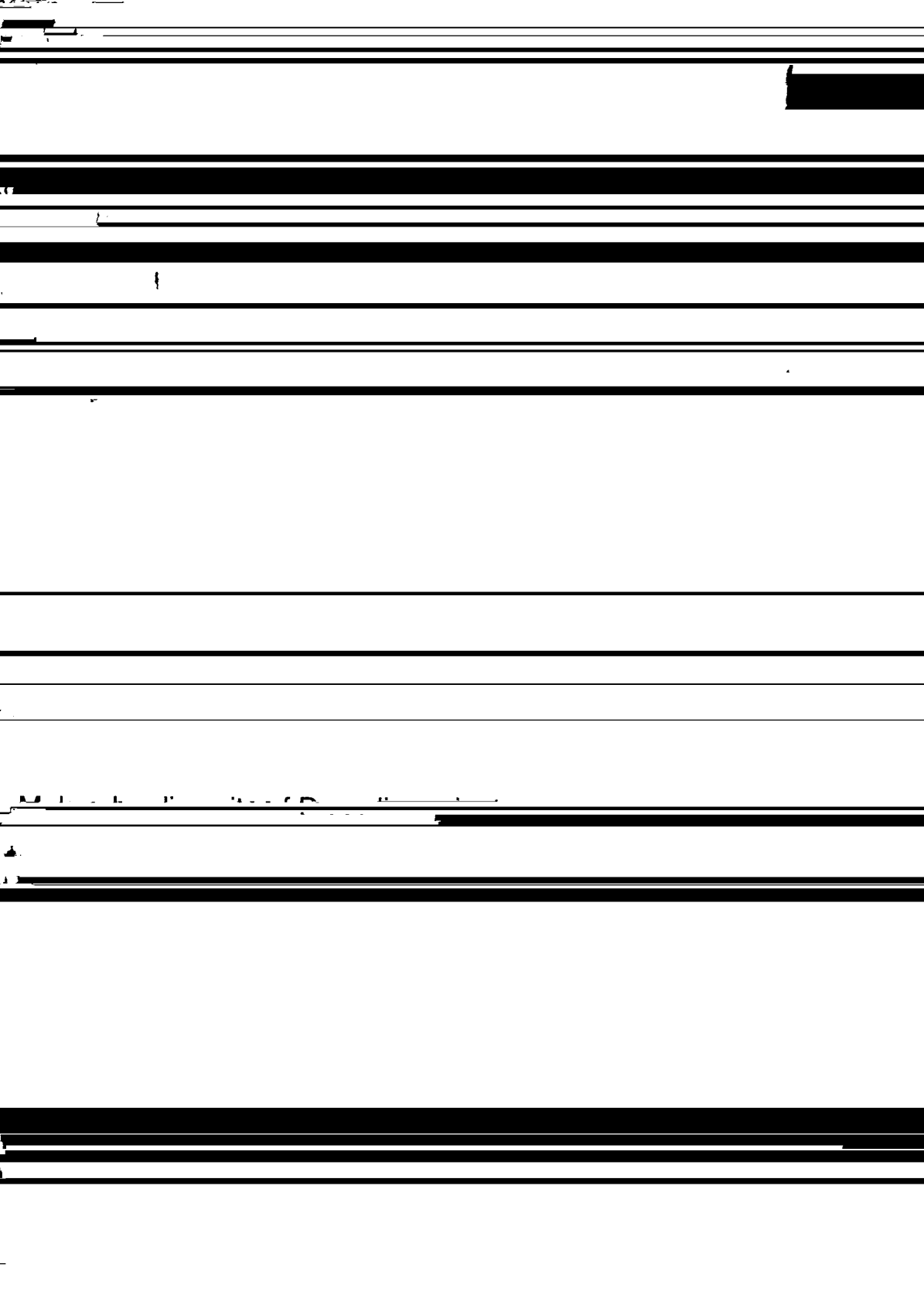


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has so far revealed no gross morphological differences among sister species (Trewick 1998), Tait &

Onychophora for instance, a group noted for their morphological conservatism, genetic methods have

logical characteristics (15 pairs of legs, midventral openings of anal glands in males, and lack of crural glands) in the Dunedin taxon distinguished it from

1995), stimulated revision of morphology based taxonomy (Reid 1996) and provided insights into the origin of diversity within, and biogeography of, spe-

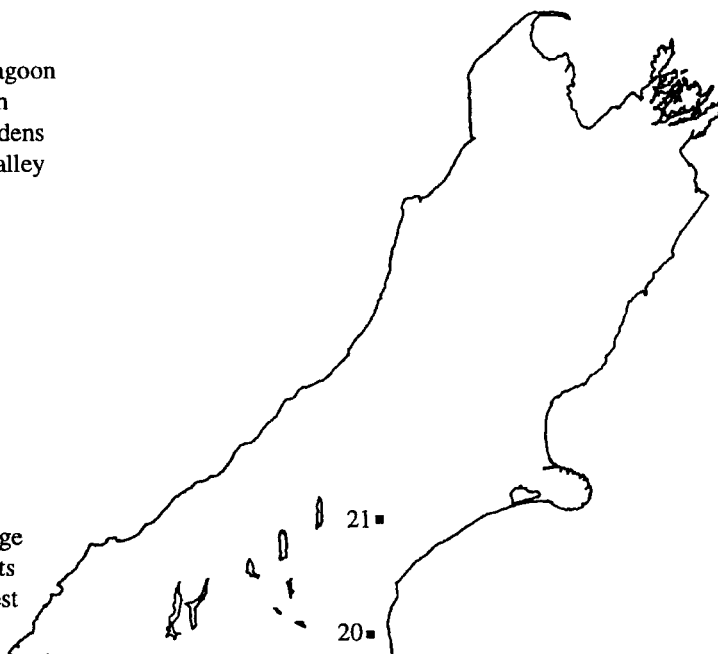
METHODS

Peripatus specimens were collected in the environs of Dunedin City and up to 220 km from it (Fig. 1). This collecting area is probably close to the range

and NotLEUr (see Results for details). PCR reactions were performed in 25 µl volumes and products gel-purified in 2% agarose stained with ethidium bromide. Bands of expected molecular weight were

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- 1 Styles Creek
- 2 Tomohawk Lagoon
- 3 Grahams Bush
- 4 Botanical Gardens
- 5 Caversham Valley
- 6 Frasers Gully
- 7 Saddle Hill
- 8 Whare Flat
- 9 Taieri Mouth
- 10 Outram
- 11 Maungatua
- 12 Piano Flat
- 13 Toms Creek
- 14 Matai Falls
- 15 Haldane
- 16 Hokonui
- 17 Trotters Gorge
- 18 Kakanui Mnts
- 19 Herbert Forest
- 20 Gunns Bush

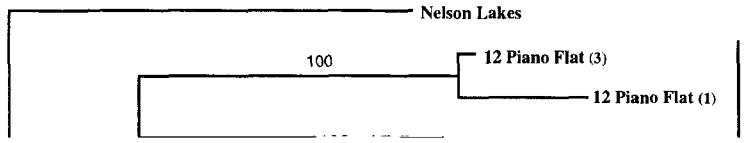


“ATG” codon typical of many insects (Szymura et al. 1996). I designed primers in relatively conserved

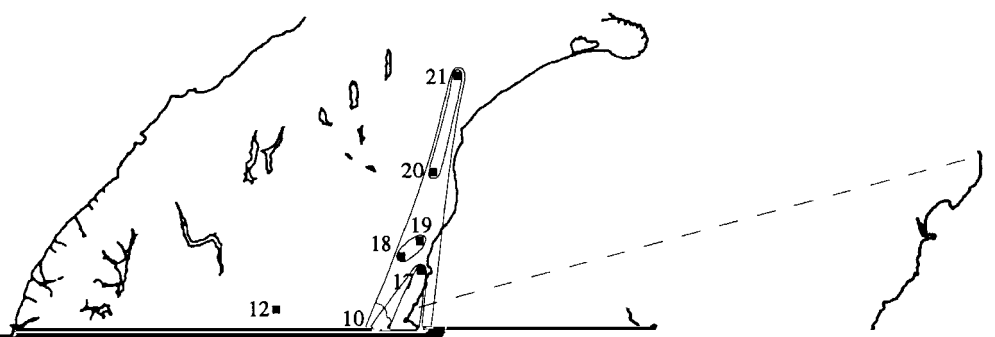
ble 2). Eighteen unique haplotypes were obtained from

Table 2 Genetic distance among ingroup and outgroup peripatus (Kimura 2 parameter below diagonal, amino acid number above diagonal) The two groups (A and B) are based on phylogenetic analysis on haplotype F1 and haplotype A1 and B1, respectively. D1, D2, D3, D4, D5, D6, D7, D8, D9, D10, D11, D12, D13, D14, D15, D16, D17, D18, D19, D20, D21, D22, D23, D24, D25, D26, D27, D28, D29, D30, D31, D32, D33, D34, D35, D36, D37, D38, D39, D40, D41, D42, D43, D44, D45, D46, D47, D48, D49, D50, D51, D52, D53, D54, D55, D56, D57, D58, D59, D60, D61, D62, D63, D64, D65, D66, D67, D68, D69, D70, D71, D72, D73, D74, D75, D76, D77, D78, D79, D80, D81, D82, D83, D84, D85, D86, D87, D88, D89, D90, D91, D92, D93, D94, D95, D96, D97, D98, D99, D100

Fig. 2 Maximum-parsimony bootstrap phylogram of COI DNA sequences from peripatus. Numbers above edges are percentage



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...the ... opportunities to rehabilitate and protect such ... Hutton, E. W. 1976. On *Basileuterus novae zelandiae* ...

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...should not be ... included in ... *Journal of Zoology* 19: 261

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Haldane	.A..T.....A.....C.T.....T.....T.....	A..G..T.A.....
Tomohawk Lgn.	.A..T.....C.....T..T.A.....	G..T...A..A..G..T.A.....A.....
Style's Creek	.A..T.....C.....T..T.A.....	G..T...A..A..G..T.A.....A.....
Outram	.A..T.....C.....C.....	A..T...A..A..G..C.T.A.....A.....
Saddle Hill	.A..T.....C.....T..T.A.....	A..T...A..A..G..A.T.A.....A.....
Maungatua	.A..T.....C.....T..T.A.....	A..T...A..A..G..C.T.A.....C.....A.....
Caversham Vll	.A..T.....C.....T..T.A.....	G..T...A..A..G..T.A.....A.....
Trotters Gge	.A..T.....C.....T..T.A.....	A..T...A..A..G..T.A.....A.....
Kakanui Mnt ⁰	...T.....C.....T..T.A.....	A..T...A..A..G..A.T.A.....A.....C.....
Herbert Frst.	...T.....C.....T..T.A.....	A..T...A..A..G..A.T.A.....A.....C.....
Peel Forest	.A..T.....C.....T..T.A.....	CC...A..A..G..T.A.....A.....
Gunn's Bush	.A..T.....C.....T..T.A.....	A..T...A..A..G..T.A.....A.....

Nelson	ACATGATACTTATTATGTTAGTAGCCCATTTTCATTATGTATTATCTATAGTGCGGTTTTTGCTATTTTAGGAGGAATAGTTCATTGATTTCCCTTAATTTTAGGTGTAAGATTA
Piano FlatT.....A..G.....A..G...A..
Piano FlatT..T.....A..G.....T.....A..G...A..
Matai FallsT.....A..A.....A..G...A..
Tom's CreekT.....A..A.....A..G...A..
Taieri MouthT.....A..A.....G...G..?
HokonuiT.....A..A.....G.....
HaldaneT.....A..A.....A..G...A..
Tomohawk Lgn.	G.....T.....T.....T..C.....A.....
Style's Creek	G.....T.....T.....T..C.....C.....A.....
Outram	G.....C.....C.....T.....T..A.....A.....
<u>Saddle Hill</u>	...C.....T.....T.....T..C.....A.....

Caversham Vll	G.....T.....T.....T..C.....A.....
Trotters Gge	G.....T.....T.....T..C.....C.....G.....A.....