETH-STREET, HOBART TOWN,
TASMANIA.

1870.

PREFACE.

THE principal object of this Catalogue is to give a complete list of all Tasmanian Land Shells hitherto described, together with the new Species discovered since the publication of Dr Cox's Monograph, and now for the first time published.

The localities to which my initials (W. L.) are appended may be depended upon, as in every instance I have either collected the Specimens myself, or received them direct from the place recorded.

A Supplement will shortly be issued, containing full descriptions and plates of the hitherto unfigured species, together with several new discoveries.

W. LEGRAND.

Elizabeth-Street
Hobart Town,
Tasmania.

HELIX.

1. HELIX (Videna) BISULCATA. *Pfr., Pro. Zool. Soc.*, 1852, p. 135. *Reeve, Conc, Icon.* sp. 969.

Cox, Mon., 1868, p. 32. Plate IX. Fig. 19, *copied from Reeve*

Shell widely umbilicated, convexly-depressed, spirally and very minutely obliquely wrinkle-striated, shining, tawny-chestnut; spire shortly conoidly-convex, slightly obtuse at the apex; suture impressed; whorls 6½, slightly convex, last much wider, periphery obsoletely angular, not descending in front, base flat, sub-compressed about the umbilicus, on both sides impressly furrowed in the middle; aperture small, slightly oblique, sub-triangularly-lunate; peristome rather simple, margins scarcely converging, right straight, sloping, basal slightly arched, somewhat thickened.

Diameter, greatest 1·14; *least* 0·98; *height* 0·50 *of an inch.*

Habitat. Tasmania (?)—*Gunn.*

Reeve remarks of this, that it is Solarium shaped, the apex tinged with red, and that the lip is simple, peculiarly wart-toothed within, along the ridge formed by the impressed groove.

Although this shell is described as Tasmanian, I have great doubts of the correctness of the habitat. I do not know of, neither do I believe that there is a single specimen in the hands of a collector or Museum in Australia. The type specimen in the British Museum was formerly in the collection of the late Mr. Cuming,—*W. L.*

HELIX.

18. HELIX ALLPORTI. *Cox.*

Habitat. Recherche Bay, Mount Wellington, Huon Road.—*W.L.*

I first found this shell, (which belongs to a section new to Tasmania,) on Mount Wellington, about ten years since. Its home seems to be Recherche Bay, where I collected a considerable number in March 1869. I have also found it at Brown's River, and near the Fern Tree Inn, on the New Huon Road.

19. HELIX MEDIANUS. *Cox.*

Habitat. Near Recherche Bay.—*W. L.*

A larger shell than *Allporti*, easily distinguished by the acute angle of the body whorl,

20. HELIX HELICE. *Cox.*

Habitat Southport and its vicinity.—*W.L.*

A species smaller in size, and partaking of the characters of the two last.

21. HELIX CŒSUS. *Cox.*

Habitat, Recherche Bay.—*W.L,*

A high-spired, sub-conical umbilicated species, about ¼ of an inch in diameter, with 5 slowly increasing whorls.

22, HELIX AUSTRINUS. *Cox.*

Habitat. Near the South Cape.—*W.L.*

This species is from the extreme south of the Island, near South Cape Bay, it is a light coloured shell with a higher and more pointed spire than *Allporti*.

June, 1870.

Opposite page: **Figure 3** (upper left): Title page (sheet 1) of *Catalogue* with 1870 date. **Figure 4** (upper right): Preface (sheet 2 of *Catalogue*. **Figure 5** (lower left): Sheet 3, descriptive text and commencement of numbering of species. **Figure 6** (lower right): Sheet 12, manuscript species names with sequential numbering, and subscription date June 1870.

descriptions were about to be published in England. Brazier's manuscript names were published on 1 April, 1871, predating the descriptions of the same species that appeared in the June 1871 Edition 1 of Legrand's *Collections*. Cox's *Helix* species, numbers 18-43 and 54-63 date from Edition 1 of *Collections*.

Side-by-side comparison of the first and second editions of Legrand's *Collections* led Iredale (1958a) to suggest "that a proof of (edition 1) was sent to Cox who asked Legrand to hold back and he would furnish the descriptions and plates." My contention is that Legrand had sent a copy of his 16 sheet *Catalogue*, and that it was to this that Cox responded with the list of his and Brazier's manuscript species names, all in the genus *Helix*. Not holding back, Legrand set type, printed off six new sheets to incorporate the list of manuscript names received from Cox, plus some of his own comments, inserted the new sheets into his publication, and thus created the 22 sheet *Catalogue* now before me.

Many of the manuscript species were based upon land shells collected by George Masters (1837-1912) (Whitley, 1971) on his several visits to Tasmania in the late 1860s, and subsequently divided between Cox and Brazier in Sydney. Some material originated from Legrand's own collecting, and was sent directly to Cox. One gains the impression that Masters met Legrand in Hobart, and that, if they did not collect together, Legrand advised Masters where good collecting was to be had. For information on Cox and Brazier and their molluscan exploits, see Richardson (1971) and Iredale (1958b), respectively.

Of William Legrand, little is known of his origins, his arrival in Tasmania, or of his business activities in Hobart. According to Holloway (2008; 2011), Legrand may have fled backruptcy in England, or had a family association with the printing trade. In Tasmania, he certainly developed a strong natural history interest, especially for molluscs, such that for a short period of time others with similar interests sought him out for identifications and advice.

William Legrand and my great-great-grandfather George Burn (1810-1877) and his fifth son William Alexander Burn (1851-?1923) were nearby businessmen in Hobart from the 1870s to 1902. A closer association may have been established, because William Burn was executor of Legrand's will, and sold, through his auction house, Legrand's stock of books, stamps, coins, medals, optical and other items to settle the estate.

Acknowledgements:
I thank Joan Holloway for a lengthy correspondence during the compilation of her dissertation on William Legrand, and for the stimulation to explore aspects of his molluscan life. It was she who drew attention to the Legrand/Burn association. The late Mrs. J. Hope Black (née Macpherson) kindly gave me her biographical notes on William Legrand. The Invertebrate Department and the library staff, Museums Victoria are thanked for allowing access to this most rare Legrand publication, and to copies of his 1871 *Collections*.

References:

Burn R (2010). *A hand-made book on Tasmanian land shells: reading between the lines*. Pp.6. (A handwritten manuscript comparing Legrand's Catalogue and the various iterations of his Collections, from copies in the Museums Victoria and Invertebrate Department libraries, prepared for use by Joan Holloway in her PhD thesis).

Clark, L. (2005). Ballière, Ferdinand François (1836-1881). *Australian Dictionary of Biography*. Supplementary Volume, Melbourne University Press, 2005. (Accessed at http:\\adb.edu.au/bibliography/bailliere-ferdinand-francios-12780/text23057 on 10 March, 2020).

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Holloway, J.F. (2008). Curiosity, collections and William Legrand: aspects of a Tasmanian career. *Tasmanian Historical Studies* 13: 83-110.

Holloway, J.F. (2011). *William Legrand: a study*. Pp. xiii+374. PhD Thesis, University of Queensland.

Iredale, T. (1958a). A home-made book on shells. *Proceedings of the Royal Zoological Society of New South Wales* 1956-1957: 58-61.

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Legrand, W. (1871). *Collections for a Monograph of Tasmanian Land Shells,* Hobart Town: Legrand. [Edition 1 (June 1871), 42 un-numbred sheets printed one side only except sheet 3 (Index) printed both sides, 2 black & white plates; several iterations printed between June and September, 1871, leading to Edition 2 (Burn, 2010; personal data). Edition 2 (September, 1871), 43 un-numbered sheets printed one side except sheet 3 (Index) printed both sides, 2 coloured plates each with protective tissue sheet].

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Whitley, G. P. (1971). George Masters, naturalist. *Australian Zoologist* 16(2): 25-32.

MSA photo competition 2020

Entries close 30 October 2020, so submit your photos soon!

As per email message to members last month, MSA member photographers are encouraged to submit up to 5 images of molluscs as part of a competition to choose images for a 2021 calendar showcasing Australasia's amazing molluscan diversity.

Images should be submitted with a short (less than 20 word) caption by email to kirsten.benkendorff@scu.edu.au Please use "MSA photo competition" in the subject heading.

The photo caption can include information about the image (location, name of species if known, and context). Images may include the watermark of the photographer.

We also encourage you to upload the photos on the Malsoc Facebook page (https://www.facebook.com/groups/Malsocaus/) and the following hashtags: #msaphotocompetition2020, #mollusc.

Submitted photos must have been taken within the last 5 years. Entries need to be submitted by October 30, 2020.

The competition will be judged by a panel of non-conflicted members of the MSA council, with winners to be announced by December 1, 2020.

Winners with photos selected for the calendar will each receive a free calendar.