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On *Isodermus planus* Erichson, 1842,
and a new species from Tasmania
(Heteroptera, Aradidae)

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Abstract

From Erichson's original material from Tasmania, a Lectotype for *Isodermus planus* ERICHSON, 1842, is selected and a detailed description given. A second species from Tasmania and Australia is described as *Isodermus dimorphus* sp.n. and the taxonomically relevant structures of both species are figured.

Zusammenfassung

Aus dem Originalmaterial Erichson's wird für *Isodermus planus* ERICHSON, 1842, ein Lectotypus designiert und eine ausführliche Beschreibung gegeben. *Isodermus dimorphus* sp.n. wird als zweite von Australien und Tasmanien bekannte Art dieser Gattung beschrieben und die taxonomisch relevanten Strukturen beider Arten abgebildet.

The genus *Isodermus* ERICHSON, 1842, comprises today

five species, of which one (*Isodermus gayi* SPINOLA) is known only from southern South America, three of them (*Isodermus tenuicornis* USINGER & MATSUDA, *Isodermus crassicornis* USINGER & MATSUDA, *Isodermus maculosus* PENDERGRAST) from New Zealand and *Isodermus planus* ERICHSON from Tasmania and Australia. A small lot of *Isoderminae* collected in Tasmania and southeast Australia contained two different species from both countries, of which -after comparison with the type material - one resulted to be *Isodermus planus* ERICHSON and the other a new species. All measurements are given in mm or 25 units are equal to 1 mm respectively.

Isodermus planus ERICHSON, 1842 (Figs.: 1, 3, 4, 7-10, 15, 16, 19, 20, 22)

Isodermus planus was described by E r i c h s o n , 1842 on material from Van Diemensland, now Tasmania and he figured a female with complete wings. The original series has occasionally been located recently among *Reduviidae* in the collection of the Zoologisches Museum an der Humboldt Universität Berlin. This series comprises six specimens and four larvae (V. instar) including one macropterous female which bears E r i c h s o n 's labels and corresponds to his figure. As this specimen is damaged (head lost), a male lectotype is designated and described.

Material: Lectotype ♂ with deciduous wings, labelled: "Van Diemensland, Schayer Nr. 2554" / "Typus" (obviously later added red label) / "Lectotypus *Isodermus planus* ER.1842, des E. H e i s s 1981"; paralectotypes are 1 ♂ with deciduous wings and 2 ♀♀ macropter, but subteneral, labelled as lectotype; 1 ♀ labelled: "2554" / "*Isodermus* ER." (white label, handwritten by E r i c h s o n ?) / "*planus* ER. Van Diemensland, Schayer" (grey label, same handwriting, the author's name bears an asterisk), which seems to be the figured macropterous female of E r i c h s o n ; 1 ♀ with deciduous wings is labelled: "*Isodermus planus* N. Terr. v. Diem" (handwriting different from female above). All are in the collection of the Zoolog. Museum d. Humboldt Universität, Berlin, one ♂ in my coll.

Additional material: 2♂♂, 2♀♀ macropterous, Australia

NO-Vict., Mt. Baw Baw, 800m, I 1973, lg. B a e h r, B e r g, S p i e t h, in coll. R i e g e r and H e i s s.

Measurements: Lectotype ♂, total length 6,9; Paralectotypes ♂ 6,9; ♀♀ 7,5 - 7,8.

♂♀ macropterous, but the wings show a tendency to break off. Body elongate, but distinctly waisted, 2,7 - 2,8 times as long as maximum width (Fig.1).

Head, measured between hind borders of postocular lobes and fore border of visible first segment of rostrum, longer than width across eyes (♂ 20,5:19; ♀ 21:19,5), with dispersed long setae, the longest (1+1) lateral of base of clypeus; clypeus prominent, smooth, rounded anteriorly and enclosed by genae, surpassed by the first rostral segment which is visible from above and reaching slightly beyond apex of antennal segment I; juga pointed, reaching beyond middle of clypeus; antenniferous tubercles cylindrical, diverging, directed anteroventrally. Eyes protruding, globose, postocular tubercles directed sideways, its apex stout and not reaching outer border of eyes (♂ 19:16,5; ♀ 19,5:17). Vertex shallow depressed between eyes, transversely rugose. Neck developed, smooth. Antennae slender, more than three times as long as width across eyes (♂ 3,07; ♀ 3,25), relative length of antennal segments I:II:III:IV as: ♂ 7:19:17,5:15; ♀ 7:20,5:19,5:16,5; first segment short, thickened at base, tapering apically, second is the longest, linear, gradually thickened toward apex, third pedunculate, slightly tapering at base, fourth also pedunculate, elongate fusiform, shorter than II and III, pilosity sparsely on I and base of II, with increasing density on apex of II, III and IV as Fig.3. Rostrum short, arising at apex of head, four-segmented, the first segment directed anteriorly, segments II to IV bent ventrally, apex not reaching line connecting the anterior borders of eyes (Fig.4). Ventral side depressed, transversely rugose, no rostral groove.

Pronotum more than twice as wide at base as long at middle (♂ 49:22,5; ♀ 54:23,5), anterior margin sinuate at middle, collar thin. Anterolateral angles slightly protruding, rounded, much narrower than broadly rounded posterolateral angles. Lateral borders strongly converging, feebly sinuate at middle, nearly parallel anterior-

ly. Hind border deeply sinuate. Fore disc smooth with a thin longitudinal sulcus, with two (1+1) weak impressions lateral, anterolateral angles slightly raised. Hind disc transversely rugose, depressed laterally behind fore lobe with coarse shallow punctures. Lateral borders with some erect setae.

Scutellum slightly longer than its basal width (σ 32:31; ♀ 36:35), lateral borders straight, carinate, apex rounded, disc smooth and irregularly punctured, more dense at base and a row of punctures on inner side of lateral carinae. A pair (1+1) of long erect setae is situated at middle of anterolateral angles.

Hemelytra reaching $1/2$ of tergum VII in ♀♀ and hind margin of tergum VII in $\sigma\sigma$. Clavus transversely rugose, marked with a row of punctures along outer margin. Corium finely rugose. Membrane irregularly wrinkled, sometimes broken at level of apex of scutellum, showing a line of "weakness" there. Hind wings developed with only one visible vein.

Legs: Femora strongly thickened medially with a double row of spines on ventral side, fore femora apically with a strong bifurcate spine on outer side in both sexes, more prominent in male, and one robust spine on inner side. Tibiae cylindrical, slightly arched, fore tibiae with a subapical comb (Fig. 15, 16). Tarsi two-segmented, first segment small, second long, clublike. Claws with setiform parempodia and lamellate pulvilli (Fig. 19). Legs with sparse long erect setae.

Abdomen obovate, lateral borders evenly rounded, mediotergites I-VII separated by a suture, the scent glands marked at the posterior margin of mediotergites III, IV and V. Anterior margin of MT III rugose with a linear depression lateral of middle. Dorsal laterotergites II and VII triangular, III to VI rectangular. Pattern of apodemal impressions 2:1:1. Dorsum smooth with sparse shallow punctures, dorsal laterotergites (connexiva) shallow depressed at middle, with fine dispersed erect setae on upper and lateral margin. In ♀♀ tergite VIII broad (21:4), trapezoidal with a transverse row of punctures at middle and erect setae, tergite IX subrectangular, thin (10:3), only weakly projecting, pilose along

hind margin (Fig.7). In ♂♂ mediotergite VII raised posteriorly, covering part of genital capsule, bearing long erect setae along hind margin. The lateral borders of sternite VII are reflexed dorsally and visible from above (Fig. 9).

Ventral side: Prosternum forming a subquadrate plate between fore coxae, well defined laterally by carinae and separated from mesosternum by a suture, transversely striate. Meso- and metasternum fused at middle, the latter hexagonal, depressed medially, transversely striate, pleura striate with erect setae laterally. Metasternal scent gland openings forming a channel, thin, reaching to lateral margin. In ♀♀ sternites I+II fused, III to VII separated, the posterior border of sternite VI bisinuate at middle, sinuate laterally. Ventral laterotergites only delimited on sternites VII and VIII, but lateral borders of sternum with a weak carina. In ♂♂ same, but sternite VIII forming a cuplike plate, with inflated lateral borders, covers completely the genital capsule from below and is partly visible from above. Surface of venter smooth, glabrous, with dispersed punctures, laterally with longitudinal rugosities. Dispersed erect setae are on lateral and posterior margins of sternites. Spiracles II-VII ventral, close to margin, VIII sublateral but not visible from above in ♀♀, lateral and prominent in ♂♂, where they are visible from above. Pattern of apodemal impressions 2:2:1, which are hardly visible.

Coloration: General colour piceous, shiny, clypeus, rostrum and tarsi paler, dorsum and venter amber colored.

Genital capsule large, its diameter as width of head across eyes, nearly circular, flat, visible posterior part (19:9) smooth at middle, laterally with coarse punctures and erect setae. Dorsal opening as Fig.20. The ventral rim (terminology see Schaefer 1977) with a transverse, bilunate sclerite, which is separated by a suture from the posterior wall of the capsule, with a median projection extending anteriorly into the opening. This sclerite shows the same position as the parandria in related subfamilies as *Prosympiestinae* and *Chinamyersiinae*. This structure has yet not been investigated in the New Zealand species, but is separated by a longitu-

dinal suture in *Isodermus gayi* SPINOLA into two units and might be of taxonomic importance. The parameres are hook-like, placed lateral of the ridge of the median projection with their thickened upper border and are attached with a joint at the juncture of the transverse sclerite and the lateral rims. Ventral rim of anteroventral opening with a median projection, where the capsule is attached to sternite VIII. (Fig.22).

Isodermus dimorphus sp.n. (Figs.: 2, 5, 6, 11-14, 17, 18, 21, 23)

♂♀ macropterous, with the characteristic tendency of *Isoderminae* to break off their wings. Body elongate, waisted, about 2,6 times as long as maximum width (Fig.2).

Material: Holotype ♂, with deciduous wings, NO-Tasmania, Mt. Barrow, XI 1972, lg. B a e h r, B e r g, S p i e t h in my coll. Paratypes 7♂♂, 9♀♀ with deciduous wings from the same locality; 1♂, 2♀♀ with complete wings are from Australia, SO-Victoria, Mt. Baw Baw, 800 m, I 1973, lg. B a e h r, B e r g, S p i e t h, from the same locality as *Isodermus planus* ERICHSON, in coll. R i e g e r, H e i s s, Mus. Berlin and British Museum (Nat.Hist.).

Measurements: Total length Holotype 5,65; Paratypes ♂♂ 5,3-5,6; ♀♀ 5,05-6,1.

Head, measured without neck shorter or almost as long as width across eyes (♂ 15,5:17; ♀ 17:17), with two (1+1) long erect setae lateral of base of clypeus, shorter ones at lateral margins of head. Clypeus prominent, smooth, rounded anteriorly, first rostral segment projecting beyond apex, but not exceeding antennal segment I. Juga pointed, reaching beyond middle of clypeus; antenniferous tubercles cylindrical, slightly diverging in anterolateral direction. Eyes globose, postocular tubercles directed sideways with rounded apex, not reaching outer border of eyes (♂♀ 17:15). Vertex depressed at base of clypeus, transversely rugose. Neck developed, smooth. Antennae slender, less than three times as long as width across eyes (♂ 2,67; ♀ 2,88), relative length of antennal segments I:II:III:IV as: ♂ 5,5:14:12:14; ♀ 5,5:15:13,5:15. First segment shortest, rounded at base, tapering toward apex; second is the longest, gradually thickened toward

apex; third shorter, pedunculate, also thickened toward apex; fourth pedunculate, elongate fusiform, as long as second. Pilosity long, erect, dense on antennal segments II to IV, less on I (Fig. 5). Rostrum short, arising at apex of head, four-segmented. The first rostral segment directed anteriorly, II to IV bent ventrally, its apex reaching slightly beyond line connecting anterior border of eyes (Fig. 6). Ventral side depressed anteriorly, transversely rugose, no rostral groove.

Pronotum nearly 2,5 times as wide at base as long at middle (σ 40:16; ♀ 39:16), anterior margin sinuate at middle, collar thin with transverse striae. Anterolateral angles not protruding, rounded, narrower than broadly rounded posterolateral angles. Lateral borders strongly converging, sinuate at middle, parallel anteriorly. Hind border sinuate at middle. Fore disc smooth with a thin longitudinal sulcus, depressed lateral. Hind disc transversely rugose with coarse punctures. Lateral borders only with a few short sparse erect setae, two (1+1) long setae at posterolateral angle of fore lobe (Fig. 5).

Scutellum barely longer than its basal width (σ 24:25; ♀ 25:26), lateral borders straight, carinate, apex rounded. Disc smooth with irregular punctures, more dense at base, a row of punctures is along lateral borders. A pair (1+1) of guard (?) setae is situated at middle of anterolateral angles.

Hemelytra covering basal half of genital capsule in σ reaching the posterior border of tergite VII in ♀♀ . Clavus marked with a row of punctures along outer margin and with a few punctures at inner margin anteriorly, elsewhere transversely rugose. Corium with a row of obliterating punctures at inner margin, finely rugose lateral. Membrane irregularly wrinkled, breaking line of hemelytra at apex of scutellum. Hind wings developed with only one visible vein.

Legs: $\sigma\sigma$ femora medially thickened, with a double row of fine spines on ventral side, fore femora apically with a prominent bifurcate tooth on outer margin, the first spine of the inner row is longer than the following ones. Middle and hind tibiae slightly thickened toward apex, fore tibiae strongly thickened at apex with a subapical

comb (Fig. 17, 18). Tarsi two-segmented, the second long and club-like. Claws with setiform parempodia and lamellate diverging pulvilli. Legs with erect setae. ♀♀ similar to males, but fore femora with only one larger acute tooth on the outer margin, the first one of the inner row is not differing in size from the others. Fore tibiae, middle and hind femora are only slightly thickened.

Abdomen elongate ovate, mediotergites I-VII separated by a suture, the nymphal scent glands marked at the posterior margin of mediotergites III, IV and V. Dorsal laterotergites II and VII triangular, III-VI rectangular. Dorsum smooth, shiny, with sparse shallow punctures. Dltg depressed at middle, its lateral borders with erect setae dorsally, laterally and ventrally. In ♂♂ mediotergite VII raised posteriorly, covering part of genital capsule, with erect setae along posterior border. Lateral borders of sternite VIII, bearing prominent spiracles, visible from above laterally of genital capsule (Fig. 13). ♀♀ on tergites VIII and IX with punctures and erect setae, tergite VIII trapezoidal (21:5), tergite IX triangular (10:6) and projecting (Fig. 11).

Ventral side: Prosternum subquadrate, lateral margins carinate, hind border delimited by a suture, transversely rugose. Meso- and metasternum fused at middle, the latter forming a hexagonal plate, depressed, striate. Pleura striate with dispersed erect setae laterally. Metasternal scent gland channel thin, reaching to lateral border of metapleura. Sternites I+II fused, III-VI separated by a suture, surface shiny, sparsely punctured at middle, laterally rugose. Dispersed setae along posterior margin of sternites. Sternite VI in ♀♀ sinuate at middle and lateral. Sternite VII and VIII bipartite (Fig. 12). Spiracles II-VII ventral, close to margin, VII lateral and barely visible from above. Sternite VIII in ♂♂ forming a cuplike plate, covering the genital capsule, spiracles VIII on reflexed lateral borders, prominent and visible from above (Fig. 14).

Coloration: General colour reddish brown, clypeus and rostrum, antennal segment I and base of II, posterior half of pronotum, clavus and mostly legs paler. Dorsum reddish brown with paler spots around apodemal impres-

sions and scent gland openings and inner margin of laterotergites. Venter shows similar pattern.

Genital capsule relatively small, narrower than width of head across eyes, circularly rounded, flat, surface smooth and shiny with scattered shallow punctures and a few erect setae on posterior half. Dorsal opening with a separated sclerite on ventral rim which merges into a median projection (Fig. 21). Parameres with triangular base, body bladelike, thickened distally (Fig.23).

Discussion: *Isodermus dimorphus* sp.n. is the second species known from Tasmania and Australia. It is related to *Isodermus planus* ERICHSON, *Isodermus tenuicornis* USINGER & MATSUDA and *Isodermus gayi* SPINOLA having the rostrum arising at apex of head and a waisted shape, which is not in *Isodermus crassicornis* USINGER & MATSUDA and *Isodermus maculosus* PENDERGRAST. This species shows a peculiar dimorphism in the development of the anterolateral tooth on fore femora, where in male there is a strong tooth and dilated tibiae and a reduced small spine and nearly linear tibiae in female. From *Isodermus planus* ERICHSON the new species can be easily distinguished by generally smaller size, its dark coloration of abdomen with paler areas, shorter antennae with fourth segment as long as second, its second segment thickened apically in male, different form of pronotum with parallel anterolateral borders, different development of femoral spines in both sexes and dilated fore tibiae in male, more projecting tergites VIII and IX in female, with spiracles VIII lateral in female and also different parameres and a small genital capsule.

From the New Zealand species *Isodermus tenuicornis* USINGER & MATSUDA it differs by other antennal proportions, with segment four equal length as two (21:26,5 in *tenuicornis*), the projecting tergites VIII and IX in female. From *Isodermus crassicornis* USINGER & MATSUDA and *Isodermus maculosus* PENDERGRAST by different antennae, waisted shape and rostrum arising at apex of head.

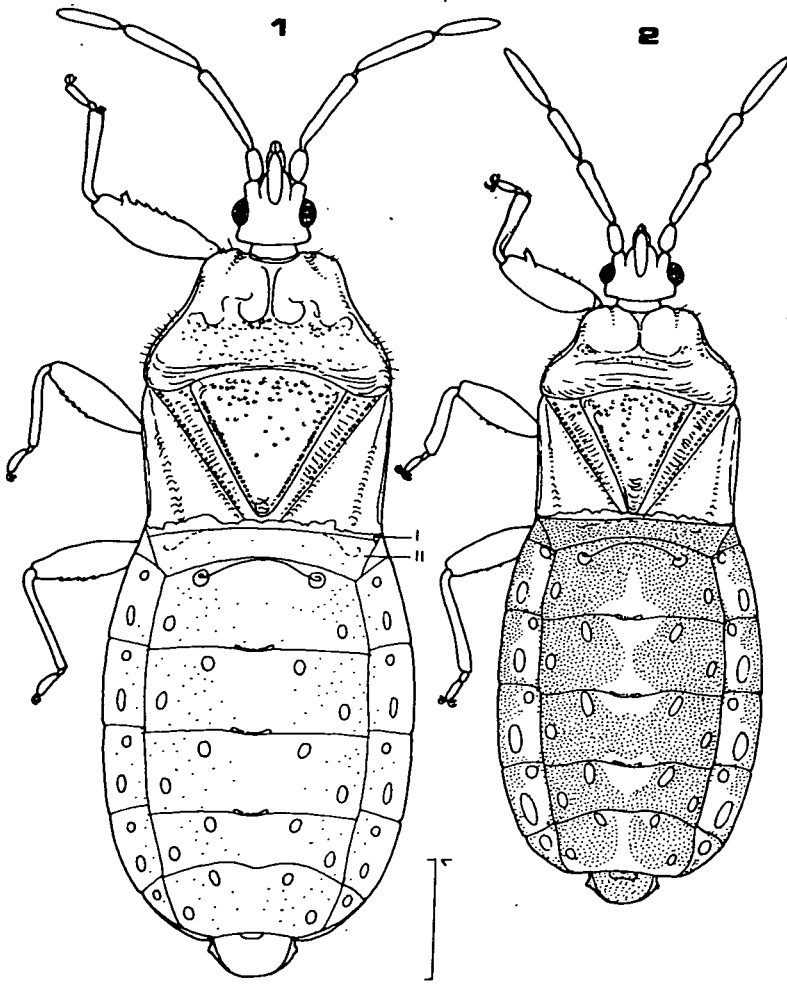
Isodermus gayi SPINOLA from South America is generally a larger and darker species with long pilosity on legs and dilated fore tibiae also in females. The median sclerite is bipartite in *Isodermus gayi* SPINOLA and the pa-

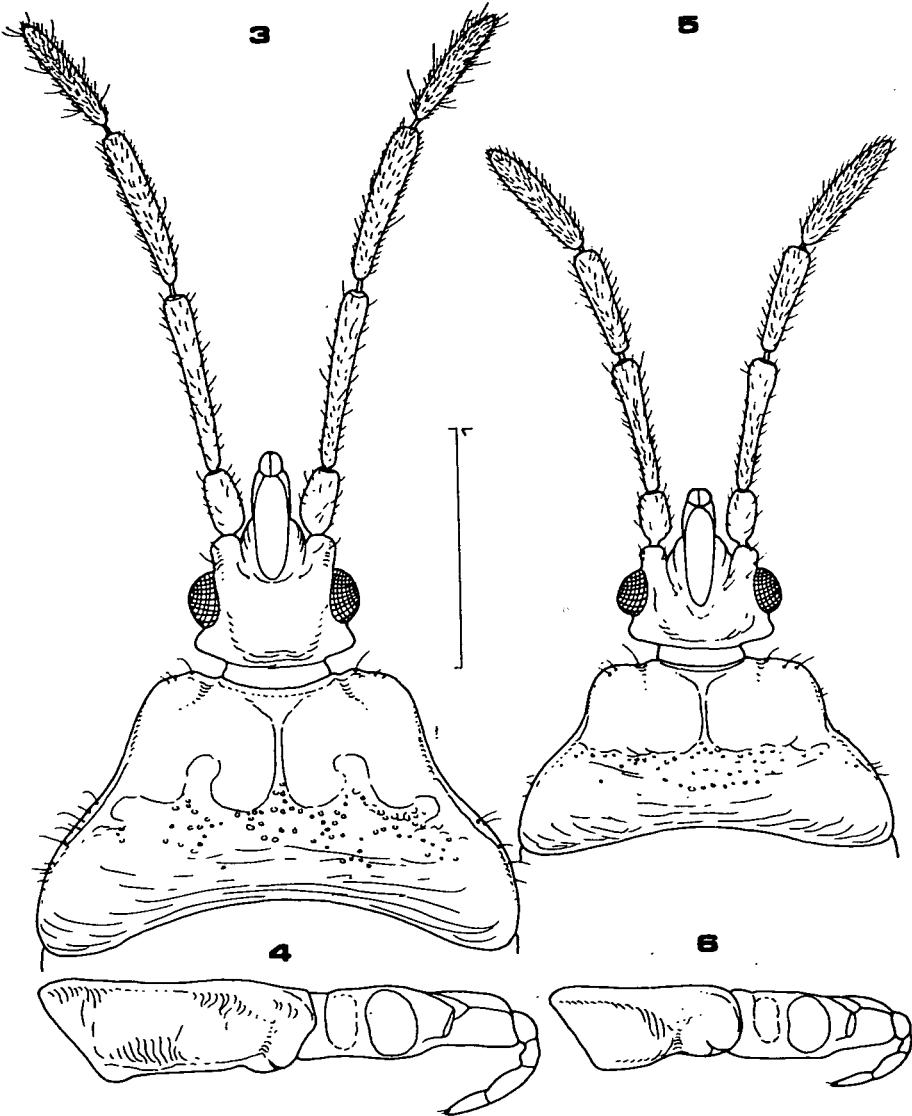
rameres also different.

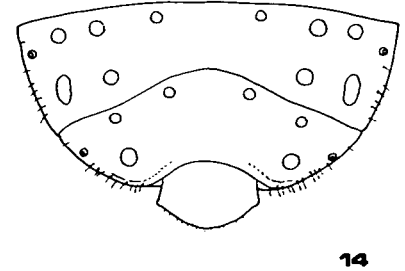
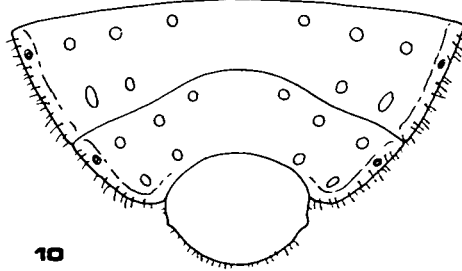
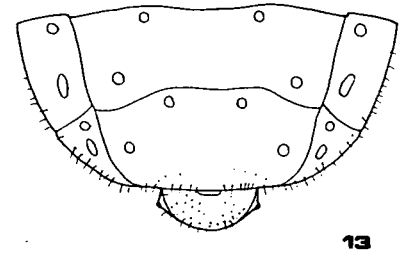
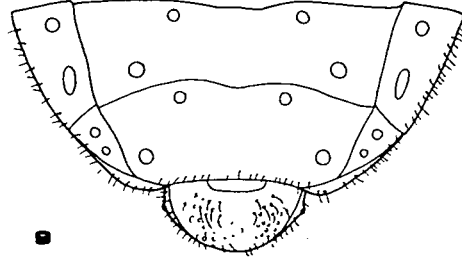
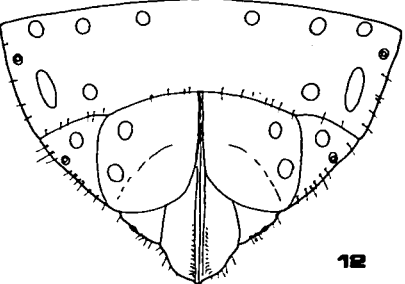
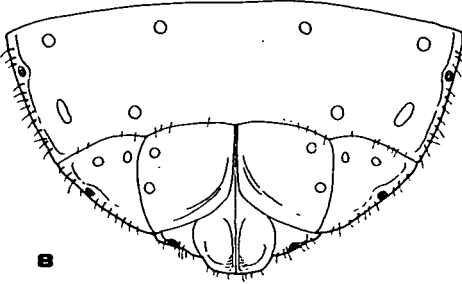
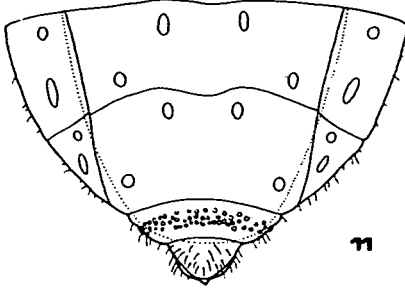
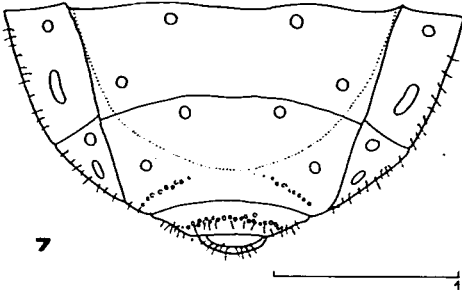
Walker (1873) has described *Isodermus vacillans* from Tasmania, which was synonymised by Usinger & Matsuda (1959:59) with *Isodermus planus* ERICHSON. This seems not to be correct. The description mentions "a lanceolate horn in front (of head) longer than the first joint of the antennae, slightly rounded sides of prothorax and rostrum as long as head". Although the first character is shared by *Isodermus planus* ERICHSON, the others are not in both species. They indicate, that *Isodermus vacillans* WALKER belongs rather to *Prosympiestus* than to *Isodermus*.

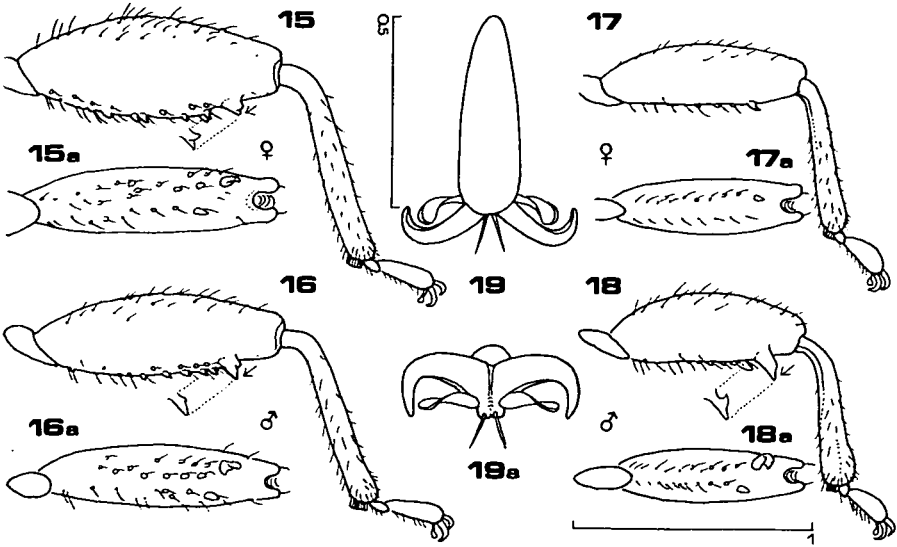
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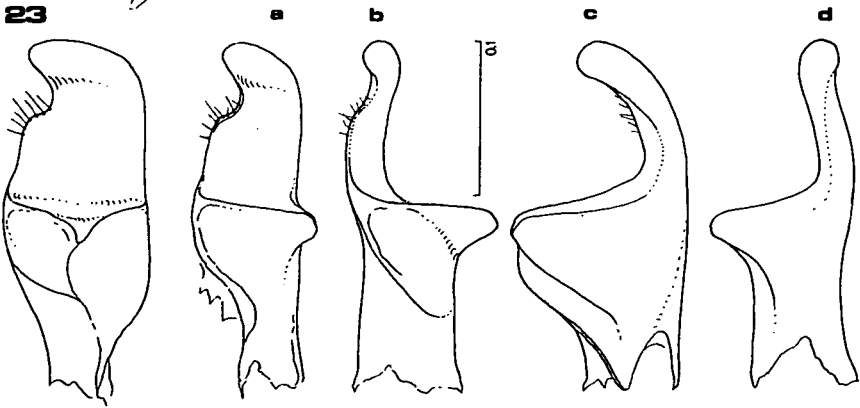
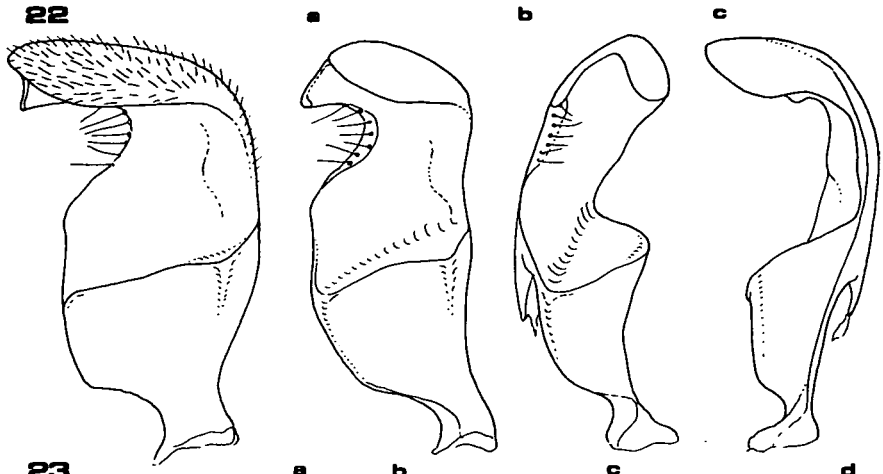
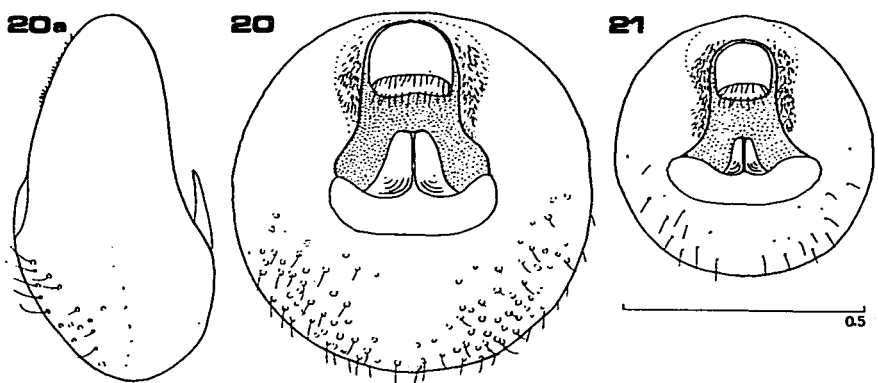
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- Figs. 1 - 2: 1-*Isodermus planus* ERICHSON, Lectotype ♂ ; 2-*Isodermus dimorphus* sp.n., Holotype ♂ .
- Figs. 3 - 6: 3-*Isodermus planus* ERICHSON, head and pronotum of ♂, 4 - lateral view; 5 - *Isodermus dimorphus* sp.n., head and pronotum of male, 6 - lateral view.
- Figs. 7-14: 7-10 *Isodermus planus* ERICHSON, terminal abdominal segments, 7 - ♀ dorsal, 8 - ♀ ventral, 9 - ♂ dorsal, 10 - ♂ ventral; 11-14 *Isodermus dimorphus* sp.n., terminal abdominal segments, 11 - ♀ dorsal, 12 - ♀ ventral, 13 - ♂ dorsal, 14 - ♂ ventral.
- Figs. 15-19: 15, 16, 19 *Isodermus planus* ERICHSON, left fore leg of ♂♀, 19 - claws; 17-18 *Isodermus dimorphus* sp.n., left fore leg of ♂♀.
- Figs. 20-23: 20, 22 *Isodermus planus* ERICHSON, 20 - genital capsule dorsal, 20a - lateral, 22a-c - left paramere; 21, 23 *Isodermus dimorphus* sp.n., 21 genital capsule dorsal, 23 - left paramere.











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