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A revision of the genus *Pahoroides* (Araneae: Synotaxidae)

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ABSTRACT: The genus *Pahoroides* (Araneae: Synotaxidae: Pahorinae), endemic to New Zealand, is redescribed and revised. Two known species are redescribed and six new species are described (*Pahoroides balli*, *P. kohukohu*, *P. confusa*, *P. gallina*, *P. aucklandica* and *P. forsteri*). The original description of the type species, *Pahoroides whangarei* Forster, 1990, includes illustrations of the male palp of a second, undescribed species, described here as *P. confusa*. The genus is presently known only from the northern half of the North Island.

KEYWORDS: Revision, New Zealand, spiders, Synotaxidae, Pahorinae, *Pahoroides*, *Pahora*, new species.

Introduction

In addition to the nominate subfamily, the family Synotaxidae Forster *et al.* (1990) includes the subfamilies Physogleninae Petrunkevitch, 1928, with species from Chile, Australia, Tasmania and New Zealand; and Pahorinae Forster, 1990, endemic to New Zealand, with four genera (*Pahora* Forster, 1990, *Pahoroides* Forster, 1990, *Nomaua* Forster, 1990 and *Runga* Forster, 1990). Fitzgerald & Sirvid (2009) revised the genus *Nomaua*, synonymised *Wairua* Forster, 1990 under *Nomaua*, and added another five species to the six already described. Forster *et al.* (1990) noted that *Pahora* and *Pahoroides* seem to be closely related, *Pahora* with eight species in the South Island (one of which is also found on Stewart Island/Rakiura) and one species in Taranaki, and *Pahoroides* with two species restricted to the northern half of the North Island. Recent collections of spiders from various localities in northern North Island have provided specimens of both known species and of six undescribed species of *Pahoroides*, including one that was incorrectly included in illustrations of *Pahoroides whangarei* by Forster *et al.* (1990: figs 194, 197). Here we redescribe *Pahoroides courti* and *P. whangarei* from the types and additional material, and describe the six new species.

Methods

Institutional acronyms

MONZ = Museum of New Zealand Te Papa Tongarewa, Wellington, New Zealand

OMNZ = Otago Museum, Dunedin, New Zealand

Abbreviations for body parts

Eyes:

ALE = anterior lateral eyes

AME = anterior median eyes

PLE = posterior lateral eyes

PME = posterior median eyes

Male palp:

E = embolus

MA = median apophysis

PA = prolateral apophysis

PM = patellar macroseta

RA = retrolateral apophysis

RPT = retrolateral projection of tibia

TTA = theridioid tegular apophysis

VA = ventral apophysis

Characters that conform to the generic diagnosis are not repeated in species descriptions. We have distinguished

species of *Pahoroides* on features of the bulb of the male palp and on features of the female epigynal scape and genitalia. In describing palps, we use the terminology of Agnarsson (2003, 2004). Colour information is based on ethanol-preserved specimens. Measurements (given in millimetres) for each species were made using an eyepiece micrometer on a Zeiss Stemmi® 2000 binocular microscope. Full measurements (including total length, and eye and leg measurements) were made on one male and one female of each species (identified by their MONZ electronic database numbers with the prefix 'AS'). Total body length of all measurable specimens was taken for males and females of all species and ranges, means and sample sizes given. The strong retrodistal projection of the male palpal tibia (Forster *et al.* 1990: figs 192, 193) was not included in measurements of the tibia of the palp. For the figures, specimens were photographed using a Canon® G2 digital camera on the same microscope, and series of photographs were combined using Zerene Stacker focus-stacking software, to produce images with extended depth of field.

In locality data, two-letter entomological area codes follow Crosby et al. (1998). All localities are from New Zealand.

Systematics

Family Synotaxidae
Subfamily Pahorinae Forster, 1990

Pahorinae Forster, 1990 (in Forster *et al.* 1990: 36).

TYPE GENUS: *Pahora* Forster, 1990 (in Forster *et al.* 1990: 40).

DIAGNOSIS: Based on Forster *et al.* (1990). In males, the ocular area behind the AME is setose and in some species is elevated. Secretory pores are present on the clypeus and eyemound (see Forster *et al.* 1990: figs 133, 134). In males, a pick or paired picks on the posterior margin of the carapace engage with a stridulatory file on the antero-dorsal surface of the abdomen. The male palp has an excavated paracymbium on the proximal edge of the retromargin of the cymbium.

DESCRIPTION: Abdomen of males is more elongate than in females; legs long and slender, the first pair much the longest; leg formula 1243 or 1423. Eight eyes in two rows, posterior row slightly recurved. AME smallest, other eyes subequal. Secretory glands on the clypeus and eyemound open from single pores in *Pahoroides* and from multipore pits in *Pahora*, *Nomaua* and *Runga* (Forster *et al.* 1990). Chelicerae are vertical, with promarginal and retromarginal teeth and a patch of denticles in fang furrow (in contrast to the single row of denticles found in species of Physogleninae). Labium about twice as wide as long and sternum about as wide as long; coxae IV separated by their width. Male palp has an elongate paracymbial excavation on proximal edge of retromargin of cymbium. Female palp has a strong tarsal claw bearing a single tooth (Forster *et al.* 1990). See Forster *et al.* (1990) for further information.

Genus *Pahoroides* Forster, 1990

Pahoroides Forster, 1990 (in Forster *et al.* 1990: 53). Type species: *Pahoroides whangarei* Forster, 1990.

DIFFERENTIAL DIAGNOSIS: Species of *Pahoroides* are distinguished from all other pahorines by the elongate epigynal scape of females, the distal projection on the palpal tibia of males, and elongate tegular apophyses extending beyond the distal margin of the cymbium.

DESCRIPTION:

Size: Small, total length of males 2.2–3.3 mm, females 1.7–2.3 mm; legs long.

Colour: Carapace dark grey-brown, paler down the mid-line; abdomen with pale greyish pattern along the dorsal mid-line of the abdomen and pale patches on the lateral surfaces (Fig. 1; see also Forster *et al.* 1990: figs 182–185); sternum and ventral abdomen uniform dark grey-brown. Legs orange-brown, without banding.

Cephalothorax: The eyemound of adult males is small, with four long macrosetae arranged in two pairs, the anterior pair closely spaced behind the AME, the posterior pair more widely spaced, anterior to the PME (Fig. 2) (*Pahora* has similar macrosetae, in the same arrangement). Four setae on the mid-line between the PME and the fovea, three setae in a row from the PLE to the mid-line anterior to the fovea. Fovea, relatively wide anteriorly, narrows and deepens in a V posteriorly (in *Pahora* it is a transverse furrow (Forster *et al.* 1990: fig. 130)).

Chelicerae: Promarginal and retromarginal teeth present, fang furrow with denticles (Forster *et al.* 1990: fig. 189).

Palp: Males have a long macroseta on the patella; retrolateral to it on the distal margin is a small sclerotised knob. The tibia has a strong retrodistal projection; this projection bears one or two macrosetae near the distal margin and three trichobothria, two of them with ridged bases (Forster *et al.* 1990: figs 192, 193). The TTA comprises three elements, a long ventral apophysis, a prolateral apophysis extending up or around the dorsal side of the ventral apophysis, and a broad retrolateral apophysis extending up no further than the tip of the cymbium. The embolus is straight and spiniform, originating prolaterally at the base of the bulb. The median apophysis, with a projecting tip, lies between

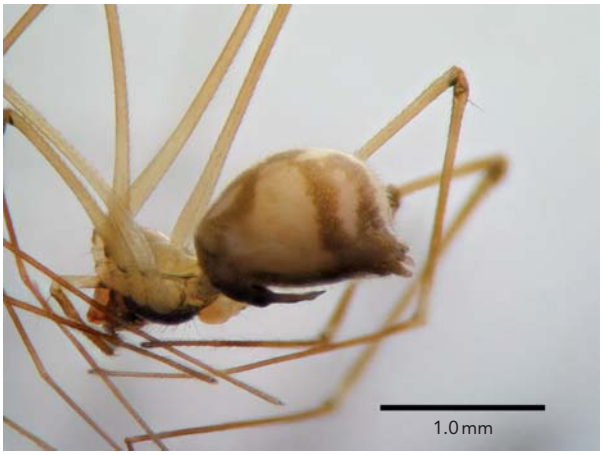

Fig. 1 *Pahoroides whangarei*, lateral view of female, showing abdominal colour pattern and epigynal scape.

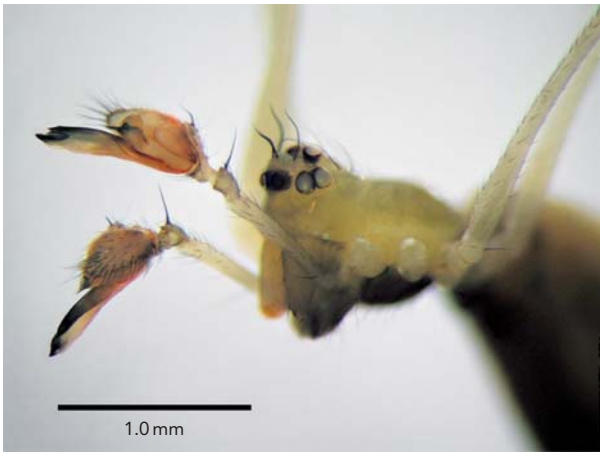

Fig. 2 *Pahoroides courti*, cephalothorax of male, showing the large palps and four macrosetae on the eyemound.

the ventral apophysis and the distal margin of the cymbium. Paracymbial excavation is elongate.

Abdomen: Elongate in males, at least three times as long as wide; globose in females, about twice as long as high.

Colulus: With three hairs.

Legs: Formula is usually 1243, but leg 2 is only slightly longer than leg 4, and in females leg 4 is sometimes longer than leg 2, e.g. *P. balli*, *P. kohukohu*, *P. aucklandica* (Table 1) and *P. courti* (Forster *et al.* 1990).

Female genitalia: Epigynal scape is long, tapered or slender, extending at least half the length of the abdomen (Fig. 1). One pair of receptacula.

DISTRIBUTION: Known from the northern half of the North Island of New Zealand, from North Cape (34°25'S, 173°03'E) south to Maungatautari (37°57'S, 175°34'E), Lake Rotorua (38°05'S, 176°16'E) and Lake Waikaremoana (38°45'S, 177°05'E).

BIOLOGY: *Pahoroides* inhabit forest and scrub, living among ferns, low vegetation and twiggy litter. They construct a domed snare in the form of an inverted bowl with numerous threads above it (Forster *et al.* 1990: fig. 191).

DISCUSSION: Forster (1990, in Forster *et al.* 1990) established the genus *Pahoroides*, describing two species (*P. whangarei* and *P. courti*), and stating that the 'genus seems closely related to *Pahora*'. Although the pattern of four macrosetae on the eyemound of males is similar in the two genera, genitalic characters differ and indicate that the relationship might be more distant than Forster suggested. The very elongate epigynal scape of *Pahoroides* might appear to be derived from the shorter scape of *Pahora*, but the internal genitalia of *Pahoroides* differ markedly; in *Pahoroides* the fertilisation ducts are anterior to the simple receptacula, while in *Pahora* they are posterior to the compound receptacula. Also, male *Pahoroides* have a tibial projection, with distal macroseta and three subdistal trichobothria (some with ridged bases), whereas *Pahora* lack the tibial projection but have several tibial spurs bearing trichobothria. The apophyses on the genital bulb of *Pahora* appear to be more like those of *Nomaua* than those of *Pahoroides.*

***Pahoroides whangarei* Forster, 1990**

(Figs 1, 3, 11, 19)

Pahoroides whangarei Forster, 1990 (in Forster *et al.* 1990: 54, figs 182–186, 188–190, 192, 193, 195, 196).

TYPE MATERIAL: **Holotype** ♂, from bowl-webs on tree trunks, Coronation Park, Whangarei, **ND**, New Zealand, 6 Feb. 1981, R.R. Forster (OMNZ IV2962). Examined 29 Sep. 2009. **Allotype** ♀, same data as for holotype (OMNZ IV2963). Examined 29 Sep. 2009.

DIFFERENTIAL DIAGNOSIS: Males of *Paharoides whangarei* are distinguished from males of all other species by the apically bifurcate tip of the ventral apophysis of the palp (Figs 3, 11); and females by the relatively short, broad scape (Fig. 19). (See also Forster *et al.* 1990: figs 195, 196 for male palp, and figs 186, 190 for scape.)

DESCRIPTION:

Male

Measurements: Total length 2.756; carapace length 0.906, width 0.709; sternum length 0.488, width 0.488; labium length 0.061, width 0.146 (MONZ AS.001924). Size range expressed by body length: 2.126–3.307 (mean 2.650, n = 16).

Table 1 Measurements of the segments of the legs and palp of *Pahoroides* species. Abbreviations for the segments are: fem. = femur, pat. = patella, tib. = tibia, met. = metatarsus, tar = tarsus.

Pahoroides whangarei						
Male	**fem.**	**pat.**	**tib.**	**met.**	**tar.**	**Total**
leg 1	3.780	0.315	3.622	3.858	1.969	13.543
leg 2	2.520	0.236	1.890	2.283	1.181	8.110
leg 3	1.575	0.197	1.024	1.260	0.748	4.803
leg 4	2.402	0.236	1.811	1.969	0.866	7.283
palp	0.415	0.122	0.146	—	0.366	1.049
Female	**fem.**	**pat.**	**tib.**	**met.**	**tar.**	**Total**
leg 1	2.992	0.315	2.835	2.913	3 .811	10.866
leg 2	2.047	0.236	1.654	1.811	1 .102	6.850
leg 3	1.339	0.197	0.945	1.102	0.630	4.213
leg 4	1.890	0.236	1.496	1.417	0.787	5.827
palp	0.341	0.110	0.171	—	0.341	0.963
Pahoroides courti						
Male	**fem.**	**pat.**	**tib.**	**met.**	**tar.**	**Total**
leg 1	3.543	0.315	3.465	3.858	1.969	13.150
leg 2	2.362	0.276	1.969	2.362	1.260	8.228
leg 3	1.575	0.236	1.181	1.496	0.787	5.276
leg 4	2.283	0.276	1.890	1.969	0.984	7.402
palp	0.463	0.134	0.171	—	0.415	1.183
Female	**fem.**	**pat.**	**tib.**	**met.**	**tar.**	**Total**
leg 1	2.677	0.315	2.520	2.598	1.496	9.606
leg 2	1.772	0.236	1.417	1.417	0.866	5.709
leg 3	1.102	0.197	0.787	0.945	0.551	3.583
leg 4	1.811	0.236	1.417	1.260	0.709	5.433
palp	0.341	0.122	0.171	—	0.268	0.902
Pahoroides balli						
Male	**fem.**	**pat.**	**tib.**	**met.**	**tar.**	**Total**
leg 1	3.307	0.315	3.228	3.465	1.772	12.087
leg 2	1.969	0.276	1.732	1.457	1.102	6.535
leg 3	1.457	0.236	1.063	1.260	0.669	4.685
leg 4	2.047	0.236	1.654	1.654	0.787	6.378
palp	0.366	0.146	0.122	—	0.390	1.024
Female	**fem.**	**pat.**	**tib.**	**met.**	**tar.**	**Total**
leg 1	2.598	0.236	1.654	2.126	1.181	7.795
leg 2	1.654	0.236	1.220	1.417	0.866	5.394
leg 3	1.102	0.157	0.787	0.866	0.591	3.504
leg 4	1.654	0.197	1.339	1.417	0.866	5.472
palp	0.293	0.122	0.122	—	0.244	0.780

Pahoroides kohukohu

Male	fem.	pat.	tib.	met.	tar.	Total
leg 1	3.228	0.315	3.386	3.937	1.811	12.677
leg 2	2.362	0.315	1.890	2.283	1.260	8.110
leg 3	1.339	0.236	1.102	1.417	0.709	4.803
leg 4	2.362	0.236	1.890	1.969	0.984	7.441
palp	0.366	0.146	0.098	—	0.366	0.976
Female	**fem.**	**pat.**	**tib.**	**met.**	**tar.**	**Total**
leg 1	3.307	0.315	3.110	3.228	1.811	11.772
leg 2	1.969	0.276	1.575	1.732	0.945	6.496
leg 3	1.339	0.236	0.945	1.260	0.709	4.488
leg 4	2.126	0.236	1.654	1.732	0.866	6.614
palp	0.366	0.159	0.171	—	0.463	1.159

Pahoroides confusa

Male	fem.	pat.	tib.	met.	tar.	Total
leg 1	3.386	0.315	2.992	3.858	2.047	12.598
leg 2	2.047	0.276	1.732	2.205	0.866	7.126
leg 3	1.260	0.236	1.102	1.260	0.709	4.567
leg 4	2.126	0.276	1.575	1.457	0.787	6.220
palp	0.415	0.122	0.122	—	0.244	0.902
Female	**fem.**	**pat.**	**tib.**	**met.**	**tar.**	**Total**
leg 1	3.071	0.276	2.913	3.150	1.811	11.220
leg 2	1.969	0.236	1.575	1.811	1.102	6.693
leg 3	1.417	0.236	0.906	0.945	0.787	4.291
leg 4	1.890	0.236	1.654	1.614	0.827	6.220
palp	0.366	0.134	0.171	—	0.293	0.963

Pahoroides gallina

Male	fem.	pat.	tib.	met.	tar.	Total
leg 1	3.071	0.315	2.598	3.307	1.969	11.260
leg 2	2.441	0.276	2.047	2.362	1.142	8.268
leg 3	1.654	0.236	1.024	1.614	0.709	5.236
leg 4	2.441	0.236	1.969	2.047	0.945	7.638
palp	0.317	0.122	0.122	—	0.317	0.878
Female	**fem.**	**pat.**	**tib.**	**met.**	**tar.**	**Total**
leg 1	2.441	0.315	2.283	2.756	1.575	9.370
leg 2	1.890	0.236	1.260	1.575	0.866	5.827
leg 3	1.181	0.236	0.866	1.024	0.669	3.976
leg 4	1.732	0.236	1.457	1.339	0.709	5.472
palp	0.354	0.122	0.195	—	0.341	1.012

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Pahoroides aucklandica

Male	fem.	pat.	tib.	met.	tar.	Total
leg 1	3.150	0.315	3.150	3.622	1.890	12.126
leg 2	2.126	0.276	1.732	1.969	1.102	7.205
leg 3	1.496	0.236	1.260	1.339	0.787	5.118
leg 4	2.362	0.276	1.811	1.732	0.945	7.126
palp	0.463	0.146	0.171	—	0.341	1.122
Female	**fem.**	**pat.**	**tib.**	**met.**	**tar.**	**Total**
leg 1	3.071	0.315	2.677	2.913	1.575	10.551
leg 2	1.969	0.236	1.575	1.811	1.024	6.614
leg 3	1.102	0.157	0.945	1.102	0.630	3.937
leg 4	2.598	0.236	1.654	1.575	0.866	6.929
palp	0.293	0.146	0.195	—	0.305	0.939

Pahoroides forsteri

Male	fem.	pat.	tib.	met.	tar.	Total
leg 1	2.953	0.276	2.598	2.835	1.535	10.197
leg 2	1.969	0.236	1.654	1.496	0.984	6.339
leg 3	1.417	0.197	1.339	1.102	0.669	4.724
leg 4	1.890	0.236	1.732	1.339	0.787	5.984
palp	0.293	0.146	0.146	—	0.341	0.927
Female	**fem.**	**pat.**	**tib.**	**met.**	**tar.**	**Total**
leg 1	2.205	0.236	1.732	2.126	1.260	7.559
leg 2	1.339	0.236	1.260	1.339	0.787	4.961
leg 3	0.866	0.197	0.787	0.866	0.472	3.189
leg 4	1.575	0.197	1.181	1.181	0.630	4.764
palp	0.317	0.110	0.171	—	0.329	0.927

Eyes: AME 0.049, ALE 0.061, PME 0.073, PLE 0.061; AME–AME 0.012, AME–ALE 0.049, PME–PME 0.061, PME–PLE 0.061, ALE–PLE 0.005.

Palp: Retrodistal projection on the tibia has a slender macroseta near the distal margin and a more slender macroseta part way down the projection. The distal end of the ventral apophysis is bifurcate and the prolateral apophysis is slender and curved (Figs 3, 11).

Female

Measurements: Total length 2.047; carapace length 0.827, width 0.669; sternum length 0.463, width 0.488; labium length 0.061, width 0.134 (MONZ AS.001924). Size range expressed by body length: 1.732–2.126 (mean 1.983, n = 11).

Eyes: AME 0.049, ALE 0.061, PME 0.061, PLE 0.061; AME–AME 0.012, AME–ALE 0.037, PME–PME 0.061, PME–PLE 0.037, ALE–PLE 0.005.

Colour: Abdomen lateral colour pattern as in Fig. 1 (see also Forster *et al.* 1990: fig. 182).

Genitalia: Scape relatively short and broad (Fig. 19) and tip flattened dorso-ventrally.

OTHER MATERIAL EXAMINED: **ND.** 3♀, Kaitaia, 30 Jan. 1981, R.R. Forster (OMNZ); 1♂, 12♀, Mangamuka, 31 Jan. 1981, R.R. Forster (OMNZ); 5♂, 10♀, North Auckland, Coronation Park, Whangarei, 6 Feb. 1981, from bowl-webs on tree trunks, R.R. Forster (OMNZ IV35939); 1♂, 7♀, Matthew Reserve (Forest & Bird), 35°09.254'S, 173°17.506'E, 23 Mar. 2010, P.J. Sirvid and B.M. Fitzgerald

(MONZ AS.001738–40); 1♀, Warawara Forest Park, Kauri Plateau, 500 m, kauri forest, not logged, king fern 20 cm off ground, 35°22.75'S, 173°17.25'E, 7 Nov. 2009, D.S. Seldon (MONZ AS.001762); 2♀, Mangamuka Summit, 35°11.401'S, 173°27.366'E, 23 Mar. 2010, P.J. Sirvid and B.M. Fitzgerald (MONZ AS.001713); 1♀, Mangamuka Gorge, picnic area, 35°11.600'S, 173°28.878'E, 23 Mar. 2010, P.J. Sirvid and B.M. Fitzgerald (MONZ AS.001731); 1♀, Kohukohu, The Skyline, Tupuwae Forest, 35°21.311'S, 173°27.578'E, 23 Mar. 2010, P.J. Sirvid and B.M. Fitzgerald (MONZ AS.001746); 9♂, 6♀, 3 penultimate ♂, Trounson Kauri Forest, 35°43.159'S, 173°38.932'E, 24 Mar. 2010, P.J. Sirvid and B.M. Fitzgerald (MONZ AS.001700–1); 7♂, 10♀, Whangarei, Coronation Park, N end (off Russell Rd), 35°42.799'S, 174°18.840'E, 25 Mar. 2010, P.J. Sirvid and B.M. Fitzgerald (MONZ AS.001698–99, AS.001924, AS.001702); 4♀, Whangarei, Coronation Park, S end (off Wilson Rd), 35°43.480'S, 174°18.461'E, 26 Mar. 2010, P.J. Sirvid and B.M. Fitzgerald (MONZ AS.001689).

DISTRIBUTION: Northland, from Kaitaia to Whangarei.

COMMENTS: We agree that the SEM images of the retrodistal projection on the palpal tibia (Forster *et al.* 1990: figs 192, 193) are of *Pahoroides whangarei* on the basis that the macroseta on the retrodistal projection is more slender than in *P. confusa*. We also agree that SEM images of the palp (Forster *et al.* 1990: figs 195, 196) represent *P. whangarei*. However, we identify two SEM images of the palp (Forster *et al.* 1990: figs 194, 197) as not belonging to *P. whangarei* but to *P. confusa* (see below).

We examined specimens held in OMNZ that were listed in Forster *et al.* (1990). Much of the material is now in poor condition and difficult to identify, so only part is listed here.

***Pahoroides courti* Forster, 1990**

(Figs 4, 12, 20)

Pahoroides courti Forster, 1990 (in Forster *et al.* 1990: 56, figs 187, 198, 199).

TYPE MATERIAL: **Holotype** ♂, Te Tapui Scenic Reserve, Matamata, **WO**, New Zealand, 20 Aug. 1984, D.J. Court (OMNZ IV2964). Examined 29 Sep. 2009. **Allotype** ♀, rimu/tawa forest, Lake Okataina, Rotorua, **BP**, New Zealand, 20 Oct. 1984, D.J. Court (OMNZ IV2965). Examined 29 Sep. 2009.

DIFFERENTIAL DIAGNOSIS: Males of *Pahoroides courti* are distinguished from males of all other species by the broad arrowhead shape of the distal end of the prolateral apophysis (Fig. 4); and females by the very long scape of uniform width (Fig. 20). (See also Forster *et al.* 1990: fig. 198 for male palp, and figs 187 and 199 for scape.)

DESCRIPTION:

Male

Measurements: Total length 2.520; carapace length 0.866, width 0.630; sternum length 0.488, width 0.488; labium length 0.073, width 0.146 (MONZ AS.001923). Size range expressed by body length: 2.362–3.386 (mean 2.655, *n* = 7).

Eyes: AME 0.049, ALE 0.061, PME 0.061, PLE 0.061; AME–AME 0.012, AME–ALE 0.049, PME–PME 0.073, PME–PLE 0.061, ALE–PLE 0.005.

Palp: The tibia has a large retrodistal projection with a long macroseta near the distal margin (Figs 4, 12).

Female

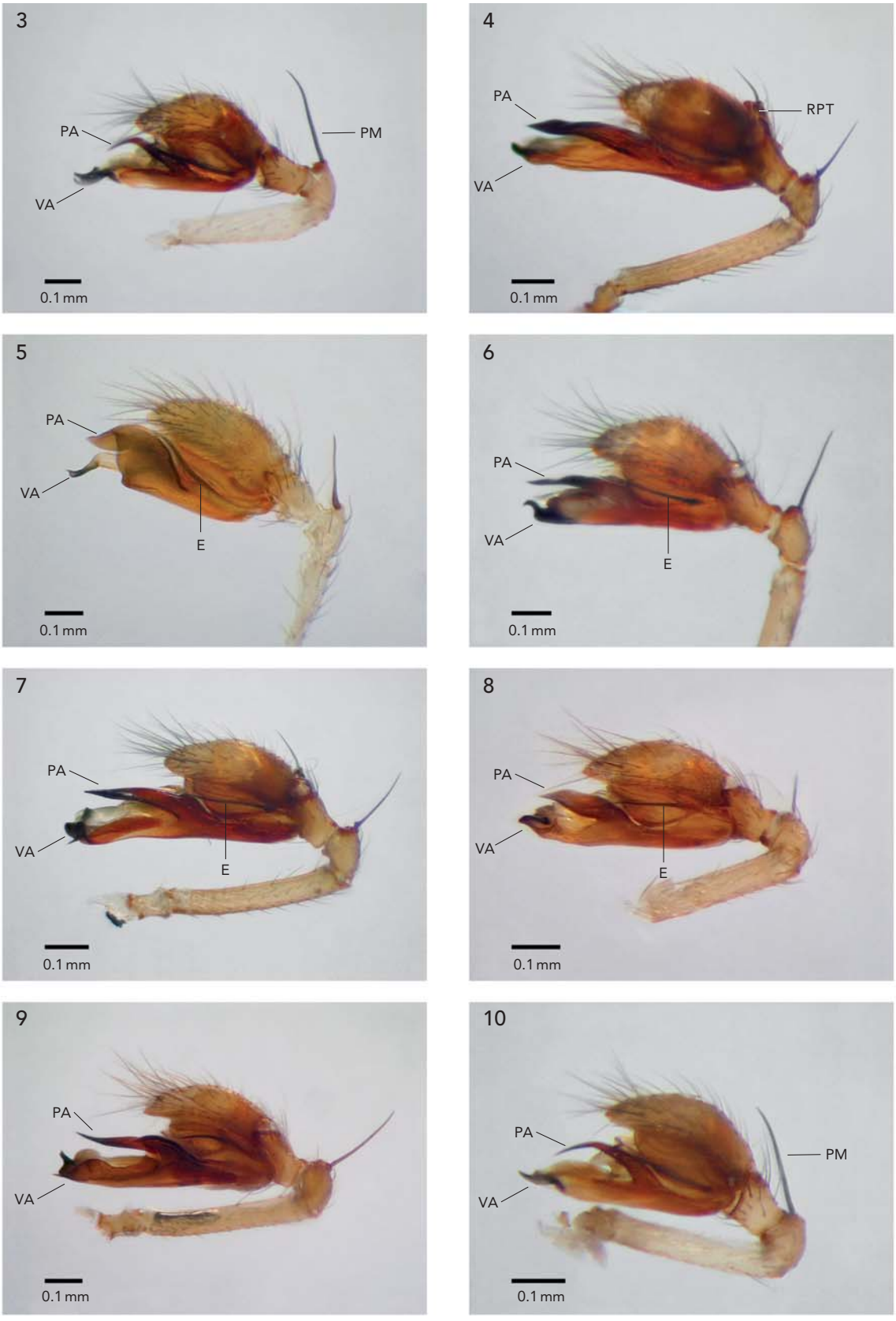
Measurements: Total length 2.126; carapace length 0.787, width 0.551; sternum length 0.463, width 0.439; labium length 0.073, width 0.146 (MONZ AS.001923). Size range expressed by body length: 1.811–2.362 (mean 2.115, *n* = 14).

Eyes: AME 0.049, ALE 0.061, PME 0.061, PLE 0.061; AME–AME 0.012, AME–ALE 0.024, PME–PME 0.073, PME–PLE 0.037, ALE–PLE 0.005.

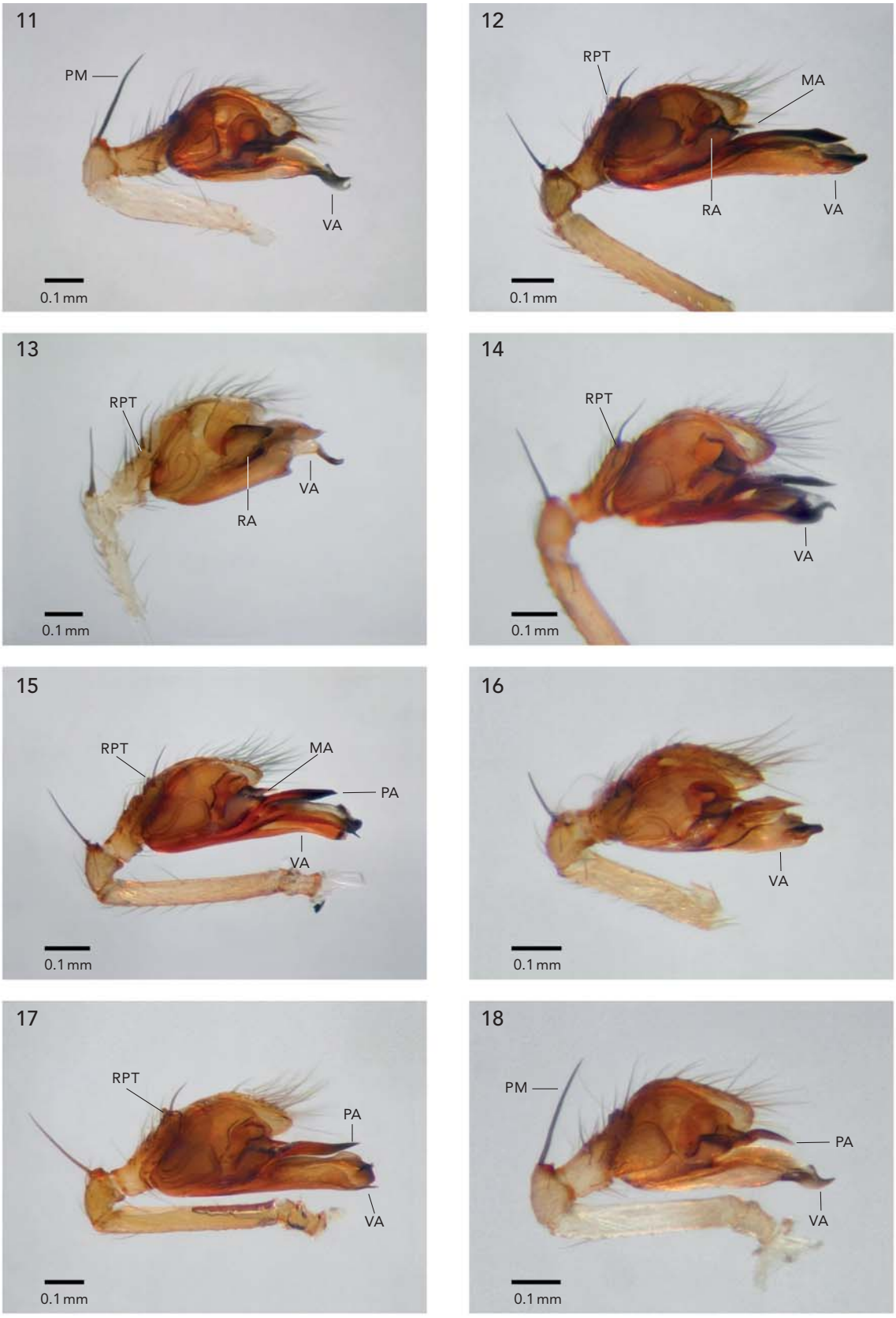
Colour: Lateral abdomen with the same basic pattern as in *Pahoroides whangarei* but the pale areas narrower.

Genitalia: Scape very long and slender (Fig. 20).

OTHER MATERIAL EXAMINED: **ND.** 1♂, Kaitaia, east Herekino, nīkau frond on ground, 35°10'S, 173°16'E, 16 Jan. 2010, D.S. Seldon (MONZ AS.001761); 1♂, Kohukohu, The Skyline, Tupuwae Forest, 35°21.311'S, 173°27.578'E, 23 Mar. 2010, P.J. Sirvid and B.M. Fitzgerald (MONZ AS.001744); 1♂, 1 penultimate ♂, Waipoua Forest, kauri forest S of Tāne Mahuta, 35°37.404'S, 173°33.623'E, 24 Mar. 2010, P.J. Sirvid and B.M. Fitzgerald (MONZ AS.001722). **WO.** 1♂, Limestone Downs, native bush, pitfall trap, 22 Dec. 2009–13 Jan. 2010, C.H. Watts (MONZ, AS.001583); 1♂, Maungatautari, South cell, outside cell, transect 1 pitfall trap J, Dec. 2008–Jan. 2009, C.H. Watts (MONZ AS.001584); 1♀, Maungatautari, South cell, outside cell, transect 1 pitfall trap J, 21 Jan. 2009–24 Feb. 2009, C.H. Watts (MONZ AS.001585); 2♀, Maungatautari Mt., pitfall trap in native forest, Jan.–Feb. 2010, C.H. Watts (MONZ AS.001804). **CL.** 1♀, Tuhua (Mayor Island). Te Huinga, from litter and broken branch, 24 Feb. 2003, B.M. Fitzgerald (MONZ AS.001763). **BP.** 2♂, 1♀, 1 penultimate ♂, Mokoia Island, Lake Rotorua, under branch and litter on ground, and



Figs 3–10 Prolateral view of palps of males: 3, *Pahoroides whangarei*; 4, *Pahoroides courti*; 5, *Pahoroides balli*; 6, *Pahoroides kohukohu*; 7, *Pahoroides confusa*; 8, *Pahoroides gallina*; 9, *Pahoroides aucklandica*; 10, *Pahoroides forsteri*.



Figs 11–18 Retrolateral view of palps of males: 11, *Pahoroides whangarei*; 12, *Pahoroides courti*; 13, *Pahoroides balli*; 14, *Pahoroides kohukohu*; 15, *Pahoroides confusa*; 16, *Pahoroides gallina*; 17, *Pahoroides aucklandica*; 18, *Pahoroides forsteri*.

dead leaves, 7 and 8 Feb. 2000, B.M. Fitzgerald (MONZ AS.001764); 1♀, Moutohora (Whale Island), damp gully, beaten from blechnum ferns, 1 Apr. 2005, B.M. Fitzgerald (MONZ AS.001765). **GB.** 1 penultimate ♂, 1 penultimate ♀, 1 fragment, beech forest, Treatment 2, Papaotehiwera Bay, Lake Waikaremoana, Urewera National Park, ex. sifting litter/moss, 19–26 Nov. 1996, L.J. Boutin (MONZ AS.001768); 1♂, 4♀, 3 penultimate ♂, 2 penultimate ♀, 1♀ fragment, mixed podocarp forest, Control 1, Whakeneperu Bay, Lake Waikaremoana, Urewera National Park, under log/bark, 19–26 Nov. 1996, L.J. Boutin (MONZ AS.001767, AS.001923); 1♀ (damaged), beech forest, Control 2, Te Piripiri Bay, Lake Waikaremoana, Urewera National Park, pitfall trap, 14 Jan. 1997, L.J. Boutin (MONZ AS.001769); 1♀, Hinau Walk, Whaitiri Point, Lake Waikaremoana, Urewera National Park, beating, 11 Jun. 2008, B.M. Fitzgerald (MONZ AS.001766); 1♂, 3♀, 1 penultimate ♀, Tawa Loop portion of Ngamoko Track, Lake Waikaremoana, Urewera National Park, beating, 20 Nov. 2008, P.J. Sirvid and B.M. Fitzgerald (MONZ AS.001439); 2♀, 1 penultimate ♂, track from Onepoto Redoubt to Lake Kiriopukae, Urewera National Park, beating, 19 Nov. 2008, P.J. Sirvid and B.M. Fitzgerald (MONZ AS.001459).

DISTRIBUTION: From northern Northland south to Maungatautari, Lake Rotorua and Lake Waikaremoana.

COMMENTS: On the holotype male the right palp is missing, presumably having been used for the SEM photograph (Forster *et al.* 1990: fig. 198), but the left palp is present.

Pahoroides balli new species

(Figs 5, 13, 21)

TYPE MATERIAL: **Holotype** ♂, Te Paki, Haupatoto, 34° 27.7697'S, 172°57.1582'E, **ND**, New Zealand, native bush, pitfall trap 6, 9 Apr.–7 May 2009, O. Ball (MONZ AS.001785). **Allotype** ♀, Te Paki, Haupatoto, 34°27.7697'S, 172°57.1582'E, **ND**, New Zealand, native bush, pitfall trap 1, 9 Apr.–7 May 2009, O. Ball (MONZ AS.001786).

ETYMOLOGY: The species epithet is a patronymic in honour of Dr Olivier J.-P. Ball, who collected the specimens, and in recognition of his studies of the biodiversity of the Te Paki Ecological District.

DIFFERENTIAL DIAGNOSIS: Males of *Pahoroides balli* are distinguished from males of all other species by the curved distal projection on the ventral apophysis of the palp (Figs 5, 13); and females by the relatively short, tapered scape (Fig. 21).

DESCRIPTION:

Male

Measurements: Total length 2.205; carapace length 0.945, width 0.551; sternum length 0.390, width 0.366; labium length 0.098, width 0.146 (MONZ AS.001802). Size range expressed by body length: 2.205–2.283 (mean 2.244, $n = 2$).

Eyes: AME 0.061, ALE 0.061, PME 0.061, PLE 0.073; AME–AME 0.005, AME–ALE 0.024, PME–PME 0.073, PME–PLE 0.049, ALE–PLE 0.005.

Palp: The retrodistal projection of the tibia is short, with two macrosetae near the distal margin (Fig. 13). The ventral apophysis terminates in a dark, curved projection and the broad prolateral apophysis extends around the ventral apophysis.

Female

Measurements: Total length 1.890; carapace length 0.709, width 0.551; sternum length 0.439, width 0.415; labium length 0.073, width 0.146 (MONZ AS.001802). Size range expressed by body length: 1.417–1.969 (mean 1.693, $n = 11$).

Eyes: AME 0.049, ALE 0.073, PME 0.061, PLE 0.073; AME–AME 0.005, AME–ALE 0.024, PME–PME 0.049, PME–PLE 0.037, ALE–PLE 0.007.

Colour: Lateral abdomen with the same basic pattern as in *Pahoroides whangarei* but the pale areas narrower.

Genitalia: Scape broad, gradually tapering to the tip. The receptacula are ovoid (Fig. 21).

OTHER MATERIAL EXAMINED: **ND.** 2♀, Te Paki, Radar Bush, 34°28.42'S, 172°45.87'E, native bush, pitfall traps 1 and 2, 14 Aug.–14 Sep. 2006, O. J.-P. Ball (MONZ AS.001311–2); 2♀, Te Paki, Radar Bush, 34°28.42'S, 172°45.87'E, native bush, pitfall traps 3 and 4, 13 Oct.–13 Nov. 2006, O. J.-P. Ball (MONZ AS.001798); 1♂, 3♀, Te Paki, Radar Bush, 34°28.42'S, 172°45.87'E, native bush, pitfall traps 1, 3 and 8, 12 Jan.–12 Feb. 2007, O. J.-P. Ball (MONZ AS.001796–7, AS.001800–1); 1♂, 1♀, Te Paki, Radar Bush, 34°28.42'S, 172°45.87'E, native bush, pitfall traps 3 and 8, 12 Feb.–13 Mar. 2007, O. J.-P. Ball (MONZ AS.001802); 2♀, Te Paki, Radar Bush, 34°28.42'S, 172°45.87'E, native bush, pitfall traps 3 and 8, 13 Mar.–13 Apr. 2007, O. J.-P. Ball (MONZ, AS.001582); 2♀, Te Paki, Radar Bush, 34°28.42'S, 172°45.87'E, native bush, pitfall traps 3 and 4, 13 Apr.–14 May 2007, O. J.-P. Ball (MONZ AS.001799); 1♀, Te Paki, Unuwhao Site A, 34°26.139'S, 172°53.279'E, broadleaf forest, pitfall trap 3, 14 Jul.–14 Aug. 2006,

O. J.-P. Ball (MONZ AS.001795); 1♀, 1 penultimate ♂, Te Paki, Unuwhao Site A, 34°26.139'S, 172°53.279'E, broadleaf forest, pitfall traps 1 and 6, 13 Oct.–13 Nov. 2006, O. J.-P. Ball (MONZ AS.001794); 1♀, Te Paki, Kohuronaki Site 1, 34°29.4658'S, 172°50.2647'E, native bush, pitfall trap 8, 14 Jul.–14 Aug. 2006, O. J.-P. Ball (MONZ AS.001793); 1♀, Te Paki, Kohuronaki Site 1, 34°29.4658'S, 172°50.2647'E, native bush, pitfall trap 4, 13 Nov.–14 Dec. 2006, O. J.-P. Ball (MONZ AS.001789); 1♀, Te Paki, Kohuronaki Site 1, 34°29.4658'S, 172°50.2647'E, native bush, pitfall trap 4, 13 Mar.–13 Apr. 2007, O. J.-P. Ball (MONZ AS.001791); 1♀, Te Paki, Kohuronaki Site 1, 34°29.4658'S, 172°50.2647'E, native bush, pitfall trap 8, 14 May–12 Jun. 2007, O. J.-P. Ball (MONZ AS.001792); 1♀, Te Paki, Darkies Ridge, 34°27.6695'S, 172°45.623'E, shrubland, pitfall trap 7, 13 Apr.–14 May 2007, O. J.-P. Ball (MONZ AS.001790); 1♀, Te Paki, Te Huka, 34°25.8957'S, 172°55.187'E, native bush, pitfall trap 7, 22 Oct.–21 Nov. 2008, O. J.-P. Ball (MONZ AS.001788); 3♀, Te Paki, Te Huka, 34°25.8957'S, 172°55.187'E, native bush, pitfall traps 4 and 5, 9 Apr.–7 May 2009, O. J.-P. Ball (MONZ AS.001787, AS.001821).

DISTRIBUTION: Known from the North Cape and Cape Reinga area (Te Paki Ecological District), Northland.

***Pahoroides kohukohu* new species**

(Figs 6, 14, 22)

TYPE MATERIAL: **Holotype** ♂, Kohukohu, The Skyline, **ND**, Tupuwae Forest, 35°21.311'S, 173°27.578'E, 23 Mar. 2010, P.J. Sirvid and B.M. Fitzgerald (MONZ AS.001748). **Allotype** ♀, same data as holotype (MONZ AS.001747). **Paratypes** 2♀, same data as holotype (MONZ AS.001749).

ETYMOLOGY: The species epithet is a noun in apposition taken from the type locality, north of the Hokianga Harbour, Northland.

DIFFERENTIAL DIAGNOSIS: Males of *Pahoroides kohukohu* are distinguished by the black hook across the top of the ventral apophysis of the palp (Figs 6, 14); and females by the shape of the epigynal scape, constricted at the base and widening distally (Fig. 22).

DESCRIPTION:

Male

Measurements: Total length 2.598; carapace length 0.945, width 0.630; sternum length 0.463, width 0.439; labium length 0.073, width 0.122 (MONZ AS.001715). Size range expressed by body length: 2.598–2.677 (mean 2.638, *n* = 2). *Eyes*: AME 0.061, ALE 0.061, PME 0.061, PLE 0.073; AME–AME 0.005, AME–ALE 0.024, PME–PME 0.073, PME–PLE 0.049, ALE–PLE 0.005.

Palp: The retrodistal projection of the tibia has a strong macroseta; the TTA is relatively short, and the ventral apophysis has a sharp black hook on the tip (Fig. 6), that originates on the retrolateral side of the tip and curves across the tip, prolaterally (Fig. 14). The prolateral apophysis is broad and flattened as in *Pahoroides courti*.

Female

Measurements: Total length 1.732; carapace length 0.906, width 0.669; sternum length 0.488, width 0.488; labium length 0.073, width 0.159 (MONZ AS.001741). Size range expressed by body length: 1.732–2.205 (mean 2.000, *n* = 5). *Eyes*: AME 0.061, ALE 0.073, PME 0.061, PLE 0.073; AME–AME 0.005, AME–ALE 0.012, PME–PME 0.061, PME–PLE 0.037, ALE–PLE 0.005.

Genitalia: Scape narrow at base, wider in the distal half, and narrows to a tip that is not dorso-ventrally flattened (Fig. 22).

OTHER MATERIAL EXAMINED: **ND.** 2♂, 4♀, North Auckland, Kohukohu, The Skyline, 28 Aug. 1953, B.J. Marples (OMNZ IV35938); 1♂, 4♀, 1 immature ♀, Waipoua Forest, 20 Jan. 1981, R.R. Forster, (OMNZ IV35937); 1♀, Mangamuka Summit, 35°11.401'S, 173°27.366'E, 23 Mar. 2010, P.J. Sirvid and B.M. Fitzgerald (MONZ AS.001712); 1♀, Waipoua Forest, kauri forest S of Tāne Mahuta, 35°36.212'S, 173°31.936'E, 24 Mar. 2010, P.J. Sirvid and B.M. Fitzgerald (MONZ AS.001741); 1♀, Waipoua Forest, kauri forest S of Tāne Mahuta, 35°37.404'S, 173°33.623'E, 24 Mar. 2010, P.J. Sirvid and B.M. Fitzgerald (MONZ AS.001723); 1♂, Kaihu Farm Hostel, forest, 35°45.738'S, 173°40.410'E, 24 Mar. 2010, P.J. Sirvid and B.M. Fitzgerald (MONZ AS.001715).

DISTRIBUTION: Western side of Northland, from Mangamuka and Kohukohu, south through Waipoua Forest to Kaihu.

COMMENTS: The specimens of *Pahoroides kohukohu* collected by Marples and Forster, listed above, are in poor condition, but identifiable. Their samples also include fragmentary material of one or more additional species that were unidentifiable.

***Pahoroides confusa* new species**

(Figs 7, 15, 23)

Pahoroides whangarei Forster (in Forster *et al.* 1990: 54). In part: figs 194, 197.

TYPE MATERIAL: **Holotype** ♂, Whangarei, **ND**, Coronation

Park, S end (off Wilson Rd), 35°43.480'S, 174°18.461'E, 26 Mar. 2010, P.J. Sirvid and B.M. Fitzgerald (MONZ AS.001692). **Allotype** ♀, same data as for holotype (MONZ AS.001691). **Paratypes** 2♂, 5♀, same data as holotype (MONZ AS.001688, AS.001690, AS.002137–8).

ETYMOLOGY: The species epithet (from Latin = confused) refers to the inclusion of this species in the original description of *Pahoroides whangarei*.

DIFFERENTIAL DIAGNOSIS: Males of *Pahoroides confusa* are identifiable by the distal spine on the ventral apophysis and the shape of the prolateral apophysis (Figs 7, 15); and females by the scape of medium thickness throughout its length (Fig. 23). This species may be found with *P. whangarei*, *P. courti* and *P. kohukohu*. Males may be distinguished by the form of the ventral apophysis of the TTA (bifurcated in *P. whangarei* (Fig. 3), terminating in a black hook in *P. kohukohu* (Fig. 6)) or the prolateral apophysis (distally arrowhead shaped in *P. courti* (Fig. 4)). Females can be separated on the basis of scape form (Figs 19, 20, 22, 23). *Pahoroides confusa* most closely resembles *P. aucklandica* but males can be separated by the form of the prolateral and the ventral apophyses (PA narrower and more tapered, and VA distally lobate in *P. aucklandica* (Figs 9, 17)), while the profile of the broad basal region of the scape can be used to separate females (Fig. 23).

DESCRIPTION:

Male

Measurements: Total length 2.362; carapace length 0.866, width 0.630; sternum length 0.463, width 0.439; labium length 0.073, width 0.146 (MONZ AS.001832). Size range expressed by body length: 2.362–2.598 (mean 2.520, *n* = 4).

Eyes: AME 0.049, ALE 0.061, PME 0.073, PLE 0.073; AME–AME 0.049, AME–ALE 0.049, PME–PME 0.073, PME–PLE 0.049, ALE–PLE 0.005.

Palp: Retrodistal projection is short and blunt, with a strong macroseta on the distal margin, about as thick as that on the patella. The ventral apophysis ends with a thickened tip and distal spine; the retrolateral apophysis is broad (Figs 7, 15).

Female

Measurements: Total length 1.811; carapace length 0.827, width 0.630; sternum length 0.463, width 0.463; labium length 0.073, width 0.171 (MONZ AS.001737). Size range expressed by body length: 1.732–2.283 (mean 1.998, *n* = 8).

Eyes: AME 0.049, ALE 0.061, PME 0.061, PLE 0.061; AME–AME 0.012, AME–ALE 0.024, PME–PME 0.049, PME–PLE 0.049, ALE–PLE 0.005.

Colour: Lateral abdomen with same basic pattern as in *Pahoroides whangarei* but pale areas narrower.

Genitalia: The scape and genitalia are shown in Fig. 23.

OTHER MATERIAL EXAMINED: **ND.** 1♂, 1♀, Coronation Park, Whangarei, 6 Feb. 1981, from bowl-webs on tree trunks, R.R. Forster (OMNZ IV35939); 2♀, Kohukohu, The Skyline, Tupuwae Forest, 35°21.311'S, 173°27.578'E, 23 Mar. 2010, P.J. Sirvid and B.M. Fitzgerald (MONZ AS.001745); 1♀, Waipoua Forest, kauri forest N of Tāne Mahuta, 35°35.756'S, 173°31.634'E, 24 Mar. 2010, P.J. Sirvid and B.M. Fitzgerald (MONZ AS.001737); 2♂, Mas Olivier, 35°51.841'S, 174°10.150'E, 25 Mar. 2010, B.M. Fitzgerald and O.J.-P. Ball (MONZ AS.001751, AS.001832); 1♂, Mas Olivier, 35°51.841'S, 174°10.150'E, 26 Mar. 2010, O. J.-P. Ball (MONZ AS.001750).

DISTRIBUTION: Northland, from Kohukohu and Waipoua Forest to Whangarei district.

COMMENTS: The vial containing 1♂, 1♀ collected by R.R. Forster (OMNZ IV35939), listed above, also contains 5♂, 10♀ of *Pahoroides whangarei*. This is confirming evidence that Forster's (1990) concept of *P. whangarei* includes two different species, as discussed above.

Pahoroides confusa may require more moisture than does *P. whangarei*; we collected both *P. confusa* (3♂, 6♀) and *P. whangarei* (4♀) in the damp habitat at the south end of Coronation Park, but only *P. whangarei* (7♂, 10♀) in the dry habitat at the north end of the park.

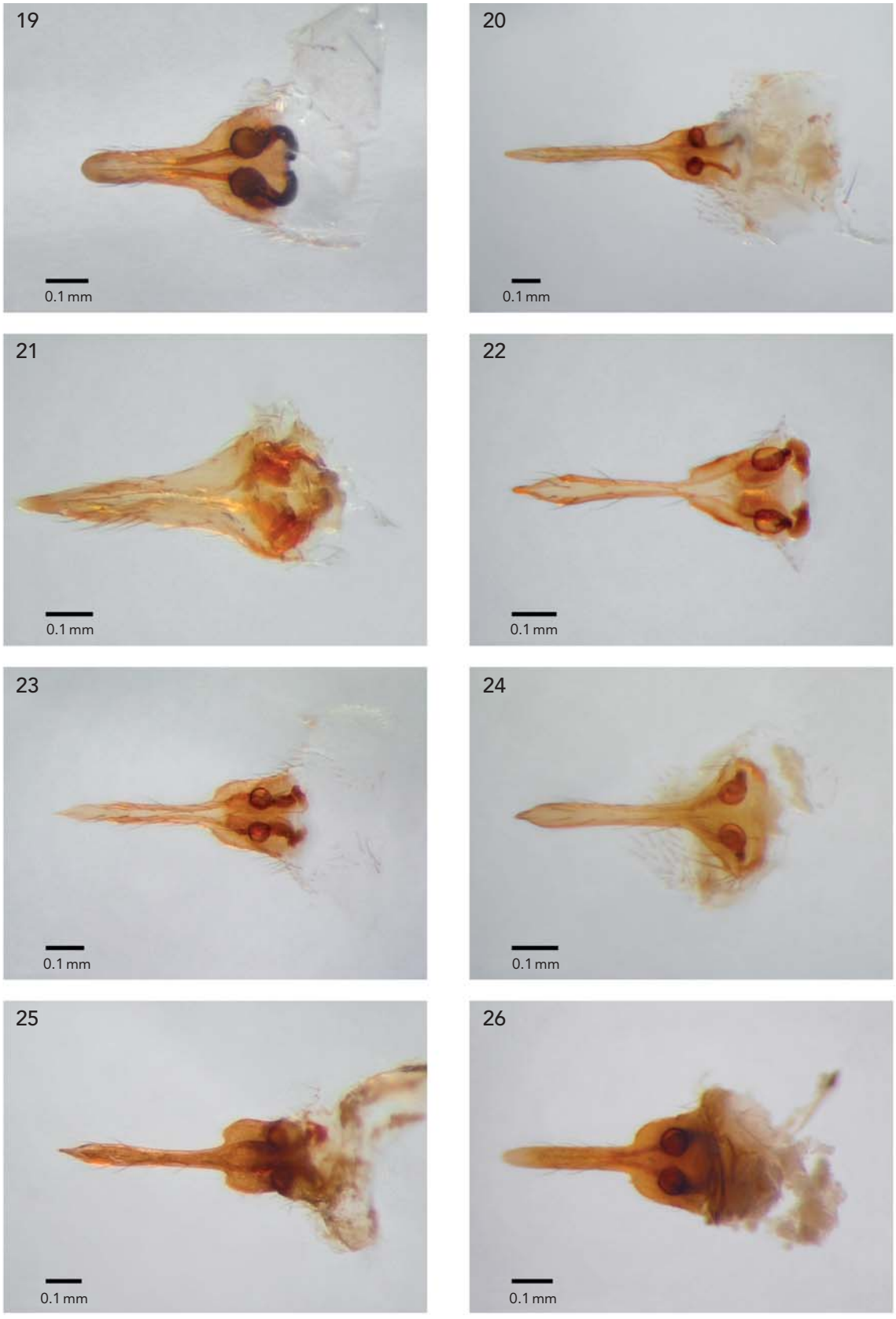
***Pahoroides gallina* new species**

(Figs 8, 16, 24)

TYPE MATERIAL: **Holotype** ♂, Hen Island, **ND**, New Zealand, inside bases of fallen nīkau fronds and on rock at night, 2–5 Dec. 2004, B.M. Fitzgerald (MONZ AS.001783). **Allotype** ♀, same data as holotype (MONZ AS.001784). **Paratypes** 4♂, 3♀, same data as holotype (MONZ AS.001780–2).

ETYMOLOGY: The species epithet (from Latin = chicken, hen) refers to Hen Island (Taranga Island), the type locality, and also relates to the common name of synotaxids, 'chicken-wireweb' spiders (Jocqué & Dippenaar-Schoeman 2006).

DIFFERENTIAL DIAGNOSIS: The relatively short and pointed ventral apophysis of *Pahoroides gallina* males is unique (Figs 8, 16), and the basal area of the epigynal scape tapering at about 45° and ovoid receptacula are typical of *P. gallina* females (Fig. 24).



Figs 19–26 Epigynal scapes of females: 19, *Pahoroides whangarei*; 20, *Pahoroides courti*; 21, *Pahoroides balli*; 22, *Pahoroides kohukohu*; 23, *Pahoroides confusa*; 24, *Pahoroides gallina*; 25, *Pahoroides aucklandica*; 26, *Pahoroides forsteri.*

DESCRIPTION:

Male

Measurements: Total length 3.307; carapace length 1.102, width 0.709; sternum length 0.512, width 0.524; labium length 0.098, width 0.171 (MONZ AS.001780). Size range expressed by body length: 2.047–3.386 (mean 2.874, *n* = 6).
Eyes: AME 0.061, ALE 0.073, PME 0.061, PLE 0.073; AME–AME 0.017, AME–ALE 0.037, PME–PME 0.049, PME–PLE 0.024, ALE–PLE 0.005.
Palp: The retrodistal projection of the tibia is of moderate length and has a strong macroseta near the distal margin. The ventral apophysis ends in a black lobe, narrow in side view (Fig. 8). The projection on the MA is semi-translucent and tapers to a point (Fig. 16).

Female

Measurements: Total length 2.283; carapace length 0.866, width 0.591; sternum length 0.463, width 0.463; labium length 0.073, width 0.146 (MONZ AS.001837). Size range expressed by body length: 1.811–2.362 (mean 2.189, *n* = 5).
Eyes: AME 0.049, ALE 0.073, PME 0.061, PLE 0.073; AME–AME 0.012, AME–ALE 0.024, PME–PME 0.049, PME–PLE 0.037, ALE–PLE 0.005.
Colour: Lateral abdomen with the same basic pattern as in *Pahoroides whangarei* but the pale areas narrower.
Genitalia: Base of scape broad; epigynal lobe slender, wider towards tip and ending in a sharp point; receptacula ovoid (Fig. 24).

OTHER MATERIAL EXAMINED: **ND.** 2♀, 2 penultimate ♂, 1 penultimate ♀, 1 immature, Bream Head, forest, in bases of fallen nīkau fronds, 16 and 26 Oct. 2001, B.M. Fitzgerald (MONZ AS.001778, AS.001837); 1♂, 2♀, 2 penultimate ♂, Hen Island, in fallen dead nīkau fronds and on rocks, 19–23 Oct. 2001, B.M. Fitzgerald (MONZ AS.001779).

DISTRIBUTION: Known only from Hen Island, and Bream Head, at the entrance to Whangarei Harbour.

COMMENTS: Records of 1♀ (as *Synotaxus*) from Tawhiti Rahi, Poor Knights Islands, in Court (1982), and of 4♀, 1 immature (as linyphiids) from Lady Alice Island, Chickens Islands, in Court (1984), probably belong to *Pahoroides gallina*.

***Pahoroides aucklandica* new species**

(Figs 9, 17, 25)

TYPE MATERIAL: **Holotype** ♂, Wenderholm Regional Park, Waiwera, **AK**, New Zealand, 36°31.80'S, 174°42.00'E, ex fallen nīkau frond, 27 Nov. 2010, P.J. Sirvid (MONZ AS.002324). **Allotype** ♀, same data as holotype (MONZ AS.002325). **Paratypes** 1♀, 1 penultimate ♂, same data as holotype (MONZ AS.002326–7).

ETYMOLOGY: The species epithet refers to the geographical distribution within the Auckland District.

DIFFERENTIAL DIAGNOSIS: The male ventral apophysis of *Pahoroides aucklandica* is distally lobate with a small spine on the tip, and the prolateral apophysis is slender and curved (Figs 9, 17). The female scape is slightly notched on the distal margin of the basal area (Fig. 25). This species most closely resembles *P. confusa* but can be separated by the outline of the basal region of the scape in females, and the form of the prolateral and ventral apophyses in males.

DESCRIPTION:

Male

Measurements: Total length 2.756; carapace length 0.945, width 0.669; sternum length 0.463, width 0.439; labium length 0.073, width 0.146 (MONZ AS.002141). Size range expressed by body length: 2.756–2.913 (mean 2.834, *n* = 2).
Eyes: AME 0.061, ALE 0.073, PME 0.073, PLE 0.073; AME–AME 0.012, AME–ALE 0.049, PME–PME 0.073, PME–PLE 0.073, ALE–PLE 0.005.
Palp: One macroseta on the tibial projection. The ventral apophysis has a small, upright spur on the distal prolateral margin. Also, the retrolateral apophysis is slender and curved (Figs 9, 17).

Female

Measurements: Total length 2.047; carapace length 0.787, width 0.630; sternum length 0.488, width 0.463; labium length 0.073, width 0.146 (MONZ AS.002142). Size range expressed by body length: 2.047–2.126 (mean 2.073, *n* = 3).
Eyes: AME 0.049, ALE 0.061, PME 0.061, PLE 0.061; AME–AME 0.012, AME–ALE 0.049, PME–PME 0.061, PME–PLE 0.061, ALE–PLE 0.005.
Genitalia: The shape of the scape is unique among the eight species, being slightly notched at the base (Fig. 25).

OTHER MATERIAL EXAMINED: **AK.** 1♂, Tiritiri Matangi, pitfall trap 2/9b, Sept. 1996, C.J. Green (MONZ AS.002141); 1♀, Mt Auckland, Mt Auckland Walkway, ex nīkau frond, 8 Jan. 2010, D.S. Seldon. (MONZ AS.002142); 1 penultimate ♀, 129 Laingholm Drive, pitfall trap 1A–3B, 19 Jun. 2007, J.T. Pusateri (MONZ AS.002140); 1♀, 129 Laingholm Drive, pitfall trap 4A–6B, 26 Feb. 2008, J.T. Pusateri (MONZ AS.002139).

DISTRIBUTION: Auckland region, from Mt Auckland south to Laingholm, Titirangi.

***Pahoroides forsteri* new species**

(Figs 10, 18, 26)

TYPE MATERIAL: **Holotype** ♂, East Double Island, Mercury Islands, **CL**, New Zealand, 36°37'S, 175°54'E, summit, beaten from plants close to ground, 1 Dec. 2000, B.M. Fitzgerald (MONZ AS.001803). **Allotype** ♀, same data as holotype (MONZ AS.001809). **Paratypes** 3♂, 3♀, 1 penultimate ♂, 2 immatures, same data as holotype (MONZ AS.001806–8).

ETYMOLOGY: The species epithet is a patronymic in honour of the late Dr R.R. Forster, who described the genus *Pahoroides* and collected specimens of *P. forsteri* on Cuvier Island (Repanga Island) in 1943.

DIFFERENTIAL DIAGNOSIS: The male palp of *Pahoroides forsteri* resembles that of *P. whangarei* but the ventral apophysis of the TTA ends in a single tapered, curved point (Figs 10, 18). The strongly curved and tapered prolateral apophysis separates this species from all other *Pahoroides* males (Fig. 10). In females, the scape is uniform in width, and broad relative to its length (Fig. 26).

DESCRIPTION:

Male

Measurements: Total length 2.520; carapace length 0.827, width 0.551; sternum length 0.463, width 0.439; labium length 0.085, width 0.171 (MONZ AS.001814). Size range expressed by body length: 1.890–2.913 (mean 2.650, *n* = 20).

Eyes: AME 0.061, ALE 0.061, PME 0.049, PLE 0.073; AME–AME 0.024, AME–ALE 0.024, PME–PME 0.049, PME–PLE 0.037, ALE–PLE 0.005.

Palp: The retrodistal projection of the tibia is relatively short, with a long, slender macroseta on the distal margin and another situated more proximally. These macrosetae are more slender than those in other species of *Pahoroides* and sometimes are difficult to distinguish from hairs (Figs 10, 18).

Female

Measurements: Total length 1.969; carapace length 0.709, width 0.512; sternum length 0.341, width 0.293; labium length 0.073, width 0.146 (MONZ AS.001814). Size range expressed by body length: 1.732–2.283 (mean 2.000, *n* = 21).

Eyes: AME 0.049, ALE 0.061, PME 0.049, PLE 0.061; AME–AME 0.024, AME–ALE 0.024, PME–PME 0.049, PME–PLE 0.037, ALE–PLE 0.007.

Colour: Lateral abdomen with the same basic pattern as in *Pahoroides whangarei* and the pale areas of similar size.

Genitalia: Epigynal scape relatively short and broad, of uniform width throughout length; tip of scape flattened dorso-ventrally. Receptacula round (Fig. 26).

OTHER MATERIAL EXAMINED: **CL.** 1♂, Cuvier Island, Jun. 1943, R.R. Forster (OMNZ); 5♂, 1♀, 1 penultimate ♂, Cuvier Island, Lookout Track, under rat trap covers, 23 Mar. 1994, B.M. Fitzgerald (MONZ AS.001773); 2♀, Cuvier Island, Radar Camp, under rock and fallen rotten log, 24 Mar. 1994, B.M. Fitzgerald (MONZ AS.001775); 4♀, Cuvier Island, Lookout Track, in fallen nīkau fronds and flowers, 25 Mar. 1994, B.M. Fitzgerald (MONZ AS.001774); 2♀, Cuvier Island, Pumphouse Track, at stream on rocks at stream edge, 15 Dec. 1996, B.M. Fitzgerald (MONZ AS.001776); 1♂, 1 penultimate ♂, 1 penultimate ♀, Cuvier Island, West Ridge Track, at big rock under iron and rodent trap cover, 15 Dec. 1996, B.M. Fitzgerald (MONZ AS.001777); 4♂, 1♀, Stanley Island, Mercury Islands, beaten from fallen dead mānuka twigs, 30 Nov. 1997, B.M. Fitzgerald (MONZ AS.001772); 3♂, 1♀, 1 penultimate ♂, Stanley Island, Mercury Islands, beaten from dead mānuka, 30 Nov. 1999, B.M. Fitzgerald (MONZ AS.001771); 1♀, Stanley Island, Mercury Islands, on small web at base of pōhutukawa, 30 Nov. 1999, B.M. Fitzgerald (MONZ AS.001770); 1 immature ♂, West Double Island, Mercury Islands, summit, beaten from fallen dead mānuka, 1 Mar. 2000, B.M. Fitzgerald (MONZ AS.001810); 2 penultimate ♂, Ruamahuaiti, Aldermen Islands, forest, in damp rotten log, 19 Feb. 2002, B.M. Fitzgerald (MONZ AS.001815); 1♂, 1♀, Ruamahuaiti, Aldermen Islands, under bank at night, 7 Nov. 2002, B.M. Fitzgerald (MONZ AS.001814); 1 penultimate ♂, Ruamahuanui, Aldermen Islands, NW Bay campsite, under rocks, 19 Nov. 2003, B.M. Fitzgerald (MONZ AS.001813); 2♂, 1♀, 1 penultimate ♂, Middle Chain Island, Aldermen Islands, from webs at ground level in forest, 20 Feb. 2002, B.M. Fitzgerald (MONZ AS.001820); 1♀, Middle Chain Island, Aldermen Islands, under rock on stone wall, 5 Nov. 2002, B.M. Fitzgerald (MONZ AS.001818); 1♀, Middle Chain Island, Aldermen Islands, NE Basin, on web under rocks, 19 Nov. 2003, B.M. Fitzgerald (MONZ AS.001819); 2♀, 1 immature, Hongiora, Aldermen Islands, under rocks beneath pōhutukawa and taupata, 18 and 22 Feb. 2002, B.M. Fitzgerald (MONZ AS.001816); 1 immature, Hongiora, Aldermen Islands, beaten from dead mariscus leaves, 9 Nov. 2002, B.M. Fitzgerald (MONZ AS.001817).

DISTRIBUTION: Known from islands east of the Coromandel

Peninsula (Cuvier/Repanga, Mercury and Aldermen islands), North Island. It is probably also present on the Coromandel Peninsula.

COMMENTS: Forster *et al.* (1990: 57) listed one ♂ and one ♀ from Cuvier Island (Repanga Island) in June 1943 as *Pahoroides courti*. We examined them and identified the male as belonging to *P. forsteri* and the female as *Nomaua repanga*, for which Cuvier Island (Repanga Island) is the type locality (Fitzgerald & Sirvid 2009: 151).

Discussion

The eight species of *Pahoroides* described here include seven species of rather limited geographic range in Northland and in the Auckland/Coromandel region, and one species (*P. courti*) with a more extensive distribution from Northland to the Waikato, Bay of Plenty and the Urewera Ranges. Several species of *Pahoroides* from Northland are in part sympatric, in contrast to species of *Nomaua*, for which our records indicate largely allopatric distributions (Fitzgerald & Sirvid 2009). For example, we collected *P. whangarei*, *P. kohukohu*, *P. confusa* and *P. courti* in the same forest at Kohukohu, and *P. whangarei* and *P. confusa* in Coronation Park, Whangarei. However, *P. balli* was the only species of *Pahoroides* identified among the large number of specimens caught in pitfall traps by Olivier Ball in the Te Paki Ecological District, an area of high endemism (Vink *et al.* 2011). That area, including Cape Reinga and North Cape, was an island until about the Middle Pleistocene and was subsequently joined to the rest of mainland Northland by a sand tombolo, 50 km in length (Brook 1999). This isolation, and the inhospitable habitat of the sand tombolo, may have prevented the southward spread of *P. balli* and the northward spread of other species of *Pahoroides*. Another isolated species, *P. forsteri*, was recorded only on Cuvier Island and the Mercury and Aldermen islands. These islands were connected to the North Island until rising sea-levels isolated Cuvier and the Aldermen Islands about 10 000 yrs BP and the Mercury Islands about 7000 yrs BP (Hayward 1986; Towns 1994). With such recent separation, we expect *P. forsteri* to be present on the adjacent Coromandel Peninsula.

Species of *Pahoroides* are common inhabitants of low vegetation and twiggy litter of the forest floor, and are probably not under threat, but the ranges of some may have been reduced and fragmented as forest has been cleared. More detailed information on their distributions in Northland would help in assessing the risk to their survival and in evaluating their conservation status.

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