

RECORDS OF THE OTAGO MUSEUM

PUBLISHED BY THE OTAGO MUSEUM TRUST BOARD
GREAT KING STREET, DUNEDIN, NEW ZEALAND

ZOOLOGY NUMBER 2

31 March, 1965

Harvestmen of the sub-order Laniatores from New Zealand Caves

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THE active investigation of caves in New Zealand over the last decade has brought to light a fascinating new fauna, which is relatively rich in arachnids. The present paper records only the harvestmen of the sub-order Laniatores, leaving the sub-order Palpatores and the spiders to be the subject of later reports. Even with the limited material studied it is clear that the cave systems in the South Island support the greater bulk of our true cave-dwelling endemics. Of the ten species recorded below, nine are restricted to the South Island, and a further four species noted in this paper, but not described, are also from this region. Modifications shown by a number of the species are the loss of pigment and the tendency for the legs to become long and slender. An interesting character, which seems to be related to the modification of the legs, is the increase in the number of tarsal segments for the first two pairs of legs. Much emphasis is placed on the tarsal formula for the separation of genera in the sub-order Laniatores and it is of considerable interest to find that this may be influenced so readily by adaptation to a different environment. After due consideration is given to this factor, all of the species recorded may be placed in the two widespread New Zealand genera *Hendea* and *Nuncia*.

I am deeply indebted to the many speleologists who have actively collected material and who are recorded as collectors throughout this paper, but I am particularly indebted to Mr J. I. Townsend who, in addition to collecting a large proportion of the material, has supplied much information regarding the various localities recorded.

Sub-order LANIATORES Thorell, 1876.
 Family TRIAENONYCHIDAE Soerenson, 1886.
 Genus HENDEA Roewer, 1931.

This genus ranges over most of New Zealand except for the northern region of the North Island and is commonly found in forested areas. Nine species and three sub-species have been recorded including the previously known cave dwelling harvestman *Hendea myersi cavernicola* Forster from the Waitomo Caves. The range of this sub-species can now be extended to include other nearby caves, but still remains the only known cave harvestman of the sub-order Laniatores from the North Island. Six further species of this genus are described below from caves in the South Island and the presence of possibly four further species is noted.

The localities from which single specimens representing possibly undescribed species have been collected are as follows:

- Hendea* sp. 1. Female, Prouse's Cave, north of Paturau River, 17 March 1963, C. Coates, J. I. Townsend.
Hendea sp. 2. Male, Motupipi Cave, Nelson, 17 September 1960, J. I. Townsend.
Hendea sp. 3. Limestone Cave, Miner River, Nelson, 11 June 1961, J. I. Townsend.
Hendea sp. 4. Waterfall Creek, Paturau, Nelson, 23 October 1960, J. I. Townsend.

Hendea myersi cavernicola Forster, 1954.

Fig. 20

This species was originally recorded from the Waitomo Caves. A number of further specimens which have been found in other caves do not differ from the original specimens apart from the intensity of pigmentation.

Records. Demonstration Chamber, Waitomo Caves, 21 June 1955, A. M. Richards. Entrance to Aranui Cave, Waitomo, 19 January 1956, A. M. Richards. Karamu Cave, Te Awamutu, on mud near stream 50 yards from cave mouth, 17 August 1957, P. Skinner. Studio, 400 yards inside Waipuna Cave, near Te Kuiti, 6 July 1951, P. Skinner. Waipuna Cave, on wall 500 yards inside, 11 January 1958, B. M. May. Gudgeon's Cave, Te Awamutu, April 1953, R. Bieleski. Gaskell's Glow-worm Cave, Matira, near Huntly, on wall 500 yards inside, 6 July 1958, B. M. May.

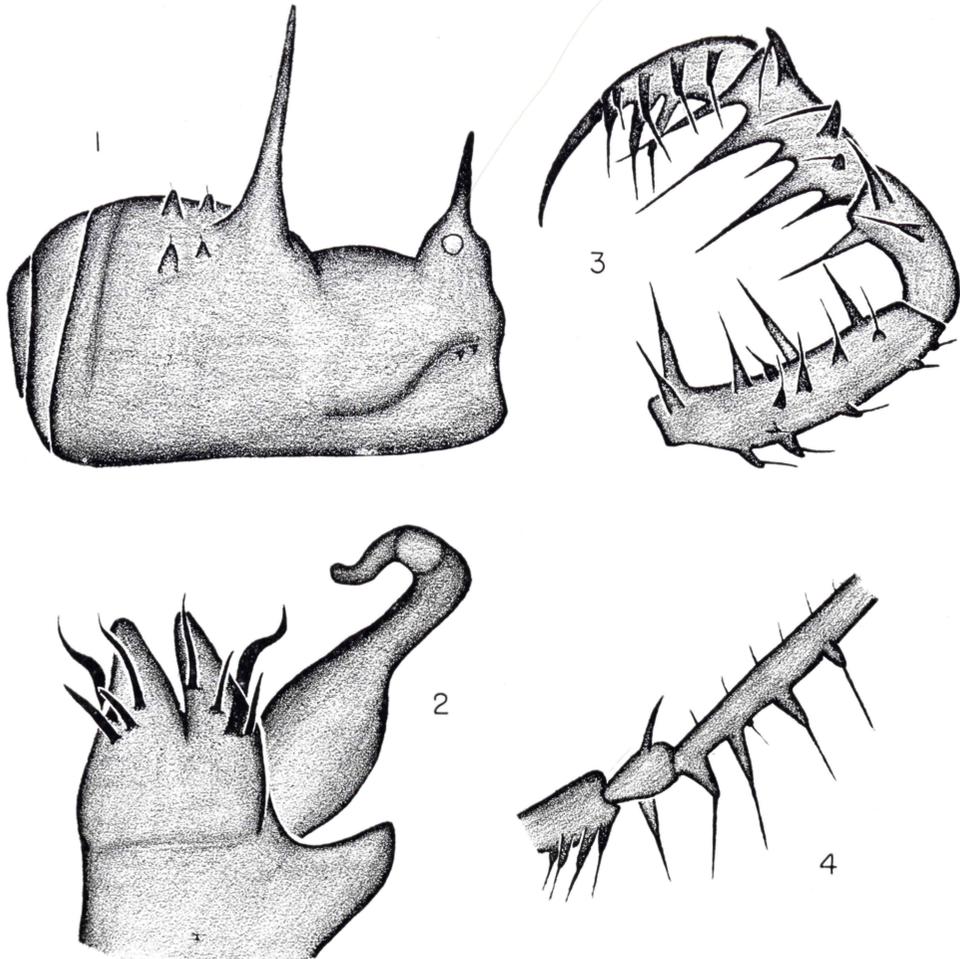
Hendea spina n. sp.

Figs. 1-4

Male

Colour: Uniform pale yellow, without markings.

Body (Fig. 1): The eyemound, which rises from the anterior margin of the carapace, is provided with an erect, slender, apical spine, approximately twice as long as the height of the eyemound itself. There are two small spines



Figs. 1-4 *Hendea spina* n. sp. Fig. 1. Lateral view of scute and free tergites of male. Fig. 2. Male genitalia. Fig. 3. Male pedipalp. Fig. 4. Coxa, trochanter and proximal portion of femur, leg 1 of male.

behind each anterior corner of the scute. Area 2 with a strong, erect, median spine, which is almost $2\frac{1}{2}$ times the length of the ocular spine. Areas 3 and 4 with a median pair of small rounded tubercles. Scute, free tergites, and sternites smooth. Maxillary processes of coxae 2 without secondary processes.

Genitalia (Fig. 2): Ventral plate divided. Superior spines much stronger than the inferior spines. The aedeagus is curved distally and appears to be swollen laterally on the sub-distal surface.

Chelicerae: Basal segment with a single median tubercle on the disto-dorsal surface. Second segment with from five to six small setose tubercles along the dorsal surface.

Pedipalps: As shown in Fig. 3, the pedipalps are slender and the tubercles are long and slender, with long setae.

Legs (Fig. 4): Long and slender. Trochanter of Leg 1 with an elongate setose tubercle on both dorsal and ventral surfaces. The femur of leg 1 is armed with a row of four similar tubercles on the proximo-ventral surface. Otherwise the segments of all legs are sparsely granulate or smooth. Tarsal formula 7. 20-22.4.4.

Measurements (in millimetres):

	Scute	Length 2.05		Width 1.82			Total	
		Trochanter	Femur	Patella	Tibia	Metatarsus		Tarsus
Leg 1		0.53	3.04	0.95	2.28	4.01	1.90	12.71
2		0.56	6.46	1.33	5.32	7.64	3.04	24.35
3		0.45	4.20	0.95	2.86	5.51	2.42	16.39
4		0.51	5.32	1.14	3.82	7.11	3.63	21.53
Pedipalp		0.26	1.33	0.57	0.91		0.76	3.83
Chelicera		Basal 0.76		Second 0.84.				

Female: The female is similar to the male.

Types: Holotype male, allotype female, paratypes Prouse's Cave, north of Paturau River, West Nelson, 17 March 1962, C. Coates, J. I. Townsend.

Records: Nelson: Cascade Cave, Paturau, 24 June 1961, B. May. Little Cave, near Sandhill Creek, south of Paturau River, 30 January 1961, D. Coates. Twin Forks Cave, south of Paturau, 11 March 1961, D. Coates. Twin Forks Cave, 10 February 1961, J. I. Townsend. Marchant's Mistake, north of Paturau River, 5 August 1961, J. I. Townsend. In cave west side of Takaka Valley, 24 September 1960, P. R. Kettle. Granny's Grotto, 300 feet down sinkhole, Takaka Hill, Canaan, 25 April 1961, C. Don.

This species differs greatly from all of the previously known species in the development of the ocular and scutal spines. It is closely related to *H. takaka* from which it is immediately separated by the absence of dark markings on the scute and the greater development of the spine on Area 2.

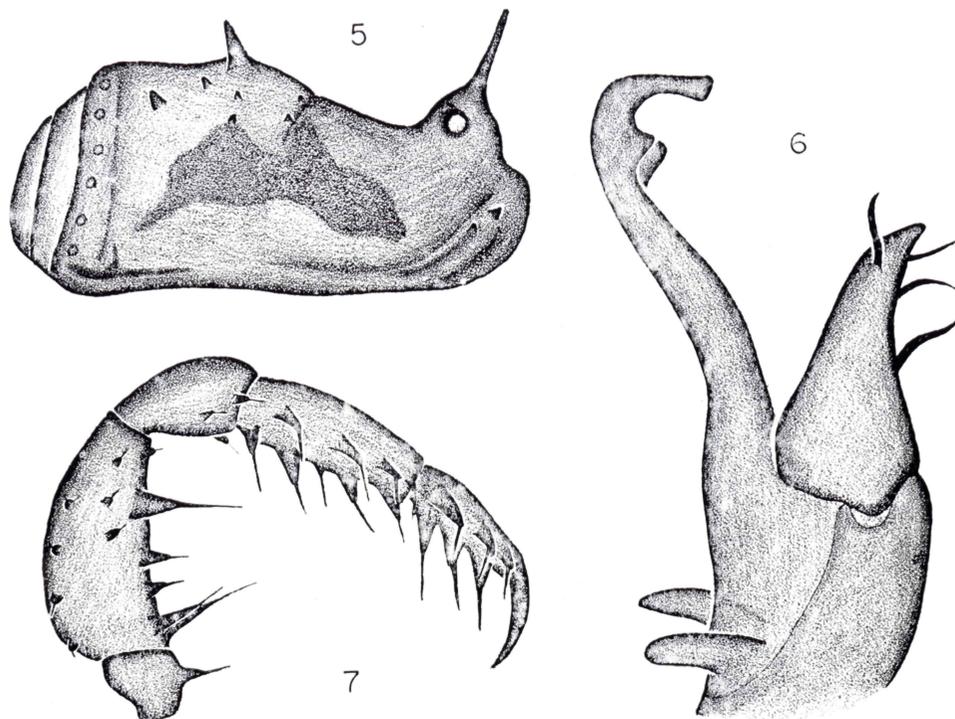
Hendea takaka n. sp.

Figs. 5-7

Male

Colour: Pale yellow with a conspicuous black patch on the mid-lateral surfaces of the scute.

Body (Fig. 5): The eyemound rises from immediately behind the anterior margin of the carapace, and is armed with a slender apical spine which is almost twice as long as the eyemound. There are two small spines behind each anterior corner of the carapace. Scutal groove clearly defined. Area 1 with a median row of four small tubercles; Area 2 with a median spine which is stouter than the ocular spine but only one half of the length. Areas 3 and 4 with a pair of small median tubercles. There is a row of low tubercles across the posterior margin of the scute.



Figs. 5-7. *Hendea takaka* n. sp. Fig. 5. Lateral view of scute and free tergites of male. Fig. 6. Male genitalia. Fig. 7. Male pedipalp.

Genitalia (Fig. 6): The aedeagus is slender and evenly curved distally with small pair of sub-distal flaps. The setae on the ventral plate are relatively slender and uniform.

Chelicerae: Basal segment smooth. Second segment with a pair of tubercles on the proximo-dorsal surface and a single tubercle on the mid-dorsal surface.

Pedipalps: As shown in Fig. 7. Femur with a row of four low tubercles along the dorsal surface and five large tubercles along the ventral surface arranged 2.1.1.1.

Legs: Long and slender. Femur 1 with a row of three long setose tubercles on the proximo-ventral surface. Legs otherwise sparsely granulate. Tarsal formula 6.22.4.4.

Measurements (in millimetres):

Scute	Length 1.90	Width 1.81.						
	Trochanter	Femur	Patella	Tibia	Metatarsus	Tarsus	Total	
Leg 1	0.41	2.12	0.64	1.52	2.16	1.41	8.26	
2	0.45	3.63	0.85	3.06	3.97	3.82	15.78	
3	0.41	2.66	0.76	1.90	2.69	1.82	10.24	
4	0.53	3.44	0.85	2.51	3.82	2.48	13.63	
Pedipalp	0.38	1.14	0.57	0.87		0.76	3.72	
Chelicera	Basal 0.65		Second 1.01.					

Types: Holotype male, paratype male, Nelson, Motupipi Cave, Takaka, January 1961, L. Kermodé.

Records: Council Cave, Motupipi, 20 August 1960, J. I. Townsend. Council Cave, Motupipi, 16 May 1962, J. I. Townsend. In cave at Canaan, January 1958, D. V. May.

H. takaka is most closely related to *H. spina*, but is readily distinguished from this species by the smaller spine on Area 2 and the form of the genitalia.

Hendea maini n. sp.

Figs. 8-11

Male

Colour: Pale orange-yellow, without markings.

Body (Fig. 8): The eyemound which rises from immediately behind the anterior margin of the carapace is provided with a stout, short apical spine which is curved forward. There is a pair of small spines behind each anterior corner of the carapace. Scutal groove clearly defined but limited to the median surface. Tergal region without a strong spine. Areas 1 and 2 with two, Areas 3 and 4 with four small tubercles. Posterior margin of the scute and free tergites with a transverse row of smaller and more closely spaced tubercles. Maxillary lobes of coxae 2 each with two small setose pustules.

Genitalia (Figs. 9, 10): Aedeagus with a pair of well developed lateral lobes. Ventral plate entire, setae strong.

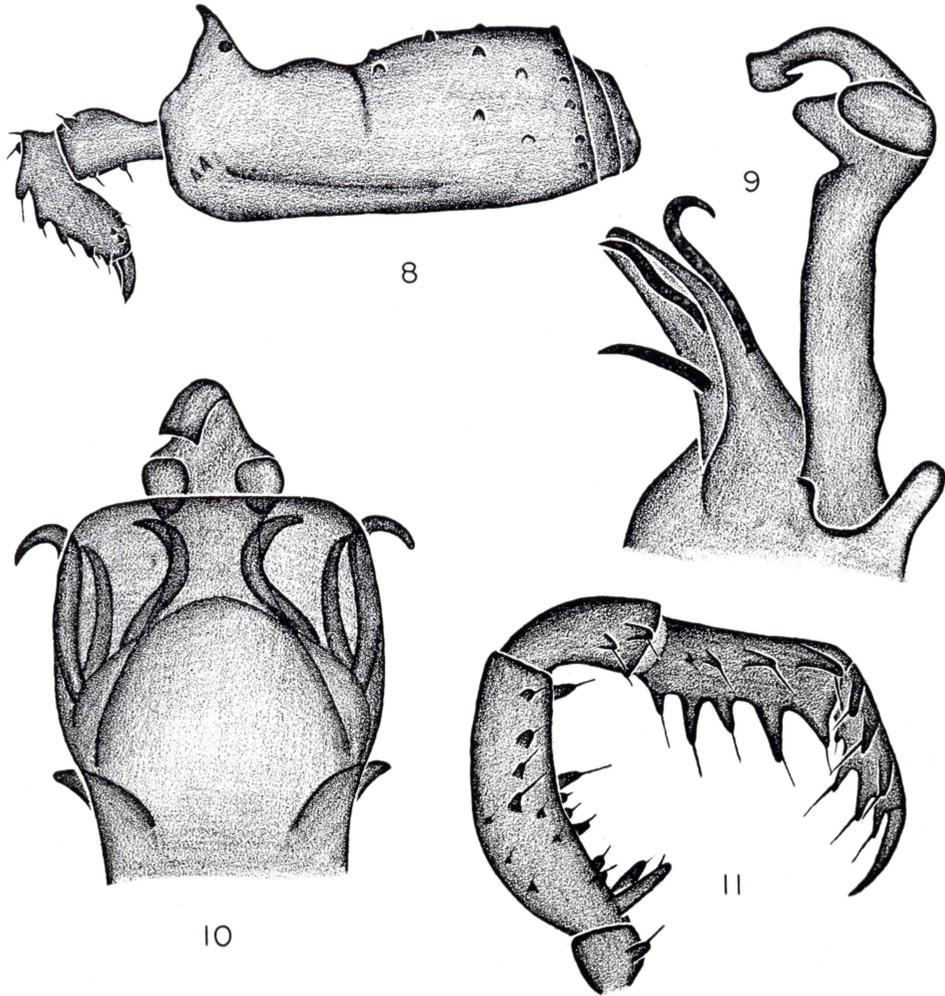
Chelicerae: Basal segment with two small setose tubercles on the disto-dorsal surface. Second segment with eight setose tubercles along the dorsal surface arranged 1.1.2.2.2.

Pedipalps (Fig. 11): Femur relatively slender with two strong tubercles on the proximo-ventral surface followed by a row of seven smaller tubercles. There is a row of four tubercles present on the distal half of the prolateral surface. Tibia with five spinous tubercles along the retro-ventral margin of which the first and third are small, and four along the pro-ventral margin of which the first is small.

Legs: Femur of leg 1 with a row of three prominent setose tubercles along the proximo-ventral surface. Legs otherwise without prominent tubercles but sparsely granulate. Tarsal formula 8.18.4.4.

Measurements (in millimeters):

	Length	Width					
Scute	2.66	2.28					
	Trochanter	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.49	3.44	1.02	2.66	4.01	2.28	13.90
2	0.76	5.72	1.33	5.32	6.92	6.88	26.93
3	0.61	4.35	1.14	3.04	5.32	2.73	17.19
4	0.72	5.72	1.33	3.82	6.89	3.82	22.30
Pedipalp	0.41	2.35	1.10	1.25		1.14	6.25
Chelicera	Basal	0.91	Second	0.98			



Figs. 8-11. *Hendea maini* n. sp. Fig. 8. Lateral view of scute, free tergites and chelicera of male. Fig. 9. Lateral view of male genitalia. Fig. 10. Ventral view of male genitalia. Fig. 11. Male pedipalp.

Type: Holotype male, Nelson, Little Cave, Paturau, 3 June 1963, P. Main.

This distinctive species is related to *takaka* and *spina* being separated from both of these species by the reduction in length of the ocular spine and the complete absence of a median spine in the scutal area. The close relationship of these three species can be seen by the structure of the male genitalia, which also demonstrates the relationship of these three species to *H. oconnori* Forster and *H. nelsonensis* Forster recorded from the North-west Nelson region.

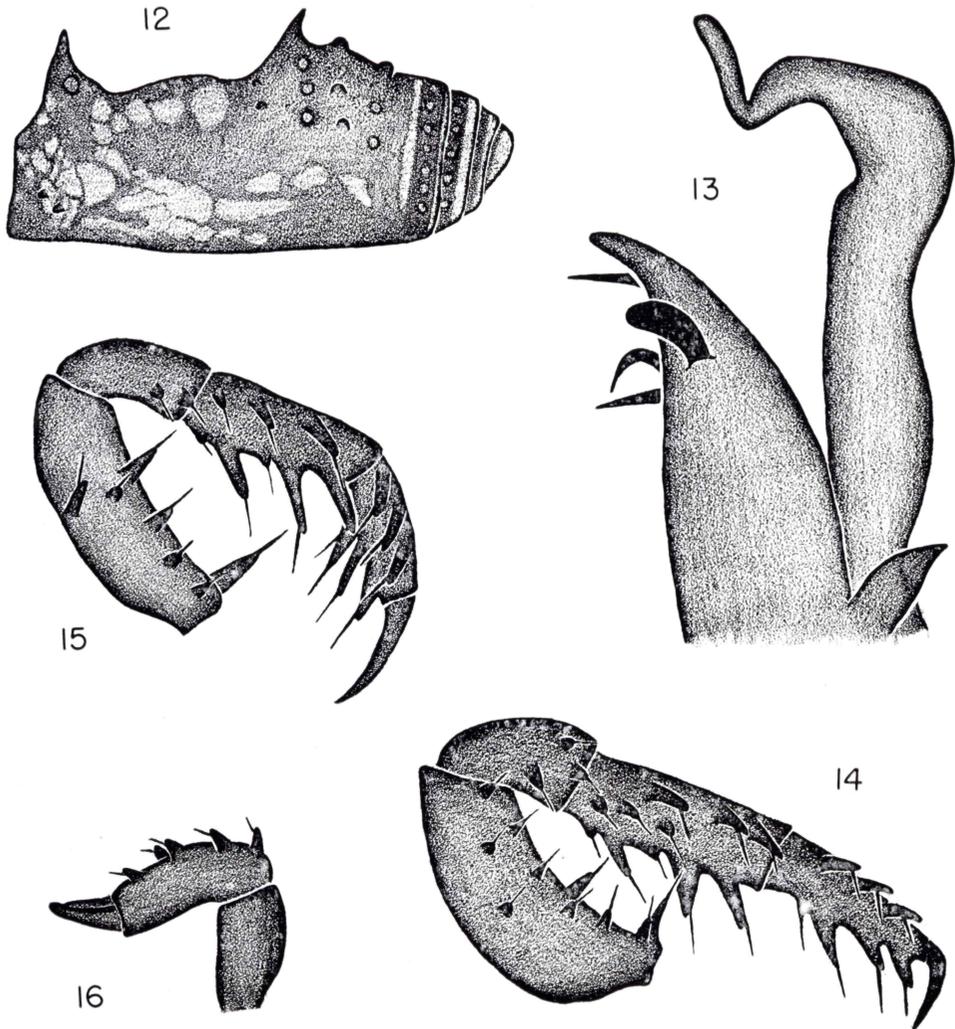
Hendea aurora n. sp.

Figs. 12-16

Male

Colour: The ground colour is pale yellow but most of the body and the legs are heavily shaded with blackish-brown.

Body (Fig. 12): The eyemound rises sharply from immediately behind the anterior margin of the carapace, and terminates with a stout apical spine which is equal in length to the height of the eyemound itself. There are two spines present behind each anterior corner of the carapace. Area 2 is armed with a



Figs. 12-16. *Hendea aurora* n. sp. Fig. 12. Lateral view of scute and free tergites. Fig. 13. Male genitalia. Fig. 14. Male pedipalp. Fig. 15. Female pedipalp. Fig. 16. Male chelicera.

stout but short median spine which is only slightly longer than the ocular spine. Areas 1-4 are each defined by a short transverse row of low tubercles. There is a row of granules present across the posterior margin of the scute and each free tergite. The maxillary lobes of coxae 2 have each a rounded secondary process on the inner surface.

Genitalia (Fig. 13): The aedeagus is simple without lateral lobes. The superior spines on the ventral plate are stout and evenly rounded distally.

Chelicerae (Fig. 16): Basal segment smooth. Second segment with from five to six simple setose tubercles on the dorsal surface.

Pedipalps (Fig. 14): The dorsal surface of the femur is smooth. The pro-lateral tubercle of the proximo-ventral pair is smaller than the retro-lateral tubercle.

Legs: There is a row of three elongate setose tubercles along the proximo-ventral surface of the femur of leg 1. Segments otherwise sparsely granulate. Tarsal formula 5.18.4.4.

Measurements (in millimetres):

Scute	Length 2.28		Width 2.21.					Total
	Trochanter	Femur	Patella	Tibia	Metatarsus	Tarsus		
Leg 1	0.38	2.28	0.96	1.90	2.66	1.52	9.70	
2	0.53	3.82	1.14	3.82	4.96	3.82	18.09	
3	0.41	3.31	0.74	2.28	3.82	2.28	12.84	
4	0.45	3.44	1.14	2.86	4.75	2.65	15.30	
Pedipalp	0.36	2.16	0.96	0.98	0.94	0.93	6.33	
Chelicera	Basal 0.76.		Second 1.14.					

Female: Similar in general structure and appearance to the male. The pedipalp is smaller and the femur more slender. The proximo-ventral tubercle on the tibia of the pedipalp is absent (Fig. 15).

Types: Holotype male, allotype female. Fiordland, Aurora Cave, Te Anau, 1962, D. J. Kershaw.

This species does not show any of the marked modifications which characterize many of the other described cave species. The tarsal formula is low and the animal is quite heavily pigmented. It is related to the *H. myersi* group but is readily separated by the structure of the male genitalia.

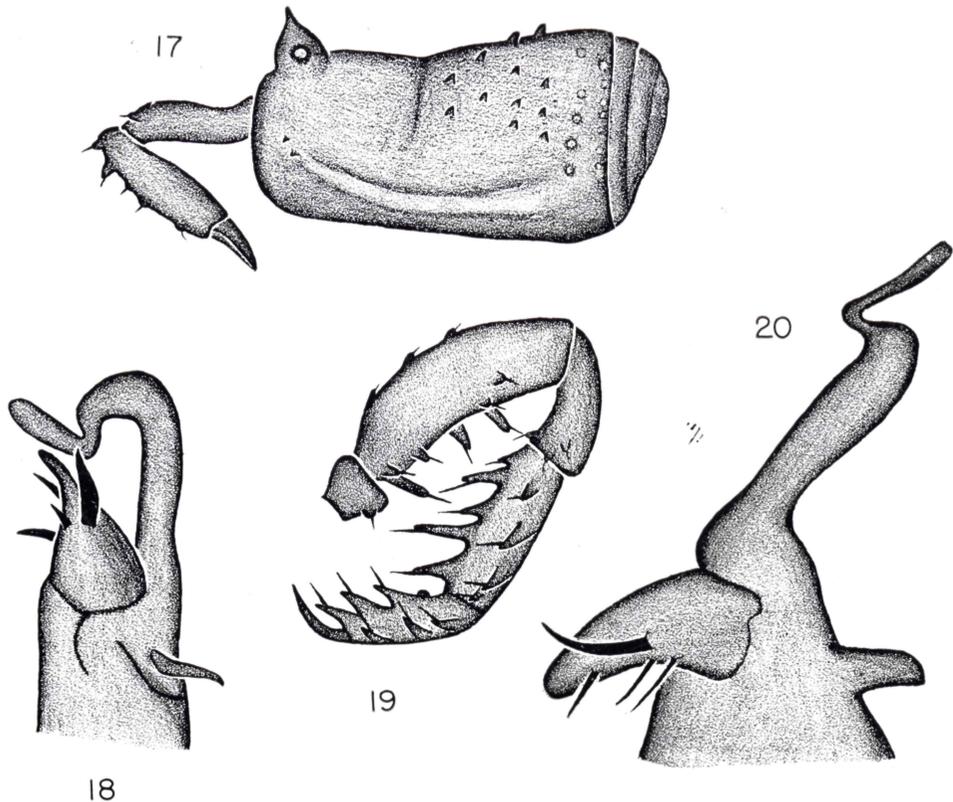
Hendea coatesi n. sp.

Figs. 17-19

Male

Colour: Body and appendages pale yellow, without markings.

Body (Fig. 17): The eyemound rises from immediately behind the anterior margin of the carapace. The apical spine is small, shorter than the height of the



Figs. 17-19. *Hendea coatesi* n. sp. Fig. 17. Lateral view of scute, free tergites and chelicera. Fig. 18. Male genitalia. Fig. 19. Male pedipalp. Fig. 20. *Hendea myersi cavernicola* Forster. Male genitalia.

eyemound. The carapace is smooth except for two small spines behind each anterior corner. Scutal groove, shallow, restricted to the median surface. Tergal region without strong median spine but Areas 1-4 delineated by transverse rows of small tubercles. Free tergites and sternites smooth. Maxillary lobes of coxae II each with a well-developed, rounded, accessory process.

Genitalia (Fig. 18): The structure of the male genitalia is similar to that of *H. myersi cavernicola* (Fig. 20) but the superior setae on the ventral plate are shorter and stouter and the distal portion of the aedeagus is more strongly curved.

Chelicerae: Basal segment smooth. Second segment with strong setose tubercles along the entire dorsal surface.

Pedipalps (Fig. 19): Slender, dorsal surface of the femur with a proximal row of three small tubercles.

Legs: Femur of leg I with a row of three elongate setose tubercles along the proximo-ventral surface. All segments except the tarsi otherwise smooth. Tarsal formula 7.28.4.4.

Measurements (in millimetres):

Scute	Length 2.11		Width 2.11.		Tibia	Metatarsus	Tarsus	Total
	Trochanter	Femur	Patella					
Leg 1	0.41	3.04	0.95		2.42	3.63	1.90	12.35
2	0.56	5.51	1.33		3.82	6.81	6.88	24.91
3	0.56	3.97	0.95		2.66	4.51	2.45	15.10
4	0.56	4.86	1.14		3.63	6.46	3.31	19.96
Pedipalp	0.31	1.32	0.71		0.96		0.83	4.13
Chelicera	Basal 0.76		Second 0.81.					

Female: The structure of the female is similar to the male.

Types: Holotype male, allotype female. Westland, Fox River Cave, near Charleston, 22 April 1962, P. Coates, C. Coates, P. Main, R. Christensen, J. I. Townsend.

Record: Same locality, 17 January 1962, J. and D. Hobson.

The general appearance of this species is very similar to the North Island cave form *H. myersi cavernicola* Forster, but has probably been derived from the sub-species *H. myersi ochrea* Forster which is a forest-dwelling form found in the region of the Fox River Caves.

Hendea townsendi n. sp.

Figs. 21-25

Male

Colour: The ground colour is pale yellow brown but much of the surface of the body and legs is heavily shaded with dark brown.

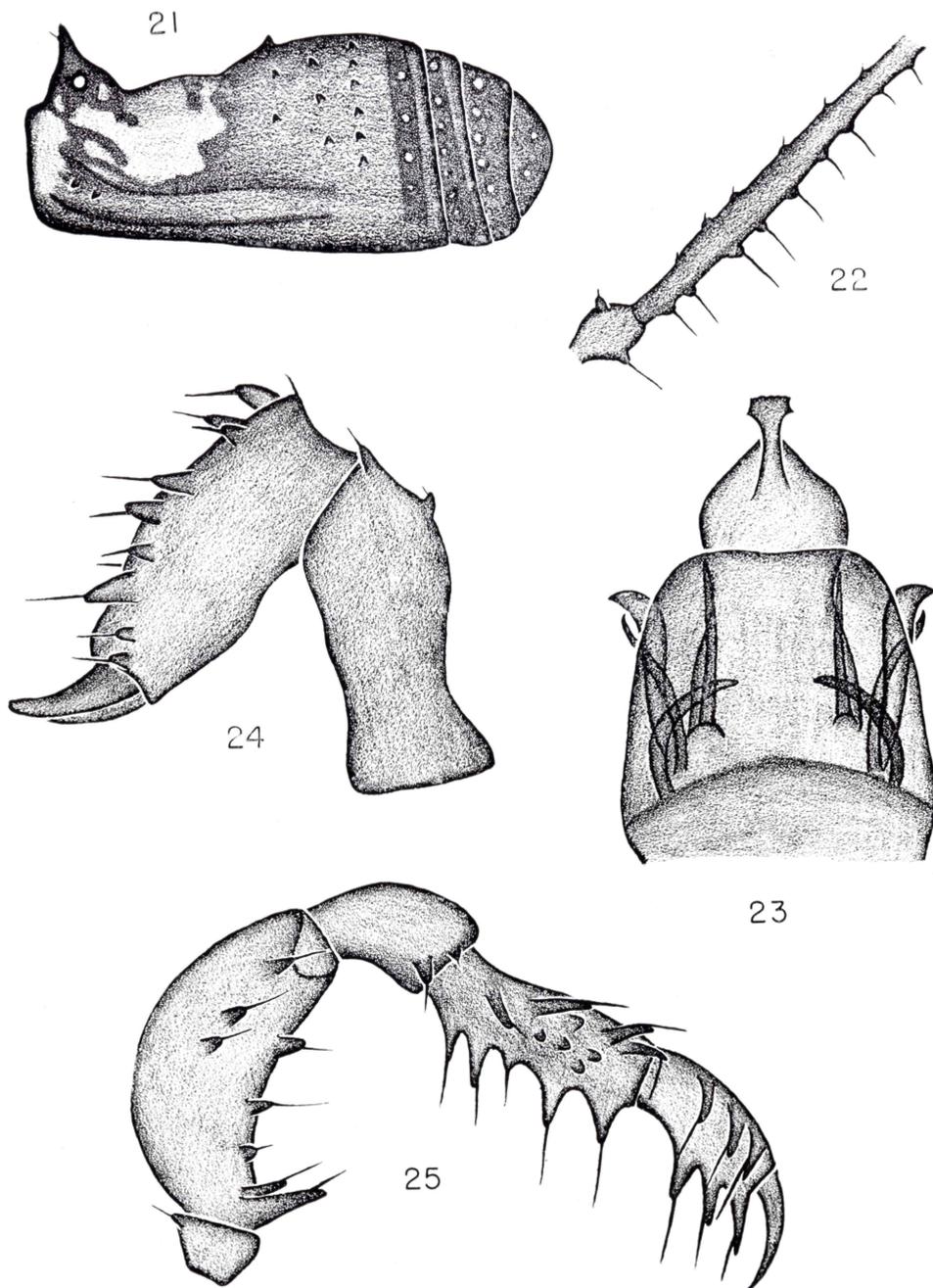
Body (Fig. 21): The eyemound rises from immediately behind the anterior margin. There is a stout erect apical spine, the length of which is equal to two thirds of the height of the eyemound. The carapace is smooth except for two small spines behind the anterior corners. Scutal groove shallow, limited to the median surface. There are two small tubercles on the median surface of Area 1 and a transverse row of slightly larger tubercles across Areas 2-4. Posterior margin of the scute and free tergites with a transverse row of low granules.

Genitalia (Fig. 23): The aedeagus is relatively stout but is terminated by a short, slender, distal portion which is expanded at the apex. The ventral plate is entire.

Chelicerae (Fig. 24): Except for three small tubercles on the disto-dorsal surface the basal segment is smooth. The second segment is strongly tuberculate on the dorsal surface.

Pedipalps (Fig. 25): Femur relatively stout. Dorsal surface smooth. Ventral surface armed with five tubercles arranged 2.1.1.1. Proximal pair largest. There is a row of three setose tubercles on the distal half of the pro-lateral surface. Ventral surface of tibia with few small tubercles.

Legs: Femur of leg with a ventral row of small setose tubercles (Fig. 22). Otherwise all segments except tarsi with a few small granules. Tarsal formula 7.26.4.4.



Figs. 21-25. *Hendea townsendi* n. sp. Fig. 21. Lateral view of scute and free tergites. Fig. 22. Coxa and proximal portion of leg I of male. Fig. 23. Ventral view of male genitalia. Fig. 24. Male chelicera. Fig. 25. Male pedipalp.

Measurements (in millimetres):

Scute	Length 2.21	Width 2.19.					
	Trochanter	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.49	3.44	0.95	2.66	3.44	2.15	13.13
2	0.56	6.46	1.14	4.77	6.13	5.32	24.38
3	0.56	4.20	1.14	2.66	5.41	2.51	16.48
4	0.63	5.13	1.14	3.82	6.88	3.23	20.83
Pedipalp	0.46	2.09	0.95	1.38		1.14	6.02
Chelicera	Basal 1.29		Second 1.31.				

Type: Holotype male. Nelson. Fenian Creek Cave, near entrance, Oparara Karamea, 27 April 1962, J. I. Townsend.

This species is related most closely to *H. myersi assimilis* Forster but is separated from it by genitalic characters, the structure of the pedipalps and chelicerae, and the absence of a median scutal spine.

Genus NUNCIA Loman, 1902

Three species described below are placed in the nominate sub-genus *Nuncia* but are separated from all other known species of this sub-genus by the presence of a greater number of tarsal segments in the first two pairs of legs. This character, which would seem to have some significance for adaptation to cave life, tends to group the three species together, but it seems probable from the form of the male genitalia, that this similarity is most likely explained by convergence.

Nuncia (Nuncia) marchanti n. sp.

Figs. 29-31

Male

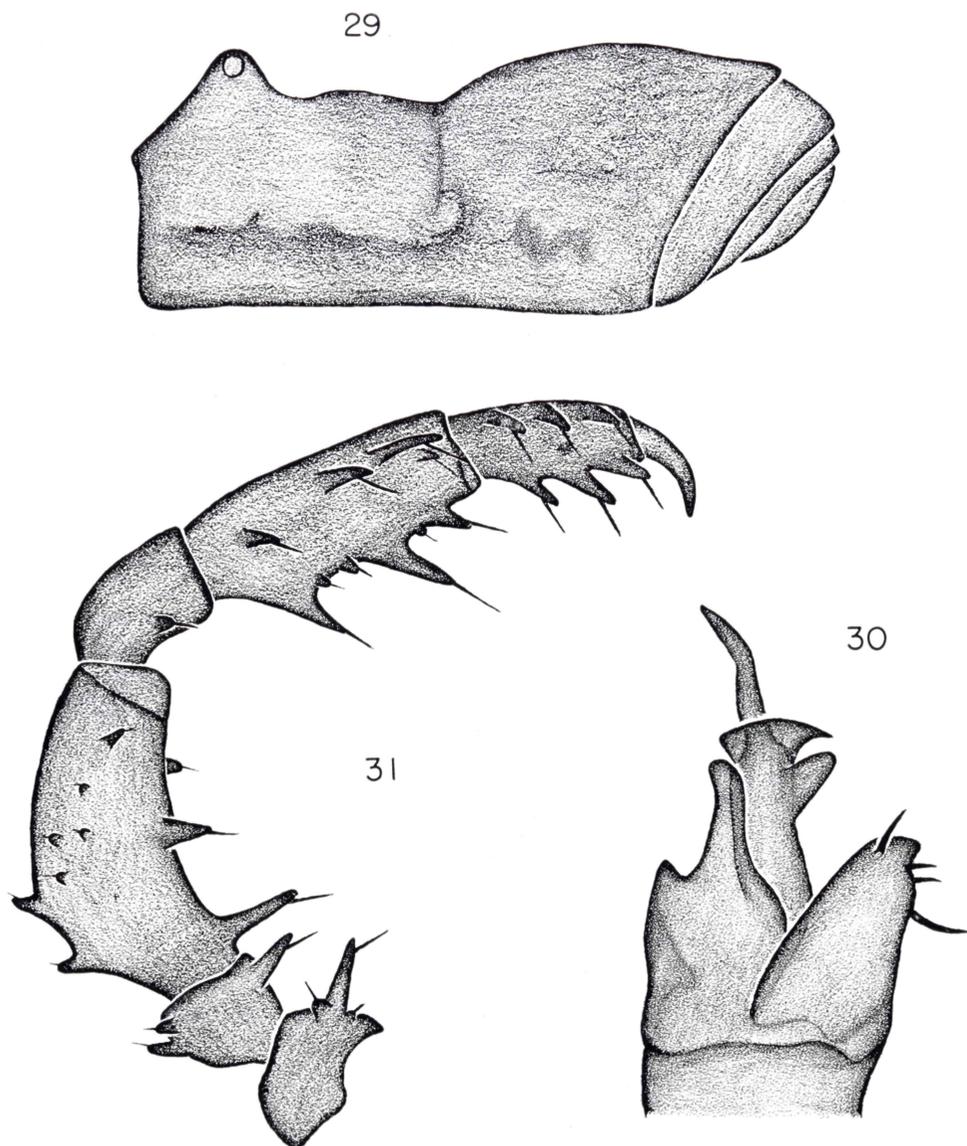
Colour: Ground colour pale yellow-brown. Some specimens have traces of darker shading on the median or lateral surfaces of the scute which forms a pattern similar to that described for *N. townsendi*.

Body (Fig. 29): The eyemound is evenly rounded and as high as wide. The anterior surface slopes back gently from the margin of the carapace. Scute and free tergites smooth. Scutal groove shallow. When viewed from the side the tergal region is higher than the carapace. Maxillary lobes of coxae 2 with well-developed secondary processes present in the form of simple, erect lobes on the median surface.

Genitalia (Fig. 30): The distal portion of the aedeagus is slender. The basal portion is enclosed in a sheath which is expanded distally into two pairs of lateral lobes. The setae on the ventral plate are weak.

Chelicerae: Basal segment smooth. Second segment with a number of strong setose tubercles along the dorsal surface.

Pedipalps (Fig. 31): Both the coxae and trochanter have a strong spinous tubercle on the ventral surface. Femur with a single, strong, spinous tubercle on the proximo-ventral surface followed by two smaller tubercles, one midway



Figs. 29-31. *Nuncia (Nuncia) marchanti* n. sp. Fig. 29. Lateral view of scute and free tergites of male. Fig. 30. Male genitalia. Fig. 31. Male chelicera.

and the second sub-distal. Two short, sharp tubercles are present on the proximo-dorsal surface.

Legs: All segments smooth, except for a few scattered granules. Tarsal formula 5.19.4.4.

Measurements (in millimetres):

Scute	Length 4.11		Width 3.02.					Total
	Trochanter	Femur	Patella	Tibia	Metatarsus	Tarsus		
Leg 1	0.56	3.44	0.86	2.47	3.44	2.45	13.22	
2	0.63	4.96	1.52	4.20	4.20	5.32	20.83	
3	0.63	3.04	0.76	2.66	3.31	2.42	12.82	
4	0.63	4.20	1.41	3.44	5.69	3.04	18.41	
Pedipalp	0.59	1.90	0.96	1.52		1.14	6.11	
Chelicera	Basal 1.90		Second 2.28.					

Female: The basal segments of the chelicerae have a pair of small sharp tubercles on the dorsal surface immediately beyond the proximal groove and a further similar tubercle on the disto-dorsal surface. The tubercles on the dorsal surface of the second segment appear to be relatively smaller than in the male. Pedipalps as in the male. Tarsal formula 3.18.4.4.

Type: Holotype male. West Nelson. Wet-neck Cave, Paturau, 4 June 1961, J. Marchant.

Records: Nelson: Caves south of Paturau, January 1961, J. I. Townsend. Cascade Creek, south of Paturau River, 25 October 1960, J. I. Townsend. Cascade Cave, Paturau, 22 September 1960, P. R. Kettle. Motupipi Cave, Takaka, 200 yards from entrance, 21 May 1961, J. I. Townsend. Profanity Cave, Buller Gorge, near Inangahua, 21 September 1961, P. R. Kettle.

Nuncia (Nuncia) kershawi n. sp.

Figs. 26-28

Male

Colour: Body and appendages pale reddish-brown with faint reticulate markings on the anterior and posterior portions of the scute.

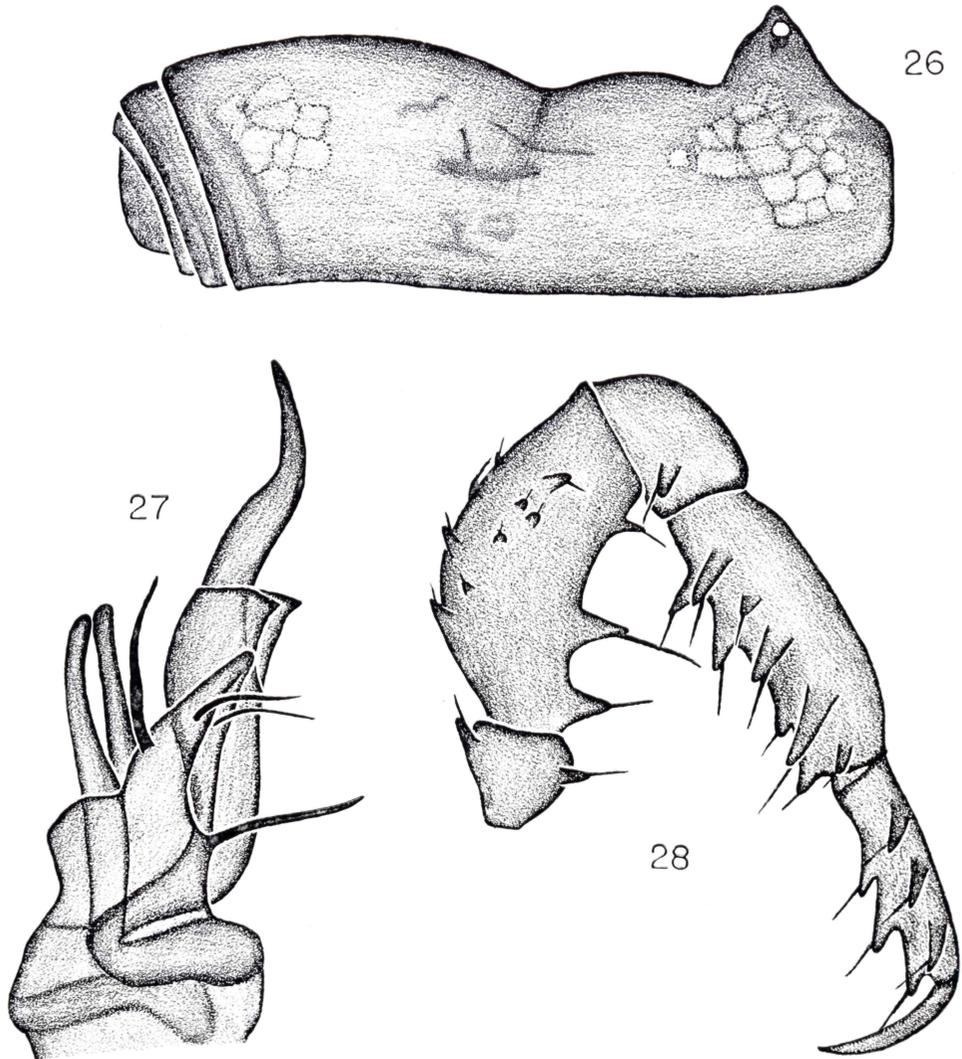
Body (Fig. 26): The front surface of the eyemound slopes back from the anterior margin of the scute. The eyemound is as high as wide and rises to a small, blunt spine between the eyes. The scute and free tergites are smooth. Scutal groove shallow, limited to the median surface. Tergal region only slightly higher than the carapace. Maxillary lobes of coxae II with a strong, erect secondary process, flattened, but curved inwards to a sharp point distally.

Genitalia (Fig. 27): The setae on the ventral plate are long and slender. The sheath extends over half of the length of the aedeagus.

Chelicerae: Basal segment with a sharp tubercle on the mid disto-dorsal surface. Second segment with a number of small tubercles on the dorsal surface and a larger spinous tubercle at two-thirds of the length of the segment.

Pedipalps (Fig. 28): Similar in structure to *marchanti* but with four tubercles along the dorsal surface of the femur.

Legs: Sparsely granulate. Tarsal formula 4.18.4.4.



Figs. 26-28. *Nuncia (Nuncia) kershawi* n. sp. Fig. 26. Lateral view of scute and free tergites of male. Fig. 27. Male genitalia. Fig. 28. Male pedipalp.

Measurements (in millimetres):

Scute	Length 4.20.		Width 3.04.					Total
	Trochanter	Femur	Patella	Tibia	Metatarsus	Tarsus		
Leg 1	0.51	3.31	1.04	2.47	3.04	2.16	12.53	
2	0.59	4.96	1.41	3.82	4.20	4.96	19.94	
3	0.55	3.44	0.76	2.47	3.36	2.16	12.74	
4	0.59	4.58	1.41	3.31	4.96	2.66	17.51	
Pedipalp	0.51	2.16	0.96	1.68		1.14	6.45	
Chelicera	Basal 1.90.		Second 2.46.					

Type: Holotype male. Fiordland. Aurora Cave, Te Anau, 1962, D. J. Kershaw.

Apart from the distinct ocular spine this species is similar in external appearance to *marchanti*. However the male genitalia and the lesser number of segments in Tarsus I readily separate the two species.

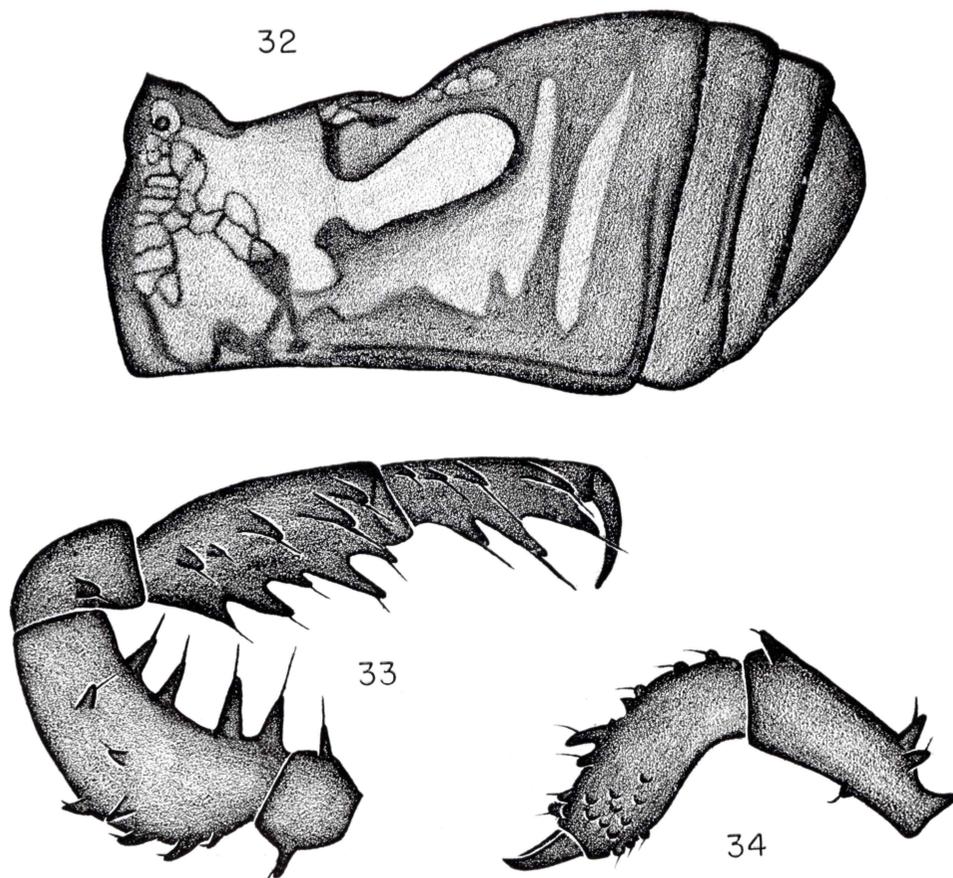
Nuncia (Nuncia) townsendi n. sp.

Figs. 32-34

Female

Colour: General colour pale orange-brown, but with a distinct pattern of darker brown shading on the scute.

Body (Fig. 32): The eyemound is broad, but relatively low, and rises above the eyes to form a small, sharp spine. Scute, tergites and sternites smooth. Scutal groove shallow, limited to the median surface. Tergal region higher than the carapace.



Figs. 32-34. *Nuncia (Nuncia) townsendi* n. sp. Fig. 32. Lateral view of scute and free tergites of female. Fig. 33. Female pedipalp. Fig. 34. Female chelicera.

Chelicerae (Fig. 34): Basal segment with a pair of strong tubercles on the proximo-dorsal surface and a single tubercle on the disto-dorsal surface. Second segment with a number of prominent tubercles on the dorsal surface and a group of small rounded tubercles on the distal retro-lateral surface.

Pedipalps (Fig. 33): Trochanter with a strong tubercle on both dorsal and ventral surfaces. Femur with a row of four sharp tubercles along the proximo-dorsal surface and a transverse row of three across the pro-lateral surface. There is a row of four strong, conical tubercles on the ventral surface of the femur. Tibia with five spinous tubercles along both margins. Tarsus with four tubercles on pro-margin and three on retro-margin.

Legs: All segments except tarsi sparsely granulate. Tarsal formula 5 (r.)-4 (l). 18.4.4.

Measurements (in millimetres):

Scute	Length 3.82	Width 3.26.					
	Trochanter	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.46	3.04	0.92	2.28	2.91	1.91	11.52
2	0.63	4.36	1.41	3.82	4.20	4.96	19.38
3	0.53	3.04	0.88	2.28	3.04	1.91	11.68
4	0.63	3.82	1.14	3.32	4.96	2.28	16.15
Pedipalp	0.76	1.90	0.92	1.52		1.14	6.24
Chelicera	Basal 1.52.		Second 1.90				

Type: Holotype female, Fenian Creek Cave, Oparara, Karamea, 27 April 1963, J. I. Townsend.

This species is most closely related to *N. kershawi* but may be separated from it by the strongly developed pattern on the scute, the sharp ocular spine and the different structure of the pedipalps.

REFERENCE

- Forster, R. R., 1954. The New Zealand Harvestmen (Sub-order Laniatores). Canterbury Museum Bull. No. 2. pp. 1-329.

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