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New and significant plant distribution records from northern New Zealand

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Abstract Comments are made on the distribution north of about latitude 38° of 31 rare or locally indigenous taxa. The rediscovery of *Asplenium hookerianum*, *Corybas unguiculatus*, *Doodia aspera*, and *Pseudopanax gilliesii* in North Auckland is documented. Significant northward extensions of geographic range are made for *Asplenium flabellifolium*, *Ascarina lucida*, *Dracophyllum pyramidale*, and *Phymatosorus novae-zelandiae*. The first mainland records are published for the hybrid *Asplenium oblongifolium* × *A. obtusatum* subsp. *northlandicum*.

Keywords plant distribution records; pteridophytes; monocotyledons; dicotyledons; New Zealand

INTRODUCTION

Between 1975 and 1979 I have collected extensively in New Zealand north of latitude 38° and have been able to relocate or find new localities for several of New Zealand's rarer indigenous plants. These discoveries, and some significant range extensions for other species, are listed below. Specimens have been deposited in the herbarium of Botany Division, DSIR, Christchurch (CHR).

PTERIDOPHYTES

Adiantaceae

Adiantum formosum R.Br.

Recorded in Northland from Reef Point, Herekino (Waitotoki Stream, A. J. Poole, pers. comm.), and northern Wairoa River (Allan 1961). I have not been able to relocate it at these places — the alluvial river terraces that provided a suitable habitat are now dominated by pines or adventive weeds.

Anogramma leptophylla (L.) Link

Mount Wellington, Auckland, 36°54'S, abundant on cliffs of fine scoria, CHR 353537.

The only other recent collection north of Wairarapa came from a small colony several kilometres away from Mount Wellington (AK 99881, W. Fisher, 1963; W. Fisher, pers. comm.).

Aspleniaceae

Asplenium flabellifolium Cav.

The Pinnacle, above Kapowairua, eastern end of Spirits Bay, Mangonui County, 34°28'S. Many small

plants growing under and over shaded ledges of conglomerate with *Cheilanthes distans* and *C. sieberi*. CHR 281585. This is the northern-most record, extending the known range 160 km north. Brownsey (1977a) gives the species distribution as scattered localities southwards from the Bay of Islands.

Asplenium hookerianum Col.

Kaeo, Whangaroa County, 35°06'S, on damp bank in kauri forest, CHR 355686.

This species ranges from Kaitaia to Stewart Island (Brownsey 1977a) but is rare north of Auckland. The Kaitaia record is based on a collection by H. B. Matthews (AK 8064), and P. J. Brownsey notes for my specimen that he has not seen any recent collections from north of Kaukapakapa (36°37'S).

Asplenium obtusatum Forst.f. subsp. *northlandicum* Brownsey

Pihakoa Point and Puheke Beach, Mangonui County, 35°50'S, on rocks near coast, CHR 310811.

These specimens have a combined stipe plus lamina length of c. 60 cm (cf. 6-28 cm range given by Brownsey 1977a).

Asplenium oblongifolium Colenso × *A. obtusatum* subsp. *northlandicum*

Rarawa Beach, Mangonui County, 34°43'S, on coastal banks, CHR 353481.

North Cape, 34°28'S, at base of a steep cliff under *Metrosideros excelsa*, CHR 356986, with A. P. Druce and R. O. Gardner.

These are the only mainland records of this hybrid (see Brownsey 1977b).

Blechnaceae

Blechnum banksii (Hook.f.) Mett. ex Diels

Ninety Mile Beach, Mangonui County, 34°50'S, on damp lignite, CHR 309001, 309008.

Waitakere Range, Waitemata County, 37°S, base of coastal cliff, CHR 308981.

Woody Head, Raglan County, 37°52'S, on damp rocks at sea level, CHR 355473. A new record for this area.

The occurrence of this species at "Waihi" (Cheeseman 1896, p. 347) may refer to the first of these places.

Blechnum penna-marina (Poir.) Kuhn

Tauroa Peninsula, Mangonui County, 35°12'S, on damp sandstone, CHR 309672.

Probably the northern-most collection. Wheeler (1963) listed the species at North Cape but my own observations suggest that her record is based on depauperate *B. membranaceum* (Col.) Mett. I have not seen voucher specimens from North Cape and the record seems unlikely.

Doodia aspera R.Br.

Kawakawa, Bay of Islands County, 35°25'S, in *Leptospermum* scrub, CHR 309747.

This fern has previously been known in New Zealand only from Tom Bowling Bay near North Cape (AK, Carse!; Parris 1972). My specimens differ from those of Carse in their longer fronds and lack of creasing, and so resemble the usual Australian form of the species.

Chinnock (1976) recorded *D. aspera* from Maraetai, Manukau County, 36°54'S (AK 138454!), but this is in error. The specimens are a form of *Doodia media* R.Br. subsp. *australis* in which the pinnae bases are adnate and confluent (B. S. Parris, pers. comm.).

Grammitidaceae

Grammitis rawlingsii Parris

Toatoa Grove, Waipoua State Forest, Hokianga County, 35°40'S, infrequent, on bases of kauri and other trees, CHR 386909.

The third collection of the species, which is known only from this locality, was made with D. R. Given in January 1979.

Loxomaceae

Loxoma cunninghamii R.Br. ex A. Cunn.

Maungataniwha Range, Mangonui County, 35°10'S, abundant on stream edge, CHR 318727.

Totara North, Whangaroa County, 35°03'S, in regenerating kauri forest, CHR 387861.

Loxoma is now an uncommon plant, at least on the mainland. These appear to be the first collections north of latitude 36° since the early 1920s.

Lycopodiaceae

Lycopodium serpentinum Kunze

Matai Bay, Mangonui County, 34°50', uncommon in *Empodisma-Gleichenia* peat bog, CHR 319048.

Rawlings (1971) recorded this species from beside the road to Cape Karikari (CHR 194256) but land reclamation has now extinguished that population. The following year he found another colony a few kilometres away on the shore of Lake Rotokawau (Rawlings, pers. comm.), and I have seen other small colonies there.

This rare species still occurs at Moanatuatua Swamp, Waipa County, 37°56'S (CHR 182135, P. Parkinson, 1968; own observations, February 1978).

Osmundaceae

Todea barbara (L.) Moore

The following are mostly new records.

Near North Cape in low *Leptospermum* scrub above Murimotu Island, 34°28'S, CHR 285218.

Near Spirits Bay, 34°26'S, on damp clay banks in the headwaters of Waiwheo and Te Ngako Streams, CHR 285130 and CHR 281582.

Near Te Paki trig, 34°27'S, in low coastal scrub on a dry ridge, CHR 309686.

Parengarenga Harbour, 34°25'S, on low sandstone, 1.5 m above high-tide point but well in the salt-spray zone, seen but not collected.

Near Big Lake, 34°32'S, a few very large plants with some fronds up to 2 m in length in a very damp sandstone cave, and growing in a curious and unique association with *Leptopteris hymenophylloides*, *Selenodesmium elongatum*, *Blechnum membranaceum*, *Cordyline pumilio*, and *Senecio diaschides*, CHR 319507.

Lake Rotokawau on Karikari Peninsula, 34°51'S, on compacted sandy clay just above the edge of the lake, CHR 321602.

Te Kao, 34°38'S, roadside by a drain and in scrub nearby, seen but not collected. Also some very large plants in a disused paddock, 1.5 km north of Te Kao, in low scrub.

Totara North, Whangaroa County, 35°02'S, a few scattered plants growing alongside old logging tracks (seen but not collected).

The Lake Rotokawau record is the first for Karikari Peninsula. Possibly the only remaining population on Hospital Hill at Mangonui (35°S) has been recently destroyed by road widening and the formation of a car park. A specimen was collected from here in 1976 (CHR 309016). Generally, plants are tolerant of salt spray and grow in both very wet and very dry places. Despite this apparent versatility, no colony except that at Waiwheo Stream contains more than a dozen adults. Juvenile plants were noticed only in the Te Kao population and are abundant there. *Todea barbara* also grows in a *Typha-Baumea* swamp near Big Lake (see above) but no specimen was collected.

Polypodiaceae*Microsorium novae-zelandiae* Cop.

Te Tipi plateau, Thames County, 37°02', epiphytic on *Dacrydium intermedium*, c. 800 m alt., CHR 312589.

This extends the known range north (from Mount Te Aroha) by c. 50 km.

Schizaeaceae*Schizaea dichotoma* (L.) Smith

Herekino State Forest, Mangonui County, 35°12'S, CHR 308991 and CHR 194257 collected by G. B. Rawlings in 1971.

Manaia Kauri Sanctuary, Coromandel State Forest Park, large population of robust plants sometimes to 45 cm tall with up to 35 fertile pinnae, CHR 309033.

Waiiau Falls Scenic Reserve, near Coromandel, large population, CHR 309032.

Kaeo, Mangonui County, 35°05'S, CHR 285131 and CHR 218405 collected by G. B. Rawlings in 1971.

Waipoua Forest Sanctuary near Cathedral Grove, A. E. Esler (pers. comm.).

Waipoua Forest Sanctuary at Toatoa Grove, CHR 228952 collected by A. E. Esler *et al.*, 1972. Seen by me in two localities but not collected.

Manginangina Scenic Reserve, Puketi Forest, not uncommon under *Agathis australis*, CHR 285129. Also common in parts of Puketi Forest itself, seen but not collected.

Russell State Forest, CHR 235853 collected by A. E. Esler & S. J. Astridge in 1972.

Warkworth, CHR 278900 collected by L. B. Moore in 1976.

Matauri Bay, Whangaroa County, in *Agathis* remnant on ridge above bay, R. H. Michie (pers. comm.).

Great Barrier Island, in small group of *Agathis australis* on ridge north of Motairehi swamp, CHR 321413.

Great Barrier Island, near Whangaparapara track, CHR 232931, collected by D. Court in 1972.

Chinnock & Heath (1974) state that *S. dichotoma* is now very rare and local, although once common. The above recent records suggest that the plant may not be rare so much as overlooked.

Thelypteridaceae*Cyclosorus interruptus* (Willd.) Ito

(=*Thelypteris gongyloides* (Schkuhr) Allan sensu Allan 1961).

Thelypteris confluens (Thunb.) Morton

(=*T. palustris* Schott. var. *squamigera* (Schlect.) Allan sensu Allan 1961).

These swamp-dwelling ferns are now rare in New Zealand. In Mangonui County they occur in the localities listed below, several of which are new

records. Superscripts indicate the species at each site:

^C = *Cyclosorus interruptus*, ^T = *Thelypteris confluens*.

^{CT} Te Werahi Swamp, 34°28'S, ^C CHR 312531 and ^T CHR 312529.

^{CT} Karikari Bay, 34°50'S, in dune slacks, ^C CHR 319057 and ^T CHR 319047.

^{CT} Motutangi Stream, 34°52'S, in swampy backwaters, ^C CHR 319054 and ^T CHR 319056.

^{CT} Tokerau Beach, 34°54'S, large colonies in recently burnt swamp, ^C CHR 309006 and ^T CHR 308988.

^C Lake Rotokawau, 34°53'S, CHR 319053.

^C Waihi Stream, 34°57'S, CHR 308979.

^T Rangiputa, 34°53'S, abundant in partly drained swamp, CHR 321367.

^T Tauroa Peninsula, 35°12'S, abundant in swamp and adjoining muddy paddock, CHR 308990. In a similar habitat c. 600 m east.

T. confluens also occurs near the Kerikeri Inlet, Bay of Islands County, 35°30'S (CHR 215620, G. B. Rawlings, 1970).

DICOTYLEDONS**Araliaceae***Pseudopanax ferox* Kirk

Near Tanutanu Beach, Tauroa Peninsula, Mangonui County, 35°12'S, *Leptospermum* scrub, CHR 309693.

This plant appears to have been lost from the following localities in Mangonui County: Reef Point and Shipwreck Bay (R. H. Michie, pers. comm.), and Te Ari (own observations).

The record of Barton (1972) of *P. ferox* in the Hunua Ranges, 37°10'S, in error, the voucher specimens being *P. crassifolius* (Auckland Regional Authority, Forestry Section herbarium!).

Misidentifications may also be responsible for the *P. ferox* records of Gudex (1959) and Mead (1969), but I have seen no voucher specimens.

Pseudopanax gilliesii Kirk

Whangaroa Harbour, Whangaroa County, 35°S, in coastal forest, CHR 309688.

This specimen is from the type locality but constitutes only the fourth collection of the species. Juveniles have not previously been observed. They differ in their smaller leaves, which are more frequently unifoliate (photographs deposited in CHR). It has been hypothesised that this species is of hybrid origin (Allan 1961) but this view is untenable as field studies indicate a uniform population having very characteristic unifoliate and trifoliate leaves.

Chloranthaceae*Ascarina lucida* Hook.f.

West of Spirits Bay, Mangonui County, 34°27'S, in podocarp-broadleaved forest, CHR 314580.

This is a range extension, McGlone & Moar (1977) mapped the northern limit of the species as near Kaitaia.

Lobeliaceae*Pratia physaloides* (A.Cunn.) Hemsl.Te Paki, Mangonui County, 34°27'S, streamside in small *Agathis*-podocarp remnant with large population, CHR 314518.Tapakakero Point, Mangonui County, 35°20'S, streamside in coastal forest with *Planchonella novozelandica* (CHR 321595), *Pisonia brunoniana* (one tree), and *Hymenantha novae-zelandiae*, CHR 319059.

Whatawhiwi, Mangonui County, 34°53'S, streamside in scrub near coast (G. B. Rawlings, pers. comm.).

Waitotoki Stream, Mangonui County, 35°05'S, streamside in coastal forest, CHR 310802.

Whangamumu Harbour, Bay of Islands County, 35°15'S, streamside in coastal forest, growing under *Nestegis apetala* (CHR 319044).The above are new records for *P. physaloides*. It has been observed but not collected by me in coastal forest west of Warawara State Forest and in similar habitats in the northern Whangaroa Harbour. It has been known to occur as far south as Sail Rock Island in the Hauraki Gulf (Cheeseman 1925) but is depleted at many localities.**Epacridaceae***Dracophyllum pyramidale* W. R. B. Oliver

Herekino State Forest, Mangonui County, 35°12'S, two plants in regenerating forest, 300 m alt., CHR 308997.

The previously-known northern limit for the species is Little Barrier Island, over 100 km to the south (type locality).

Malvaceae*Hibiscus diversifolius* Jacquin

Whareana Beach, Mangonui County, 34°28'S, stream edge, CHR 387498 (and CHR 178128, G. C. Kelly, 1967).

Paxton Point, Mangonui County, 34°42'S, swamp margin, CHR 319046 (and CHR 276395, A. E. Esler, 1974).

Karikari Bay, Mangonui County, 34°50'S, dune slack, CHR 319058.

Tauroa Peninsula, Mangonui County, 35°12'S, swamp margin, CHR 355677 (and CHR 296411, H. Carse, 1912).

H. diversifolius is now very rare in New Zealand. It was known from Tapotupotu Bay and Wai-kuku Beach in the North Cape district (R. H. Michie, pers. comm.), but a search in 1977 in company with Mr Michie failed to relocate it.**Orchidaceae***Corybas unguiculatus* (R.Br.) Reichb.

Ahipara gumfield plateau, 35°10'S, CHR 285124.

Many inconspicuous plants growing singly in very damp, sandy soil on low ridges in a peat swamp.

This species was originally recorded in New Zealand from peaty swamps bordering Lake Tongongue near Kaitaia, an area long since drained. Further populations existed in the now drained Motumahoe swamps near Tauhei and from the Mo-anatuatua Swamp near Ohaupo. No plants were found in a recent search in August 1979 at the Moanatuatua Swamp. Extensive drainage works are in progress there and it is very doubtful if any plants still exist.

New Zealand plants have been described as *Corysanthes matthewsii* Cheeseman (1899) and *Corysanthes carsei* Cheeseman (1912). In 1945, Hatch merged *C. matthewsii* with the Australian *C. unguiculatus* but maintained *C. carsei* as distinct (transferring it to *Corybas*). Moore & Edgar (1970) merged all three species. The Ahipara specimens are closest to *C. carsei*, should this be regarded as distinct.**Onagraceae***Fuchsia procumbens* R. Cunn. ex A. Cunn.

Kennedy Bay, Coromandel County, 36°42'S, a large colony on a sandy bank near high-tide mark, CHR 309026. Both sexes present.

Piperaceae*Peperomia tetraphylla* (Forst.f.) Hook. et Arn.Herekino Gorge, Mangonui County, 35°10'S, epiphytic on *Pittosporum* sp., CHR 310787. This is the third collection of this species from Northland and the first from the west coast of the North Island (see Rawlings 1971).**Pittosporaceae***Pittosporum virgatum* Kirk

Puketutu, Mangonui County, 35°S, in podocarp-broadleaf forest, CHR 355670.

Coffins Creek, Great Barrier Island, 37°18'S, abundant in regenerating kauri forest, CHR 319049.

Kennedy Bay, Coromandel County, 36°42'S, in regenerating kauri forest, CHR 309049.

Mercury Bay, Coromandel County, in tall *Lep-tospermum* scrub (seen but not collected).Previous records of *P. virgatum* are from Whangaroa and various coastal localities on the eastern coast of the Coromandel Peninsula. It is

occasional in several localities on Great Barrier Island, including the summit of Mount Hobson. The only Central Northland population that still exists is in the Puketū State Forest (seen but not collected).

Rosaceae

Rubus squarrosus Fritsch

Waitotoki Stream, Mangonui County, 35°5'S, streamside in coastal forest, CHR 310801.

Possibly a new northern limit for the species. It was collected by Carse at Manukau, north of Herekino, in January 1898 (CHR 296507).

Scrophulariaceae

Hebe diosmifolia (A. Cunn.) Ckn. et Allan

Waitiki Stream, Mangonui County, 34°31'S, occasional plants on shaded banks under *Leptospermum* scrub with *H. ligustrifolia*, CHR 314511.

Karikari Peninsula, in *Hakea-Leptospermum* scrub behind Puheke Beach, 34°52'S, sighting only and specimen not collected.

Parakerake Bay on Karikari Peninsula, small populations on steep banks under *Metrosideros excelsa* (seen but not collected).

Ahipara gumfield at western edge of plateau, 35°11'S (seen but not collected).

Ngaioitonga Saddle, 35°18'S, four isolated plants on roadside on damp shaded banks (seen but not collected).

The above are mostly new records. The population at Ahipara grows in an interesting association with *Pseudopanax ferox*, *Myrsine* cf. *divaricata* (large non-drooping and non-divaricating tree 8 m high), *Olearia alba* var. *angulata*, *Hebe ligustrifolia*, *Pittosporum pimeleoides* (fide R. H. Michie), and abundant *Microlaena polynoda* and *Echinopogon ovatus*. At Ngaioitonga Saddle the plants are all 4–5 m tall with an open virgate habit, and with branchlets having leaves longer than the smaller, more compact shrubs growing on rocky banks of the Waipoua River (35°39'S). The Waipoua plants have a different flowering period and chromosome number (J. B. Hair, pers. comm.). This suggests that at least two taxa are included within *H. diosmifolia* at present. A specimen collected at Bream Head (35°51'S) has straight, narrow leaves from 4–5 cm long, and a low bushy habit. The flowering racemes are similar to those of *Hebe parviflora* var. *arborea*. Possibly it is a hybrid between this and *H. diosmifolia* (det. A. P. Druce). Curiously, the former species is common in the area whereas the latter has never been found there. Other *Hebes* of interest growing near the Whangarei Heads are *H. ligustrifolia* (CHR 285123) and an undescribed species on the southern slopes of Mount Manaia. *H. macrocarpa* var. *latisejala* has been recorded in this area (Cheeseman 1906) but no plants have been seen recently despite searches by C. Ogle and myself.

MONOCOTYLEDONS

Centrolepidaceae

Centrolepis strigosa (R.Br.) Roem. et Schult.

Lake Kaiwi, Hobson County, 35°49'S, on the sandy lake shore, CHR 319045.

The only other known North Island locality for this plant is near Dargaville on the coast (CHR 214231, Mason and Esler 11314, 1970).

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