Spiders of a number of genera occur beside the sea. However, only few are intertidal in that their burrows are covered at high tide. Best known among araneomorphs are Desis and Parathenua (Desidae), the latter having been revised recently (Beatty and Berry, 1988). In contrast, spiders of only one mygalomorph genus, Idioclis Koch, 1874, are known to live in the intertidal zone.

The genus Idioclis was first described by Koch (1874) including only I. helva from Fiji. No reference was made to the habitat. The first report of the intertidal habits of a barychelid was with the description of Idioclis littoralis Abraham, 1924, found in the intertidal mudflats of Singapore. Much later, I. helva was recorded from the littoral zone in Western Samoa (Marples, 1951, 1955). Soon after, another species, Arthrophonysia intertidalis Benoit & Legendre, 1968, (transferred to Idioclis by Raven, 1985) was collected and described from the littoral zone of Madagascar and the Seychelles.

By 1988, six species of Idioclis had been described: the type species, I. helva from Fiji and Western Samoa (Marples, 1951, 1955); I. littoralis Abraham, 1924 from Singapore; I. intertidalis (Benoit & Legendre, 1968) from Madagascar and the Seychelles (Benoit, 1978); I. xmas Raven, 1988 from Christmas Island; I. eniwetok Raven, 1988 from the Caroline and Marshall Islands; and I. hawaiien sis Raven, 1988 from the Leeward Islands, near Hawaii.

After a revision of the genus (Raven, 1988), we discovered Idioclis in the intertidal or littoral zones in northern Australia, New Caledonia, and the Solomon Islands. Three new species are described here. Concurrently, the first male and more females of the type species, I. helva, were taken from the type-locality of Ovalau, a small island of Fiji. Females of I. helva were also collected from the coast of the large island of Vanua Levu, Fiji. With this new material we conclude that a new species occurs in Western Samoa. We also document variation in spermathecae for the first time in barychelids.

Raven (1988) noted that Idioclis hawaiiensis differed from all other congeners in the wider sternum, undivided spermathecae, and relatively shorter eye group. Since then, material from another island in the Leeward Islands has proved to be a new species for which a new genus is here created. This new genus recognizes the plesiomorphic nature of both I. hawaiiensis and its new sister species.

**MATERIALS AND METHODS**

All abbreviations are standard for the Araneae and explained in Raven (1984a). The width of the eye group or the median ocular quadrangle (abbreviated as MOQ) is the distance between the two most separated points in a line orthogonal to the long axis of the spider. All measurements except those for eyes are given in millimetres. Eye measurements are taken from camera lucida drawings made at × 50 magnification; any error was taken as 0.02 mm, or 1 mm on the enlarged figure. Eye interspaces, which are measured along a line joining the centres of the respective eyes, are given as
diameters of an AME. Presence of leg spines are specified by the number recorded with their position (rare number occurring in parentheses) although ranges can include zero. Spine positions are as follows: dorsal, if on or close to the midline; prolateral or retrolateral, if spine bases are visible pro- or retrolaterally when viewed dorsally; ventral, if bases are visible when viewed ventrally. Spines are considered weak, and probably the equivalent of attenuate macrosetae of Coyle (1971: 329), if only marginally thicker than other setae on that surface. Despite being weaker, they are treated as spines because their number and position suggest they are the weaker form of thick spines on other species. Descriptions of scopulae give the extent (measured from the distal end of the leg segment), the density of scopula hairs, and the number of rows of setae that part the scopula hairs.

Acronyms for museums are: AMNH, American Museum of Natural History, New York; BMNH, British Museum (Natural History), London; NHW, Naturhistorisches Museum, Vienna; QM, Queensland Museum, Brisbane. Other museums are given in full.

**SYSTEMATICS**

**Idioetis Koch**


**Checklist of Species**

*Idioetis helva* Koch, 1874, type species Fiji.


*Idioetis ferrophila* sp.nov. New Caledonia.

*Atrophonysia intertidalis* Benoit & Legendre, 1968 Madagascar, Seychelles.

*Idioetis littoralis* Abraham, 1924 Singapore.

*Idioetis marovo* sp.nov. Solomon Islands.

*Idioetis talofa* sp.nov. Western Samoa.


*Idioetis yerlata* sp.nov. North-eastern Australia.

**Distribution**

Spiders of the genus *Idioetis* are now known near beaches and in littoral zones in Fiji, Singapore (Abraham, 1924), Western Samoa (Marples, 1951, 1955), Madagascar (Benoit & Legendre, 1968), Seychelles Islands (Benoit, 1978), Christmas Island (Indian Ocean, Raven, 1988), Marshall and Caroline Islands (Raven, 1988), north-eastern Australia, New Caledonia and the Solomon Islands. Habitats, life history observations and biogeography of the genus will be discussed elsewhere.

**Remarks**

This paper contains the first description of a $\delta$ of the type species. The diagnosis of *Idioetis* given by Raven (1988) is correct save for the removal of...
characters present only in *I. hawaiiensis*, here transferred to *Nihoa*, gen. nov.

**Idioctis helva** Koch
(Figs 2-6, Table 1)


**Material Examined**

**Lectotype**: ♀, (here designated), Ovalaul., 17°41’S, 178°50’E, Fiji, Mus. Godeffroy No. 8097, deposited in Zoologische Institut and Zoologisches Museum, Hamburg.

**Paralectotype**: 1 ♀, 1 juvenile, same data, deposited in BMNH.

**Other Material**


**Diagnosis**

Spermathecae two, each consisting of two short dissimilar lobes, ental lobe stout, ectal lobe slender. ♀♀ with c.18 thorns on patella III. 4-5 teeth on paired claws of ♀♀. Rastellum of ten thick (four as long as wide) coniform spines in short distal line. Preening combs absent. ♂♂. Tibia I with small distal spur and upcurved megaspine, prolateral face with distal triangular cuticular process and short lower angular downcurved spine. Bulb pyriform; embolus broad, not spiralled; cymbium with two divided lobes. Two rows of teeth on all paired claws.

**Topotype Male**

Carapace 4.36 long, 3.32 wide. Abdomen 4.16 long, 2.40 wide. Total length, 10.

**Colour in alcohol.** Carapace and legs yellow brown, chelicerae red brown; abdomen dorsally grey brown with dark ‘V’ dorsally showing location of heart; venter entirely yellow brown.

### Table 1. Leg measurements of *Idioctis helva*, ♂

<table>
<thead>
<tr>
<th></th>
<th>Femur</th>
<th>Patella</th>
<th>Tibia</th>
<th>Metatarsus</th>
<th>Tarsus</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>3.60</td>
<td>1.92</td>
<td>3.04</td>
<td>2.32</td>
<td>1.36</td>
<td>12.24</td>
</tr>
<tr>
<td>II</td>
<td>3.20</td>
<td>1.84</td>
<td>2.64</td>
<td>2.16</td>
<td>1.28</td>
<td>11.12</td>
</tr>
<tr>
<td>III</td>
<td>2.56</td>
<td>1.44</td>
<td>2.16</td>
<td>2.16</td>
<td>1.20</td>
<td>9.52</td>
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<tr>
<td>IV</td>
<td>3.36</td>
<td>1.76</td>
<td>3.52</td>
<td>2.96</td>
<td>1.20</td>
<td>12.80</td>
</tr>
<tr>
<td>Palp</td>
<td>2.20</td>
<td>1.44</td>
<td>1.52</td>
<td>0.84</td>
<td></td>
<td>6.00</td>
</tr>
</tbody>
</table>

FIG. 1. *Idioctis yerlata* sp.nov., ♀.
FIG. 2. Distribution of *Idioctis* ★ and *Nihoa* ▲ in the Western Pacific and Indian Ocean.

FIG. 3. *Idioctis helva*, scanning electron micrographs, paired claws, lateral view. a, b, leg I, ♂ (a), ♀ (b). c, d, leg IV, ♀.
FIG. 5. Idioctis helva, dorsal view of spermathecae of ?♀. a-d, g, Ovalau Island, Fiji. a, S12525. b, S12521. c, S12522. d, S12523. g, S12524. e, f, h-j, Lotu Island (Vanua Levu), Fiji. e, S12527. f, S12528. h, S12526. i, S12529. j, S12530. Scale line = 0.25mm.

FIG. 6. Idioctis helva, topotype ♂. a, cephalothorax and chelicerae, dorsal view. b, spinnerets, ventral view. c, eyes, dorsal view. d, sternum, maxillae, labium and chelicerae, ventral view. e, palpal tibia, cymbium, and bulb, retroventral view. f, tibia I, ventral view, showing distal spur and megaspine. g, tibia I showing spur, prolateral view. Scale line = 1mm (a), 0.5mm (b-g).
Carapace. Uniform covering of short black bristles and fine grey hair, not obscuring cuticle; margins with longer setae and lower sclerotised shelf of hirsute chitin below main margin. An irregular row of 15-20 setae anteromedially; 2-3 pairs of fine setae; numerous thick setae between PME and ALE. Striae shallow, narrow, glabrous, recognised as areas intervening grey bush of hair. Fovea wide, recurred.

Eyes. Tubercle distinct. Group occupies 0.45 of head-width. Three rows; back row recurved. Front line of lenses of AME just behind line of back of ALE and 'iris' well back. Eye group front width, back width, length = 35:43:25. MOQ front width, back width, length = 21:29:14. AME:ALE:PME:PLE = 10:11:7:10. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.5; ALE-ALA, 1.6; PME-PLE, 0.2; PME-PME, 1.8; ALE-PLE, 0.6.

Chelicerae. Wide band of brown setae and grey hair prodorsally, two narrower bands laterally. Promargin with 8 evenly spaced teeth, basomesally with 2 small teeth and 3 granules. Intercheliceral tumescence absent. Rastellum consists of 5 long thick pointed spines and c.5 thick setae.

Maxillary. 1.04 long in front, 1.36 long behind, 0.64 wide; with c.5-8 pointed cuspules. Heel angular; anterior lobe distinct.

Sternum. 2.16 long, 1.48 wide. Only posterior sigilla evident as rounded glabrous marginal areas.

Legs. Formula 4123. All segments, especially femora, with mat of dark grey prostrate hairs; and erect black setae. All legs of similar diameter. Tibia I with small distal spur and upcurved megaspine, prolateral face with distal triangular cuticular process and short lower angular downcurved spine. Preening combs entirely absent.

Scopula. Never so thick as to obscure cuticle, individual hair bases distinct. Tarsi I-III ventrally pallid. Tarsi I and II entirely ventral, thin, entire, full length; III, thin, divided by 8-10 setae; IV, with 10-15 scopula hairs in narrow triangle on proximal prolateral face. Claw tufts smaller than claws. Metatarsi: I, thin for full length, distally cuticle is pallid; II, similar but with single thick seta on ventrodorsal edge; III, prevenentrally with light brush; IV, bare. Thorn spines: 10 on prolateral patella III.

Spines. Leg 1: fe d4, ti v3 +2 megaspines; me v1 weak, distal. Leg 2: fe d3, ti v4; me v1 weak, distal. Leg 3: fe d4, rl, pa p10 thorns, ti v5, me rl, v4. Leg 4: fe d6, rlw; ti r2, v7w; me v3 + 4 thick setae. Palp: fe d5w.

Claws. 2 full scooped rows of 8-10 teeth in each row on paired claws of leg I; claws of leg IV with 2 rows, 6 in each outer row and 2 in each inner row.

Trichobothria. In two rows, each of c.8 for 3/4 of tibiae; c.12 in proximally retrolateral row on metatarsi, distally row is irregular and trichae are longer; c.3 clavate and 15 filiform on tarsi in band.

Palp. Bulb pyriform; embolus broad, not spiralled; cymbium with two divided lobes.

Spinnerets. PMS 0.20 long, 0.08 wide, 0.08 apart, c.0.18 of basal PLS in diameter. PLS basal, middle, apical, and total article lengths = 0.64, 0.26, 0.14, 1.04, respectively.

DISTRIBUTION AND HABITAT
I. helva is known from mangrove roots and trunks on Ovalau Island, east of Viti Levu, Fiji, and from coral rock on Lotu Island, south of Vanua Levu, Fiji.

REMARKS
Females of I. helva differ from those of other species by the wider configuration of the eyes and the smaller PMS. Spermathecae consist of two short almost amorphous lobes joined basally to form a common aperture. Males differ from those of I. entiwetok Raven by the absence of preening combs.

Idioclis yerlata sp. nov.
(Figs 1.2, 7-9, Table 2)

MATERIAL EXAMINED

DIAGNOSIS
Spermathecae with one large medial lobe and variable basal lobe ectally; basal lobe small with common atrium with lateral lobe or separate lobe arising above base of medial lobe (Fig. 9). Three closely spaced teeth on cheliceral promargin near fang base. Numerous (28-30) thorn spines on prolateral patellae III. 5-7 teeth on paired claws of
leg I. Preening combs absent. Rastellum is 12-14 long curved spines.

**HOLOTYPE FEMALE**

Carapace 5.36 long, 4.40 wide. Abdomen 8.80 long, 5.28 wide. Total length, 16.

**Colour in alcohol and life.** Carapace and legs yellow brown, chelicerae red brown, abdomen uniform yellow brown.

**Carapace.** Uniform cover of fine prostrate wavy grey hairs; 10-15 long erect setae on medial caput lateral of centre line; c.4 pairs of fine foveal bristles; 27 long erect black setae anteromedially; 7 long black anteronally directed bristles and numerous fine black setae between PME; 2 long recurved and 10-15 shorter black bristles between ALE; caput raised; striae distinct. Fovea broad, straight with recurved ends.

**Eyes.** Tubercle low. Group occupies 0.33 of head width. Three rows; back row more or less straight. Eye group front width, back width, length = 44:58:34. MOQ front width, back width, length = 23:42:17. AME:ALE:PME:PLE = 7:13:7:15. Eye interspaces: AME-AME, 1.3; ALE-ALE, 3.4; AME-ALE, 1.6; PME-PLE, 0.1; PME-PME, 4.0; ALE-PLE, 1.6.

**Chelicerae.** With moderately dense bush of black hairs dorsally and in lateral band; rastellum consists of 12-14 long strong spines; promargin of furrow with two very large and five smaller teeth, and six small teeth basally.

**Labium.** 0.92 wide, 0.48 long, without cuspules, separated from sternum by narrow groove.

**Maxillae.** 1.60 long in front, 2.04 long behind, 0.96 wide; with 6-9 spindle-shaped cuspules in
close group on inner angle; anterior lobe indistinct, posterior 'heel' produced.

*Sternum.* 3.12 long, 2.00 wide; sigilla evident as shallow depressions in margin.

*Legs.* Formula 4123. Legs I and II much thicker than III and IV; tarsi as fat as distal metatarsi. Dorsal tarsi and metatarsi with pile of short straight grey hair. Tibia through tarsus IV asetose, almost glabrous. With numerous short coniform spines on prolateral patellae III, IV. Preening combs consist of group of 8 spines on metatarsi III, outer pair and middle pair long and slender, others short, thick; eight also on metatarsi IV, two long slender setae separated by shorter spines on ventral edge of metatarsi IV.

*Scopula.* Full and entire on metatarsi and tarsi I, II; divided by setae on metatarsi and tarsi III; one narrow prolateral band on tarsi IV; elsewhere absent. Palpal tarsal scopulac entire.

*Spines.* No spines on tarsi. Leg I: fe 0, (d11 thick setae); ti p1 weak, v7 weak; me v1 distally with thick bristle. Leg 2: me v2 distally 1v with thick bristle. Leg 3: pa p28-30; tibia v1 + 6w, me distoventral 2 long medial with 4 on each side and one between 2 long. Leg 4: fe 0, pa p11-16, ti v5, me 0. Palp, ti v1 or v0.

*Claws.* Paired claws with 5-7 teeth on ectally displaced keel on leg I; 3 teeth on leg III; 2 on leg IV; palpal claws without teeth. All paired claws extending beyond tufts, except on palp.

*Trichobothria.* c.8 for 3/4 of tibiae; c.12 on metatarsi; 5 clavate and 12 filiform on tarsi.

*Spermathecae.* Two, each with one large medial and one ectal lobe.
**Idioctis ferrophila** sp.nov.

(Figs 2, 10-12, Table 3)

**Material Examined**

**Holotype:** ♀, Port Boise, 22°20'S, 166°59'E, New Caledonia, ironstone boulder in water on beach, 25.x.1988, R.J. Raven, T.B. Churchill, QM S13537.


**Diagnosis**

Spermathecae with large medial lobe and short basal lobe with axes perpendicular. Thorn spines: c.30 on prolateral patellae III, c.11 small on proximal prodorsal patella IV. 3-5 teeth on paired claws of ♀. Rastellum a line of 10 short conical spines, not on mound, on edge above fang. ♂ ♀ unknown.

**Holotype Female**

Carapace 5.28 long, 4.12 wide. Abdomen 8.48 long, 4.88 wide. Total length, 17.

**Colour in alcohol and life.** Carapace yellow brown with light brown mottling, chelicerae dark reddish brown-burgundy; legs, sternum, maxillae, and labium yellow brown; abdomen light yellow brown with slightly darker medial band over heart.

**Carapace.** With fine gray hairs forming uniform covering; hairs become larger and paler on margins and darker and thicker near anteromedial line. Striae glabrous, narrow, barely distinct. Narrow sclerotised and hirsute ledge below edge of carapace. Fovea very slightly procurred. About 10 thick and several finer anteromedial setae; two long setae between PME; 5-8 long recurved and several shorter setae and fine hairs between ALE. Clypeus absent.

**Eyes.** Tubercle low. Group occupies 0.32 of head-width. Three rows; back row procurred. Eye group front width, back width, length = 44:55:32. MOQ front width, back width, length = 25:33:19. AME:AME:PLE = 10:14:8:14. AME:AME, 0.4. AME-ALE, 0.8, ALE-ALE, 1.7, PME-PM E, 0.3, PME-PME, 2.2, ALE-PLE 1.0.

**Chelicerae.** Porrect with prodorsal and lateral bands of long fine hairs. Slight ridge parallels upper cheliceral face. Rastellum a line of 10 short conical spines, not on mound, on edge above fang.
Furrow promargin with 7 thick teeth, basomesally with 1 minute and three small teeth.

Labium. 0.88 wide, 0.44 long. Labiosternal suture a narrow groove.

Maxillae. 1.52 long in front, 2.16 long behind, 1.04 wide; with 4-6 cuspules on inner edge. Heel distinct; anterior lobe, indistinct.

Sternum. 2.80 long, 1.88 wide. With slightly darker and thicker hairs on margin; otherwise fine grey hairs medially. Sigilla shallow, indistinct.

Legs. Formula 4123. I, II thicker than III, IV.

<table>
<thead>
<tr>
<th>TABLE 3. Leg measurements of <em>Idioctis ferrophila</em>, holotype ♂</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>Palp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Femur</td>
<td>2.88</td>
<td>2.68</td>
<td>2.08</td>
<td>3.08</td>
<td>2.24</td>
</tr>
<tr>
<td>Patella</td>
<td>2.40</td>
<td>2.16</td>
<td>1.52</td>
<td>2.24</td>
<td>1.68</td>
</tr>
<tr>
<td>Tibia</td>
<td>2.08</td>
<td>2.04</td>
<td>1.36</td>
<td>3.28</td>
<td>1.36</td>
</tr>
<tr>
<td>Metatarsus</td>
<td>1.60</td>
<td>1.52</td>
<td>1.36</td>
<td>2.44</td>
<td></td>
</tr>
<tr>
<td>Tarsus</td>
<td>1.12</td>
<td>1.12</td>
<td>0.80</td>
<td>0.88</td>
<td>1.44</td>
</tr>
<tr>
<td>Total</td>
<td>10.08</td>
<td>9.52</td>
<td>7.12</td>
<td>11.92</td>
<td>6.72</td>
</tr>
</tbody>
</table>

Covered with fine grey hairs mixed with black setae; fine 'furry' grey hairs form narrow band near trichobothria on tibiae and metatarsi. Metatarsi I, II with distinct darker pair of setae distoventrally. Thorn spines: c.30 on prolateral patellae III, c.11 small on proximal prodorsal patella IV.

Scapula. Metatarsi and tarsi I, II, full, entire but not obscuring cuticle and separate hairs distinct. Metatarsi: III, one wide band prolaterally, ventrally and retroventrally with setae and spines; IV, absent. Tarsi: III, full, parted by band 6-8 setal rows wide; IV, only small cluster in proximal proventral corner.

Spines. True spines only ventrally on palpal tibiae and distal metatarsi III, IV; 6-8 thicker setae on dorsal femora. Leg 1, 2: none except tibia v2 (w) and v4, respectively. Leg 3: thorn spines plus, ti v6 (w), me v8 on distal edge plus 1 thick and 4 thinner medially. Leg 4: thorn spines plus, tibia v7
INTERTIDAL TRAPDOOR SPIDERS

FIG. 12. *Idioctis ferrophila* sp.nov., dorsal view of spermathecae of 9, a, S7211. b, S12513. c, S12517. d, S12511. e, S12512. f, S13538. g, S13537. Scale line = 0.25mm.

(w); me, v8 distal (4 close enough to be almost a comb) and 3 thinner proximad. Palp, ti v5.

Claws. 5 short (leg I) to 3 (leg IV) teeth on paired claws, palpal claw bare. Tufts dense, not enclosing claws, divided.

*Trichobothria*. In 2 rows, each of c.6 for 3/4 of length of tibiae; c.6-7 in short diagonal row on metatarsi; 5 clavate and c.14 filiform on tarsi in two triangular bands. Trichobothria associated with fine grey hairs.

*Spermathecae*. Two, each with two lobes, medial lobe broad, lateral lobe small digitiform.

*Spinnerets*. PMS 0.22 long. 0.08 wide. 0.08 apart, c.0.12 of basal PLS in diameter. PLS length of basal, middle, apical, and total articles = 0.76, 0.22, 0.18, 1.92, respectively.

DISTRIBUTION AND HABITAT

*Idioctis ferrophila* is known from ironstone boulders on the beach at Port Boise at the south eastern corner of New Caledonia. A trapdoor burrow with a spider like that of *Idioctis* was noted in intertidal rocks just south of Goro, 5-7 km east of Port Boise. The specimen was not collected. At both locations, the boulders and rocks had water around their bases at low tide.

ETYMOLOGY

The specific epithet is latin derived for iron (*ferros*) and greek love (*philos*) and relates to the original collection of this species from only ironstone boulders in southern New Caledonia.

*Idioctis talofa* sp.nov.

(Figs 2, 13-15, Table 4)

MATERIAL EXAMINED

HOLOTYPE: 9, Upolu, 13°55'S, 172°45'W, close to high tide mark, Western Samoa, B. J. Marples, BMNH 1974.129.1.


1 9, 'Samoa', 19.i.1882, Kauf, Godeffroy collection in NHW.

DIAGNOSIS

Spermathecae two, each consisting of two similarly sized lobes, one lobe pointed. 18-20 thorn spines on prolateral proximal corner of patella III; c.9 on patella IV; prolateral distal corner of femur IV with 2-3 short spines. 4 teeth on all paired claws. Preening combs absent. Rastellum is 11 thick curved spines in single line with bases touching.

HOLOTYPE FEMALE

Carapace 5.00 long, 4.08 wide. Abdomen 7.17 long, 4.00 wide. Total length, 15.


Carapace. With light uniform covering of silver brown hairs, none in striae, light bush on margins, numerous brown bristles beside 10 thick and several smaller anteromedial bristles, 6-8 thick bristles between PME, c.10 between AME. Fovea distinctly procured; clypeus absent.

Eyes. Tubercle low, distinct. AME pigmented. Group occupies 0.35 of head-width. Three rows; front row widely separated from middle row, back row slightly procured. Eye group front width, back width, length = 40:52:33. MOQ front width, back width, length = 24:35:19. AME:ALE:PME:

FIG. 13. Localities of *Idioctis talofa* sp.nov. in Western Samoa.
FIG. 14. Idioctis talefa sp.nov., holotype ♀, a, cephalothorax and chelicerae, dorsal view. b, spinnerets, ventral view. c, sternum, maxillae, labium and chelicerae, ventral view. Scale line = 1mm (a, c), 0.5mm (b).

PLE = 10:12:8:14. Interspaces: AME-AME, 0.5, AME-ALE, 1.0, ALE-ALE, 1.9, PME-PLE, 0.2, PME-PME, 2.4, ALE-PLE, 1.3.

Chelicerae. Band of moderately long brown bristles prodorsally and narrower band laterally. Rastellum is c.11 thick curved spines in single line hanging over long cheliceral edge, with bases touching. Furrow promargin with 8 teeth, all bases separate but most anterior teeth bases very close, basomesally with 6 small teeth.

Labium. 0.92 wide, 0.84 long. Separated from sternum by narrow groove.

Maxillae. 1.44 long in front, 1.96 long behind, 1.20 wide; with 5-8 pointed cuspules on inner angle. Heel rounded; anterior lobe just distinct.

Sternum. 3.24 long, 1.96 wide. Widest between coxae I. Sigilla small, marginal, indistinct.

Legs. With uniform covering of moderately long brown hairs. Scopula. Metatarsi and tarsi I, II entire, full; metatarsi III, only on proventral face; metatarsi IV absent; tarsi II with narrow band of 4-6 rows parting scopula; tarsi IV thin, short hairs, only on proventral face. Thorn spines: 18-20 on prolateral proximal corner of patella III; c.9 on patella IV; prolateral distal corner of femur IV with 2-3 short spines. Preening combs absent.

Claws. All paired claws with 4 distinct teeth; palpal claw bare. Claw tufts not enclosing claws.

Spines. No true spines dorsally or laterally except for femora and patellae III, IV. Spines on ventral legs generally weak, strong only on distal metatarsi III and IV but no so close as to form comb. Leg 1: ti p3, me 0. Leg 2: ti v3, me v1. Leg 3: pa p18, ti v6w, me v9. Leg 4, fe p3, pa p6, ti v8w, me v5 short plus 4-6 thinner. Palp: ti p1, v4.

Trichobothria. In two rows, each of c.11 for 3/4 of tibiae; c.9 in curving row on metatarsi; 3 clavate and c.15 filiform on tarsi.

Spermathecae. Two, each consisting of two similarly sized lobes, one lobe pointed.
FIG. 15. *Idioctis talofa* sp.nov., dorsal view of spermathecae of ♀ ♂, a-h. Scale line = 0.25mm.

*Spinnerets.* PMS 0.36 long, 0.12 wide, bases 0.06 apart, c.0.19 of basal PLS in diameter. PLS basal, middle, apical, and total article lengths = 0.74, 0.26, 0.18, 1.18, respectively.

**Distribution and Habitat**
Known from laval rock on beaches on the island of Upolu, and the islet of Nu’ulopa, Western Samoa (Marples, 1955).

**Etymology**
The specific epithet is a Samoan word meaning ‘welcome’, in appreciation of the warm reception given to TBC.

**Remarks**
Differs from *I. helva* in the spermathecal lobes being equal in size, anterior most teeth in cheliceral margin not fused basally, and has 1-2 thorns on prolateral distal femur IV. Of the 17 adults examined, one from ‘Upolu’ has only 4-6 spines on prolateral patella III of both legs. In all others, the number varies from 10-20 on a single specimen.

*Idioctis marovo* sp.nov.
(Figs 2, 16-18, Table 5)

**Material Examined**
*Holotype:* ♀, Uepi Island, Marovo Lagoon, Western Province, Solomon Islands, Western Pacific, 8°27’S, 157°56’E, intertidal limestone beach rock, 7.vii.1990, T.B. Churchill, QM S17121.

*Paratype:* 5 ♀ ♂, same data as holotype, 7.vii.1990, T.B. Churchill, QM S17118-20, QM S17122, QM S17123.

**Diagnosis**
Spermathecae two, each consisting of large terminally enlarged lobe with smaller one attached to the outer base of the former. Thorn spines: 25 on prolateral proximal corner of patella III; 10-16 on patella IV; prolateral distal corner of femur IV with 5 short spines. 2-4 teeth on paired claws. Rastellum of 10 strong spines in single line with bases touching. Preening combs a whorl of spines on metatarsi III, IV. ♂ ♂ unknown.

**Table 4. Leg measurements of *Idioctis talofa*, holotype ♀.

<table>
<thead>
<tr>
<th></th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>Palp</th>
</tr>
</thead>
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<tr>
<td>Femur</td>
<td>3.36</td>
<td>2.80</td>
<td>2.36</td>
<td>3.42</td>
<td>2.52</td>
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<tr>
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<td>2.28</td>
<td>2.16</td>
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<td>1.64</td>
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<tr>
<td>Tibia</td>
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<td>1.96</td>
<td>1.64</td>
<td>3.17</td>
<td>1.36</td>
</tr>
<tr>
<td>Metatarsus</td>
<td>1.64</td>
<td>1.40</td>
<td>1.28</td>
<td>2.75</td>
<td></td>
</tr>
<tr>
<td>Tarsus</td>
<td>0.88</td>
<td>1.08</td>
<td>0.80</td>
<td>1.00</td>
<td>1.32</td>
</tr>
<tr>
<td>Total</td>
<td>10.28</td>
<td>9.40</td>
<td>7.80</td>
<td>12.92</td>
<td>6.84</td>
</tr>
</tbody>
</table>

**Holotype Female**
Carapace 3.92 long, 2.96 wide. Abdomen 5.28 long, 2.96 wide. Total length, 12.

*Colour in alcohol.* Carapace yellow brown, orange brown on caput; legs yellow brown; chelicerae red brown. Abdomen pallid but dorsally with two purple brown markings at anterior and posterior ends.

*Carapace.* With light uniform covering of silvery brown hairs, none in striae; light bush on margins; numerous brown bristles beside 10 thick and several smaller anteromedial bristles, 6-8 thick bristles between PME, c.10 between AME. Fovea very slightly procurred.

*Eyes.* Tubercle low, distinct. AME pigmented. Group occupies 0.48 of head-width. Three rows; front row widely separated from middle row, back row straight. Eye group front width, back width, length = 32:40:27 MOQ front width, back width, length = 21:27:13. AME:ALE:PLE:AME = 8:12:6:13. AME-AME, 0.8, AME-ALE, 0.9, ALE-ALE, 1.3, PLE-PLE, 0.1, PLE-AME, 1.9, ALE-PLE, 0.9

*Chelicerae.* Band of stiff silver bristles prodorsally and two narrow bands retrolaterally. Rastell-
FIG. 17. Idiocis marovo sp.nov. holotype ?. a, cephalothorax and chelicerae, dorsal view. b, abdomen, dorsal view. c, abdomen, ventral view. d, sternum, maxillae, labium and chelicerae ventral view. e, eyes, dorsal view. f, spinnerets, ventral view. Scale line = 1mm (a-d), 0.5mm (e, f).
INTERTIDAL TRAPDOOR SPIDERS

FIG. 18. Idioctis marovo sp.nov., dorsal view of spermathecae of 9. a, S17119. b, S17123. c, S17122. d, S17121. e, S17120. f, S17118. Scale line = 0.25mm.

lum of 10 strong spines in single line with bases touching overhang cheliceral edge. Furrow promargin with 7 teeth, all bases separate but most anterior teeth bases very close, basomesally with 4 small teeth.

Labium. 0.64 wide, 0.28 long. Separated from sternum by distinct narrow groove.

Maxillae. 1.00 long in front, 1.44 long behind, 0.76 wide; with 5 pointed cupules on inner angle. Heel rounded; anterior lobe just distinct.

Sternum. 2.24 long, 1.52 wide. Sigilla small, oval, and marginal, increasing in size posteriorly.

Legs. With uniform covering of moderately long brown hairs. Scopula: metatarsi and tarsi I, II, entire, full; metatarsi III, only on proventral face; tarsi III, with band of 4-6 rows of setae parting scopula; metatarsi and tarsi IV absent. Thorn spines: 25 on prolateral proximal corner of patella I; 10-16 on patella IV; prolateral distal corner of femur IV with 5 short spines. Preening combs a whorl of spines on metatarsi III, IV.

Spines. No true spines dorsally or laterally but 3-5 long fine black setae on femora I. Spines on ventral legs generally weak, strong only on distal metatarsi III and IV but no so close as to form comb. Leg 1: fe 0, pa 0, ti v2w, me 0. Leg 2: fe 0, pa 0, ti v2, me v1w. Leg 3: fe 0, pa p24 thorn spines, ti v2w, me v10. Leg 4: fe p5 thorn spines, pa p10-16, ti 0, me v7 in distal whorl. Palp, ti r1, v4 + 3w.

Claws. Paired claws with 2-4 distinct teeth; palpal claw bare. Claw tufts just enclosing claws.

Trichobothria. In two rows, each of c.11 for 3/4 of tibiae; c.15 in curving row that splits into two rows for the distal half on metatarsi; 6 clavate and c.16 filiform that split into two rows each two wide, centrally and distally, on tarsi.

Spermathecae. Two, each consisting of large terminally enlarged lobe with smaller one attached to the outer base of the former.

Spinerets. PMS 0.26 long, 0.14 wide, bases 0.06 apart, c.0.30 of basal PLS in diameter. Basal, middle, apical, and total article lengths of PLS = 0.74, 0.12, 0.14, 1.00, respectively.

DISTRIBUTION AND HABITAT
Known from limestone beach rock and the root bases of coconut trees in the littoral zone on the island of Uepi, in the Marovo Lagoon, Western Province, Solomon Islands.

ETYMOLOGY
The specific epithet is taken from Marovo Lagoon, Solomon Islands (where the spiders were collected), which has been nominated for World Heritage listing. In the face of increasing pressure from mining and logging activities, its pristine state is a credit to the wisdom of the local people.

REMARKS
Females of I. marovo differ from those of all other species except I. eniwetok in that patella III is clearly shorter than tibia III, and from I. eniwetok in the presence of numerous thorn spines on patella IV.

Nihoa gen.nov. Raven & Churchill

DIAGNOSIS
Nihoa can be distinguished from Idioctis by the wider sternum, the medially located teeth on the paired claws of 9 and the absence of a second row of teeth on the claws of 5. The two genera are readily distinguished by the presence of distinct pattern dorsally on the abdomen of Nihoa. Nihoa also differs from both Idioctis and Idiophasma in the absence of a rastellum and from Rhianodes Raven in the absence of a groove on the anterior face of the maxillae.

DESCRIPTION
Carapace hirsute, without pattern. Fovea very

<table>
<thead>
<tr>
<th>TABLE 5. Leg measurements of Idioctis marovo, holotype</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>Palp</th>
</tr>
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<tbody>
<tr>
<td>Femur</td>
<td>4.88</td>
<td>4.64</td>
<td>3.60</td>
<td>5.12</td>
<td>4.16</td>
</tr>
<tr>
<td>Patella</td>
<td>3.28</td>
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<td>2.48</td>
<td>3.60</td>
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<tr>
<td>Tibia</td>
<td>3.28</td>
<td>3.20</td>
<td>2.64</td>
<td>5.36</td>
<td>2.84</td>
</tr>
<tr>
<td>Metatarsus</td>
<td>2.56</td>
<td>2.32</td>
<td>2.40</td>
<td>4.16</td>
<td></td>
</tr>
<tr>
<td>Tarsus</td>
<td>2.32</td>
<td>1.60</td>
<td>1.68</td>
<td>1.92</td>
<td>2.08</td>
</tr>
<tr>
<td>Total</td>
<td>16.32</td>
<td>14.88</td>
<td>12.80</td>
<td>20.16</td>
<td>10.56</td>
</tr>
</tbody>
</table>
broad, straight to slightly procurved. Abdomen
with distinct pattern or mottling. Rastellum ab-
sent. Maxillae usually with c.10-20 cusps on
inner anterior corner; anterior lobe indistinct,
posterior heel produced. Labium wide, without
cuspules. Sternum long, narrow (about 1.4 times
longer than wide, rarely narrower), with small,
marginal sigilla, if evident. Scopulae (♀ ♂) entire
on metatarsi and tarsi I-III, and one small triangle
proventrally on metatarsi IV, if present; dense and
divided by narrow band of setae.

Spines (rare value in parentheses). Leg 1:
femur, p0 d0-4 r0, patella, 0, tibia, p0-1 v2-7, me
p0 r0-1. Leg 2: femur, p0 d0-4 r0, patella p0, tibia
p0-1 v0-4, metatarsus 0 v1-2. Leg 3: femur p0-1
d0-5 r0, patella p0-30, tibia p0(2) r0(2) v0-7,
metatarsus p0-3 r0-3 v0-13. Leg 4: femur p0 d0-7
r0, patella p3-16, tibia p0 d0 r0(2) v0-7, metatarsus
p0-7 r0-4 v2-9.

Paired claws of ♀ ♂ with teeth on medial keel;
claws of ♀ ♀ without or without one row of teeth.
Tarsi with clavate and filiform trichobothria. ♀ ♀:
tibia 1 with protaleral spur and megaspinus, more
distal protaleral megaspinus and associated
cuticular 'thumb'; palpal bulb pyriform; embolic
tip flanged.

TYPE SPECIES
Nihoa mahina sp.nov.

REMARKS
Raven’s (1988) inclusion of Idioctis hawaiiensis
in Idioctis was presumably based upon the
notion that it was the only genus that could be on
such remote islands. He did identify that the
species was the sister group of all other Idioctis
species but lacked data on the ♀ of the type
species to confirm the generic diagnosis.

DIAGNOSIS
Paired claws of ♀ ♀ with teeth. Upper cuticular
process on tibia I of ♀ ♀ at base of spur. Sper-
mathecae two coniform mounds.

HOLOTYPE MALE

Carapace 10.00 long, 9.67 wide. Abdomen
10.00 long, 6.83 wide. Total length, 24.

Colour in alcohol. Carapace, legs and chelicerae
red brown. Abdomen dorsally yellow brown with
medial longitudinal discontinuous band of brown
flanked laterally by somewhat paired, brown spots
anteriorly and recurved brown bands posteriorly.
Abdomen ventrally yellow brown with four small
brown marks almost equidistant, centrally. Ster-
num, maxillae, and labium red brown. Spinnerets
yellow brown.

Carapace. Fine silvery hairs form uniform
covering intermixed with numerous setae; line of
6 thick and several finer anteromedial bristles, and
several thick bristles between ALE; striae
glabrous. Fovea slightly procurved.

Eyes. Tubercle low. Group occupies 0.24 of
head width. Eyes in three rows. Eye group: front
width, back width, length = 71:82:60. MOQ front
width, back width, length = 44:60:31.


FIG. 19. Localities of Nihoa in the Leeward Islands. N.
maJiirm sp.nov. on Nihoa I. and N. hawaiiensis
(Raven) on Necker I.
**FIG. 20. Nihoa mahina sp.nov. holotype ♂. a, cephalothorax and chelicerae, dorsal view. b, eyes, dorsal view. c, sternum, maxilla, labium and chelicerae, ventral view. d, spinnerets, ventral view. e, abdomen, dorsal view. f, abdomen, ventral view. Scale line = 2mm (a, c, e), 1mm (b, d).**

**ALE, 2.3, PME-PLE, 0.1. PME-PME, 2.4, ALE-PLE, 1.1.**

**Chelicerae.** With prodorsal and lateral bands of setae and fine silver hairs. Rastellum only a line of 20-25 long pointed bristles on distal edge. Furrow promargin with 8 thick teeth and 3 smaller teeth; 12 small teeth basomesally. Intercheliceral tumescence absent.

**Labium.** 1.76 wide, 0.72 long. Labiosternal suture a distinct groove.

**Maxillae.** 2.96 long in front, 3.60 long behind, 1.60 wide; with c.12 cuspules on inner edge. Heel distinct; anterior lobe indistinct.

**Sternum.** 5.60 long, 4.08 wide. Sigilla marginal, round, and posterior pair largest.

**Legs.** Formula 4123. Tibia I with distal, prolateral spur and short megaspine; base of spur with broad cuticular process below which is one (rarely two) spine. Scopulate surface of tarsi palid.

**Scopula.** Leg I, full, thick, entire and undivided on metatarsi and tarsi I, II. Leg II scopula extends
FIG. 21. *Nihoa mahina* sp.nov. holotype ♂. a, tibia I, prolateral view showing distal spur and megaspine, hair and scopula omitted. b, tibia I showing distribution of hair and scopula. c, palpal bulb. d, palpal tibia, cymbium and bulb, ventral view. e, palpal bulb. Scale line = 1mm (a, b, d), 0.5mm (c, e).

to retrolateral side; metatarsi III, thin on distal half extending to prolateral side with setae intermixed; tarsi III, entire, thick with setae intermixed; metatarsi IV, with distal prolateral 1/4 with thin scopulae; tarsus IV with setal band 2-4 rows across intermixed with thin scopulae.

**Spines.** Leg 1: fe p2, pa 0, ti p2+2, v3+2, me 0. Leg 2: fe p2, pa 0, ti p1, v2, me 0. Leg 3: fe p2, r3, pa 0, p2+1w, ti p2, r2, v5, me p4, r5, v10. Leg 4: fe p2, d2, r2, pa 0, ti r5, v10, me p6, r5, v17. Palp: pa 0, ti v1.

**Palp.** Bulb with distally flanged embolus. Cymbium with two deeply divided lobes, retrolateral face slightly concave.

**Claws.** 2-4 (leg I) to 0 (leg IV) teeth in medial keel on paired claws. Tufts dense, enclosing claws.

**Trichobothria.** c.8 for half length of tibia, c.12 on metatarsi in single curving row; two bands each of c.4 small clavate and c.10 filiform on tarsi.

**Spinnerets.** PMS 0.84 long, 0.36 wide, bases 0.32 apart, c.0.33 of basal PLS in diameter. PLS basal, middle, apical, and total article lengths = 1.12, 0.64, 0.52, 2.28, respectively.

**ALLOTYPE FEMALE**

Carapace 10.00 long, 8.33 wide. Abdomen 10.33 long, 7.33 wide. Total length, 25.

**Colour in alcohol.** Carapace and legs orange brown, chelicerae red brown. Abdomen dorsally yellow brown with medial longitudinal discontinuous band of brown, flanked laterally by somewhat paired, brown spots anteriorly and recurved brown bands posteriorly. Abdomen ventrally yellow brown with four small brown marks almost equidistant, centrally. Sternum, maxillae, and labium orange brown. Spinnerets yellow brown.

**Carapace.** Fine silvery hairs form uniform covering intermixed with numerous setae well developed between head region and fovea; striae glabrous; fovea straight; c.30 setae between AME, c.14 between PME, c.40 long setae along medial
**Nihoa mahina** sp. nov.

Paratype ♀. a, cephalothorax and chelicerae, dorsal view. b, eyes, dorsal view. c, spermathecae. d, sternum, maxillae, labium and chelicerae, ventral view. e, spinnerets, ventral view. f, abdomen, dorsal view. g, abdomen, ventral view. Scale line = 2 mm (a, d, f, g), 1 mm (b, e), 0.5 mm (c).

Caput; lateral edge of carapace with several anterior and posterior directed lines of setae with dense fine silvery hairs. Clypeus absent.

Eyes: Tubercle low. Group occupies 0.30 of head width. Eyes in three rows. Eye group front width, back width, length = 72:81:55. MOQ front width, back width, length = 45:55:35. AME:ALE:PME:PLE = 20:23:12:25. Inter-spaces: AME-AME, 0.4, AME-ALE, 0.8, ALE-ALE, 2.6, PME-PLE, 0.1, PME-PME, 1.8, ALE-PLE 0.8.

Chelicerae: With prodorsal and lateral bands of setae with fine silver hairs. Rastellum absent, c.35 strong bristles in line on distal edge. Furrow
promargin with 8 thick teeth and 3 smaller teeth; 6 basomesal granules.

Labium. 1.76 wide, 1.12 long. Labiostemal sul
ture broad.

Maxillae. 2.72 long in front, 3.68 long behind, 1.60 wide; with c.10-12 cuspsules on inner edge. Heel angular; anterior, indistinct.

Sternum. 5.44 long, 3.76 wide. Sigilla: anterior and medial pair not evident; posterior pair small, round, marginal.

Legs. Thorn setae and preening combs absent. Tarsi broad, tarsi I c.60% of length wide; tarsi IV distally incrassate, distal width c.1.4 times basal width.

Scopula. Very dense on legs I, II; metatarsi and tarsi I, II, full, thick, entire, undivided; metatarsi III, thin on distal half with thick setae intermixed; tarsi III, entire, thick with 3-5 setae intermixed; metatarsi IV, thin in distal prolateral 1/4, divided; tarsi IV, thick, full, divided by narrow setal band 2-4 rows across and few setae intermixed, setal brush dense distally.

Spines. Leg 1, 0. Leg 2: 0, save ti p1. Leg 3: fe p2w, r2w, pa p2 thorns, ti p2, r1, v3, me p3, r3, v7. Leg 4: fe 0, pa 0, ti r1, v4, me p2, r1, v9. Palp, fe p1w, pa 0, ti p3w, v6w.

Claws. 4 (leg I) to 0 (leg IV) teeth on paired claws on medial keel. Tufts dense, just enclosing claws. Palpal claw very small, curved, bare.

Trichobothria. In two rows each of c.8 for half length of tibia; c.11 on metatarsi in single curving row; c.3-5 clavate and 12-14 filiform in each of two bands on tarsi.

Spermathecae. Two coniform mounds.

Spinerets. PMS 0.96 long, 0.44 wide, bases 0.16 apart, c.0.53 of basal PLS in diameter. PLS basal, middle, apical, and total article lengths = l.12, 0.44, 0.48, 2.04, respectively.

DISTRIBUTION AND HABITAT
Known only from the island of Nihoa in the Leeward Islands, northwest of Hawaii.

ETYMOLOGY
The generic name refers to the type locality. The species name is a Hawaiian word for moon, given that the type specimen was collected in the moon-light.

REMARKS
Males of N. mahina differ from those of N. hawaiiensis in the presence of teeth on the claws of leg I and in the basal position of the cuticular process on tibia I. Females differ in the coniform spermathecae, in having 4, rather than 2, teeth on the claws of leg I, and in the darker abdomen dorsally.

Nihoa hawaiiensis (Raven), new comb.
(Fig. 19)


MATERIAL EXAMINED
Holotype: δ, Necker L., Leeward Islands, north-west Pacific, 23°35'N, 164°42'W, E. H. Bryan Jr, 29.vi.1923, AMNH.
Paratype: ?, same data as holotype, AMNH.

OTHER MATERIAL
The types and also from Necker L., Leeward Islands: δ, 23.vi.1982, S. Conant; 4 δ, 4 φ, Annex Hill, alt. 82m., 24.vi.1984, S. Conant; all in Bernice P. Bishop Museum, Hawaii.

DIAGNOSIS
Paired claws of δ δ without teeth. Upper cuticular process on tibia I of δ δ prolateral, well above spur. Spermathecae two long domed mounds.

DISTRIBUTION, BURROW AND HABITAT
The spiders were found under rocks in burrows on very sparsely vegetated hillsides on Necker Island, one of the Leeward Islands, northwest of Hawaii.

SPERMATHECAL VARIATION IN IDIOCTIS

This paper includes the first documentation of spermathecal variation in a genus of the family Barychelidae. Shape of spermathecae has been

| TABLE 6. Leg measurements of Nihoa mahina,  |
|   holotype δ   |     |     |     |     |
| Femur        | 8.33 | 8.16 | 6.16 | 9.50 | 5.50 |
| Patella      | 5.33 | 4.83 | 4.83 | 4.83 | 3.16 |
| Tibia        | 6.17 | 5.33 | 5.00 | 6.83 | 3.33 |
| Metatarsus   | 5.83 | 5.66 | 5.33 | 8.00 |     |
| Tarsus       | 3.50 | 3.83 | 2.83 | 3.16 | 2.50 |
| Total        | 29.16 | 27.81 | 24.12 | 32.32 | 14.49 |

| TABLE 7. Leg measurements of Nihoa mahina,  |
|   allotype φ  |     |     |     |     |
| Femur        | 6.66 | 6.50 | 5.66 | 7.33 | 5.00 |
| Patella      | 4.66 | 4.16 | 3.50 | 4.66 | 3.50 |
| Tibia        | 3.83 | 4.00 | 3.33 | 5.50 | 2.66 |
| Metatarsus   | 3.50 | 3.16 | 3.50 | 5.33 |     |
| Tarsus       | 2.00 | 2.33 | 1.83 | 2.66 | 3.16 |
| Total        | 20.65 | 20.15 | 17.82 | 25.48 | 14.32 |
used widely in mygalomorphs to distinguish between species (e.g., Schiapelli & Gerschmann de Pikelin, 1962; Forster & Wilton, 1968; Raven, 1984a). As such, spermathecal shape has been considered a relatively stable and useful diagnostic character. Rarely are exceptions well supported. In his excellent and detailed revision of *Euaedrus*, Coyle (1988) showed extensive variation in the shapes of spermathecae of one species, *E. mexicanus*. On the other hand, Raven (1984b, 1990) found in the *Anane maculata* group (Nemesiidae) and *Tritane* (Barychelidae), respectively, that spermathecae are almost constant within a species group. Moreover, Raven & Churchill (1991) noted that one shape is widespread in barychelid genera and may be the family synapomorphy.

Among mygalomorphs, barychelids have received little attention from taxonomists or ecologists, presumably because they build cryptic burrows. They are also under-represented in museum collections. Hence, from the limited material available variation in shape of spermathecae has been unclear but assumed to be minimal. In *Idiocis*, we find that this variation is usually too great to be useful as a specific character on its own, even though it was stable in species of *Encycrypta*.

Recognition of a number of species in which the shape of the spermathecae cannot be diagnostic may seem unwarranted. In a major revision of Pacific barychelids (Raven & Churchill, in prep.), a plesiomorphic spermathecal shape has been identified and found to be widespread. However, as with *Idiocis*, barychelid males do show mutually exclusive differences where none were evident among their (unequivocally) conspecific females. Hence, interspecific differences can be sufficiently clarified with non-sexual somatic characters.

**ACKNOWLEDGEMENTS**

We sincerely dedicate this paper to Ms Julie Gallon, who assisted with the collection of *Idiocis yerlata*. Julie has been missing since 2 August, 1990, and we will continue to miss her dearly. This research, visits to European museums, and collections made in New Caledonia, Fiji, the Solomon Islands, and Singapore were funded by an Australian Research Council grant to RJR. The authors are indebted to the generous hospitality of Dr Jean Chateau of O.R.S.T.O.M., Nouméa, New Caledonia. Ms Clare Brenmer and Mrs Bronwyn Mitchell made the excellent figures 1, 8, 11, 14, 17, 20-22; RJR did the rest. We kindly thank Mr Joseph Koh, and Associate Professor Dennis Murphy of the University of Singapore, for their hospitality and assistance to RJR in acquiring comparative material of *I. littoralis*. Mr John Ravenscroft kindly assisted in the search for *Idiocis helva* in Fiji. We are grateful to Dr G. Rack, Zoologisches Institut and Zoologisches Museum, Hamburg, for the loan of types of *Idiocis helva*, to Dr J. Gruber, Naturhistorisches Museum, Vienna, and Mr P.D. Hillyard, British Museum (Natural History), London for the loan of *Idiocis*, material from Samoa, and to Ms Sabina Swift, Bernice P. Bishop Museum, Honolulu, for sending the new material of *Nihoa*. The invitation of Dr Harry Parnaby to TBC to accompany the Australian Museum expedition to the Solomon Islands is gratefully appreciated. TBC warmly thanks the local people of the Marovo Lagoon area for their co-operation and hospitality. We are grateful to Dr S. Conant for data on habitats of *Nihoa mahina* and *Nihoa hawatienis* in Hawaii.

**LITERATURE CITED**


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