

## Have you seen this unidentified fungus?

Dubbed 'Hairy McLeary', for further identification was unsuccessful, this small (0.6 mm) ascomycete fungus, illustrated on the front cover, was found on decaying tawa wood in the Maungakotukutuku Valley, north of Wellington. The perithecial necks face in the same direction – presumably towards light, giving the appearance of a group of migrating moa.

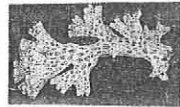
As the best key to critters of this size is '*British Ascomycetes*' by Dennis, identification difficulties are to be expected. But the combination of hyaline, septate, delicately striate ascospores with long-necked, black perithecia seems highly unusual, and, to date, even a family seems elusive.

But Hairy McLeary is not alone! A similar species, with larger perithecia, and larger, also striate ascospores, dubbed 'Hairy McLeary 2' was recently found by the Tongariro River Volcanic Plateau, Central North Island. AND during the recent (and excellent) N.Z. Fungal Foray at Haast, a further sister species, 'Hairy McLeary 3' was discovered lurking in the damp forest beside the Okuru Estuary.

So, if you fancy peering at very rotten wood with a hand lens, you may be rewarded by tiny, long-necked perithecia with anchoring hyphae. If so, I'd be interested!

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## LICHEN PROFILE: *Cladia retipora* (Labill.) Nyl. - David Galloway

As a schoolboy in Invercargill in 1957, I was first made aware of the existence of lichens by finding *Cladia retipora*, the subject of this note, in a *Sphagnum* bog close to a popular family picnic spot at the Seaward Bush Scenic Reserve. On taking a handful of this curious, spongy, white, coral-like substance back to Southland Boy's High School the following day, I was given two different opinions on it by my teachers. Firstly, the Biology Master declared it to be a moss, which I thought could not be right, since in my mind all mosses were green, while the Chemistry Master, Mr G.C. Martin, told me that it was in fact a lichen, and further, that its name was *Cladonia retipora*, the epithet *retipora* referring to the network of holes that is its characteristic feature. Gordon Martin was the son of William Martin, a retired school Headmaster who was one of New Zealand's few publishing cryptogamists, and at that time writing a monograph on *Cladonia* in New Zealand (Martin 1958b). Gordon Martin, who suffered from multiple sclerosis, and was unable to leap across drainage ditches then criss-crossing parts of the Awarua Bog, enlisted my help as an agile pair of legs for him, and I thus began collecting specimens of *Cladonia* from peat bogs in the Invercargill area, which he then sometimes forwarded on to his father in Dunedin. He suggested that I might like to start a collection of lichens, and from that suggestion my subsequent rather circuitous path to a career in lichenology began. So for me the lichen *Cladia retipora* has always had an attraction and a major significance.

Gordon Martin, gave me a reprint of his father's study of New Zealand *Cladonia* (Martin 1958b) in 1959 during my Upper VIth year, but much of it I found confusing and difficult to understand. However, I was fascinated by William Martin's notes on *C. retipora* "...The finest and most handsome of all *Cladonia* species, coralloid and reticulate, white, grey, or rarely faintly brown, rarely dark brown as in Australia and Chatham Island. Sea-level to subalpine on bogs, manuka heaths, sand-dunes, grassland and shingly wastes... Specimens collected by me on Longwood Range (4480) show a primary thallus of minute squamules. This is probably the first certain discovery of a primary thallus on any member of the *Clathrinae*. The discovery is corroborated by Dr A.W. Evans" (Martin 1958b: 630).

In 1960, as a first-year Botany student at Otago University I was to read another of William Martin's recent papers in which he reported "...Most authors have stated that the primary thallus does not exist or at least is unknown in any member of the *Clathrina*. In Labillardier's [sic.] original description of *Baeomyces retiporus* [sic.], the primary thallus ... is described as: crustaceus, granulis albissimis nitidis, conspersus, mox evanidus." For this reference I am indebted to Dr. Evans [Yale University, a distinguished *Cladonia* scholar upon whose taxonomic judgement William Martin relied during his early studies on this genus in New Zealand], who also corroborated my own discovery of plants from the Longwood Range in Southland with the primary thallus still present (no. 4880)..." (Martin 1958a: 80). I was thus fired with enthusiasm to see whether I too could find primary thalli of *C. retipora* and perhaps also of the more widespread *C. aggregata*. In 1960 on peat bogs at Tussock Creek on the Southland Plain near Winton, I found good material of both species with the secondary, coralloid thalli developing from inflated-squamulose primary thalli, and the following year Dr James Murray of the Chemistry Department confirmed that these structures were indeed primary thalli of *Cladia*. Subsequent searches from the Awarua Plains, Stewart Island, Silver Peaks and the Forgotten River Gorge, turned up primary thalli of *C. aggregata*, *C. retipora* and *C. sullivanii*, and a discussion of these collections formed the basis of my first publication in lichenology (Galloway 1966). *Cladia* has always held a fascination for me and subsequently I was able to add *C. inflata*, *C. schizopora* (Galloway 1977) and *C. fuliginosa* (Galloway 1985) to the species known from New Zealand, extending William Martin's treatment of the genus (Martin 1965). In 1981, Rex Filson in Melbourne published a monograph of *Cladia*, which was his MSc thesis for Monash University, and in this comprehensive work he lectotypified the basionym of *Cladia retipora* on a specimen of *Baeomyces retiporus* from Tasmania collected by La Billardière and preserved in the cryptogamic herbarium in Paris (Filson 1981: 23). Gintaras Kantvilas and Jack Elix subsequently described *C. moniliformis* from Tasmania (Kantvilas & Elix 1987) and in a study of the *C. aggregata* complex, described four additional species, all apparently endemic to Tasmania viz., *C. deformis*, *C. dumicola*, *C. mutabilis* and *C. oreophila*. New Zealand populations of *C. aggregata*, should be re-investigated in the light of these studies and it is likely that some or all of these new species will be found here.

Early in 1973 I began work in the Lichen Section of the British Museum (Natural History) at South Kensington, and by 1974, my wife Patricia was starting on her career as an opera singer, working from Covent Garden as a base. In May 1981 we spent a

month in Florence, and while Patricia rehearsed a new production of Wagner's *Götterdämmerung* conducted by Zubin Mehta, I worked in the Museo Botanico, in a rather down at heel, rambling old palazzo in Via La Pira. Here the Director, Prof Guido Moggi, introduced me to the extensive herbarium, and although he was not sure of the exact details of the lichen collections, he showed me the three major lichen collections for which Firenze is famous, the Pier Antonio Micheli collection, the Philip Barker Webb Herbarium and the General Cryptogamic Herbarium. And very kindly, he let me get on with exploring these treasures at my leisure over the subsequent weeks. In recent years the extent of the lichen collections in Florence has been documented more fully (Foggi et al. 1990).

The Micheli Lichens are worth a digression – as they are the basis of part of Micheli's book, *Nova Plantarum Genera* (Micheli 1728), a celebrated pre-Linnean treatment of cryptogams and far superior to Linnaeus's rather perfunctory treatment of lichens in his 1753 book *Species Plantarum* (Linnaeus 1753) which, rather unfortunately perhaps, is the accepted starting point for the naming of lichens (Galloway 1981). The Micheli lichens I found were bound in 5 large volumes (numbered 271-275). The lichens being glued onto small pieces of paper and pinned onto sheets 34 x 23.5 cm, which were then enclosed in paper folders. Each volume was in a rather fragile cardboard case covered with green fabric and secured with nearly rotted tapes! It was all rather badly curated and kept. The lichen specimens had phrase-name annotations in Micheli's hand, e.g. "...Lichen Pulmonarius cinereus ...", and a more modern hand had added later names e.g. "Ramalina pollinaria Ach. Sun.". The lichens themselves although well over 200 years old were in surprisingly good condition.

However, it was in the extensive herbarium of the English collector, Philip Barker Webb (1793-1854), that I really struck gold, finding there, *inter alia*, the lichen collections made by Jacques-Julien Houtou de la Billardière from the south coast of Tasmania in 1792 and including original material of the lichen that he named *Baeomyces reteporus* (Labillardière 1807), the first lichen described from Australia (Kantvilas 1983), and the lichen I first collected from Seaward Bush.

Labillardière was one of three naturalists appointed to the ships *La Recherche* and *L'Espérance* under the command of Joseph Antoine Bruny D'Entrecasteaux, charged by the Assemblée Constituante on 9 February 1791 to search for the lost expedition of Jean François de Galaup, comte de la Pérouse (1741-1788). The two ships left France at the end of September 1791 and, after calling at Tenerife and the Cape of Good Hope, made landfalls in Australia including Tasmania (see Galloway 1988: 98). During this time Labillardière made copious botanical collections many of which he later described (Labillardière 1807) with *Baeomyces reteporus* Labill., being described from Tasmania (see below). The subsequent dramatic fate of both Labillardière and his collections is worth recounting here.

On leaving Tasmania in 1793, the expedition commanded by D'Entrecasteaux sailed north via the Santa Cruz and Admiralty Islands to Java. During that passage both D'Entrecasteaux and his succeeding officer, Huon de Kermadec, died at sea. Command then devolved upon Alexander Hemisvy D'Ariveau who took the ships to Java where they learned of the execution of Louis XVI during the Revolution, and of the Dutch

being at war with France. Republican members of the ships' company, including Labillardière, were taken prisoner, whilst a number of the Royalist officers under the command of Rossel, who succeeded D'Ariveau on the latter's death, were allowed safe passage back to France, taking the expedition's (i.e. Labillardière's) collections with them. Although losing his collections, Labillardière retained his journal and on his release from prison in Batavia eventually returned to France in 1796. Meanwhile in June 1795, the Dutch vessel *Hooghly* with Rossel and Labillardière's collections aboard, was captured by the British Navy in the Atlantic, 15 days after leaving the Cape. As the British and Dutch were also then at war, Labillardière's collections were claimed by the British as a naval prize and taken to London to be presented to George III. Although France and Britain were at war, their men of science were not, and Sir Joseph Banks (President of the Royal Society and scientific advisor to King George III) and James Edward Smith (the founder of the Linnean Society of London and the then owner of the Linnaeus collection) petitioned the King to allow Labillardière's collections to be returned to Paris to their rightful owner, a course of action the monarch graciously acceded to.

Labillardière's preparation of his collections for publication, and the publication of *Novae Hollandiae plantarum specimen* is dealt with in some detail by Frans Stafleu (1967) who noted that Labillardière "...never really worked up all his collections" being more of a "...botanist-voyageur, with the emphasis on 'voyager'". Be that as it may, Labillardière did leave us the first formal description of an Australian lichen, and this singularly beautiful lichen is perfectly caught by Pierre Jean François Turpin's engraving of it in the Specimen. Wilfrid Blunt (1950) described Turpin as "...possibly the greatest natural genius of all the French botanical painters of his day". It is therefore fitting that a singular lichen should have a singular artist to first present its interest and beauty to the world.

In 1834, Labillardière's plant collections were purchased by the wealthy English botanist and collector, Philip Barker Webb (1793-1854). Webb lived for many years in Paris where he was a close friend and colleague of Camille Montagne who determined much of his cryptogamic material including the Labillardière lichens, and during the last 14 years of his life often worked in Florence. Webb willed his enormous herbarium, his library and his house in Paris to the Grand Duke Leopoldo I of Tuscany in 1850, with the intention that the collections be added to the Erbario Centrale Italico, now the Herbarium Universitatis Florentinae (FI) of the University of Florence. The Webb Herbarium (FI-WEBB) contains almost all of the holotypes of species described by Labillardière. The holotypes are nearly always accompanied by the holograph description, in the exact text as published (Steinberg 1977).

To my great delight, I eventually came across two herbarium sheets containing *Cladia retipora*. What I designated the holotype of *Baeomyces reteporus* Labill. (Galloway 1988: 104), has two specimens (11 x 8 cm and 6 x 6 cm) pinned to the top right-hand corner, and a paper packet with several additional pressed specimens on the lower right-hand corner of the sheet. A small paper packet marked "*Baeomyces reteporus*" in Labillardière's hand is pinned below this packet. Accompanying the lichens specimens I discovered a single, loose octavo sheet of paper written in ink on both sides in Labillardière's hand. The recto had a description of *Baeomyces* and part of

the description of the new species *B. reteporus*, while the verso had the remainder of the species description as well as legends for the figure illustrating the species in *Novae Hollandiae plantarum specimen* (Galloway 1988: 102, pls 4, 5; 103, pl. 6). The existence of Labillardière's holograph description together with the specimens of *Baeomyces reteporus*, confirmed their status as holotype, thus making Filson's designated lectotype material in Paris correctly an isotype. Altogether, I found 21 lichen species in 13 genera preserved on 19 herbarium sheets (Galloway 1998), from Labillardière's Tasmanian collections, but the jewel of this collection for me was the original gathering of *Cladia retipora*. This particular discovery closed a circle.

In 1842, William Jackson Hooker, the Director of Kew Gardens was sent material of *C. retipora* [he called it *Cenomyce retipora*, following Acharius (1814)], and wrote of the material "... Labillardière, and following him, Acharius, ascribe a thallus to this species... but my copious specimens exhibit no appearance of a thallus. If it exists, it is probably very evanescent... The texture of the entire plant is, as it were, between crustaceous and cartilaginous, not much unlike that of our well-known *Cenomyce rangiferina*; but, instead of forming an uniform tubular membrane, the whole surface is a tissue of elegant network, the areolae oval or rounded, varying somewhat in size, but gradually becoming smaller in the ultimate small ramuli; then the inside, instead of being tubular, is filled with the same tissue or network, anastomosing in every direction from the base to the summit of all the branches..." (Hooker 1842). Branching patterns and the development of podetia in *Cladia* were later discussed in a preliminary way by Galloway (1966) and by Jahns (1972). However, it was Sam Hammer who showed conclusively, in a series of elegant SEM figures (Hammer 2000:43, figs 37-42), that branching in *C. retipora* is primarily the result of meristem divisions, and he described the process of meristem ontogeny leading to growth of branches and development of perforations.

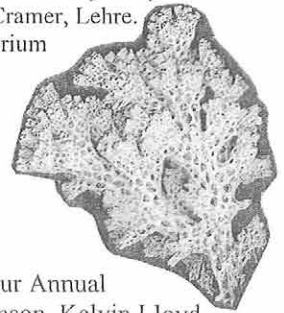
I still find *Cladia* an exciting genus, and I am repeatedly amazed at the beauty of the structure of *Cladia retipora* every time I see it, and reminded also of its poignant and dramatic history of discovery and description. William Jackson Hooker's encomium to it is still apposite "...Nothing in nature can exceed the elegant lace-like appearance of this plant, a structure one would little expect to meet with in the humblest and least perfect part, of the vegetable creation, the Lichens." (Hooker 1842).

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Fig. Beautiful 'coral lichen'  
*Cladia retipora*



## REPORTS

### BSO AGM, 10 April 2002 – Ralf Ohlemueller

Barbara Anderson, standing in for Bastow Wilson, chaired our Annual General Meeting. Apologies were received from Kath Dickinson, Kelvin Lloyd, Nola Walker and John Steel. The minutes of the 2001 AGM, approved by committee, were circulated and taken as read. The chairman's and treasurer's reports were also circulated and approved. Officers elected were: **Chairman**: David Orlovich; **Secretary**: Robyn Bridges; **Treasurer**: Ralf Ohlemueller; **Newsletter editor**: Allison Knight. **Committee members**: John Barkla, Barbara Anderson, Kelvin Lloyd (in absentia). (Bastow Wilson has since been co-opted on to the committee)

**Matters arising**: Barbara Anderson raised the issue of whether there is need to elect a vice chairman for the BSO. This was discussed and it was agreed that there is no