Entomol. Mitt. zool. Mus. Hamburg Bd. 9 (1988) Nr. 132

Diroptes gen. n. (Acari, Pygmephoroidea) with a key to the species

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(With 12 figures)

Abstract

Diroptes gen. n. is described and illustrated. A key for the designation of all known species of *Diroptes* is given.

Introduction

Kaliszewski (1987 in manuscript) discussed the systematic position and evolution of some species of the subfamily Siteroptinae Mahunka, 1970. He also redescribed the genus *Siteroptes* Amerling, 1861 and described a new genus *Pseudobakerdania* within the Siteroptes. The present paper contains description of the third monophyletic group of the subfamily Siteroptinae, the genus *Diroptes*.

Diroptes is presently represented by five known species, *Siteroptes vetus* Rack, 1965 from Germany (Europe); *Siteroptes kaszabi* Mahunka, 1969 from Mongolia (Asia); *Siteroptes longisetosus* Mahunka, from Bolivia (South America); *Siteroptes stigmatus* Mahunka, 1979 from Tanzania (Africa); and *Siteroptes stellifer* Zaki, 1983 from Hungary (Europe). Members of the genus have been found in samples of rotten plants, litter, roots of grasses, humus, and soil. Judging from the structure of the gnathosoma species of this group are fungivorous. It seems to be interesting that all known species of *Diroptes*, with the exception of the European species, were found in highlands greater than 1500 m above sea lavel.

The terminology and notation follow Lindquist (1986).

Diroptes gen. n.

Type species: *Siteroptes vetus* Rack, 1965.

Member species of the genus *Diroptes:*

1. *D. vetus* (Rack, 1965) (examined holotype female from ZMH[1])

[1] Zoologische Museum der Hamburg Universität, 2000 Hamburg 13, Martin-Luther-King-Platz 3, West Germany.

2. *D. kaszabi* (Mahunka, 1969) (examined holotype female from HNHM[2])

3. *D. longisetosus* (Mahunka, 1969) (examined paratype female, slide no. A 12/72 fom ZMH)

4. *D. stigmatus* (Mahunka, 1979) (included based on literature)

5. *D. stellifer* (Zaki, 1983) (examined female holotype, and male paratype from HNHM)

Diagnosis: Species of *Diroptes* are distinguishable from those of all other Pygmephoroidea by the combination of the following features[3]).

Female

(Figs 1-8)

1'. Peritremae troughlike, more tan three times longer than wide.

2. Prodorsal shield with setae v_1, v_2, sc_1 and sc_2.

3. Setae *e* and *f* usually present. *D. longisomus* is the only exception.

4'. Lateral plates (*La*) and posterior sternal plates (*StPo*) fused, their posterior edge forms an almost straight line.

5'. Setae *1c* of coxae I bifurcate.

6'. Coxal plates II with two pairs of setae. Setae *2c* absent.

7'. Setae *4c* absent from coxae IV.

8. Tarsus and tibia of leg I separate.

9. Tarsus I with 13 setae.

10. Genu I with four setae.

11. Femur I with four setae.

12'. Genu II with two setae.

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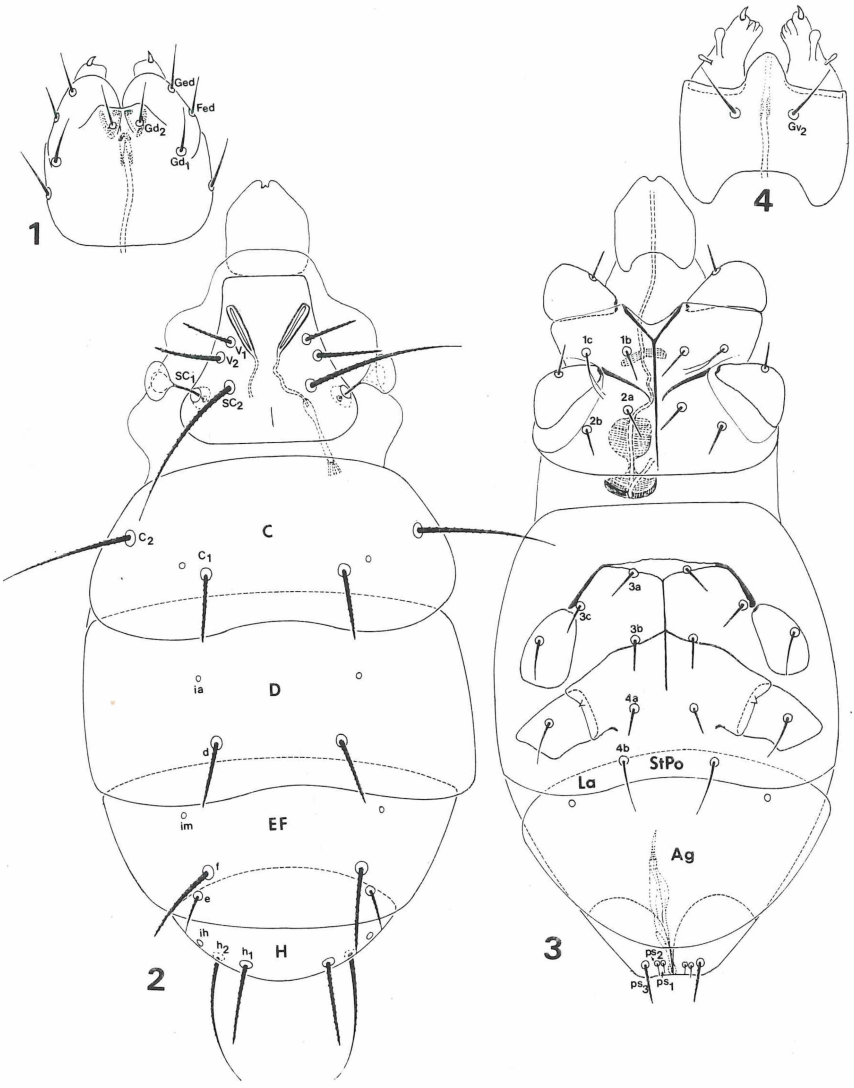
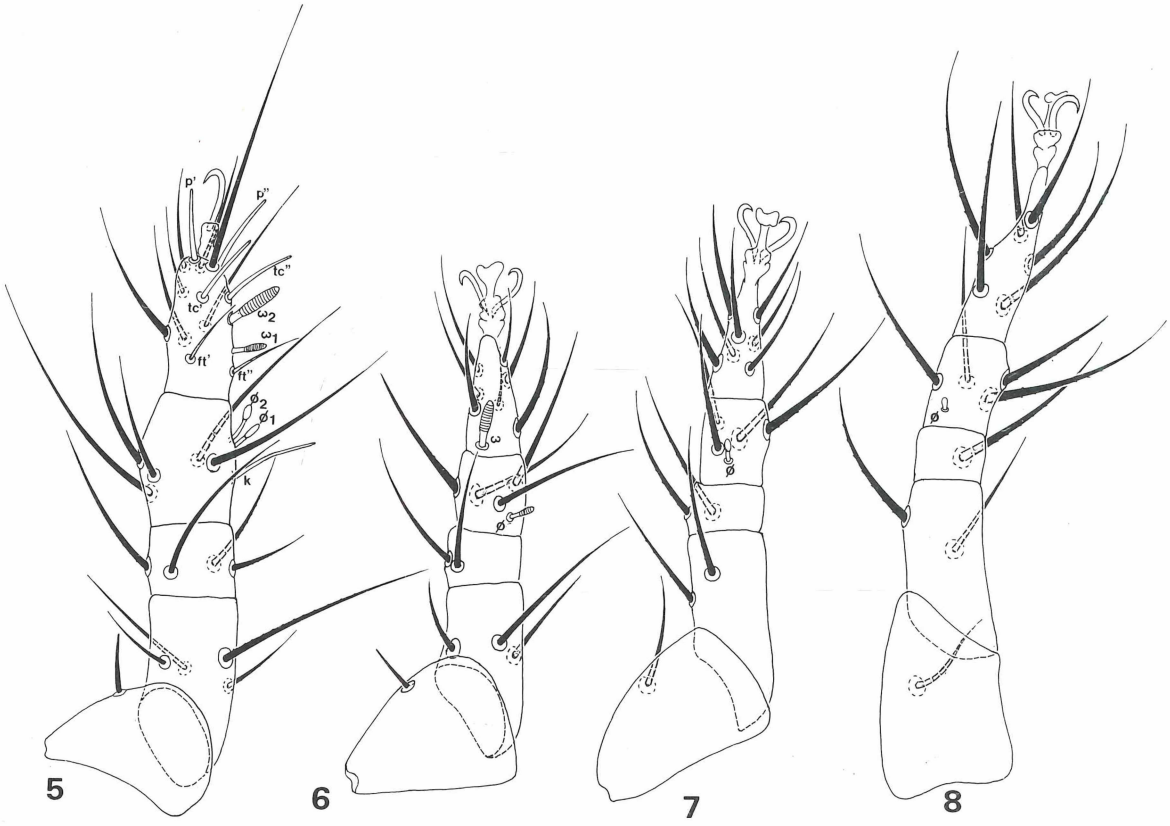
[2]) Hungarian National History Museum, Budapest VIII, Baross u. 13, Hungary.

[3]) Characters marked with a prime are apomorphic compared with the most primitive character states in Siteroptidae sensu Kaliszewski (in prep.) which includes the following genera: *Asensilla* Rack, 1974, *Diroptes* gen. n., *Elattoma* Mahunka, 1969, *Pseudobakerdania* Kaliszewski, 1987, part of *Pygmephorellus* Cross & Moser, 1971 sensu Savulkina (1981), part of *Siteroptes* Amerlin, 1861 sensu Savulkina (1981).



Figs 1-4: *Diroptes vetus* (Rack, 1965), adult female. Gnathosoma: dorsal aspect (1), ventral aspect (4). Idiosoma: dorsal aspect (2), ventral aspect (3).



Figs 5-8: *Diroptes vetus* (Rack, 1965), adult female. Leg I (5), leg II (6), leg III (7) and leg IV (8).

Male

(Figs 9-11)

1. Gnathosoma with one pair of solenidia, one pair of eupathidial setae, and three pairs of "normal" setae.
2. Prodorsal shield with four pairs of setae.

3'. Setae *d* reduced to small peg-like structures.

4. Setae *e* and *f* on tergite *EF* present.

5'. Aedeagus characteristically bent, relatively short, rigid.

6'. Coxal plates II with two pairs of setae. Setae *2c* absent.

7'. Setae *4c* absent from coxae IV.

8. Tarsus I 13 setae.

9. Genu I with four setae.

10. Femur I with four setae.

11'. Genu II with two setae.

12'. Femur IV with one setae.

Description

Female

(Figs 1-8)

Gnathosoma rectangular in outline, slightly longer than wide, with three pairs of setae (*Gd*$_1$, *Gd*$_2$, *Gv*$_2$). Cheliceral stylets small, with bases shorter than half palpal width. Palpi directed anteriorly, approximate, with setae *pp*, *Fed*, *Ged*, one modified eupathidial setae, one solenidion, and a single terminal tibial claw each. Pharynx forming three pharyngeal pumps in idiosoma.

Dorsum of idiosoma: Stigmae slit-like. Peritremae long, strongly sclerotized, oriented posteromedially to gnathosoma. Propodosomal shield with setae v_1, v_2, sc_2 and club-like sensilli sc_1. Hysterosoma with setae c_1, c_2, *d*, *e*, *f*, h_1 and h_2. Setae *f* may be absent. Cupulus *ia*, *im*, and *ih* present.

Venter of idiosoma: Apodemes weak. Lateral opisthosomal plates (*La*) fused with posterior sternal plate (*StPo*), their posterior edge forms an almost straight line. Coxal plates I with two or three pairs of setae. Setae *1c* bifurcate. Coxal plates II with two pairs of setae. Coxal plates III with three pairs of setae. Coxal plates IV without setae *4c*. Posterior sternal plate with setae *4b*. Tergite *Ps* with three pairs of setae.

Legs: Leg I with one claw, without empodium. Legs II-IV with paired claws and membranous empodia. Leg setal formulas: leg I, 1 - 4 - 4 - 6(2ϕ) - 13(2ω); leg II, 1 - 3 - 2 - 4 (1ϕ) - 7(1ω); leg III, 1 - 2 - 2 - 4(1ϕ) - 7; leg IV, 1 - 2 - 1 - 4(1ϕ) - 6.

Male

(Fig. 9-11)

Gnathosoma reduced, nonfunctional, with one pair of solenidia, one pair of modified eupathidial setae, and three pairs of "normal" setae. Cheliceral stylets and pharynx absent.

Dorsum of idiosoma: Propodosomal shield with setae v_1, v_2, sc_1 and sc_2. Tergite *CD* with two pairs of setae *c*, and one pair of reduced to small peg-like structures setae *d*. Tergite *EF* with setae *e* and *f*. Tergite *H* of characteristic surface structure forms dorsal part of genital capsule. Setae h_1 similar to setae *d*. Aedeagus characteristically bent, relatively short and rigid. Venter of idiosoma: Apodemes weak. Apodemes V present. Tergite *Ps* forms ventral part of genital capsule. Coxae II with two pairs of setae. Coxae III with three pairs of setae. Coxae IV without setae *4c*. Posterior sternal plate with setae *4b*. Tergite *Ps* with only two pairs of setae.

Legs: Leg I with one claw, without empodium. Legs II and III with paired claws and membranous empodia. Leg IV with highly modified claws and empodium, without spine-like setae. Leg setal formulas: leg I, 1 - 4 - 4 - 6(2φ) - 12(2ω); leg II, 1 - 3 - 2 - 4(1φ) - 7(1ω); leg III, 1 - 2 - 2 - 4(1φ) - 7; leg IV, 1 - 1 - 1 - 4(1φ) - 6.

Key to the Species of the Genus *Diroptes* gen. n.

Females

1. Coxal plates I with three pairs of setae 2
- Coxal plates I with two pairs of setae 3

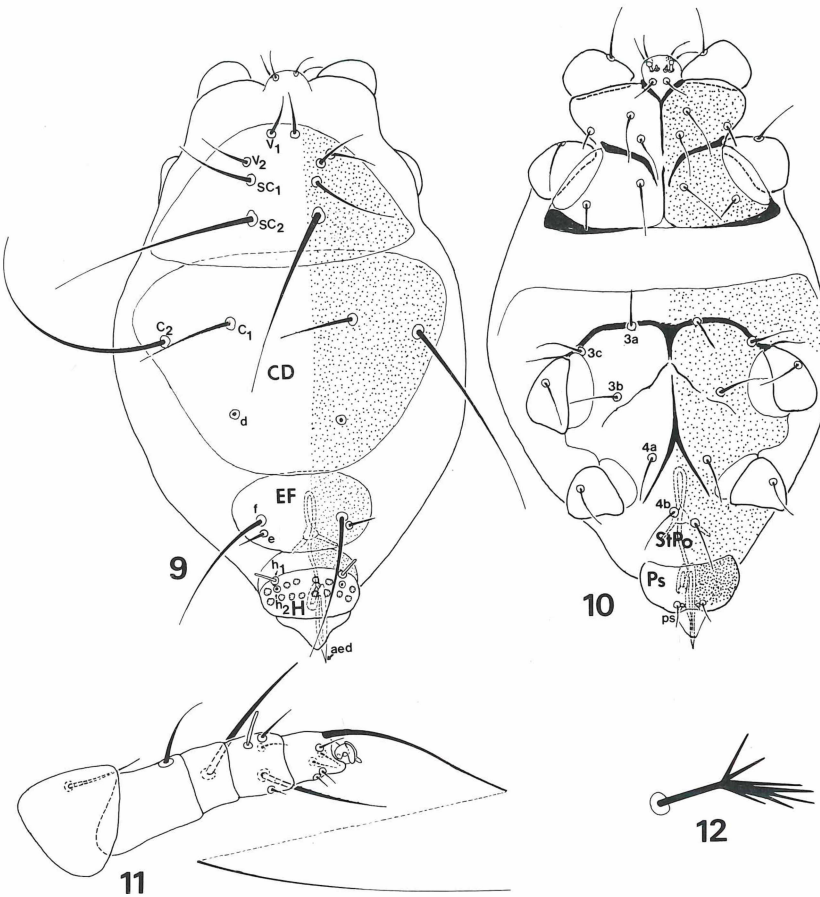
2. Tergite *EF* with one pair of setae . *D . longisetosus* (Mahunka, 1969)
- Tergite *EF* with two pairs of setae 4

3. Setae *d* longer than distance between them; setae *f* longer than distance between them . . . . . *D. kaszabi* (Mahunka, 1969)
- Setae *d* shorter than distance between them; setae *f* shorter than distance between them . . . . . *D. stigmatus* (Mahunka, 1979)

4. Setae v_2 simple . . . . . *D. vetus* (Rack, 1965)
- Setae v_2 divided into seven branches (Fig. 12) . . . . . *D. stellifer* (Zaki, 1983)

Acknowledgements

I would like to express my gratitude to Dr. Gisela Rack (Zoologisches Museum, Universität Hamburg, West Germany) for her help and support during these studies. I also want to thank Mr. Mattew Rohde (The University of Alabama, Alabama, USA) for correcting the English manuscript.



Figs 9-12: *Diroptes stellifer* (Zaki, 1983). Male: dorsal aspect of idiosoma (9), ventral aspect of idiosoma (10), leg IV (11). Female: seta v_2 (12).

References

Cross, E.A. & Moser, J.C., 1971: Taxonomy and biology of some Pyemotidae (Acarina: Tarsonemoidea) inhabiting bark beetle galleries in North American Cornifers. - Acarologia, *13:* 47-64. Paris.

Kaliszewski, M., 1987a: *Siteroptes longisomus* sp. n. (Acari: Pygmephoroidea) from Siberia, with remarks on the genus and key to the species. - Ent. Mitt. zool. Mus. Hamburg, *9* (130): 21-36. Hamburg.

Kaliszewski, M., 1987b: *Pseudobakerdania* n. gen., (Acari: Pygmephoroidea) with the description of two new species and some remarks on the phylogenetic position of the genus. Ent. Mitt. zool. Mus. Hamburg, *9* (132): 123-134. Hamburg.

Kaliszewski, M. (in prep.): Revision of the lower Pygmephoroidea (Acari: Tarsonemina).

Lindquist, E.E., 1986: The world genera of Tarsonemidae (Acari: Heterostigmata): a morphological, phylogenetical and systematic revision, with a reclassification of family-group taxa in the Heterostigmata. - Mem. ent. Soc. Can., *136:* 517 pp., Ottawa.

Mahunka, S., 1969: The scientific results of the Hungarian soil zoological expedition to South America. 13: Acari: Phygmephoridae and Scutacaridae from the material of the second expedition (Brasil and Bolivia). - Acata zool. Acad. Sci. Hung., *15:* 333-370. Budapest.

Mahunka, S., 1969: Pyemotidae and Scutacaridae IV. Ergebnisse der zoologischen Forschungen von Dr. Kaszab in der Mongolei (Acarina). - Reichenbachia, *12:* 83-112. Dresden.

Mahunka, S., 1970: Considerations on the systematics of the Tarsonemina and the description of new European taxa (Acari: Trombidiformes). - Acad. Sci. Hung., *16:* 137-174. Budapest.

Mahunka, S., 1979: Auf Insecten lebende Milben aus Africa. IV. (Acari: Acarida, Tarsonemida). - Acta zool. Acad. Sci. Hung., *25:* 127-157. Budapest.

Rack, G., 1965: Beschreibung von *Pygmephorus ignotus* Krczal, 1959 und vier neuen Pyemotidae aus Hamburg (Acarina, Trombidiformes). - Abh. Verh. Naturw. Ver. Hamburg, (N.F.) *9* (1964): 17-30. Hamburg.

Rack, G., 1974: Neue und bekannte Milbenarten der Überfamilie Pygmephoroidea aus dem Saalkreis bei Halle (Acarina, Tarsonemida). - Ent. Mitt. zool. Mus. Hamburg, *4* (87): 499-521. Hamburg.

Savulkina, M.M., 1981: Sistema ekologiya i rasprostranenie kleshchei sem. Pygmephoridae Cross, 1965 (Trombidiformes). - Ent. Obozr., *60:* 654-450. (In Russian). Moskva.

Zaki, A.M., 1983: *Siteroptes stellifer* sp. n. from Hungary (Acarina). - Folia ent. Hung., *44:* 209-212. Budapest.

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