

KANUNNAH

The Research Journal of the
Tasmanian Museum and Art Gallery

VOLUME 5

Ka-nunnah – ‘Thylacine’

The oldest fossils of thylacines are Late Oligocene to Middle Miocene in age (20–25 My B.P.) and are from the Riversleigh deposits in north-western Queensland (Vickers-Rich *et al.* 1991). It is speculated that competition with introduced dingoes in mainland Australia may have caused their extinction in mainland Australia during the last 5000 years. The most recent remains of thylacines in mainland Australia were dated at just over 3000 years old (Archer 1974).

The thylacine (*Thylacinus cynocephalus*) in Tasmania coexisted with Aboriginal people for millennia. The arrival of Europeans in Tasmania resulted, in just over a hundred years, in the extinction of thylacines from their last refuge. The demise of the thylacine resulted in the extinction of an entire lineage of marsupials from the planet.

To the Aboriginal people of Tasmania the thylacine was called many things due to its wide spread distribution in the State. Tribes from the areas of Mount Royal, Bruny Island, Recherche Bay, and the south of Tasmania referred to the Tiger as ‘Ka-nunnah’ or ‘Laonana’, while tribes from Oyster Bay to Pittwater called it ‘Langunta’

and the North-west and Western Tribes called it ‘Loarinnah’ (Milligan 1859). Famous Tasmanian Aboriginal chief Mannalargenna from the East Coast of Tasmania called the thylacine ‘Cab-berr-one-nen-er’, while Truganinni and Worrady, (Bruny Island) called it ‘Can-nen-ner’.

The thylacine is the state logo for Tasmania. The title of the journal ‘Kanunnah’ commemorates the Tasmanian Aboriginal word used by tribes from southern Tasmania for the thylacine.

Archer M (1974) New information about the Quaternary distribution of the thylacine (Marsupialia: Thylacinidae) in Australia. *Journal and Proceedings of the Royal Society of Western Australia* **57**: 43–50.

Milligan J (1859) Vocabulary of dialects of Aboriginal Tribes of Tasmania. *Papers and Proceedings of the Royal Society of Tasmania* **3(2)**: 239–282.

Vickers-Rich P, Monaghan JM, Baird RF, Rich TM (1991) *Vertebrate Palaeontology of Australasia* (Monash University Publications Committee: Melbourne).

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Managing Editor: Rodney D. Seppelt

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KANUNNAH

The Research Journal of the Tasmanian Museum and Art Gallery

The Tasmanian Museum and Art Gallery is a combined museum, art gallery and state herbarium. It has the broadest collection range of any single institution in Australia and these collections span the arts, sciences, history and technology. The Tasmanian Museum and Art Gallery's role is to collect, conserve and interpret material evidence on the State's natural history and cultural heritage.

Kanunnah is a peer-reviewed journal published by the Tasmanian Museum and Art Gallery in Hobart, Tasmania. Its aim is to disseminate research in all areas of study undertaken by the Tasmanian Museum

and Art Gallery. These areas include the life sciences, culture, history and the arts. Papers on any of these research areas will be considered, but papers dealing with Tasmanian, southern Australian and sub-Antarctic issues will be particularly welcome.

Short communications and reviews are also welcome. Researchers based outside the institution are encouraged to submit manuscripts for publication to the journal, although they must be relevant to the Museum's primary areas of study.

Kanunnah will be published occasionally, depending upon budgetary considerations and available manuscripts.

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COVER IMAGE: Detail of the Scott's table

SEE PP. 1–20

Kanunnah 5: 1-149, 7 February 2013

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EDITOR'S COMMENTS

Kanunnah, as a peer-reviewed journal, was established with the aim of disseminating research in all areas of study undertaken by the Tasmanian Museum and Art Gallery: life sciences, history, culture, and the arts. Contributions are by staff and researchers working on the collections of TMAG or on collections that are particularly pertinent to Tasmania.

The journal's original editor, Andrew Rozefelds, and his successor, Marco Duretto, have subsequently left the museum. They are both due thanks establishing and for continuing to produce a fine museum journal.

In 2011, with the departure of Marco, the future of the journal seemed uncertain. As an Honorary Botanist with the State Herbarium, part of TMAG, I offered to take on the role of editor to ensure continuation of *Kanunnah*. I am delighted that the Director, Bill Bleathman, has been such a strong supporter of the journal and saw fit to continue the journal in its printed form, when many publications are succumbing to the electronic format, and for accepting my offer to become Managing Editor.

This issue of *Kanunnah* contains contributions covering a wide diversity of TMAG's collections, continuing the journal's tradition. What is new, however, is an ongoing series titled 'Treasures from the TMAG collections' in which some of the treasures of the collections will be showcased. Two such contributions are included in this issue: a treatise on the recently purchased micromosaic tabletop, known as the Scott's Table, and a study of the barkcloth collections which have formed an important display at MONA.

I am grateful to all the authors for their submissions covering such a diverse array of subject material and look forward to continuing the strong traditions established for *Kanunnah*.

Lastly, I am grateful to Kent Whitmore and Warren Boyles at Forty South Publishing for their efforts in putting together this publication.

Rod Seppelt
Managing Editor

KANUNNAH

Volume 5 (2013)

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TREASURES FROM THE TMAG COLLECTIONS

A NINETEENTH-CENTURY ROMAN MOSAIC TABLETOP WITH MARBLE FRAME

Giuliana Franzini Musiani

Giuliana Franzini Musiani. 2012. Treasures from the TMAG collections: a nineteenth-century Roman mosaic tabletop with marble frame. *Kanunnah* 5: 1–20. ISSN 1832-536X. The micromosaic tabletop set in a marble frame was brought into Tasmania in 1857. It has been acquired by the Tasmanian Museum and Art Gallery in 2009 and named ‘Scott’s table’. This essay investigates the Italian historical background, the technique and the style of this specimen of nineteenth-century Roman decorative art, probably one of the first examples of this kind, with an excursus about its iconographic and literary sources and a note about the etymology of the names *Roma*, *Romulus* and *Remus*.

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KEY WORDS: *mosaico minuto*, Roman micromosaic, *marmi di scavo*, ancient marbles, Romulus and Remus, Tasmanian Museum and Art Gallery

This paper was conceived as an essay on the Italian historical background, the technique and the style of this example of nineteenth-century Roman decorative art, with an *excursus* about its iconographic and literary sources and a note about the etymology of the names Roma, Romulus and Remus. The final section of the essay deals with the collection of fragments of ancient marbles surrounding the central mosaic

as a frame. The table was brought into Tasmania in 1857 and acquired by the TMAG in 2009. The central panel is a mosaic on *nero del Belgio* marble, surrounded by a large frame made of fragments of *marmi da decorazione* (decorative marbles) and of semiprecious stones, completed by a ring of red marble. The mosaic reproduces the lower part of the Rubens painting *La lupa capitolina*, or *The Finding of Romulus and Remus*.



Fig. 1. *Rome in 1850: The Tiber and Castel Sant'Angelo*

ETCHING TAKEN FROM W. WARE, *PICTURES OF EUROPEAN CAPITALS*, CLARKE, BEETON AND CO., LONDON, NO DATE, BUT 1851.
MUSIANI FRANZINI PRIVATE COLLECTION

HISTORICAL BACKGROUND

Oh Rome! My country! City of the soul!
—George Lord Byron

Around 1850, Rome was a picturesque city of less than 200,000 inhabitants, with numerous and important foreign communities, frequented by a great number of visitors.¹ To pay a visit to Rome was a dream of foreign travellers and the ‘*clou*’ of the ‘pilgrimage to Italy’ (Lady Morgan 1821), the most attractive destination of the Grand Tour² and one of the most enriching cultural experiences for many English and German young nobles and intellectuals since the time of the late Renaissance.

During the nineteenth century artists, writers, scholars and archaeologists came

to Rome and lived there for years to study classical arts, attracted by the beauty of its monuments and often captured by the romantic charm of the ruins, particularly if seen by moonlight. Authors were often involved in literary and political discussions and showed deep interest in the ‘*pictoresque*’ of the religious ceremonies and of the colourful Carnival, so vividly described by Dickens in *Pictures of Italy* (1846) and by the American sculptor William Story in *Roba di Roma* (1864). Many of the visitors, especially the English nobles, used to buy and collect contemporary works of decorative art, like mosaics and cameos, or ancient artefacts that had been discovered in archaeological diggings or sold from Roman private collections.

Several guidebooks,³ both in English and in Italian, were available for travellers, supplying descriptions of the monuments, churches and art galleries. They also contained recommendations about passports and police regulations, accommodation and lists of the most interesting and qualified ateliers and artists of any kind of decorative arts, especially of painters and *mosaicists* or mosaic-makers. In particular, the book *Elenco di tutti i pittori, scultori, architetti, miniatori, incisori in gemme e in rame, scultori in metallo e mosaicisti, aggiunti gli scalpellini ...* [List of all the painters, sculptors, architects, miniature-painters, precious stones carvers, engravers, metals-sculptors, mosaic-makers, plus marble-workers ...] compiled by Enrico de Keller and published in Rome in 1830 (2nd edn), indicates that some 45 *studi* of mosaic-makers were operating in Rome at that time. Giuseppe Melchiorri, in *Guida metodica di Roma* [A Methodical Guide of Roma] Roma 1836, describing the economic conditions of the Roman kingdom, underlines that:

... la parte principalissima dell'industria della città consiste nei lavori di oggetti di belle arti, cioè nelle forme plastiche, scajole. Mosaici ... marmi di ogni genere, nelli quali sorpassa qualunque altra città ... [... the most important economic activity of the city is the production of objects of decorative arts, as *scagliola*, mosaics ... any kind of works in marble, in which the city excels above all the other cities ...].

Moreover, towards the 1850s travellers were no longer only aristocrats, authors, musicians and artists, like Seume, Goethe, Stendhal, Lady Morgan, Berlioz, Corot, Heine, Dickens, or even the *Daisy Miller*

of Henry James. A large number of new visitors were what E.A. Poe, in his article *The Philosophy of the Furniture* (1840), names 'an aristocracy of dollars', which were especially interested in taking back to their own countries expensive souvenirs from Italy, particularly from Rome, as a 'display of wealth', which '... takes the place and performs the office of the heraldic display in monarchical countries'.

Australian travellers in Rome in the second half of the nineteenth century

Wealthy Australian families of English background began to do the same, particularly after 1850. At that time members of these families, for example Sara and William C. Wentworth or Caroline Armytage, spent months travelling across several countries of Europe. They bought the most expensive, sumptuous and eye-catching creations of the contemporary European decorative arts, and sent back to Australia numerous chests, filled with English sterling pieces, Dresden, Sèvres, Meissen hand-painted chinaware, copies of ancient paintings in large gilded frames, marble sculptures or fire-mantels, Florentine tabletops in marble or *scagliola* and Roman mosaic tabletops. The last were among the most beloved and sought after 'souvenirs' of Rome.⁴

Some of the 'Australian' mosaic tables subsequently disappeared, sold at auctions, as happened to the Wentworth table at Vacluse House, Sydney, mentioned in an auction catalogue in 1900: 'lot 71: Circular mosaic table, inlaid in various coloured marbles, with a view of the Coliseum, on Florentine carved and gild



Fig. 2. Scott's tabletop: central mosaic and marble frame, surrounded by a large dark timber frame. Diameter 90 cm, central mosaic 23 cm. Second half of the nineteenth century

PURCHASED WITH THE ASSISTANCE OF THE AUSTRALIAN GOVERNMENT THROUGH THE NATIONAL CULTURAL HERITAGE ACCOUNT, THE ART FOUNDATION OF TASMANIA AND MR JOHN HAWKINS, 2009. TMAG P2009.71

stand'.⁵ Another table, with a central mosaic depicting the Roman forum, was mentioned by the Italian scholar Mario Praz (1896–1982) as existing in 1964 at Vacluse House, Sydney.⁶ Nevertheless, some other tables are still in their original places, like the two *guéridons* at Como House in Melbourne, bought in Rome by Caroline Armytage in 1870, which depict the *Colombe di Plinio* and different Roman monuments within a frame of fragments of marbles.

SCOTT'S TABLE

This Roman tabletop was brought into Hobart in 1857. After several vicissitudes, it has been acquired in 2009 by the Tasmanian Museum and Art Gallery, its name 'Scott's table' being taken from the name of its first owner. Its arrival was announced with great emphasis and described by pompous adjectives in articles in the local newspapers. Obviously this work was something unusual for Tasmania at that time, something which, when put on display, was able to rouse interest and curiosity of visitors.

The newspapers informed their readers that the mosaic table was bought by Mr Anstley for Mr George Scott. Probably the former could be identified as Mr Henry Frampton Anstley (1822–1862), politician and member of the Legislative Council for Oatlands, who was a papal knight and died in Rome in 1862.⁷

It is also interesting to add that, according to an article in the *Hobart Town Mercury* of 6 July 1857, another traditional Roman 'souvenir' arrived with the table, and was also seen as exceptional: a photo album,

Fotografie di Roma di Giacomo Anderson. The anonymous reporter writes:

... as a work of art, (the photographs) are, beyond exception, the most accurate, and highly finished, which have ever been seen in Tasmania.

In a similar way, the *Handbook of Roma and its Environs* (Murray's Guide, 1864, 7th edn, p. xxii) mentions the English photographer:

Mr. Anderson is the most extensive producer of photographs in Roma and his production ... stands the light well, the photographs are the best we have ever seen, ... extremely faithful and good, and of different size to suit all purses and purchasers.

It is unknown whether this album still exists.⁸ Both the mosaic table and the photo album reveal the interest of the buyer, Mr Anstley, and the Tasmanian owner, Mr Scott, in the celebrated and traditional art of mosaic and in the 'new' art of photography. In fact, photographers and mosaic-makers offered in their works the same subjects, such as views of ancient monuments, reproductions of famous paintings and local folklore, all of which travellers liked to show in their home countries, as souvenirs of Rome.

Central mosaic

The round tabletop of Scott's table has a diameter of 90 cm. The 23-cm centre (Fig. 3) is a mosaic on *nero del Belgio* marble, surrounded by a large round frame made of fragments of *marmi da decorazione* (decorative marbles) and of semiprecious stones, completed by a ring of red marble (see 'The marble frame', below). The



Fig. 3. Scott's tabletop: the central micromosaic representing Romulus and Remus
BASED ON A DETAIL FROM THE PAINTING BY P.P. RUBENS, *THE FINDING OF ROMULUS AND REMUS* (1625).
TMAG P2009.71.

mosaic reproduces the lower part of a Rubens painting, *La lupa capitolina*, or *The Finding of Romulus and Remus* (see 'Iconography', below, and Fig. 7).

This kind of decorative art is currently known as 'micromosaic' particularly in English-speaking countries. The name has been recently coined by Arthur Gilbert (born Arthur Bernstein 1913–2001), owner of the Gilbert Collection now on display at the Victoria and Albert Museum in London, and has been adopted by scholars and auction firms in their books and catalogues. The micromosaic is also called *mosaico minuto* or *mosaico in piccolo* by modern mosaic-makers and experts. However, not one of the nineteenth-century authors, such as Mariana Starke, Charlotte Eaton, Forsyth, Melchiorri, the Murray's guides, Carlo Dossi and others, use any other word but *mosaico* or *mosaic* when mentioning this kind of decorative art. De Keller uses the definition *genere a minuto* (small-scale mosaic). Lady Morgan, in *France 1829–30*, notes that the same artists used to create in their *studi* both *miniature mosaics* (micromosaics) and *monumental mosaics* (traditional mosaics). This tradition is still alive in the Studio Vaticano and in other modern ateliers.

Research into the *mosaico minuto* and studies about it and Roman mosaic-makers began in recent times. The leading scholar is Professor Alvar Gonzales Palacios, with his book *The Art of Mosaic. Selections from the Gilbert Collection* (1977). Important exhibitions followed in the 1980s, as well as significant books by R. Valeriani and M.G. Branchetti, but much more remains to be done and investigated about the Roman mosaic-makers, their biographies and their works.

Important and rich collections of micromosaics are on display in the Musei Vaticani (Città del Vaticano), the Savelli Collection (Rome), the Hermitage Museum (St Petersburg), the Gilbert Collection (Victoria and Albert Museum, London) and the Prado (Madrid). Nowadays micromosaics are very much sought after by collectors and antiquarians.

Micromosaics need to be observed and enjoyed as miniatures, because the size of the works can vary from 1–3 cm up to 30–35 cm for the largest creations. The surface is even and glossy, and the colours of the tesserae, 'as small as a pin's head' (Starke 1820), were available, and still are, in an endless variety of shades. The colours tend to be brighter in the works of the second half of the nineteenth century.⁹

This kind of mosaic is made of small tesserae of *pasta vitrea* (glass paste) of various shapes and nuances, according to the technique of the *smalti filati*. This technique has been used by Roman mosaic-makers since the last quarter of the eighteenth century. The inventor is said to have been Giacomo Raffaelli (1743–1836),¹⁰ but other artists probably used the same technique at that time.

This 'new' art is also related to the science of chemistry. Lady Morgan (*France in 1829*, 1830, Vol. II, p. 70) writes:

Several chemists have largely contributed to the excellence of these works, by the invention of brilliant and varied colours ... It is not more than forty years since the attempt was first made to fabricate artificial stones (*id est tesserae*) of the size and form adapted to the composition of small pieces.

This new technique allows the tesserae to be reduced to the size of millimeters and to be moulded into different shapes. The mosaic-maker melts, using a jeweller's flame fragments of a *fritta of pasta vitrea*, a glass paste mixed with chemicals, in an endless number of colours and nuances, supplied in round or square pieces of roughly 12 x 2 cm.¹¹ Thus, he is able to obtain tiny *teghe* or rods of 15–20 cm, sometimes thin – less than 1 mm. These filaments are then cut into pieces, or tesserae, and fixed by mastic, close to each other on a *cassina* or base, which is gold, metals or premoulded glass (i.e. *avventurina*) for small objects. The *cassine* for tabletops are usually in marble, commonly *nero del Belgio*. Finally the surface, having been previously covered with colophony, is planed with a hard stone and polished with soft sheets of lead. Then, the little gaps between the tesserae are filled with multicoloured wax and polished again with beeswax on a woollen cloth. Micromosaics were framed by semiprecious stones, gold, silver or other materials, even lava, to embellish snuffboxes, paperweights, or jewels. The larger ones were surrounded by gilded frames, as paintings, or by marbles, as tabletops, like Scott's table.

Traditional subjects were the *Colombe di Plinio* (Plinius doves),¹² Roman monuments, flowers, or copies of paintings, like the tabletop at TMAG, and often animals. George Augustus Sala, in *Rome and Venice* 1869, even writes: '... the Earl of Worldsen had the portraits of all his racehorses taken in mosaic'.

The art of micromosaic, after producing pieces in thousands during the nineteenth century, passed through a period of decline from the end of the century. Nevertheless,



Fig. 4. Cufflinks

IVORY, GOLD AND MICROMOSAIC. ACTUAL SIZE: ABOUT 5 MM. ARTIST: ROBERTO GRIECO, 2010. ROBERTO GRIECO COLLECTION, ROME (COURTESY OF MR ROBERTO GRIECO)

it is still alive in Rome today. The Studio del Mosaico Vaticano at Città del Vaticano, established in 1727, is still operating in the traditional style. Moreover, in Rome, other artists, like Roberto Grieco and Luigi Faraoni, with their '*contemporary micromosaics*' infuse a new life into this art '*combining innovation and tradition*' (R. Grieco, *Micromosaici romani*, 2008). They still use the same technique of *smalti filati*, including the multicoloured tesserae or *malmischianti*, and the same tools of two centuries ago, to create 'unique pieces which should be signed and exhibit with pride' (R. Grieco *ibidem*) (Fig. 4).

The mosaic on Scott's table presents a glossy and polished surface, in a rich palette of colours in various shades. The mosaic-maker dealt with the size and the shapes of the tesserae with ability and freedom,



Fig. 5. Scott's tabletop: the central micromosaic. Detail: the leaves in 'tesserae *composte*'
TMAG P2009.71

according to the pictorial and figurative needs of the scene. The tesserae, up to 5 mm, are relatively large for a micromosaic. Rectangular tesserae, from pale beige to pale blue and grey, depict the water. Oval or linear tesserae, in soft and dark brown and green, represent the vegetation in the foreground and background, in particular the water-reeds behind the children. Here the mosaic-maker also used the 'tessere *composte*',¹³ presenting two or more colours in the same tessera to depict the round and oval leaves near the water (Fig. 5).

The riverbank in the foreground appears larger and less rich in detail than in the original Rubens painting. The bodies of the children are made by little pale pink square tesserae, the concentric arrangement of which may be compared with the *opus vermiculatum*, as it appears in

ancient mosaics.¹⁴ The arms of the children appear to be particularly well made, and their position contributes to re-create the sense of depth and the perspective of Rubens' work. Small curled tesserae, heading in various directions, depict the fur of the she-wolf and the children's hair; the smallest ones were used by the mosaic-maker to create the teeth, the tongue and the nails on the paws of the she-wolf.

The mosaic-maker clearly aimed at focusing on the children and their movements, seeing them as the centre of the round mosaic. He also intended to recreate the effect of brush-strokes, playing with various sizes and shapes of tesserae, generally free from any geometrical arrangement. The colours of the glass are also well combined and amalgamated, soft and not too bright. In this way the artist succeeded in preserving the pictorial values of the original, although he operated using a different kind of artistic language, imposed by the materiality and the rigidity of the glass-tesserae, and by the 'mechanical factor' (M.G. Branchetti pers. comm.), typical of mosaic-creations.

On the basis of the technique, the kind of tesserae, their arrangement and the choice of the subject, the mosaic must be dated to around the first years of the second half of the nineteenth century. This is also the authoritative opinion of the scholar Dr Maria Grazia Branchetti and of the *maestro mosaicista* Roberto Grieco, the mosaic artist who operated for years at the Studio Vaticano del Mosaico, and now owns a highly regarded studio in Rome (pers. comm. 2010).

The subject of Scott's table is similar to numerous other mosaics of the second half of the nineteenth century that can



Fig. 6. *Romulus and Remus*

PLAQUE IN MICROMOSAIC IN GILDED FRAME. MOSAIC 25 CM, SECOND HALF OF NINETEENTH CENTURY. SAVELLI COLLECTION, ROME, ON DISPLAY AT THE VATICAN MUSEUM, VATICAN CITY (COURTESY OF DR LORENZO SAVELLI)

be seen in private and public collections around the world: for example, a plaque in the Savelli Collection in Rome, another identical plaque and a tabletop in the Gilbert Collection in London, a tabletop at the *Ministero degli interni* (Internal Affairs Department) in Rome, and a tabletop at the Hermitage in St Petersburg.¹⁵ Other examples exist in private collections, such as a plaque recently auctioned at Sotheby's (pers. comm. M.G. Branchetti). Nevertheless, the Scott's table differs from the others because it presents a simplified background of thick foliage in several shades of brown, with no sky or tree, which appear in other mosaics representing the same subject. Moreover, the white cloth under the children is higher than in the Rubens painting and in similar other works.

According to the classification of mosaics on the basis of their style proposed by M.G. Branchetti (2004), it would be possible to ascribe the central mosaic of the Scott's table to the *stile accademico* (academic style), peculiar to the works reproducing ancient paintings, towards the second half of the nineteenth century, such as C. Dolci, *Madonna del dito*, and G. Reni, *Beatrice Cenci*, in the Savelli Collection in Rome. It can probably be compared to the elaborate and soft style of the followers of Michelangelo Barberi after 1850, the *stile romantico* (romantic style), as Dr M.G. Branchetti calls it, and to the taste of a tabletop with the same subject, signed Luigi Moglia (Grieco 2008, p. 178), dated after 1850.

It is well known that the mosaic-makers rarely used to sign and date their works and that the major part of the micromosaics in private and public collections are the works of anonymous artists. The inventory of the subjects never was exclusive or unique for only one mosaic-maker or for only one atelier. Artisans used to copy each other, using the same technique and the same materials and keeping the same style for years and years. Murray's Guide (1867, p. xxvii) supplies a list of artists, such as M. Barberi and his daughter, L. Moglia, Poggioli, etc., adding that the same shop can sell works of different quality and '*the price will vary ... from one to five fold*'. The scholar J. Rudoe (in Gabriel *Micromosaic* 2000) writes: 'towards the second half of 19th century, as the tourist industry expanded, the making of the micromosaic was ... a commercial enterprise'. At that time there were also some authors who did not like micromosaics and complained about what they saw as a decline of a noble, ancient art. Goethe in his

Italienische Reisebuch, when contemplating the mosaics of San Marco in Venice, notes: 'Zum 8. Oktober 1786 ... Die Kunst ... hat sich jetzt auf Dosen und Armbaender verkrümmelt. Diese Zeiten sind schlechter, als man denkt'. [the mosaic art ... has been dissipated on boxes and armrings. The times are worse than one thinks]. Charlotte Eaton (1826) in her guide, *Rome in the Nineteenth Century*, names the mosaic-makers 'artisans', who aim only to produce in 'immense quantity' artefacts for the English who 'flocked in such a number to Roma' and are fond of this kind of souvenirs.

The central mosaic on Scott's table is not signed on its surface and its back apparently was glued to the wooden support after its arrival in Tasmania. Therefore, a detailed inspection of the work has been rather limited and difficult. Consequently, it was impossible to ascertain whether there might exist on the back a signature or a studio-stamp or the metallic label with reference number typical of the Studio Vaticano. In the Archives of the Vatican there are receipts of payments for mosaics of the same subject, dated 1874–1876,¹⁶ but no documents seem to exist which could be linked to the Scott's table. *Sic stantibus rebus*, it would be highly questionable and almost impossible to try to attribute the mosaic of the Scott's table to a specific artist or a particular studio, because of the lack of any evidence, i.e., authentic, coeval, reliable documents, which could justify and support credible suppositions.

In fact, the Scott's table mosaic can be seen as a good-quality example of a subject which became popular towards 1850s and was reproduced in large numbers during the second half of the nineteenth century.



Fig. 7. Peter Paul Rubens (1577–1640) *Romolo e Remo* or *The Finding of Romulus and Remus* (1625)

OIL ON CANVAS, 213 X 212 CM. ROME PINACOTECA CAPITOLINA (FROM THE BOOK ROMA VOL. I, 1941 TCI MILANO)

Iconography

The mosaic on Scott's table represents the lower part of the painting by Peter Paul Rubens (Siegen 1577–Antwerpen 1640), oil on canvas, 210 x 212 cm, *La lupa capitolina* or *The Finding of Romulus and Remus*, painted probably in Antwerp in 1617–1618, for an unknown purchaser (Fig. 7).

The painting was acquired in 1750 by Pope Benedetto XIV Lambertini with other works of art, as the first nucleus of the Capitoline Gallery at the Musei Capitolini in Rome, where it is still on display. This Rubens masterpiece was also on display in Canberra and Melbourne (March–August 1992) as part of the exhibition *Rubens and the Italian Renaissance*.

Rubens depicted Romulus and Remus lying on the banks of the river Tiber, lying

under the tree *ficus ruminalis*,¹⁷ protected by a she-wolf and fed by woodpeckers. These animals were sacred to the god Mars, the father of the twins. The strong old man on the left represents the river Tiber. Rubens depicted the figure of the river with a beard and a wreath on its head, as it appears in the ancient Roman sculptures. The young woman behind the Tiber is the mother of the twins, the vestal Rea Silvia.¹⁸ On the right, Faustulus, the shepherd, is discovering and rescuing the children.

At the Pinacoteca Ambrosiana at Milano there is a Rubens drawing which can be connected to this painting and presents the same scene of the mosaic: the twins and the she-wolf on the river bank and the thick reed-thicket in the background. It is one of the 'archeological' drawings made by Rubens when he was in Italy between 1600 and 1608. The painter copied the left part of a Roman sculpture representing the Tiber. The sculpture was originally at the Belvedere, near St Peter's in Rome, but is now in the Louvre, Paris.

Rubens was a highly educated artist and knew the classic authors and poets well. On the left upper corner of the drawing he transcribed a quotation from Virgil's *Aeneid* (VIII, 630–34), describing the bas-relief decorating the Aeneas buckler:

Fecerat et viridi fetam Mavortis in antro
 procubuisse lupam, geminos huic ubera
 circum
 ludere pendentis pueros et lambere matrem
 impavidos, illam tereti cervice reflexa
 mulcere alternos et corpora fingere lingua.¹⁹

These verses clearly inspired the painting at the Pinacoteca Capitolina, the

detail of which is depicted in the Scott' tabletop mosaic.

The legend of Romulus and Remus, well-known even today, was mentioned and elaborated by several Latin and Greek poets and historians, particularly Titus Livius (*Ab urbe condita* liber I, 4) and Virgil. The authors aimed at surrounding the origins of Rome and its empire with a halo of mythological glory. The legend can also be read in one of the most ancient guides to Rome, the medieval (c. 1100) *Mirabilia urbis Romae*, in Latin, printed for the first time in 1499, and in another anonymous Latin work, *Origo populi romani*, written in the fifth century.

Although the twins and the she-wolf often appear on Roman coins, on ancient, medieval and modern sculptures and bas-relief, and on the xylographies of the title-page of two incunabula in the Biblioteca Herziana in Rome, the scene is rather uncommon in paintings. An affresco by Cavalier d'Arpino (Giuseppe Cesari 1568–1640) at Palazzo dei Conservatori in Rome, and another by A. Carracci (1560–1609) at Palazzo Magnani in Bologna, depict the twins with the she-wolf as part of a larger historical scene.

The Rubens painting is probably the only work by a great artist which represents the myth, as it was described by Titus Livius and Virgil, and it is seen also nowadays as the 'painting-symbol' of Rome. This does explain why this subject was so often reproduced in mosaic form and why it was so popular among foreign travellers.

The marble frame

The round frame, 55 cm width, surrounding the central mosaic, is made with relatively small fragments of ancient and modern *marmi da decorazione* (decorative marbles) and pieces of semiprecious stones in various, irregular shapes. Particularly rare is a fragment of *murra* (spar-fluorite) a translucent, iridescent stone imported by ancient Romans from Asia Minor. The marbles are assembled according to their colours to create a sort of large wreath around the central mosaic, pale on the outer edge and darker towards the centre. This kind of work, named *commesso*, can be seen in some sense as an imitation of the ancient Roman *opus sectile*, which was made of *variegatis marmorum crustis* (with fragments of marbles in various colours) (Furietti 1752), used to decorate floors during Classical times. A modern example (1784) is the floor of the sacristy of St Peter's in Rome. Nowadays a similar kind of floor-covering is still sometimes used for modern buildings.

The name *marmi di scavo* (ancient marbles) indicates any kind of polychrome decorative stones imported since the first century BC from the countries of the Mediterranean area into Rome and other cities by the Roman emperors, firstly by Augustus (63 BC–14 AD), to embellish public and private buildings, *thermae*, villas, temples with polished floors, pillars, columns and walls. The quarries were imperially owned and worked, administered by officers appointed by the emperor, in some periods under the direct control of the emperor himself and used for the emperor's purposes. Nevertheless, a certain amount of these expensive materials became available for rich citizens and for workshops.

The marbles were imported both as finished works, such as columns and sculptures (also as copies of Greek bronze sculptures) or in huge, coarse blocks. The latter, sent into Rome by ships, were stored in a special place, named *marmorare*, along the Tiber banks.

Soon after 330 AD, when Constantine (274–337 AD) moved the capital of the empire from Rome to Byzantium, waves of invasions started to affect the western part of the empire and little by little the splendid buildings began to deteriorate. Meanwhile, as Rome became the centre of Christianity, numerous churches and new monuments were built everywhere. The worked marbles, pillars, sarcophagi, sculptures and raw blocks were seen as a source of easily available materials. The imperial buildings and the *marmorare* suffered endless pillage and for centuries Rome itself became the largest quarry of every kind of precious marble. From the Renaissance, following a renewed love for classical civilizations, ancient marbles and sculptures became a real business: prospectors, merchants, antiquarians, and craftsmen operated, looking for sculptures and materials and selling them to collectors. During the Renaissance, the antiquarians were often highly educated men, like Andrea Odoni or Jacopo da Strada (1507–1588) and the collectors were rich men or powerful families, as the Medici in Florence or the Popes and cardinals in Rome.

In the eighteenth and nineteenth centuries, numerous foreign travellers, deeply interested in geology and archaeology, were always eager for fragments of sculptures and *marmi antichi* (ancient marbles) to buy and take home to their own countries, although always export

permission had to be granted by the Papal government. Goethe, in his *Italienische Reisebuch*, writes:

den 18. November 1787 ... Eine fuer mich ausgewaelte Sammlung von Musterstuecken hat er nach Weimar abgesendet [(a friend of mine) has recently sent to Weimar a collection of specimens (of marbles) especially chosen for me].

He also bought other little samples and, while visiting the remains of the Domus Aurea, he could not help:

... die Taschen vollzustecken von Granit, Porphyr und Marmortaefelchen, die zu Tausend hier herumliegen ... [... filling (his) pockets with granite, porphyry, and marble-slabs, lying in thousand everywhere].

Lady Morgan (1821) writes that the *scarpellini* (marble-workers) used to transform fragments of ancient marbles into little sculptures or paperweights for English visitors to take to England as special souvenirs. Henry Sass, when visiting Rome in 1817, (in *A Journey to Rome and Naples performed in 1817*), complained about the destruction of the ancient monuments:

How many cornices, fluted columns, and beautifully executed capitals have I seen cut up and used as merely block of marble!

Also, Robert Browning mentions the romantic charm and the beautiful colours of the ancient marbles in his poem *The Bishop Orders His Tomb at Saint Praxedes's Church*.²⁰

At the end of second half of the eighteenth century decorative marbles began to be studied from the geological and archeological points of view. German,

Italian and English archaeologists, geologists and amateurs, such as Edward Dodwell and the Italian lawyers Francesco and Tommaso Belli created rich collections of fragments of ancient and modern marbles, some of them very rare, brought into Europe also from America or Asia, classified and listed according to scientific theories. As a consequence, several catalogues were published from the 1820s, such as the catalogues of the Dodwell and the Belli collections, both edited by Tommaso Belli. The marble specimens, collected by Dodwell, are still on display in the Geological Museum of the Università La Sapienza at Rome.

The most important collection, including 1000 pieces of ancient and modern stone from all over the world, was assembled by the Roman lawyer Faustino Corsi (1771–1845), and was sold in 1828 to the Oxford University Museum. Corsi published a catalogue of his collection '*Catalogo ragionato d'una collezione di pietre da decorazione formata e posseduta in Roma dall'avvocato Faustino Corsi*' [Scientific catalogue of a collection of decorative stones, assembled and owned at Roma by the lawyer Faustino Corsi] (Corsi 1825, Salvaggi Roma). Later, in 1828, he published *Delle pietre antiche*, an erudite book, rich in quotations from various ancient and modern authors, which can be seen as the first modern treatise about ancient marbles.

In this book all the decorative stones, described by the classical authors, particularly by Pliny the Elder (24–79 AD) in *Naturalis Historia*, and named in Latin, were identified by the author with the same marbles, known in the past centuries and also in 1800 under the picturesque



Fig. 8. Scott's tabletop: central mosaic and frame made by fragments of ancient and modern *marmi da decorazione* (decorative marbles) and semiprecious stones in various irregular shapes. TOP LEFT: a fragment of malachite (green), BOTTOM RIGHT: fragment of lapislazuli (blue)

Italian names given to them by the Roman *scalpellini* (marble-workers), such as *portasanta* (holy door), used to decorate the Porta Santa of St Peter's, *fior di pesco* (peach bloom) pale pink, *africano* (African) dark brown or black, *cipollino* – flaking off like an onion.

Following the classifications in these published catalogues, the marble-makers, sometimes working in the same atelier with a mosaic-maker, often used to accompany their marble tables with a list and a map of the marbles which they used in their works. The lists were in Italian, even when provided to foreign buyers (at that time, English, French and German visitors, particularly artists, had a good knowledge of the Italian language) and the marbles were always named with the traditional, common Italian names. This habit was not unusual during the second half of the nineteenth century, although the first examples of tabletops showing a collection of marble fragments, completed by a list and a map, are the two tables (155 pieces in each table) made in 1830 by Raffaelli and Leonardi for an English purchaser (see R. Valeriani 1993).

After 1850, tabletops showing large and elaborate marble frames around the central mosaic began to become relatively common when the technique evolved, thanks also to new machinery invented by the Martinori brothers of Università dei Marmorari at Rome. Moreover, tastes changed and the purchasers, often rich businessmen and merchants, were asking for more elaborate and eye-catching works. Spectacular marble works and marble-mosaic frames were also put on display at the Universal



Fig. 9. Tabletop with central mosaic representing Piazza San Pietro Rome (St Peter's Square), surrounded by a frame of fragments of ancient marbles in various colours

MOSAIC 90 x 120 CM. SECOND HALF OF THE NINETEENTH CENTURY. COLLEZIONE SAVELLI, ROME (COURTESY OF DR LORENZO SAVELLI).

Exhibitions, sometimes accompanied by a list of marbles and a map of the pieces. The best known and most celebrated of these works is *L'aureola*, created for the World Exhibition of 1855 in Paris by Michelangelo Barberi (1787–1867), probably the most renowned mosaic-maker of the century. His masterpieces were collected by kings, princes and the Czar of Russia. The tabletop *L'aureola* shows its central mosaic, Piazza San Pietro at Rome, framed by *vari frammenti di bellissime pietre del mondo conosciuto dagli antichi e provenienti da quelle che già arricchivano i monumenti dell'impero* [various fragments of beautiful marbles from countries known by the ancient and taken from the marble-decorations, which embellished the monuments of the

Roman empire]. Another mosaic table, surrounded by *cent vingt espèces de marbre ...* [120 different marble-fragments] was on display at the World Exhibition in Paris in 1867.²¹ A tabletop, very similar in pattern and style to the Scott's table frame (last quarter of nineteenth century, according to the catalogue) was auctioned in London in 2010, (pers. comm. Dr A. Rozefelds and Mr P. Hughes of TMAG, 2011). Many others exist in private collections or in European and American museums. (Fig. 9).

The marble frame surrounding the central mosaic of Scott's table, with its showy collection of fragments of ancient and modern marbles, can be seen as one of the first examples of this kind of work. Moreover, Scott's table was brought into Tasmania in 1857 with its map and list of the Italian names of the 144 fragments of marbles that form the frame. Both the list

and the map still existed when the table was auctioned with other Italian pieces of decorative art, including a sculpture of 'Canova' [sic!], in 1887 in Melbourne, as the advertisement in the Melbourne *Argus* indicates. Unfortunately, both the original list and the map appear to be lost, and only the list survives as a copy, published in *The Courier* of Hobart, on 15 July 1857. However, it is largely incorrect and spoiled by spelling and typing errors.

Nevertheless, the list and the lost map prove that a huge variety of marbles were still available in Rome at that time, and that the Roman artists and marblers-workers were able to use even small fragments to create their works. Besides, the habit of supplying a list of marble with the marble work indicates that the collectors' interest in beautiful ancient and modern decorative marbles was equal to their passion for the mosaics.

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Venezia; Dr Paolo Di Buono, Director of the Studio del Mosaico Vaticano, Città del Vaticano; Dr Maria Antonietta De Angelis, Art Historian, Archivio Vaticano, Città del Vaticano; Prof. Arch. Dario Del Bufalo, Presidente dell'Università dei marmorari, Rome; Mr Scott Carlin, Head Curator of Vacluse House, Sydney.

The bibliography about mosaics and ancient marbles is a very large one. The author selected only those books actually used for the article. All of them are held in the author's private library.

Endnotes

- 1 Until 20 September 1870, Rome was the capital city of the *Stato pontificio* (papal kingdom), consisting of the central part of Italy, excluding Tuscany.
- 2 In his book *Voyage in Italy* (1670) J. Starkey, (London) Richard Lassels, '... a gent, who travelled through Italy five times, as tutor to several of English Nobility and Gentry' used the names 'Grand Tour' and 'giro of Italy', for the first time, the terms which were commonly used in later guides and travel diaries.
- 3 For a detailed list of the most popular English guides of the nineteenth century, see the first section of the bibliography. In particular, Murray's *A Handbook of Roma and its Environs*, 7th edn (1864), supplied travellers with the names and addresses of the most reliable ateliers, enumerating in separate lists mosaic-makers, mosaic-painters and mosaic-sellers.
- 4 The Murray's Guide (1864, 7th edn *General Information* p. xxviii) recommended to English visitors the names of English agencies in Rome offering a regular shipping service for works of art and packages of any size: 'works of art and packages in general are regularly despatched to England ... and thence delivered to America or other countries'.
- 5 Personal communication kindly supplied by Mr Scott Carlin, Head Curator of Vaucluse House, Sydney, in 2010.
- 6 M. Praz, 1982. *Il mondo che ho visto*, Adelphi, Milano.
- 7 D. Pyke (ed.), *Australian Dictionary of Biography*, Vol. I (1788–1850), p. 21. 1966. Melbourne University Press, Melbourne.
- 8 James Anderson was born in 1813 as Isaac Atkinson. As a watercolour painter he signed with the name William Nuget Dunbar; later he had a photographic studio in Rome. From 1845 he was a member of the 'Roman photographic school'. He was initially associated with the studio of Giacomo Caneva and then ran his own studio, the most famous at Rome, specialising in photographs of ancient monuments and paintings. His son, Domenico, and grandson continued with the studio. Several original plates still exist in the Alinari archives in Firenze.
- 9 The *Mosaico minuto* or micromosaic differs from the traditional *smalto tagliato*, used for centuries to decorate walls, apses of churches and large surfaces. To create the tesserae of traditional mosaic or 'tagliato', which are normally square, the mosaic-maker cuts the little pieces directly from the 'fritta' using a special, sharp hammer, called *martellina*. The most spectacular example of *mosaico a smalti tagliati* is the entire decoration of the dome and the copies of paintings on the altars of St Peter's in Rome. The micromosaic technique was accurately described in English guides of the first quarter of nineteenth century; for example, Mariana Starke in *Travels to the Continent* (pp. 311–312) writes: '*These Mosaics, called Roman, consist of small pieces of glass (some of them scarcely larger than a pin's head), tintured with all degrees of colours necessary to form a picture: and, when the mosaics are finished, they are polished in the same manner as mirrors*'. Descriptions of this technique can be found also in Eaton (1826, Vol. III), [Charlotte Eaton (Mrs Waldie) *Rome in XIX Century* Vol. III. London, 1826], who refers only to the Studio Vaticano, in De Keller (1830) and in Lady Morgan (1830, Vol. II) *France 1829–30* Vol. II [see bibliography].
- 10 The article 'L'inventario del 1836 di Giacomo Raffaelli' by R. Valeriani (1993) quotes the inscription on the tomb of G. Raffaelli in the church of San Stanislao dei Polacchi in Rome:

... qui primus encausto in subtilissima
fila reducto musivam artem mirifice perfecit
[who as the first took to perfection the art of
mosaic, making very thin filaments from the
glass paste].
- 11 Venice had been for centuries the main supplier of glass pastes, although in the nineteenth century the Vatican Studio also had its own furnace. Nowadays, the glass paste in an endless number of colours or shades is supplied to the Vatican Studio and to mosaic-makers by the Fornace Orsoni of Venezia, the oldest existing furnace still operating in the traditional ancient style.
- 12 The use of microscopic tesserae, which were always square, was not unknown in Classical and Byzantine times. The Roman mosaic *Le Colombe di Plinio* (Plinius doves), dating from the second century AD, and believed by Plinius the Elder to be a copy of a Greek painting, was discovered during digging at the Villa Adriana at Tivoli in 1737. Initially this mosaic belonged to Cardinal Furietti (1685–1764), and now is on display in the Musei Capitolini at Roma. It is made with very tiny multicoloured marble-tesserae which create pictorial effects and reflections. The discovery of this mosaic stimulated the taste for micromosaics, and the new miniature creations at the end of the second half of the eighteenth century. The *Colombe di Plinio* was probably the most common and popular subject for micromosaics up until the end of the eighteenth century. One of the first examples, signed G. Raffaelli (1743–1836), is in the Savelli Collection in Rome. Another example, much later (c. 1870), can be seen in the centre of two little tables at Como House in Melbourne.
- 13 This special kind of tesserae, created by Antonio Aguatti (17?–1845) is also called *malmischiatii*.

Other mosaic-makers immediately adopted the same technique, which became common towards the second half of the nineteenth century; it was used to add colours to the works and sometimes, when requests for mosaics were very large, to make the work more quickly. Modern mosaic artists, such as *maestro mosaicista* Mr Roberto Grieco, still use this technique to obtain special effects in their creations.

- 14 This technique was used by the Greeks and Romans in the first and second centuries AD to reproduce Greek paintings. The most famous mosaic of this kind is *La battaglia di Issa* (first century AD), found at Pompei and now at Napoli in the Museo Archeologico Nazionale. The *opus vermiculatum* is accurately described by G.A. Furietti in his treatise *De Musivis* 1752 which must be regarded as the first modern book about mosaic art: *Vermiculata vero opera ea dicimus, ubi tenuissimis lapillis, rerum, animalium, hominumque imagines effiguntur, quibus formandis, si excellens artificis manus accesserit, picturam ipsam aemulari videatur* (caput I, p. 18) [we name 'vermiculata' the works, where the pictures of things, animals and persons are depicted by very small marble-tesserae, and when these works seem to imitate the painting – art, if they are made by a great artist].
- 15 Examples of the same subject can be found in public and private collections, as indicated in the following bibliographic information: M.G. Branchetti 2004, *Collezione Savelli*, p. 119; R. Grieco, 2008, *Mosaici Romani*, pp. 153, 202; R. Grieco & A. Gambino 2001, *Roman Mosaics*, pp. 159, 177, 178, Efimova, *West-European Mosaics of the 13th–19th Centuries in the Collections of the Hermitage*, nos. 74, 75; A. Gonzales Palacios 1977, *The Art of Mosaics* cat. N. 77, Gabriel *Micromosaics* n. 97. A bracelet on display in the Victoria and Albert Museum, London, is rather similar to the

Scott's table mosaic, depicting only vegetation and sky in the background. Probably other mosaics showing the same subject may exist in private collections.

- 16 Information kindly supplied by Dr Maria Antonietta de Angelis, Archivio Storico, Rome (pers. comm. 2010).
- 17 The names Roma, Romulus, Remus may refer to an Etruscan family name root: * *ruma* ..., to which can also be related *Rumon*, the pre-Latin name of the Tiber, as well as *ficus ruminalis* (Serv. Aen. VIII, 63–90), the tree under which Romulus and Remus were rescued and fed by the she-wolf. There is probably a connection with the Greek words indicating the stream, and to flow. A very odd etymology of the name *Romulus* can be read in *Mirabilia urbis Romae* 1499: '*... pro Romo Romulum blandimenti causa ... appellatum fuisse*' [instead of Romo he was named Romulus as an affectionate diminutive].
- 18 Rubens depicted also the god Mars and Rea Silvia. The painting is in the Gallery of Liechtenstein. The sketch, oil on canvas, was on display in Australia, in Melbourne and Canberra, in 1992, in the exhibition *Rubens and the Italian Renaissance*.
- 19 'And the mother-wolf he had fashioned, couched in the green cave of mars. About her teats the twin boys hung playing, and, unfearing, licked their dam; she, her sharply bent back, caressed each in turn and their limbs with her tongue'. Virgil, *Aeneid*, prose translation by John Jackson, 1908. Wordsworth Classic, 1995, p. 142.
- 20 'my slab of basalt ... peach-blossom marble all, the rare, the ripe ... onion-stone ... some lump of lapislazzuli ... blue as a vein o'er the Madonna's breast ... 'twas of antique black ...' (passim).
- 21 M.G. Branchetti, 2004. *Mosaici minuti. Collezione Savelli*, Gangemi, Rome.

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MONOCHROME OIL PAINTINGS AND GOUACHE, WATERCOLOUR, AND INK DRAWINGS BY WILLIAM CHARLES PIGUENIT

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Brown, Tony (A.V.) 2012. Monochrome oil paintings and gouache, watercolour, and ink drawings by William Charles Piguénit. *Kanunnaah* 5: 21–42. ISSN 1832-536X. Over a period of at least 20 years (1877–1896), and possibly longer, William Charles Piguénit (1836–1914) painted 72, and probably more, monochromatic works in oil, gouache, watercolour and Indian and sepia ink. The works were produced for private and commercial commissions and used as illustrations in books and newspaper, as well as gifts for subscribers to art societies' Art Union lotteries. They were also painted for family and friends, as a record of an arduous field trip undertaken to the Central Highlands and West Coast of Tasmania.

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This paper is based on the result of research undertaken during 2012 as part of the preparations for a book, on the works by W.C. Piguénit that are held in the Tasmanian Museum and Art Gallery, and an associated exhibition of these works.¹ The exhibition will open in February 2013 with the book being available at that time. An earlier paper on the subject of Piguénit's monochromatic works by Jonathon Holmes appeared in *Kununnah*

(Vol. 3, 2008). Information found during this research suggests that the number of monochromatic works that Piguénit produced is considerably greater than Holmes's estimate and their purpose and distribution far more varied.

The first known production of a monochrome oil painting by William Charles Piguénit, *The Alum Cliffs, Mersey River*, (Fig. 1) was in 1877,² following a trip to the Deloraine-Chudleigh-Meander area



Fig. 1. *Alum Cliffs, River Mersey*, (1877)
Monochrome oil on cardboard, 61.6 x 47.0 cm
TASMANIAN MUSEUM AND ART GALLERY: AG1819

in December 1876.³ He then continued to work in this medium for at least the next 20 years, producing 72 positively identified, monochromatic works of areas he had visited.⁴ Some of the scenes, such as Mt King William and Lake St Clair/Mt Olympus, were reproduced a number of times, each with a slight variation in the subject.

There is, however, circumstantial evidence that Piguénit may have produced two monochromatic works of Hell's Gate five years earlier, following his trip to Port Davey with the surveyor James Reid Scott in 1871. Scott's Account Book for 1868–1876⁵ contains an entry for 29 July 1872 recording that he had received a present from Piguénit of a work, *Arthur Range and Plains*, and that he had purchased two additional works, entitled *Hell's Gate from above* and *Hells Gate from below*, for five guineas each. The price, even for that relatively early stage in Piguénit's career, indicates that the works were either in watercolour or monochrome and not coloured oil. A woodcut, entitled *Hell's Gate, Davey River Tasmania*, was published in the *Illustrated Australian News* of 20 March 1878. The associated text is taken from a paper Scott read before the Royal Society of Tasmania, at Hobart Town in 1875.⁶ A sketch of Hell's Gates accompanies the paper and is recognisable as being based on the same original work from which the woodcut engraving was copied. Whether the original works were in monochrome oil, Indian or sepia ink, watercolour or gouache (all of which Piguénit used) is presently unknown, as is their location.

Piguénit's visit to the Deloraine-Chudleigh-Meander area was at the invitation of

the Managing Director of the Launceston and Western Railway Company, R.W. Lord, who had commissioned him to produce an oil painting of a tranquil scene in this area. The result was the oil painting *Evening on the Meander*, a scene depicting the Meander River near the property Cheshunt.⁷ The commission followed the completion of the main railway line from Hobart to Western Junction in November 1876, and its connection to the Launceston to Deloraine rail line, which had been operating since 1871, allowing the area to be opened up to tourists.

Piguénit's companion on this trip was his friend and bush travelling companion, Robert Mackenzie Johnston, who, at the time, was the Audit Officer for the Launceston and Western Railway Company. Johnston worked for the Western Railway Company between 1870 and 1879 before taking various government positions based in Hobart. Over the next two decades Johnston acquired a number of Piguénit's monochrome oil and gouache works, almost as soon as they were painted.

During 1877 Piguénit produced at least four coloured oil and three monochrome oil paintings of scenes of places that he had visited during the December 1876 trip. His oil paintings included: *Quamby Bluff, Tasmania*, which he exhibited in the Victorian Art Academy exhibition in March 1877 and which was reproduced as a woodcut engraving in the *Illustrated Australian News* of 16 April 1877⁸; *Cumming's Peak, from Stocker's Plains, Tasmania*, exhibited in the NSW Academy of Art exhibition during May 1877⁹; and *Evening on the Meander* and *Cummings Head, from Meander*, both of which were

exhibited in the Fine Art Exhibition in Launceston, during February 1879.¹⁰

Piguenit also exhibited one of the three monochrome oils, *Deep Creek, Mersey River*, in the Fine Art Exhibition, Odd Fellow's Hall, Launceston, during February 1879.¹¹ This work is described as showing the stratification of the cliffs along the gorge through which the Mersey River flows near Chudleigh, and was one of the works R.M. Johnston owned. Johnston later exhibited this work in the First Annual Exhibition of the Fine Arts in Hobart, during March 1887, as *Gorge at Chudleigh*.¹²

Towards the end of an article in the *Launceston Examiner*, 15 September 1877, which gave a very positive review of *Deep Creek, Mersey River*, the writer states that:

It may be interesting to lovers of art to know that the practice, as in the 'Deep Creek,' of the translation of colour into monochrome is again being revived in England. The Times of June 12th contains the following:

Black and White. We are glad to see these pleasing and instructive exhibitions at the Dudley Gallery kept up without any sign of decreasing interest on the part of those who visit or those who contribute to them. Full of instruction as is the practice of Black and White—in other words of the translation of colour into monochrome, the study of it in its various media of India ink and sepia, chalk, charcoal, and blacklead, and again is etchings and engravings on wood and metal, is among the most useful, and the most needed by the artist of the present day. With an increasing feeling of the value of colour and a more cultivated sense of its relations has come, strange to say, a comparative, undervaluing and seeming neglect of light

and shade. We can conceive no picture in which colours should be used without light and shadow, but with black and white alone a competent painter can go far to supply the place of local colour.

The other two monochrome oils produced after the trip to the Chudleigh area were: *Alum Cliff, River Mersey* and *Falls on the Lobster Rivulet, near Chudleigh, Tasmania*. Neither of these works was entered in a mainstream exhibition at the time, although the former of the two works appeared as a woodcut engraving in 3 October 1877 editions of the *Illustrated Australian News*; the 13 October 1877 edition of the *Illustrated Sydney News*, where it was titled *The Cliffs of Alum*; and, in the October 1877 edition of the *Illustrated New Zealand Herald*, as *Alum Cliffs, River Mersey*.¹³ This is the earliest monochrome oil by Piguénit held in the TMAG's collection.

The *Falls on the Lobster Rivulet, near Chudleigh, Tasmania*, appeared as a woodcut engraving in the *Illustrated Australian News*, 31 October 1877; and in the 10 November 1877 edition of the *Illustrated Sydney News*, where it was entitled *Waterfall on the Lobster, Chudleigh, Tasmania*.¹⁴

These three works were the precursor to more than 72 monochrome oil paintings and gouache or ink drawings, which Piguénit is known to have produced over a 20-year period. It is also probable that he produced many more works in monochrome than those recorded in this study and that the time period extended beyond 25 years.

Even though the above three monochrome works were used as woodcut engravings in the illustrated newspapers of the time, they were not the first of

Piguenit's works to have been used for such a purpose. Earlier, on 19 February 1876, the *Australasian Sketcher* had published a wood block engraving of a coloured oil painting by Piguenit, entitled *On the South Esk*. This work was one of the six works chosen by the Committee of the Art Union of Victoria, to be photographed by the firm Johnstone, O'Shannessy & Co., Melbourne, and issued as albumen silver prints in a presentation volume to each of the subscribers in their Art Union [lottery].¹⁵ Over the next few years each subscriber to the Victorian Art Union received a folio of six photographs of paintings selected from works exhibited during the year.

During February–March 1873 Piguenit had accompanied J.R. Scott and his party of five men to Lake St Clair and the Eldon and Murchison valley areas.¹⁶ It was not until 1878, however, that finished paintings of this trip were seen by the public. The *Mercury* of 16 August 1878 records that:

We had the pleasure yesterday of inspecting four oil paintings from the studio of our talented fellow-townsmen, Mr. W.C. Piguenit. Two of these are painted in colours, and two are monochromes, the style now so much in vogue among British artists ... 'Mount Olympus,' a monochrome, is the first picture seen as the room is entered ... It stands sentinel in rugged grandeur of outline by the placid waters of Lake St. Clair ... 'Eldon Bluff.' – This picture, a monochrome, is in some respects the most striking of the group. As sketched, the tiny Lake Augusta nestles at its feet, the feature of which Lake is the fringe of Pine Trees, which skirts its edge. We are struck with the total absence of the

gum tree, which is, in this western region, supplanted by the pine ... The artist visited this remote place in company with the late Hon. J. R. Scott. We hope that the heads of our educational establishments will afford their senior pupils an opportunity of visiting the Museum at hours when, with the aid of a favouring light, the pictures can be best seen to advantage.¹⁷

Both of these monochrome oil paintings were commissioned by G.T. Collins of Launceston, a solicitor and later in life a member of the Tasmanian Legislative Council, whose extensive art collection contained many works by Piguenit.

In the Fine Art Exhibition held in the Odd Fellows Hall in Launceston in early 1879, three of Piguenit's monochrome oil paintings were exhibited. *The Deep Creek, Mersey*, which was owned by R.M. Johnston, and *Eldon Bluff, Lake Augusta* and *Mount Olympus, Lake St Clair*, both owned by G.T. Collins. A review of the exhibition in the *Cornwall Chronicle* (Launceston) of 20 February 1879 stated that:

No 25 'Eldon Bluff, Lake Augusta' (the property of Mr. G T. Collins), is a monochrome, which, along with 33, 'Mt Olympus Lake St. Clair' has certainly commanded the most attention and admiration of any pictures in the room. The haze arising from the mountains looks almost like nature itself. There is a depth and tone about the pictures which are in Piguenit's peculiar style and stamp the excellence of all his productions.

Piguenit painted a second version of *Mount Olympus* in 1888. This work is very similar to the one owned by Collins



Fig. 2. *On the Huon Road*, 1880
Monochrome oil on cardboard, 46.3 x 36.6 cm
TASMANIAN MUSEUM AND ART GALLERY: AG812

but is much more 'atmospheric' as the foothills of the Olympus area enswathed with cloud. This work is held in a private collection.

During 1879 Piguenit produced his first (so far recorded) monochrome oil painting of a non-grand landscape scene typical of his earlier works. *On the Huon Road, Tasmania* (1879–1880) (Fig. 2), depicts a family resting alongside their horse and cart at a corner in the road beside a swiftly flowing rivulet. This work is one of five monochromes presented to the TMAG by Mrs J.R. Scott in January 1922.¹⁸

Piguenit's last work in monochrome oil before leaving Tasmania for New South Wales in April 1880 was *The Murchison Valley*, which he painted in early 1880 for his brother-in-law, J.G. Fleming.¹⁹ Fleming had married Emma Mary Piguenit in 1862 and operated a grocery store at Clarence House on the corner of Liverpool and Murray streets, Hobart. This work depicts a scene from sketches made on his trip to the central highlands with J.R. Scott in 1873. The *Mercury* of 9 March 1880 records:

The Murchison Valley.—The last of the pictures executed by Mr. W. C. Piguenit, prior to his departure from the colonies for Sydney, probably for England, is now on view says, the *Mercury*, at the Museum, Macquarie-street, and will continue so for a few days. It is painted in monochrome, and is a view of the Valley of the Murchison (the head waters of the Pieman River), showing some of the most striking natural grandeur of this wonderful country. The sketch from which Mr. Piguenit's picture is painted was taken by him when on an excursion tour with the late Hon. J. R. Scott, in 1874[sic],

who from time to time furnished the Government with some valuable sketch maps of this but little known country, as a record of his many examinations of this portion of Tasmania. The treatment of the subject by the artist is happy in every particular. The bold magnificence of the rugged mountain chain of abrupt peaks is admirably shown; while on the left hand the delicate tracery of the foliage is carried out into the most minute details ... The picture is the property of a resident of the city, a relative of Mr. Piguenit's.

After moving to Sydney Piguenit continued to produce monochrome oil paintings as well his better known and more numerous oil paintings and watercolour drawings. In a number of instances he painted coloured oil paintings of various scenes around Sydney Harbour and the coastline to the south, and also produced variations in monochrome oil or watercolour. His earliest, *On the Cook's River near Undercliff, New South Wales* (1880), was followed by *Life in the Forest, Tasmania*, *The Mid-day Rest* (1881), and then *Australian Gum Tree* (1883), *Mount Kosciusko and the Valley of the Upper Murray* (1883), and *Rocky Coastline, N.S.W.* (1884).

Cook's River near Undercliff, New South Wales (1880) is in the style of *On the Huon Road, Tasmania* (1879–1880) representing a peaceful social outing on a calm river, the banks of which are covered by forest.

In Sydney, 1881 heralded the start of special exhibitions and prizes for works in 'Black and White', not only because works in monochrome were 'so much in vogue among British artists', but also as a means of providing a venue for non-oil

paintings to be displayed. The exhibitions were also used as a means of selecting works for easy reproduction that could be used as presentation pieces to subscribers in both the New South Wales and Victoria Art Unions, as well as commercially for illustrations on Christmas cards by John Sands, a Sydney publisher.

The results of the John Sands Water-colour Competition in November 1881, gave rise to considerable newspaper comment because of the decision of the judges.²⁰ They awarded the first prize to *Govett's Gorge, looking towards the Valley of the Grose*, by C.E. Hern, Sydney, as an excellent representation of a well-known and very characteristic scene familiar to all tourists in New South Wales, although in purely artistic qualities, they did not consider it equal to *Mount Ida, Lake St Clair, Tasmania*, by W.C. Pignuenit, Hobart, which was considered less suitable for reproduction, but to which they gave the second prize.²¹

John Sands Competition – Second Prize, £25, 'Mt Ida, Lake St Clair, Tasmania'. Had Mr Pignuenit's pencil been employed upon a scene more distinctly Australian there can be little doubt but that the relative positions of the prize-takers would have been reversed.²²

The acceptance of works in 'Black & White' was consolidated when the Art Society of NSW offered a competition exclusively for works in monochrome. The purpose of the competition was to obtain a 'presentation picture' for the society's first Art Union. The *Mercury* of 24 May 1881 recorded:

N.S.W. Art Society.— The Art Society of New South Wales has, awarded the prize

lately offered for the best monochrome to Mr. W.C. Pignuenit. The subject is 'Life in the Forest, Tasmania, the Midday Rest,' and the picture is executed in this well-known artist's best style. It is intended to reproduce it for one of the presentation pictures in the society's first art union.

The *Launceston Examiner* of 8 September 1881 continues the story:

Sydney Art Union.— In connection with the forthcoming exhibition of the Fine Art Society of New South Wales, to be opened at Sydney on 3rd October, it is intended to hold an Art Union on the English principle, the prizes, ranging in value from £2- 2s to 50 guineas, to be selected from the pictures exhibited. Every subscriber will receive a large and we well-executed photograph by Boyd [local Sydney photographer] of Mr. W. C. Pignuenit's monochrome 'Forest life in Tasmania—the midday rest,' which represents a familiar scene in any of our rich agricultural districts on the N.W. Coast or in the Western districts, and which received first prize at the Society's last competition.

An idea of the composition of *Forest life in Tasmania – the midday rest*, can be obtained from the *Sydney Morning Herald* report of 8 October 1881. The reporter, in his comments on the works exhibited by Pignuenit in the second exhibition of the Art Society of NSW, stated that:

No. 49, 'In the Huon Forest, Tasmania,' by W.C. Pignuenit, resembles very closely his picture, 'Forest Life in Tasmania—the Midday Halt,' which has been photographed for the presentation to

members of the Art Society's Art Union. In each picture there are the same tall gums, robed and crowned with feathery foliage, the same cool green shades, and the same beautiful touches of purple and blue in the background.

Later, on 2 December 1885, the *Mercury* reported:

The School of Art Exhibition. Through the zeal and enterprise of Mons F. Maurice, the people of Launceston will be enabled to inspect what is probably the finest art exhibition ever opened in Tasmania... Most Tasmanians naturally look around for Piguenit's name, and they will not be disappointed in this collection. The famous monochrome, 'Midday Rest,' which the trustees of the Sydney Gallery very much desired to purchase, has been sent by Mr. G. T. Collins from his excellent collection. This is a typical Australian picture, drawn by the artist from imagination, though many think they half recollect just such a turn on some of our roads through heavily timbered country. The rough bush dray, with the unharnessed horse feeding by the side of it, while two timber splitters are yarning and eating on a log near a creek that has prompted the midday rest is a familiar scene, and the tall gum trees arching overhead, through which the thick foliage of the adjacent forest is seen, is a fitting background for the hard-working trio.

The article in the *Mercury* continues:

A second monochrome from the same artist has also been lent by Mr. Collins. It is a view of Lake Augusta, on the West Coast of Tasmania, and the still water and soft foliage depicted with

consummate art, above which towers a wild peak, like the ruined architecture of a grand gothic cathedral, with an evening light thrown over all make up a dream of a beautiful scene, though taken from actual nature.

Whether this work, entitled *Lake Augusta*, was the 1878 monochrome *Eldon Bluff and Lake Augusta*, under another name, or still another monochrome painting of the same area, is yet to be established. At this stage they are considered to be the same work since they were owned and exhibited by Collins, but as there are numerous variations of other views, *Lake Augusta* may have been a variation and thus be added to the list of Piguenit's monochromatic works.

On 19 September 1881, the *Mercury* newspaper contained two reports regarding a monochrome painting by Piguenit, the *Western Ranges*, which was on view at his brother-in-law, J. G. Fleming's premises, Clarence House, Liverpool-street.²³ The first of the two articles stated:

We notice in our advertising columns of today's issue, that Mr. J. G. Fleming, Liverpool-street, is exhibiting W. C. Piguenit's monochrome of the 'Western Ranges,' which should be particularly interesting at this juncture to all mining and prospecting parties setting out for that locality. We should recommend all such interested to take this opportunity of viewing it, which will give them some idea of the character of the country thereabouts.

Whether this work is another, yet to be recorded, monochromatic work by Piguenit, or *The Murchison Valley* under another name is still to be established,

but the final sentence of the report in the *Mercury* states: 'The picture is the property of a resident of the city, a relative of Mr. Piguénit's' so currently they are considered to be the same work.

Piguénit exhibited ten oil paintings and two monochromatic works in the third exhibition of the Art Society of NSW in March 1883.²⁴ The *Sydney Morning Herald* of 28 March records that:

No. 202, 'Mount Kosciusko and the Valley of the Upper Murray', is done in Indian Ink and is a triumph of perspective, the eye being cheated into imagining that it wanders over about 20 miles of landscape; there are a dozen distances in it, each being distinct from the rest and the work has all the clearness of photography combined with the softness that photographs never attain. 199 is a splendid study of a gum tree.

Although only receiving this scant 'review' in the *Sydney Morning Herald*, his drawing, *Australian Gum Tree* was awarded a 'Shared Prize' with J. Mather of Melbourne – that shared prize was J.P. Russell's prize of ten guineas for the best black and white drawing of an Australian tree.²⁵

Mount Kosciusko and the Valley of the Upper Murray was purchased by the Art Society of New South Wales for copying as a presentation work to each subscriber in its 1883 Art Union. In May that year a sub-committee was appointed to consider the best means of reproducing the work, and resolved that copies of it would be produced by photography rather than lithography, as it had used for the presentation work in 1882.²⁶ The committee also resolved to

send copies of the work 'to the leading business houses in Australian colonies, with a view to obtain subscribers'.²⁷ Even though a wide distribution of copies was made, neither the present location of the original work nor a photographic image of this work have been located.

Later, in December that year (1883), *Mount Kosciusko and the Valley of the Upper Murray* was lent to the Calcutta International Exhibition by the Art Society of New South Wales. At this exhibition it was awarded a 'Certificate of the 1st Class and Gold Medal for Landscape'.²⁸

Rocky Coastline, N.S.W. (1884) appears to be a monochromatic variant of an oil painting exhibited by Piguénit in the Art Society of NSW exhibitions at the same time.²⁹

In December 1885, R.M. Johnston received five monochrome gouache drawings from Piguénit. The *Mercury* of 15 December 1885 reported:

I have been shown by Mr. R. M. Johnston, the Government Statistician, five beautiful paintings by Mr. W.C. Piguénit, of Sydney, received by him from that artist today. These pictures illustrate some of the finest yet probably least known scenery of Western Tasmania, and the difficulties of exploration of that part of the island. The subjects are—Lake Pedder, the Arthur Ranges from the Craycroft, Cumming's Head from Stocker's Plains, crossing the Picton, and the fifth (an eastern Tasmanian subject) is Ben Lomond from the Marshes. The pictures are to be exhibited at the forthcoming Tasmanian Art Association's Exhibition at Hobart, where they will certainly prove as attractive as have other productions from Mr. Piguénit's skilful brush. As

they are intended for the illustration of Mr. R. M. Johnston's coming work on the Physical Geology and Paleontology of Tasmania, those pictures are painted in distemper, that is in black and white, to facilitate their better reproduction by photography. Mr. Johnston's book, which is still in process of a compilation, will be a most elaborate and compendious record, and will contain many illustrations besides those so kindly contributed by Mr. Piguenit.

Johnston's work on Tasmanian geology, a *Systematic Account of the Geology of Tasmania*, was published in 1888.³⁰ Two of Piguenit's drawings, *Lake Pedder* and *Crossing the Picton*, were based on sketches made 11 years earlier, between 31 November and 9 December 1874, when Piguenit had joined Johnston on a trip for:

botanical and geological purposes... traversing the country from Victoria on the Huon, westward, via the Picton, Craycroft, and Lake Pedder, to the waters of the Gordon River near Macquarie Harbour, ... The party consisted of the late Honourable James Reid Scott, Mr. W.C. Piguenit, Lieutenant Burgess, the author [Johnston], and two experienced bushmen.

Because of the rough condition encountered while traversing the countryside, the party ran short of food by the time they had reached Lake Pedder and instead of continuing to the Gordon River returned to Victoria [Huonville]. Two of five monochrome gouache drawings, *Camp, Lake Pedder* and *Ben Lomond from the Marshes*, are now in the collection of the TMAG.³¹

The Arthur Ranges from the Craycroft is most likely to have been based on drawings from his 1871 trip to Port Davey with Scott and party; and *Cumming's Head from Stocker's Plains* from the 1876 trip to the Deloraine-Meander area. *Ben Lomond from the Marshes* very probably resulted from one of Piguenit's earlier visits, in 1878–1879, to Col. Legge at Cullenwood in the northeast of Tasmania when he also painted *On the South Esk, Avoca; St Pauls Dome from the S.E.*; and *South Esk River and Ben Lomond*.

In early 1886 a company was established by American investors to produce a three-volume publication entitled the *Picturesque Atlas of Australasia*: 'to pictorially and historically describe the Australasian Colonies at the time of the 100th anniversary of the settlement of Australia by Europeans, with the aid of the best colonial artists and writers'.³² Piguenit was one of the artists chosen to produce works for the publication, and the company purchased the original artworks commissioned from various artists for publication.

Six of his works: *Hells Gate, Davey River; Mount King William; The Frenchman's Cap; Eldon Bluff; St Paul's Dome from the South Esk; and Butts of Ben Lomond*, which he painted specifically for the publication in 1866, were chosen for inclusion in the section on Tasmania that appears in Volume 2. As one of these works, *St Paul's Dome from the South Esk*, now in a private collection, is a monochrome watercolour, it is probable that all six works are in monochrome watercolour similar to those produced for R.M. Johnston to use as illustrations in *A Systematic Account of the Geology of Tasmania*, and not in monochrome oil.

The *Picturesque Atlas of Australasia* was issued in sections at five shillings each and eventually formed the three volumes. The publication of these sections took place over a three-year period, 1886 to 1888. Once the work was completed and the financial matters settled, the company was disbanded and physical property liquidated. At an auction in November 1895, 400 original drawings that had been specially prepared for the Atlas, including those by Piguénit, were sold.³³ The present whereabouts of the other five drawings in this group is unknown.

Evidence of the popularity and demand for monochrome paintings and drawings continued through 1887 and 1888, as shown by the number of such works exhibited at a variety of locations in Sydney, Melbourne and Hobart. In February 1887, at the Fine Arts Exhibition in Hobart:

... several pictures by W. C. Piguénit, [are exhibited] which are admittedly the best pictures in this class. They are all sketches in black and white, and each a work of undoubted merit, deserving of careful study. The first, 'Coast Scene near Sydney,' exhibited by Mr. C. M. Maxwell, is a sepia study, representing the striking contour of the cliffs at Middle Head, with North Head in the distance, and a steamer coming in. Those who have sailed out of Sydney Harbour, and admired the extensively broken coast line and striking headlands, would at once recognise the locale of this picture, for, it is very accurately drawn. The other three Piguénit's, which are done in ink and Chinese white, are exhibited by Mr. R. M. Johnston, and consist of 'Cumming's Head from Stocker's Plains,'

a very pretty sketch with cattle; 'The Arthur Range,' a magnificent spectacle, the light and shade between the extremely broken mountain tops being worked out with great skill; and 'Lake Pedder.' This last-named picture is the best of the three. The materials used, combined with the genius Mr. Piguénit has for lake scenes, and the natural beauty of the country depicted, has given a picture that is of entrancing loveliness. It is peculiarly soft and deep, an effect produced without any detriment to the skilful accuracy of the detail in its foliage and the number of little figures in the foreground. These figures are charming, and bear the closest inspection.³⁴

Similarly, at a 'conversazione' (evening party) held by the Art Society of NSW on 20 July:

Wednesday night afforded an opportunity for the display of a very interesting collection of pictures, in a variety of styles and methods. Among the most noticeable were a dozen fine oil paintings in monochrome by Mr. Schell, comprising views of New Zealand scenery, varying in tone from rugged mountain to placid lake ... Two nice studies of Tasmanian scenery, in black and white, were shown by the vice-president, Mr. W. C. Piguénit.³⁵

On 23 August:

Just now there are on view at Messrs. Callan and Sons art depot, 818, George-street, [Sydney] some very fine pictures in black and white by Mr. W. C. Piguénit. Apart from the fact that they are works of art, an interest and value attach to them because of the scenes they represent.

The artist was one of an exploring party organised by the late Deputy Surveyor General of Tasmania (Mr. C. P. Sprent), who travelled among the western highlands of that country last summer. Availing himself of the opportunity thus afforded, he made some sketches from which he has produced the pictures referred to. They are landscapes of bold mountain scenery in the comparatively unknown portion of Tasmania lying between the extreme Western limits of settlement in the vicinity of Lake St. Clair and Macquarie Harbour on the West Coast--a district now, however, attracting attention on account of the mineral wealth it is known to possess. There are five of those pictures as follow:- 'Peak of King William,' from the terraces; 'King William Range,' 'Mount Gell,' from the western flank of Mount Arrowsmith; 'Mount King William,' from Lake George; and 'The Frenchman's Cap.' All are remarkable for a nice representation of lights and shades, and a striking transparency in both the clouds and the water, while the foliage is bright and realistic, and the general appearance of the landscape pleasing to the eye.³⁶

These five works were then transferred to Hobart to be exhibited for public view before being received by their new owners:

Piguenit's Monochromes of the Western Highlands of Tasmania. Lovers of art will be well repaid by a visit to Mr. R. L. Hood's showroom in Elizabeth street, where they will find a series of five exceedingly fine oil studies in black and white, painted expressly for one or two well known residents of Hobart by Mr. W. C. Piguenit. The subjects selected represent some

of the grandest scenes in the Western Highlands of Tasmania, and embrace the majestic peaks and ranges lying between Lake St. Clair and the Linda, known as Mount King William, Mount Arrowsmith, Mount Gell, the Frenchman's Cap, and the Collingwood Valley ranges, all lying in the line of the new track out from Bronte to the Linda. These pictures were exhibited in Sydney prior to their despatch to Tasmania, and were much admired. The following is an extract from Society [local Sydney magazine] with respect to them: 'Mr. Piguenit's spirited delineations of this wild scenery, with its bold basaltic mountain forms, will be a fresh revelation of Nature's majestic handiwork....The powerful drawing of these strange Alpine heights, the liquid stillness of the water, the care bestowed upon the foliage of the foreground, the realisation of the Alpine spirit of the place, and the forcible portrayal of the storm-clouds as they sweep above, beneath, and round about the giant crags, combine to render these works equal in artistic power to any of the more ambitious efforts in colours or on a larger scale than I have seen from Mr. Piguenit's brush.' It will be remembered that Mr. Piguenit accompanied the party, organised by the late Mr. Charles Sprent, deputy surveyor-general, who crossed from Hobart to Macquarie Harbour, via Mount Arrowsmith, last February.³⁷

As well as the above five works, Piguenit also painted at least another four monochrome oil scenes during 1887. One was of a coastal scene near Sydney. The other three were further variations of the western highlands of Tasmania: *Mount King William, Western Tasmania;*



Fig. 3. *Frenchman's Cap, Tasmania*, (1887)
Monochrome oil on cardboard, 53.0 x 39.5 cm
TASMANIAN MUSEUM AND ART GALLERY: AG8420



Fig. 4. *The Arthur Range, Tasmania*, (1891)
Monochrome oil on cardboard, 47.4 x 85.7 cm
TASMANIAN MUSEUM AND ART GALLERY: AG116

The Frenchman's Cap from the western flank of Mount Arrowsmith; and *Frenchman's Cap, Tasmania*, (Fig. 3) all of which are now in the collection of the TMAG.³⁸ Another scene from the highlands, just to the west of Mount Olympus, *Lake Petrarch, Mount Byron, Vale of Cuvier*, depicts the local mountain and lake scenery, and is presently held in a private collection.

The Centennial International Exhibition, which was held in Melbourne in the latter part of 1888, attracted a large display of artworks from the Australian colonies and overseas countries. Of the 24 works by Piguenit exhibited in the 'Tasmanian Court', nine were in monochrome, four in oil and five in gouache. R.M. Johnston exhibited his five gouache drawings Piguenit had produced to illustrate the *Geology of Tasmania* as well as the mono-

chrome oil, *Alum Cliff*. G.T. Collins of Launceston exhibited the remaining three monochrome oil paintings: *Eldon Bluff*; *The Frenchman's Cap*; and *Midday Rest*.³⁹

Some time in the 1880s Piguenit produced a variation of his 1880 monochrome *On the Cook's River near Undercliff, New South Wales*. The work is untitled and is of a river scene in New South Wales. It depicts a peaceful social outing on a calm river, the banks of which are covered by a more luxurious forest entangled by lantana vines. This work is also in the collection of the TMAG.⁴⁰

Piguenit produced his best known collection of monochrome oil paintings in 1891. These were produced as illustrations for his invited talk to the Fourth Meeting of the Australasian Association for the Advancement of Science (AAAS) held in Hobart during January 1892.⁴¹ The



Fig. 5. *Mount Wellington from Shag Bay, River Derwent, Tasmania, 1893*
 Monochrome oil on cardboard, 31.6 x 57.8 cm
 TASMANIAN MUSEUM AND ART GALLERY: AG1823

eight works were scenes of: *Lake Pedder*; *Hell's Gate*; *The Arthur Range* (Fig. 4); *The Murchison Valley*; *Mount Gell*; *Mount Olympus*, *Lake St Clair*; *The King William Range*; and *Mount King William from Lake George, Tasmania*. Following his presentation, all these works were purchased by the Tasmanian Government and donated to the TMAG.⁴²

Demand for Piguénit's works in monochrome continued into the 1890s. One of his first works to be completed in the 1890s was a monochrome watercolour: *Our Camp on the Snowy River, N.S.W.*, that is dated 1891 and is now in a private collection. This work is of a very similar scene to that depicted in a watercolour drawing, *The Perisher, Snowy River, N.S.W.* (1902).⁴³ This may have resulted from a field excursion undertaken in anticipation

of his hoped for commission by the Art Gallery of New South Wales to paint a large oil painting of Mount Kosciusko. This commission was received in 1902 and the painting completed in 1903.⁴⁴

During his visits to Tasmania in 1893, Piguénit received a commission from: 'Mrs T.S. [sic, J.R.] Scott of Battery Point, to paint one of his black and white pictures of a local subject'. This commission resulted in *Mount Wellington from Shag Bay, River Derwent, Tasmania*, (Fig. 5) which is now in the TMAG collection, another of the gifts from Mrs J.R. Scott in 1922.⁴⁵ It was one of a number of works Piguénit produced during his trip to Hobart, while either staying with, or frequently visiting, R.M. Johnston at his home at Shag Bay, on the eastern side of the Derwent River opposite to where the zinc smelter is presently located.



Fig. 6. *Ben Lomond from Break O' Day, Cullenswood, 1895*
Monochrome oil on cardboard, 39.7 x 78.0 cm
TASMANIAN MUSEUM AND ART GALLERY: AG820

In the following year, during another visit to Tasmania, Piquenit painted and exhibited two further monochrome oil paintings. The *Mercury* of 4 September 1894 noted:

Art Gallery Additions. – Among recent additions to the pictures at the Art Gallery are a pair of black and whites loaned by their artist, Mr. W. C. Piquenit. One of them represents a 'View from Beltana, looking down the Derwent,' and the other a 'View of Geilston Bay looking up the Derwent.' These pictures are considered by judges who have seen them to be two of Mr. Piquenit's best works of this class, the light and shade being wonderfully well brought out, and the detail characteristic of the artist fully shown.

Piquenit exhibited these two works at the Tasmanian International Exhibition, in January 1895, receiving a 1st class certificate for *View from Beltana*, and a 2nd class certificate for *View from Geilston Bay*. Both works, together with four significant oil paintings by Piquenit, were sold at W.T. Bell and Co.'s Mart sale on 30 April 1896.⁴⁶ Their present location is unknown.

Also in 1895, while staying with another close friend, Colonel W.V. Legge at his property in the Fingal Valley, Piquenit painted the monochromatic oil painting *Ben Lomond from the Break O' Day, Cullenswood Estate*, (Fig. 6) a panoramic view of flat farm land populated by grazing cattle against a backdrop of the Ben Lomond plateau. Both this work and the watercolour and pencil drawing on

which it is based, are held in the TMAG collection.⁴⁷

At present Piguénit's last two dated and catalogued monochrome oils are *The River Derwent from the Queen's Domain*, and another version of *The Frenchman's Cap from the western flank of Mt Arrowsmith* that were painted in 1896 for a Mr Cecil Anderson, who lived at 'Inshallal', Risdon.⁴⁸ The *Mercury*, 1 January 1897 reported that:

The current issue of The Tasmanian Mail include in its pictorial matter two fine photographic reproductions, by Beattie, [local photographer, J.W. Beattie] of studies in black and white oils by Mr. W. C. Piguénit. The views depicted are 'The Frenchman's Cap,' a fine piece of rugged mountain scenery, and 'The River Derwent, from the Queen's Domain,' showing the grand stretch of water which nature has there provided for the use of Tasmanian people.

Although these are the last works by Piguénit in monochrome that can be dated with certainty, it was by no means the last exhibition of works of this kind. During February–March 1907 the Hon. G.T. Collins of Launceston lent eight monochrome paintings, from his extensive collection of works by Piguénit, to the Launceston Exhibition of the Australian Manufactures and Products, held under the auspices of the Launceston branch of the Australian Natives Association.⁴⁹

Of the eight works, only the titles of three and a description of a fourth work, 'a view on the Derwent River' are known. This is because of the lack of documentation at the time and the fact that the exhibition was to display Australian manufactured and industrial goods and 'works of art'

were mainly treated as 'home crafts' and were placed around the upper balcony of the Albert Hall in Launceston, where the exhibition was held.

As well as his Australian monochromatic works, Piguénit produced at least two large (50 inches by 36 inches) monochrome paintings, both entitled *On the Thames*. They were sold at Burns & Son auction rooms in Collins Street, Hobart, on 24 January 1921.⁵⁰ As no image of these works has been found it is not known if they are related to one of the three paintings by Piguénit produced during and after his 1898 trip to England and later engraved by the London firm Messrs Graves and Co. Because of their size they are considered to be further works.

In the same auction as the Thames works were four other monochrome works: *Adamson's Peak, Tasmania*; *Lake St Clair, Tasmania*; *Mount Gell*; and *Mount King William*. Judging by the size of these works (as listed in the catalogue) they do not correspond to any other works with a similar title and are therefore considered to be additional works in the monochromatic medium.

Numerous other monochrome oil paintings have been located through the search of auction house sale catalogues. These have both general descriptive titles, for example: 'Sailing Vessels on a River with a Mountain in the Background'; 'Australian Landscape'; and specific location titles: *The Fisheries River Darling, N.S.W.*; and *Weather-board Falls*. The catalogues however, do not contain illustrations, so a comparison of these works with known works, could not be made.

Of the 72 definitely identified monochrome oil and gouache works by Piguénit,

19 are in the collection of the TMAG, two in the National Library, Canberra, and nine in known private collections. There are five variations of *Mount King William*; four of Lake St Clair/Mt Olympus; two of each of: *The Frenchman's Cap*; *The Frenchman's Cap from Mt Arrowsmith*; *Lake Pedder*; and *The Murchison Valley*.

Overall, the collection of Piguenit's monochromatic works catalogued during this study significantly alters the findings of Holmes.⁵¹ It shows that Piguenit's monochrome works were not 'an isolated group painting in this medium in Piguenit's oeuvre' painted only in the late 1880s, but were a constant part of his artistic output for at least 20, if not more years and that only six out of the monochromatic works (not 'many', as stressed by Holmes) were commissioned for engravings reproduced in the *Picturesque Atlas of Australia* (1886–1888). In 1887, Piguenit painted many oil paintings including at least eight painted especially for friends who accompanied Piguenit with Sprent on his excursion to western Tasmania in February 1887.⁵²

Another confusion in Holmes's paper is that he assumed that the works in the TMAG, which were painted by Piguenit in 1891 for his talk to the AAAS in January 1892, and purchased very soon after the talk by the Tasmanian Government, are those painted for the *Picturesque Atlas of Australia*. The six works for the *Picturesque Atlas of Australia* commission were probably painted in monochrome watercolour in 1886, before Piguenit came to Tasmania on 30 December 1886⁵³ and were held by the publishers until 1895, when they were sold.⁵⁴ The whereabouts of five of the original works used in the

Picturesque Atlas of Australia are currently unknown, the sixth being in a private collection.

A reading of the book by Hughes-D'Aeth,⁵⁵ on which Holmes bases one of his assumptions, claims that Piguenit, and the other commissioned artists, only painted in monochrome as the images needed to be in monochrome to be photographed for 'transfer to photo-sensitive woodblocks', indicates that while this technique was used in the production it was sufficient, but not necessary, to produce tonal results. Many works by fellow artists on the Atlas (for example, Fullwood, Schell, Filter and Smedley) used:

paint-daubed photographs for their illustrations because they knew that between their proofs and the printed illustration lay an engraver's burin (cutting tool) that would erase all boundaries between media. Even the process used by the Atlas and the illustrated journals of the day, of photographing proofs directly onto wooden blocks (xylography) could not wrest from human hands the final and necessary translation.⁵⁶

This was obviously the case in the late 1870s and early 1880s, as shown by the number of coloured oil painting used as wood block engravings in illustrated newspaper and journals. Of the 72 works catalogued in this study, only 16 of them were photographed for wood block engravings to illustrate newspapers or other publications. Other monochromatic works, and a number of coloured oil paintings were photographed, or had lithographic prints made from them, for presentation to subscribers to the many Art Union lotteries of the time.

One of the problems associated with the identification of monochromatic works by Piguénit is the common practice in the late nineteenth and early twentieth century of artists and students visiting local galleries and copying works, especially by Piguénit. Contemporary newspaper accounts record this practice:

the Hon. J. W. Agnew has kindly consented to allow his collection, at present in the room, [Museum] to remain on view as a loan collection, and, as already announced, he has no objection, to students copying any of the works, a privilege which no doubt many will avail themselves of.⁵⁷

Work by a Tasmanian Art Student—
One of our most promising Tasmanian art students has recently completed copies of the eight studies, in black and

white, by W C Piguénit representing the Western Highlands of Tasmania, which during the present year were presented to the gallery. The artist has been especially happy in reproducing the soft shades so noticeable in Mr Piguénit's black and whites.⁵⁸

The Gallery is very largely attended daily by numerous visitors, and many students take advantage afforded them to study and copy from the originals contained in the Gallery.⁵⁹

This resulted in the many 'Piguénit-like' works, both in monochrome and coloured oil, which presently exist and detract from the reputation of the genuine Piguénit works.

An illustrated Catalogue Raisonné of the 72 (+) monochrome oil paintings and gouache, watercolour, and ink drawings by William Charles Piguénit, so far catalogued, will be available on the Tasmanian Museum and Art Gallery website early in 2013.

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of Tasmania; Nevin Hurst, Masterpiece Gallery, for access to his sales catalogue collection; and Gillian Winter for editorial assistance.

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THE 'CLEVER' SISTER – PAINTING ALONGSIDE W.C. FIGUENIT IN HUNTER'S HILL

Natalie Pirotta

Pirotta, N. 2012 The 'clever' sister – painting alongside W.C. Piguénit in Hunter's Hill. *Kanunnah* 5: 43–58. ISSN 1832-536X. Harriet Halligan (1844–1919) was the sister of William Charles Piguénit (1836–1914), the successful landscape painter who holds an established place in the history of art in Australia. Now largely forgotten, Harriet was a successful artist in her own right in the late nineteenth century. Her work was frequently reviewed in the press in New South Wales and Tasmania, and she won numerous awards for her work at the major exhibitions held during this period. William and Harriet lived close to each other in Hunter's Hill, New South Wales, and often exhibited their work together. Both Harriet and William were dedicated to producing 'Australian art', that is, art that reflected the natural beauty they found in the local landscape. This paper discusses some of Harriet's later artwork, produced after she and William moved to New South Wales.

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KEY WORDS: Harriet Halligan, William Charles Piguénit, nineteenth-century Australian women artists, Royal Art Society of New South Wales, flower painting

In 1901, to mark the birth of the nation, the Art Society of New South Wales put together an album of watercolours to be presented to the Duke of Cornwall, later King George V, when he visited Australia for the Federation celebrations.¹ The album is a collection of postcard-size drawings of local scenery, birds and flowers. Many famous landscape painters of the day are included in the album, such as William Piguénit (1834–1914), who

was a very successful landscape painter in his time and is remembered as the first Australian-born landscape painter of any note.² Examples of his work hang in most of Australia's public galleries. However, for me the most striking picture in the album, due to the intense use of colour and strong composition, is a picture of red and white correas in a vase, painted by Piguénit's sister, Harriet Halligan (1844–1919) (Fig. 1).³



Fig. 1. Harriet Halligan, untitled contribution to *Album of watercolours presented to their Royal Highnesses the Duke and Duchess of Cornwall and York during the Royal Tour in 1901*

MITCHELL LIBRARY, STATE LIBRARY OF NEW SOUTH WALES.
CALL NO. PXD 189/13

For Harriet to be included in this album of watercolours suggests that her work was appreciated by her peers, and that she was an active participant in the ‘exciting original’ art scene that developed in the 1880s and 1890s in Australia.⁴ Painting flowers and scenes was a popular activity for women in the nineteenth century and Harriet is just one of many women who drew flowers and exhibited them.⁵ There is a good overview of her work in Joan Kerr’s



Fig. 2. Portrait of Harriet Halligan

PRIVATE COLLECTION. REPRODUCED WITH PERMISSION FROM
TRICIA ELLIOTT

Dictionary of Australian Artists, but alas no images were included.⁶ Harriet’s work is not discussed in the few books that have emerged since the 1970s attempting to redress the neglect of women artists in the history of Australian art, such as Janine Burke’s *Australian Women Artists, 1840–1940* and Caroline Ambrus’s *Australian Women Artists – First Fleet to 1945: History, Hearsay and Her Say*.⁷

In 1881 William wrote to his cousin Fanny in England that his sister Harriet ‘was a clever flower painter’; however, a photograph of her as a young woman (Fig. 2) and the sketches carefully filed away in the Mitchell Library picture archives suggest a much more intriguing figure.⁸ In this photograph Harriet’s heavy-lidded

dark eyes look out through a veil, as if she wants to keep some privacy. However, she cannot help but draw attention to herself with the flower arrangement on her hat and on her right breast. Her waist is tightly pulled in by a fashionable Victorian dress.

Harriet was born in Hobart in 1844, eight years after her brother William Piguenit. Her father, Frederick Piguenit, had been granted a free pardon in 1841: he had arrived Hobart in 1830 after being convicted in Birmingham of being involved in 'a very extensive system of robbery'. Her mother, Mary Ann Piguenit, travelled to Hobart to marry Frederick, and shortly after established a school for 'Young Ladies' where, 'with the aid of an accomplished Assistant', Mrs Piguenit educated 'Young Ladies in every branch of useful polite Learning'.⁹ 'Polite Learning' was likely to have included drawing, embroidery, dancing, natural history, music and poetry – an ornamental education, sufficient to provide a lady with interests to pursue in her idle hours, perhaps not quite enough to pursue a professional occupation.¹⁰ I suspect the education provided by Mary Ann and her older sisters would have been the extent of Harriet's formal education. Mary wrote poetry and had a fine hand for drawing as well. The family has kept a poem and drawing that Mary wrote in a picture book belonging to Harriet's older sister, Agnes, to commemorate a picnic the family took to Kangaroo Valley.¹¹ The poem describes 'a genial warm day' when the family 'from the "Crescent" we did tramp' to the picnic location. Mary includes vignettes describing her children, including Harriet at 17 years of age:

We also had our sister 'Harry'
Who never on the way did tarry

And never fence of post and rail
Could make her heart so stout to fail
For through all such she is the girl
To nimble, quickly, lightly whirl

The 'crescent' that she referred to in her poem was the family home in Lansdowne Crescent (Fig. 3). The photograph shows a wide, double-fronted Victorian cottage with a deep verandah at the top of a steep hill in Hobart. Birds were contained in cages hanging from the roof of the verandah and the garden is abundant with flowering plants, which also wind their way up the pillars of the house. French doors open from the verandah into heavily curtained rooms and there is a wooden bench next to the front door for the occupants to shelter from the sun and enjoy the view of the garden and Hobart Town beyond. The photograph suggests a family in tune with the interests of the time – gardens and nature study, and a family doing quite well despite the father's convict stain.¹²

The letters between William, his sister Agnes, and their cousin Fanny in England, written after their move to New South Wales, suggest the homes they created in Hobart and Hunter's Hill were places where discussions about current events and poetry were common.¹³ Neither William nor Harriet attended art school, their aesthetic tastes and talents were therefore initially fostered at home. The first 10 or so folios from William's scrapbook are of picturesque and romantic images – mostly lithographs cut out of journals and newspapers – including snippets of poetry from Wordsworth. The scrapbook and Agnes's picture book, suggest that Harriet was at least exposed to the picturesque



Fig. 3. ‘The Cottage Green’, photograph of the Piguénit family home in Lansdowne Crescent, Hobart

PRIVATE COLLECTION. PHOTOGRAPH COURTESY OF TRICIA ELLIOTT

and romantic images that were popular in the nineteenth century.

Harriet, like William, could be considered a ‘self-taught’ artist. However, William had the benefit of a vocational education at a school for boys until the age of 14 and then the added stimulation of working in an environment with other people interested in art and natural science. William attended Cambridge House where he learnt penmanship, drawing, mapping and geometry, until he began his career with the Colonial Survey Department. His public service career enabled him to meet and work with other

artists, such as Frank Dunnet, a trained lithographer who later taught drawing at Chalmers School (as today, many artists had to find another way to make a living other than through art). It also provided opportunities to hone his painting and drawing skills through opportunities to draw directly from the landscape when he travelled to the wilderness.

Though both Harriet and William were freed from the rigid Academy training that dominated the art schools at the time, their works are influenced by the strength of the culture around them. William’s picturesque and romantic

images were very popular at the time. His training as a draughtsman clearly had an influence on his later work as a landscape painter; he paid close attention to the actual lay of the land, producing 'faithful' replications of the scene before him. However, through his imaginative use of colour and brush strokes he transformed this reality to the level of poetry. Transforming the truth of nature with the imaginative power of colour and painterly gesture was a defining element of English Romanticism – a commitment to celebrating the landscape that fitted well with the enthusiasm in the Australian colonies, especially among the 'native born' such as Harriet and William, for the local flora and scenery.¹⁴

Australian Romantics – the Piguénits of Hunter's Hill

Agnes Piguénit was described by Mary in her poem as 'charming ... or to a young man's peace alarming'. In 1878 Agnes married Alfred Randall, a cousin who had boarded with the family in Hobart. Alfred was appointed the District Engineer of Railways at Dubbo soon after, and at Agnes's request built the home in Hunter's Hill, New South Wales, for the family to move into. While Alfred appears to have been the main provider for the extended Piguénit family he also engaged in water-colour painting, and had previously worked on some lithographic projects with William when they lived and worked together in Hobart.¹⁵

The move to New South Wales was ostensibly due to the offer by Alfred Randall to build the family a home, but may have also been motivated by a perceived need to move away from a town

where their social progress was hampered by their father's status. Although many ex-convicts did well economically, Van Diemen's Land society was obsessed with status.¹⁶ The class divisions between convicts and their descendants and free settlers was so rigid that James Boyce suggests 'that Van Diemen's Land is perhaps best seen as a caste-based society, with an untouchable majority barred from almost all contact with their "betters".¹⁷ The home in Hunter's Hill made possible the replication of their life in Tasmania on a much grander scale and provided further career opportunities for both William and Harriet. They both already had a presence in the New South Wales art scene. Harriet exhibited an oil painting of flowers at Sydney's Intercolonial Exhibition of 1878, while William had been winning awards at the Annual Exhibitions of the New South Wales Academy since 1874, and had joined a sketching camp in the Grosse Valley of the Blue Mountains organised by Eccleston du Faur, Secretary of the NSW Academy.¹⁸

William and Harriet are listed in the first catalogue of the Art Society of New South Wales as 'Working Members'. Gerald H. Halligan was also listed as an honorary and subscribing member, and he became Harriet's husband 12 months later. It is possible that they met through the society – suggesting that it was useful for forging social as well as artistic connections. Gerald Halligan Jnr was the son of Gerald Halligan (1821–1886), a leading figure in the establishment of the municipality of Marrickville. When Gerald junior joined the Art Society of New South Wales he was the Acting Under-Secretary for Public Works, a member of the Royal



Fig. 4. 'Saintonge' – William Piguénit is standing on the steps, while Harriet stands on the verandah dressed in white. Agnes and Alfred Randall are seated on the right.

PRIVATE COLLECTION. PHOTOGRAPH COURTESY OF TRICIA ELLIOTT.

Society of New South Wales, and a keen photographer. He joined the Department of Public Works when he was 16 years old, and by 1889, aged 34, he was put in charge of all bridge construction on the harbour.¹⁹ Importantly for Harriet, as with any artist, the marriage to Gerald allowed Harriet to set up her own home, not far from her brother and the rest of the family in Hunter's Hill, and therefore gave her space to work on her art. The house, and Gerald's successful career in public service, must have also given her significant financial security, and the

freedom to paint without the need to take on students. The marriage was childless, which allowed both of them to put their significant energy into their professional interests. Gerald became a member of the Linnean Society of New South Wales and the Geological Society of London. He is best known for his work on tides, currents and their effects.²⁰

It was Gerald who took the photograph of the Piguénit family artfully arranged on the front verandah of 'Saintonge', the home Alfred built in Hunter's Hill (Fig. 4). The composition of this photograph



Fig. 5. Harriet Halligan, hand-painted table with floral motif

PRIVATE COLLECTION. PHOTOGRAPH BY NATALIE PIROTTA, REPRODUCED WITH PERMISSION BY TRICIA ELLIOTT

suggests a close family that enjoyed 'playful' activities together. Conversation, art, letter-writing and trips to town were the staple activities of their life in this 'woodland setting'. Family members today remember the smell of oil and turpentine pervading Saintonge, as Alfred had included an upstairs studio for William, with south-facing windows as he had requested.²¹ William's paintings, along with the family's collection of books, decorated the rooms downstairs, and although Harriet and Gerald had eventually built their own home, hand-painted furniture by Harriet also decorated the rooms (Fig. 5). I suspect Alfred's watercolours must have featured somewhere in the house, though I have been unable to find records of his works today.

'Distinctively Australian' art

Throughout the nineteenth century 'environmental learning' had been a pervading theme of the intellectual life of the colonies.²² Interest in the natural

history of the continent: geology, native bird and plant life, as well as the landscape, intensified in the latter half of the century, as the colonies moved towards federation, and wanted to catch up with the rest of the world in all developmental senses. Intellectual life in Australia blossomed in the 1880s and 1890s across the colonies. Eight international exhibitions were held in Australian capital cities between 1879 and 1899 – showcasing agricultural, manufacturing and art products – with each colony aiming to prove to the world they 'were prosperous, advanced and civilized'.²³ In 1892, the Australasian Association for the Advancement of Science held a four-day conference 'which ... epitomises in a few brief days the intellectual life of Australasia'.²⁴ The conference program reflected the wide-ranging interests of the thinking population – from the best way to manage sewerage, to the value of art. The feeling of enthusiasm among the members of the association permeates the press reports throughout the late 1880s and 1890s – enthusiasm for the project of developing knowledge about and for Australia. This period of Australian intellectual life epitomised what Richard Holmes has described as 'The Age of Wonder' – when thinkers interested in science, poetry, and philosophy shared 'a common ideal of intense ... personal commitment to discovery' – translated easily to the new world.²⁵

The establishment of the Art Society of New South Wales served the nationalist project to promote Australian work:

... the ladies and gentlemen of the society are laboring [sic] to, by the study and reproduction of scenes and subjects, for



Fig. 6. Harriet Halligan, untitled oil painting of roses

PRIVATE COLLECTION. PHOTOGRAPH BY NATALIE PIROTTA, REPRODUCED WITH PERMISSION FROM KERRY LOVERING

the most part distinctively Australian, to found something like an Australian School of Art.²⁶

Australian art was identified as being by 'Australians' and about 'Australia'. Part of Piquenit's popularity at this time is due to his being a 'native-born' painter of Australian scenery. The first published history of Australian art in Australia, by and about members of the Art Society, states that they have

... endeavoured to foster an Australian spirit and emulation in the world of art ...

we have tried to educate the public to stand for the advancement of our own National Work.²⁷

They saw themselves as 'pioneers', 'working under almost insuperable difficulties' to raise the standard of art in Australia.²⁸ I am not sure that either William or Harriet saw themselves as working under 'insuperable difficulties'; they were both rather fortunate in that they had ample opportunities to exhibit and sell their work. They did, however, embrace the commitment to paint



Fig. 7. Harriet Halligan, *Bignonia* [sic] *Coffee Blossom & Berry*, 1885. Royal Art Society of New South Wales Annual Exhibition Catalogues 1885

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Australian subject matter – William painting landscapes and Harriet painting Australian flowers (Fig. 6).

An Australian flower painter

The many paintings and watercolours listed in the first few exhibitions of the Art Society of New South Wales are no longer in the public domain. However, from the mid-1880s the Art Society included sketches of several of the works on show in the accompanying catalogue. The 1885 exhibition includes a sketch by Mrs G.H. Halligan, *Bignonia Coffee Blossom and Berry*.²⁹ The black and white reproduction (Fig. 7) is a few steps away from the original work – it is a sketch made by hand by an unknown member of the society and now only available to be viewed on microfiche – and therefore cannot give us a sense of the colour of the picture; however, the information available suggests the design of the work is strong. The plant takes up the whole of the picture and you can see

from the black and white reproduction that Harriet has a flair for design. It is frustrating as a researcher studying her work to read the review in the paper of this sketch describing it as ‘an exquisite piece of colouring’ and not be able to see the original work.³⁰

The design in the image is arresting, dominated at first glance by the large flowers close to the centre; however, the ‘bignonia’ [sic] spills outside the picture plane, emphasising that the wildness of the plant cannot be contained by the constraints of the painting’s frame. While William’s paintings were constrained by years of training as a topographical draughtsman, Harriet has demonstrated in this work a freedom from traditional rules of perspective and distance. In this work we see her plunge into the sensuous wildness of the plant, reproducing what she saw rather than forcing it to conform to rules of composition.

Japanese Anemones (Fig. 8) is another painting that allows the flowers to express themselves freely across the picture plane under what may have been Harriet’s signature style – dramatic lighting referencing the drama of the baroque. Light spills diagonally across the canvas – highlighting the intense white of the flowers. And, as with her other paintings, the plant is not contained by the picture plane: its wildness is the subject of the picture.

Harriet did well as a flower painter. She began exhibiting her work before she left Tasmania, and exhibited regularly at the Art Society of New South Wales, and entering works in the number of major exhibitions held in the colonies and overseas.³¹ In the spring exhibition



Fig. 8. Harriet Halligan, *Japanese Anemones*, undated

PRIVATE COLLECTION. PHOTOGRAPH BY NATALIE PIROTTA, REPRODUCED WITH PERMISSION FROM TRICIA ELLIOTT

of the Art Society of NSW in 1892, the year that Ethel Stephens became the first woman elected to the Council of that society, the Governor of NSW, Lord Jersey, purchased two paintings from the society's exhibition, *A collection of Australian wildflowers* by Harriet and a group of yellow roses by Ethel Stephens.³² Harriet also won an award for oil-painting at the Chicago Exhibition in 1893.³³ The Chicago Exhibition is significant, as Australian artists saw this exhibition as an opportunity to show the rest of the world that the colonies could produce more than wool and minerals.³⁴ Harriet applied her interest in Australian wildflowers and design to wallpaper and fan designs, winning awards for each, most notably at

the Exhibition of Women's Industries in 1888, and a bronze award for wallpaper design at the Franco-British Exhibition in Paris in 1908.³⁵ Unfortunately, I have not been able to locate any of these designs in any public collection in Australia. Harriet's interest in design predated the significant interest in the use of Australian wildflowers for design purposes between 1890 and 1914.

Despite this success in her lifetime, the only two pieces of Harriet's work owned by a public gallery have been rarely seen. While the Tasmanian Museum and Gallery (TMAG) has a wall in their Colonial Gallery dedicated to William, Harriet's painting *Australian Wildflowers* (Fig. 9), is rarely exhibited. The scene is



Fig. 9. Harriet Halligan, *Australian Wild Flowers*
TASMANIAN MUSEUM AND ART GALLERY

a cornucopia of Australian wildflowers. The bright red and intense white of the flowers in the vase are visually striking. The vase is sitting on a rather ornate heavy wooden table, which has been draped with a light blue cloth. In front of the table there appears to be something like an ornate golden vase or flask with more flowers draping from the opening. What strikes me first is the use of colour and the strong composition. Her brother William's compositions follow the lay of the land, which he then transforms with colour. Harriet, on the other hand, has created her own compositions. The arrangement of the still life is in the Dutch tradition, flowers spilling out of an ornate vase. She has decided where the vase will sit and how the flowers will be arranged; she has then decided which parts of the picture in front of her she will emphasise. There is another blue jar almost blending into the blue cloth next to the gold flask. The background is of greenish gold but the shadows to the right of the vase are emphasised with a red, darker than the red in the flowers. The overall impression is of intensity, life and fullness – strangeness. The flowers she has chosen to paint were very rare at the time, and the composition is dramatic. Light enters the painting from the top left-hand corner, highlights flowers and the golden flask in the bottom left corner, before swirling along the cloth and the fallen flowers on the ground. Shadows made from dark reds and browns emphasise the light as it falls on the flowers.

This is most likely the work that Harriet sent to the Franco-British Exhibition in Paris in 1908, and was

exhibited in Hobart before it left Australia. William also sent what were, and still are, considered his best oil paintings to this exhibition: *A Northern River of New South Wales*, *Lake St Clair, the Source of the Derwent*, and *A Thunderstorm on the Darling*. It is therefore likely that Harriet considered her painting *Australian Wild Flowers* to be an excellent representation of her work, as well as of Australian wildflowers. The local reviewer in Tasmania wrote of this work:

'Australian Wild Flowers' by Mrs G.H. Halligan, is a large oil painting, within which most of the best known flowers of New South Wales are beautifully grouped. The general composition of the picture is masterly, and the flowers are truthfully drawn and coloured, while their individual beauty is shown to best advantage. The white waratah, a rather rare flower, is shown in contrast to the more common red blossom, and the well-known flannel flower and christmas bells, and many others, are combined to make a picture of great beauty and interest.³⁶

The other work Harriet sent to the Franco-British Exhibition was *A Forest Climber of New South Wales* which I have not been able to locate in any public collection. The reviewer in the *Mercury* wrote:

'A Forest Climber of New South Wales' is a delicately painted watercolour of the Moreton Bay begonia. There is no Chinese white in this, the dainty touches, as well as the more powerful strokes, being all pure water colour, and the general effect most harmonious and beautiful.³⁷



Fig. 10. Harriet Halligan, *Sketches, 1908–1918, 1908–1918 / H.V. Halligan, 1908–1918*
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Local landscape artist

The only other works by Harriet available in a public collection are two sketchbooks kept in the archives of the Mitchell Library in New South Wales. Caroline Jordan has opined that 'colonial women's art is more often found in library archives than in public art collections because it was previously valued for its biographical, geographical or historical interest than for any perceived artistic merit'.³⁸ Some women's work is still in the collection of family descendents, or the families of people who bought their work during their lifetime. This seems to be certainly true of Harriet's work.

The sketchbooks in the Mitchell Library are dated from 1908 to approximately 1918 and suggest that she was either

developing an interest in landscapes in the last decade of her life, or was continuing to work in private in a genre that she never exhibited. While Harriet pays attention to the topography of the scene, her lines are not so distinct, colour is used to define distance and shapes rather than line.

This sketch (Fig. 10) of a waterway near Sydney has been signed by 'Harriet', suggesting that she considered this a finished piece of work. The sun setting on the water and the swirly clouds suggest the makings of a purely Romantic landscape, while the addition of the people and the boat, and indeed the fence leading down to the water, suggests the being-in-place of William's work – people embedded in the landscape, at one and equal to the beauty



Fig. 11. Harriet Halligan, *Sketches, 1908–1918, 1908–1918* / H.V. Halligan, 1908–1918
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and majesty suggested by the setting sun. This confirms my view that, like William, Harriet considered herself at home in this landscape. Fences have been constructed and two people play peacefully in a boat, almost oblivious to the majesty of the setting sun. This sketch does not reflect the awkward imposition of a colonial ‘eye’ on a foreign landscape, rather it is a reflection of the local ‘at-homeness’. Harriet has certainly looked at the landscape with a ‘Romantic’ lens – that is she has ‘seen’ the beauty of the setting sun as it is reflected on the water, but she also has represented people at home in this landscape.

Among Harriet’s sketches there is a copy of one of her brother’s paintings of Lake St Clair. In this sketch (Fig. 11) Harriet has recreated the scene at Lake St Clair with dabs of colour rather than emphasising line. Distance between the foreshore and the distant mountains is created by colour – lighter shades of blue and purple are used to emphasise the distance – a similar trick to Piquenit. She has allowed the watercolours to bleed into each other, giving a much more fluid look. You could skate over the surface of her water. And she has written on the bottom ‘copy from dear Will’s picture’.

There is no evidence to suggest that any of these sketches were worked up into finished paintings, either in watercolour or in oil – which would have possibly enabled the works to be on show and left us a more lasting legacy of her work.

Conclusion

Harriet may not be considered a 'great' and influential painter; however, she was a successful member of the community of artists and others that dedicated themselves to learning more about their local environment and sharing that learning with others. Along with her brother William, Alfred Randall, and

her husband, Gerald Halligan, Harriet enthusiastically committed herself to the 'Age of Wonder' that categorised the closing decades of nineteenth-century Australia. Like others of their generation, they shared a love of all things 'Australian' and turned their creative minds to re-creating their 'home' in their art. While William focused on the Australian landscape, and won for himself a place in Australian history, Harriet's contribution to the burgeoning art scene, focused as it was on the 'women's arts' of decoration and native flowers, is limited to a dictionary entry.

Endnotes

- 1 Album of watercolours presented to their Royal Highnesses the Duke and Duchess of Cornwall and York during the Royal Tour in 1901 by the members of the Art Society of New South Wales, Mitchell Library, New South Wales, PXD 189.
- 2 William Moore, *The Story of Australian Art*, Angus and Robertson Publishers, Australia, 1934, p. 89. Bernard Smith adds 'of any consequence' to his appraisal of Piguenit, Bernard Smith, *Australian Painting: 1788–1960*, Oxford University Press, Melbourne, 1962, p. 60
- 3 Harriet Halligan (1844–1919) is a difficult woman to research as she appears to have used different names when exhibiting her work. She is recorded in the archives in the Mitchell Library and the Tasmanian Museum and Art Gallery as Harriet Halligan (which is how she signed this particular picture). When exhibiting with the Royal Art Society of New South Wales she uses Mrs G.H. Halligan, Miss H.V. Halligan, Mrs Eugowra Halligan (1885) and in her sketchbook she sometimes signs her sketches Harriet V. Halligan. More simply, her family knew her as 'Harry'.
- 4 Andrew Sayers, *Australian Art*, Oxford University Press, Oxford, 2001, p. 80.
- 5 Elizabeth Lawson, *The Natural Art of Louisa Atkinson*, State Library of New South Wales Press, Sydney, 1995; Caroline Jordan, *Picturesque Pursuits: Colonial Women Artists & the Amateur Tradition*, Melbourne University Press, Melbourne, 2005.
- 6 Joan Kerr and Power Institute of Fine Arts, *Dictionary of Australian Artists. Working Paper. Painters, Photographers and Engravers 1770–1870*, Power Institute publications, Sydney: Power Institute of Fine Arts, University of Sydney, 1984, p. 627.
- 7 Janine Burke, *Australian Women Artists, 1840–1940*, Greenhouse Publications, Collingwood, Vic., 1980. Caroline Ambrus, *Australian Women Artists: First Fleet to 1945: History, Hearsay and Her Say*, Irrepressible Press, Woden, ACT, 1992.
- 8 Letter from W.C. Piguenit to Frances (Fanny) Piguenit, 3 February 1887, Piguenit family papers, MLMSS 5339, Mitchell Library, New South Wales, accessed 2009.
- 9 Christa E. Johannes *et al.*, *W.C. Piguenit 1836–1914 Retrospective*, Tasmanian Museum and Art Gallery, Hobart, 1992, p. 10. The following quote is from a newspaper advertisement for Mrs Piguenit's school found in uncatalogued Piguenit family papers at the Mitchell Library, NSW, ML MSS 2318 and ML MSS 5339
- 10 J. Withers, 'Artistic women and women artists', *Art Journal*, 35(4) (Summer, 1976), pp. 330–336.
- 11 Many thanks to Tricia Elliot, Piguenit descendent, for allowing me to look at this poem and other family keepsakes.

- 12 For a detailed discussion of the interest in gardens in Australia in the nineteenth century, see Susan Martin, Kylie Mirmohamadi, and Katie Holmes, *Reading the Garden: The Settlement of Australia*, Melbourne University Press, Melbourne, 2008; Elizabeth Lawson, *The Natural Art of Louisa Atkinson*, State Library of New South Wales Press, Sydney, 1995; Caroline Jordan, *Picturesque Pursuits: Colonial Women Artists & the Amateur Tradition*, Melbourne University Press, Melbourne, 2005.
- 13 Uncatalogued Piguénit family papers at the Mitchell Library, NSW, ML MSS 2318 and ML MSS 5339.
- 14 On English Romanticism, see James A.W. Hefferman and Dartmouth College, *The Re-creation of Landscape: A Study of Wordsworth, Coleridge, Constable, and Turner*, published for Dartmouth College by University Press of New England, Hanover, NH, 1984, p. 154.
- 15 Piguénit and Randall collaborated on projects in the 1870s in Tasmania. Johannes *et al.*, *W.C. Piguénit 1836–1914 Retrospective*. p. 12. See also <http://www.daa.org.au/bio/alfred-randall/>
- 16 James Boyce, *Van Diemen's Land*, Black Inc, Melbourne, 2009.
- 17 James Boyce, *Van Diemen's Land*, Black Inc, Melbourne, 2009p. 159.
- 18 On William's activities in New South Wales in the 1870s refer Dinah Dysart, 'William Charles Piguénit: 19th Century Environmentalist', *Art and Australia* 29(4), (Winter 1992); Kerr and Power Institute of Fine Arts, *Dictionary of Australian Artists. Working paper. Painters, Photographers and Engravers 1770–1870*; Tim Bonyhady, *The Colonial Earth*, Miegunyah Press, Carlton, Vic., 2000. Johannes *et al.*, *W.C. Piguénit 1836–1914 Retrospective*, p. 44. For Harriet's activities refer to Kerr and Power Institute of Fine Arts, *Dictionary of Australian Artists. Working Paper. Painters, Photographers and Engravers 1770–1870*.
- 19 H. Vaughan Evans, 'Halligan, Gerald Hartnett (1856–1942)', *Australian Dictionary of Biography*, <http://adb.anu.edu.au/biography/halligan-gerald-hartnett-6533>, accessed 29 August 2011.
- 20 Australian Dictionary of Biography, <http://adb.anu.edu.au/biography/halligan-gerald-hartnett-6533>, accessed 15 July 2011.
- 21 I had previously believed that Piguénit used a small cottage next door as his studio. However, conversations with Kerry Lovering and Tricia Elliott, who are the current custodians of the family memories and historical objects, have led me to conclude that his studio may have been upstairs in Saintonge, at least for some of the time once they moved into the house.
- 22 J.M. Powell, 'Environment-identity Convergences in Australia, 1880-1950', in: *(Dis)Placing Empire: Renegotiating British Colonial Geographies*, Proudfoot, L.J. & Roche, M.M. (eds), Ashgate, UK, 2005. p. 118.
- 23 Linda Young, "How like England we can be": The Australian international exhibitions in the nineteenth century', in: Darian-Smith, K., Gillespie, R., Jordan, C. & Willis, E. (eds), *Seize the Day: Exhibitions, Australia and the World*, Monash University ePress, Melbourne, 2008, pp. 12.1–12.19.
- 24 *Sydney Morning Herald* (NSW:1842–1954), 6 January 1898.
- 25 Richard Holmes, *The Age of Wonder: How the Romantic Generation Discovered the Beauty and Terror of Science*, Harper Press, UK, 2009, p. XVI.
- 26 *Sydney Morning Herald* (NSW: 1842–1954), Saturday 11 April 1885, p. 9; A. Sayers, 2001, p. 80.
- 27 George Galway, *Fifty Years of Australian Art by Members of the Royal Art Society: 1879–1929*, Royal Art Society Press, Sydney, p. 2.
- 28 *ibid.* p. 2.
- 29 Annual Exhibitions of the Art Society of New South Wales, 1880–1902, Mitchell Library, 706/20.
- 30 *Sydney Morning Herald* (NSW:1842–1954), 11 April 1885, p. 9.
- 31 Kerr and Power Institute of Fine Arts, *Dictionary of Australian artists. Working Paper. Painters, Photographers and Engravers 1770–1870*.
- 32 Ethel Stephens was the first woman to be elected to the Committee of the Art Society of New South Wales and she was the President of the Society of Women Painters; George Galway, *Fifty Years of Australian Art by Members of the Royal Art Society: 1879–1929*, Royal Art Society Press, Sydney.
- 33 *Sydney Morning Herald* (NSW:1842–1954), Saturday 18 November 1893.
- 34 *Sydney Morning Herald* (NSW:1842–1954), Thursday 28 July, 1892, p. 6.
- 35 *Sydney Morning Herald* (NSW:1842–1954), 13 October 1888, p. 11.
- 36 'Franco-British Exhibition: Tasmanian Pictures to be sent', *Mercury* (Hobart, Tas.: 1860–1954) Tuesday 17 March 1908, p. 5.
- 37 See note 3.
- 38 Jordan (2005), p. 7.

TREASURES FROM THE TMAG COLLECTIONS

COLLECTING *MASI*, *SIAPO* AND *NGATU* – BARKCLOTH AT THE TASMANIAN MUSEUM AND ART GALLERY

Kirsten Brett

Brett, K. 2012. Collecting *masi*, *siapo* and *ngatu* – barkcloth at the Tasmanian Museum and Art Gallery. *Kanunnah* 5: 59–82. ISSN 1832-536X. The Tasmanian Museum and Art Gallery has a diverse collection of barkcloth from throughout the Pacific that has been acquired over the past 160 years. This research provides an overview of the influences that affected the development of the barkcloth collection and how collecting practices have biased both the cloth acquired and how it was documented in museum registers.

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KEY WORDS: barkcloth, tapa, collecting, Tasmanian Museum and Art Gallery, Pacific, donors, Hobart, Alexander Morton, missionary, representation, significance, Samoa, Fiji, Papua New Guinea, Solomon Islands, Tonga, French Polynesia

As an active port and base for missionaries, Hobart was well connected with the Pacific in the late nineteenth century and early twentieth century. The Tasmanian Museum and Art Gallery (TMAG), which grew out of the Royal Society of Tasmania (established in 1843), was well positioned to be presented with material following visits to the Pacific. As such, a diverse collection of Pacific material has developed despite its relatively small size in comparison to other Australian

state museums. An interesting part of this material is a significant collection of barkcloth from Tasmania's Pacific neighbours; these pieces began being collected as early as 1850.

In discussing the breadth of TMAG's collection of barkcloth, this paper examines what and who influenced the development of the collection and how the motives which drove donors and TMAG's collecting practices determined the barkcloth that was collected and how it was recorded.

Background on barkcloth

An important part of Polynesian and Melanesian life practised for a long time, the making of barkcloth has been recognised as a symbol of Pacific identity since early European explorers visited the region. It is predominantly a means of creative expression for women, although in some parts of New Guinea, the Marquesas Islands and Easter Island men also practised this art.¹

Various local names are used for barkcloth, such as *siapo* in Samoa, *masi* in Fiji, *lepau* in Santa Cruz Islands and *ngatu* in Tonga. While they are now commonly referred to as 'tapa', this term was originally used only in Hawaii (*kapa*) and Mangareva, as well as in the Fiji/Tonga/Samoa triangle in reference to the undecorated border of the cloth. The term 'tapa' became a common term in the early nineteenth century as Europeans started arriving in the area, and collecting the cloth. Because of the variety of local names used for this cloth throughout the Pacific the English equivalent of 'barkcloth' is being used in this paper, in line with current ethnological practice.

Different techniques have been used to produce barkcloth throughout the Pacific, resulting in distinctive styles that can be attributed to different islands. The inner bark of certain trees is used to make the cloth, in particular the paper mulberry (*Broussonetia papyrifera*), with other sources including breadfruit (*Artocarpus*) and various species of wild fig (*Ficus*), which create a heavier material.² The material is prepared by stripping the bark from the tree, separating the inner bark and then beating it on an anvil with wooden beaters to spread the fibres. Water, soaking or even

fermenting may be used in this process. Larger pieces are produced by gradually adding thin pieces together during beating by layering and felting, or alternatively pasting the edges, depending on the region where they are made.³

Patterned barkcloth is made by applying natural dyes collected from various trees or plants in a range of ways such as freehand painting, repeating patterns rubbed over design tablets, stencilling or relief printing. The context and meaning of motifs used in these designs is largely incomprehensible to people outside of the societies who make them.⁴ For example, in Papua New Guinea patterns may carry significant cultural information such as signals about clan allegiance and as such contain information which may not be meant to be shared with outsiders.⁵

Across the Pacific, barkcloth has served numerous uses and purposes, from everyday to ceremonial. It has been used to make various items of clothing: loin cloths, shawls, neck scarves, sashes, belts, wraps, skirts, ponchos, headdresses and special clothing for particular festivals. It serves practical and decorative purposes in mats, bed covers, blankets, mosquito nets, room dividers, decorations, burial shrouds, and is used or presented in ceremonies and at events such as weddings, births and deaths as well as gifts for visitors.

Much barkcloth was traditionally plain. Such cloths tend not to be as prevalent in museums because collectors have predominantly sought the more eye-catching patterned examples.⁶ Rod Ewins (1997), has pointed out that while the plain white barkcloth was rarely collected in Fiji, for Fijians 'white signified the spiritual domain and white cloth was reserved

for the principal rites of passage and for special uses in the temples... it was of at least as deep cultural significance as the richly figured cloth normally collected'.⁷

Background on collecting practices in the Pacific and representation of Indigenous material

European interest in the artefacts of Indigenous peoples began with the early visits of explorers. Collecting items became popular with traders, whalers, settlers, administrators, military vessels and institutions, missionaries and on behalf of colonial institutions. What was important about collecting was not necessarily the artefacts or specimens themselves, but rather how they verified visits to remote places and represented the voyages' success. For some, the relationships that developed while negotiating for an object played an important role in integrating into local societies and achieving their objectives.

The fine and flexible material nature of barkcloth enabled it to be easily cut to make distinctive, transportable souvenirs for visitors. Missionaries also came into possession of barkcloth and other artefacts in parts of the Pacific through local people surrendering objects that were associated with 'false religions' in a step towards becoming Christian.⁸ The later display or presentation of these artefacts testified to the conversion of the 'islanders' and the missionaries' success. Artefacts were also used by missionaries as a form of currency, being received as gifts from their congregation and at times sold to raise money for mission work.⁹

In the nineteenth and early twentieth centuries there was a focus on collecting ethnographic material for its aesthetic

qualities, with limited information recorded that placed the objects in any context. During this period ethnographic artefacts were interpreted by collectors through their morphology and geographical location in the same manner as zoological and botanical specimens.¹⁰ Little interest was given to recording the negotiations that were undertaken to acquire objects or the significance of objects to the local communities from which they were collected.

The effects of imperialism and colonisation have been well documented.¹¹ They are the forces that have initiated false representation of Indigenous people. Fox (1992) noted that colonial museums were politically defined from the imperial centre. Therefore, the object in the 'museum existed physically in one place, while the knowledge about it resided elsewhere'.¹² It is important to consider the particular agendas under which that material has been collected and donated to colonial museums, and the cultural bias and false representation that have occurred in how it has been recorded by both the collector and on museum registers. After all, the representation of a culture is going to be affected if it is done through a different knowledge system to the one being represented.¹³

The colonial museum, as part of a non-Indigenous worldview, has interpreted Pacific Islander culture and artefacts in a decontextual manner, whereas Indigenous knowledge and connection to country and place is very contextual. As Price (1989) highlights:

... the plight of objects from around the world that – in some ways like the Africans who were captured and

transported to unknown lands during the slave trade – have been discovered, seized, commoditized, stripped of their social ties, redefined in new settings, and recontextualized to fit into the economic, cultural, political, and ideological needs of people from distant societies.¹⁴

Consequently, TMAG's collection of barkcloth should be viewed with an appreciation of how it came to be at the museum, and awareness of the contextual information that may be lacking.

Methodology

Researching the barkcloth collection has involved accessing various TMAG archives and external references as well as the objects themselves. The acquisition of TMAG's collection of barkcloth occurred from 1850 until relatively recently. The early material was part of the Royal Society of Tasmania's museum collection, which developed between 1843 and 1895. In 1896 the administration of the museum transferred from the Royal Society of Tasmania to the colonial government via a board of trustees, with the museum subsequently becoming known as the Tasmanian Museum and Art Gallery in 1899. For ease of understanding, I have referred to barkcloths as being part of the TMAG collection throughout this paper, despite early donations being part of the collection of the Royal Society of Tasmania.

Barkcloth donations were recorded on different acquisition registers depending on when they arrived at TMAG. These included the main series of registers: Roblin Register (1860–1883), Tasmanian Museum (TM) Register (2 volumes, 1884–1913) and

G Miscellaneous Register (1914–1934), which all allocated an accession number that related to the particular register. These accession numbers all became 'M' numbers when they, and later barkcloth donations, were subsequently registered into the M Anthropology Register (5 volumes, 1935–1993) and the Indigenous Cultures Database (1993–present). While there is overlap in the material recorded on these registers, accessing them all provided an overview of what information was recorded with incoming barkcloth. Additionally, acquisitions were recorded in acquisition lists published in the Royal Society *Papers and Proceedings*, as well as sometimes in the *Mercury* newspaper. Further archived TMAG documents, such as directors' letter books, give additional insight into the process of developing the collection. External references and supplementary material have been valuable in developing a picture of donors, and context to the collection.

Scope of the collection

TMAG's collection of barkcloth started to be developed in 1850 and has continued to be expanded ever since. The majority of the pieces were collected in the late nineteenth and early twentieth centuries. They include material from Fiji, Samoa, Tonga, Vanuatu, Tahiti in French Polynesia, Papua New Guinea, Niue, the Futuna Islands and the Solomon Islands (including Santa Cruz and Tikopia). Representing a vast region, and developed over a 160-year period, this collection is notable for encompassing a diverse range of techniques and styles. An example of the variety of the material in terms of decoration and relevant information



Fig. 1. M500 Barkcloth: *Masi vakadrau*
Fiji, pre-1850 Barkcloth 188 x 158 cm

TASMANIAN MUSEUM AND ART GALLERY. PRESENTED BY MR MCKAY, c.1850

recorded in registers can be seen in the comparison of two Fijian barkcloths (Figs. 1 & 2).

An early acquisition (Fig. 1) was an undecorated barkcloth (M500) donated by Mr J.W. McKay in 1850. It arrived only seven years after the establishment

of the Royal Society of Tasmania from whose collections TMAG's developed. It was simply recorded in the TM register by an accession number and with the information 'Tappa, 1850, JW McKay, Fiji'¹⁵. Like the majority of the barkcloth in the collection, the maker (or makers)

have not been recorded, nor information regarding where it was made or the significance to the local people. This barkcloth is a form of *masi vulavula* (fine white cloth) that has decoration described as *siku vakadavu*, a Lauan term signifying that this style came from the island of Kadavu, and involved using the thin bark, or 'tail' (*siku*) at the tip of the sapling, as a fringe. Such cloths were frequently used as bridal attire. The fact that it is plain white is a further indication that it was of spiritual significance to the Fijian people from which it was collected. The edges of joins on such cloths have one layer of fabric hanging free as a fringe. This delicate cloth appears to have been made from small strips joined together, with fine fringes hanging from it at regular intervals along these joins.¹⁶

In comparison, a more recent donation (Fig. 2), made by A.M. & J.R. Pemprase in 1982, is decorated (as is the majority of the TMAG collection). However, unlike earlier material presented to the museum, the maker of the barkcloth and its provenance was recorded in TMAG's register. It was originally presented to A.M. & J.R. Pemprase by Mrs Louisa Yawayawa in 1970 and was made by her mother near Suva, Viti Levu, around 1920. Such cloth was never made in the Suva area, however, and the stencilled figuration is in the style of one of the Cakaudrove outlying districts such as Yacata or Northern Koro. The maker probably came from one of these areas originally.¹⁷

M5451 (Fig. 2), as a decorated Fijian barkcloth, is known as *masi kesa*. It has been decorated using a typical form of Fijian decoration – stencils. This process involves cutting stencil motifs out of

leaves, or more recently X-ray films or simply thick plastic sheet, and then rubbing pigment through the openings with a wad of barkcloth.

Although there are records of 155 barkcloths in acquisition registers, acquisition lists and the Indigenous Cultures database, a recent review suggests the TMAG collection currently includes 130 barkcloths as well as material used in their construction such as four barkcloth beaters and one design tablet. Donors of the barkcloth have not always been recorded and TMAG records of where the barkcloths were collected are generally vague. In line with the times, much of the material was predominantly collected for its aesthetic qualities with limited information recorded about the object.

Many donations of barkcloth to the TMAG were made alongside other ethnographic or natural history material from Pacific islands. They were recorded like natural history specimens, by type and geographical location, resulting in little ethnographic information being documented. Such was the case with E.T. Walker's donations, in 1871, which were registered on the acquisition list in the same way as the natural history specimens with which they were received, namely: 'A bow, 6 arrows and a branch of coral used as a club, from Tanna, New Hebrides. Two clubs, 2 pieces of Tapa cloth, 3 mats, a pillow, 3 pieces of sponge, sample of sugar cane, a piece of the root of a plant from which the drink called "kava" is made and 2 beetles from Fiji'.¹⁸

It is often difficult to know where individual barkcloth originated, as early records associated with them are usually vague. Even when the locality where a



cloth was collected is recorded, this may not be where it was made. As a portable object, it could have been traded and exchanged between islands by either the islanders or European settlers prior to collection. Furthermore, some Pacific Islander communities resettled on other islands and continued to create barkcloth in their original style.¹⁹ Some of TMAG's barkcloth pieces can be attributed to their place of origin only by reference to their creation methods and stylistic indicators. The dates of manufacture of cloth are likewise difficult to determine, with often the only clue being the date of entry into the TMAG collection (and then only if this date was recorded).

The diverse range of decoration and motifs on TMAG's barkcloth reveals the interest of many early collectors in their aesthetics, rather than in their cultural significance to the society that created them. This is highlighted by a report in *The Courier* in 1853 about a donation: 'Dr Milligan presented a mat of figured Tapa cloth, remarkable for the distinctness of the colours employed and the neatness and fidelity of the pattern'.²⁰ The donor, Dr Joseph Milligan (a medical practitioner and amateur naturalist), was the Secretary of the Royal Society of Tasmania from 1848 to 1860. That one of the museum's enthusiastic founders was collecting barkcloth for its aesthetics reinforces that this approach was common for the day.

Fig. 2. M5451 Barkcloth – *Masi kesa*
Near Suva, Viti Levu, Fiji, c.1920
Barkcloth, coloured dye, stencilled, 299 x 50 cm
TASMANIAN MUSEUM AND ART GALLERY.
PRESENTED BY A.M. & J.R. PEMPRASE, 1982



While the majority of barkcloth in the TMAG are decorated in line with the preferences of collectors to predominantly focus on aesthetics, some undecorated cloth was donated and actually comprise about a tenth of the barkcloth collection.

TMAG's accessibility shaped the collection

During the nineteenth century, Hobart's deep-water port connected Tasmania to the Pacific, serving as a base for missionaries and as the centre of the Southern Ocean sealing and whaling trade. Material arrived on the many naval vessels and with whalers and traders passing through Hobart. Located opposite the port, on Hobart's waterfront at Sullivans Cove, TMAG was in close proximity to the docked ships.

Some TMAG records document the name of the ship on which material arrived, as was the case for a donation in 1897 of a barkcloth (M523) collected from Rubiana Island in the Solomon Islands by Captain Adams and brought to Hobart aboard the HMS *Pylates*. This cloth (Fig. 3) has been dyed blue with *pau* (wild indigo), a common method of production in the Solomon Islands. It must have been collected just prior to donation to the TMAG as diaries of *The Southern Cross*²¹ and the occasional papers of the Melanesian Mission²² refer to missionaries running into Captain Adams and the *Pylates* several times in the Solomon Islands in 1896.

Fig. 3. M523 Barkcloth
Solomon Islands, collected c.1897
Barkcloth, coloured dye, 213 x 63 cm

TASMANIAN MUSEUM AND ART GALLERY
PRESENTED BY CAPT. ADAMS, RN, 1897

Similar donations aroused local interest; in January 1899 the *Mercury* reported: ‘The Tasmanian Museum has received a quantity of valuable contributions this month from officers of the war vessels who collect curios from the natives of the islands in the Pacific’.²³

Institution influencing the collection

As a small state museum with limited resources, TMAG’s barkcloth acquisitions have not been strategically planned and have predominantly been dependent on the generosity of donors. However, of significance to the expansion of the barkcloth collection was the influential TMAG curator and then Director (1884–1907) Alexander Morton, who actively requested material from people in relevant regions and utilised the colonial museum network.

Morton had hands-on knowledge of the Pacific islands through visits to many parts of Melanesia prior to his work at TMAG. He was a seaman after leaving school, his initial voyage being on a vessel bringing Melanesian labour to Queensland. In 1877, as a curatorial assistant to the Australian Museum, he accompanied explorer Andrew Goldie to New Guinea. From 1878 he participated in collecting trips to the Solomon Islands, Torres Strait and Lord Howe Island.²⁴ Records of correspondence within his TMAG letter book indicate that Alexander Morton actively tried to collect Pacific material, including barkcloth, during his period at TMAG. Given the scant resources of the museum, he corresponded with relevant people in the Pacific and often offered exchanges in return for the material he was seeking.

In 1896 he wrote to ‘George Bellamy Esq. District Officer, Kualla, Selangor, Malay Peninsula’, requesting items for the collection:

Should you at any time be able to let us have any specimens my trustees would be deeply obliged. As our museum is a general museum anything in the way of natural history specimens, or native weapons would be most acceptable. I am most desirous of obtaining some samples of native cloth. The different coloured loin cloths used by the natives. Anything I can send in exchange I will gladly do so. Should you ... [like] a set of say ten years of our Royal Society of Tasmania Journals containing some interesting papers kindly let me know and I will send them.²⁵

This request was likely inspired by some recent barkcloths acquired from this region by TMAG. One, in 1885, from Mr J. Wemyss Symes, was recorded in the *Mercury* as ‘Tappa, or native cloth used by the jungle tribes, Malay Peninsula’.²⁶ A further three barkcloths were donated from the Straits Settlement by Brian Gaynor (Assistant Treasurer, Perak, Straits Settlement) in 1889, which have since been attributed to Tikopia (including M521).

M521 (Fig. 4) is made from the inner bark of *Antiaris toxicaria* which is thicker and heavier than the inner bark of the paper mulberry tree. The orange dye used on this cloth to create the geometric patterns is turmeric.

Another of Alexander Morton’s requests travelled to Samoa in 1897 with Mr Walch, of Hobart’s Davey Street Congregational Church, when Walch visited Reverend Newall in Malau. Reverend Newall of the London Missionary Society presided over



the Training Institution for Native Pastors in Malau, Samoa, from 1880 to 1910. Morton wrote:

Having heard you are about to pay Samoa a visit I bring under your notice a proposal that you might be favourably inclined to support. As you are aware the trustees of this museum are endeavouring to get together a thorough representation of Southern Island ethnological collection ... If during your visit you could [gather] a collection of native weapons, dress etc. it would form a great addition. I am aware the Congregational Sunday Schools of Hobart have contributed very largely to the Samoan Mission friends & such a collection I mention would prove of great interest to the many hundreds of scholars who visit the museum. Trusting you will be able to bring back a good collection ...²⁷

Mr Walch returned with a collection of ethnographic material including three Samoan barkcloths (including M502) donated by Reverend Newall.

M502 (Fig. 5), referred to as *siapo mamananu* (meaning freehand-painted barkcloth), is a solid red cloth that was probably dipped in red dye from the bark of the *nonu fi'a fi'a* (*Eugenia malaccensis*) tree, then 'varnished' with 'o'a (*Bischofia javanica*) paint, making it waterproof.²⁸

Later, in 1906, Morton approached the Lieutenant Governor of British New

Fig. 4. M521 Barkcloth
Tikopia, Solomon Islands, 19th century
Barkcloth, coloured dye, hand-painted
279 x 43 cm

TASMANIAN MUSEUM AND ART GALLERY
PRESENTED BY BRIAN GAYNOR, 1889



Fig. 5. M502 Barkcloth – *Siapo mamanu*
Samoa, collected c.1897. Barkcloth, coloured dye, dyed, 212 x 132 cm
TASMANIAN MUSEUM AND ART GALLERY. PRESENTED BY REV. J.E. NEWALL, 1898



Guinea for further ethnographic material. He received a letter from the Private Secretary, Government House, stating that His Excellency the Governor of New Guinea would be pleased to make up a collection for the Tasmanian Museum.²⁹ Approximately 50 items were received from his administrative area later that year including a barkcloth (M524) (Fig. 6) recorded as coming from Collingwood Bay, in north-east New Guinea.

As well as actively seeking to further develop the collection, Alexander Morton also sought further information on ethnographic material, to supplement the existing limited information record. Enquiring about Fijian material on loan from Mrs Waterhouse, he wrote in 1896: 'I would be much obliged if you could give me some particulars as to how they were obtained and the date they were collected'.³⁰

The generosity of donors from a variety of backgrounds largely influenced the development of the barkcloth collection. Barkcloth arrived at TMAG through missionaries, collectors, local residents and on one occasion from visiting Pacific Island royalty. Looking at certain donors and the barkcloth they donated provides insight into how and why some of the donors collected, the information they recorded, as well as the diversity of the collection.

Fig. 6. M524 Barkcloth
Collingwood Bay, Oro Province, Papua New
Guinea, collected c. 1906
Barkcloth, coloured dye, hand-painted
253 x 32 cm

TASMANIAN MUSEUM AND ART GALLERY
PRESENTED BY LT. GOV. OF BRITISH NEW GUINEA, 1906

Table 1. Known missionary donors of barkcloth in the TMAG collection

ACQUISITION DATE	DONOR	NUMBER DONATED	ATTRIBUTION
1850	Rev. S.R. Lewis	1	Pitcairn Island
1866	Rev. Dr Nicholson	5	Samoa, Nieu
1870	Mrs S. Crouch (Associated with South Sea Missions through her husband.)	3	Fiji, Samoa
1875	Rev. G. Brown	1	Samoa
1878	Rev. White	1	Fiji
1892	Rev. T. Frazer	2	Vanuatu
1898	Rev. Newell	3	Samoa
c. 1884–1913	Rev. F.W. Walker	4	Fiji, Tahiti
1894	Rev. R.M. Turnball	1 Tapa beater	Vanuatu
1920	Mrs Waterhouse (Related to Wesleyan missionaries: Reverends John, Joseph and Samuel Waterhouse who served in Fiji at various times between 1840 and 1878.)	3	Fiji, Samoa
1983	Australian Board of Missions	29	Papua New Guinea, Fiji, Samoa

Missionary influences

The majority of barkcloth of known donors was donated by missionaries, people of their church congregation or their family, as outlined in Table 1. With the exception of the Australian Board of Missions, these donors were associated with either the London Missionary Society or the Wesleyan Methodist Missionaries. The donations made by missionaries and the church had little information recorded, and can be assumed to have been collected for their aesthetics and to testify to the missions' success in converting Islander people. The lack of associated ethnographic information linked to

these objects suggests missionaries were restricted in their understanding of the role of barkcloth to the societies where they came from. The donations made by Mrs Crouch, Rev. F.W. Walker and the Australian Board of Missions are discussed in more detail below.

In 1870 Mrs Sarah Crouch donated 'a collection of weapons &c. from Fiji, – 1 pillow, 2 pieces Tappa cloth, 1 female chiefs dress, 1 paddle, 2 war clubs, 1 piece Samoan cloth, 1 sandwich Island spear, skull of porpoise, foetal porpoise',³¹ indicating the diverse ethnographic material and natural history specimens with which barkcloth was donated. Mrs

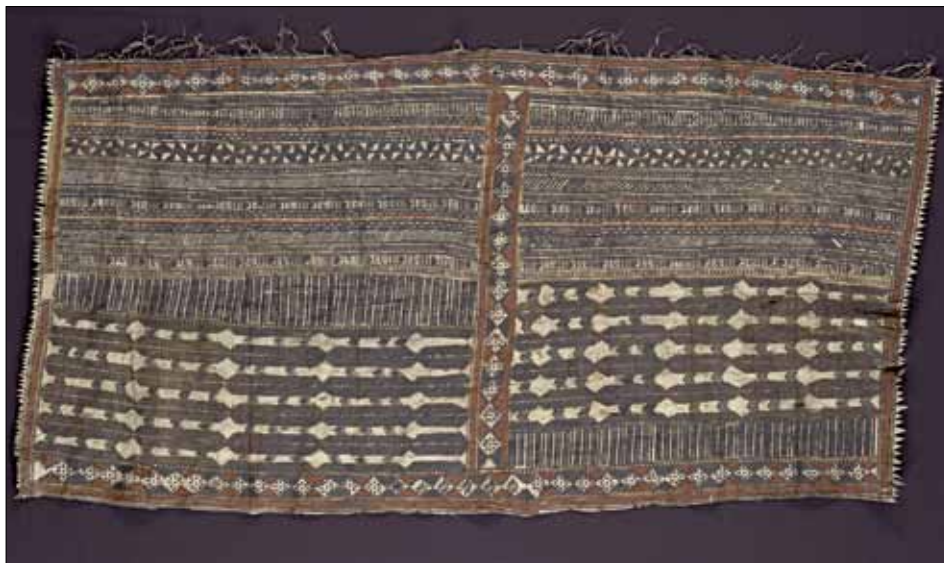


Fig. 7. M499 Barkcloth – *Masi kesa*, Fiji, pre-1870, Barkcloth, coloured dye, stencilled, 167 x 70 cm
TASMANIAN MUSEUM AND ART GALLERY. PRESENTED BY MRS S. CROUCH, 1870

Crouch was the wife of the Methodist Thomas Crouch, an advocate of the South Seas Mission and trustee of the Wesleyan Melville Street church for 58 years. At an advocacy meeting that Mr Crouch addressed in 1861 at Hobart's Murray Street Chapel, held in aid of the United Methodist Missions, it was reported that 'Several curiosities from the South Sea Missions were on the table, and excited a good deal of attention ...'.³² This links ethnographic material which Mr Crouch collected as serving to testify to the conversion of the 'islanders' and the success of missionaries.

M499 (Fig. 7) has been decorated with stencil patterns and labelled 'From Samoa – Mrs Crouch, 1869'. While it may have been collected in Samoa, all the stylistic

features of the piece confirm it is a Fijian *masi*.³³ How it may have come to be in Samoa is unknown. Perhaps it was part of a trade between Fiji and Samoa, a gift from a Fijian, or simply purchased by someone in Fiji and taken to Samoa.

Some decades later the missionary Rev. F.W. Walker donated four pieces of barkcloth to TMAG that have been attributed to Fiji and Tahiti. This material is believed to have been collected in 1907–1908 under interesting circumstances. At the end of 1907 Rev. F.W. Walker joined an expedition to travel to Flint Island, 400 miles north of Tahiti, with a team of astronomers to observe the solar eclipse of 3 January 1908.³⁴ The two barkcloths attributed to Tahiti are presumed to have been collected at this time giving them a

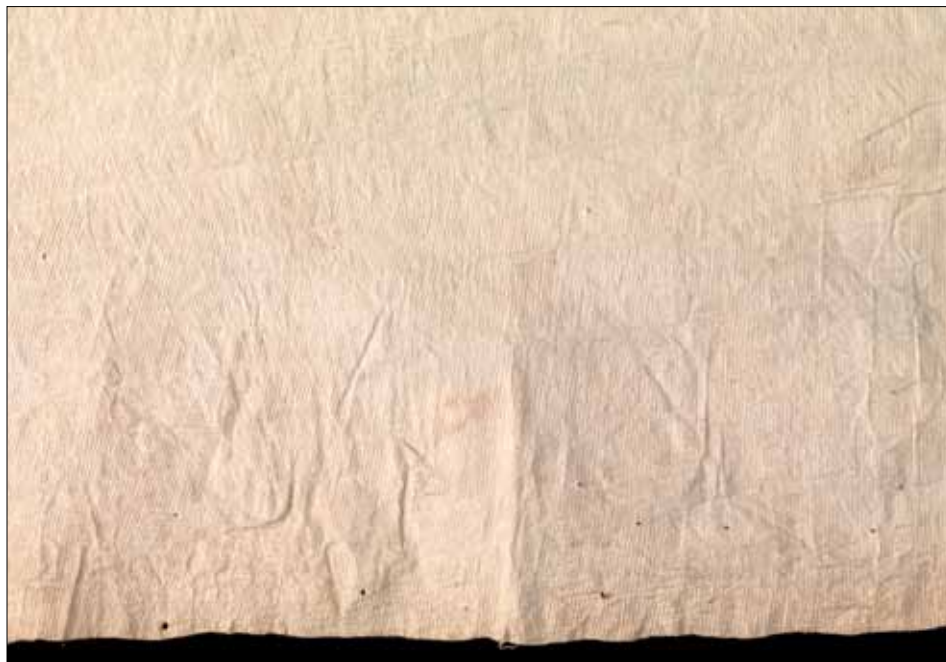


Fig. 8. M494.1 Barkcloth – *Ahu*, Tahiti, French Polynesia, possibly collected *c.* 1908.
Barkcloth, 31 x 110 cm

TASMANIAN MUSEUM AND ART GALLERY. PRESENTED BY REV. F.W. WALKER, PROBABLY BETWEEN 1908 AND 1914

collection date of *c.* 1908. These cloths are the only barkcloths in TMAG's collection attributed to Tahiti, as French Polynesia appears to be a region not commonly visited by Australian collectors.

The fine ribbed 'watermarking' in this cloth (M494.1, Fig. 8) is characteristic of having been beaten into a lining board, a technique that was used in Tahiti.³⁵ As barkcloth reportedly stopped being made in 1840 in Tahiti, this cloth could possibly be dated to the early nineteenth century.³⁶

A major and relatively recent donation to TMAG was the collection of 29 barkcloths

(predominantly from Papua New Guinea) donated in 1983, by the Australian Board of Missions (ABM) Tasmania. Established in 1850, the Australian Board of Missions sent the first Anglican missionaries to New Guinea in 1891, which subsequently became established as a diocese within the Church of England in Australia. Throughout the twentieth century, ABM was active in supporting missions in the Pacific as well as around the world. The barkcloths donated to TMAG were collected between 1891 and 1970, as such depicting the use of an evolving range of materials. For example, while most of the barkcloth depicts the sole use of dyes



Fig. 9. M6005 Barkcloth Collingwood Bay, Oro Province, Papua New Guinea, collected pre-1970.
Barkcloth, coloured dye/ink/paint, hand-painted, 134 x 90 cm

TASMANIAN MUSEUM AND ART GALLERY. PRESENTED BY AUSTRALIAN BOARD OF MISSIONS (TAS.), 1983

derived from plants, in M6005 (Fig. 9) there is evidence of the use of black ink (possibly a felt-tip pen), as well as acrylic paint in the patterning.

Amateur collector and Tasmanian residents influencing the collection

Professional photographer, collector and amateur anthropologist, John Watt Beattie (1859–1930) is an example of a collector who, in contrast to the prevailing approach of the time, amassed a range of barkcloth, both decorated and undecorated, that seemed to be significant locally and which gave insight into a variety of manufacturing methods. Of the seven

barkcloths collected (including M529) by Beattie (probably during his journey to the western Pacific in 1906 which he recorded in his diary)³⁷ two were undecorated, one from the Solomon Islands was simply dyed blue with *pau* (wild indigo) and four were patterned. In the 1890s Beattie developed a popular museum of art and artefacts in Tasmania. Much of this collection went to the Queen Victoria Museum and Art Gallery in Launceston; however, following his death, the remainder was purchased by William Walker who donated it to the TMAG around 1933.

The size and fineness of M529 (Fig. 10) suggest that it was made as a garment



for men. The large geometric designs and their arrangement are typical of the ‘Cakaudrove’ style known as *Masi bola*. This technique involves folding the *masi* and rubbing the creases with paint to divide up the design area and then painting on designs using the edge of a coconut leaf.³⁸ The bold black and white motifs are said to be similar to patterns formed in plaiting coconut leaves.³⁹

Another donor whose interest in collecting barkcloth that was not simply focused on aesthetics was Mrs David Barclay (Grace Agnes Salier). Mrs Barclay seems to have been well connected with the Pacific through her husband and her own family. Her husband, David Barclay, was manager of the Commercial Bank of Tasmania, as well as director of many companies which included the Union Steam Ship Company of New Zealand.⁴⁰ As part of the Salier family she was related to a family of merchants, exporters and importers who had a large fleet of whaling vessels. She donated four barkcloths in 1897, which were reported in the *Mercury* as an ‘excellent sample of “Tappa” or native cloth, from Fiji, in various stages of manufacture’,⁴¹ which indicates the collector had an interest in the manufacturing process of barkcloth.

While this donation by Mrs Barclay was originally recorded in early museum records in line with the *Mercury* report

Fig. 10. M529 Barkcloth – *Masi bola*
Probably Bouma, Taveuni, Cakaudrove, Fiji,
probably collected c. 1906.
Barkcloth, coloured dye, hand-painted,
230 x 72 cm

TASMANIAN MUSEUM AND ART GALLERY. PRESENTED BY
WILLIAM WALKER C. 1933, BEATTIE COLLECTION



Fig. 11. M514 Barkcloth – *Ngatu tahina*
Tonga, 19th century
Barkcloth, coloured dye, patterned on *kupesi*
rubbing tablets, hand-painted highlights,
260 x 102 cm

TASMANIAN MUSEUM AND ART GALLERY.
PRESENTED BY MRS D. BARCLAY, 1897

as being from Fiji, later museum records attribute it to Tonga. M514 (Fig. 11) is a *ngatu* of the *tapa'ingatu* type, where rubbing is restricted to the areas over the small *longolongo* (so named because the close stitching resembles the leaflets of the plant of the same name—*Cycas rumphii*, *C. circinalis*⁴²) matrixes, leaving the rest of the cloth white.

Pacific Islander donor influencing the collection

One of the few barkcloths in the TMAG collection donated by a Pacific Islander, rather than a collector or missionary, is M275 (Fig. 12), a *siapo* donated by the Samoan 'Tamasese' noted as 'royal' in early museum registers. Tamasese was most likely Tupua Tamasese Lealofilo-o-a'ana I (the son of Tupua Tamasese Titimaea), one of Samoa's four paramount chiefs from 1891 to 1915. In 1910, the year the barkcloth was donated, Tamasese travelled to Germany⁴³ and it is possible that this item was donated during this journey as the ship may have passed through Hobart's port.

This cloth (Fig. 12), known as *Siapo tasina*, has been decorated by being placed on a sewn leaf design tablet known as *upeti fala* then rubbed over with dye to bring out the pattern of the tablet, with highlights hand painted on to it after drying. This is a *siapo vala* – a wearing cloth.⁴⁴

Discussion

TMAG's barkcloth collection, at first glance, would appear to have developed by chance. As a small state museum with limited resources TMAG has been dependent on the generosity of donors from various backgrounds. However,



Fig. 12. M275 Barkcloth – *Siapo tasina*, Samoa, pre-1910.
Barkcloth, coloured dye, rubbed on design tablet (*upeti fala*), hand-painted highlights 179 x 159 cm
TASMANIAN MUSEUM AND ART GALLERY. PRESENTED BY TAMASESE (ROYAL), 1910

further investigation has revealed that the development of its Pacific collection has also benefited from being in a convenient location from an early date and from active collecting by in house enthusiasts. TMAG profited from its accessibility on Hobart's waterfront at Sullivans Cove, opposite Hobart's deep water port from which ships came and went to the Pacific. Additionally, it benefited from Hobart being a base for missionaries that served the Pacific. The active collecting carried out by curator and later director Alexander Morton, further influenced the collection by using the colonial museum network and contacts throughout the Pacific to add to the collection. The development of such a diverse collection of barkcloth at TMAG suggests that Tasmania, and Hobart in particular, had a strong relationship with its Pacific neighbours.

Despite its diversity, the collection should not be considered representative of the barkcloth that was being produced throughout the Pacific at the time. The significance of material collected was not assessed by collectors or by the museum at the time of acquisition. *Significance 2.0*⁴⁵ points out that the criteria that should be considered when assessing the significance of an object are the historic, artistic or aesthetic, scientific or research potential and social or spiritual significance. Additionally, its provenance, representativeness, condition and interpretive capacity should be considered. The predominance of collectors focusing on acquiring patterned barkcloth for what they considered to be their aesthetic significance, as well as recording limited information about them, indicates a lack of awareness of the broader criteria that would make an object

of significance not only to local people, but also to a broader global understanding and appreciation of their culture. However, this was the practice at the time. Perhaps it is the prevalence of this general practice that makes the material which was donated against this trend (such as the undecorated cloth that makes up 10% of the collection and which was traditionally more common in Pacific communities, and the cloth collected by Beattie and Mrs D. Barclay) all the more significant to TMAG's collection.

There is a notable lack of record in registers of the significance of objects to Pacific people. While barkcloth was usually made by more than one person, there is a general absence of mention of the original creator/s or owners of the barkcloths within the TMAG records. This is actually the case for all barkcloth donations until the recent 1982 donation by A.M & J.R Pemprase which detailed its maker, changes in ownership and where and when it was made. Furthermore, with the exception of two donations they have all been donated by visitors to the Pacific rather than the local societies. These two exceptions are the earlier mentioned Samoan cloth donated by Tamasuse (Royal) in 1910 and a donation by Jonah who was associated with the well-known missionary George Brown, in 1875. Jonah, a local Samoan teacher, is recorded as having donated a 'Model of Samoan Canoe, Large sheet of Tapa Cloth'.⁴⁶ The predominant trend of collector visitors to Pacific societies, gives the collector custodianship over what material entered TMAG. In contrast, material chosen and given by Pacific people gives them more ownership over how a collection developed.

Indigenous academics have pointed out that culture is more than artefacts, and that artefacts themselves have no meaning without a cultural context.⁴⁷ Isolated and decontextualised material culture, such as these barkcloths, with limited background information recorded, does not adequately reflect the societies or cultures from which they came. As a consequence of this lack of contextual information, the provenance of cloths has often been determined by attribution on stylistic grounds, with the TMAG then attributing meaning to them. This is evident in this paper, where descriptions of barkcloth have relied on discussion of stylistic attribution, due to the absence of other information. This is in contrast to how the societies that created the barkcloths may view them. For example, for ni Vanuatu people the significance of an object may be in the skills of the maker and how they reflect their place based identity.⁴⁸

While barkcloth continues to have significance to many Pacific cultures, in some societies, such as the Santa Cruz Islands and the broader Solomon Islands, Vanuatu and Tahiti, there have been periods from the late nineteenth century when the art of making barkcloths was lost or nearly lost. At various times in the twentieth century there has been a move to revive the creation of barkcloth in these cultures. For example, in Eromanga, Vanuatu, barkcloth production was briefly revived during the Second World War due to a shortage of imported cloth and consequently a new generation of people learnt the practice.⁴⁹ Indigenous people around the world are now accessing museum collections to reconnect with traditional objects and practices. Such

a process could see barkcloth from various societies triggering memories and connections between people and place, as such adding to the stories that can be associated with them.⁵⁰

Interpretation of TMAG's collection is currently restricted to a 'Western' perspective of the objects' meanings, with little avenue for what the cloth meant at the time to the societies that created them. A way of further developing this collection's interpretative capacity could be through becoming part of the process of island nations reconnecting with objects, and taking the opportunity to record the meaning they ascribe to them, thus placing material in a more cultural context.

Conclusion

The TMAG has a diverse collection of barkcloth that has not developed purely by chance donations from generous donors. Former curator and director Alexander Morton is testimony to how the TMAG has influenced the collection by active networking within the constraints of time and limited resources. Additionally, it developed through the TMAG being in a good geographical position (right next to an active port to the Pacific) during a key period to receive donations from missionaries and the people associated with them, as well as from naval vessels and traders.

This collection has been influenced by the collecting practices of the time (reflected in early TMAG registers), which focused on viewing ethnographic artefacts in a scientific way with limited interest given to their provenance and their interpretative capacity, and little supplementary information recorded. It

is a collection that has developed mainly from collectors considering the aesthetic significance of barkcloth rather than from assessing their historic, scientific and social or spiritual significance. While many Pacific islands are represented, this collection is unlikely to be a representative collection of the cloths being produced in the nineteenth and twentieth centuries as most donors were not analytical of their collecting practices.

The lack of information recorded in TMAG's registers regarding barkcloth

acquisitions has constrained the interpretation and use of the collection to a Western perspective and has been dependent upon attribution on stylistic grounds. Further insight and understanding of the significance of these cloths to Tasmania's Pacific neighbours is now needed. The scope of the collection demonstrates the strong relationship that not only the TMAG, but also Hobart, had with the missionaries and colonial people moving through the Pacific.

Acknowledgements

Thank you to Dr Rod Ewins for the previous work he has done on the TMAG barkcloth collection. Thanks also to

Dr Jody Steele and Dr Eleanor Cave who provided comments on drafts of this paper.

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WHAT BUGS TASMANIANS? AN ENQUIRY INTO TMAG'S INVERTEBRATE ENQUIRIES DATABASE

Simon Grove

Grove, Simon 2012. What bugs Tasmanians? An enquiry into TMAG's Invertebrate Enquiries Database. *Kanunnah* 5: 83–105. ISSN 1832-536X. Invertebrates dominate Tasmanian biodiversity, as elsewhere, and Tasmania's human population frequently interacts with elements of this biodiversity. Consequently, taxonomic specialists at the Tasmanian Museum and Art Gallery receive many requests for information or identification. An analysis of all such enquiries logged between 2005 and 2011 has demonstrated that the Tasmanian public has a substantial interest in invertebrates, albeit with distinct biases towards certain taxa, and with report rates fluctuating with the seasons of activity of particular taxa. These biases probably reflect a combination of conspicuousness, aesthetics, 'wow' and 'yuk' factors and perceived threat to person or property. The analysis has also demonstrated that responding to these enquiries requires specialist staff with a deep understanding of invertebrate taxonomy across a very broad range of taxa, but with a degree of specialisation in the taxa of most interest to the public. It has also demonstrated that taxonomic surprises continue to emerge as a result of the liaison between specialist staff and the general public.

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KEY WORDS: invertebrates, arthropods, mollusca, arachnida,
public enquiries, Tasmania

INTRODUCTION

The overwhelming majority of animal species, in Tasmania as everywhere on the planet, are invertebrates (Ponder & Lunney 1999). Beetles alone account for 21% of the world's described species; moths and butterflies 9.2%; and molluscs 4.5% (data from Chapman 2009). As befits this tremendous diversity, TMAG's Rosny Collections and Research Facility houses extensive taxonomic collections of Tasmanian invertebrates, from sponges and corals to crabs, insects and spiders. The Zoology Unit's specialists in invertebrates, whose job it is to maintain these collections, are also on hand to respond to enquiries from members of the public (mostly Tasmanians). Most seek information on particular invertebrate species that are of personal or professional interest to them (and which may or may not be represented in TMAG's collections), or seek the identity of specimens that they have found, most of which are of Tasmanian origin. Enquiries may take the form of a phone call or email, but enquirers also regularly bring in live or dead specimens to the front desks at both Rosny and the city museum site. Many of these specimens are eventually added to the collections.

Since 2005, all enquiries have been recorded in a database maintained by the Zoology Unit. This paper presents some findings concerning the taxonomic focus of these enquiries from the first comprehensive analysis of this database.

METHOD

The Enquiries database was interrogated to screen all records from the beginning

of 2005 to the end of 2011 that had a focus on a particular taxon (i.e., a species or taxonomic group). Records were then arranged according to a traditional taxonomic hierarchy, i.e., phylum, class, order, family, genus and species. They were then grouped according to whether the enquiry was an identification request, or sought (or occasionally provided) information on that taxon (for instance, regarding a species' occurrence or conservation status in Tasmania, its toxicity, pest status, etc.). Many requests concerned both identification and information, but for the purposes of this paper a request was allocated to one or the other request-type depending on which appeared to be given primacy in the request and/or the response. For instance, an enquiry concerning the nesting habits of European wasps (*Vespula* spp.) would be classified as an information request, but an enquiry regarding how to determine which of the two species of *Vespula* now established in Tasmania might be responsible for a particular 'problem' nest would be classified as an identification request.

Records were also categorised by year and month of enquiry, to enable examination of seasonal or inter-annual trends in rates of enquiry.

RESULTS

There were 1165 records in the Enquiries database within the period of interest, of which 1084 (93%) had a focus on a particular taxon. The analyses that follow concern only these taxon-focused records.

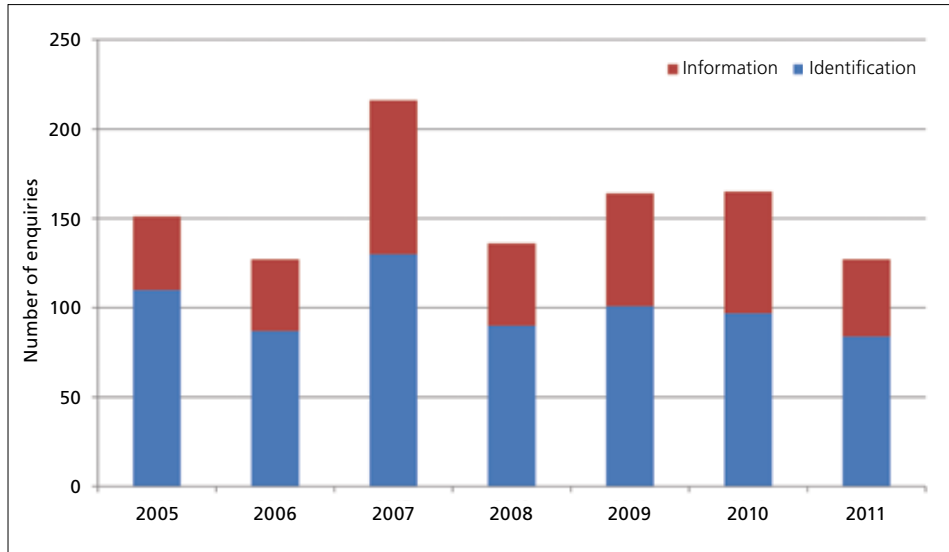


Fig. 1. The number of taxon-focused enquiries per year, 2005–2011, separated into those concerning information and those concerning identification (n=1084)

Identification versus information

65% of taxon-focused enquiries were primarily identification-related, *versus* 35% information-related.

Trends over time

The number of taxon-focused enquiries per year (Fig. 1) varied from a minimum of 127 (in 2011) to a maximum of 216 (in 2007). The yearly average rate over the sample-period (135.5 enquiries) equated to just over one enquiry every two working days. There was no indication of a consistent trend towards either fewer or more enquiries over the sample-period.

Seasonality

The overall rate of taxon-focused enquiry equated to 11.3 per month. While the number within a given month varied

considerably among years, there were nevertheless significant overall differences between some months (Fig. 2). In general, enquiry rates were lowest in winter, increasing through spring to a late-summer peak (but with a subsidiary dip in December), and then declining through autumn. On average, peaks of nearly three times as many enquiries were recorded in February and March compared to the most enquiry-poor month of June.

Taxonomic overview

The 438 taxa which were the subject of enquiries were spread widely across 245 families, 91 orders, 25 classes and 11 phyla (Appendix 1). Enquiries for 332 entailed taxonomic resolution at the level of species or genus, with the remainder resolved at the level of family or higher.

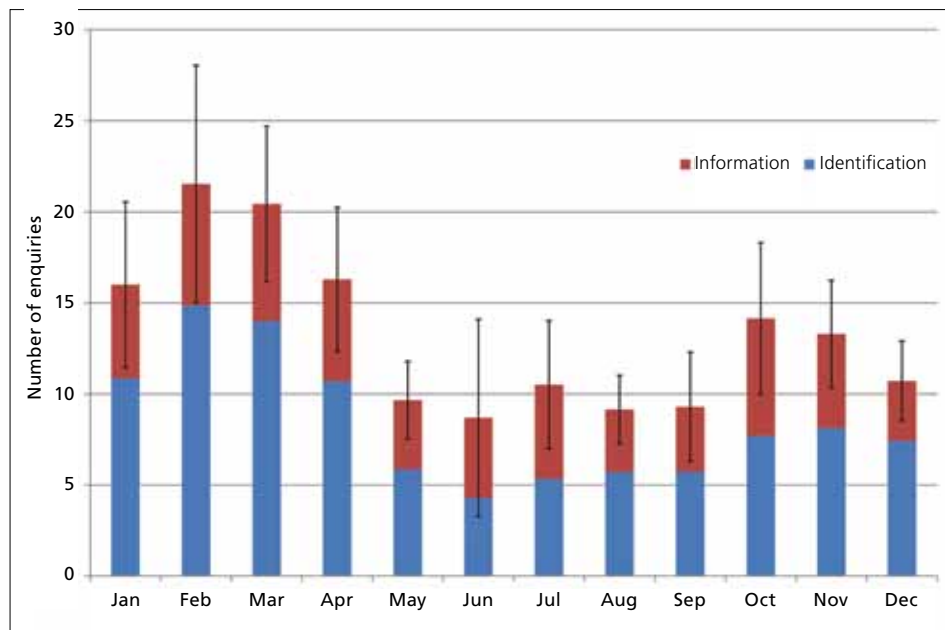


Fig. 2. Monthly mean numbers of taxon-focused enquiries, 2005–2011, separated into those concerning information and those concerning identification ($n = 1084$; 95% confidence intervals shown based on all enquiries)

The phylum Arthropoda (spiders, insects, crustaceans etc.) accounted for the most records by far (accounting for 70% of all taxon-focused enquiries) (Fig. 3). In almost equal measure, the arthropod classes attracting the most enquiries were the Arachnida (spiders and their allies) and the Insecta (Fig. 4). Together, these accounted for over 90% of all arthropod-related enquiries. Within the arachnids, 88% of records concerned the order Araneae (spiders), with the remainder concerning mites, ticks, scorpions, pseudoscorpions and harvestmen. Within the insects, 17 orders were represented, of which the dominant was the Lepidoptera (moths and butterflies), represented by a

quarter of all insect-related records. Other well-represented insect orders were Hymenoptera (wasps, ants and bees: 18%), Diptera (flies: 14%), Coleoptera (beetles: 13%), Hemiptera (bugs: 8%) and Orthoptera (crickets and grasshoppers: 6%). The remaining records (8% of the insect total) comprised the cockroaches, termites, springtails, dragonflies, bark-lice, bristletails, lacewings, stick-insects, stoneflies, fleas and thrips.

The phylum with the second-highest number of records (accounting for over 18% of all taxon-focused enquiries) was the Mollusca (snails, clams, squid etc.). Almost a quarter (23%) of all mollusc-related records did not entail taxonomic

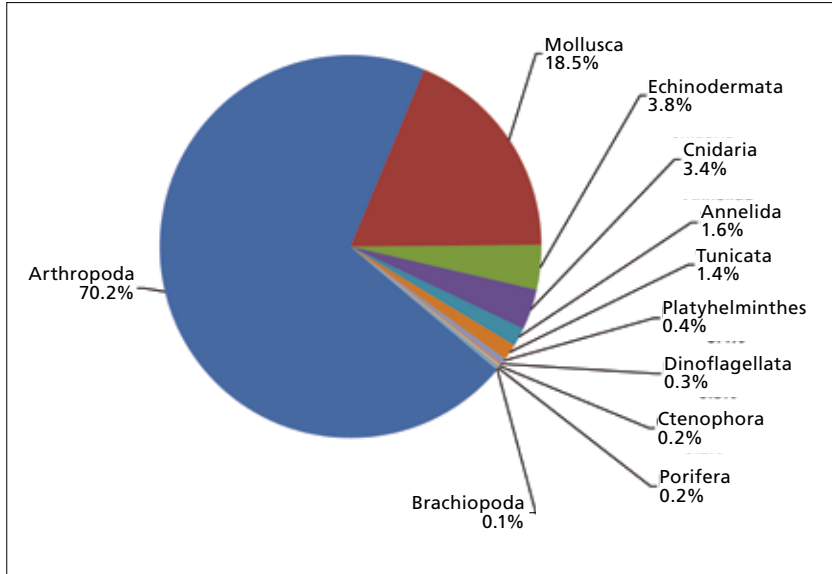


Fig. 3. Proportional representation of taxon-focused enquiries (n = 1084) among 11 phyla

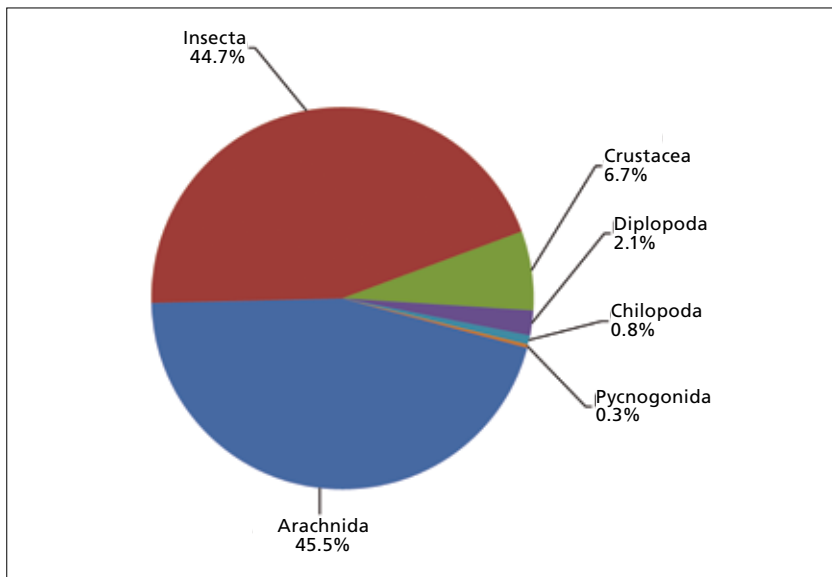


Fig. 4. Proportional representation of taxon-focused enquiries (n = 761) among six classes in the phylum Arthropoda

resolution beyond the level of phylum, while over half (54%) concerned the class Gastropoda (snails and slugs), with the class Bivalvia (clams) accounting for a further 13%. The remaining records referred to the mollusc classes comprising squid and their allies, and chitons.

The remaining 11.3% of all taxon-focused records concerned nine other phyla, comprising the echinoderms (starfish, urchins and sea-cucumbers), cnidarians (corals, anemones and jellyfish), annelids (earthworms, leeches and polychaetes), tunicates (sea-squirts and salps), platyhelminths (flatworms), dinoflagellates (the only single-celled organisms to feature in the database), ctenophores (sea-gooseberries), poriferans (sponges) and brachiopods (lampshells). None of these phyla individually contributed more than 3.8% to the total number of taxon-focused records.

Taxonomic case studies

Within any particular order, class or phylum a few species, genera or families tended to numerically dominate the enquiries. Some examples follow. Where appropriate, some short notes are included to help explain the public focus on these taxa.

SPIDERS

(Arthropoda – Arachnida – Araneae)

At 49, the number of species of spider that were the subject of enquiries surpassed all other taxa of equivalent rank. Spider enquiries were spread across 30 families, but were dominated by the families containing large, showy species and/or those considered to pose a danger

to humans. Most concerned taxa that are found in or around human habitations. In descending order, these are: wolf-spiders, huntsmen, redback spiders, funnelweb spiders, orb-spiders, house-spiders and whitetail spiders. Most enquiries sought identifications. Some (e.g. Fig. 5) were very seasonal, with clusters spread over a few days of peak activity for the species concerned (warm April evenings for Tasmanian funnelwebs *Hadronyche venenata* Hickman (Fig. 6, left); warm March evenings for the large wolf-spider *Tasmanicosa godeffroyi* Koch (Fig. 6, right). Information-related enquiries were more common for two easily identified spider species known to be of public concern: redback *Latrodectus hasselti* Thorell and whitetail *Lampona cylindrata* (Koch). The main enquiry regarding redbacks was on the species' occurrence in Tasmania. In fact, although not native to Tasmania (Garb *et al.* 2004), it is widespread in urban areas and in disturbed drier woodland (Brunet 1994). The main enquiry regarding whitetails was as to whether the species was venomous or not. In fact it is not particularly venomous (Ibister and Gray 2003). There were also three enquiries about the presence of brown recluse spiders *Loxosceles reclusa* Gertsch & Malaik in Tasmania. This is a North American species, not present in Tasmania or elsewhere in Australia, which has been the subject of multiple 'viral' emails that indiscriminately advised readers to be on the look-out for this species because of the purported ability of its bites to cause severe tissue necrosis and death. In fact these claims are an urban myth (Vetter 2008; Hosking 2011).

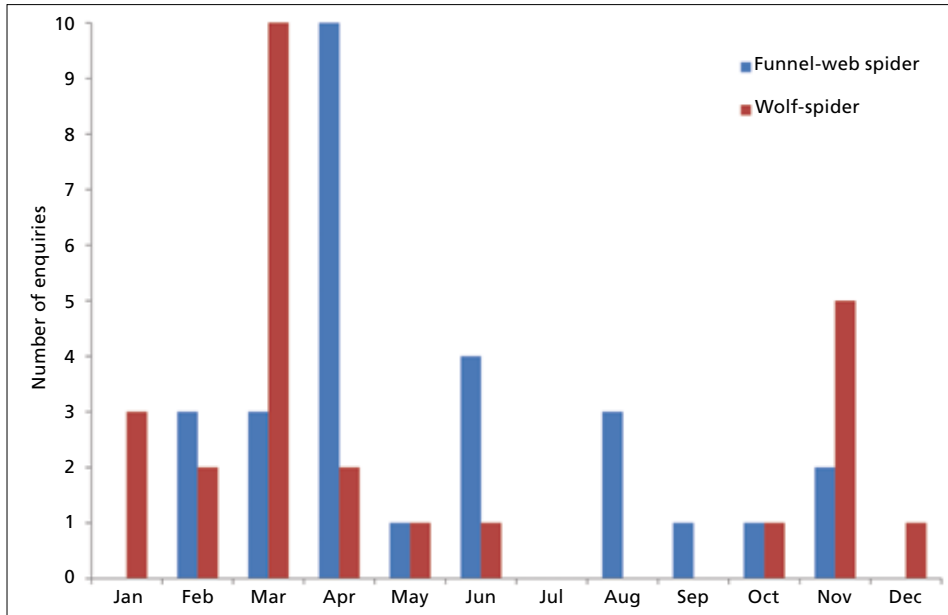


Fig. 5. Total number of enquiries by month relating to Tasmanian funnel-web spiders *Hadronyche venenata* and the wolf-spider *Tasmanicosa godeffroyi*, compiled for the period 2005–2011 (n = 28 for each species)



Fig. 6. LEFT: Tasmanian funnel-web spider *Hadronyche venenata*, female, body-length 18 mm
 RIGHT: Wolf-spider *Tasmanicosa godeffroyi*, male, body-length 20 mm
 Both are preserved (and unregistered) TMAG specimens

IMAGES BY SIMON GROVE



Fig. 7. LEFT: Wattle goat-moth *Endoxyla lituratus*, female, body-length 60 mm, TMAG F2526
 RIGHT: Helena gum-moth *Opodiphthera helena*, male, body-length 55 mm, TMAG F3810

LEFT IMAGE BY SIMON GROVE; RIGHT IMAGE BY SIMON CUTHBERTSON

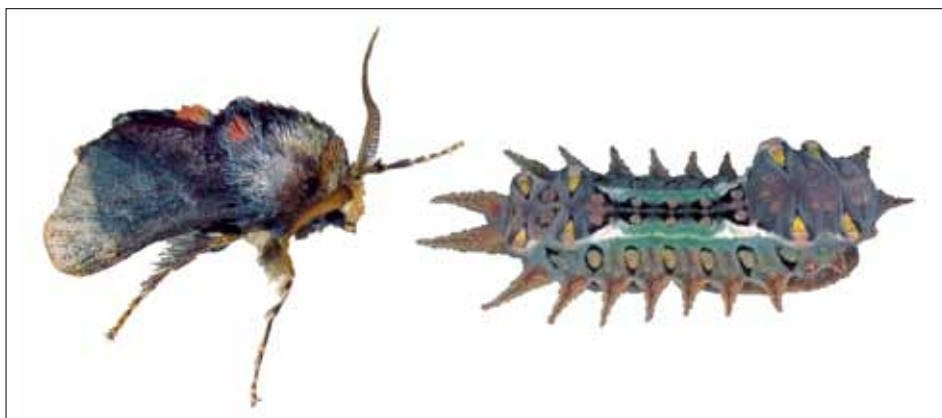


Fig. 8. LEFT: Painted cup-moth *Doratifera oxleyi* adult male RIGHT: Larva

IMAGES BY CATHY BYRNE

MOTHS AND BUTTERFLIES (Arthropoda – Insecta – Lepidoptera)

Moth enquiries outnumbered butterfly enquiries three to one. Geometrid moths dominated the list of species, in keeping with the expertise of the current Curator of Zoology, Dr Cathy Byrne. However, they represented relatively few records overall. The wattle goat-moth *Endoxyla lituratus* Donovan, helena gum-moth

Opodiphthera helena (White) and painted cup-moth *Doratifera oxleyi* (Newman) were the top-ranking species, at six enquiries each. The first two are large and charismatic moths (Fig. 7, left and right respectively) that are often noticed resting on buildings by day or flying to light at night. Full-grown gum-moth larvae are also strikingly proportioned and coloured, and are often observed

when they are seeking somewhere to pupate. Regarding goat-moths, it is more often their larval emergence-holes that are observed, since the larvae are wood-feeders living within old wattle branches. By contrast, painted cup-moth adults (Fig. 8, left) are nondescript and seldom noticed. What made them the subject of enquiry in the spring of 2010 was the unprecedented level of defoliation then being inflicted on various eucalypt species around Hobart by an outbreak of their colourful larvae (Fig. 8, right). At the time, the species of *Doratifera* responsible for the defoliation was unknown, because the larvae of Tasmania's several *Doratifera* species cannot be readily distinguished. It took rearing of larvae to adulthood by Cathy Byrne to determine that the outbreak was caused by *D. oxleyi*. This finding was all the more remarkable in that the painted cup-moth was considered to be rare in Tasmania prior to this outbreak.

WASPS, ANTS AND BEES

(Arthropoda – Insecta – Hymenoptera)

By far the most enquiries for this group (19) related to the European bumblebee *Bombus terrestris* (Fig. 9, left). While none of the observers needed help with identifying this distinctive, recently established species, most sought information on its current occurrence and distribution. In fact, it is now widespread across Tasmania (Hingston 2006). The startlingly electric-blue bluebottle 'ant' *Diamma bicolor* Westwood (Fig. 9, right) was the next most enquired-about species (six enquiries, five concerning identification). In fact this insect is actually a flower-wasp (family

Tiphiidae) whose wingless females can be observed scurrying about on sandy paths; their larvae are unusual for flower-wasps because they parasitise mole-crickets rather than beetle larvae.

FLIES

(Arthropoda – Insecta – Diptera)

Two fly families were the subject of most enquiries for this group: bristle-flies and hover-flies. The former parasitise various other insects as larvae, and include many large species that are hard to ignore when observed buzzing against the kitchen window. One in particular, *Euamphibolia speciosa*, (Erichson), attracts attention because of its striking black-and-white colour-pattern (Fig. 10, left). Its larvae parasitise larvae of the golden stag-beetle *Lamprima aurata* Latreille, a species which is widespread in suburbia and whose adults attract their own share of attention because of their metallic colours and daytime flight activity. The main species of hoverfly featuring in enquiries was the European drone-fly *Eristalis tenax* (Linnaeus). The nectar-feeding adults of this species (Fig. 10, right) mimic honeybees and seldom attract attention amongst the blossoms. However, drone-fly larvae are detritivorous and aquatic, breathing air through an extensible 'snorkel' that may be several centimetres long, a feature which has given rise to their common name of rat-tailed maggots. The maggots commonly infest poorly-drained compost heaps and septic tanks; they cause particular alarm when they seek dry land for pupation (sometimes exiting via the toilet-bowl or kitchen sink).



Fig. 9. LEFT: European bumblebee *Bombus terrestris*, female (worker), body-length 18 mm, TMAG F4814
RIGHT: bluebottle 'ant' *Diamma bicolor* female, body-length 22 mm, TMAG F4560

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Fig. 10. LEFT: The bristle-fly *Euamphibolia speciosa*, body-length 17 mm, TMAG F4564
RIGHT: European drone-fly *Eristalis tenax*, body-length 15 mm, TMAG (unregistered)

LEFT IMAGE BY SIMON CUTHBERTSON; RIGHT IMAGE BY SIMON GROVE

BEETLES

(Arthropoda – Insecta – Coleoptera)

The redheaded pasture-scarab *Adoryphorus couloni* (Fig. 11, left) attracted the most enquiries amongst those regarding beetles. These beetles will be familiar to many Tasmanians because of their early-

spring mass emergences from grassland (including suburban lawns). Accordingly, most enquiries were during August and September. Because of their tendency to aggregate near sources of artificial light, these beetles often end up dying in their thousands along suburban footpaths and



Fig. 11. LEFT: Redheaded pasture-scarab *Adoryphorus couloni*, body-length 13 mm
RIGHT: jewel-bug *Choerocoris paganus*, body-length 13 mm
Both are preserved (and unregistered) TMAG specimens

IMAGES BY SIMON GROVE



Fig. 12. LEFT: Mass beaching of drowned redheaded pasture-scarabs *Adoryphorus couloni*
RIGHT: aggregation of nymphs of jewel-bug *Choerocoris paganus*

LEFT IMAGE BY CHRISTINE GROVE; RIGHT IMAGE BY SIMON GROVE

seashores (Fig. 12, left). The species' mass appearance in southern Tasmania seems to be a relatively recent phenomenon, perhaps associated with warmer average temperatures. In fact the species is probably a relatively recent invader from the north of Tasmania, and perhaps from the Australian mainland prior to that. Other identification requests regarding beetles concerned domestic or commercial pests such as drugstore beetle *Stegobium paniceus* (Linnaeus), lesser grain-borer *Rhyzopertha dominica* Fabricius, Australian carpet-beetle *Anthrenocerus australis* (Hope) and wood-worm *Anobium punctatum* (DeGeer).

BUGS

(Arthropoda – Insecta – Hemiptera)

Harlequin-bugs *Dindymus versicolor* (Herrich-Schaeffer) and jewel-bugs *Choerocoris paganus* (Fabricius) (Fig. 11, right) featured in several bug-related enquiries. They are commonly observed by the public because of their bright colours, their tendency to feed on garden plants, and the parental care shown towards their offspring (nymphs); large aggregations of these bugs basking on warm surfaces such as garden paths are particularly noticeable (Fig. 12, right). The passion-vine hopper *Scolypopa australis* (Walker) was also the subject of several enquiries, perhaps because of the large size and moth-like or cicada-like appearance of the adult, or because of its status as a pest of garden passion-vines and kiwi-vines. On a less savoury note, identification enquiries concerning bed-bugs *Cimex lectularius* Linnaeus reflect the growing domestic prevalence of this species. This has been attributed to greater international travel to and from destinations where bed-

bug infestations are rife, coupled with growing resistance of bed-bugs to today's insecticides (Potter 2011).

CRICKETS AND GRASSHOPPERS

(Arthropoda – Insecta – Orthoptera)

Amongst this group, species of striking appearance attracted particular attention. For instance, mountain bush-crickets *Acripeza reticulata* Guérin-Ménéville (Fig. 13, left) are large, slow-moving insects found mostly in high-altitude woodlands and moorlands. When disturbed (e.g., by bush-walkers), they raise their forewings to reveal bright blue and crimson stripes on the abdomen, presumably as a warning to potential predators that they are distasteful. The short, stout legs of Australian mole-crickets *Gryllotalpa australis* Erichson (Fig. 13, right) are designed for burrowing in soft earth, including in suburban gardens, but they bestow on these insects a grotesque appearance when seen scurrying towards household lights on warm summer evenings.

CRUSTACEANS

(Arthropoda – Crustacea)

A wide range of marine and freshwater crustaceans were the subject of enquiries, of which most were decapods (crabs and their allies). The top-ranking species was the spider-crab *Leptomithrax gaimardii* (Milne Edwards) (Fig. 14, left). These large, gangly crabs normally live offshore, but they periodically undertake synchronised migrations into the shallows for mating. These events are often first detected from the mass strandings of apparently dead crabs, since



Fig. 13. LEFT: Mountain bush-cricket *Acripeza reticulata*, female, body-length 40 mm
RIGHT: Australian mole-cricket *Gryllotalpa australis*, male, body-length 36 mm
Both are preserved (and unregistered) TMAG specimens

IMAGES BY SIMON GROVE



Fig. 14. LEFT: Mating aggregation of the spider-crab *Leptomithrax gaimardii*
RIGHT: Balmain bug *Ibacus peronii*, body-length 95 mm, preserved (and unregistered) TMAG specimen

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spawning is preceded by the shedding of the outgrown exoskeleton which is often washed ashore. Another deep-water species that attracted attention because of the striking appearance of its empty exoskeleton when washed ashore was Balmain bug *Ibacus peronii* Leach (Fig. 14, right).

MILLIPEDES (Arthropoda – Diplopoda)

A single species attracted all 13 enquiries in this group: Portuguese millipede *Ommatoiulus moreleti* (Lucas) (Fig. 15). This feral detritivore and herbivore has been in Australia since at least 1953 (Baker 1985), reaching Tasmania in the 1970s; it is now

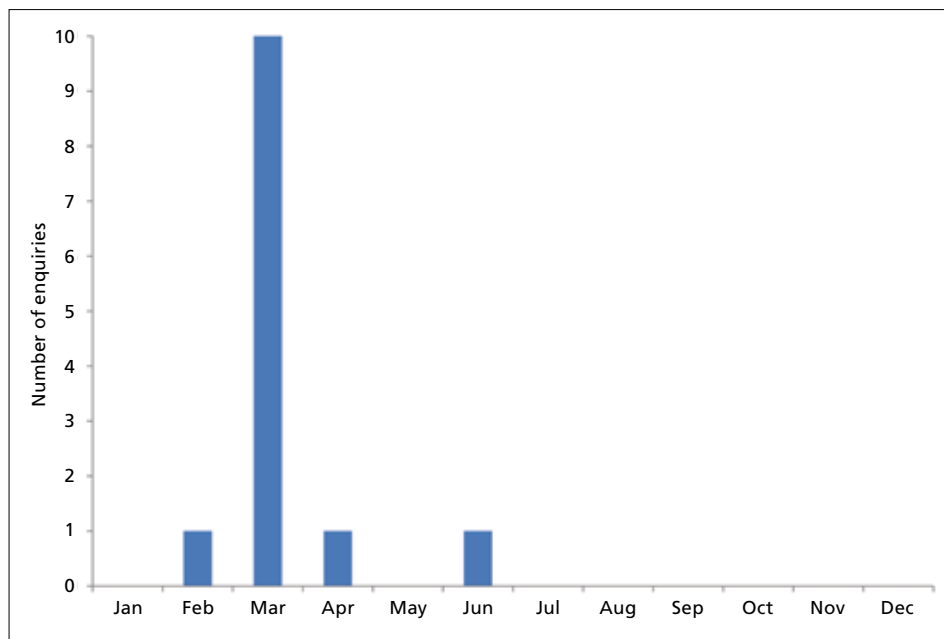


Fig. 15. Total number of enquiries by month relating to Portuguese millipedes *Ommatoiulus moreleti*, compiled for the period 2005–2011 (n = 13)

abundant in urban and suburban areas. It tends not to attract attention to itself except in autumn, when individuals often enter houses, leading to enquiries about their identity. Their pest, nuisance or toxicity status is also of public concern, probably because of the pungent and distasteful quinones that they exude when disturbed, as a deterrent to would-be predators.

'UNDIFFERENTIATED' MOLLUSCS (Mollusca)

Nearly a quarter of all mollusc-related enquiries were categorised as 'undifferentiated'. For the most part, this

reflected a focus on multiple taxa (e.g., enquiries about donations of shell collections). Many enquiries were about shell-necklaces, reflecting the particular expertise of the Curator of Invertebrate Zoology at the time (Elizabeth Turner). These included questions such as what shell species were used; how the shells were collected and prepared; where they were collected; and how the aboriginal status of a shell-necklace could be ascertained. Responses to these queries were often circumspect, because of the cultural significance of necklace-making to the Aboriginal community.

SNAILS AND SLUGS (Mollusca – Gastropoda)

Some 48 individual gastropod species featured in enquiries related to this group, including terrestrial slugs and snails (nine species), freshwater snails (two species) and marine snails and sea-slugs (the remainder). Only two of the nine terrestrial species were natives (as well as being Tasmanian endemics): the large and distinctive wet-forest walnut-snail *Caryodes dufresnii* Leach (six enquiries) (Fig. 16, top) and the coastal tree-trunk snail *Bothriembryon tasmanicus* (Pfeiffer) (three enquiries) (Fig. 16, centre). The two enquiries about white Italian snails *Theba pisana* (Müller) (Fig. 16, bottom) were from 2009 and 2010, perhaps reflecting the recent spread of suburbia into prime coastal habitat for this species on Hobart's southeastern fringes. Amongst marine species, rainbow kelp-shells *Phasianotrochus irisodontes* (Quoy & Gaimard) (Fig. 17, top left) featured prominently, primarily because of their association with Aboriginal shell-necklaces (as discussed above). Conical moon-snails *Polinices conica* (Lamarck) (Fig. 17, bottom left) and the related zoned sinum *Sinum zonale* (Quoy & Gaimard) (Fig. 17, top right) were of interest because of their distinctive egg-masses that are a common feature of sandy beaches. Those of moon-snails (Fig. 19, top left) are transparent, jelly-like and crescent-shaped; sinums' are sand-encrusted and collar-shaped, hence their common name of sand-collars. Enquiries regarding Tasmania's only common species of cone-shell, the anemone cone *Conus anemone* Lamarck (Fig. 17, bottom right), reflected a concern about whether it was venomous like tropical species. In fact it may well be venomous, but its poison dart



Fig. 16. TOP: Walnut snail *Caryodes dufresnii*, shell-length 37 mm, TMAG E9892
CENTRE: Tree-trunk snail *Bothriembryon tasmanicus*, shell-length 23 mm, TMAG E9672
BOTTOM: White Italian snail *Theba pisana*, shell-length 16 mm, TMAG (unregistered)

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is usually targeted at slow-moving marine worms (Kohn 2003) and is unlikely to be unleashed on humans. Another venomous species, the warm-water pelagic sea-slug known as sea-lizard *Glaucus atlanticus* Forster, also attracted enquiries following its first known beaching in Tasmanian waters at the Bay of Fires in January 2007. This species feeds on bluebottles *Physalia*



Fig. 17. TOP LEFT: Rainbow kelp-shell *Phasianotrochus irisodontes*, shell-length 12 mm
 BOTTOM LEFT: Conical moon-snail *Polinices conica*, shell-length 22 mm
 TOP RIGHT: Zoned sinum *Sinum zonale*, shell-length 29 mm
 BOTTOM RIGHT: Anemone cone *Conus anemone*, shell-length 38 mm
 SPECIMENS FROM THE COLLECTION OF, AND IMAGES BY, SIMON GROVE



Fig. 18. LEFT: Northern Pacific sea-star *Asterias amurensis*, body-length 12 mm
 CENTRE: Derwent River sea-star *Marginaster littoralis*, body-length 33 mm, TMAG
 RIGHT: New Zealand sea-star *Patriella regularis*, body-length 47 mm, TMAG H473

ALL IMAGES BY SIMON GROVE

utriculus (La Martinière) (Thompson and Bennett 1970), incorporating its cnidarian host's stinging-cells into its own defences. Its detection in Tasmanian waters was probably associated with the warm East Australian Current, which has strengthened and extended significantly further southwards in recent years (Suthers *et al.* 2011).

OCTOPUS AND SQUID (Mollusca – Cephalopoda)

In this group, the species of most interest was giant squid *Architeuthis cf. dux* Steenstrup. This mysterious denizen of the ocean depths has the reputation of being a ferocious predator and the world's largest invertebrate, so its occasional and unaccountable stranding on Tasmanian beaches (and subsequent transfer to the TMAG collections) attracts particular public interest.

STARFISH, URCHINS AND SEA-CUCUMBERS (Echinodermata)

The most enquired-about echinoderm by far (11 enquiries) was the Northern Pacific sea-star *Asterias amurensis* Lütken (Fig. 18, left). This feral predator became established in the Derwent estuary in the early 1980s (Byrne *et al.* 1997), and was first identified by TMAG's then Curator of Invertebrates, Elizabeth Turner. It is highly visible on occasions when large numbers are cast ashore. The Derwent River sea-star *Marginaster littoralis* Dartnall (Fig. 18, centre) was the subject of six enquiries, all seeking information on its current status and on TMAG-held

material. TMAG holds 28 specimens, including the type material collected in 1969 and described by the then Curator of Zoology, Alan Dartnall. The species is now considered endangered and possibly extinct, perhaps through interbreeding with the very similar but feral and much more abundant New Zealand species *Patriella regularis* (Verrill) (Fig. 18, right), itself the subject of two identification-related enquiries.

CORALS, ANEMONES AND JELLYFISH (Cnidaria)

There were many enquiries concerning summer aggregations of jellyfish in coastal waters, and their nuisance or danger status because of their ability to sting. These mostly related to moon-jellyfish *Aurelia 'aurita'* (Linnaeus) and lions-mane jellyfish *Cyanea 'capillata'* (Linnaeus). Both are cosmopolitan species (actually species-complexes, hence the use of quotation marks); in fact the latter often feeds on the former (Hansson 1997). They often end up being concentrated in shallow waters by prevailing winds and currents, though they mostly live offshore. The tentacles of both species are richly endowed with stinging cells, with those of the lion's-mane jellyfish capable of inducing painful rashes in swimmers.

Dinoflagellates (*Dinoflagellata*). These are the only single-celled organisms that were the subject of enquiry. All three enquiries related to sea-sparkle *Noctiluca scintillans* (Macartney). This is a predatory planktonic species that is now the principal cause of phosphorescence and red tides in Tasmanian coastal waters. First recorded

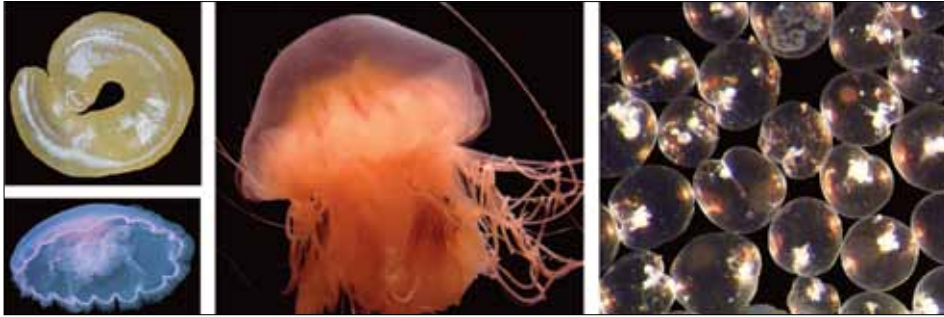


Fig. 19. TOP LEFT: Egg-mass of conical moon-snail *Polinices conica*
 BOTTOM LEFT: Moon-jellyfish *Aurelia aurita* CENTRE: Lions-mane jellyfish *Cyanea capillata*
 RIGHT: Sea-sparkle *Noctiluca scintillans* (greatly magnified)

TOP LEFT IMAGE BY SIMON GROVE; OTHER IMAGES BY LISA GERSHWIN

in southern Tasmania as recently as 1994, blooms of sea-sparkle seem to be on the increase, probably associated with nutrient-enrichment and/or warming waters (McCleod *et al.* 2012). Weather conditions led to memorable blooms of this species in May 2005 and in February and March 2007.

DISCUSSION

This survey has thrown some light on the extent of interest that the Tasmanian public has in invertebrates. Although there is not likely to be a single driver for this interest, it would appear that it is most often piqued by encounters with live invertebrates, most of them either at the beach or in domestic settings (houses, gardens, etc.). This may explain why there is a strong bias amongst the taxon-focused enquiries towards species that are disturbance-tolerant or disturbance-adapted (including many feral species); also why such species tend to be large, striking and/or showy (the ‘wow’ and ‘yuk’ factors). Species with these traits

are more likely to occur in proximity to humans and are more likely to attract attention than are disturbance-intolerant, shy, small or otherwise cryptic species, despite the numerical dominance of these other species across Tasmania as a whole.

The marked seasonality in the rate of enquiries is probably a product of the coincidence of increased human and invertebrate activity over the warmer months. The lull in enquiries in December may correspond with many people (including museum staff) being on leave over Christmas.

The proportion of enquiries concerning potential or actual pests, or venomous or nuisance species, is much higher than the actual proportions of species that bear these traits. People may be seeking reassurance from specialists regarding the risks posed by such species, or may be looking for means of dealing with the risks. Perhaps, too, people with ‘creepy-crawly’ phobias are also demonstrating a need to rationalise and conquer their own fears through seeking more information

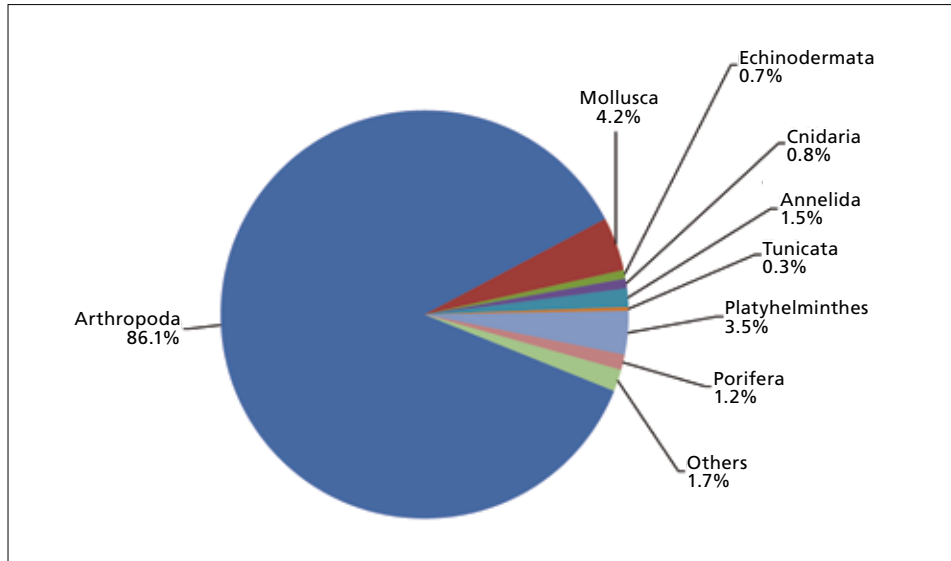


Fig. 20. Estimated proportional representation of Australian invertebrate species richness by phylum
BASED ON CHAPMAN (2009)

on the object of their fears. In other words, in terms of human evolutionary ecology, people's interests in invertebrates may to a large extent be adaptive, and driven by self-preservation.

The survey has also demonstrated the high expectations held by the Tasmanian public regarding the level of expertise of Zoology Unit staff. Given the breadth of taxonomic coverage of identification-related enquiries that were resolved by staff at the species-level (Appendix 1), these expectations have generally been fully realised. Nevertheless, the many responses in which taxa were recorded as 'undifferentiated', rather than particular species, are a reminder that there are practical limits to this expertise, especially in a small institution like TMAG where specialists must also be generalists.

It is worth examining how the taxonomic focus of enquiries compares with the actual proportional representation of taxa. Unfortunately, there are no comprehensive data available for the estimated number of species in Tasmania. For Australia as a whole, the most recent comprehensive attempt (Chapman 2009) came up with an estimate of 566,398 species, of which 147,579 (26%) were considered to be formally described. On the basis of this report, all but 2.5% of multicellular animal species in Australia are likely to be invertebrates (the rest are vertebrates). Among the invertebrates, the arthropods predominate in terms of estimated species richness, accounting for 86.1% of species (Fig. 20). This pattern is well illustrated in *Species-scape* (Fig. 21).

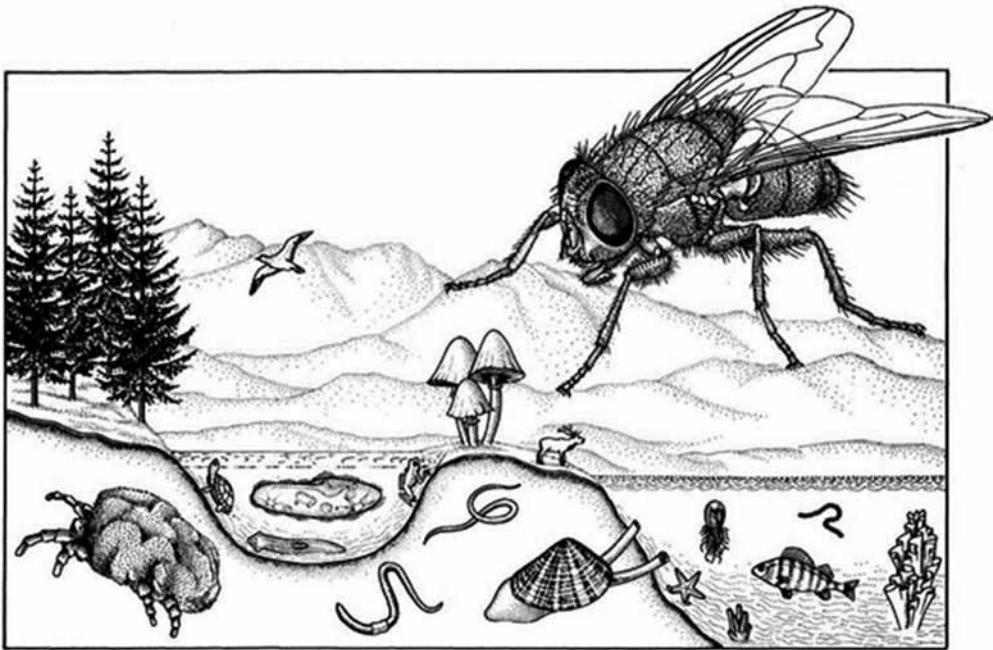


Fig. 21. *Species-scape*, a work that attempts to portray the proportional representation of different life-forms on Earth by relativising the size of representative organisms of different phyla
FROM WHEELER (1990). REPRODUCED WITH THE PERMISSION OF THE PUBLISHERS, THE ENTOMOLOGICAL SOCIETY OF AMERICA

To the extent that it is valid to use Australia-wide estimates in a Tasmanian comparison, it would appear that the proportion of enquiries pertaining to arthropods was relatively low, at 70.2%. On the other hand, the proportion of enquiries pertaining to molluscs was high (at 18.5%) compared to their estimated contribution to species richness (4.2%); likewise echinoderms (starfish, urchins and sea-cucumbers: 3.8% versus 0.7%) and cnidarians (corals, anemones and jellyfish: 3.4% versus 0.8%).

Among the arthropods, the insects predominate in terms of estimated species richness, accounting for 82.1% of species (Fig. 22), nearly double the proportion of

enquiries (44.7%). On the other hand, the proportion of enquiries pertaining to arachnids (spiders and their allies) was nearly four times as high (at 45.5%) as their estimated contribution to species richness (12.5%). Among the insect enquiries, at 25% the moths and butterflies were over-represented compared to their estimated contribution to species richness (9.8%), as were the grasshoppers and crickets (6% of enquiries, compared with 1.4% of species richness). Ants, bees and wasps and flies were represented in proportions very close to their estimated contribution to species richness; while beetles were grossly under-represented (13% of enquiries, compared with 44% of species richness).

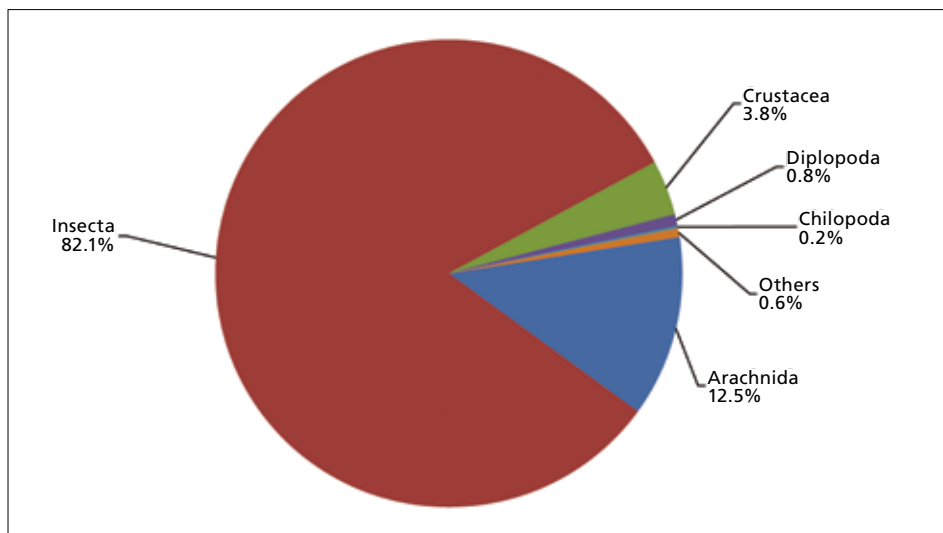


Fig. 22. Estimated proportional representation of Australian arthropod species richness by class. Note that no data were available for Pycnogonida

BASED ON CHAPMAN (2009)

The specialist interests of Zoology Unit staff may partially account for the preponderance of enquiries relating to certain taxa. Indeed, 'taxonomic chauvinism' is thought to be a significant issue amongst taxonomic institutions, manifesting in research bias towards 'favoured' (usually more charismatic or tractable) taxonomic groups (e.g., among vertebrate taxa: Bonnett *et al.* 2002; among insect taxa: Leather 2009). It is also insidious in ecological field-studies, in which the approach to studying less-favoured groups such as beetles and moths has a tendency to involve cheaper, shorter-term studies than for more-favoured groups such as birds and mammals (Pawar 2003). In the case of the Zoology Unit, various staff incumbent over the period of this study were widely known amongst the Tasmanian public for their

specialist expertise in spiders, molluscs (including shell necklaces), crustaceans, jellyfish, corals, moths and pest insects, and would have been preferentially consulted accordingly. However, the development of expertise in those groups was itself in part a response to the level of public interest. TMAG is not alone in this regard. At the Australian Museum, 'the current [research] emphasis in the [invertebrate] collections is crustaceans, worms, insects, spiders and molluscs' (Australian Museum 2012).

This study has also demonstrated that taxonomic surprises continue to emerge as a result of the fruitful liaison between Zoology Unit specialist staff and the general public. Specialists' identification of painted cup-moth as the source of the recent outbreaks of eucalypt defoliation near Hobart is one such example;

specialists' detection of the incursion into the Derwent estuary of feral Northern Pacific sea-stars is another.

CONCLUSION

This study has demonstrated that the Tasmanian public has a substantial interest in the state's invertebrates, albeit with distinct biases towards certain taxa. These biases probably reflect a combination of observability, aesthetics, 'wow' and 'yuk' factors, and perceived threat to person or property.

The study has also demonstrated that responding to these enquiries requires specialist staff with a deep understanding of invertebrate taxonomy across a very broad range of taxa, but with a degree of specialisation in the taxa of most interest to the public. Maintaining and nurturing this expertise will remain an important function of the museum if it is to continue to meet the high expectations of the Tasmanian public. Taxonomic surprises seem likely to continue to emerge through this liaison, and some of these may have major management implications.

Appendix 1

The 438 taxa that were the subject of taxon-focused invertebrate enquiries to TMAG over the period 2005–2011 ($n = 1084$) can be found on the TMAG public access website at:

<http://www.tmag.tas.gov.au/kanunna>

For each taxon, figures are provided separately for the number of enquiries

concerning identification and information. Taxa are listed in order of descending number of enquiries per taxonomic group, first at the level of phylum, then class within phylum, order within class, family within order, and finally species within family. Note that not all of the taxa are found in Tasmania.

Acknowledgements

Zoology Units specialist staff responsible for responding to enquiries over all or some of the period 2005–2011 were Elizabeth (Liz) Turner, Dr Genefer (Gen) Walker-Smith, Kirrily Moore, Dr Catherine (Cathy) Byrne, Ruth Mollison and Dr Jennifer (Jen) Lavers, ably assisted by volunteers Hilton Redgrove and Michael (Mike) Bouffard.

Dr Lisa Gershwin kindly allowed the use of her images of jellyfish and sea-sparkle. Cathy Byrne, Associate Professor Alastair Richardson (University of Tasmania) and Lynette Forster (University of Tasmania) kindly commented on a previous version of the manuscript.

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A NEW LICHENISED BASIDIOMYCETE FROM TASMANIA

G. Kantvilas and S.J. Jarman

Kantvilas, G. & Jarman, S.J. 2012. A new lichenised basidiomycete from Tasmania. *Kanunnah* 5: 106–112. ISSN 1832-536X. *Lichenomphalia tasmanica* Kantvilas *sp. nov.* is described and illustrated. The new species has a scattered occurrence in the highlands of Tasmania and is characterised by a *Coriscium*-type thallus of convex squamules, bright yellow-orange mushroom-like fruiting bodies, mostly four-spored basidia and ovate to broadly ellipsoid basidiospores, 7.5–10 × 5–6.5 µm. It appears to be most closely related to *L. lobata* (Redhead & Kuyper) Redhead *et al.* from South America.

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KEY WORDS: basidiolichens, biodiversity, lichens, *Omphalina*, *Phytoconis*, taxonomy

INTRODUCTION

In comparison to the Ascomycota, lichenised Basidiomycota are very infrequent (Oberwinkler 1970, 1974). In Tasmania, of the estimated 1200–1500 species of lichenised fungi (G. Kantvilas, unpubl.), only four genera of basidiolichens have been recorded: the bracket fungus *Dictyonema sericeum* (Sw.) Berk. (Kantvilas & James 1987); the club fungi *Multioclavula mucida* (Fr.) R.H. Petersen and *M. vernalis* (Schwein) R.H. Petersen (Petersen & Kantvilas 1986); and several lichenised mushrooms, namely *Marasmiellus affixus* (Berk.) Singer (Kantvilas & May 1995); *Lichenomphalia*

umbellifera (L. ex Fr.) Redhead *et al.* and *L. chromacea* (Cleland) Redhead *et al.* (Kantvilas & May 1995, Kantvilas 1994, Kantvilas & Jarman 1999; as *Omphalina*). Apart from the *Dictyonema*, which has a ± byssoid thallus, the other species are noteworthy in that their lichenised thallus is at best a basal, indeterminate algal mat penetrated by a fungal mycelium from which the typical basidiocarps arise. The new species described below is very distinctive in that it produces a distinctly squamulose, determinate thallus, which is unusual in basidiolichens as a whole.

For many years, the authors observed this organism in its sterile form, growing

on damp alpine soils, but were unable to identify it. In some respects, it resembled a number of known lichens, notably a discoloured *Trapeliopsis colensoi* (C. Bab.) Gott. Schneider, or perhaps a moribund *Arthrgraphis citrinella* var. *catolechiooides* Obermayer or *Solenopsis tasmanica* Kantvilas. However, the mystery organism differed from all these species by its anatomy and by lacking any secondary chemical metabolites. Thus it was very exciting when the species was finally encountered fertile, producing not ascomata as expected but attractive, yellow-orange, mushroom-like basidiocarps. The first fertile collections were from remote areas and by the time they were returned to the laboratory they were inadequate for formal description. Recently, fresh, well-developed material suitable for illustration and morphological and anatomical examination was collected, and the species is formally described below in the lichenised basidiomycete genus *Lichenomphalia*.

Material and methods

The work is based on collections of the first author, housed in the Tasmanian Herbarium (HO). Comparative information on other taxa was derived from published sources and reference herbarium specimens (also held in HO).

Anatomical observations are based on hand-cut sections of the basal squamules, stipe and pileus, mounted in water, lactophenol cotton blue and ammoniacal erythrosin. The last medium was used routinely for measurement of basidia and basidiospores. Dimensions of basidiospores are presented in the format 5th percentile–average–95th percentile, with outlying values in parentheses.

TAXONOMY

Lichenomphalia tasmanica

Kantvilas sp. nov.

Mycobank No.: MB801203

Quoad thallum squamulosum typi *Coriscii* ad *Lichenomphaliam hudsonianam* accedit sed ab ea squamulis convexis, crenulatis lobatisque valde differt.

TYPE: Tasmania: track to Nevada Peak, 42°55'S 146°40'E, 1150 m alt., on soil amongst boulders in subalpine heathland, 29 March 2012, G. Kantvilas 261/12 & B. de Villiers (HO–holotype).

Thallus squamulose, of the *Coriscium*-type, bright green when fresh, drying to a dull olive or green-grey. *Squamules* strongly convex, 0.5–2 mm wide, 0.5–1 mm thick, irregularly crenulate to lobate, at first scattered, soon becoming crowded, overlapping and fusing together in rather lobulate clumps 5–10 mm wide, spreading across the substratum in uneven, discontinuous patches to 10 cm across; upper surface minutely pitted and uneven, with a rather discontinuous, hyaline cortex 20–50 µm thick composed mostly of elongate hyphae with occasional parenchymatous cells; lower surface mostly ecorticate, attached to the substratum by medullary hyphae. *Basidioma* a mushroom. *Pileus* bright yellow-orange, drying to a pale orange-pink, 3–11 mm wide, ± hemispherical to bluntly conical when young, soon plano-convex, sometimes with a slight central depression when mature; margin entire or, more commonly, crenulate, ± translucent and weakly striate; pileipellis of ± parallel,



Fig. 1. *Lichenomphalia tasmanica*: habit

cylindrical, interwoven hyphae 4–8 μm thick lacking clamp connections. *Stipe* 5–10 mm tall, central, minutely tomentose, white when fresh, persistently so or drying to a very pale orange-pink \pm concolorous with the dry pileus. *Lamellae* decurrent, rather distant, concolorous with the pileus or paler. *Basidia* (2,) 4-spored, clavate, 6.5–10 μm wide, 30–40 μm long; sterigmata 5–8 μm long. *Basidiospores* hyaline, thin-walled, smooth, ovate to broadly ellipsoid, (6–)7.5–8.5–10 \times (4.5–)5–5.7–6.5(–7) μm . *Cystidia* absent. *Lamellar trama* hyphae 4–6 μm thick, lacking clamp connections, with pigment very dilute, intercellular.

Ecology and distribution

All collections cited below are from sub-alpine to alpine elevations. The squamules encrust consolidated moist soil

rich in organic matter, usually amongst small stones in gaps in heathland; the edges of tracks, either animal or human, are a typical habitat. Associated species typically include rather depauperate thalli of lichens such as *Parasiphula fragilis* (Hook.f. & Taylor) Kantvilas & Grube, *Siphula decumbens* Nyl., and squamules of *Cladonia* species.

It is difficult to determine the fruiting season of this fungus from the collections available. That most are from late summer–early autumn is probably an artefact of this being the most likely time for high-altitude fieldwork in Tasmania; one collection is from June, which can be considered early winter. However, we certainly have a perception that this species does not fruit annually. In some years it may be observed several times



Fig. 2. *Lichenomphalia tasmanica*: holotype

- A.** Squamulose, lichenised basal thallus
- B–D.** Developing mushroom-like basidiocarps and squamulose thallus
- E.** Top view of mature basidiocarp, showing the pileus with translucent, crenulate margin
- F.** Lateral view of mature basidiocarp, showing decurrent, distant lamellae

at different locations, but then in other years it is not seen at all. The sterile, basal portions tend to be inconspicuous and collected fortuitously, attached to collections of other species.

Two unusual specimens from low-land eucalypt forest (*A.M. Gray* 1103, *G. Kantvilas* 175/99, both in HO) have a thallus of convex, coalescing squamules similar to that of the new species, and \pm identical basidiospores, but their stipe is relatively long, slender and flexuose and the pileus is somewhat funnel-shaped to plane throughout its development. They are excluded from our concept of *L. tasmanica* at this stage and require further study.

SPECIMENS EXAMINED: TASMANIA: Devils Backbone, 43°13'S 146°45'E, 12.v.1996, *G. Kantvilas* 53/96 (HO); Mt Wellington summit, 42°54'S 147°14'E, 1220 m alt., 15.iv.1996, *G. Kantvilas* 35/96 (HO); Hill One, Moonlight Ridge, 43°28'S 146°46'E, 1000 m alt., 31.iii.1997, *G. Kantvilas* 86/97; southern slopes of Bishop Peak, 41°52'S 146°08'E, 1350 m alt., 20.iii.1999, *G. Kantvilas* 79/99 (E, HO); Cathedral Mountain, 41°53'S 146°06'E, 1380 m alt., 20.iii.1999, *G. Kantvilas* 85/99 (HO); summit of Drys Bluff, 41°42'S 146°49'E, 1290 m alt., 23.vi.2002, *G. Kantvilas* 352/02 (HO); Rodway Range at main saddle, 42°41'S 146°34'E, 1285 m alt., 17.iv.2006, *G. Kantvilas* 201/06 (HO).

Discussion

The lichenised members of the genus *Omphalina sens. lat.* have had a rather chequered nomenclatural history. In early floras and guides for the Northern Hemisphere (e.g. Duncan 1970), the fruiting bodies were recognised as belonging to *Omphalina*, even as the name

Coriscium viride (Ach.) Vain. was applied to the squamulose basal thallus and the name *Botrydina vulgaris* Bréb. used for the granular-crustose thallus. More recently, the name *Omphalina* was applied to the total lichenised organism. The lichenised species were segregated first in the genus *Botrydina* by Redhead & Kuyper (1988) and then in *Phytoconis* by Redhead & Kuyper (1988) but, for nomenclatural reasons, neither genus could be adopted (see Redhead *et al.* 2002). Hence the name *Lichenomphalia* was coined and the notion that the lichenised members of *Omphalina sens. lat.* form a distinct genus is supported by morphological, anatomical and molecular evidence (Redhead & Kuyper 1987, Lutzoni & Vilgalys 1995, Moncalvo *et al.* 2002, Redhead *et al.* 2002).

In addition to the new taxon, there are only two other squamulose species of *Lichenomphalia* in the literature. One is *L. hudsoniana* (H.S. Jenn.) Redhead *et al.*, the currently accepted name for *Coriscium viride*, which is widespread in the Northern Hemisphere, especially in montane regions (Watling & Woods 2009). This clearly differs from the new species by its basal thallus in which the squamules are concave with upturned whitish edges. In contrast, in *L. tasmanica*, the squamules shrink appreciably on drying but nevertheless retain their characteristic convex form. The basidiocarp and dimensions of basidia and basidiospores are very similar in both taxa. The second squamulose taxon is *L. lobata* (Redhead & Kuyper) Redhead *et al.*, which was first described as a species of *Botrydina* by Redhead & Kuyper (1987), based on collections from alpine elevations in Colombia and Venezuela. As with *L. tasmanica*, *L. lobata* differs from

L. hudsoniana chiefly by its convex thallus, but its distinctiveness has been further confirmed by molecular data (Palice *et al.* 2005, Geml *et al.* 2012). With only a relatively scant published description of *L. lobata* available, it is difficult to evaluate how it differs from *L. tasmanica*. However, the former seems to be a generally larger organism, with broader squamules (2–3 mm), a taller, glabrous stipe (10–15 mm), and a wider pileus (10–14 mm) (Redhead & Kuyper 1987). It is not impossible that the Tasmanian and South American organisms are conspecific, and certainly Geml *et al.* (2012) demonstrate the wide dispersal of *Lichenomphalia* species (notably *L. umbellifera*) in the Northern Hemisphere. At the same time, however, these authors (*op. cit.*) also note the genetic distinctions between Northern and Southern Hemisphere populations of *L. umbellifera sens. lat.*, and the problems of dispersal across the tropics. Hence the relationships between *L. lobata* and *L. tasmanica* will probably be resolved only with molecular data. In the meantime, we elect to describe the Tasmanian entity as distinct in view of the morphological differences between it and *L. lobata* mentioned above and the wide geographical disjunction between these two taxa.

Other Tasmanian species of *Lichenomphalia*

The genus *Lichenomphalia* has been poorly collected in Tasmania and many of the collections that have been made by mycologists (as distinct from lichenologists) include only the fruiting bodies. However, two additional species have been recorded and these are mentioned briefly below.

***Lichenomphalia chromacea* (Cleland) Redhead, Lutzoni, Moncalvo & Vilgalys**

Widely scattered on sandy or peaty soil in heathland and woodland, but with most collections from higher elevations. Recognised by the granular, *Botrydina*-type thallus and the vividly yellow to orange-yellow basidiocarps that dry to a pale yellowish orange; the basidia are four-spored (very rarely two-spored) and the basidiospores are 8–10 x 5–6.5 µm (Tasmanian collections). See Grgurinovic (1997) for full description and Fuhrer (2005) for an illustration.

SPECIMENS EXAMINED: TASMANIA: Crater Peak, 41°39'S 145°56'E, 1200 m alt., 16.ii.1984, G. Kantvilas 413/84 & P. James (BM, HO); Navarre River, 42°09'S 146°08'E, 840 m alt., 2.ii.1986, G. Kantvilas 41/86 (HO); Overland Track between Waterfall Valley Hut and Cirque Hut, 41°43'S 145°57'E, 3.vi.1992, T.W. May 798 (HO, MEL); Arve Loop, 43°09'S 146°45'E, 240 m alt., 23.ix.1992, Y.S. Chang 572 (HO); Mt Norold, 43°15'S 146°15'E, 950 m alt., 24.ii.1994, G. Kantvilas 50/94 (HO); Mt Murchison, 41°48'S 145°37'E, 850 m alt., 12.ii.1995, G. Kantvilas 22/95 (HO); Peter Murrell Nature Reserve, 43°00'26"S 147°17'57"E, 40 m alt., 7.v.1999, S. McMullan-Fisher 208 (HO, MEL); near summit of Black Bluff, 41°27'S 145°57'E, 1300 m alt., 26.iii.2000, G. Kantvilas 139/00 (HO); Southlea, Kingston, 42°56'S 147°19'E, 26.v.2001, J.A. Cooke 10 (HO); Lower Longley, 42°57'56"S 147°08'52"E, 400 m alt., 4.vi.2001, A.M. Gray 1104 (HO).

***Lichenomphalia umbellifera* (L. : Fr.)
Redhead, Lutzoni, Moncalvo &
Vilgalys**

A widespread species, especially abundant on sandy, peaty soils in damp places in open eucalypt forest; it may also occur on rotting wood in rainforest. Recognised by the granular, *Botrydina*-type thallus, the orange-brown basidiocarps that dry to a dull ± purple-brown, the four-spored basidia and broadly ellipsoid to ovate basidiospores, 7–8 x 4–6 µm (Tasmanian

collections). See Watling & Woods (2009) for description and Kantvilas & Jarman (1999) and Fuhrer (2005) for illustrations.

SPECIMENS EXAMINED: TASMANIA: Adamsons Falls Track, 43°22'S 146°51'E, 25.ix.1981, G. Kantvilas 959/81 & A. Henssen 27568 (H, HO); Sumac Road, Spur 2, 41°08'S 145°02'E, 30.i.1992, G. Kantvilas 86/92, B. Fuhrer & J. Jarman (HO); Lower Longley, 42°57'56"S 147°08'52"E, 400 m alt., 4.vi.2001, A.M. Gray 1106 (HO).

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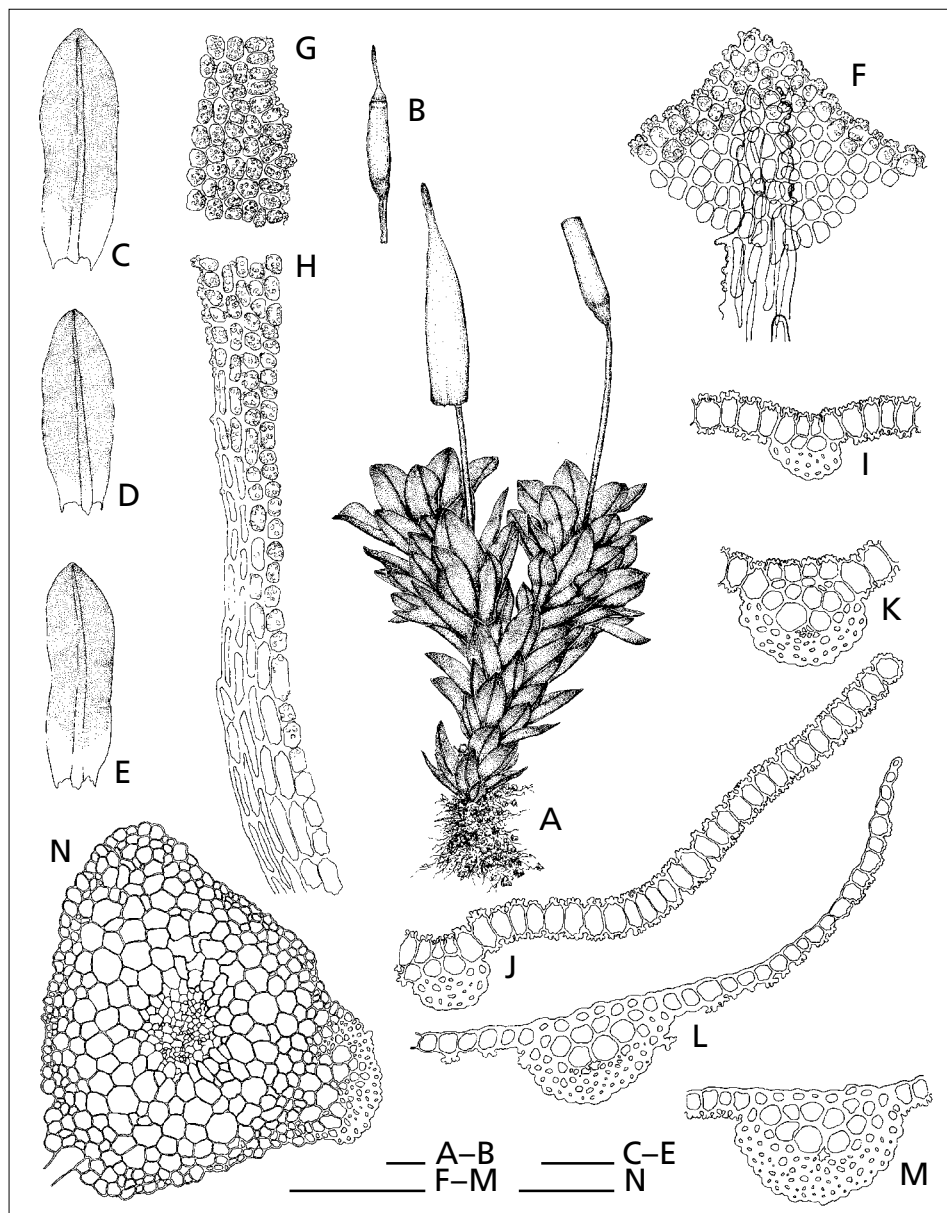
A CANDLE-SNUFFER MOSS
IN THE FLORA OF TASMANIA:
ENCALYPTA (BRYOPSIDA: ENCALYPTACEAE)

Diana G. Horton

Horton, D.G. 2012. A candle-snuffer moss in the *Flora of Tasmania: Encalypta* (Bryopsida: Encalyptaceae). *Kanunnah* 5: 113–126. ISSN 1832-536X. *Encalypta vulgaris* is the only species of Encalyptaceae recorded from Tasmania where it has been documented from widespread coastal and interior localities. Populations occur on soil, generally on rock outcrops, from 100 to 800 m, typically as a mass of sporophytes with capsules covered by the mitrate, long-cylindric calyptra that defines the family. Two of three endemic Australian *Encalypta* species, *E. tasmanica* and *E. australis*, are based on Tasmanian specimens. E. Hampe's description of *E. tasmanica* does not include citation of a type; however, in an earlier publication, he reported *E. vulgaris* collected by C. Stuart in Van Diemensland. The Lectotype of *E. tasmanica* in Hampe's herbarium in the Natural History Museum London (BM) and two Isotypes discovered recently in the Royal Botanic Gardens Melbourne (MEL) also bear the name, *E. vulgaris*, and were collected by C. Stuart in Van Diemensland. W. Wilson described *E. australis* in J.D. Hooker's *Flora Tasmaniae*, based on specimens collected by W. Archer near the Cataract, Launceston, and near Cheshunt. The Lectotype and a probable Isotype or Syntype are in Hooker's herbarium in BM.

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KEY WORDS: Encalyptaceae; *Encalypta vulgaris*, Tasmania; *E. tasmanica*, *E. australis*, Tasmanian types, synonyms



INTRODUCTION

A mitrate, long-cylindric and rostrate calyptra (Fig. 1A) is the quintessential feature of Encalyptaceae. It is the first thing one is likely to notice because populations of most species generally have abundant sporophytes and the distinctive calyptrae are persistent and cover the capsules, as suggested by the Latin name *en-* (with or in) and *calypus* (covered or enveloping) and the common names, Candle-snuffer Moss and Glockenhut. This is a small family with two genera, *Encalypta* Hedwig and *Bryobrittonia* Williams, the former comprised of *c.* 25 species, the latter monotypic. *Bryobrittonia* is restricted to northerly regions of North America and Eurasia in tundra and montane habitats, and species of *Encalypta* similarly are concentrated in the Northern Hemisphere, mainly in northern regions, although two species (*E. asperifolia* Mitten and *E. armata* Brotherus in Dusén) are endemic to South America, and four (*E. ciliata* Hedwig, *E. procera* Bruch, *E. rhaptocarpa* Schwaegrichen, and *E. vulgaris* Hedwig) extend into the Southern Hemisphere variously in South America, Antarctica, Africa, New Guinea, and Australia (Horton 1983, 2012). Stone (1977) suggested that *Bryobartramia* Sainsbury might belong in Encalyptaceae and Zander (1993) placed

it there. Subsequently, it has been aligned with Encalyptaceae, for example, by Hedderson *et al.* (2004), and Goffinet and Buck (2004), while Buck and Goffinet (2000) and Goffinet *et al.* (2008, 2012) have treated it as a monotypic family in either Pottiales or Encalyptales, respectively. I am doubtful that *Bryobartramia* belongs in Encalyptales.

Species of *Encalypta* are characterised by an unusually diverse peristome structure that Philibert (1884–1890) interpreted as representing nematodontous and arthrodontous, diplolepeidous and haplolepeidous peristomes. He treated Encalyptaceae as a basal group from which other mosses had diverged. Fleischer (1904) considered all *Encalypta* peristomes to be arthrodontous, but he placed Encalyptaceae alone in the Heterolepeidae, separate from, and in a central position between, Haplolepeidae and Diplolepeidae. Edwards (1979, 1984) reported that the 2:3 pattern characteristic of haplolepeidous mosses is not present in *Encalypta* species and noted that *Encalypta* species Philibert considered nematodontous actually are arthrodontous. Vitt (1984) proposed a new classification of Bryopsida with two arthrodontous lineages linked by groups with diplolepeidous, opposite

Fig. 1. *Encalypta vulgaris* Hedw.

A. Plant with calyptra and dehisced capsule, drawn moist. **B.** Capsule with operculum.

C–E. Stem leaves. **F.** Cells of leaf apex, abaxial view, papillae mostly omitted for clarity.

G. Upper mid laminal cells. **H.** Marginal cells, including transition from upper papillose cells to smooth, narrowly elongate marginal and oblong basal laminal cells.

I–M. Transverse sections of leaf and costal region, showing single abaxial stereid band in costa.

N. Stem section, with central strand.

SCALES: = 1.0 mm FOR A, B = 1.0 mm FOR C–E = 100 μ m FOR F–M = 100 μ m FOR N

DRAWN FROM R.D. SEPPELT 29130, THE SPRINGS, MT WELLINGTON (ADT, IN HO). REPRODUCED WITH PERMISSION OF THE ARTIST AND FLORA OF AUSTRALIA

(segments and teeth) peristomes. He placed Encalyptineae near Buxbamiineae at the base of the haplolepidous lineage, and Funariineae at the base of the diplolepidous lineage. More recently, molecular and morphological analyses, including those of Newton *et al.* (2000), Goffinet and Cox (2000), Buck and Goffinet (2000), Goffinet and Buck (2004), Goffinet *et al.* (2007), and Goffinet *et al.* (2008, 2012), generally support Vitt's (1984) recognition of close relationships among Encalyptaceae, Funariaceae and Buxbaumiaceae/Diphysciaceae, and a near-basal phylogenetic position of Encalyptaceae among Bryopsida.

Encalyptaceae are concentrated in tundra and montane habitats where they form tufts or turfs on exposed soil, frequently in association with rock outcrops. Substrate pH is a significant ecological factor with some species restricted either to calcareous or siliceous substrates and others tolerant of a broader range of pH (Horton 1982, 1983, 1988).

ENCALYPTACEAE Schimp.,
Coroll. Bryol. Eur.: 38 (1855/1856)

TYPE: *Encalypta* Hedw., *Sp. Musc. Frond.*: 60 (1801)

Plants medium-size; stems erect and simple or branched, central strand distinct or undifferentiated; axillary hairs sparse to abundant; brood bodies absent or present, clusters of dark brown filaments; leaves \pm twisted and contorted with laminae inflexed to conduplicate or involute when dry and erect-spreading to reflexed when moist, \pm oblong to lanceolate-oblong, apices

\pm broadly obtuse or acute to narrowly acute, mucous to hair-pointed; margins plane to recurved, distally minutely (microscopically) crenulate or serrulate; costa single, strong, subpercurrent to excurrent, abaxial surface \pm keeled, smooth to \pm prurulose or papillose or spinose; in transverse section a central strand is present or absent and there is a single abaxial band of stereids; distal laminal cells chlorophyllose, \pm quadrate, papillose on both surfaces or smooth on the adaxial surface and mammillose on the abaxial; basal cells hyaline or \pm chlorophyllose, broadly oblong, smooth on both surfaces or papillose on the abaxial, transverse walls \pm thickened and yellow to brick-red or greenish to pale orange or brownish, longitudinal walls thin and hyaline or greenish to orange or brownish; basal marginal cells undifferentiated to narrowly oblong. Goniatocous or dioicous. Perichaetial leaves \pm differentiated; perigonial paraphyses with distal cells undifferentiated or enlarged. Seta short to elongate. Capsule erect, smooth to longitudinally or spirally furrowed. Annulus undifferentiated to massive. Operculum conical, convex or concave-plane and short- to long-rostrate. Peristome absent, single or double, if single there are 16 or fewer teeth, \pm well-developed and lanceolate to fragile, stunted and ephemeral, if double the two layers are \pm fused or free with 16 linear and \pm elongate to shorter, lanceolate exostomial teeth opposite 16 endostomial segments. Spores highly variable in size, shape, polarity and ornamentation. Calyptra persistent, mitrate, elongate-cylindrical and generally covering the capsule, with a \pm elongate beak distally and \pm entire or fringed basally.

***Encalypta* Hedw., *Sp. Musc. Frond.*: 60 (1801)**

TYPE: *Encalypta ciliata* Hedw., *Sp. Musc. Frond.*: 61 (1801)

SYNONYM: *Leersia* Hedw. ex Batsch, *Tab. Afd.* 264 (1802)

Leaves with laminae inflexed to conduplicate when dry; margins minutely crenulate distally; distal leaf cells papillose on both surfaces; basal cells achlorophyllose. Perigonial paraphyses with undifferentiated distal cells.

The greater part of the structural variation described for Encalyptaceae, including all that is sporophytic, reflects that among species of *Encalypta*. The features that differentiate *Encalypta* from *Bryobrittonia* are all gametophytic, and the most obvious are densely papillose distal laminal cells (they are smooth on the adaxial surface and mammillose on the abaxial in *Bryobrittonia*) and hyaline basal cells (chlorophyllose in *Bryobrittonia*).

Vegetative plants of *Encalypta* are strikingly similar to those of some species of *Syntrichia* Brid./*Tortula* Hedw., so much so that they are difficult to differentiate if sporophytes are absent. Plants of at least some species of *Syntrichia/Tortula* share with *Encalypta* species a moderate size, markedly different wet and dry habit (dry leaves twisted and contorted, moist erect-spreading to reflexed and collectively almost flower-like, Fig. 1A), leaf shape that is oblong with broad, muticous to hair-pointed apices, upper leaf cells that are chlorophyllose, isodiametric, bulging and densely papillose (Fig. 1 G, K), and basal cells that are hyaline, enlarged, oblong

and smooth (Fig. 1 H). The only feature that reliably separates these genera is, in *Encalypta*, at least the transverse walls (and also the longitudinal walls in some) of the basal cells are yellow to brick-red, while those of *Syntrichia/Tortula* are hyaline or greenish.

Encalypta ciliata was reported from eastern Australia by Mitten, according to Paris (1904), but all Tasmanian and Australian specimens examined are *E. vulgaris*.

***Encalypta vulgaris* Hedw., *Sp. Musc. Frond.*: 60 (1801)**

TYPE: ‘*Bryum extincitorium* anther erecta oblonga minori, calyptras laxis aequalibus. Linn. Sp. pl. 2. P. 1581. 5. *Bryum calyptras extincitorii forma minus* Dill. Musc. 349. T. 45. F. 8. Enc. vulgaris Hedw. St. Crypt. p. 46. t. 18.’; Lectotype: G-Hedw.-Schwaegr.

SYNONYM: *Encalypta tasmanica* Müll. Hal. & Hampe, *Linnaea* 26: 491 (1855).

TYPE: ‘Tasmania, Van Diemensland leg. C. Stuart’; Lectotype: BM-Hampe; Isotypes (2): MEL; Syntype: BM-Hampe.

SYNONYM: *Encalypta vulgaris* Hedw. var. *tasmanica* Hampe, *Linnaea* 26: 491 (1855), *nom. inval. in synon., E. tasmanica*.

SYNONYM: *Encalypta australis* Mitt. in Wilson in Hooker f., *Fl. Tasman.* 2: 182 (1859).

TYPE: ‘Near the Cataract, Launceston, Tas., and on the fossiliferous limestone near Cheshunt, W. Archer’; Lectotype: BM-Hooker; Isotype: BM-Hooker.

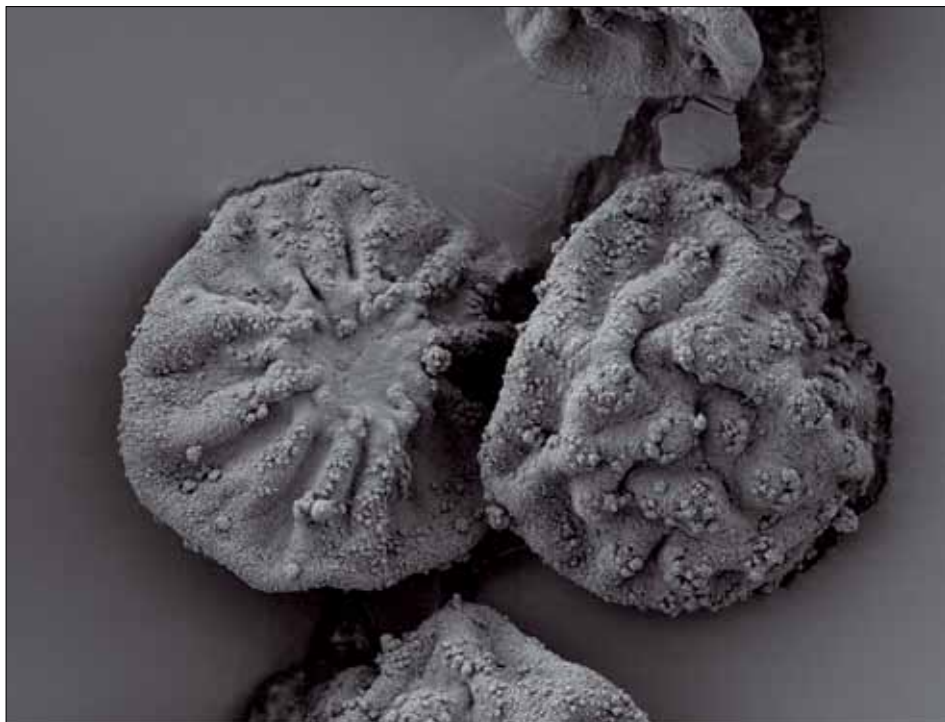


Fig. 2. Scanning electron micrograph of spores of *Encalypta vulgaris*, showing ornamentation of proximal (left) and distal (right) surfaces. Note prominent gemmae on the distal surface

FROM R.D. SEPPELT 29130

SYNONYM: *Encalypta novae-valesiae* Hampe, as *novae-valisiae*, *Linnaea* 37: 513 (1872).

TYPE: 'Blue Mountains, New South Wales'; Holotype: BM-Hampe.

SYNONYM: *Pyramitrium novae-valesiae* (Hampe) Mitten, *Trans. & Proc. Roy. Soc. Victoria* 19: 61 (1882).

Stems with central strand present or undifferentiated; axillary hairs sparse; brood bodies absent; leaves 2.2–3.1 (–4.0) mm long, 0.9–1.2 mm wide,

oblong to narrowly obovate, apex mucicous, broad and \pm rounded to bluntly and broadly mucronate; margins plane; costa prominently keeled even near apex, sparsely prorulose, glossy yellow to brown; distal laminal cells 11–18(–21) \times (9–)13–18(–21) μm wide with 3–7 papillae; basal cells 22–80 \times 9–18 μm , smooth with transverse walls pale orange and longitudinal walls hyaline; basal marginal cells narrow, in a band 4–6 cells wide.

Goniautoicous. Calyptra 3–6 mm long, including the 0.9–1.8 mm beak, glossy,

golden, slightly translucent, smooth to \pm papillose, basally \pm erose, the beak narrow. Seta 2–11 mm long, untwisted or 1 or 2 dextrorse twists near capsule, dull to \pm glossy, red below, orange to yellow near capsule. Capsule 1–4 mm long, golden with a narrow bright-red rim, delicately puckered, sometimes delicately longitudinally striate, neck indistinct. Annulus undifferentiated. Operculum concave-plane and rostrate. Peristome usually absent or single, white and fragile with 16 or fewer poorly developed teeth. Spores 35–40 μm in diameter, brown, heteropolar, proximal face \pm smooth centrally or with low gemmae, \pm radially plicate, distal face with large hollow gemmae, 5–6 μm in diameter.

REPRESENTATIVE SPECIMENS EXAMINED

Lenah Valley, A.V.Ratkowsky 665, 13.x.1979 (AD); Along Nelson Creek at Tasman Hwy c. 7 m W of Buckland, D.H.Norris 31125, Dec. 24 1973 (BRI); Lindisfarne (East Derwent Valley), W.A.Weymouth (Det.: L. Rodway), Aug. 1914 (HO); Road below Longley, A.V.Ratkowsky H663 (Det.: D.A.Ratkowsky), Jan. 4 1980 (HO); Mt. Faulkner, A.V.Ratkowsky H664 (Det.: D.A.Ratkowsky), Jan. 13 1980 (HO); Central Highlands, Snowy Knob, A.Moscal 18844, Feb. 12 1990 (HO); Nile, McLeod, Sept. 1884 (MEL); New Town, W.A.Weymouth 59, Sept. 24 1889 (NSW).

Tasmanian *E. vulgaris* is characterised by a pale-golden, basally erose calyptra that extends well below the capsules and has a narrow, straight or slightly curved beak (Fig. 1A); a golden capsule with a delicately

puckered or delicately longitudinally striate urn and a narrow, bright-red rim, peristome absent in most or white, poorly developed and evanescent, and heteropolar spores with prominent, large gemmae on the distal surface (Fig. 2); a red seta that is untwisted or with 1 to 2 twists just below the capsule (Figs. 1A & 1B); oblong to narrowly obovate leaves with rounded to broadly acute or bluntly and broadly mucronate apices (Figs. 1 C–F), laminae that are greyish-green to yellowish-green and, on the abaxial surface, a prominent, shiny, yellow to brown costa that extends almost to the apex (Fig. 1F).

Striking variation in plant size among Tasmanian (and Australian) populations could reflect variation in available moisture. Leaves range from just over 2 to 4 mm long, setae from 2 to 11 mm, capsules from 1 to 4 mm and calyptrae from 3 to 6 mm.

In Tasmania, *E. vulgaris* has been recorded from numerous coastal localities in the vicinity of Hobart and fewer, widespread localities elsewhere (Fig. 3). It seems likely that these disjunctions reflect the paucity of collecting localities or collections elsewhere on the island. A range of elevations from 100 to 800 m have been recorded. As is typical for species of Encalyptaceae, Tasmanian populations of *E. vulgaris* occur on soil, generally on moist rock outcrops that include sandstone and dolerite.

Sorting the typification tangle

Australian synonyms of *E. vulgaris* include three endemic species, *E. tasmanica*, *E. australis* and *E. novae-vaesiae*. The first two names are based on specimens collected in Tasmania.

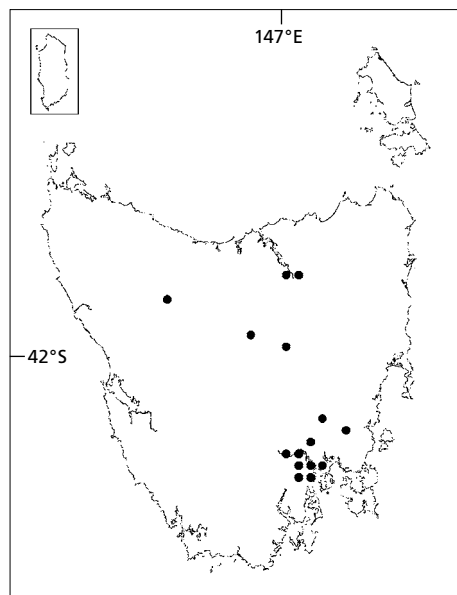


Fig. 3. Distribution of collections of *E. vulgaris* in Tasmania. From Tasmanian Herbarium (HO) database

Encalypta tasmanica was described by Müller & Hampe (1855) in Volume 26 of *Linnaea*, in a multi-authored paper, 'Plantae Muellerianae', wherein the southern Australian plant collections of physician, Dr Ferdinand Müller, are recorded. Diverse groups of plants are represented among the collections, including vascular plants, mosses and algae.

The description of *E. tasmanica* is a brief Latin diagnosis in which the new species is differentiated from *E. vulgaris*. No type is cited; however, the publication in Volume 26 of *Linnaea* is a continuation of an earlier publication, the first part of which was published in Volume 25. As it turns out, the earlier publication contains

information essential to identification of the types of *E. tasmanica*.

In Volume 25 of *Linnaea*, the first part of 'Plantae Muellerianae' includes lists of vascular plants, algae, lichens, mosses and ferns. It is reported in the introduction (Sonder 1854) that the publication is based on collections made by F. Müller in the vicinity of Adelaide, as well as in remote coastal areas and the interior, and that it also includes contributions from several friends of Müller, including Dr Behr and C. Stuart.

Edwin Hampe (1854) contributed the treatment of Musci in Volume 25. One of the species listed is *E. vulgaris* and the locality for the specimen is recorded as 'Van Diemensland (Stuart)'. According to Sonder's introduction (1854), Stuart must have given his specimen to Müller and it would subsequently have been distributed to Hampe.

Hampe's herbarium is in the Natural History Museum London (BM), and among his collections there are two specimens of *E. tasmanica*. The label on the first specimen (Fig. 4A) has the locality and collection data ('Van Diemensland leg C Stuart') cited by Hampe (1954) for the specimen of *E. vulgaris* recorded in the first part of 'Plantae Muellerianae'. Furthermore, the specimen originally was determined as *E. vulgaris*, but 'vulgaris' later was crossed out and replaced with 'Tasmanica Hpe & CM'.

The label data on the second specimen in Hampe's herbarium (Fig. 4B) are more difficult to interpret because they appear to have been written by the same individual, but at different times (lines one and three versus two, four



Fig. 4. *Encalypta tasmanica*. BM specimen labels

- A.** Lectotype: Tasmania, Van Diemensland, collected by C. Stuart [BM001006920]
B. New Holland, no collector cited [BM001006919]

and five). Also, while the identity of the specimen as *E. tasmanica* is clearly given in the first line, the collection locality is ambiguous because three are cited: Tasmania (line two), 'Nova Hollandia' (line three), and 'Buchanriver – Gipps Land' (line four). My best guess is that the locality for this specimen is simply New Holland [Australia] (line three). The citations of 'Tasmania leg Stuart' (line two) and 'Buchanriver – Gipps Land leg Dr F. Müller' (line four) record more specifically where, and by

whom, *E. tasmanica* had been collected. Presumably, this specimen came from one of these two localities, but it is unclear which. The last line (five) seems to be description, perhaps diagnostic features.

While preparing my treatment of Encalyptaceae for the *Flora of Australia* (Horton 2012) and for this treatment for Tasmania, I examined specimens from AD, ADT, BRI, HO, MEL, MELU and NSW. Among the specimens in the Royal Botanic Gardens Melbourne



Fig. 5. *Encalypta tasmanica*. MEL specimen labels

- A.** Isotype: V.DL [Van Diemensland], no collector cited
B. Isotype: Van Diemensland, collected by C. Stuart, 1850



Fig. 6. *Encalypta australis*. BM specimen labels

- A.** Lectotype: Near the Cataract Launceston, Tasmania, collected by Mr Archer 1 August [BM000986335]
B. Probable Isotype or Syntype: Tasmania, collected by Mr Archer [BM000986336]

(MEL), I discovered two that are types of *E. tasmanica* (Figs. 5A & 5B).

One MEL specimen contains two labels (Fig. 5A), the larger on handmade paper. The latter has the determination as 'Encalypta Tasmania nsp.' with 'Encalypta vulgaris Hedwig prius' and 'V.DL' below. Presumably, *prius* [first] indicates that the specimen was initially determined as *E. vulgaris*. The smaller label

has the number 1106 and 'Moist places', possibly a collection number and habitat description. While the number could have been written by the same individual who wrote the larger label, 'moist places' appears to be written by another hand.

The other specimen in MEL also contains two labels (Fig. 5B). The handwriting on both labels is the same, except the identity (*E. vulgaris*) on the larger label, which is

in a markedly different hand. Perhaps it was C. Stuart, the collector, who wrote everything except that determination on the larger one.

The two MEL specimens share names (*E. tasmanica*, *E. vulgaris*), locality (V.DL and Van Diemensland), what could be a collection number (1106) and habitat data (moist places). Also, the words 'moist places' on the labels in both specimens appear to be written by the same individual who wrote everything except '*Encalypta vulgaris* Hedw.' on the larger label in the second specimen

I sent scans of the labels in the two MEL specimens to L. Ellis, Curator of Bryophytes, the Natural History Museum (BM). He compared the handwriting on the two labels to that of E. Hampe and reported that the handwriting on the first specimen (Fig. 5A) is definitely that of Hampe and that he is '90% sure' the '*Encalypta vulgaris* Hedw.' on the second specimen (Fig. 5B) also is Hampe's.

In view of the above evidence, it seems reasonable to suggest that the first specimen (Fig. 4A) of *E. tasmanica* in Hampe's herbarium in BM, and both specimens in MEL (Figs. 5A & 5B), are parts of the same collection. Therefore, I (Horton 2012) designated the first

specimen in BM the Lectotype and the two specimens in MEL, Isotypes. Based on the analysis above of the label data on the Nova Hollandia specimen in Hampe's herbarium (Fig. 4B), it is unclear whether it contains material from the type locality, so it is not treated as a type.

The original description of *E. australis* was published in W. Wilson's (1859) contribution on Musci in Joseph Dalton Hooker's *Flora Tasmaniae*. In the introduction, Hooker noted that specimens collected by W. Archer had been described by Mitten and that he [Mitten] allowed Hooker 'to insert his descriptions of new species' in the *Flora Tasmaniae*.

Curators at NY (B. Thiers), BM (L. Ellis) and E (D. Long) found no types of *E. australis* among Mitten's collections; however, L. Ellis found two specimens in Hooker's Herbarium (Figs. 6A & 6B). Both match the type citation in being collected in Tasmania by Archer, but only the first (Fig. 6A) includes one of the specific localities. Therefore, I (Horton 2012) designated the first specimen from the Cataract Launceston the Lectotype and the second (Fig. 6B), a probable Isotype or Syntype.

Acknowledgements

I am indebted to Rod Seppelt for his exceptional support of this project with preparation of the beautiful, detailed illustrations of Tasmanian *E. vulgaris*, reproduced with his permission and that of *Flora of Australia*; through his editorial guidance; and by making arrangements to have Rick van den Eenden, Australian Antarctic Division, prepare SEM images of spores of *E. vulgaris*; Dalia Howe (HO) provide distributional data for Figure 3, and Dr Jean Jarman (HO) prepare

the distribution map and label Figure 1. Sincere thanks to each of these persons for their contributions. I am most grateful to the curators of AD, ADT, B, BM, BRI, E, HO, MEL, MELU, NSW and NY for the loan of specimens and/or checking for types that made this project possible, and particular thanks additionally to Len Ellis (BM) for deciphering label data on types and for providing the images of BM labels on specimens of *E. tasmanica* and *E. australis*.

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A CONTRIBUTION TO THE FLORA OF THE MEREDITH RANGE, NORTH-WESTERN TASMANIA

G. Kantvilas, S.J. Jarman and N. McCaffrey

Kantvilas, G., Jarman, S.J. & McCaffrey, N. 2012. A contribution to the flora of the Meredith Range, north-western Tasmania. *Kanunnah* 5: 127–140. ISSN 1832-536X. In a vegetation survey at the Meredith Range, north-western Tasmania, we record 64 taxa of vascular plants, 54 bryophytes and 83 lichens. The dominant vegetation at the study site is buttongrass (*Gymnoschoenus*) moorland and the species recorded are essentially typical for this vegetation type. However, the flora has been severely affected by relatively recent fires. Significant species records for the area include two lichens: *Baeomyces rufus* (Huds.) Rebent., a widespread Northern Hemisphere species previously unrecorded for Australasia, and *Cladia occulta* Kantvilas *sp. nov.*, described here as new to science.

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KEY WORDS: *Baeomyces*, bryophytes, *Cladia*, floristics, lichens, vascular flora

INTRODUCTION

The Meredith Range is situated in north-western Tasmania within an area bounded approximately by the Lower Pieman Dam Road to the south, the Pieman River and Corinna Road to the west and north, and by south-flowing tributaries of the Pieman River (e.g., the Stanley and Wilson rivers) to the east. The range consists of undulating terrain with

high points at Mt Meredith (810 m) to the north and Mt Livingstone (781 m) to the south; neither of these peaks is prominent from a distance and the whole area is very much 'off the beaten track' for biologists and bushwalkers. However, the general area has, and continues to be, explored for minerals. The area falls within the Meredith Range Regional Reserve and is listed on the Register of the National

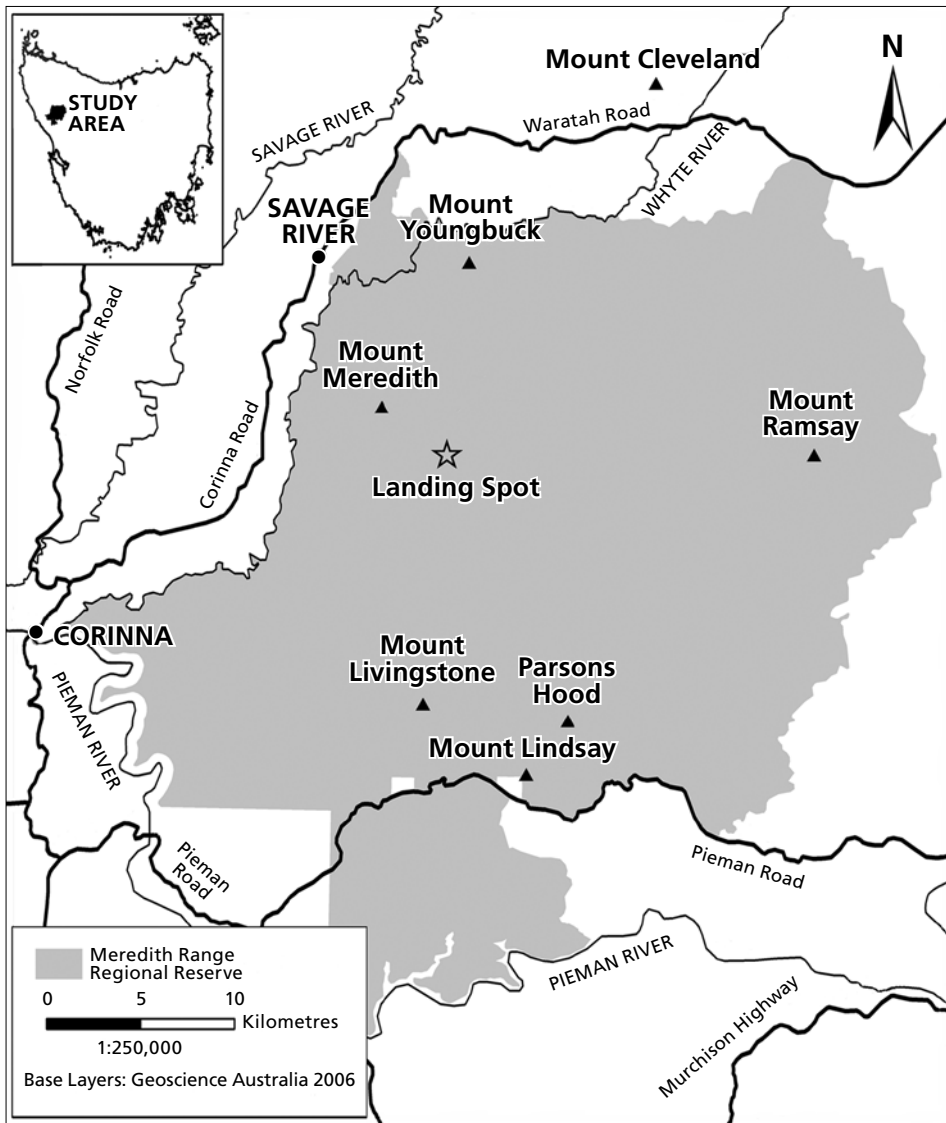


Fig. 1. Location of the Meredith Range study area

Estate as a part of the broad area referred to generally as 'the Tarkine'. Its wilderness values were recognised and discussed by Harries & Brown (1992).

The geology of the area is predominantly granite (Richley 1978), formed during Late Devonian-Early Carboniferous times (385–380 million years ago) following the major folding and mountain-building period known as the Tabberabberan Orogeny; the Meredith batholith is the largest exposed area of granite in western Tasmania and intrudes the more easily erodable Precambrian to Early Devonian sedimentary rocks (Sharples 1992).

There is no published information on the natural history of the Meredith Range. cursory remarks on the vegetation are offered by Askey-Doran *et al.* (1992) in a broad overview of the botany of Tasmania's north-west, and some peripheral areas accessible by road were surveyed in the course of broader botanical surveys (e.g., Jarman *et al.* 1988). The whole range was heavily burnt during the Savage River Fire of 1982 (Barker 1991) and there is also anecdotal information of multiple fires since that time. Node counts of *Banksia marginata* plants (after the method of Brown & Podger 1982) suggest that the most recent fire may have been in the mid-1990s.

In 2011, the Cradle Coast Authority commissioned a brief vegetation survey of a site on the Range. It revealed a flora which, although not atypical for that part of Tasmania, nevertheless includes a number of novelties, and range extensions for several species. The results of the survey are documented here.

METHODS

The range was visited by helicopter on 2 February 2011. A single study site, about 3.5 km south-east of Mt Meredith, was selected on the basis of ease of landing; Mt Meredith is approximately 7 km south-southeast of Savage River township (Fig. 1).

The site encompassed a relatively small, irregularly-shaped area of approximately 5 ha on the upper slopes and ridge of the range, its boundary dictated by terrain and distance from the landing spot. Elevation was about 760–780 m asl; co-ordinates at the landing spot were MGA94 356469E; 5394767N. The landscape was hilly, with boulders and outcropping bedrock of granite the predominant feature.

The general description of the vegetation and inventory of vascular plants was compiled by a general reconnaissance of the site. For lichens, the major habitats were identified, and multiple representatives of each were then searched and collections made for identification (or confirmation of identification) in the laboratory. Identification was conducted using the standard methods of low- and high-power microscopy, thin-layer chromatography of selected specimens (Orange *et al.* 2001), and comparison with published descriptions and reference herbarium specimens where necessary. Bryophytes were peripheral to the main survey and were documented only from incidental collections made during the lichen survey. Identifications were undertaken in the laboratory using essentially the same methods as those applied to the lichens, excluding chromatography.

Vascular plant classification and nomenclature follows Baker & Duretto (2011) except that *Pimelea lindleyana* is retained



Fig. 2. Vegetation and physiognomy of the Meredith Range

- A.** Outcropping granite in buttongrass moorland
- B.** Buttongrass moorland with dead skeletons of *Banksia* and *Leptospermum*, and patches of scrub in fire-protected sites

as a separate species from *P. linifolia*, in accordance with Curtis (1967). Nomenclature of lichens, mosses and liverworts essentially follows that given in McCarthy (2012), Streimann & Klazenga (2002), and McCarthy (2006) respectively. Voucher specimens are lodged in the Tasmanian Herbarium (HO).

RESULTS

Vascular plants

Vegetation at the study site represents blanket moor (after Jarman *et al.* 1988) in the transition zone between its highland and lowland forms, and falls within the TasVeg Mapping Unit MBS (Harris & Kitchener 2005). It consists of a *Gymnoschoenus*-dominated sedgeland-heath, with taller heathland or scrub around the rocky outcrops, and some low open forest over scrub in patches apparently missed, or burnt lightly, by the last fire. The main community comprises 'standard peat' (nomenclature after Jarman *et al.* 1988). Emergent, weather-beaten *Banksia* skeletons, up to 3–4 m tall, are prominent throughout, their pale grey stems, in parts blackened by charcoal, slowly disintegrating in the harsh environment. Smaller, dead stems of *Leptospermum* up to about 1 m tall, bleached and devoid of all twigs, are also common. Occasional gaps occur within the main vegetation layer, exposing smaller ground-cover species, including lichens and bryophytes, and/or the ground surface itself (Fig. 2).

The dominant moorland species is the large hummock sedge *Gymnoschoenus sphaerocephalus*. It occurs within dense mixtures of woody species and mono-

cotyledons, including *Leptospermum nitidum*, *Sprengelia incarnata*, *Melaleuca squamea*, *Bauera rubioides*, *Boronia elisabethiae*, *Eurychorda complanata*, *Lepidosperma filiforme* and *Empodisma minus*, which together form a layer about 40–60 cm tall. Scattered low crowns of *Banksia marginata*, *Agastachys odorata* and, less commonly, *Hakea epiglottis* are emergent in this layer. Small herbs in the low ground layer include *Helichrysum pumilum* and *Stylidium graminifolium*, occasionally *Actinotus bellidioides*, *Drosera arcturi* and *Schizacme montana*, and very rarely *Oschatzia saxifraga*. The fine-leaved sedges, *Schoenus lepidosperma* and *Tetraria capillaris*, and the fern ally *Lycopodiella laterale* are also common in this layer.

The vegetation is generally more heathy around the rocks. Most of the woody species in the main moorland community are common there, along with other shrubs such as *Monotoca submutica*, *Epacris serpyllifolia*, *Hibbertia procumbens*, *Billardiera longiflora*, *Eucalyptus vernicosa* and *E. nitida* which are generally restricted to this habitat. Rare individuals of a few rainforest species such as *Nothofagus cunninghamii*, *Trochocarpa gunnii* and *Cenarrhenes nitida* are also present. Protected rock crevices support small patches of tightly compacted *Hymenophyllum marginatum* and, less commonly, other *Hymenophyllum* species and *Grammitis billardierei*.

Sixty-four vascular plant taxa in 34 families were recorded (Table 1). All species are native, including 26 (41%) that are endemic to Tasmania. The most species-rich families are the Epacridaceae, Proteaceae, Myrtaceae and Cyperaceae, and species from these and the Restionaceae include many of the

Table 1. Vascular plants recorded from the Meredith Range, February 2011
(e = endemic to Tasmania)**FERNS AND FERN ALLIES**

Gleicheniaceae

- Gleichenia dicarpa* R.Br.
Sticherus tener (R.Br.) Ching

Grammitidaceae

- Grammitis billardierei* Willd.
Grammitis sp.

Hymenophyllaceae

- Hymenophyllum cupressiforme* Labill.
Hymenophyllum marginatum Hook. & Grev.
Hymenophyllum sp.

Lycopodiaceae

- Lycopodiella lateralis* (R.Br.) B.Ollg.

Polypodiaceae

- Microsorium pustulatum* (G.Forst.) Copel.
subsp. *pustulatum*

Schizaeaceae

- Schizaea fistulosa* Labill.

MONOCOTYLEDONS

Cyperaceae

- Gahnia grandis* (Labill.) S.T.Blake
Gymnoschoenus sphaerocephalus (R.Br.) Hook.f.
Lepidosperma filiforme Labill.
e *Lepidosperma inops* F.Muell. ex Rodway
Schoenus lepidosperma (F.Muell.) K.L.Wilson
subsp. *lepidosperma*
Tetraria capillaris (F.Muell.) J.M.Black

Iridaceae

- e *Diplarrena latifolia* Benth.

Liliaceae

- e *Blandfordia punicea* (Labill.) Sweet

Poaceae

- e *Microlaena tasmanica* (Hook.f.) Benth.
var. *tasmanica*

Restionaceae

- Empodisma minus* (Hook.f.) L.A.S.Johnson
& D.F.Cutler
Eurychorda complanata (R.Br.) B.G.Briggs
& L.A.S.Johnson
Sporadanthus tasmanicus (Hook.f.) B.G.Briggs
& L.A.S.Johnson

Xyridaceae

- e *Xyris marginata* Rendle

DICOTYLEDONS

Apiaceae

- Actinotus bellidioides* (Hook.f.) Benth.
e *Oschatzia saxifraga* (Hook.f.) Walp.

Asteraceae

- e *Helichrysum pumilum* Hook.f. var. *pumilum*
e *Olearia persoonioides* (DC.) Benth.

Cunoniaceae

- Bauera rubioides* Andrews

Dilleniaceae

- Hibbertia procumbens* (Labill.) DC.

Droseraceae

- Drosera arcturi* Hook.
Drosera pygmaea DC.

Epacridaceae

- Epacris impressa* Labill.
e *Epacris serpyllifolia* R.Br.
e *Leptecophylla pogonocalyx* C.M.Weiller
e *Leucopogon oreophilus* J.M.Powell
Leucopogon sp.
e *Monotoca submutica* (Benth.) Jarman
Sprengelia incarnata Sm.
e *Trochocarpa gunnii* (Hook.f.) Benth.

Escalloniaceae

- e *Tetracarpaea tasmanica* Hook.

Fabaceae

- Pultenaea juniperina* Labill.

Fagaceae

- Nothofagus cunninghamii* (Hook.) Oerst.

Lentibulariaceae

- Utricularia dichotoma* Labill.

Loganiaceae

- Schizacme montana* (Hook.f. ex Benth.) Dunlop

Mimosaceae

- Acacia mucronata* Willd. ex H.L.Wendl.
subsp. *mucronata*

Myrtaceae

- e *Baeckea leptocaulis* Hook.f.
e *Eucalyptus nitida* Hook.f.
e *Eucalyptus vernicosa* Hook.f.
e *Leptospermum nitidum* Hook.f.
Melaleuca squamea Labill.

Pittosporaceae

- e *Billardiera longiflora* Labill.

Proteaceae

- e *Agastachys odorata* R.Br.
Banksia marginata Cav.
e *Cenarrhenes nitida* Labill.
e *Hakea epiglottis* Labill. subsp. *epiglottis*
e *Persoonia gunnii* Hook.f. var. *gunnii*

Rutaceae

- e *Boronia elisabethiae* Duretto

Santalaceae

- e *Exocarpos humifusus* R.Br.
Leptomera sp.

Scrophulariaceae

- Euphrasia* sp.

Stylidiaceae

- Stylidium graminifolium* Sm.

Thymelaeaceae

- e *Pimelea lindleyana* Meisn.

Violaceae

- Viola hederacea* Labill.

Winteraceae

- Tasmania lanceolata* (Poir.) A.C.Sm.

Table 2. Bryophytes recorded from the Meredith Range, February 2011 (e = endemic to Tasmania)**MOSESSES**

Andreaea acutifolia Hook.f. & Wils.
Rosulabryum sp.
Campylopus chilensis De Not.
Campylopus sp.
Dicranoloma menziesii (Taylor) Renaud
Dicranoloma robustum (Hook.f. & Wilson)
 Paris s.lat.
Dicranoweissia microcarpa (Hook.f. & Wilson)
 Paris
Ditrichum punctulatum Mitt.
Holomitrium perichaetiale (Hook.) Brid.
Hypnodendron comosum (Labill.) Mitt.
Leptostomum inclinans R.Br.
Leptotheca gaudichaudii Schwägr.
Leucobryum candidum (Brid. ex P.Beauv.) Wilson
Polytrichum juniperinum Hedw.
Pychomnion aciculare (Brid.) Mitt.
Racomitrium crispulum (Hook.f. & Wilson)
 Hook.f. & Wilson
Rhacocarpus purpurascens (Brid.) Paris
Warburgiella sp.

LIVERWORTS

Aerochila biserialis (Lehm. & Lindenb.) Grolle
Acrobolbus cinerascens (Lehm. & Lindenb.)
 Bastow
Acromastigum cavifolium R.M.Schust.
Acromastigum cunninghamii (Steph.) Evans
Anastrophyllum schismoides (Mont.) Steph.
Andrewsianthus sp.
Balantiopsis diplophylla (Hook.f. & Taylor) Mitt.
Bazzania accreta (Lehm. & Lindenb.) Trevis.
Bazzania monilineris (Lehm. & Lindenb.) Trevis
Brevianthus flavus (Grolle) J.J.Engel & R.M.Schust.
Chiloscyphus leucophyllus (Hook.f. & Taylor)
 Gottsche, Lindenb. & Nees

Frullania rostrata (Hook.f. & Taylor) Hook.f. &
 Taylor ex Gottsche, Lindenb. & Nees
Gackstroemia weindorferi (Herzog) Grolle
Goebelobryum unguiculatum (Hook.f. & Taylor)
 Grolle
Heteroscyphus billardierei (Schwägr.) Schiffn.
Heteroscyphus echinellus (Lindenb. & Gottsche)
 J.J.Engel & XiaoL.He
Heteroscyphus fissistipus (Hook.f. & Taylor)
 Schiffn.
Jamesoniella colorata (Lehm.) Spruce ex Schiffn.
Kurzia hippurioides (Hook.f. & Taylor) Grolle
Lepicolea scolopendra (Hook.) Dumort. ex
 Trevis.
Lepidolaena brachyclada (Taylor ex Lehm.) Trevis.
Lepidozia sp.
Leptoscyphus sp.
Marsupidium surculosum (Nees) Schiffn.
Metzgeria saccata Mitt.
Metzgeria sp.
Plagiochila pleurata (Hook.f. & Taylor) Taylor &
 Hook.f. ex Gottsche, Lindenb. & Nees
Radula buccinifera (Hook.f. & Taylor) Taylor ex
 Gottsche, Lindenb. & Nees
Radula compacta Castle
Radula ratkowskiana K.Yamada
Riccardia cochleata (Hook.f. & Taylor) Kuntze
Riccardia crassa (Schwägr.) Carrington &
 Pearson
Telaranea patentissima (Hook.f. & Taylor)
 E.A.Hodgs.
 e *Telaranea tasmanica* (Steph.) J.J.Engel &
 G.L.Sm.
Tylimanthus tenellus (Hook.f. & Taylor) Mitt.
Zoopsis setulosa Leitg.

most abundant species present in terms of individual stems. Most species are common and/or widespread in button-grass moorland in western and south-western Tasmania, and none is formally listed as rare or threatened under State or Commonwealth lists (<http://www.dpiw.tas.gov.au/inter.nsf/WebPages/SLEN-5P27QC?open>).

Bryophytes

Fifty-four bryophytes (18 mosses, 36 liverworts; Table 2) were recorded from the study site. Given the opportunistic nature of the sampling, this number is likely to represent an underestimate of the flora. The most species-rich habitats for bryophytes are protected rock crevices and sheltered sites below overhanging rock. These situations are protected from

drying out by the rocks themselves and by the associated dense shrubbery, and they offer a more stable environment that is cooler and more humid than that found in the surrounding moorland vegetation, as well as a degree of fire-protection. As with the lichens and vascular plants, several species that typically occur in wet forests and scrub are restricted to these situations, including, for example, the mosses *Dicranoloma menziesii*, *Ptychomnion aciculare* and *Leucobryum candidum*, and the liverworts *Brevianthus flavus*, *Gackstroemia weindorferi*, *Heteroscyphus billardierei* and *Plagiochila pleurata*.

In contrast to the lichens, very few bryophytes occur on exposed rock surfaces. The main species are the mosses *Andreaea acutifolia*, *Rhacocarpus purpurascens* and *Racomitrium crispulum*, with the liverwort *Jamesoniella colorata* commonly entangled among them. The broad matrix of the buttongrass community supports a low number of bryophyte species although typical moorland soil colonisers such as *Campylopus chilensis*, *Goebelobryum unguiculatum* and *Dicranoloma robustum* are common. None of the bryophyte species collected during the study was unusual or rare.

Lichens

Eighty-three species of lichen were recorded (Table 3), including seven that are endemic to Tasmania. Major habitats include peaty soil within the buttongrass moorland itself, emergent woody shrubs in the moorland and in scrubby copses, and large boulders and outcrops of bedrock, including peat-filled crevices found on the larger outcrops. It is due to these large rock outcrops that much of the area is mistakenly mapped by

TASVEG as 'Lichen lithosere' (Harris & Kitchener 2005).

On soil, lichens compete with small vascular species or fill the gaps between the larger plants including buttongrass hummocks. *Siphula decumbens* is particularly prominent, forming chalky white carpets of tiny erect flattened lobes. The genera *Cladia* and *Cladonia* are also common and conspicuous. In open, boggy areas, the dominant lichens tend to be *Cladia moniliformis*, *Parasiphula jamesii* and the brownish, tea-leaf-like *P. fragilis*. The flora in better drained, elevated sites, such as near rotting, dead buttongrass hummocks includes the greyish coral lichen, *Cladia retipora*, together with *C. sullivanii* and species of *Cladonia*, especially *C. southlandica* and *C. capitellata*.

The lower trunks and stumps of emergent dead trees, where the bark or wood is soft, damp, partly rotted, and sheltered by the surrounding sedges, support *Cladia aggregata*, *C. schizopora*, *Cladonia rigida* and *Trapeliopsis granulosa*. More elevated parts of the trees that are exposed to the sun and wind have a patchy flora dominated by tufts of *Usnea* species as well as *Hypogymnia enteromorphoides*, *Hypotrachyna sinuosa* and *Ramboldia stuartii*. On or near patches of charcoal, *Hypocenomyce australis* is usually abundant. There are also minute scraps of a few normally epiphytic lichens (species of *Mycoblastus* and *Pertusaria*, *Leifidium tenerum*) but these minute thalli are interpreted as struggling survivors from the last fire rather than active recolonisers.

Whereas some lichens occur directly on rock, others, like many bryophytes,

Table 3. Lichens recorded from the Meredith Range, February 2011 (e = endemic to Tasmania)

<i>Aptroothia robusta</i> (P.M. McCarthy & Kantvilas)	<i>Lepraria yunnaniana</i> (Hue) Zahlbr.
Aptroot	<i>Lithographa graphidioides</i> (Cromb.) Imshaug ex
<i>Arthroraphis citrinella</i> (Ach.) Poelt var.	Coppins & Fryday
<i>catolechioides</i> Obermayer	<i>Micarea magellanica</i> (Müll. Arg.) Fryday
<i>Baeomyces heteromorphus</i> Nyl. ex C. Bab. &	<i>Micarea cf. ternaria</i> (Nyl.) Vězda
Mitt.	<i>Micarea</i> sp.
<i>Baeomyces rufus</i> (Huds.) Rehent.	<i>Mycoblastus coniochorus</i> (Elix & A.W. Archer)
<i>Chiodecton montanum</i> Thor	Kantvilas & Elix
<i>Cladia aggregata</i> (Sw.) Nyl.	<i>Mycoblastus kalioruber</i> Kantvilas
e <i>Cladia deformis</i> Kantvilas & Elix	<i>Paraporphidia leptocarpa</i> (C. Bab. & Mitt.)
e <i>Cladia dumicola</i> Kantvilas & Elix	Rambold & Hertel
e <i>Cladia moniliformis</i> Kantvilas & Elix	<i>Parasiphula fragilis</i> (Hook.f. & Taylor) Kantvilas
e <i>Cladia mutabilis</i> Kantvilas & Elix	& Grube
e <i>Cladia occulta</i> Kantvilas	<i>Parasiphula georginae</i> (Kantvilas) Kantvilas &
<i>Cladia retipora</i> (Labill.) Nyl.	Grube
<i>Cladia schizopora</i> (Nyl.) Nyl.	e <i>Parasiphula jamesii</i> (Kantvilas) Kantvilas &
<i>Cladia sullivanii</i> (Müll. Arg.) W. Martin	Grube
<i>Cladonia capitellata</i> (Hook.f. & Taylor) C. Bab.	e <i>Pertusaria flavoexpansa</i> Kantvilas & Elix
var. <i>capitellata</i>	<i>Pertusaria lophocarpa</i> Körb.
<i>Cladonia corniculata</i> Ahti & Kashiwadani	<i>Pertusaria novaeseelandiae</i> Szatala
<i>Cladonia ochrochlora</i> Flörke	<i>Pertusaria pertractata</i> Stirt.
<i>Cladonia pleurota</i> (Flörke) Schaer.	<i>Poeltiaria coromandelica</i> (Zahlbr.) Hertel &
<i>Cladonia pyxidata</i> (L.) Hoffm.	Rambold
<i>Cladonia rigida</i> (Hook.f. & Taylor) Hampe var.	<i>Polychidium contortum</i> Henssen
<i>rigida</i>	<i>Psilolechia</i> sp.
<i>Cladonia southlandica</i> W. Martin	<i>Ramboldia blastidiata</i> Kantvilas & Elix
<i>Cladonia subsubulata</i> Nyl.	<i>Ramboldia stuartii</i> (Hampe) Kantvilas & Elix
<i>Cladonia tenerrima</i> (Ahti) S. Hammer	<i>Rhizocarpon geographicum</i> (L.) DC.
<i>Cladonia ustulata</i> (Hook.f. & Taylor) Leighton	<i>Rhizocarpon</i> sp.
<i>Coenogonium lutescens</i> (Vězda & Malcolm)	<i>Rimularia cf. intercedens</i> (H. Magn.) Coppins
Malcolm	<i>Rimularia psephota</i> (Tuck.) Hertel & Rambold
<i>Dibaeis absoluta</i> (Tuck.) Kalb & Gierl	<i>Siphula decumbens</i> Nyl.
<i>Fuscidea subasbolodes</i> Kantvilas	<i>Siphula gracilis</i> Kantvilas
? <i>Gyalidea cf. fritzii</i> (Stein) Vězda	<i>Steinia geophana</i> (Nyl.) B. Stein
? <i>Hertelidea</i> sp.	<i>Stereocaulon corticatulum</i> Nyl.
<i>Hymenelia</i> sp.	<i>Trapelia coarctata</i> (Sm.) M. Choisy
<i>Hypocenomyce australis</i> Timdal	<i>Trapelia ?glebulosa</i> (Sm.) J.R. Laundon
<i>Hypogymnia enteromorphoides</i> Elix	<i>Trapelia lilacea</i> Kantvilas & Elix
<i>Hypogymnia lugubris</i> (Pers.) Krog	<i>Trapeliopsis granulosa</i> (Hoffm.) H.T. Lumbsch
<i>Hypotrachyna sinuosa</i> (Sm.) Hale	<i>Umbilicaria cylindrica</i> (L.) Delise ex Duby
? <i>Immersaria athroocarpa</i> (Ach.) Rambold &	<i>Usnea inermis</i> Motyka
Pietschmann	<i>Usnea oncodes</i> Stirt.
<i>Lecanora farinacea</i> Fée	<i>Usnea torulosa</i> (Müll. Arg.) Zahlbr.
<i>Lecanora lugubris</i> (C.W. Dodge) D.J. Galloway	<i>Xanthoparmelia isidiotegeta</i> Elix & Kantvilas
<i>Lecanora polytropa</i> (Hoffm.) Rabenh.	<i>Xanthoparmelia mougeotina</i> (Nyl.) D.J. Galloway
<i>Lecidea sarcogynoides</i> Körb.	<i>Xanthoparmelia stygiodes</i> (Nyl. ex Cromb.)
<i>Lecidea xylogena</i> Müll. Arg.	O. Blanco <i>et al.</i>
<i>Lecidella</i> sp.	<i>Xanthoparmelia tegeta</i> Elix & J. Johnst.
<i>Leifidium tenerum</i> (Laurer) Wedin	<i>Xanthoparmelia xanthomelaena</i> (Müll. Arg.) Hale

are found in sheltered, peat-filled crevices. The most common species by far on exposed surfaces is *Paraporphidia leptocarpa*, a highly variable crustose lichen that forms irregular patterns of black apothecia following the microtopography of the rock surface. The distribution of other saxicolous lichens is very patchy with species confined to local spots (often only a few centimetres across) where they escaped the worst effects of past fires. Some of these lichens, and ones which may have been expected to be common there once, are a pale orange, undescribed species of *Hymenelia*, the pale yellow *Pertusaria lophocarpa* and *Poeltiaria coromandelica*, the pale lilac *Trapelia lilacea*, the greenish *Rhizocarpon geographicum*, and the whitish *Lecanora farinacea*. Macrolichens are generally very scarce, although *Umbilicaria cylindrica*, a typical species of highland rocks, was found as one tiny remnant thallus, as were several species of the green, foliose genus *Xanthoparmelia*.

Extremely fire-protected surfaces on the largest outcrops support a few additional inconspicuous species such as *Chiodecton montanum* and several species of *Micarea*. *Lithographa graphidioides*, a widespread austral cool temperate species known in Tasmania from only two other locations, was found on moist rocks in the shelter of a large outcrop. *Lecanora polytropa* was found on the tops of some rocks where birds perch and defecate. Smaller rock outcrops, deeply shaded beneath shrubs and sedges, support patches of *Dibaeis absoluta*.

NEW SPECIES AND RECORDS OF LICHENS

One lichen species found in the study area is recorded for Tasmania for the first time and another is a species new to science; these are treated in detail below. Several other crustose species are only tentatively identified and may well represent further new species or new records.

1. *Baeomyces rufus* (Huds.) Rebert., *Prodr. fl. neomarch.*: 315 (1804)

This is a widespread temperate species, previously unrecorded in Australasia. It is characterised by a dull pale green thallus of minute, scattered to contiguous squamules that coalesce into a continuous crust, commonly beset with roundish schizidia to *c.* 0.2 mm wide. It contains stictic and constictic acids, together with traces of related compounds, and is thus readily distinguished from the common and widespread *B. heteromorphus* Nyl. ex C.Bab. & Mitt., which contains norstictic acid. The specimen from the Meredith Range lacks the typical subsessile to shortly stalked, brownish apothecia but compares favourably with reference herbarium material from the Northern Hemisphere. It grew on peaty soil in a sheltered rock crevice. For a full description, see Hitch *et al.* (2009).

SPECIMEN EXAMINED: Tasmania, Meredith Range, *c.* 3.5 km SE of Mt Meredith, 41°35'S 145°17'E, 750 m a.s.l., 2 Feb. 2011, G. Kantvilas 76/11 (HO).

2. *Cladia occulta* Kantvilas sp. nov.
Mycobank No.: MB801204

Cladiae dunicolae Kantvilas & Elix similis sed acidum barbaticum et acidum bourgeanicum continenti differt.

TYPE: Australia: Tasmania: Meredith Range, c. 3.5 km SE of Mt Meredith, 41°35'S 145°17'E, 750 m a.s.l., on peaty soil in buttongrass moorland, 2 February 2011, G. Kantvilas 38/11 (HO – holotype).

Sterile pseudopodetia very brittle and fragile, ± erect or ascending, forming loose clumps or tufts decaying at the base, to c. 30 mm tall, 0.5–1 mm wide, cylindrical, not inflated, neatly tapered to acute or awl-like apices, ± dichotomously or trichotomously branched to c. three times, occasionally simple; surface smooth and glossy, olive-green to pale yellow-green, becoming bronze or olive brown and minutely rimose in more exposed (usually upper) parts; axils not inflated, not perforate, acute, forming angles < 45°; perforations slit-like to oval, 0.1–0.5 mm wide, 0.5–1 mm long, abundant, sometimes forming a neat rank on one side of the pseudopodetium; medullary cavity whitish and tomentose throughout. *Fertile pseudopodetia* unknown. *Pycnidia* occasional, tubular, glossy dark brown to black, occurring at the apices of the pseudopodetia, mostly in corymbose or coronate clusters. *Conidia* filiform to falcate, 5–8 × 0.5–1 µm. *Chemical composition:* bourgeanic acid, barbatic acid, obtusatic acid (trace); medulla K–, KC–, C–, P–, UV–. (Fig. 3)

ETYMOLOGY: the specific epithet, meaning 'hidden', refers to the rather inaccessible location at which the species was



Fig. 3. *Cladia occulta* habit

discovered, as well as to its superficial resemblance to *C. dunicola* with which it could be easily confused.

REMARKS: This new species is known only from a single collection and hence its pseudopodetia and other morphological features may exceed the dimensions given above. However, its chemical composition is so remarkable that it deserves taxonomic recognition. It was collected in a rather scrubby patch of buttongrass moorland where it was associated with several other species of the genus, including *C. aggregata*, *C. deformis*, *C. dunicola*, *C. retipora* and *C. sullivanii*.

The genus *Cladia* in the strict sense (e.g., Filson 1981), excluding recent inclusions from the genera *Heterodea* and *Ramalinora* (Parnmen & Lumbsch 2012), is extremely

complex and variable; the *C. aggregata* group, to which *C. occulta*, belongs, is particularly so. Kantvilas & Elix (1999) applied morphological, anatomical and chemical criteria to clarify this species complex, and recognised several additional species. Their findings were subsequently confirmed by molecular methods (Lumbsch *et al.* 2010). Whereas barbatic acid is common in *Cladia* and characterises the most common and widespread form of *C. aggregata*, bourgeanic acid has not been reported previously in the genus. The new species is most similar to *C. dumicola* in that it has relatively slender, uninflated, neatly tapering pseudopodetia that are frequently a shade of glossy olive green to olive brown. However, *C. dumicola* has a completely different chemical composition that comprises the fatty acid, caperatic acid (Kantvilas & Elix 1999).

DISCUSSION

The floristic composition and physiognomy of the vegetation in the study area is generally typical of moorland communities in western and southwestern Tasmania (e.g., see Jarman *et al.* 1988; Kantvilas & Jarman 1988, 1991; Harris & Kitchener 2005; Kantvilas 2007). Indeed, perhaps its most notable feature is the apparent absence of several 'typical' moorland species. Among the vascular species, these include *Epacris corymbiflora* and *Chordiflex hookeri*, both of which could be expected in the main buttongrass-dominated moorland community. For *Epacris corymbiflora*, the site is close to its northern-most limits (unpublished data from collections at the Tasmanian Herbarium) but, for *Chordiflex hookeri*, the

site is well within the species' altitudinal and geographical limits (see Morris 1991 and Tasmanian Herbarium collections). Further examples of 'missing' vascular species are *Leptospermum glaucescens*, *Boronia citriodora* and *Dillwynia glaberrima*, which are typically components of the heathy vegetation around large rocks. In the lichen flora, widespread and very common species that are typically found on rocks in moorland, such as *Ramboldia petraeoides*, *Flavoparmelia haysomii* and *Parmelia signifera*, were not recorded, nor were the common moorland epiphytes *Tasmidella variabilis* and *Ramboldia laeta*. In the bryophyte flora, typical soil-colonising species such as *Campylopus kirkii* and *Dicranoloma eucamptodontoides* were not found.

The absence of these species may be due, in part, to the small size of the study area, which can result in fewer habitats and less environmental variability within them. However, we would expect the common, widespread and/or typical species to be the ones least affected by this factor. A more likely explanation for the 'missing' species, if indeed they were ever present, is to be found in fire regimes. Multiple fires can have devastating impacts on the survival of plant species, especially if one or more of the fires occur before the vegetation has recovered from the previous fire(s). All of the 'missing' cryptogams are ones that would have grown in exposed habitats where the impacts of fire would have been most severe.

For the lichens, which formed the major focus of the study, overall abundance and species richness is also lower than expected (based on past experience and qualitative observations). The flora comprises mostly

rather weedy species that are able to cope with disturbance such as fire and life in dynamic conditions where succession of vascular plants occurs relatively quickly. For example, emergent trees and shrubs would be expected to support a rich epiphytic lichen flora, including some species typical of rainforest and eucalypt woodland. However, at the study site, all the living vascular plants appear to be too young to support any epiphytes at all, and the only habitat for such species is provided by dead, fire-killed plants of *Banksia* and the occasional dead eucalypts and tea-trees, species-poor substrates with mostly inconspicuous lichens. Likewise, rocks would normally represent by far the richest lichen habitat in buttongrass moorland, and an almost total coverage of the exposed surface by lichens is not unusual in Tasmania. At Meredith Range, however, the rocks have been very severely scorched by fire and most of their surfaces are bare; their mottled colour indicates that extensive mosaics of species were once present.

At 750 m elevation, the vegetation could be expected to show a scattering of species that favour higher elevations.

This is demonstrated in the vascular flora by occasional plants of the high-altitude eucalypt *Eucalyptus vernicosa*. The presence of several mainly alpine cryptogams (for example, the moss *Andreaea ?acutifolia* and the lichens *Arthroraphis citrinella*, *Pertusaria flavoexpansa*, *Rimularia psephota*, *Umbilicaria cylindrica* and *Xanthoparmelia stygiodes*) also provide a hint that the site experiences environmental conditions approaching those in alpine or subalpine situations.

The vast majority of species recorded in the study area are common and widespread in similar habitats throughout western and south-western Tasmania. However, the novelties discovered, at least among the lichens, indicate the degree to which species discovery and alpha taxonomy should remain a major focus for biologists. They also serve as a reminder that even seemingly degraded and superficially commonplace sites may hold species of great interest. In addition to the new record and new species dealt with above, several other taxa from Meredith Range may well prove to be equally noteworthy given further collections and study.

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HERE TODAY, GONE TOMORROW: THE MOSS *GIGASPERMUM REPENS* IN TASMANIA

R.D. Seppelt, L.H. Cave and D. Tng

Seppelt, R.D., Cave, L.H. & Tng, D. 2012. Here today, gone tomorrow: the moss *Gigaspermum repens* in Tasmania. *Kanunnah* 5: 141–149. ISSN 1832-536X. The morphology of the seemingly ephemeral but perennial moss *Gigaspermum repens* (Hook.) Lindb. (Musci: Gigaspermaceae) is described and illustrated and its Tasmanian distribution mapped. Collections within the state have been made when above-ground shoots are visible from early winter (June – immature spore capsules) to mid-spring (mid-August to early October – mature capsules). After spore maturation the above-ground shoots degenerate. Perennation is by an intricate drought-resistant subsurface rhizomatous shoot system. The name *Trianthema humillima* F.v.Mueller [= *Gigaspermum repens*] is superfluous.

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KEY WORDS: mosses, Gigaspermaceae, *Gigaspermum repens*, Phenology, *Trianthema humillima*

INTRODUCTION

The moss family Gigaspermaceae Lindb. includes five small genera (Goffinet *et al.* 2012): *Chamaeobryum* Thér. & Dixon, *Costesia* Thér., *Gigaspermum* Lindb., *Lorentziella* Müll. Hal., and *Oedipodiella* Dixon. *Gigaspermum* is the most widespread, occurring in Australia, New Zealand, southern Africa, Mexico and the Mediterranean region.

In Australia, *G. repens* (Hook.) Lindb. is the only representative of the genus

and family and has been recorded in all states and territories. The genus once included six species but Herrnstadt *et al.* (1980) considered there were only two closely related species: *G. mouretii* Corb. and *G. repens* and that the two species were doubtfully distinct, differing only by *G. mouretii* being parocous and *G. repens* being autoicous.

Gigaspermum in Tasmania

***Gigaspermum repens* (Hook.) Lindb., Öfversigt af Förhandlingar: Kongl. Svenska Vetenskaps-Akademien 21: 599. 1865**

BASIONYM: *Anictangium repens* Hook., Musci Exotici 2: 8. 106. 1819. Type: Western Australia: King George's Sound, *D. Menzies*, 1791, (BM).

SYNONYMS: *Anoectangium repens* (Hook.) Steud., Nomenclator Botanicus 2: 58. 1824. *Hedwigia repens* (Hook.) Wilson, Flora Novae-Zelandiae 2: 92. 1854.

Leptangium repens (Hook.) Mitt., Journal of the Proceedings of the Linnean Society 4: 79. 1859.

Physcomitrium repens (Hook.) Müll. Hal., Synopsis Muscorum Frondosorum omnium hucusque Cognitorum 2: 544. 1851.

Schistidium repens (Hook.) Brid., Bryologia Universa 1: 120. 1827.

Gigaspermum subrepens Müll. Hal., Genera Muscorum Frondosorum. 130. 1900. Western Australia, Swan River. *L.Preiss*, 1839-40. B. (*n.v.*, probably destroyed).

Plants (Fig. 1.A-N; Figs. 4-6) usually forming small dense aggregations on soil, whitish-green, with erect leafy shoots arising from a more or less leafless underground rhizomatous system. Stems short, to about 6 mm in length. Leaves on sterile shoots spreading, more or less orbicular, apiculate; on fertile shoots larger, imbricate, whitish, orbicular, narrowing to a slender acuminate point; margins entire; costa absent. Lamina cells lax, rhomboid to hexagonal, marginal

cells slightly larger and weakly projecting at distal end. Autoicous; perigonal shoot arising below perigynium. Capsules immersed in the perichaetial leaves, green, becoming light brown to orange-brown when mature; mouth very wide, covered by a thin membrane. Peristome absent. Operculum low, convex, with a small apiculus. Calyptra conical, mitriform, covering only the tip of the operculum apiculus. Spores light brown, very large, angular by compression from adjacent spores, verrucose, 70-130 µm.

WORLD DISTRIBUTION: Widespread in Australia (Fig. 2A); known also from New Zealand, southern Africa; Madagascar; Mexico, ? Mediterranean (if *G. mouretii* is conspecific).

TASMANIAN DISTRIBUTION: (Fig. 3)

SELECTED SPECIMENS EXAMINED: Mt. Nelson, *A.J.Taylor s.n.*, 03.x.1886, ex Hb. W.A.Weymouth 1381 (HO 73100 - mature capsules); Kangaroo Point, *W.A.Weymouth 2443*, 15.viii.1904 (HO 73098 - mature capsules); Bellerive, *L.Rodway s.n.*, .ix.1920 (HO 73103 - mature capsules); Archers Knob, Asbestos Range National Park, *A.Moscal 23986*, 02.viii.1992 (HO 134453 - immature capsules); Flinders Island, Trousers Point, *A.Moscal 27491*, 06.x.1995 (HO 558449 - mature capsules); Orielton Lagoon, *A.Moscal 29093*, 29.viii.1997 (HO 558448 - immature capsules); Tasman Peninsula, White Beach, *L.H.Cave 751*, 19.viii.2007 (HO 546739 - mature capsules).

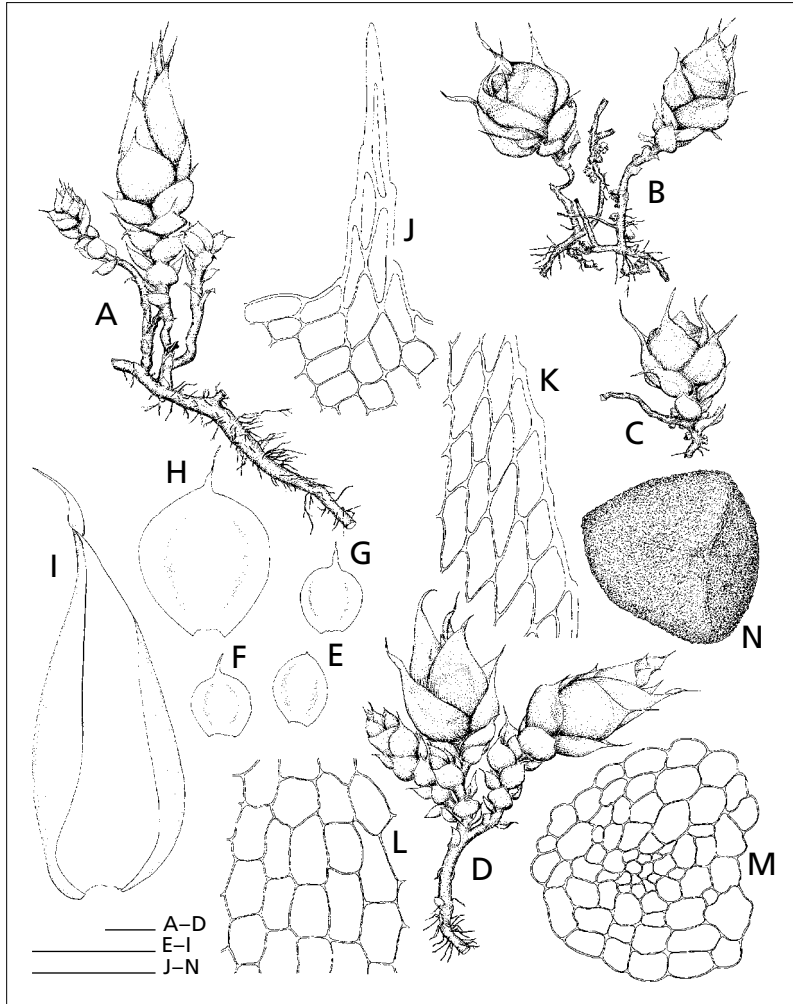


Fig. 1. *Gigaspermum repens* (Hook.) Lindb.

A–D. Habit of plants showing underground rhizomatous system.
E–H. Stem leaves, largest leaf (H) from near shoot apex. **I.** Inner perichaetial leaf.
J. Cells of leaf apex. **K.** Cells of mid lamina margin of stem leaf. **L.** Cells of lower lamina of stem leaf. **M.** Stem section. **N.** Proximal face of spore showing weak triradiate mark caused by compression of the spores within the capsule.

SCALES: = 1 mm FOR A–I; = 100 μ m FOR J–N

Drawn from: A. Moscal 30648, 14.vii.1999, Tasmania, East coast, Craigow Hill, 42°49'S, 147°25'E (HO 558450 - Figs. A–M); L.H.Cave 751, 19.viii.2007, Tasmania, Tasman Peninsula, White Beach, 43°07'45.2"S, 147°43'21.0"E (HO 546739 - Fig. N).

DRAWING © R.D. SEPPELT

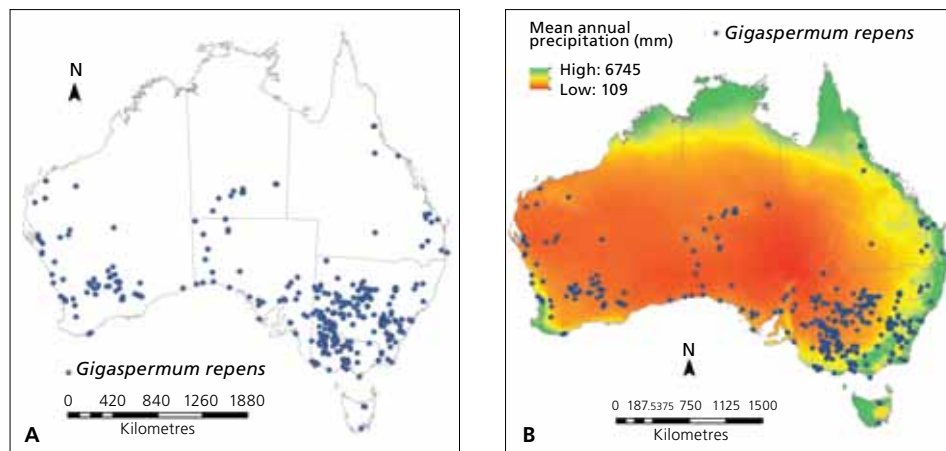


Fig.2. Distribution of collection records of *Gigaspermum repens* in Australia.

- A.** Collection records downloaded from *Atlas of Living Australia Virtual Herbarium* data.
B. Collection records with mean annual rainfall from *Atlas of Living Australia* data.

The brown spores are very large for a moss (Figs. 5 & 6). Fife (pers. comm.) gives a spore diameter range of 150–190 μm for New Zealand specimens. Catcheside (1980) indicates spores to 150 μm for South Australian specimens.

Scott & Stone (1976) state that the Western Australian *Gigaspermum subrepens* Müll. Hal. 'is said to differ only in the more pointed leaves and should be considered synonymous until proved otherwise'. Given the considerable variation both in leaf size and shape in *G. repens*, there seems little justification in maintaining any taxonomic distinction between the two taxa, even in the apparent absence of authentic specimens, and we concur with the suggested synonymy.

Phenology

Collections within Tasmania have been made when above-ground shoots are

visible, from early winter (June – immature spore capsules) to mid-spring (mid-August to early October – mature capsules). After spore maturation the above-ground shoots degenerate. Perennation is by an intricate drought-resistant subsurface rhizomatous shoot system.

The earliest collections represented in the Tasmanian Herbarium were made by A.J. Taylor from Mt Nelson (03 October 1886 – HO 73100) and Kangaroo Point (05 September 1886 – HO 73101). Both collections have mature capsules. Other collections with mature capsules have been collected between 19 August and 06 October. Collections with immature (green) capsules have been made between 26 June and 30 August. The latest collection date with mature capsules is 06 October.

Although clearly perennial, the moss behaves more like an ephemeral or annual

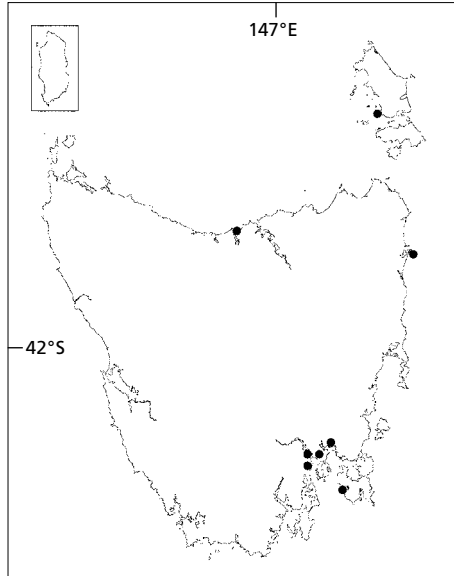


Fig. 3. Distribution of collections of *Gigaspermum repens* in Tasmania

DATA FROM SPECIMENS LODGED IN TASMANIAN HERBARIUM (HO)

species. Consequently, the distribution map of Tasmanian collections (Fig. 3) should be viewed as far from complete. Based on the known distribution, the moss is likely to be found in suitable habitats along the east and northern coasts of the state. Stone (2006) notes: 'once common on disturbed roadsides, but now greatly reduced by weed cover and the use of fertilizers'. The appearance of sporophytes in late winter and early spring is counter to the time of reproductive maturity in most of the state's bryophytes. Consequently, the species is most likely to have been seldom collected because most collecting activities are in the spring, summer and autumn seasons.

Habitat

Collections on the mainland of Australia appear to be primarily on calcareous substrates and mostly from lower rainfall localities (Fig. 2B). The distribution of collections within Australia is derived from records held in the Australian Virtual Herbarium database and accessed through the Atlas of Living Australia website. Stone (2006) states that on the mainland *G. repens* is most common in inland, semi-arid areas on bare earth, red sandy loam, river silts and lateritic outcrops. In higher rainfall areas it occurs on rocky limestone outcrops and rocks, basaltic soils, from sea level to 1000 m. In Tasmania the species has been found on shallow soils (in some instances only 1 cm deep) over doleritic, metamorphic and sandstone or siltstone substrates. Collection sites have been mostly open, with little competitive ground cover. Moore & Scott (1979), in their study of the ecology of dune mosses, indicate that tolerance of burial was the exception rather than the rule. Further, they indicate the presence on soils of low (5–11%) organic matter content. Areas where the moss has so far been collected in Tasmania are relatively low rainfall, around 500 mm per annum, but on the mainland of Australia the species has been found commonly in areas having significantly lower rainfall. It is likely that the species will be found along the east and northern coast of the state. It is also probable that it may have been present in the Midlands area but that agricultural pursuits and the application of fertilizer for pasture improvement have seen its demise there.



Fig. 4. Habit of immature and nearly mature plants of *Gigaspermum repens*
IMAGE © D. TNG



Fig. 5. Habit of mature plants of *Gigaspermum repens*
IMAGE © L.H. CAVE



Fig. 6. Mature spores of *Gigaspermum repens* within capsule

IMAGE © L.H. CAVE

Flowering plant or moss

What is now known as the moss *Gigaspermum repens* was once described as a flowering plant, *Trianthema humillima* F. von Mueller (Aizoaceae) (Mueller 1876). In the first edition of his *Flora of South Australia*, J.M. Black (1924, p. 222) wrote:

T. (Trianthema) humillima F.v.M. One of the smallest of flowering plants, glabrous,

the stems only 1-3 mm long, bearing 2 or 3 fleshy leaves and usually 2-3 almost terminal flowers; perianth 2 mm long, divided to the base into 5 unequal hyaline acuminate segments; capsule obovoid, 1½ mm long, opening by a small convex lid; placenta attached to a central column; seeds minute, 60-80 in the lower part of the capsule.

Near Maitland, Y.P. (Yorke Peninsula). The type of this moss-like plant came from between the Lachlan and Darling Rivers, New South Wales. The Maitland specimens are in fruit, and it is impossible to discover the number or positions of the stamens. The type-specimens appear to have been in the same condition. Until these and other points are settled, the generic position of the plant must remain somewhat uncertain.

Later (Black 1948, p. 531) corrected the placement of the plant as a moss:

Delete *Trianthea humillima* F.v.M. Mr. J.H. Willis of the Melbourne Herbarium informs me that further investigation of specimens from Maitland, Yorke Peninsula, prove that this is not a flowering plant, but a small moss, *Gigaspermum repens* (Hook.) Lindb. Mueller mistook the columella of the spore-case (sporocarp, sporangium) for the erect free-central placenta of *Trianthea* and the numerous spores for seeds.

The status of the name *Trianthea humillima* has remained equivocal. An anonymous note in *The Bryologist* 74, p. 531 (1971) remarks:

As *Trianthea humillima* was described by Ferdinand von Mueller in *Fragmenta Phytographiae Australiae* 10: 72. 1876, would not *T. humillima* just simply become a synonym of *Gigaspermum repens*, as the basionym (*Anictangium repens*) was described by Hooker in *Musci Exotici* 2: 8, pl. 106. 1819.

In the International Plant Name Index (IPNI), *Trianthea humillima* is regarded as an unresolved name. There is a suggestion in the IPNI entry that *Trianthea humillima* is a synonym of *Pomatotheca humillima* which is a name not listed in the TROPICOS name database. However, as the plant to which the name *Trianthea humillima* has been attached is the moss *Gigaspermum (Anictangium) repens*, described in 1819, the name *Trianthea humillima* is clearly superfluous.

Black (1924) gives the location of the type as Maitland, South Australia, but this refers to the name *Trianthea humillima* and not the moss *Anictangium (Gigaspermum) repens*.

Concluding remarks

Compared to its distribution on the mainland, *G. repens* seems to represent both a geographic outlier and a divergence in habitat. Within the state the moss has not yet been found on calcareous substrates. Such substrates are comparatively rare in Tasmania and are represented typically by karst environments in wetter areas of the state. However, the winter-spring growth of the moss has probably been the prime reason for the lack of collections. Although apparently confined to the eastern and northeastern parts of the state, within that area the distribution of collections is patchy. Further field surveys, particularly along the east and northern coastal regions, seem desirable.

Acknowledgements

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of collections of *Gigaspermum* in Tasmania, Dr Chris Cargill and Nunzio Knerr, Centre for Australian National Biodiversity Research, Canberra, for providing Figure 2 from the Atlas of Living Australia website.

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