

## ACARI FROM OPERATION DRAKE IN NEW GUINEA

### 4. A NEW SPECIES OF *LEPTUS* (ERYTHRAEIDAE)<sup>1</sup>

BY R V. SOUTHCOTT

From Operation Drake, two vials of mites of the family Erythraeidae have been sent to me by Dr Robert DOMROW (see DOMROW, 1983). These contained larvae of the genus *Leptus* Latreille, 1976, collected at Buso, Papua-New Guinea, ectoparasitic upon insects. One vial contained three larvae of *Leptus draco* n. sp., and the other vial contained a single specimen of an indeterminable larva of *Leptus*. Taxonomic and other details are as follows :

Genus *Leptus* Latreille, 1796

***Leptus draco* n. sp.**

Figs. 1 A-E, 2 A-D, 3, 4

Description (principally from mounted Holotype specimen ACA2006C). Colour in life not recorded, presumably red. Idiosoma ovoid, flattened below, length (moderately fed) 895 µm, width 570 µm; overall length from tip of mouthparts to posterior pole of idiosoma 1075 µm.

Dorsal scutum triangular, with rounded angles, the anterior sensilla being only a little anterior to the level of the AL scutalae, and in a less sclerotized segment of the scutum; posterolateral borders of scutum concave (see Fig. 1 C). Scutalae rather clavate, with acute projecting barbs throughout most of the length, these being absent only

in a short proximal part of the shaft or scobillum. AL scutalae arise somewhat anterior and medial to the PL scutalae. Sensillary setae fine, tapering, sparsely ciliate in distal half.

The Standard Data (and other data) (in µm) are as follows :

	Holotype specimen ACA2006C	Paratype specimen ACA2006A	Paratype specimen ACA2006B*
AW	86	79	—
PW	96	95	—
SBa	13	15	—
SBp	13	15	—
ISD	62	62	—
L	93	89	—
W	104	102	—
A-P	12	13	—
AL	78	80	—
PL	78	75	—
ASens	43	46	—
PSens	62	66	—
DS	38-50	36-53	—
'Oc.'	46	49	—
CDS	43-52	46-53	—
PDS	38-47	36-47	—
GeI	209	206	207
TiI	298	300	295
TaI	205	195	206
GeIII	191	182	194
TiIII	395	395	389
TaIII	187	178	193
TiIII/TiI	1.33	1.32	1.32

\* Scutum obscured

1. The previous part in this series was DOMROW (1983).

Dorsum of idiosoma with about 44 setae, slightly expanded distally, arranged in vague transverse rows.

Venter of idiosoma : sternale I tapering, pointed, well ciliated, 73  $\mu\text{m}$  long ; sternale II similar, 56  $\mu\text{m}$  long ; between area of coxae II-III are 4 well-ciliated setae, blunted terminally, the anterior pair 166  $\mu\text{m}$  apart, 34  $\mu\text{m}$  long, the more posterior pair level with coxae III, 90  $\mu\text{m}$  apart, 68  $\mu\text{m}$  long. Posterior opisthosomal setae about 20 in number, arranged in 4 more or less transverse rows ; the more anterior of these tapering, ciliated, the more posterior ciliated, somewhat expanded distally, 42-56  $\mu\text{m}$  long.

Coxalae 1, 1, 1. Coxalae I long, ciliated, pointed, 113  $\mu\text{m}$  ; II blunt-ended, ciliated, 36  $\mu\text{m}$  ; III blunt-ended, ciliated, 58  $\mu\text{m}$ .

Legs normal, slender ; I 1160  $\mu\text{m}$  long ; II 1020  $\mu\text{m}$  ; III 1315  $\mu\text{m}$  (all lengths include coxae and claws). Tarsus I long and curved, 205  $\mu\text{m}$  long by 24  $\mu\text{m}$  high ; TiI/GeI (see table above) 1.43. Tarsus III 187  $\mu\text{m}$  long by 20  $\mu\text{m}$  high ; TiIII/GeIII (see table) 2.07. Leg scobalae normal, pointed, ciliated. Basifemoral formula 2, 2, 1 ; telofemoral 5, 5, 5.

Genu I has specialized setae SoGeI.62d, VsGeI.93d. Tibia I has specialized setae So.TiI.70d, SoTiI.86d, VsTiI.90d. Tibia II has specialized setae SoTiII.04d, SoTiII.88d. Tibia III has specialized seta SoTiIII.02d.

Pedotarsal claws : anterior strong, with falciform hook, the shaft with a row ventrally of slender cilia ; middle (empodium) falciform, slender, without cilia, overreaching the two neolateral claws ; posterior slender, without hook, slightly retroflexed, with strong cilia.

Gnathosoma as figured, the chelae bases showing an abrupt transition from a rounded posterior part to a narrowed anterior part of about the same length, moderately chitinized ; fused chelae bases 104  $\mu\text{m}$  across. Anterior hypostomala simple, 31  $\mu\text{m}$  long ; galeala not identified. Palpal setal formula 0, 0, 1, 1, 3, 7. Palpal supracoxala about 5  $\mu\text{m}$  long. Palpal tibial claw (odontus) simple falciform. Palpfemoralia tapering, strongly barbed, palpigenuala expanded, clavate, strongly barbed.

### ■ Collection data

Three larvae parasitizing *Neopromachus* sp. (Phasmida : Phasmatidae : Lonchodinae : identified by J. A. MARSHALL, Commonwealth Institute of Entomology, London), "on thorax, even well up on spines thereon", Sept., 1979, Buso, Papua, New Guinea (R. DOMROW) ("Lot 9"). Specimen ACA2006C, partially fed, Holotype (to British Museum (Nat. Hist.)) ; Paratype ACA2006B (well fed) (to Brit. Mus.) ; Paratype ACA2006A (partially fed) (to be deposited in South Australian Museum).

### ■ Remarks on taxonomy

The genus *Leptus* is known on a world-wide basis (see SOUTHCOTT, 1961), including Papua-New Guinea. A large proportion of species are described from the larval instar. Several species of the genus have been described from larvae for the Indonesia-New Guinea-Australia region.

*Leptus draco* may be distinguished from all previously described larval species (at least those that have been recognizably described) on the grounds of scutum, body setae, leg setae, palpal setae and other gnathosomal characteristics.

By the key of OUDEMANS (1912) it comes nearest to *L. siemsseni* (Ouds.) (= *Achorolophus siemsseni* Oudemans 1910 (1910 c), 1912) from China, but differs in having a more rounded posterior element of the chelae bases, and in having the dorsal scutum with its anterior part relatively less chitinized. From the only previously described larval *Leptus* from New Guinea, *L. debeauforti* (Ouds., 1905) (= *Achorolophus debeauforti* Oudemans 1905 a, b, 1906), described from a single specimen obtained upon an ant at Humboldt Bay, New Guinea (now Teluk, West Irian) on 17.v.1903, it differs in not having the areas of chitinization which surround each lateral pair of the AL + PL scutalae.

From *L. terebrans* Vitzthum, 1926, from South Sumatra, it differs by having clavate, palpigenualae, in the frying-pan shape of the chelae bases when seen from above as against the rather attenuated-pear shape of *L. terebrans*, and in various other characters.

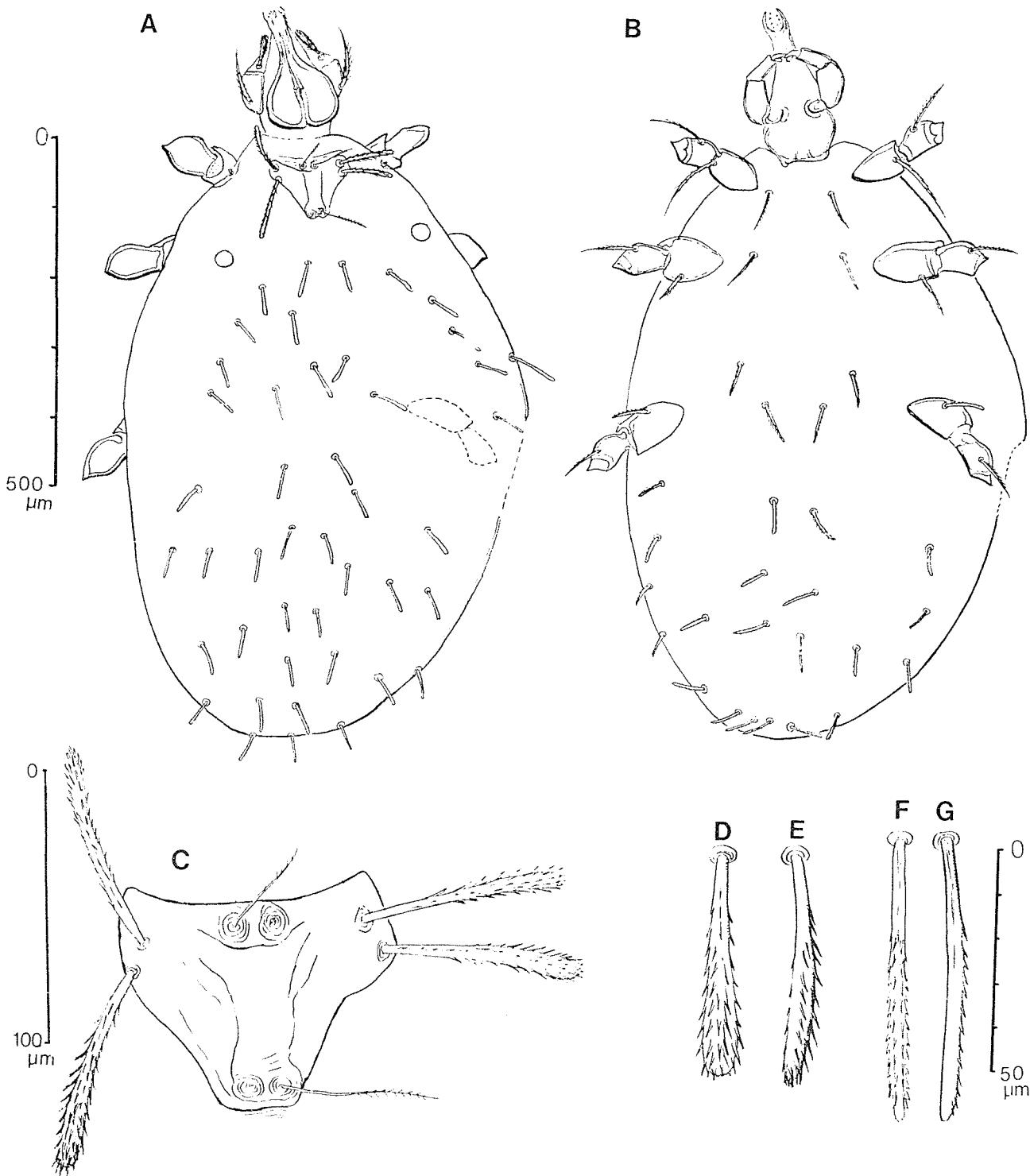


FIG. 1 A-E : *Leptus draco* n. sp. A. — Holotype from above, legs omitted beyond trochanters. B. — Same from below. C. — Holotype, dorsal scutum. D, E. — Dorsal idiosomal setae of holotype. F, G : *Leptus* sp., dosal idiosomal setae. (A, B to scale on left ; D-G to scale on right.)

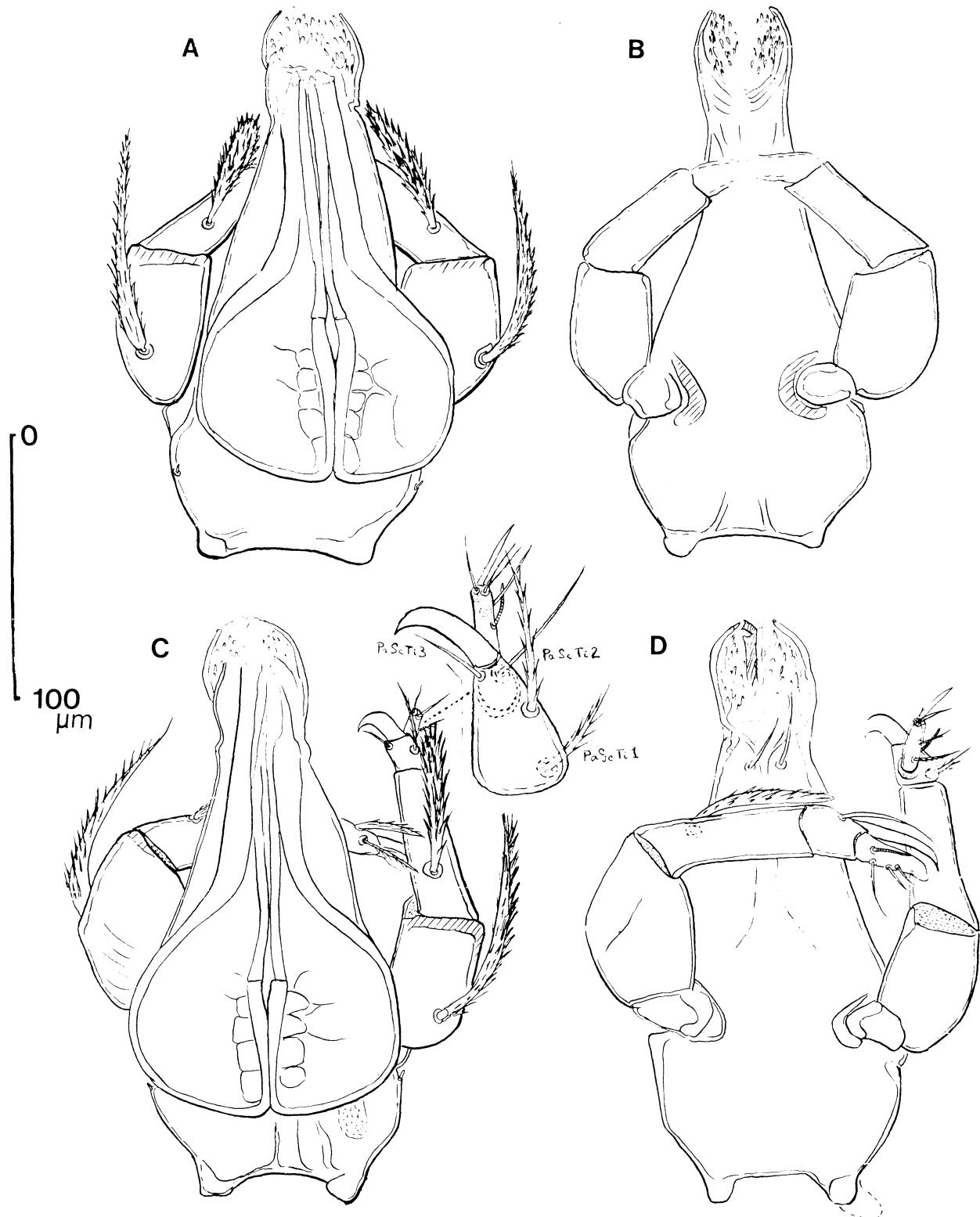


FIG. 2 : *Leptus draco* n. sp. Gnathosoma. A. — Holotype, above. B. — Same, below. C. — Paratype ACA2006A from above. D. — Same, below. (All to scale shown, except enlargement of palp tip in C ; not to scale.)

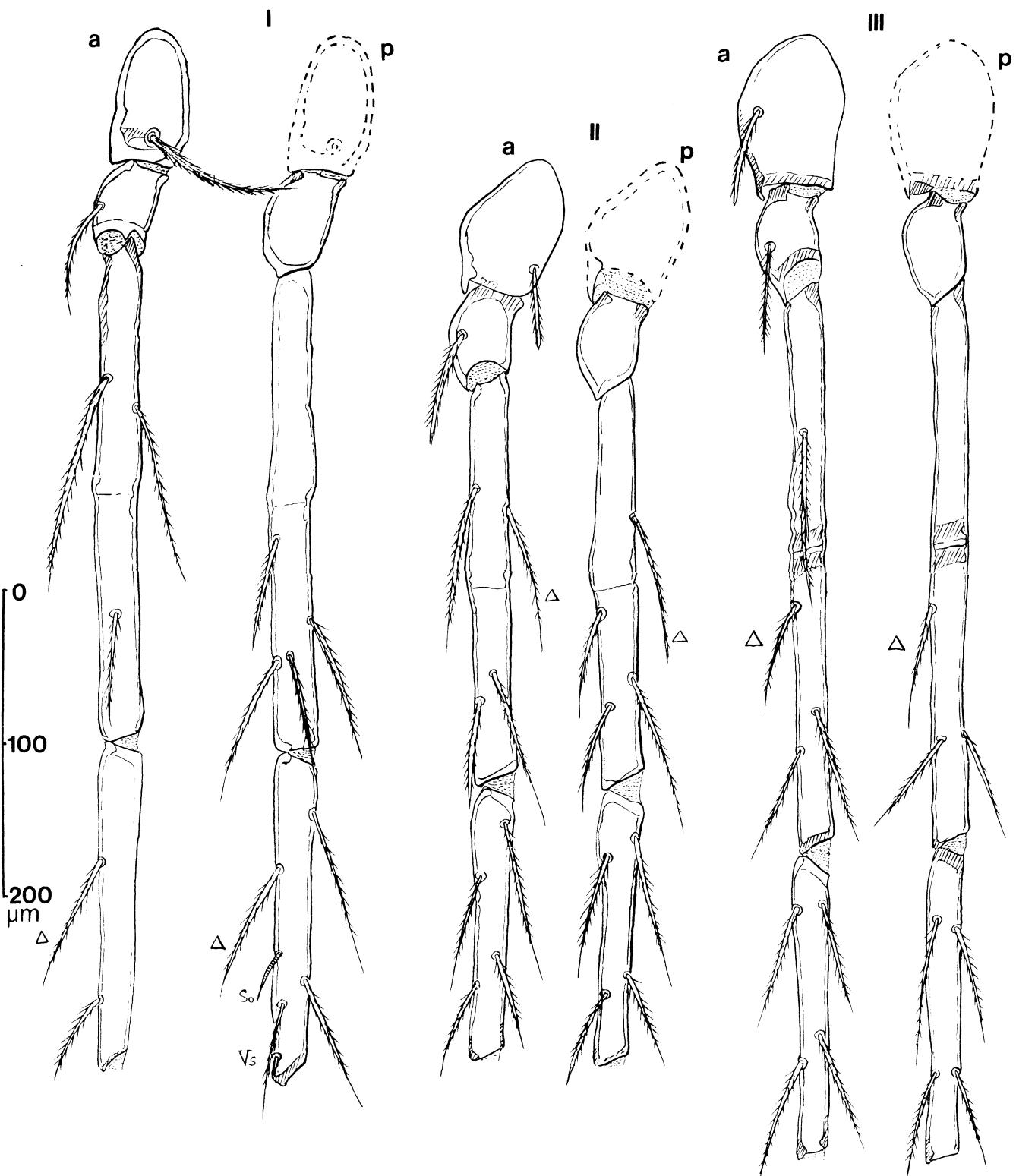


FIG. 3 : *Leptus draco* n. sp., Holotype. Legs I-III, coxae to genua. a = anterior aspect, p = posterior aspect ; to standard symbols. All to scale shown.

From the Australian *L. bathypogonus* Womersley, 1934 it differs in having only one palpigenuala; from *L. chelonethus* Womersley, 1934 it differs in having a relatively poorly chitinized anterior part to the scutum, the ASens anterior to the level of the AL scutalae, and a clavate palpigenuala. From *L. anomalus* Southcott, 1946 (Australia) it differs in having only one palpigenuala, elongate and less numerous sternal setae, and in various other characters.

SHIBA (1976) described three species of larval *Leptus* from Malaya. From these species *L. draco* differs in number of particulars in each case. Thus in *L. calidus* Shiba the dorsal scutum is longer than wide, and the SD are to 79  $\mu\text{m}$  long. In *L. hozumii* Shiba the idiosomal setae are strongly ciliated, the DS being ciliated throughout the length, appearing almost as cylindrical, and the legs are much shorter. In *L. cameronensis* Shiba the DS are also ciliated throughout the length, the dorsal scutum is much smaller, almost pyriform in outline, and generally striate instead of porose, and the legs are short.

*L. draco* differs from the Japanese *L. kyushuensis* Ishii, 1953, and from four of the species described by KAWASHIMA (1958) from Japan (*L. saigusai* Kaw., *L. gifuensis* Kaw. (the latter was re-described by SHIBA, 1969), *L. hidakai* Kaw., and *L. japonicus* Kaw., in having a clavate palpigenuala. From *L. asahinai* Kawashima, 1958 it differs in having expanded DS, and the number of the DS is about 44 instead of 74.

Among the south-eastern European species considered by BERON (1975) it comes nearest to *L. ignotus* sensu Beron, but his species has up to about 90 dorsal idiosomal scutalae instead of the 44 of *L. draco*. (It should be noted that *L. ignotus* Ouds., as re-described by OUDEMANS (1912, pp. 197-198) is stated to possess about 120 dorsal idiosomal scutalae, and hence BERON's species is unlikely to be conspecific with *L. ignotus* Ouds.). From *L. killingtoni* Turk, 1945, from England, *L. draco* differs in having 44 instead of about 90-100 DS; additionally, *L. killingtoni* possesses three solenogenuala I, according to TURK's (1945) Fig. 15.

*Leptus* sp.

Fig. 1 F, G

Operation Drake yielded a single specimen of another larval species of *Leptus*. As it is a fully-fed larva, the dorsal scutum has assumed a near-vertical pose upon the idiosoma, and the specimen is thus unsuitable for detailed description.

The dorsal idiosomal setae have less outstanding barbs than those of *L. draco*, the barbs being present in the distal 2/3 of the setae rather than throughout the length. The dorsal setae are also significantly longer, 49-66  $\mu\text{m}$  long.

■ Collection data

Recorded as "scarlet mite on wasp, Buso, Lot 26B, Papua-New Guinea, IX.1969, Angela WILKINS"; identification number ACA2007; specimen to be deposited in Brit. Mus. (Nat. Hist.), London.

■ Remarks on taxonomy and biology.

It is not at present possible to compare this specimen, with its poorly visible scutum, with *L. debeauforti* Oudemans, also obtained from a New Guinea hymenopteran. OUDEMANS' sole specimen of the latter species had the mouthparts missing, and OUDEMANS, in his various references (1905 a, b; 1906; 1910 a, b; 1912) to *L. debeauforti*, in the manner of the day, provided almost no metric details of the specimens. OUDEMANS provided a figure of a dorsal seta, but as he commented (1906, p. 135) "my figure 81 is not well done", and it cannot be used for comparison.

a) From the European *L. pyrenaeus* André, 1953 (from a scorpion), it differs in having only one palpigenuala, and likewise from the African *L. benzaliensis* Fain and Elsen, 1972, and *L. glossinarum* F. and E. From the African *L. carpenteri* F. and E., 1972 and *L. maringensis* F. and E., it differs in having the palp genualae clavate, and in having the AL and PL scutalae subequal, as against generally unequal. (The four last-named species were obtained parasitic upon tsetse flies, subfamily Glossininae).

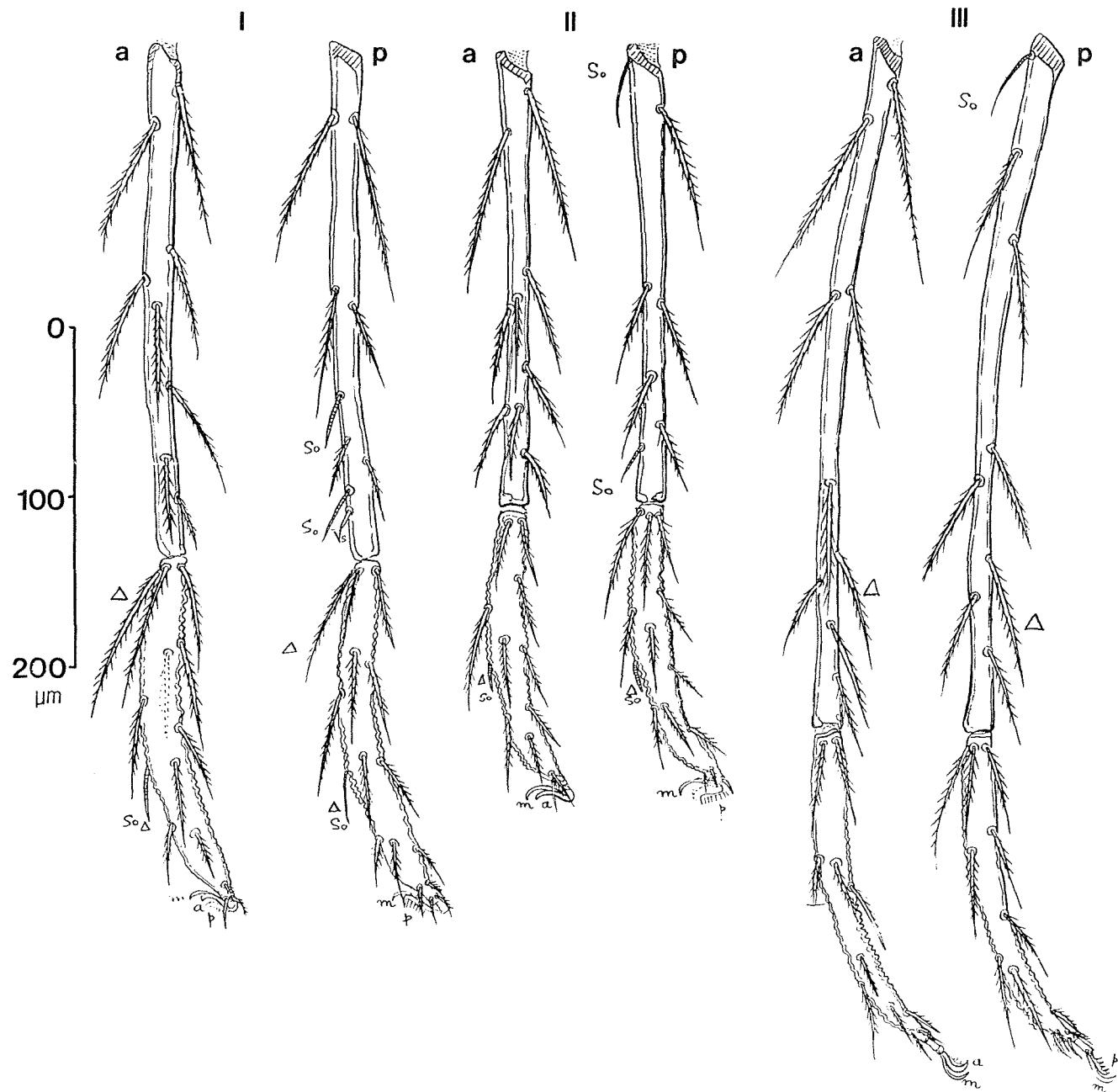


FIG. 4 : *Leptus draco* n. sp., Holotype. Legs I-III, tibiae and tarsi. a = anterior aspect, p = posterior aspect ; to standard symbols. All to scale shown.

b) From *L. phylloretiae* Feider, 1956, described from Jugoslavia, it differs in the more attenuated leg segments, in the position of the ASens anterior to the AL scutalae, in the longer scutalae, in having the posterior margin to the chelae bases more rounded, and in other characters. It differs from *L. galerucae* Feider, 1967 in a number of characters ; this latter species has a very broad scutum, and the idiosoma bears dorsally about 108 setae ; the central ventral setae are directly anterior to the third intercoxalae ; and in various other characters.

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Paru en décembre 1984.

CORRIGENDA

Au Tome XXV, Fascicule 4 d'*Acarologia*, dans l'article du Dr R. V. SOUTHCOTT « Acari from Operation Drake in New Guinea 4. A new species of *Leptus* (Erythraeidae) », à la page 356, colonne de droite, lignes 32 à 42 (« a) From the European *L. pyrenaeus* André ... upon tsetseflies, subfamily Glossininae. »), et

à la page 358, colonne de gauche, ligne 1 à 12 (« b) From *L. phylotretae* Feider ... and in various other characters. ») :

supprimer les lettres « a) » et « b) » ; placer et lire ces deux paragraphes à la suite du texte de la colonne de gauche de la page 356, c'est-à-dire après « ... *L. killingtoni* possesses three solenogenualae, according to TURK's (1945) Fig. 15. » ; les deux paragraphes appartiennent à la description du *Leptus draco* et non à celle du *Leptus* sp.

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