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TERMITOPHILOUS ISOPODS
FROM SOUTHERN AFRICA

By

BRIAN KENSLEY

Cape Town Kaapstad

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By
BRIAN F. KENSLEY

South African Museum, Cape Town

(With 7 figures and 1 table)

[MS. accepted 15 October 1970]

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INTRODUCTION

A collection of termitophilous isopods taken over the last seven years by Dr. W. G. H. Coaton and colleagues of the Plant Protection Institute, Pretoria, was submitted to the South African Museum for identification. The isopods have been collected from several localities in the Karoo and Namaqualand, Cape Province, and also from South West Africa. The localities involved may be seen in Figure 1. Seven species of termites are involved as hosts to the isopods. The present paper is intended merely as a systematic account of the specimens taken, as biological data concerning these unusual animals are scarce. Holotypes and allotypes are housed in the South African Museum, and are given S.A.M. catalogue numbers. Paratypes have been divided between the South African Museum, Cape Town, and the National Collection of Insects, Pretoria. The latter specimens are designated with 'T' numbers. Where available, duplicate material has also been donated to the Muséum National d'Histoire Naturelle, Paris.

DESCRIPTION OF THE MATERIAL

Suborder ONISCOIDEA

Tribe SYNOCHETA

Superfamily STYLONISCOIDEA

Family **Titaniidae**

Titana mirabilis Budde-Lund

Titana mirabilis Budde-Lund, 1909: 65. Barnard, 1932: 208. Vandel, 1952a: 86.

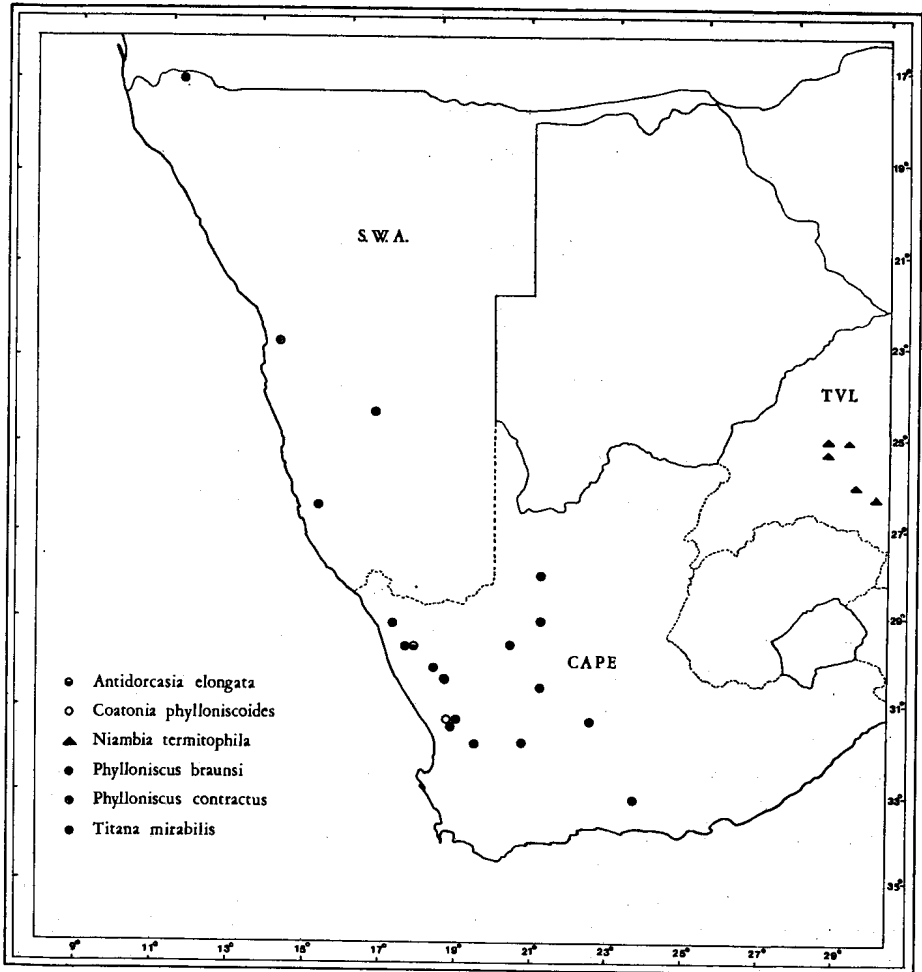


Fig. 1. Map showing collecting localities.

Material

<i>Cat. No.</i>	<i>No. Specimens</i>	<i>Locality</i>	<i>Host species</i>
T694	1 ♂	Vanrhynsdorp	<i>Microhodotermes viator</i>
T695	3 ♀	Vanrhynsdorp	<i>Microhodotermes viator</i>

Phylloniscus braunsi Purcell

Fig. 2

Phylloniscus braunsi Purcell, 1903: 409. Barnard, 1932: 206.

Phylloniscus braunsi var. *eutheles* Barnard, 1932: 207.

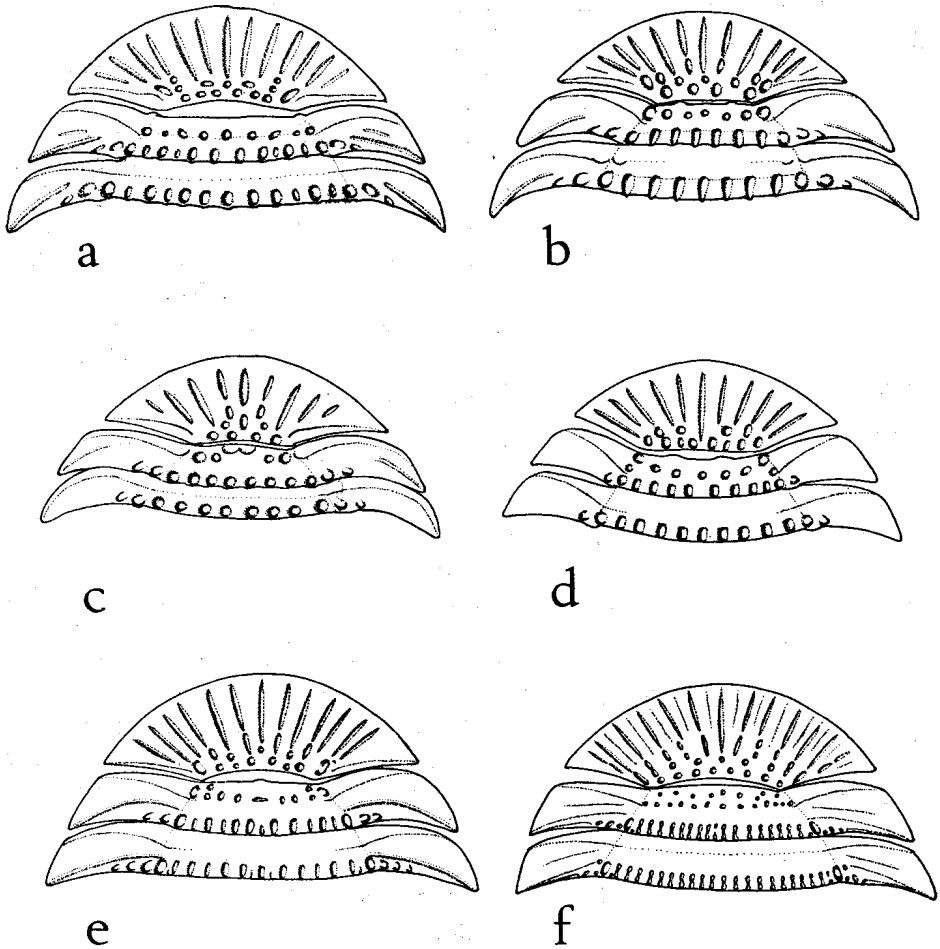


Fig. 2. *Phylloniscus braunsi*. Head and first two thoracic segments in dorsal view showing variation.

Material

For convenience the available material has been divided into six arbitrary groups, corresponding to Figure 2 *a-f*, to give some idea of some of the variation in the species. Figure 2*a* is of the holotype, Figure 2*b* that of the variety *eutheles*.

Host Species	Form (Fig. 2)	Cat. No.	Specimens	Locality
<i>Hodotermes mossambicus</i>	d	T99	2 ♀	Kenhardt, C.P.
	d	T100	1 ♀	Kenhardt, C.P.
<i>Macrotermes subhyalinus</i>	e	T357	5 ♂	Maltahöhe, S.W.A.
	c	T479	3 ♀	Epupa Falls, S.W.A.

<i>Host Species</i>	<i>Form</i>	<i>Cat. No.</i>	<i>Specimens</i>	<i>Locality</i>
<i>Microhodotermes viator</i>	d	T97	1 ♂	Williston, C.P.
	d	T98	1 ♀	Mertenhof, C.P.
	d	T196	1 ♂ 3 ♀	Williston, C.P.
	d	T198	2 ♀	Williston, C.P.
	d	T199	1 ♀	Beaufort West, C.P.
	d	T699	1 ♂	Vanrhynsdorp, C.P.
	d	T746	2 ♂ 1 ♀	Bitterfontein, C.P.
	f	T353	2 ♂ 2 ♀	Aus/Lüderitzbucht, S.W.A.
	f	T740	4 ♂ 1 ♀	Springbok, C.P.
	f	T763	1 ♀	Steinkopf, C.P.
<i>Trinervitermes trinervoides</i>	d	T747	3 ♂ 2 ♀	Garies, C.P.
	d	T750	3 ♀	Garies, C.P.

Remarks

From the present material, it can be seen that this species is widely distributed through the Cape Province and South West Africa. The type locality is Willowmore, C.P., while the variety *eutheles* was described from Upington, C.P., and differed from the type in dorsal sculpturing. It would seem that the species is variable with regard to the pattern and the number of dorsal tubercles. By far the commonest is that of the Namaqualand-Karoo form, but at least five other patterns may be distinguished. No differences in mouthparts or other appendages could be detected in these forms, and the erection of subspecies could not be justified. These variations are probably due to the semi-permanent isolation of scattered populations.

Phylloniscus contractus n. sp.

Fig. 3

Description

Body twice longer than wide, evenly oval in outline, bearing numerous scattered scales. Head dorsally flattened, with several rounded and elongate tubercles, anterior margin semicircular, lateral corners acute, completely covering antennae when latter folded. First pereion segment, anterior margin with row of six small tubercles. Posterior third of segment demarked by slight ridge, forming a broad band bearing row of eight broad elongate tubercles. Pereion segments two to seven each with posterior band bearing row of 10 elongate tubercles. More posterior segments have the tubercles posteriorly pointed. Epimera of segments one to seven well separated, each bearing slightly curved ridge in anterior portion. Pleon segments one and two short, narrow, having no free epimera, each bearing row of four slightly elongate posteriorly pointed tubercles, some indication of lateral tubercles, each with free epimerite. Telson apically having two rounded lobes, laterally concave. First antenna

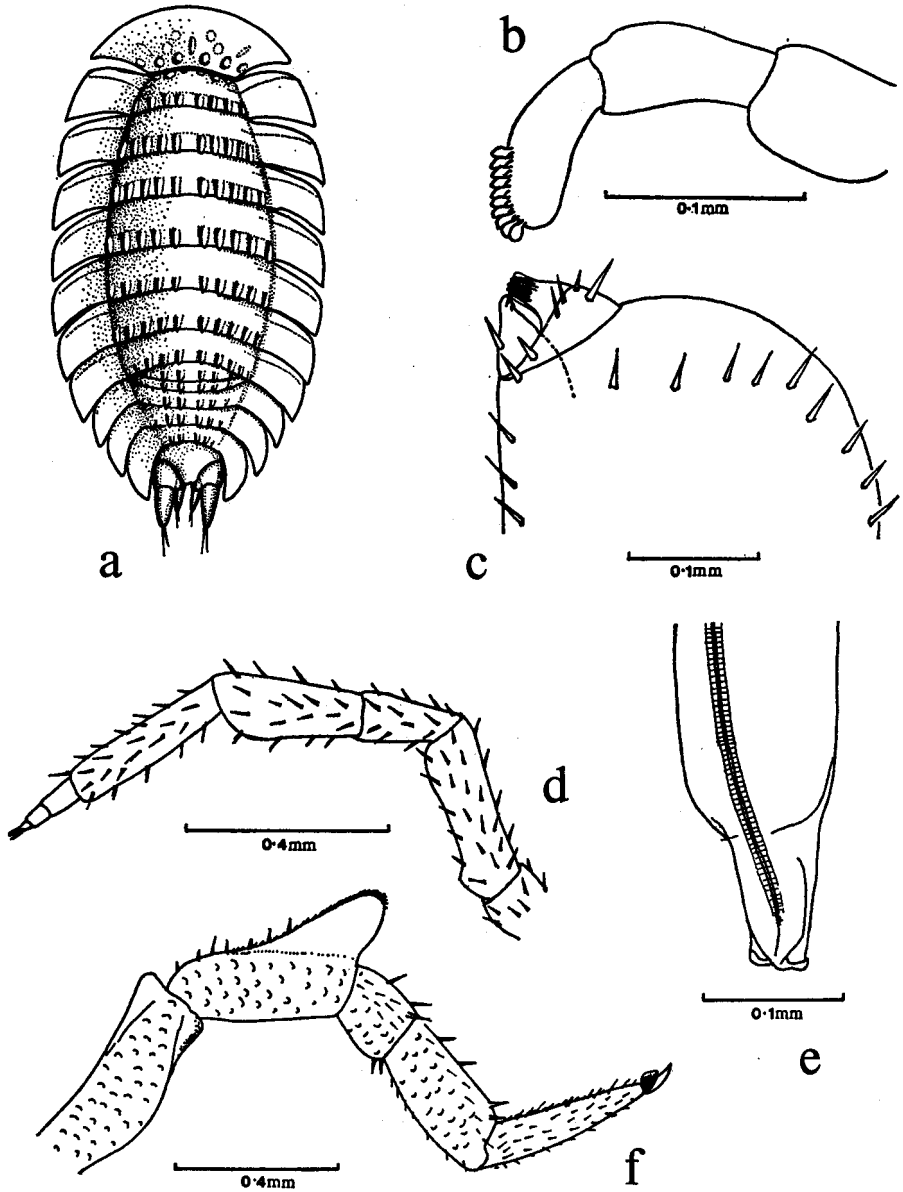


Fig. 3. *Phylloniscus contractus*

- a. Holotype in dorsal view.
- b. First antenna.
- c. Maxilliped.
- d. Second antenna.
- e. Apex of inner ramus, second pleopod, male.
- f. Seventh pereopod, male.

curved, three-segmented, two distal segments equal in length, terminal segment bearing regular row of aesthetascs. Second antenna terete, with five large basal segments, flagellum of three small segments. Left mandible bearing two penicils, right bearing one, no molar penicils present. First maxilla with inner lobe apically setose, bearing two setose penicils, upper smaller than lower. Outer lobe bearing three large simple spines, three slender spines, two very slender penicils terminally. Second maxilla consisting of single apically setose lobe. Maxilliped bearing short palp, latter curved over endite, bearing several spines and terminal brush of setae. Endite reduced, lacking terminal penicil. Dactyls of all pereopods bearing fine lamellar dactylar organ as in *P. braunsi*. Genital apophysis lanceolate. First pleopod male as in *P. braunsi*, second pleopod male apically more slender than in latter species. Uropod outer ramus twice length of inner, both terete.

Material

	Cat. No.	Specimens	Length (mm)	Locality	Host Species
Holotype	S.A.M. A12832	1 ♂	5.9	19 km ex Swakopmund	<i>Hodotermes</i> <i>mossambicus</i>
Allotype	S.A.M. A12833	1 ovig ♀	5.1	19 km ex Swakopmund	<i>Hodotermes</i> <i>mossambicus</i>

Remarks

The present specimens are placed in the genus *Phylloniscus* because of the similarity in the maxilliped, the first antennae, first and second pleopods telson with *P. braunsi*, hitherto the only species of the genus. Several differences however seem to warrant the separation of a new species. The most obvious of these differences is the body shape, the present species being oval/elongate unlike the almost circular *P. braunsi*. *P. contractus* is also more convex dorsally, the head lacks elongate tubercles, the second antenna bears almost spinose setae, the ischial lobe of pereopod seven in the male is not as spinose as in the previous species, the inner uropod ramus is not lamellar. Pleopod two of the male is apically more slender. Why there should be one species of the genus near Swakopmund, while from the Kunene River in the north to Namaqualand and the Karoo in the south one variable species is to be found, is open to discussion. Dr. Coaton (personal communication) states that there is no isolation of the termite host species, as colonies of *H. mossambicus* occur from the coast, through Pronamib/Namib desert country, right into the escarpment and inland plateau. The possibility does exist that a particular species of *Phylloniscus* is able to survive in the Namib conditions, where *P. braunsi* would be less well adapted. Until more intensive collecting can be done, further speculation will be of little use.

COATONIA n. gen.

Eyes absent, head produced over bases of second antennae. Body circular, depressed. Epimera of first pereion segment embracing head. Pleon not much

narrower than pereion. Mandibles with well-developed molar process. Right mandible with one penicil, left with two; no molar penicil present. Inner lobe of first maxilla with three penicils. Maxilliped with broad exopodite, palp with terminal setal brush, endite with terminal penicil. Second antenna with fourth and fifth peduncle segments prominent, flattened, flagellum three-segmented. Pereiopods six and seven in male bearing modifications. Body and appendages covered with minute semicircular scales, those on appendages sometimes thorn-like.

Coatonia phylloniscoides n. sp.

Figs 4, 5

Description

Body circular in outline, dorso-ventrally flattened, unpigmented, covered with numerous minute scales. Head embraced by epimera of first pereion segment, bearing ten rounded tubercles in the posterior half. First four pereion segments bearing anterior row of circular tubercles (up to 12/segment) and posterior row of elongate tubercles (up to 11/segment). Each epimerite bearing single proximal tubercle. Anterior row of circular tubercles decreasing in number posteriorly, one on first pleon segment. Posterior row of tubercles present on all segments except last pleon segment. First antenna three-segmented, terminal segment bearing eight or nine aesthetascs. Second antenna flattened, especially fourth and fifth segments. Flagellum of three segments, about one-third length of fifth peduncle segment. Left mandible with two penicils at base of lacinia mobilis, no molar penicil. Right mandible with lacinia mobilis reduced, single penicil at its base, no molar penicil. Inner lobe of first maxilla bearing three distal penicils, terminal penicil bulbous. Outer lobe bearing nine or ten chitinous teeth plus one slender penicil. Second maxilla lamellar, inner terminal lobe with numerous fine and several stout setae. Maxilliped having broad spinose epipodite, palp of fused segments, distally tapering, bearing brush of stiff setae terminally, endite with three distal spines, plus single terminal penicil. Pereiopods covered with flat semicircular scales, numerous split spines, particularly on ventral surfaces. Very delicate dactylar organ present. Pereiopods six and seven differentiated in male. Sixth with dense brush of fine setae on disto-dorsal surface of propodus. Seventh pereiopod with ischium having hooked leaf-shaped lobe proximo-ventrally, ventral surface extended to form broad lobe, apex of which bearing numerous fine setae. First pleopod male with elongate triangular lamellar exopod. Endopod with stout basal segment, and slender tapering distal segment. Lanceolate genital apophysis situated between first pleopods. Endopod of second pleopod elongate, stout, with complex convoluted terminal portion. Third to fifth pleopods with quadrate exopods and much smaller roughly quadrate endopods. Telson broadly triangular, apically rounded. Uropod with stout base, exopod terete, slightly tapering, with two terminal setae. Endopod inserted at same level as exopod, terete tapering, little shorter than exopod, with two terminal setae.

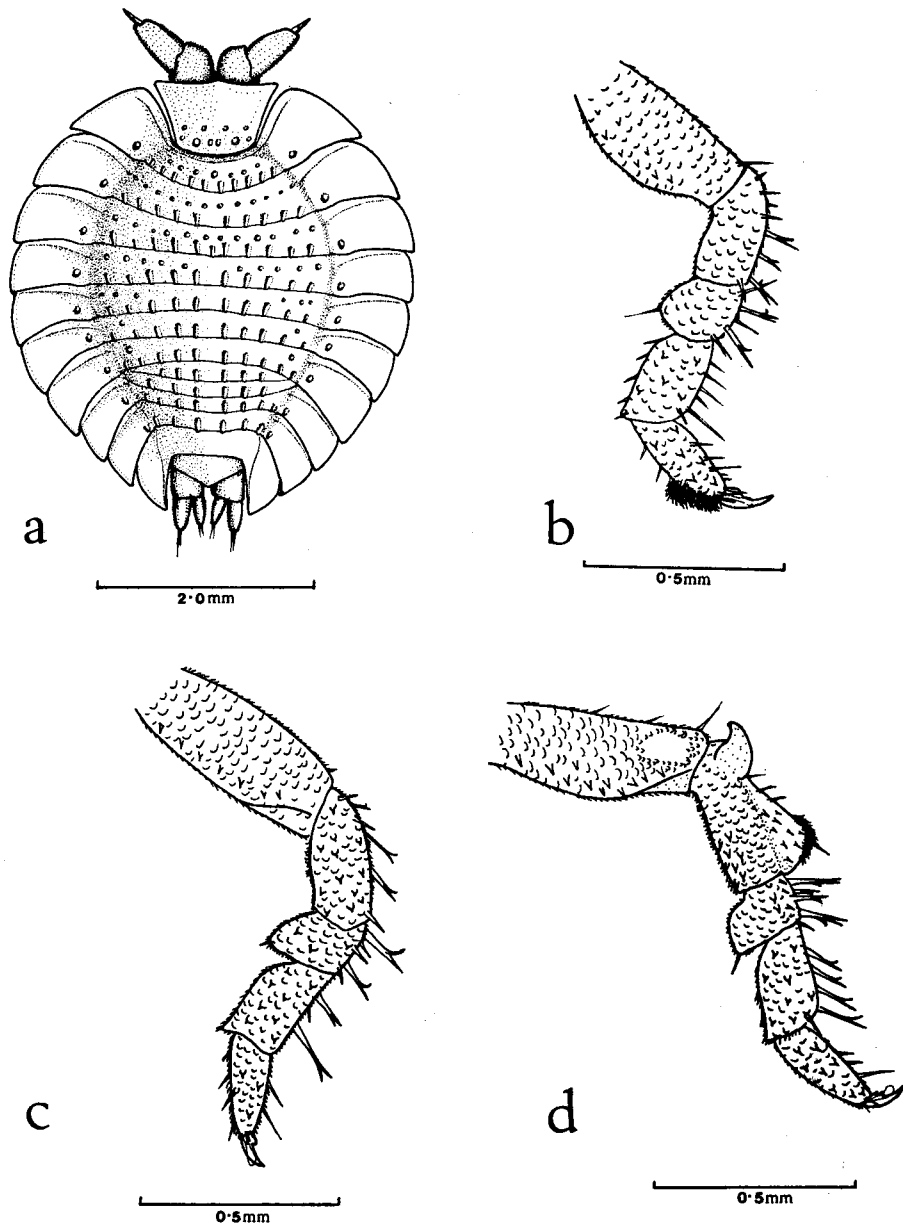


Fig. 4. *Coatonia phylloniscoides*

- a. Holotype in dorsal view.
- b. Sixth pereopod, male.
- c. Seventh pereopod, female.
- d. Seventh pereopod, male.

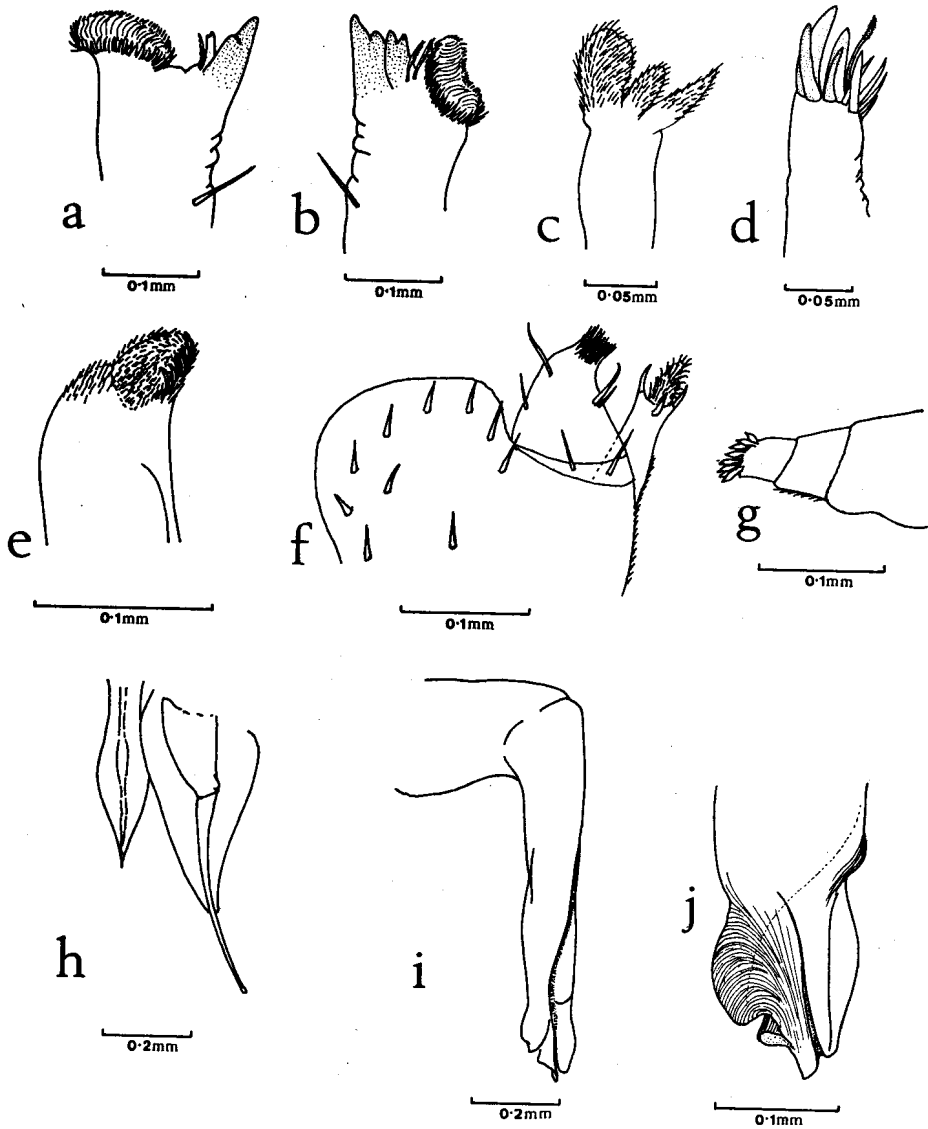


Fig. 5. *Coatonia phylliscoides*

- a. Right mandible.
- b. Left mandible.
- c. Inner lobe of first maxilla.
- d. Outer lobe of first maxilla.
- e. Second maxilla.
- f. Maxilliped.
- g. First antenna.
- h. Genital apophysis and first pleopod, male.
- i. Inner ramus of second pleopod, male.
- j. Apex of inner ramus of second pleopod, male.

Material

	<i>Cat. No.</i>	<i>Specimens</i>	<i>Length</i> (mm)	<i>Locality</i>	<i>Host Species</i>
Holotype	S.A.M. A12829	1 ♂	3.1	Vanrhynsdorp	<i>Microhodotermes</i> <i>viator</i>
Allotype	S.A.M. A12830	1 ovig ♀	3.2	Vanrhynsdorp	<i>Microhodotermes</i> <i>viator</i>
Paratypes	S.A.M. A12831	6 ♂ 4+11 ovig ♀	2.8-3.0 3.0-3.2	Vanrhynsdorp	<i>Microhodotermes</i> <i>viator</i>
Paratypes	T694	2 ♂ 2+14 ovig ♀	2.8 2.8-3.2	Vanrhynsdorp	<i>Microhodotermes</i> <i>viator</i>

Remarks

Of the known genera of the Titaniidae from southern Africa, the present species most closely resembles *Phylloniscus*, also a termitophilous genus. The general shape, the first pleopod and genital apophysis of the male of both genera are very similar, as are the rest of the pleopods. *Coatonia* differs from *Phylloniscus* in that the first pereion segment embraces the head, also in the structure of the maxillae and maxilliped, and the inner ramus of the uropod. The first antenna, although three-segmented, differs in proportion and in the shape of the aesthetascs. The very distinctive structure of the head immediately separates *Coatonia* from *Phylloniscus*. In the latter the slender terete antennae are usually hidden by the head, whereas in the present species the second antennae are strikingly obvious, rather as in *Schoebliia*. The latter genus, of the family Schoebliidae, however, differs considerably in antennal and mouthpart structure. The maxilliped of *Coatonia* has a well-developed palp and endite, unlike the reduced maxilliped of *Phylloniscus*. The genus is named for Dr. W. G. H. Coaton, who was responsible for much of the collecting of the material and for making the collection available for identification.

ANTIDORCASIA n. gen.

Body oval, twice longer than broad. Head with anterior margin semi-circular, covering bases of antennae, lacking eyes. Mandibles and maxillae as in *Phylloniscus*. Maxilliped endite well developed, with two distal spines and terminal penicil. Pereiopod seven differentiated in male, bearing low rounded spinose lobe. Uropod with endo- and exopod both terete.

Antidorcasia elongata n. sp.

Fig. 6

Description

Body oval, twice longer than broad, central portion strongly convex. Head semicircular in outline, bearing cluster of rounded tubercles, not embraced by

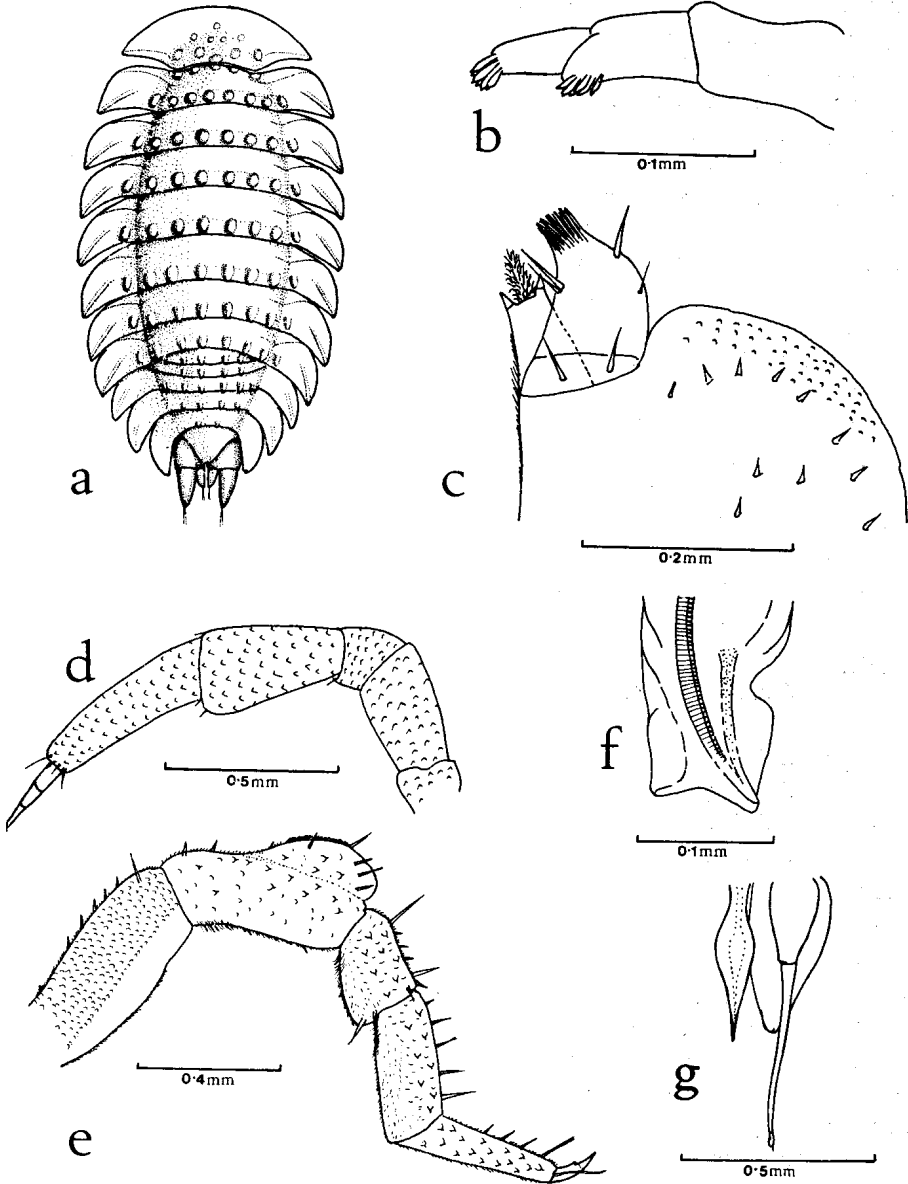


Fig. 6. *Antidorcasia elongata*

- a. Holotype in dorsal view.
- b. First antenna.
- c. Maxilliped.
- d. Second antenna.
- e. Seventh pereopod, male.
- f. Apex of inner ramus of second pleopod, male.
- g. Genital apophysis and first pleopod, male.

epimera of first pereion segment. Latter bearing anterior row of five rounded tubercles, eight posterior rounded tubercles. Epimera each bearing single diagonal elongate rib. Pereion segments two to seven each bearing eight posterior rounded tubercles. First two pleon segments each with four pointed tubercles, third with six, fourth with four, fifth with two. Telson slightly broader than long, apically rounded. First antenna three-segmented, basal segment largest, subterminal and terminal each bearing cluster of aesthetascs. Second antenna with five basal segments, fifth largest, covered with numerous flattened scales. Flagellum of three small segments. Left mandible bearing one penicil, right two, no molar penicils. First maxilla inner lobe with three setose penicils, terminal one rounded. Outer lobe with several simple spines. Second maxilla apically setose. Maxilliped with spinose epipodite, palp bearing several spines and terminal cluster of setae. Endite shorter than palp, bearing two distal spines and large terminal setose penicil. Pereiopods spinose, covered with flattened scales. Seventh pereiopod male bearing low, rounded ischial spinose lobe. Dactyls of pereiopods with fine dactylar organ. First pleopod in male with bipartite endopod, basal segment short, stout, terminal segment slender, apically slightly flattened, with single very fine terminal seta. Genital apophysis lanceolate. Endopod of second pleopod in male with broad terminal portion. Uropod with inner ramus less than half length of outer, both terete.

Material

	Cat. No.	Specimens	Length (mm)	Locality	Host Species
Holotype	S.A.M. A12834	1 ♂	5.6	Springbok	<i>Microhodotermes viator</i>
Allotype	S.A.M. A12835	1 ♀	5.5	Springbok	<i>Microhodotermes viator</i>

Remarks

The present species is very closely related to both *Coatonia* and *Phylloniscus*. All three genera have a similar flattened body with dorsal sculpturing, almost identical mandibles, maxillae and first pleopods and genital apophysis in the male. The maxilliped is as in *Coatonia*, and differs from *Phylloniscus* in possessing a setose penicil. The species is separated from the almost circular *Coatonia* in the oval-elongate shape, the slender second antennae, the structure of the 6th and 7th pereiopods in the male. Although in general shape and to some extent in dorsal sculpturing the present species resembles *Phylloniscus contractus*, it differs in several respects. The maxilliped structure is as in *Coatonia*, the first antenna differs in the proportions of the segments and in the disposition of the aesthetascs, the seventh pereiopod of the male has an ischial lobe much lower and broader than in *Phylloniscus*, all the pereiopods lack the lamellar dactylar organ, the endopod of the uropod is terete and not lamellar. Thus, although the present species closely resembles both *Coatonia* and *Phylloniscus*, it is placed in a separate genus as it fits neither of the former generic definitions completely.

Tribe **CRINOCHEETA**
 Superfamily **ATRACHEATA**
 Family **Squamiferidae**
Niambia (Niambia) termitophila n. sp.

Fig. 7

Description

Body elongate, bearing many scattered scales, with reticulate purplish dorsal pattern. Head discrete, trilobed in dorsal view. Epistome not bulbous. Eyes with seven or eight ocelli. Frontal line ridge-like between eyes. First antenna three-segmented, terminal segment longest, with terminal aesthetascs. Second antenna peduncle four-segmented, third segment distinctly shorter than fourth, flagellum two-segmented, entire appendage covered with scales. Left mandible with tridentate incisor process, tridentate lacinia mobilis. Molar process consisting of compound penicil. Right mandible with tridentate incisor process, reduced tridentate lacinia mobilis with single penicil at base, single penicil between lacinia mobilis and molar process. Latter consisting of several penicils. Inner lobe of first maxilla bearing two stout setose penicils, outer lobe with eight terminally simple spines. Second maxilla with small rounded inner lobe, larger and broader outer lobe. Former with numerous short terminal spines. Maxilliped, endite with stout seta near inner angle, palp with two subterminal setae, and terminal brush of setae.

First pereion segment with antero-lateral extension reaching forward to head. Pereion almost parallel-sided. Pereiopods lacking any secondary differences in male. All pereiopods with numerous spinelike setae on ventral surfaces of dactyli, propodi, and carpi. Propodus and carpus each with two dorso-distal spines. Pleon only slightly narrower than pereion, epimerites curved, acute. Telson apically acute, sides concave, broader than long, fringed with alternating large and small scales. Outer ramus of first pleopod in male cordiform, inner ramus elongate tapering with genital apophysis fitting between median edges. Genital apophysis apically broadened, truncate. Outer ramus of second pleopod triangular, inner ramus elongate, tapering to needle-like point. Pleopods three to five with outer rami cordiform, inner rami roughly circular. Uropods with basal segment square, shorter than outer ramus; latter inserted at apex of basal segment, inner ramus inserted in more proximal position, slender.

Material

	<i>Cat. No.</i>	<i>Specimens</i>	<i>Length</i> (mm)	<i>Locality</i>	<i>Host Species</i>
Holotype	S.A.M. A12826	1 ♂	5.2	Pretoria	<i>Macrotermes</i> <i>virialatus</i>
Allotype	S.A.M. A12627	1 ♀	5.0	Pretoria	<i>Macrotermes</i> <i>virialatus</i>
Paratypes	S.A.M. A12828	50 ♂ ♂ 7 ovig ♀ ♀	2.0-4.9 2.8-4.8	Pretoria	<i>Macrotermes</i> <i>virialatus</i>

	Cat. No.	Specimens	Length	Locality	Host Species
Paratypes	N.C.I.	41 ♂♂	2.4-4.6	Pretoria	<i>Macrotermes</i>
		10 ovig ♀♀	3.2-4.0		<i>vitrialatus</i>
	T44	24 ♂♂		Rust der	<i>Macrotermes</i>
		1 ovig ♀		Winter	<i>vitrialatus</i>
	T135	28 ♂♂		Pretoria	<i>Macrotermes</i>
		1 ovig ♀			<i>vitrialatus</i>
	T159	1 ♂		Bethal	<i>Trinervitermes</i>
					<i>trinervoides</i>
	T179	2 ♂		Pretoria	<i>Macrotermes</i>
					<i>vitrialatus</i>
	T279	18 ♂♂		Pretoria	<i>Macrotermes</i>
		4 ovig ♀♀			<i>vitrialatus</i>
	T283	2 ♂♂		Pretoria	<i>Odontotermes</i>
					<i>transvaalensis</i>
	T319	22 ♂♂		Pretoria	<i>Macrotermes</i>
		5 ovig ♀♀			<i>vitrialatus</i>
	T440	1 ♂		Kendall	<i>Odontotermes</i>
					<i>badius</i>

Remarks

Vandel (1959) states that the difference between the genera *Trichorina* and *Niambia* is extremely 'delicate', in fact, hinges on the presence or absence of a frontal line. The present species is placed in *Niambia* as a frontal line is apparent. If Barnard's (1932) key to the species of *Niambia* is applied, it will be seen that the present species falls into the subgenus *Niambia* (having simple spines on the outer lobe of the first maxilla), and into the group having the fourth antennal segment distinctly longer than the third, and the outer ramus of the first pleopod cordiform. In this group, only *N. angusta* has this outer ramus without a projection on its outer margin as in the present species. *N. termitophila* differs from *N. angusta* in several respects, viz. in having eyes with fewer ocelli, in being a relatively narrower animal, and in being recorded from termite nests. The only other South African species of *Niambia*, recorded from a similar habitat, *N. formicarum*, taken from ant nests, differs sharply in possessing a projection on the outer margin of the outer ramus of the first pleopod. *N. eburnea* (Vandel) from the ant nests of the Ivory Coast is very similar to the present species, but is slightly smaller (male and female 3 mm in length), lacks any pigmentation, and has 5-6 ocelli per eye. The frontal line of this species is so obscure that Vandel (1952b) originally placed it in *Trichorina*. This would suggest that the existence of two such closely related genera is artificial.

DISCUSSION

Of the oniscoid isopods, one family of the tribe Crinocheta (Squamiferidae) and two families of the tribe Synochaeta (Titaniidae and Schoebliidae) have termitophilous representatives in southern Africa.

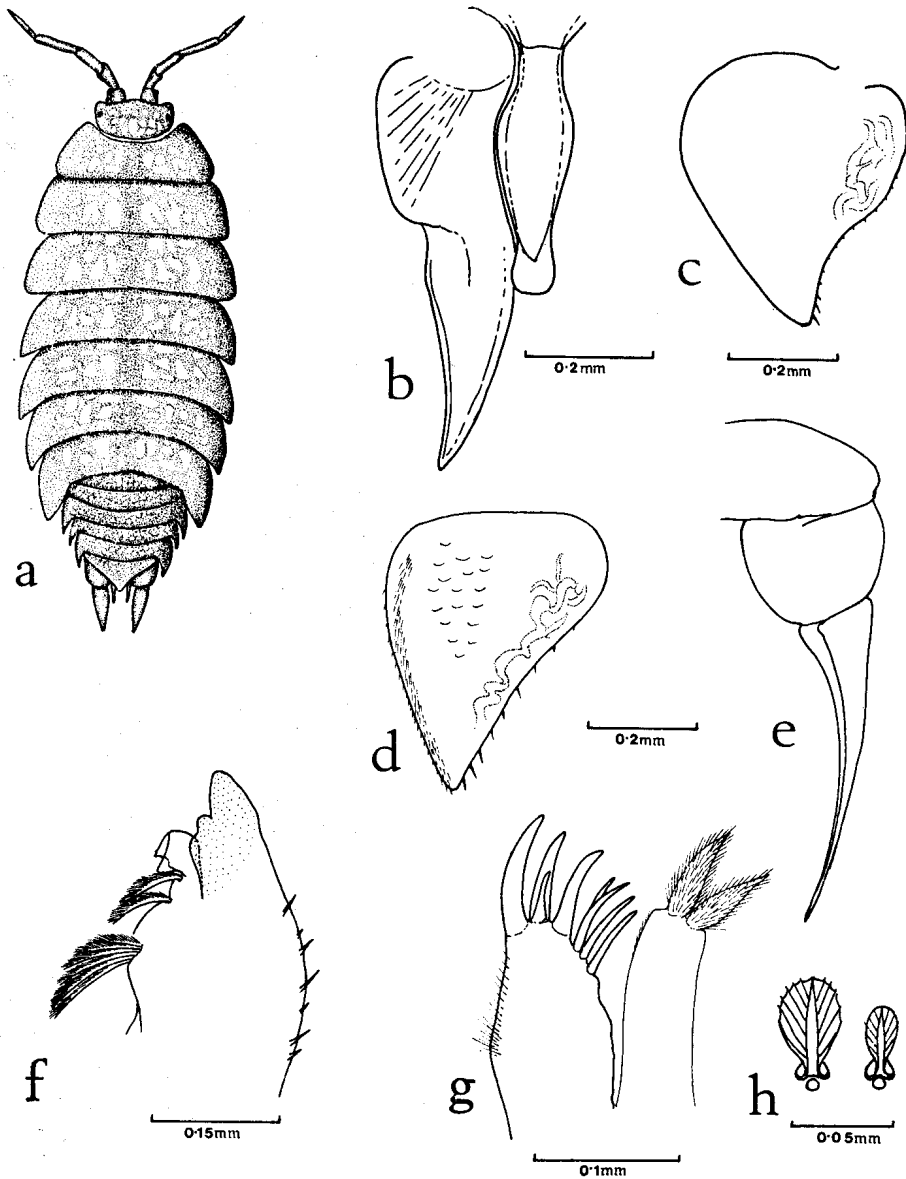


Fig. 7. *Niambia termitophila*

- a. Holotype in dorsal view.
- b. Genital apophysis and inner ramus of first pleopod, male.
- c. Outer ramus of first pleopod, male.
- d. Outer ramus of second pleopod, male.
- e. Inner ramus of second pleopod, male.
- f. Right mandible.
- g. First maxilla.
- h. Integumental scales.

These Crustacea, unlike many insects which occupy a similar habitat, cannot be regarded as true termitophiles as they do not fulfil two important prerequisites. They are not species specific (see Krishna, 1969: 11) nor do they live in close association with the termites as do many of the termitophilous insects. Nevertheless, it is more than likely that these forms do have an obligatory relationship with the termites, in that they are not found outside of the termite nest. They are most probably scavengers feeding on detritus contained in the nest system of their hosts. The Titanidae are either tolerated by the termites or protected against attack by their flattened limuloid body shape plus the rapidity of their evasive movements.

Termite hosts	Termitophilous Isopoda	Recorded from
Hodotermitidae		
Hodotermitinae		
<i>Hodotermes mossambicus</i> (Hagen)	<i>Phylloniscus contractus</i>	S.W.A.
	<i>Phylloniscus braunsi</i>	R.S.A., S.W.A.
<i>Microhodotermes viator</i> (Latreille)	<i>Phylloniscus braunsi</i>	R.S.A., S.W.A.
	<i>Titana mirabilis</i>	R.S.A.
	<i>Coatonia phylloniscoides</i>	R.S.A.
	<i>Antidorcasia elongata</i>	R.S.A.
Termitidae		
Macrotermitinae		
<i>Macrotermes subhyalinus</i> (Rambur)	<i>Phylloniscus braunsi</i>	S.W.A.
<i>Macrotermes virialatus</i> (Sjöstedt)	<i>Niambia termitophila</i>	R.S.A.
<i>Odontotermes badius</i> (Haviland)	<i>Niambia termitophila</i>	R.S.A.
<i>Odontotermes transvaalensis</i> (Sjöstedt)	<i>Niambia termitophila</i>	R.S.A.
Nasutitermitinae		
<i>Trinervitermes trinervoides</i> (Sjöstedt)	<i>Phylloniscus braunsi</i>	R.S.A.
	<i>Niambia termitophila</i>	R.S.A.

TABLE 1. Termite hosts and associated Isopoda
R.S.A.: Republic of South Africa S.W.A.: South West Africa

Known hosts include the families Hodotermitidae and Termitidae. Since the nests of *Hodotermes mossambicus* are entirely hidden in the soil and not easily found, none have yet been searched for termitophiles; specimens of *Phylloniscus* were taken from the surface soil dumps of this host species at three localities and from its superficial foraging cells under a stone at another. The nests of *Microhodotermes viator* are frequently subtended on the surface by conical clay mounds in the karroid areas of South Africa, and several of these have been exposed and searched for termitophiles. Specimens of *Coatonia*, *Antidorcasia* and *Titana* were taken exclusively from the nests of this host species, those of *Phylloniscus* being collected as readily from its superficial foraging cells under stones as from its nests. All specimens of *Phylloniscus* associated with Termitidae were taken in the nests of the hosts. Other styloniscoid termitophiles which have been recorded from southern Africa, but are not represented in this collection, include *Kogmania depressa* Barnard, *Schoebelia circularis* Budde-Lund and *S. fulleri*

(Silvestri). With the exception of a single specimen taken from the nest mound of *Trinervitermes trinervoides*, all specimens of the squamiferid *Niambia termitophila* were collected from fungus chambers of the nests of Macrotermitinae.

SUMMARY

Two new genera of termitophilous isopods, *Coatonia* and *Antidorcasia*, each containing a single species, and a new species of *Phylloniscus*, are described. All these species, and also the previously described species of *Titana* and *Phylloniscus* belong to the family Titaniidae. A new species of the squamiferid isopod *Niambia*, also taken from termite nests, is described. Seven termite species from South Africa and South West Africa are involved as hosts to these curious crustaceans.

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Style manual for biological journals. Washington: American Institute of Biological Sciences.

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To be governed by the rulings of the latest *International code of zoological nomenclature* issued by the International Trust for Zoological Nomenclature (particularly articles 22 and 51). The Harvard system of reference to be used in the synonymy lists, with the full references incorporated in the list at the end of the article, and not given in contracted form in the synonymy list.

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Scalaria coronata Lamarck, 1816: pl. 451, figs 5 *a*, *b*; Liste: 11. Turton, 1932: 80.