



Fig. 1
Seedling of *Ileostylus micranthus* on a garden shrub of *Coprosma roundifolia* at Pukerua Bay, 20 December 1986. The mistletoe fruit was from Upper Hutt in May 1986, and was placed on the host plant in the manner prescribed by Dr Thomas in his accompanying article.

Photo: Colin Ogle

A Rarely Seen Native Grass, *Amphibromus fluitans*

Colin Ogle, Pukerua Bay

Found by Thomas Kirk at "Waihi Lake and Creek" in the Waikato district in 1883, the wetland grass *Amphibromus fluitans* was named by him as an endemic species to New Zealand (Kirk 1884). Its rather late discovery and the low number of collections made of it over the following century (Table 1) suggest that this grass has always been very rare. It is, however, not endemic; a recent publication (Jacobs and Lapinuro 1986) has shown that *A. gracilis*, of southern New South Wales, Victoria and Tasmania, is the same species as our earlier-named *A. fluitans*.

In the 1970's I was shown *A. fluitans* by Tony Druce in the central North Island, once on the edge of a lake near Kuripupango and later in an ephemeral wetland on a terrace of the Awapatu River, a tributary of the Moawhango. Wetlands such as these lack adventive grasses, and *A. fluitans* is easily spotted as a sprawling, grey-green grass, superficially not unlike creeping bent (*Agrostis stolonifera*). However, it is not so easily recognised

when it grows among adventive grasses of damp places, such as creeping bent, Mercer grass (*Paspalum distichum*), floating sweet grass (*Glyceria* spp.), and kneed foxtail (*Alopecurus geniculatus*). In the early stages of a survey of wetlands around Lake Wairarapa in the period 1981-84, I had seen vegetative material of a grass I could not identify among the adventive ones, on the muddy beds of dried-out ponds, but it was not until March 1984 that distinctive fruiting heads were seen and the plants were positively identified as *Amphibromus fluitans*.

As Kirk (1884) indicated, the flower heads remain almost hidden by the leaf sheaths until the seeds are nearly mature, and even then elongation of the stems is barely sufficient to expose the heads completely. This can be seen

| Location | Collector and Date | Notes | Herbarium Number |
|---|---|--|---------------------------------|
| Waihi Lake, Waikato | T. Kirk (18.12.1873) | | WELT 68387-9 (Type specimen) |
| Swamps near Mt Egmont | T.F. Cheeseman (Jan. 1885) | | WELT 68452 |
| Near New Plymouth | T.F. Cheeseman (Jan. 1895) | | CHR 2814 |
| Kariotahi, near Waiuku, Manukau Harbour | H. Carse (25.11.1899) (Dec. 1900) | In dry pond On margin of pond among sand dunes | WELT 68460 CHR 5924 |
| West of Waiuku | D. Petrie (Jan. 1914) | Near sea coast | WELT 68456 |
| Old waterworks, 1 1/2 miles out from Marton | D. Petrie (early Jan. 1917) | Abundant, long past flowering | WELT 68458. |
| Old waterworks, Marton | Ick-Hewins (early Jan. 1919) | Greedily eaten by stock and difficult to get in good condition (D Petrie's note) | CHR 1388 |
| Pond at Church St, Palmerston North | V. Zotov (20.11.1929) | Growing among <i>Glyceria fluitans</i> | CHR 3514 |
| Lake Tekapo | H.H. Allan (Jan. 1935) | | CHR 9537 |
| Ica Station, Whareama Valley | V. Zotov (23.3.1945) | Old riverbed | CHR |
| Waipu Lagoon, Bell Block, New Plymouth | R. Mason (16.1.1956) | In 6-9 inches of water | CHR 90828 |
| 3 miles south-east of Opunake | A.P. Druce (Jan. 1964) | Lagoon margin | CHR 159504 |
| Kaimaikuku Stream (Awapatu R.), Kaimanawa Mts, 3000' | A.P. Druce (Jan. 1974) | Dried up tarn | CHR 252351 |
| Lake near Kuripupango, Kaweka Range | A.P. Druce (Dec. 1974) | Lake (shallow water) | CHR 274710 |
| South end of Boggy Pond, east side of L. Wairarapa | C.C. Ogle (7.3.1984) | On peaty mud, exposed at low pond levels | CHR 417055 |
| Queen Elizabeth Park, Paekakariri | C.C. Ogle (22.4.1984) | (see text) | WELT 77673 |

Table 1: Specimens of *Amphibromus fluitans* in the herbaria of Botany Division, DSIR, Christchurch (CHR), and the National Museum Wellington (WELT). Where more than one specimen exists from the same locality, collected at or near to the same date, only one specimen is listed.

in Fig. 1. The result is that *A. fluitans* appears to fruit rather later than other grasses with which it grows, although some herbarium specimens with emergent inflorescences were collected as early as November (Table I).

Six weeks after finding this grass at Boggy Pond, and armed with a feeling for its habitat, I visited a wetland near Paekakariki with Tom Moss. Situated in a dune hollow in Queen Elizabeth Park, this wetland had been fenced a few months earlier to exclude sheep, and there, among a mixture of native sedges and adventive grasses, we found many patches of *A. fluitans*. These plants were still in fruit.

Do these recent findings mean that *A. fluitans* is not rare but only rather hard to spot? Perhaps, but though it probably still grows unrecognised elsewhere, I believe that it is generally threatened because it needs wetlands which are at least moderately fertile and which have some bare ground, conditions which are produced by seasonally-fluctuating water levels, and which are in the kind of places mostly lost to intensive pastoral farming. Where such wetlands remain, they have been mostly over-run by introduced plants, particularly grasses and dicot herbs, and trees like willows and alder.

At Queen Elizabeth Park, the prevention of grazing may be the beginning of the end for *A. fluitans*, since a dense, tall sward of other plants has taken



Fig. 1. Seed heads of *Amphibromus fluitans*, Queen Elizabeth II Park, Paekakariki; 15 April 1985. Photo: Colin Ogle.

over the site. There are equally poor prospects for *A. fluitans* at Boggy Pond. A decision taken in 1984 to direct water from nearby farmlands into Boggy Pond has not only reduced the period of each year in which the shores are exposed, but it will also have raised the fertility of the water. This, in turn, is likely to produce more vigorous growth of competitive, adventive grasses.

Similar fates have undoubtedly been met by other populations of *A. fluitans*. There have been no collections from lowland sites, other than at Boggy Pond and Paekakariki, for more than 20 years. Zotov's "pond at Church Street, Palmerston North" (Table 1) has been obliterated (R.M. Greenwood, pers. comm.), but the state of other lowland locations which once had *A. fluitans* is unknown.

The future for *Amphibromus fluitans* appears generally bleak, for not only have many habitats gone, but remaining ones are often heavily infested by adventive plants and grazing animals, and conservation management will be difficult and labour-intensive. *A. fluitans* is not alone in this. There are a number of once wide-spread native species of lowland, fertile wetlands which are now uncommon. In the previous issue of this bulletin Dr. Patrick Brownsey (1985) identified the precarious hold which *Ophioglossum petiolatum* has in New Zealand. *Myriophyllum robustum*, *Mazus pumilio*, *Crassula acutifolia*, *Thelypteris confluens*, and *Pterostylis micromega* are a few others which might be heading in the same direction.

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Native Forest Remnants in Wellington's Botanic Gardens

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INTRODUCTION

Because of a lack of information on the remaining native forest areas in the Wellington Region (Fig 1) a regional study of the biological resources in Wellington was initiated by the Wellington Regional Council in 1981 (Anon. 1984).

This led to more detailed surveys of several areas in the Region (Clelland 1984; Myers 1985). In the latter report, five forest remnants within