

foreshore along to the Puhinui Creek in the south. Cattle grazed through here up until about 10 years ago, but the almost pure manuka canopy is in good condition, and of a fairly uniform height of 4-7m.

*Coprosma tenuicaulis* was common in the understorey, and a *Coprosma* hybrid was seen.

Despite the presence of one large kahikatea (*Dacrycarpus dacrydioides*) standing well above the surrounding canopy, we could find only one juvenile nearby. *Carex virgata* was abundant and *C. geminata* was common. There were patches of *Nertera scapanioides* on *Sphagnum* moss. Only one ripe red fruit could be found. Other species recorded were *Centella uniflora*, abundant *Isachne globosa*, *Histiopteris incisa*, *Leucopogon fasciculatus*, *Blechnum novae-zelandiae* (the swamp form),

*Cyathea dealbata*, *Baumea rubiginosa*, *B. tenax*, *Cordyline australis*, *Muehlenbeckia australis*, *M. complexa*, *Pteridium esculentum*, *Geniostoma rupestre* var. *ligustrifolium*, *Hydrocotyle novae-zeelandiae*.

It was clear that both authors had run out of steam by the time they left the manuka scrub to return to their cars, as their note books are silent on the subject of the stream-side flora. One author does however recall that while we were crossing pasture to the stream, Wendy found (and carefully uprooted) a Bathurst bur (*\*Xanthium spinosum*) with really vicious-looking spines. The native freshwater buttercup, *Ranunculus amphitrichus*, has also been recorded from the reserve.

Reference:

"Puhinui Reserve: Draft Management Plan" February 2000, Manukau City Council.



## Remembering Edith Katie Reynolds 25 February 1910 - 25 December 1999

Alan Esler (Coordinator)

Katie Reynolds touched many hearts. Her life and character were recalled the long-time friend Rosemary Roberts in the Northern Advocate, Whangarei. Auckland Botanical Society is grateful to this newspaper's editor for permission to reprint Rosemary's tribute. When it was known that Katie would be remembered in this Journal her friends volunteered words from the heart in her praise. We are proud to pay our respects to this remarkable lady. Lucy Cranwell wished to express her compliments also but her own death sadly came too soon. She would have recalled many outings such as the Hen Island trip in 1934 which Katie described in an article in the *Auckland Botanical Society Journal* 43: 35-39 (1988).

**Rosemary Roberts** (writing for the Northern Advocate 27 Jan 2000, p. 2; reproduced with permission.)

Notes in square brackets are corrections to Rosemary's original text.

Katie Reynolds of Whangarei, a self-taught botanist who never attended university but was consulted by leading scientists, has died. She was 89.

Her achievements won her some of New Zealand's highest awards for those who study plants — she was a Fellow and an Associate of Honour of the Royal N.Z. Institute of Horticulture, and was also awarded the Institute's prestigious Loder Cup for the preservation of native flora. In nominating her for an award, Emeritus Professor of Botany at Auckland University, F. J. Newhook described her as, "legendary in botanical and horticultural circles ... unreservedly accepted by professional scientists as an authority." A gifted communicator, Mrs Reynolds combined a research role sharing her encyclopaedic knowledge of plants — particularly New Zealand native plants — with people of all ages and levels of learning, over several decades.

Described at her funeral as "fearless but never fierce," Mrs Reynolds was a tenacious battler on conservation issues, always presenting her arguments with meticulously researched factual evidence.

She led the charge on moves to save Waipoua kauri forest and other less well-known areas of ecological importance in Northland; she was affectionately dubbed "Coppermine Kate" after playing a leading role in defeating proposals to mine Coppermine Island in the Hen and Chickens group off the east coast of Northland, in the early 1970s.

She was one of the first people to speak out about the damage being done by possums, particularly to pohutukawa. In careful research completed before "going public," she proved beyond doubt that possums were responsible for the damage and

produced damning evidence about their eating habits and patterns of stripping trees one by one.

Katie Reynolds was the youngest of the four children of Mr and Mrs A.R. Pickmere of Whangarei. Her parents were keen amateur botanists, and their four-acre property, Pukenui, was filled with rare plants, both native and exotic. Growing up there was "like living in a wildlife park," she said.

The garden included a fine orchard and a bush area running down to the Hatea River, where the Pickmeres moored their launch. Boating excursions were an extension of the family's interest in studying wildlife and plants and took them to all the outlying islands and northern harbours. These were her "playground and school" said Mrs Reynolds, and she was always to be "supremely at home and happy" on the water. Among the many scientists who visited the Pickmeres and joined them on the boat trips were botanists Dr Lucy Cranwell and Dr Lucy Moore, who became Mrs Reynolds' lifelong friends and, she said, "a most dynamic influence". Cranwell was later charge botanist at the Auckland Museum and Moore was senior botanist at Lincoln College [Botany Division, DSIR, Lincoln].

While her parents could not afford to send her to university — the 1930s depression was just ending when she left Whangarei High School — growing contact with these and other scientists gave Mrs Reynolds access to the botanical learning she craved.

She and her mother used to collect specimens of plants and flowers to send to the annual Cheeseman Memorial Exhibition of Native Plants held at the Auckland Museum — a mission which took days of preparation at home and at the museum. From about 1935 she helped at the shows every year and organised the 1938 show when Dr Cranwell was overseas.

In the late 1930s Mrs Reynolds was appointed acting botanist at the Dominion Museum in Wellington. She held the position for two years, until returning home when her father became ill. During World War 2, she served in the Women's War Service Auxiliary Signallers, and drove ambulances.

### **Richie Afford:** A Golden Memory of Katie Reynolds -

If one lives long enough at one address, a garden eventually becomes a sort of memorial repository and a reminder of past associations; and so it is with Katie and our garden. She was a person of boundless enthusiasm, and involved in the early 30s with the

She also contributed to the war effort by gathering a large amount of a particular variety of seaweed for research by Lucy Cranwell [Moore]; this led to an agar manufacturing industry being set up.

Katie Reynolds' career as a communicator began in 1935 when she was suddenly called on to give a talk on native plants to the Junior Gardening Club. The parents were so interested that she was asked to talk to some adult groups and literally hundreds of talks followed over the years. Her audience expanded dramatically when she became Radio IXN's gardening broadcaster in the early 1960s. She also wrote articles for the New Zealand Herald, the New Zealand Gardener and the Whangarei City Council's monthly journal, illustrated with her own fine line drawings.

She took the members of her children's club, the Native Wildflower Circle, on field trips every Saturday to learn about native plants, talked botany to Guides and Rangers and helped tertiary students collect and learn about native specimens. She regularly guided overseas botanists around the North, particularly to Waipoua Forest. Eminent visitors included Dr Harold St John of Bishop Museum, Honolulu, and Dr Ronald Melville of the Royal Botanic Gardens at Kew, London.

Generous with the seeds and cuttings she collected throughout her life, she was responsible for many native plantings in Whangarei city and district, giving her own time and usually the plants as well. She married William Reynolds, an engineer, in 1946. They had two sons, Richard and Alistair. In 1958 the couple bought a property in Anzac Rd, Whangarei, then in gorse and pine trees. Over the years they worked to turn it into a mini-botanic garden. Before long they were hosting innumerable groups — even busloads — of visitors who came to see the many rare native plants being cultivated there.

After her husband Bill died in 1975 Katie Reynolds ran the family launch, Valerie, for another fifteen years. Right until her death she still enjoyed a night or two out on a boat.

She is survived by her sons, and five grandchildren.

New Zealand Native Wildflowers Circle, organised and run by Lucy Cranwell, the precursor to our Botanical Society. In those days, it may be hard to believe, but the Circle gathered members from far afield, Marton, Shannon, Wellington, Whakatane, Sumner, Grey-

mouth, and of course Whangarei. Lucy attracted members like moths to the proverbial flame.

So later, during the war, when I was posted to Whangarei, and on a brief leave, who should be the first person I contacted – no other than Katie. I will never forget her numerous tubs of *Xeronema*; she dearly wanted to take me to one of her favourite haunts to see them in their natural habitat, the Poor Knights. But more urgent events dictated otherwise. Later in the 60s I organised an Easter trip to Whangarei for the Auckland Natural History Club, so who better could I co-opt as guest leader than Katie, and her friend Charlie Devonshire. Who was another Whangarei enthusiast. They duly turned up with

cuttings and flowers for examination and identification; among them one of the New Zealand jasmine *Parsonsia heterophylla*, with bright golden flowers. There was great speculation as to how this could be. Was it the soil for instance that would account for its colouring? I brought the cutting home and struck it in a pot; later I put it in the garden to scramble up an old dead *Cyathea*. Imagine my disappointment when it eventually presented the usual creamy white flowers. Years passed, then one sunny spring morning my eyes caught a most glorious sight - a crown of bright golden blossom. And so it has been each year. A golden memory of an unforgettable Katie.

### **Maureen Young**

In 1987 we took Katie up to the Far North for an outing with the Native Orchid Group. As she had no trousers she bought herself some thick ribbed pantyhose to wear under her frock, and with a pair of sneakers she was all set for a field trip. It had rained the previous night so the Kaimaumu swamp was very wet, and we spent most of the day in water up to our

ankles. That night, back at camp, Katie asked me if I knew what capillary action was. As I replied in the affirmative, she then told me that during the day she had felt that her backside was wet, and she could only conclude that capillary action had taken place within her ribbed pantyhose. We had a good laugh over it.

### **Colleen Macmillan:** Katie - what a distinctive character!

My first introduction to her, perhaps 25 years ago was over the phone as she spontaneously crooned and hiccupped her rendition of the kokako's song. Living near the Mangakahia range we suspected that we had been hearing the bird's call, and were directed to Katie as an authority on such matters.

environmental issues as well as the determination to follow through as needed. For many years she had a love/hate relationship via the media, local and national, with offending authorities. Like a dog with a bone she never let up.

We met not long after that and it did not take long for our friendship to blossom. We shared an interest in the natural world and over the years went on many jaunts throughout the North to observe things of interest and often to collect seeds.

She had a fine command of the English language and for those who knew her well, an immensely pleasing hand. Her talents were reinforced by her skilful botanical line drawings, and over the years she did a series of illustrated articles for the NZ Herald and NZ Gardener, as well as presenting local radio talks. In her latter years she developed a good eye for photography with some being displayed at the Russell Visitors' Centre.

She was a gracious lady, unhurried, but of quick mind and sharp wit. She had a discerning nature, and she did not tolerate fools easily. And for people who embellished at the truth, "I always carry my bag of salt", she would say with a smirk.

With photography in mind, we set off for the Waipoua forest one day especially to record a particular tiny ground orchid. The day was ours – the bush too. There was no one else in sight. The subject located, Katie, with the intensity of an eye-dog, dropped to her knees, easing herself slowly backwards across the track. She edged down bit by bit on to her belly with a swaying side action, for all the world like a seal positioning itself for a sunning. In full 'sprawl' position was she, her weight on her elbows and the camera focussed, when the silence was suddenly shattered.

Self taught, her knowledge of New Zealand flora and fauna was a tremendous. Her hallmark was accuracy. For these reasons, over the years botanists of repute from New Zealand and overseas sought her out, this was something that gave her great pleasure. But equally fulfilling was her willingness to share her knowledge with those who showed interest, both young and old. She had an inherent understanding of

From around the bend in the track a horde of American tourists materialised. The leader of the pack bellowed to his cohorts, as only Americans can do, "My God, there's been accident!"

And with that the mob ran, tripped and floundered in our direction till we were fully surrounded, questions being fired at random. Interest diminished rapidly when they collectively couldn't see the orchid, and it didn't feature as being as big as orchids back home. So they moved on.

Katie, totally unfazed carried blithely on – didn't give them the time of day, except perhaps an irritated mutter. And when she'd completed her mission she got up, brushed herself down and we carried on. We had many giggles over that incident.

**Alan Esler:** Katie Reynolds as a Botany Division outpost

I met Katie Reynolds in November 1970. Sandra Astridge and I were accompanying Ruth Mason as she revisited Northland wetland sites she had surveyed with Neville Moar and Bob Cooper in 1949. Katie already had a long association with Botany Division. I was new to the job as regional botanist covering all the northern half of the North Island and getting to know the territory and its plant life. Sandra was my assistant and straight from university. Katie became our mentor because she knew the north and was more than willing to impart her knowledge. Her letters in a bold, clear, neat hand came thick and fast. Usually the second arrived before we had answered the first. Plants were the main topic but we got to hear about the environmental wreckers, and always the latest news about her family. She was very outspoken about the wreckers and did not hesitate to confront them if she felt they needed good reasons for not proceeding. She proudly related to me her part in stopping a publicity stunt that involved scaling Sail Rock standing tall and alone in the waters of Hauraki Gulf. She knew that it was in a delicate state because of the bird burrows in the soft soil. I don't remember who or what was to get the publicity. The chosen climber was already known for a much greater feat of daring. She rang him and simply said "Call it off Ed".

From 1965 Katie relayed information on flower forms and localities of *Fuchsia procumbens* through Lucy Moore to feed to Eric Godley's research on the subject. Eventually Eric and Katie shared authorship of a scientific paper in which they stated in the beginning "We will bring together all the known locality records of *F. procumbens*, and find out how many populations have survived and how many are threatened". Up to the 1980s it was thought that this plant grew in 20 or

Age did not dampen Katie's lifelong interests which were too many and varied to list. But one worthy of mention was her exceptional knowledge of her local history, and with that interest in mind, she did meticulous research for the Historical Places Trust, in particular, that involving the preserving of some of the north's historical trees. In some cases this involved liaising with elderly Maori; she took this in her stride, being proficient in Maori protocol and language. A versatile lady.

And on a final note, she did keep up with the times in the most matter of fact way. Would you believe she sourced and helped implement the DNA testing of bat's blood? Now, who other than Katie would have done that?



**Katie Reynolds at Ahipara Gumlands with the N.Z. Native Orchid Group, 7 Nov 1987.**

**Photo: Doug McCrae.**

so places. Eric and Katie listed 57 localities and declared "*F. procumbens* is not considered to be endangered". Katie visited the bays around Cape Brett and other places by boat where access on foot would have been difficult. Frank Newhook shared many cruises with Katie and knew these out-of-the-way places too.

I had some short field trips on land with Katie and visited and stayed with her at 42a Anzac Rd, Whangarei. Bill kept a magnificent vegetable garden and Katie grew many native plants and ornamentals. There was no landscape plan. She knew what each plant needed and gave it that place. This is the mark of a smart gardener's skill.

Other colleagues in Botany Division enjoyed Katie's wisdom and friendship. Bill Sykes contributes his memories to the recollections in this journal, below.

This journal also affords an opportunity to record one of her punchy epistles, and a sample of her distinctive handwriting (8 Feb 1985). The "canoe" referred to is her launch *Valerie*.

Dear Alan,  
Would you please identify this for me? It came from Puketi forest where, my friends tell me, it is not uncommon. To me it looks like *Olearia macrodonta*, but is out of its natural range. I had a wonderful two days in far north and saw *Cryptostylis subulata* in flower. What on earth is L.&S. [Department of Lands and Survey] doing turning marvellous swamp-

shrubland into pasture? It is a very costly operation and in any case we don't have markets for our farm products. In one place many *Todea barbara* had been bulldozed out – till Doug McRae informed them. In another place where swamp is drained, and discing is being done, *Cryptostylis*, being cut, comes up like grass. L.&S. is "saving" them by digging them and transferring them to Moturua, Bay of Is. Crazy! What comes then of the "genetic pool" idea. In the Bay "they" – suspect Bill Wright, "did in" two kowhai I planted at Oihi. I know better than put Taupo kowhai there and in fact my two were from a particularly attractive tree from Napia Bay, Mangonui Inlet. The parent tree has succumbed to gorse spraying operations. Luckily I have one plant here. I do wish that we would preserve some of these wonderful wetlands. I saw Fern Birds and heard Bittern, and in the area saw Maire Tawake in full fruit, and an 8 foot tall *Astelia grandis* (these last in a Reserve).

Best wishes, Katie

My canoe is on the slip, and I must get to work. She has a major job to be done – re-caulking."

area saw Maire Tawake in full fruit, and an 8' tall *Astelia grandis* (these last in a Reserve)

Best wishes  
Katie.

My canoe is on the slip, and I must get to work. She has a major job to be done – re-caulking.

#### Ewen Cameron: Katie, Bot Soc and publications

I first met Katie in the mid 1980s at an Auckland Bot Soc function. I immediately warmed to this woman

with a twinkle in her eye, and a passion for plants and conservation. Katie joined Auckland Bot Soc in 1958

and resigned in 1992 because of poor health. During that period she contributed several articles to the *Bot Soc Journal* (see below) and attended several meetings, including the inaugural Lucy Cranwell Lecture in September 1985, given by Lucy Moore. Katie and Joan Dingley cut the cake at the Bot Soc Jubilee Dinner (3/10/87). During 1992 I was invited to attend a farewell "botanical meeting" for Katie at Whangarei, before she headed south.

With Alan Esler's encouragement, I phoned Lucy Cranwell on 1 May to see if she was up to giving a recorded telephone "interview" about Katie for this tribute. She willingly agreed and immediately recalled Katie as "strong Scottish .... great yachtswoman". We were to do the interview in exactly two weeks time, but unfortunately by that time Lucy had been moved to hospital.

Judging from Auckland Museum herbarium (AK), Katie's love of plants did not extend to collecting many herbarium specimens, although I don't know how many there may be in CHR or WELT. I located 24 sheets in AK that Katie had collected (1933-1987),

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**Bill Sykes:** She was a very special person who certainly enriched my life

I have many nice memories of Katie Reynolds whom I first met in June 1962 shortly after coming to New Zealand. As I recall, it was Lucy Moore who suggested that I should go and see Katie because, as I soon came to appreciate, she was one of the most knowledgeable people about the flora of North Auckland. Her great enthusiasm and energy quickly became evident and were subsequently manifested to me in various ways. Thereafter for many years I was the fortunate recipient of Katie's generosity and helpfulness for she freely sent me specimens and

ranging from an alga from the Poor Knights, to vascular plants from the Bay of Islands, Bream Islands, Cavalli Islands, 2 species of wild ginger from Whangarei, cultivated material from her garden, to an unusual cultivated Whangarei tree (*Phytolacca dioica*). The holotype specimen of *Xeronema callistemon* f. *bracteosa* (CHR 50094A) was described by Lucy Moore from a specimen Katie collected in her garden in November 1943. Lucy Moore (1968) noted that the two varieties of *Xeronema* were transplanted from the Poor Knights and kept under observation there by the Pickmere family for 30 years. Peter de Lange and I (1999) recently reduced the variety *bracteosa* to forma.

As others have already said, Katie had an intimate knowledge of the plants of Northland. I was grateful for this knowledge when writing an article on *Lilium formosanum* (Cameron 1989), Katie was able to recall that this lily was growing wild by the Kerikeri Stone Store back in the late 1930s. Katie's warmth, local botanical knowledge and environmental watchdog function will be sorely missed.

the best tribute that I can pay her is to share a few of her comments and observations.

Katie's interests were wide and encompassed all aspects of the environment, botanical and zoological, on land and sea. I shall always think of her as being closely connected to the sea because she was from a seafaring family and married into another. Her annual summer holiday cruising along the North Auckland coast and offshore islands in the Reynolds' yacht *Valerie* was a pleasure that a number of biologists experienced. For Katie this was the ideal way to live as she slowly sailed along the coast, stopping periodically to row the dinghy ashore for some botanising. Her love of the sea was emphasised for me in 1990 when she wrote concerning her son Richard's proposal to move house, "I like Rotorua where they are now, but it is so inland." As might be expected, Katie was a keen swimmer and enjoyed snorkelling, fishing and other watery activities. She described swimming through *Zostera* beds looking for the inconspicuous submerged flowers. She could show a considerable degree of fearlessness as illustrated by this quote from another letter in 1990 concerning catching a three-foot octopus that wrapped itself round her arm. "It really was easy -- squeezing it in the thin part and biting between the eyes, then turning it inside out."

On the botanical side, Katie is probably best remembered for her knowledge of plants and her skill in growing them. I have not been to the Three Kings Islands but I was introduced to their flora in Katie's garden. I and other botanists remain indebted to her for freely sending flowers and/or fruits of northern species that were difficult to obtain further south. A notable contribution that she made was in her locating and monitoring of the populations of *Fuchsia procumbens* in North Auckland. These were very valuable for research on the species.

As someone working on cultivated and adventive plants I found Katie very knowledgeable about them as well. She wrote in detail about her experiences with growing such plants as the South African *Scadoxus* species. On my visits she took me to see various uncommon cultivated plants in the north because she knew where they were and who was growing them. She was always keen to keep up to date with the tiresome business of name changes, for example in her later years she referred to her bush of *Ernestimeyera magna* which she would have known

for most of her life under the much more euphonious name of *Alberta magna*.

Katie was a passionate conservationist of the indigenous flora, which meant that she was very concerned over the spread of noxious plants, being aware of the danger of some species before most people. This is well illustrated by her remarks on gingers, *Hedychium* species, in 1990. "Yes they are as bad as they're being painted. *H. gardnerianum* (Kahili Ginger) is very beautiful, but, my word, does it take charge! It is spread by birds, of course, by people who don't know its potential, and by floods. I gave a talk about weeds and warned about ginger 37 (I think) years ago!" Katie was a fighter for the environment generally and vigorously opposed the polluting activities of various industrial developments, especially in the Whangarei Heads area. I see that as late as May 1990 she wrote concerning the Marsden Point Oil Refinery and Power Station. "That coal-fired Power Station! It has been shelved Temporarily' but we, the fighters, don't feel that we can relax. We should never have had the Oil Refinery (which battle I fought and lost). We have too many oil spills, and, particularly since the expansion, it discharges an unacceptable tonnage of S.O.2 - horrible for the residents of the once beautiful area, Whangarei Heads." Not surprisingly she acquired a degree of notoriety for her views and in a 1986 letter she comments that a young new acquaintance said, "You're a stropky old bugger, aren't you?" But this remark did not upset her at all for "I've been chuckling ever since, and I regard it as an affectionate and tremendous compliment".

Closer to home it was sad that in later years she suffered from thieves stealing some of her prize plants. But characteristically she did not admit defeat because as she said in May 1986, "I am wanting to acquire and grow plants of *Urtica ferox* in strategic spots around the place. Good for my arthritis, host for Red and Yellow Admiral butterflies - as well as providing a suitable bite against thieving intruders."

Finally, I shall always remember Katie had a very wide circle of friends and acquaintances for she was always very interested in people. Although she only met my children when they were very young she always inquired about them afterwards. I think that it was such interests that encouraged her to become an authority on poisonous plants, for I know that local health authorities often consulted her about them. Katie was a very special person who certainly enriched my life.



## Notes towards an Excursion Flora: *Amphibromus fluitans* (Poaceae)

Rhys Gardner

In the new Grass-Flora (Edgar & Connor 2000) this Critically Endangered native grass is scarcely brought forward: it is not illustrated, only a few localities are referred to, and the northernmost collections are not cited.

***Amphibromus fluitans*** Kirk, *T.N.Z.I.* 16: 374, pl. 28 (1884)

Perennial, semi-aquatic, forming loose grey-green mats, branches ("stolons") extravaginal, mostly basal, shoots incl. infl. to c. 40 cm long; leaf blades to c. 12 x 0.3 cm, tapering to sheath apex; ligule c. 4-7 mm long, tapering to a subacute tip; panicle loose, to 13 cm long, erect, often enclosed in uppermost leaf-sheath (where the spikelets may be entirely cleistogamous); spikelets 3-6-flowered (in Australia apparently 6-10-fl), to c. 2.5 cm long (incl. awns), breaking up below the lemmas; glumes persistent, the upper one slightly exceeding the lower; lemma 5 mm long, strongly 7-nerved, 2(-5)-fid at apex, the awn arising from c. halfway up lemma, ± straight, obscurely twisted, scabridulous; palea slightly shorter than lemma; callus rounded, short-hairy.

Distribution: Northland (e.g. Ninety Mile Beach and Karikari peninsula; P. J. de Lange *pers. comm.*), Great Barrier Island, near Waiuku and south to Aotea Harbour, Waikato Lakes district and from there southwards to Lake Tekapo. See Ogle (1987) for other localities. Also native to Australia (New

South Wales, Victoria and Tasmania), where it is said to be rare.

Ecology: A sporadically-distributed plant of moderately fertile wetland shallows (Ogle 1987). Most collections come from the edges of dune-lakes on the west coast of the North Island, but the plant is also known from several montane swamps in the central North Island mountains, to c. 900 m a.s.l. It grows well at the A.R.C. Botanic Gardens, Manurewa, in a relatively dry site.

Notes: Thomas Kirk discovered *A. fluitans* near Huntly, at Lake Waahi (often miscalled "Waihi"). His article has an amateurish but not inaccurate sketch of the plant done by his fifth child, Lucy May Kirk.

Kirk noted that the spikelets tend to break up soon after the panicle becomes exerted "so that there is but little to attract attention to the plant". In fact the pair of glumes persist at the apex of the panicle branches (see Fig. 1).

Vegetative pieces might easily be misidentified as creeping bent (*Agrostis stolonifera*). However, this has both intra- and extra-vaginal branching and a leaf blade that it tends to be wider than the sheath. Its ligule is similar to that of the *Amphibromus* in being a rather long and conspicuous membrane but tends to be relatively broad at the apex and splits to become deeply lacerate.

### Selected specimens

Gt Barrier I., Tryphena-Claris Rd, 36°15'S 175°28'E, P. J. de Lange, 20 Nov 1989 [habitat now destroyed, P. J. de L. *pers. comm.*], AK 199925;

Karioitahi, nr Waiuku, 37°17'E 174°41'E, H. Carse, 25 Nov 1899, WELT 68460;

Lake Whangape, "Opuatia Swamp", 37°26'S 175°04'E [S13 929164], "floating turf at lake inlet", P. J. deLange, 17 Feb 1990 AK 202187;

Aotea Harbour, Makaka Road, 37°57'S 175°28'E, "short turf around dune lakes", P. J. de Lange, 3 Apr 1990, AK197805;

Pureora Forest, Waihora lagoon, "scattered round edge of lagoon", G. Reid, 13 Feb 2000, AK 245590;

Cult. ex "Maher's Swamp" [nr Barrytown], 42°11'S 171°19'E, P. J. de Lange, 5 Jan 1990, AK 211089.

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**Fig. 1. (opposite page) Whole plant (photocopy) x 0.7; ligule x 30; spikelet x 4; glumes x 30. Based on Cheeseman, New Plymouth, Jan 1885, AK 200024.**