F.M.Bailey's ascent of Mt Bellenden-Ker in 1889, and notes on the publication priority of new vascular plant species from the Expedition

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Summary

Dowe, J.L. & Broughton, A.D. (2007). F.M.Bailey's ascent of Mt Bellenden-Ker in 1889, and notes on the publication priority of new vascular plant species from the Expedition. *Austrobaileya* 7(3): 555–566. The route of A.Meston's Bellenden-Ker Range Expedition of 1889 and F.M.Bailey's itinerary were determined from Meston's narrative of the Expedition. Many of the species that Bailey described from the Expedition were published as new species in as many as four publications. The chronology of the four publications has been established thus providing a priority of publication for the names involved.

Key Words: F.M.Bailey, A.Meston, Bellenden-Ker botany, publication priority, Queensland flora

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Introduction

One of F.M.Bailey's most productive collecting and taxonomic periods resulted from his participation in Archibald Meston's Government Scientific Expedition in 1889 to the Bellenden-Ker Range in north-east Queensland (White 1950; Hall 1978; Sanderson 2007), with almost 100 new taxa being described, mostly by Bailey himself. Bailey was one of two scientists on the Expedition, the other being zoologist Kendall Broadbent, a collector for the Queensland Museum. The Expedition departed Cairns on June 14, 1889, and during the ensuing 67 days, ascended Mt Bellenden-Ker [with a brief climb by Meston to the summit of Mt Bartle Frere (20–23 July)], as well as exploring the Mulgrave River, Harvey Creek, and Russell River areas. The Expedition returned to Cairns on August 19, 1889.

As an introduction to the taxonomic assessment, and to place in context the collection localities, this paper examined Meston's accounts and provides the most likely route that was taken by Bailey in his ascent and descent of Mt Bellenden-Ker. Some comments on the vegetation, as described by Meston, are also provided. In addition to the higher plants and ferns which are discussed here, Bailey (1890b, 1891) prepared lists of the fungi, mosses, liverworts and lichens collected during the Bellenden-Ker Expedition, but aspects regarding the publication priority of these taxa are beyond the scope of this paper.

With regard to the route and itinerary, only the ascent and descent of Mt Bellenden-Ker, which occupied the period 15 June to 17 July, is examined here in detail. However, the assessment of Bailey's taxonomic accounts deals with the entire Expedition.

The Bellenden-Ker Range Expedition

Meston (1889a–j) provided a detailed, though somewhat romanticized, account of the Bellenden-Ker Range Expedition, and with specific focus on the actual ascent and subsequent descent in the company of F.M.Bailey. However, Meston provided only a meagre description of other localities visited during the Expedition, such as Mulgrave River, Harvey Creek and Russell River, and consequently the route to these areas was not able to be determined with acceptable accuracy.

Accepted for publication 30 August 2007

Despite Mt Bellenden-Ker having apparently been ascended at least twice before by European explorers (Johnstone 1874; Sayer 1888), Meston was subsequently adamant that none of the previous attempts indeed reached the summit, and that he was the first non-indigenous person to do so. Meston's narrative is generally correct in geographical content. However, it is in some instances obscure with regard to location details as many of the topographical features of Mt Bellenden-Ker were not well defined at the time. The names of some of the peaks on the Bellenden-Ker Range described by Meston do not agree with the names on current topographical maps and this had led to some difficulties initially in interpreting the route taken by the Expedition. Some of the names used by Meston in 1889 that now refer to different peaks are: Mt Toressa for Mt Sophia, Mt Sophia for the northern-most high peak of the Bellenden-Ker Range (1280 m), South Peak for a small peak (1550 m) to the west-southwest of Centre Peak and Mt Harold for Mt Massey. Early names for some streams were also used by the Expedition, for example present-day Behana Creek was referred to as Tringilburra Creek. Understanding the different names was critical in determining the route of the ascent.

Of the altitude readings taken by Meston, only those recorded during the first week can be considered of sufficient accuracy to be used to locate the Expedition's position on a modern contour map. After that time, without frequent recalibration of the barometer, the altitude readings become less accurate and more problematic. Meston placed the Expedition's highest camp on his 'south peak' at a height of 5000 ft (1524 m). The true South Peak, as indicated on modern maps, is about 4.5 km (2.8 miles) away to the SSE at a height of about 1211 m (4000 ft). Meston appears to be describing a part of a plateau region about 1540 m (5050 ft) in height to the west and about 1 km from the Centre Peak, the highest point on the Bellenden-Ker Range at 1582 m (5189 ft). During the Expedition's stay at Meston's 'south peak', Meston ascended the highest point and a smaller peak about 400 m to the north at a height of 1555m (5100 ft).

Determining the route

Meston's reports (Meston1889a–j) contain much valuable information made from his observations and measurements during the ascent of Mt Bellenden-Ker. He described the mountain and creek systems in detail, the types of vegetation encountered, locations of campsites, local geology and activities carried out by members of the Expedition. He also recorded barometric heights, temperatures, distances travelled and directions taken.

Meston used a compensated aneroid barometer to measure heights (Meston 1889a). Measurement of altitude depends on the difference in air pressure between two points in a vertical column of air. Within this column, pressure variations are also caused by (1) changing temperature of the air column, (2) diurnal variations, and (3) movements of pressure systems. Where the pressure variations due to (1) and (2) support each other, errors up to 3–4% in the recorded altitude could occur (BoM 1966; SRBV 1997). Allowing for possible errors as outlined above, Meston's initial barometric heights can still be used with some confidence to support or substantiate his position already determined from his descriptions and distances travelled. The location of the highest camp, South Peak Camp was determined by Meston's description of the whole south end of Bellenden-Ker from the Centre Peak broadening out to be about 1 km in width. His barometer gave a height of 5000 feet (1525 m) (Meston 1889a). The Bartle Frere map shows in this area a relatively flat triangular region of height 1520 m dominated by three small high points each of height of about 1540 m but less than 1560 m and all about 300 m apart. The high point nearest to the ridge climbed and west-southwest of the Centre Peak is the most likely site for this camp at 1550m.

All this information was evaluated and assessed and apart from some discrepancies discovered during this process relating to Meston's use of mountain names (mentioned above), the detail was sufficient to allow described features to be readily identified on the Bartle Frere 1:100,000 Topographical Survey map, Series R631, Sheet 8063, Edition 2-AAS. The estimated route of Bailey's sector of the Expedition is provided in **Fig. 1**.

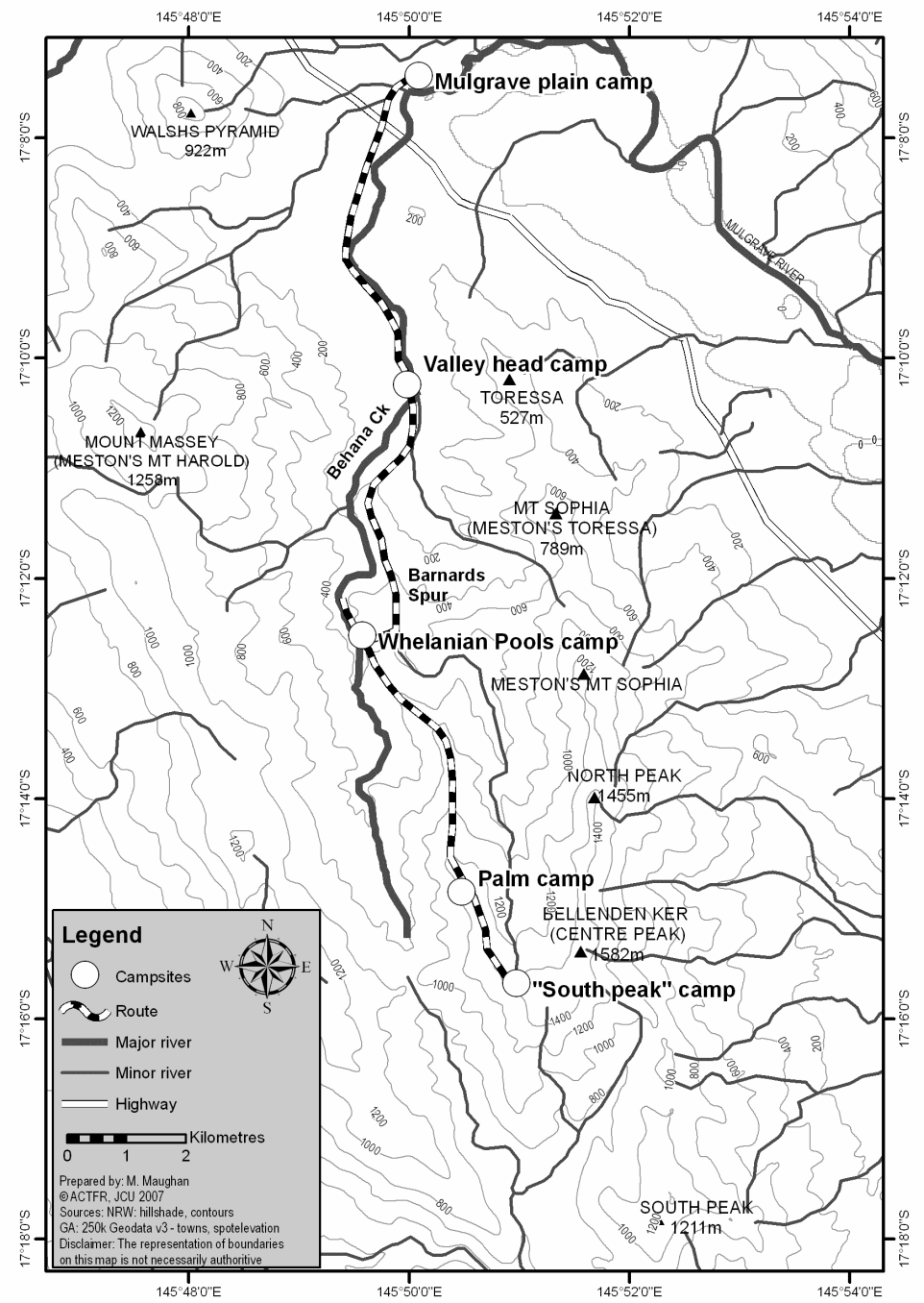

Fig. 1. Estimated route taken by F.M.Bailey during the Bellenden-Ker Expedition, 1889, based on data in Meston (1889 a–j). Map prepared by Jonah Sullivan and Mirjam Maughan, ACTFR, Townsville.

Description of the route

The Expedition left the 'Mulgrave Plain Camp' (about 4 km east of Walsh's Pyramid) on Behana Creek (named as Tringilburra Creek) on 16 June 1889 and travelled 7 km up Behana Creek on horseback over level open-forested country to the junction of a creek draining the western slopes of Mt Sophia (current name) and Behana Creek. 'Valley Head Camp' was made at this junction, which was also at the foot of Barnard's Spur, so named by Meston in February 1889 while on a previous expedition (Meston 1889k; Barnard 1962). The next day, the Expedition now on foot, ascended the spur, the crest of it being open forest and rising 500 m in 5 km in a southerly direction before descending steeply 200 m into the Behana Creek gorge. At this point the two main tributaries of Behana Creek join. The 'Whelanian Pools Camp' was made on large slabs of granite by the creeks. The next two days were used to collect specimens along the steep and rocky creek gorges.

On 20 June the party began the long climb to the top of Mt Bellenden-Ker. The ridge selected by Meston during the February 1889 Expedition ran slightly east of south from the junction of the two creeks at the 'Whelanian Pools Camp' to just west of the summit of Mt Bellenden-Ker, a distance of about 7 km and rising from 300 m to about 1500 m. This section of the climb was in dense rainforest along a narrow ridge not more than 6 m wide in places, with steep slopes on both sides. Progress was slow as the track had to be cleared of lawyer vine, stinging trees and thick vegetation so that the Aboriginal carriers following were not obstructed. 'Palm Camp' was set up at about 1200 m on 20 June, and 'South Peak Camp' at 1550m three days later, about 1 km west-southwest of Mt Bellenden-Ker Centre Peak. Collections were made at 'Palm Camp' on 20–21 June and at 'South Peak Camp' from 23-26 June, before the Expedition returned to lower altitudes. Only Meston, his son and Broadbent and an Aborigine, Multarri, climbed to the summit of Mt Bellenden-Ker at a height of 1582 m. The climb was made in mid-winter. At the 'South Peak Camp', Meston recorded midday temperatures ranging from 13ºC to 18ºC and night temperatures ranging from – 1ºC to 9ºC. Most of the collecting at the high elevation camps was done in rain or cloud.

Collections and vegetation

Bailey collected mostly near the camps, as well as along the routes between camps, and did not venture too far away from these areas.In contrast, Meston and others, not only collected near the camps, but ranged further afield during the expedition (Meston 1889b). Meston (1889e) also collected plant specimens on Bailey's behalf during the Expedition. In his reports, Bailey listed collection localities such as Mt Bartle Frere, Mt Massey (Meston's Mt Harold) and Walshs Pyramid, places that Bailey did not visit during the Expedition. In some instances, specimens have been cited with Meston as a co-collector (see Chew (1972), for type collection of *Piper mestonii* F.M.Bailey and Chew (1989), for type collection of *Ficus crassipes* F.M.Bailey), while many have been cited merely as 'Bellenden-Ker Expedition' without reference to actual collector. Bailey's Bellenden-Ker Expedition itinerary is presented in **Table 1**.

Overall, little can be gleaned from Bailey's accounts with regard to the vegetation types through which they traveled and made collections. In his reports, his references to vegetation were limited to descriptors such as 'scrubs', 'tropical scrubs' and 'rich scrubs', which appear to be synonymous with closed forest and/or rainforest; 'scrub borders' which may distinguish some ecotones; and 'scrubs bordering rivers' which refer to riparian vegetation. On the contrary, Meston's reports were descriptive of the vegetation, and he provided, sometimes with acknowledged assistance from Bailey, details of species composition and distribution, as part of his accounts of the daily routine of the Expedition. In his '*The Flora of Wooroonooran*', Meston (1889j) provided a summarised account of the vegetation experienced during the Expedition, albeit "*…a very brief description of the specially interesting section of the Bellenden-Ker flora, and intended for the ordinary reader who either dreads or has no desire for a personal orthographical struggle with Mr. Bailey's official report*". In a general

Table 1. F.M.Bailey's itinerary during the Bellenden-Ker Expedition, 1889.

Date	Movements and collecting locations
4 June	depart Brisbane
9 June	arrive Cairns
14 June	depart Cairns for Bellenden-Ker Range
15 June	arrive Tringilburra (Behana) Creek, edge of Mulgrave Plain
16 June	arrrive head of Behana Creek valley
17 June	ascend Barnards Spur, camp at Whelanian Pools
18–19 June	collect around Whelanian Pools
20–21 June	ascend to Palm Camp, collect locally
22 June	ascend to 'south peak' [west-southwest of Centre Peak on modern maps]
23–26 June	collect around 'south peak' [west-southwest of Centre Peak on modern maps]
27 June	descend to Palm Camp
28 June–1 July	collect around Palm Camp
2 July	descend to Barnards Spur, camp overnight
3 July	descend to head of Behana Ck valley
4–10 July	collect in Behana Creek valley area
11 July	move to Behana Creek camp, edge of Mulgrave Plain
12–17 July	collect in Behana Creek camp area
18–25 July	travel to Russell River and Harvey Creek, collect locally
26 July	travel to Mulgrave River
27 July–18 August	collect along Mulgrave River
19 August	return to Cairns
20 August	Cairns
21–26 August	visit Freshwater Valley
27 August	depart Cairns
2 September	arrive Brisbane

context, Meston described the whole range as being "*clothed in dense tropical jungle from base to summit, there not being a single open space 50 ft. square, except a patch of ferns on the south spur at 2700 ft., and a few hundred yards of forest on the west spurs of mounts Sophia and Toressa*".

In the lower portion of the ascent, Meston (1889a) described the vegetation of Barnard's Spur as "*chiefly bloodwood, Moreton Bay ash and the Casuarina*". He used the term 'forest' for this moist sclerophyll vegetation, as opposed to 'scrubs', 'thick scrub' or 'dense tropical scrubs' for complex closed forest or rainforest. As Meston began his ascent into the higher elevations he noted, at about 1200 m, "*many tall trees…especially Kauri pines, which attain gigantic dimensions. The lawyer vine and stinging tree are left behind at about 2000ft, but all the way up it is a thick wiry undergrowth*". At Meston's 'south peak', at about 1550 m, "*the vegetation here is one tangled solid mass, impenetrable without the cane-knife*". To reach the Centre Peak, Meston had to cut "*through indescribable vegetation, the worst of which is a dracophyllum tree… tough, gnarled, wiry branches all tangled together*". Upon reaching the summit, the "*trees are nearly all short and gnarled, and all, without exception, hard as bone*" and "*conspicuous among the vegetation is a dome-topped tree with foliage so thick that not a ray of sunshine penetrates*". The latter refer to *Dracophyllum sayeri* F.Muell. and *Leptospermum wooroonooran* F.M.Bailey, respectively.

The potential of many species as useful fruits was optimistically expounded by Meston, such as *Acronychia acidula* F.Muell., *Antidesma bunius* (L.) Spreng., *Citrus inodora* F.M.Bailey, *Davidsonia pruriens* F.Muell., *Garcinia mestonii* F.M.Bailey, *Macadamia whelanii* (F.M.Bailey) F.M.Bailey, *Myristica insipida* R.Br., *Piper mestonii* F.M.Bailey and *Rhodomyrtus macrocarpa* Benth., as well as various native grapes, the Burdekin Plum, beans, nuts, cherries, berries and figs. Among perfume-bearing plants, Meston included *Dracophyllum sayeri*, an unnamed '*Hollandaea* sp.', *Orites fragrans* F.M.Bailey and orchids. As for potential garden ornamentals, Meston noted *Helicia nortoniana* (F.M.Bailey) F.M.Bailey, *Mullerochloa moreheadiana* (F.M.Bailey) K.M.Wong and *Schefflera actinophylla* (Endl.) Harms. He noted the restricted distribution of *Acronychia chooreechillum* (F.M.Bailey) C.T.White, *Crepidomanes pallidum* (Blume) K.Iwats. and *Leptospermum wooroonooran* to the summits of peaks. The achievements of the Expedition were remarkable considering the impenetrability of the vegetation, the steepness of the topography, the almost constant rain and the very low temperatures in the higher elevations.

New taxa described from the Bellenden-Ker Range Expedition

A perusal of taxonomic citations in Chapman (1991), APNI (2005) and numerous other publications, of the taxa that were described from the Bellenden-Ker Expedition (Bailey 1889a–c, 1890a–b, 1891), revealed that the publication citation data for them were overall inconsistent and contradictory. In effect, new taxa were nominally published as '*n. sp.*', up to four times in separate publications, and priority had not been fully resolved for many of them. This paper aims to compare the publications in which the new taxa were 'published', and resolve the publication priority issue.

The four publications in which taxa were described as '*n. sp.*' are:

1. '*Report on New Plants, Preliminary to General Report on Botanical Results on Meston's Expedition to the Bellenden-Ker Range, by F.M. Bailey, F.L.S., Colonial Botanist*'. This report is dated 1 October 1889 by what appears to be Bailey's hand.

In this publication, 17 new taxa (one genus and 16 spp.) are listed alphabetically by genus, designated as '*n. sp.*' and with a detailed description and distribution details. The publication appears to have been type-set, and consists of three pages. It is not known how many copies were produced or to whom they were distributed, and the document is exceedingly rare. However, as the document was type-set, it can be assumed that a significant number may have been printed and distributed. The document qualifies as a valid place of publication for 17 new taxa (**Table 2**, column 1).

Table 2. Publication data of F.M.Bailey's Bellenden-Ker Expedition vascular plant taxa published as new (i.e. '*n. sp.*') in four publications. Listed are the page numbers for the protologue (**bold** type) and subsequent publication of the same taxon:

1: Bailey 1889a; 2: Bailey 1889b; 3: Bailey 1889c; 4: Bailey 1890a.

Bailey's taxon name	Currently accepted name for taxon (Bostock & Holland 2007)	Publication and page numbers			
		1	2	3	4
Alsophila rebeccae var. *commutata* F.M.Bailey	*Cyathea baileyana* (Domin) Domin [Cyatheaceae]	-	-	-	**91**
Aspidium acuminatum var. *villosum* F.M.Bailey	*Lastreopsis microsora* (Endl.) Tindale subsp. *microsora* [Dryopteridaceae]	-	**29**	78	93
Aspidium ramosum var. *lineare* F.M.Bailey	*Arthropteris palisotii* (Desv.) Alston [Nephrolepidaceae]	-	**28**	78	93
Bacularia palmeriana F.M.Bailey	*Linospadix palmerianus* (F.M.Bailey) Burret [Arecaceae]	-	**24**	67	77
Bambusa moreheadiana F.M.Bailey	*Mullerochloa moreheadiana* (F.M.Bailey) K.M.Wong [Poaceae]	**1**	26	71	87
Blechnum whelanii F.M.Bailey	*Blechnum whelanii* F.M.Bailey [Blechnaceae]	**1**	28	77	92
Bulbophyllum toressae F.M.Bailey	*Dendrobium toressae* (F.M.Bailey) Dockrill [Orchidaceae]	**1**	23	63	72
Citrus inodora F.M.Bailey	*Citrus inodora* F.M.Bailey [Rutaceae]	**1**	15	34	12
Cyanocarpus F.M.Bailey	*Helicia* Lour. [Proteaceae]	**1**	21	55	60
Cyanocarpus nortoniana F.M.Bailey	*Helicia nortoniana* (F.M.Bailey) F.M.Bailey [Proteaceae]	**2**	21	55	61
Cyrtandra baileyi F.Muell.	*Cyrtandra baileyi* F.Muell. [Gesneriaceae]	-	-	-	**51**
Denhamia viridissima F.M.Bailey & F.Muell. ex F.M.Bailey	*Denhamia viridissima* F.M.Bailey & F.Muell. ex F.M.Bailey [Celastraceae]	-	-	**35**	14
Derris koolgibberah F.M.Bailey	*Derris koolgibberah* F.M.Bailey [Fabaceae]	-	**16**	38	20
Dimeria glabriuscula F.M.Bailey	*Dimeria ornithopoda* Trin. [Poaceae]	-	-	-	**83**

Bailey's taxon name	Currently accepted name for taxon (Bostock & Holland 2007)	Publication and page numbers			
		1	2	3	4
Ficus crassipes F.M.Bailey	*Ficus crassipes* F.M.Bailey [Moraceae]	**2**	22	60	69
Garcinia mestonii F.M.Bailey	*Garcinia mestonii* F.M.Bailey [Clusiaceae]	**2**	14	31	8
Harpullia frutescens F.M.Bailey	*Harpullia frutescens* F.M.Bailey [Sapindaceae]	-	**15**	36	17
Helicia whelanii F.M.Bailey	*Macadamia whelanii* (F.M.Bailey) F.M.Bailey [Proteaceae]	**2**	21	55	61
Hymenophyllum trichomanoides F.M.Bailey	*Hymenophyllum baileyanum* Domin [Hymenophyllaceae]	-	**27**	74	90
Hymenophyllum tunbridgense var. *exsertum* F.M.Bailey	*Hymenophyllum subdimidiatum* Rosenst. [Hymenophyllaceae]	-	**27**	74	90
Hyptiandra bidwillii var. *grandiuscula* F.M.Bailey & F.Muell. ex F.M.Bailey	*Quassia baileyana* (Oliv.) Noot. [Simaroubaceae]	-	-	-	**12**
Leptospermum wooroonooran F.M.Bailey	*Leptospermum wooroonooran* F.M.Bailey [Myrtaceae]	-	**17**	40	27
Melicope chooreechillum F.M.Bailey	*Acronychia chooreechillum* (F.M.Bailey) C.T.White [Rutaceae]	-	**15**	33	11
Myrtus metrosideros F.M.Bailey	*Uromyrtus metrosideros* (F.M.Bailey) A.J.Scott [Myrtaceae]	-	17	41	**27**
Oberonia pusilla F.M.Bailey	*Octarrhena pusilla* (F.M.Bailey) M.A.Clem. & D.L.Jones [Orchidaceae]	**2**	23	62	71
Omphalea queenslandiae F.M.Bailey	*Omphalea queenslandiae* F.M.Bailey [Euphorbiaceae]	-	-	**58**	67
Orites fragrans F.M.Bailey	*Orites fragrans* F.M.Bailey[1] [Proteaceae]	**2**	21	56	61
Panicum prenticeanum F.M.Bailey	*Panicum incomtum* Trin. [Poaceae]	-	-	-	**82**
Panicum vicinum F.M.Bailey	*Ichnanthus pallens* var. *major* (Nees) Stieber [Poaceae]	-	-	-	**82**
Piper mestonii F.M.Bailey	*Piper mestonii* F.M.Bailey [Piperaceae]	**2**	20	54	59

Bailey's taxon name	Currently accepted name for taxon (Bostock & Holland 2007)	Publication and page numbers			
		1	2	3	4
Polypodium albosetosum F.M.Bailey	*Grammitis albosetosa* (F.M.Bailey) Parris [Grammitidaceae]	**3**	29	78	94
Scaevola scandens F.M.Bailey	*Scaevola enantophylla* F.Muell. [Goodeniaceae]	**3**	18	47	43
Scleria ustulata F.M.Bailey	*Exocarya scleroides* (F.Muell.) Benth. [Cyperaceae]	-	-	-	**81**
Sorghum laxiflorum F.M.Bailey	*Vacoparis laxiflorum* (F.M.Bailey) Spangler [Poaceae]	-	**25**	70	84
Strychnos bancroftiana F.M.Bailey	*Strychnos minor* Dennst. [Loganiaceae]	**3**	19	49	47
Symplocos paucistaminea F.Muell. & F.M.Bailey	*Symplocos paucistaminea* F.Muell. & F.M.Bailey [Symplocaceae]	-	-	-	**46**
Trichomanes barnardianum F.M.Bailey	*Crepidomanes barnardianum* (F.M.Bailey) Tindale subsp. *barnardianum* [Hymenophyllaceae]	-	-	-	**89**
Vallisneria gracilis F.M.Bailey	*Vallisneria nana* R.Br. [Hydrocharitaceae]	**3**	23	62	70
Vittaria (*Taeniopsis*) *wooroonooran* F.M.Bailey	*Scleroglossum wooroonooran* (F.M.Bailey) C.Chr. [Grammitidaceae]	**3**	27	75	92

[1]reinstated to species rank at BRI (P.I.Forster, pers. comm., August 2007)

2. '*Report by A. Meston on the Government Scientific Expedition to the Bellenden-Ker Range (Wooroonooran), North Queensland*'. This is a foolscap-sized Parliamentary Paper in *Queensland: Votes and Proceedings of the Legislative Assembly during the Session of 1889*. The botany section was titled '*Botany of the Bellenden-Ker Expedition, by Fredk. Manson Bailey, Colonial Botanist*' and covered pp. 14–29 of the Parliamentary Paper, and repaginated and over-printed as pp. 1218–1233 in Volume 4 of a compilation of Parliamentary Papers for that year. This paper was tabled in the Queensland Parliament on 16 October 1889 (R. Bradbury, Queensland Parliamentary Service, pers. comm.).

In this version, Bailey annotated a total of 583 taxa, of which one genus and 23 species were annotated as '*n. sp.*', and three as new varieties (N.B: Bailey did not designate these as new but simply applied a new varietal name to an existing species), and including the 17 species previously described in '*Report on New Plants*' (see above). All taxa were listed according to the classification of Bentham and Hooker (1862–1883), with species name, author, common name, description and collection location. Bailey provided expanded descriptions of some established taxa. The descriptions of the 17 redescribed '*n. sp.*' taxa were identical to those in '*Report on New Plants*'. This publication therefore has

the protologues of an additional ten taxa that were therein validly published (**Table 2**, column 2).

3. '*Report of the Government Scientific Expedition to Bellenden-Ker Range upon the Flora and Fauna of that Part of the Colony*'. This was published in octavo-size by the Department of Agriculture, Brisbane. The botany section was titled '*Botany of the Bellenden-Ker Expedition*', covering pp. 29–80. The introductory section by Archibald Meston was identical to that included in the Parliamentary Paper version, and following the botany section there was an additional section on the Zoology of Bellenden-Ker Ranges by Henry Tyron and Charles Hedley, thus bringing the total number of pages in the document to 127.

The title page is dated 1889, and there is strong circumstantial evidence that this version was published after October 1889. Apart from including additional taxa, there is a footnote (p. 35) in which Bailey noted that F.Mueller (Victorian Government Botanist) had seen some specimens and provided assistance with descriptions: "*The few plants marked with an asterisk I obtained but poor specimens of, but Baron Mueller has kindly assisted me in their determination. The descriptions in all cases, however, are my own*". As Bailey did not return to Brisbane until early September, it may be that dispatch of specimens to Mueller and for Mueller to respond would have taken longer than the maximum of five weeks before the Parliamentary Paper version (see above) was tabled on 16 October 1889. Bailey's introductory paragraphs are dated even earlier, at 7 October 1889, but this may not be related to the botanical assessment as an identical letter, also dated 7 October 1889, was used in the preamble to the Parliamentary Paper version.

This version was more expansive in layout, with headings by class, order and genus, with full taxonomic citation, and some additional notes. There were seven additional taxa, bringing the total to 590 taxa, of which two were new taxa that had not been included in either '*Report on New Plants*' or the Parliamentary Paper version (**Table 2**, column 3).

4. '*Synopsis of the Queensland Flora, Third Supplement*'. This was published post May 1890, and all of the new taxa that were published in the preceding publications (see above) were again designated as '*n. sp.*' in this publication, but needless to say do not qualify as valid protologues. However, there were an additional eight new taxa described from the Bellenden-Ker Expedition collections, and these had not been previously described (**Table 2**, column 4).

There were also other new taxa subsequently described from the Expedition by Bailey, but these did not appear in print until the early 1890s and later, in publications such as *Botany Bulletin*, *Queensland Agricultural Journal*, *Queensland Flora* and *Comprehensive Catalogue of Queensland Plants*, and all of which were published as '*n. sp.*', and in most cases, to our knowledge, only once. However, Bailey did produce some other lists of species, some of them designated as '*n. sp.*' in various appendices to Department of Agriculture Annual Reports. For example, in the Annual Report of 1889–1890 in an appendix titled '*Supplement to the report of the botany of the Bellenden-Ker Expedition*', Bailey listed nine taxa that had been described in *Synopsis of the Queensland Flora, Third Supplement*, but he appended these with the appropriate authorship. In the Annual Report for 1890–1891, in a section that was titled '*Final supplement to the report of the Botany of the Bellenden-Ker Expedition*', Bailey listed nine higher plant species of which five were appended as '*n. sp.*'. However, there was no description accompanying these names and taxonomically they can be relegated to the status of *nomen nudum* if deemed to be published before the valid protologues in various issues of *Botany Bulletin* for 1891.

Discussion

White (1950, p.109) appears to be the first to comment on the discrepancies concerning publication priority involving the two versions of Bailey's Bellenden-Ker Expedition botany reports. White described the Parliamentary Paper version as "*extremely rare, however, even in Australian libraries*", whereas the Department of Agriculture version "*was the*

one always quoted by Bailey himself and by subsequent authors". White concluded that the Parliamentary Paper version had priority. However, both of these were preceded by the '*Report on New Plants*' dated 1 October 1889, in which 17 new taxa were validly described. These taxa were in turn 're-described' in the Parliamentary Paper version of the botany report, and which was tabled 16 October 1889, with a number of additional previously undescribed taxa. Subsequently, these taxa were 'redescribed' in the Department of Agriculture publication post-October 1889 and again in post-May 1890 in Bailey's '*Synopsis of the Queensland Flora, Third Supplement*'.

The chronology of those publications in which Bailey's Bellenden-Ker taxa were described and then redescribed, though nomenclaturally illegal, as '*n. sp.*', has been clearly established in this paper. All species that were described in the various publications herein discussed, are listed in **Table 1**. It is anticipated that this assessment of Bailey's Bellenden-Ker botany will resolve some of the inconsistencies in taxonomic citations for the taxa involved.

Acknowledgements

We would like to thank the following who kindly and thoroughly assisted with library searches, advice on references and other matters: Robert Bradbury (Queensland Parliamentary Service, Brisbane), Arthur Chapman, Alex George, Laurie Jessup (BRI), Catherine Jordon (Australian National Botanic Gardens Library, Canberra), Helen Thompson (ABRS), Jenny Tonkin (ABLO), Stefan Ungrich (CBGP-INRA, France), Annette Wilson (ABRS) and Frank Zich (QRS).

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