by shining privet (*Ligustrum lucidum*, to c. 13 m tall, 40 cm dbh), but there are also several dozen fairly old, often multi-stemmed, subcanopy mahoe, to c. 8 m tall 50 cm dbh).

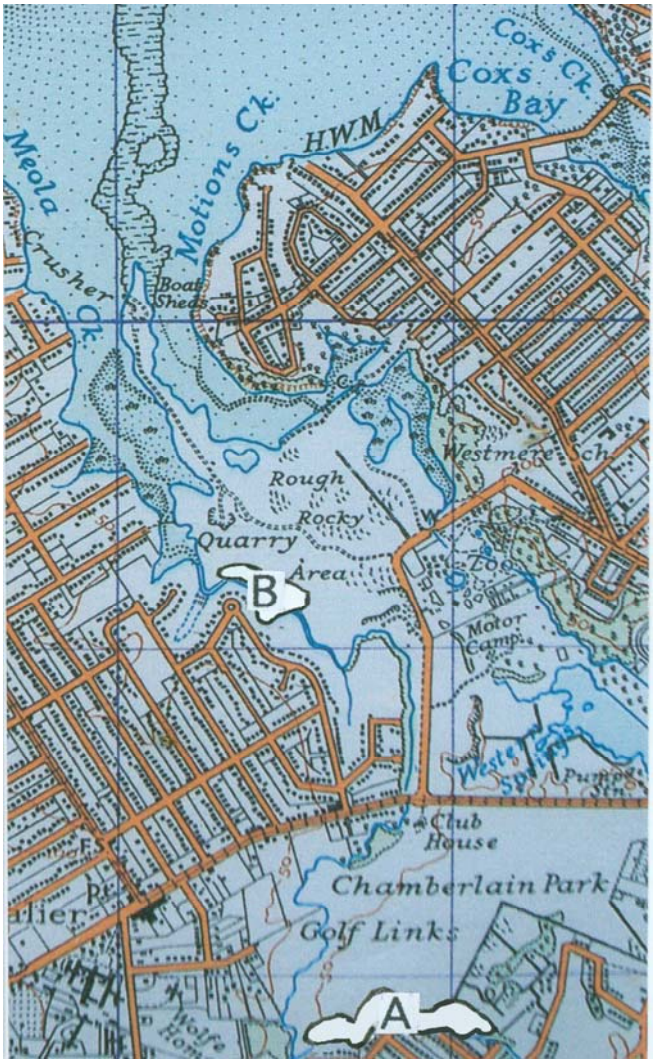

Fig. 1: Two rock-forest remnants of Meola Creek: A (south side Chamberlain Park); B (west side Sir Keith Park Memorial Airfield). Base map is NZMS 2A "Auckland", drawn in 1942.

Other shrub species are infrequent: hangehange (*Geniostoma ligustrifolium*), kawakawa (*Macropiper excelsum*) and coastal karamu (*Coprosma macrocarpa* subsp. *minor*) were all I saw. The floor is rather dry and weedy, but has an occasional plant of *Microsorum pustulatum* and *Pteris tremula*. Peter de Lange found two exotic ferns on the drystone-walled side of the stream: *Adiantum capillis-veneris*, and *Dryopteris filix-mas*. In most places, the higher parts of the slope against the golf-course's fairways have been tipped onto or have been planted with pines, flowering cherry (*Prunus serrulata*) and a mixture of native trees.

The downstream stand (Fig. 1B) is also situated on the western flank of the flow, between Motions Road and Meola Road. The top of the flow here has been infilled and levelled to form the surface on which Western Springs College and the Sir Keith Park Memorial Aifield are laid out. But some of the slope down to the creek remains as original topography. Again, angular basalt boulders cover most of the ground, but there are also a few rock faces a couple of metres long and high.

Except along the scrappy, disturbed top part of the slope, the vegetation is dominated by shining privet (to c. 10 m tall, 25 cm dbh). Subcanopy mahoe of fair size are quite frequent, and mapou (*Myrsine australis* to c. 8 m tall 15 cm dbh) are also common. Hawthorn (*Crataegus monogyna*) is also present in the subcanopy, but is struggling under the dry conditions. There are no large old relic trees here, not even any pohutukawa (*Metrosideros excelsa*). I did see towards the foot of the slope one medium-sized individual of cabbage tree, several karo (*Pittosporum crassifolium*, c. 7 m tall 15 cm dbh) and a similar-sized houpara (*Pseudopanax lessonii*), and a few 3 m tall silver tree ferns (*Cyathea dealbata*). The lower margin above the creek's *Bolboschoenus fluviatilis*-dominated flood-level terrace has at least one old vine of *Parsonsia heterophylla*. The understorey is largely of spindle (*Euonymus japonica*), with a few hangehange and kawakawa; mapou however is regenerating satisfactorily. The most hospitable sites on the ground are generally covered with Wandering Jew (*Tradescantia fluminensis*), or *Microlaena stipoides*, and the smaller rocks are largely covered with ivy (*Hedera helix*). A few common ferns are present: *Asplenium flaccidum*, *A. oblongifolium*, *Doodia australis*, *Microsorum pustulatum*, *Pteris tremula* and *Pyrrosia eleagnifolia*. I saw a few titoki seedlings, one colony of *Cordyline pumilio*, one struggling plant of *Polystichum richardii* agg., and, low on the slope near the forest's western end, three thriving tussocks of *Carex spinirostris* (*ROG 10930,* AK).

These two remnants are of reasonable size, and although they are of no great age or diversity they deserve better treatment. Perhaps their floras could be augmented during any restoration with material from the Mt Eden rock-forest.

Stick Lake and its amazing *Centipeda aotearoana*

Maureen Young

In April 2007 a NIWA diving team, together with Lisa Forester of the Northland Regional Council, conducted a survey of 18 Northland lakes as part of an ongoing monitoring programme. Thanks to the good graces of Lisa I was able to accompany them as a volunteer, but purely in the terrestrial sphere.

While driving to Lake Kanono, near the southern end of the Pouto Peninsula, we passed a depression in a

paddock about 100 m from the lake's edge (NZMS 260 Q09 141367). This depression (c. 50 m across) was obviously seasonally wet, but after a dry summer it had dried out completely and the mud had cracked into large polygons. Lisa remarked that there might be some good turf plants around the edge, so I wandered over to check it out. Disappointingly there were no turf plants of interest, so I decided to walk across the "weed" covered polygons to the other side to see what grew there. As I stepped onto this central area, I was amazed to find that the "weeds" consisted of a thick covering – ankle deep in parts – of *Centipeda aotearoana*.

Fig. 1. Cows at Stick Lake (Lisa Forester).

Only one species of *Centipeda* (Asteraceae) is described in Flora Vol. I (Allan, 1961), as *C. orbicularis*, but recently it has been recognised that there are four species indigenous to New Zealand (Walsh 2001 *et al.* 2002, de Lange *et al*. 2006. The others are *C. minima*, *C. elatinoides,* and *C. cunninghamii*. The common name for all species is sneezewort or sneezeweed. *C. aotearoana* N.G.Walsh is endemic, and is distinguished from the rest by its much larger trailing habit and firm stemless, hemispherical fruiting capitula (Walsh 2001).

There were occasional plants of other species; *Myriophyllum triphyllum, Alternanthera* aff. *sessilis, Persicaria lapathifolia, Portulaca oleracea, Ranunculus flammula* and *Aster subulatus,* but the *Centipeda* dominated the vegetation, a lush plant or two atop each polygon. Inquisitive steers came to check me out, but it was obvious that they were averse to stepping on the cracked mud and they just circled around the lake (Fig. 1.). It seems that stock don't eat *Centipeda* anyway (Lisa Forester *pers. comm*.)

With us that day was the owner of the property, Roy Budgen, (and also our old friend Logan Forest, of our 2001 Bot Soc Pouto camp, reference: Cameron et al. 2001). Roy had only lived there for two years, but in that time he had observed that the depression was under water for about seven months of the year, and was never deeper than 1 m. The locals call it Stick Lake, as it has a few dead manuka trunks poking up. The drying out must be a relatively recent phenomenon as the shells of hundreds, if not thousands, of freshwater mussels were embedded in the mud. An old aerial photo shows that the lake once covered an area of over 2 ha., whereas the dried area covers a mere 0.5 ha.

Fig. 2. *Centipeda aotearoana* in cracked mud at Stick Lake (Lisa Forester).

C. aotearoana was also seen, in small numbers, at Lake Waiporohita, Karikari Peninsula, during the Bot Soc Easter camp 2007 (Young 2007).

Acknowledgements

Thanks to Lisa Forester and the NIWA team (Paul Champion, Rohan Wells, Aleki Taumoepea and Mary de Winton) for including me in the survey; to Roy Budgen for permitting access to his property, and to Roy and Logan Forest for imparting their local knowledge. Aerial photos courtesy of Northland Regional Council.

References

Allan, H.H. 1961: Flora of New Zealand. Vol. I. Wellington, Government Printer.

Cameron, E. K.; Jones, S., Wilcox, M., Young, M. 2001: Pouto Camp *Auckland Botanical Society Journal* 56: 38-51.

de Lange, P.J.; Murray, B.G. 2002: Contributions to a chromosome atlas of the New Zealand flora – 37. Miscellaneous families. *New Zealand Journal of Botany 40*: 1-24.

de Lange, P.J.; Sawyer, J.W.D.; Rolfe, J.R. 2006: New Zealand Indigenous Vascular Plant Checklist. Wellington, New Zealand Plant Conservation Network.

Walsh, N.G. 2001: A revision of Centipeda (Asteraceae). *Muelleria 15*: 33-64.

Young, M. 2007: Easter Camp: Karikari Peninsula and environs, 9/4/07. Auckland Botanical Society Journal 62: 41-47.