Ground spiders of the genus *Taieria* Forster, 1979 in New Zealand: taxonomy and distribution (Araneae: Gnaphosidae)

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**Abstract:** The genus *Taieria* Forster, 1979 includes six species: *T. erebus* (L. Koch, 1873); *T. elongata*, *T. kaituna*, *T. obtusa* and *T. miranda* - found in New Zealand and described by Forster (1979); and *T. titirangia*, a new species from the South Island, New Zealand. For the first time *T. erebus* has been found on the South Island (recorded previously only on the North Island), and for the first time *T. elongata* has been recorded on the North Island (known before only on the South Island). Maps with the distribution of six species of *Taieria* on the South and North Islands are included.

**Key words:** spiders, Gnaphosidae, *Taieria titirangia*, new species, New Zealand

**Introduction**

The genus *Taieria* was described by R. Forster (1979). Earlier, two species, *Drassus erebus* and *Drassus achropus*, were described from New Zealand by L. Koch (1873). Forster (1979) showed that the two species were actually a male and a female of the same species and he chose a valid name *Taieria erebus* (L. Koch, 1873). Additionally, Forster (1979) described four new species of the genus *Taieria* from New Zealand: *T. elongata*, *T. kaituna*, *T. obtusa* and *T. miranda*. Currently six species are found in New Zealand: *Taieria erebus* (L. Koch, 1873), *T. elongata* Forster, 1979, *T. kaituna* Forster, 1979, *T. obtusa* Forster, 1979, *T. miranda* Forster, 1979 and *T. titirangia*, new species.

**Methods**

For the distribution of *Taieria* in New Zealand we have used materials provided by major museums of New Zealand and Florida State Collection of Arthropods, Gainesville. Materials used by Forster (1979) have been also included. Maps have been prepared with the program ArcView GIS 3.2. The format of a new species description and the standard abbreviation of morphological terms follow those used in Ovtsharenko, Platnick (1995). All measurements are in millimeters.

**Collection Examined**

AMNZ - Auckland Institute and War Memorial Museum, Auckland
OMD - Otago Museum, Dunedin
MONZ - Museum of New Zealand
LUNZ - Lincoln University, Lincoln
NZAC - New Zealand Arthropod Collection, Auckland
FSCA - Florida State Collection of Arthropods, Gainesville

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Taxonomic Part

Genus Taieria Forster, 1979

**Diagnosis:** The genus *Taieria* includes medium-sized spiders, total body length 4.5 to 9.6 mm. Carapace is pear-shaped, narrowed anteriorly, usually reddish brown, orange brown or yellow with brown or yellow setae. Eight eyes in two rows; anterior row is straight, posterior row - procurred; anterior median eyes - circular, dark; others are oval and light. Abdomen is from yellowish to gray brown covered by plumose hairs; male abdomen has shiny brown anterior scutum. Legs are usually yellow brown. Tibia has a double row of spines on the ventral surface and a basal ventral pair of spines on metatarsus. Male palps have very distinctive retrolateral tibial and retrolateral patellar apophysis, with or without dorsal tibial apophysis. Embolus laminar, conductor vestigial or absent. Median apophysis relatively large, hooked. Epigynum ventrally with prominent median scape and distinctive lateral pockets located posteriorly; epigynum dorsally with one pair of oval receptacula.

**Biology:** The biology of the genus *Taieria* is almost unknown except for *T. erebus*, the unique behavior of which has recently been described by Jarman, Jackson (1986). *T. erebus* has been found to be a versatile predator: it captures insects both cursorially (away from webs) and kleptoparasitically (on alien webs) and it also eats the eggs of host spiders (oophagy). When *T. erebus* invades webs, it has an aggressive mimic, performing a repertoire of vibratory behaviors to lure a host spider. Ground spiders (Gnaphosidae) are traditionally referred to as hunting spiders, but *T. erebus* builds a small prey-capture web. It also preys on segestriid spiders, then uses their webs to catch more prey. This being an unusual example of a spider using as a tool for predation the web of another species from an unrelated family.

Habitat preferences of *Taieria*: we have found that some species are notably more adaptable than others. They occupy a greater variety of habitats while others are singularly less plastic and are restricted to a narrower range of habitat types. An example of more plastic species is *T. erebus*, which occurs in forests, gardens, rocky hillsides, sand dunes, beaches, and in the houses. A lifespan of adults is relatively short, particularly for males (Forster 1979). Revision of additional material shows, that in New Zealand adult specimens of *Taieria* occur mostly from October till February. As to the species *T. erebus*, females of this species occur all year long and males occur from August till May.

**Distribution:** Currently there are six species of *Taieria* in New Zealand. Analysis of additional materials of the genus *Taieria* demonstrates much wider distribution of the genus throughout New Zealand than it has been known before (Forster 1979). Thus we have found *T. erebus* also on the South Island (recorded previously only on the North Island) and *T. elongata* has been found on the North Island (earlier known only on the South Island). A new species, named *T. titirangia*, has been found in the northern part of the South Island. Therefore the South Island is more diverse and presented by five species of *Taieria*. *T. titirangia* and *T. obtusa* occur only on this island. The North Island is presented by four species, and only one species *T. miranda* is endemic of the Island.

*Taieria erebus* (L. Koch, 1873)

*Drassus erebus* L. Koch, 1873: 387, pl. 30, fig. 5 (male holotype from Canterbury, New Zealand, in O. P. Cambridge Coll., Oxford, not seen).

*Drassus ochropus* L. Koch, 1873: 390, pl. 30, fig. 7 (female holotype from Canterbury, New Zealand, in O. P. Cambridge Coll., Oxford, not seen).

*Taieria erebus* (L. Koch, 1873): Forster 1979: 49.

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Gorge, 45°03′S, 169°08′E, Nov. 19, 1974 (J. Dugdale; OMD), 1♀; Rock and Pillar Ecological Survey, 2 km S of Summit Rock, Ski Hut, 44°46′S, 170°18′E, Jan. 18, Feb. 28 1969, elev. 1368 m, edge of bog, pitfall (J. Child; OMD), 2♀; Rock and Pillar Ecological Survey, W of Middlemarch, 45°30′S, 170°07′E, Dec. 31, 1968, elev. 608 m, rocky hillside, pitfall (J. Child; OMD), 1♂; Rock and Pillar Ecological Survey, Lug Creek, Matagouri Scrub, 45°25′S, 170°07′E, Dec. 18, 1968, pitfall (J. Child; OMD), 1♀; The Sentinel, Cook, 44°43′S, 168°01′E, Dec. 3, 1953 (B. Holloway; OMD), 2♀; Southland, Orepuki, 46°16′S, 167°43′E, May 9, 1944, under log (R. Forster; OMD), 1♀; Spencer Park, Spencerville, Christchurch, Mar. 1983 (R. Jackson; OMD), 1♀; Stewart Island, 46°50′S, 167°52′E, Jan. 1956 (H. Watt; OMD), 1♂; Stewart Island, Halfmoon Bay, 46°53′S, 168°09′E, Mar. 10, 1951 (O. Allan; OMD), 1♀; Swinburn Bridge, 45°24′S, 169°07′E, Dec. 16, 1968, Mar. 6, 29 1969, pitfall (C. Wilton; OMD), 3♀; Taieri, 45°30′S, 170°18′E, Jan. 26, 1951, Oct. 10, 1973, dead cabbage tree leaves (R. Forster; OMD), 2♂, 1♀; Taieri Ridge, Deep Dell-Fillyburn, 45°23′S, 170°18′E, Dec. 12, 1968, summit (C. Wilton; OMD), 2♂; Taitapu, 43°40′S, 172°32′E, Nov. 1980 (A. W. P.; OMD, 28/91), 1♀; Te Anau, 45°25′S, 167°41′E, Feb. 12, 1983 (R. Forster; OMD), 2♀; N of Tiroiti, 45°00′S, 169°15′E, Dec. 12, 1968, summit, steep grade (C. Wilton; OMD), 1♂; near Waipiata, 45°10′S, 170°09′E, Oct. 14, 1968, pitfall (C. Wilton; OMD), 1♀; Waipori, 45°49′S, 169°52′E, Nov. 7 - 21, Dec. 5 – 19, 1978, elev. 520 m, tussock, pitfall (B. Barratt; OMD), 3♂; Wakari, Dunedin, 45°51′S, 170°28′E, Nov. 10, 1982 (D. J. H.; OMD), 1♂; Wedderburn, 45°02′S, 170°00′E, Oct. 15, 1967, Nov. 20, 1968, Feb. 16, 1969, pitfall (C. Wilton; OMD), 1♂, 1♀; Weka Pass, Canterbury, 43°00′S, 172°41′E, Jan. 12, 1947 (B. Marples; OMD), 1♀; Whale Island, Bay of Plenty, 43°53′S, 172°48′E, Aug. 27, 1970 (OMD), 1♂; Wooden Beach, Canterbury, 43°20′S, 172°42′E, Dec. 26, 1957, Oct. 25, 1992, beach, amongst maram grass (R. Pilgrim, C. Vink; OMD, LUNZ), 1♂, 1♀.

Distribution: the North and the South Islands, New Zealand (Fig. 1).

Ecology: forests, beaches, rocky hillside, gardens, inside houses, sand dunes, edge of bog; can be found under logs, stones, deans bushes, dead cabbage tree leaves, maram grass, inside buildings.

Taieria elongata Forster, 1979

Taieria elongata Forster, 1979: 50 (female holotype from Otago, Balclutha Plant Reserve, 46°13′S, 169°44′E, New Zealand (South Island) (Nov. 20, 1958; R. Forster) and male allotype taken on bank above tide level, between Taieri Mouth and Brighton, 45°56′S, 170°19′E, New Zealand (South Island) (Sept. 27, 1968; C. Wilton), in OMD, examined).

Other material examined: North Island: Poor Knights Islands, Tawhiti Rahi Island, 35°27′S, 174°43′E, Dec. 8, 1980, northern slopes near lighthouse, Pohutukawa leaf litter (K. Wise; AMNZ, 6000), 1♀. South Island: Allans Beach, Otago, 45°52′S, 170°41′E, Jan. 2, 1952 (B. Marples; OMD), 1♀; Bull Creek, 43°27′S, 170°00′E (R. Forster; OMD), 1♀.

Distribution: the South Island and the Poor Knights Islands, New Zealand (Fig. 3).

Ecology: hillsides, on bank above tide level; can be found under stones and leaf litter.

**Taieria kaituna Forster, 1979**

*Taieria kaituna* Forster, 1979: 52 (male holotype and female allotype from Kaituna Valley, Canterbury, 43°44’S, 172°41’E, New Zealand (South Island) (Nov. 1, 1966; R. Forster, in OMD, examined).


Distribution: the North and the South Islands, New Zealand (Fig. 2).

Ecology: bays, under stones, on bushes, in litter, under sheet of fin in moss, inside houses.

**Taieria obtusa Forster, 1979**

*Taieria obtusa* Forster, 1979: 53 (male holotype and female allotype taken under stones on ground, Cromwell, Otago, 45°02’S, 169°12’E, New Zealand (South Island) (Oct. 21, 1950; R. Forster), in OMD, examined).

Other material examined: **South Island**: Christchurch, 43°31’S, 172°38’E (FSCA), 1♂, 1♀; Christchurch, Spencers Beach, 43°31’S, 172°38’E, Oct. 10, 1973, sand beach, under log (OMD), 1♂; Cromwell, 45°02’S, 169°12’E, Oct. 21, 1959 (R. Forster, in OMD).
Forster; OMD), 1♂, 4 juv.; Cromwell, Beetle Reserve Cemetery Road, 45°02'S, 169°12'E, Nov. 15, 17, 1977, tussock, litter, dead Poa sp. leaves (J. Watt; NZAC, 92170), 3♀, 18 juv.; Cromwell, Sandflat Road, 45°02'S, 169°12'E, Nov. 19-28, 1974, pitfall (J. Watt; OMD), 1♀; Cromwell Gorge, 2 km SE of Cromwell, E bank of Clutha below Dunston Gold monument, 45°06'S, 169°18'E, Nov. 21-27, 1974, pitfall (J. Watt; OMD) 1♂, 1♀; East Branch Eweburn, Otago, 45°09'S, 170°06'E, Nov. 20, 1968, Jan. 27, 1969, pitfall (C. Wilton; OMD), 1♂, 1♀; Flagstaff, 45°05'S, 168°40'E, Dec. 27, 1979 (R. Forster; OMD), 1♀; Hokitika, 42°42'S, 170°57'E, Oct. 4, 1974, under log (OMD), 1♀; Kaikoura, 42°24'S, 173°41'E, May 16, 1974 (OMD), 6♀; Opoho Bush, Cemetery Road, Dunedin, 45°51'S, 170°31'E, Nov. 17-23, 1970, pitfall (C. Wilton; OMD), 1♂; Waipori, 45°49'S, 169°52'E, Nov. 5 - Dec. 21, 1978, Jan. 16-31, Feb. 28 - Mar. 14, 1979, elev. 520 m, tussock, pitfall (B. Barratt; OMD), 1♂, 2♀.

Distribution: the South Island, New Zealand (Fig. 2).

Ecology: sand beaches, tussock grass, under logs, stones, and leaf litter.

**Taieria miranda Forster, 1979**

*Taieria miranda* Forster, 1979: 54 (female holotype from Ohope Beach, Auckland, 37°57'S, 177°02'E, New Zealand (the North Island) (Oct. 1, 1969; C. Wilton) and male allotype from Hawkes Bay, Cape Kidnappers, 39°38'S, 177°06'E, New Zealand (the North Island) (Jan. 21, 1954; J. Dugdale), in OMD, examined).

Other material examined: North Island: Auckland, Red Mercury Island, 36°38'S, 175°56'E, Sept. 1971 (D. Court; OMD), 1♀; Hawkes Bay, Taradale, 39°32'S, 176°50'E (R. Hutton; OMD), 1♀; White Pine Bush, 37°59'S, 176°57'E (R. Forster; OMD), 1♀.

Distribution: the North Island, New Zealand (Fig. 3).

Ecology: beaches.

**Taieria titirangi, new species**

Type: Male holotype taken in litter, Titirangi, Marlborough, 41°23'S, 174°03'E, New Zealand (Oct. 22, 1969; F. Alack) deposited in OMD (69/177).

Etymology: The specific name is a noun in apposition taken from the type locality.

Diagnosis: Male palp differs from all New Zealand species of *Taieria* in the lack of dorsal apophysis on the tibia, small, almost undeveloped retrolateral apophysis on patella, and relatively short and hooked retrolateral tibial apophysis (Fig. 4 A-C).

Male: Total length 4.75. Carapace 2.25 long, 1.60 wide. Femur II 1.55. Carapace yellow brown with dark brown reticulation and borders; abdomen yellow gray with dark brown transverse stripes and reddish antero-

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Fig. 3. Distribution of *Taieria miranda* Forster (circles) and *T. elongata* Forster (triangles).
median triangular spot; legs yellow. Eye sizes and interdistances: AME 0.09, ALE 0.11, PME 0.14, PLE 0.11, AME-AME 0.06, AME-ALE 0.02, PME-PME 0.01, PME-PLE 0.07, ALE-PLE 0.06; MOQ length 0.39, front width 0.24, back width 0.24. Leg spination: femora: I d1-1-0, p0-0-1; II d1-1-0, p0-0-1; III d1-3-3; IV d1-1-1-2; patella: III p0-1-0, r0-1-0; IV p0-1-0, r0-1-0; tibia: I v0-1-0; II v0-1-1; III p0-1-1, r0-1-1, v1-2-2; IV d0-1-0, p0-2-2, r0-1-2, v2-2-2; metatarsus: I v2-0-0; II v2-0-0; III d0-1-2; p1-1-1, r1-1-1, v2-1-2; IV d0-2-2, p1-1-1, r1-1-1, v2-1-2. Palp: retrolateral tibial apophysis short (but not tiny) and slender, hooked on the tip, dorsal tibial apophysis lacking, retrolateral apophysis on patella small, almost undeveloped, and look like as tubercles, embolus slightly twisted on the top, medial apophysis large and hooked (Fig. 4 A-C).

Female: Unknown.
Other material examined: None.
Distribution: Known only from type locality on the South Island, New Zealand (Fig. 1).
Ecology: in litter.

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Fig. 4. Taieria titirangia, new species: A - left male palp, prolateral view; B - same, ventral view; C - same, retrolateral view.
References


Паяците от род Taieria Forster, 1979 в Нова Зеландия: таксономия и разпространение (Araneae: Gnaphosidae)

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(Резюме)