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Dorsipes evarthrusi sp. n. (Acari: Podapolipidae), ectoparasite of *Evarthrus americanus* (Carabidae) from Georgia, U.S.A.

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(With 6 figures)

Abstract

Dorsipes evarthrusi sp. n. (Acari, Podapolipidae) is described from **Evarthrus americanus** (Dejean), a carabid beetle from Atlanta, Georgia, U.S.A. This is the first record of **Dorsipes** from the Western Hemisphere.

Introduction

In the process of examining large numbers of insects in the Entomology Museum of the University of Georgia, Athens, Georgia, U.S.A., podapolipid mites were found at wing bases and on the dorsal surface of the abdomens of carabid beetles. Parasites were removed and, in 1972, **Eutarsopolipus** and **Dorsipes** were sent to Hans Regenfuss. Two species of **Eutarsopolipus** from Georgia were described by Regenfuss (1974). Regenfuss (1968) described all of the seven species of **Dorsipes**, all collected from the area near Erlangen, Germany. Regenfuss (1972) made reference to two additional species, **Dorsipes opisthobius** and **D. tricuspidatus**, collected near Freiburg, Germany. However, he was unable to complete the descriptions of these species due to commitments to other projects and due to failing health. Regenfuss pointed out that it is difficult to separate larval and female stages of **Dorsipes** from **Eutarsopolipus.** The dorsal aedeagus and 4 pairs of legs in males makes separation of male **Dorsipes** from male **Eutarsopolipus** very easy. In general, larval and female **Dorsipes** can be separated from most **Eutarsopolipus** by the following characters: more setae on femur and genu II, III in **Dorsipes** (1 or 2 vs. 0 or 1), tarsus I solenidion usually longer in **Dorsipes** and femur I with 3 setae in **Dorsipes** in contrast to 2 in most **Eutarsopolipus. Dorsipes** has not been reported from areas other than Central Europe. The species described here is the first record from the Western Hemisphere. Kurosa (personal communication) has collected **Dorsipes** in Japan and the genus is believed to be world wide in distribution.

Terminology follows that of Lindquist (1986). Mites were examined, drawn and measured with the aid of a Wild-Heerbrug phase contrast microscope with a drawing attachment and stage micrometer. All measurements are in micrometers (μm).

Family Podapolipidae Ewing, 1922
Genus **Dorsipes** Regenfuss, 1968
Dorsipes evarthrusi sp. n.

DERIVATIO NOMINIS. This new species is named for the host species, **Evarthrus americanus.**

FEMALE (Figs 1, 2). Gnathosoma length 58, width 56; dorsal setae 30, ventral setae 30. Cheliceral stylets 39. Idiosoma length 380, width 290. Stigmata anterior to prodorsal plate, with narrow tubes leading to an expanded atrium. Prodorsal plate length 57, width 158; setae v1 8, sc2 26. Plate C length 57, width 224; setae c1 8, setae c2 7. Plates D and EF obscured (not evident). Venter with apodemes 1 meeting the prosternal apodeme at the midline, apodemes 2 do not extend to the prosternal apodeme, coxae III obscured. Legs - setal arrangements for legs I, II, III as in Table 1. Tarsus I solenidion omega 6; tibial solenidion phi 7, with an adjacent seta k, 3; tarsus II solenidion omega 6, with an adjacent seta at least as long as the solenidion. Vestigial fastigial seta 1 on tarsus I. Spine on tarsus I anteroterminal. Leg I pretarsal claw moderately developed. Femur I seta v 15, more than 1/2 width of femur; seta d 2. Setae d present on femora II, III. Tibial and tarsal longest setae 14. Pretarsal claws on legs II, III minute.

MALE (Figs 3, 4). Gnathosomal length 32, width 32; dorsal setae 4, ventral setae 5. Cheliceral stylets 18. Idiosoma length 158, width 129. Setae v1, v2 vestigial, setae sc2 10. Fused shields C, D and EF divided posteriomedially by genital shield, setae c1, c2, d and f vestigial, no longer than the diameter of the socket for the seta. Genital shield length 25, width 32, with a broad base. Venter with apodemes 1 meeting the sternal apodeme, apodemes 2 not meeting sternal apodeme. Setae 1a 3, 2a 4, 3a vestigial, 3b 3. Legs - setal arrangements for legs I, II, III, IV as in Table I. Tarsus I solenidion omega 6; tibial solenidion phi 7, with adjacent seta k 3; leg II solenidion omega 5, with an adjacent seta. Vestigial fastigial seta on tarsus I. Femur I seta v 7; seta d 1. Tarsus III longest seta 12. Femur II, III with seta d. Pretarsal claws on legs II, III minute. Legs IV dorsal, tarsus with 2 spine-like and two small setae, tibia IV with 2 small setae. Coxal setae 1a 3, 2a 4, 3a 1, 3b 3.

LARVA (Figs 5, 6). Gnathosoma length 45, width 42; dorsal setae 33, ventral setae 23. Cheliceral stylets 22. Idiosoma length 178, width 136. Setae v1 12, sc2 88. Setae c1 and f 10, setae c2 and d 8. Shield C fused with shield D posteromedially; shield EF length 31, width 42, setae f 10. Shield H length 26, width 20, setae h1 8, setae h2 144. Distance between setae h1 13. Venter with apodemes 1 meeting sternal apodeme, apodemes 2 not meeting sternal apodeme; setae 1a, 2a, 3b about 7; setae 3a 1, distance between 3a and 3b 11-16. Legs - setal arrangements as in Table 1. Tarsus I solenidion omega 6, tibial I solenidion phi 8 with adjacent seta k 3. Tarsus II solenidion omega 4 with and adjacent seta 10. Femur I seta v 20, seta d 3. Tibia, tarsus III longest seta 20. Femur II, III with seta d. Paired pretarsal claws on legs I, II, III minute.

Table 1. Leg setation for legs I, II, III for all stages and legs IV for males of **Dorsipes evarthrusi** sp. n.

	I				II				III				IV Males only			
	F	G	Ti	Ta	F	G	Ti	Ta	F	G	Ti	Ta	F	G	Ti	Ta
Setae	3	3	6	8	1	2	4	5	1	1	4	5	0	0	2	5
Solenidia	-	-	1	1	-	-	-	1	-	-	-	-	-	-	-	-

HOST AND LOCALITY. Holotype male: Atlanta, Georgia, U.S.A., from abdomen of **Evarthrus americanus** (Dejean) Carabidae, collected by P. W. Fattig 17 October 1947. Deposited in the Zoological Museum Hamburg (#RWH 71-17847-1). Paratypes (4 females, 3 larvae, 2 eggs containing larvae). Female RWH 71-17847-2, larva RWH 71-17847-3 and egg RWH 71-17847-4, same data as holotype. Females RWH 71-1839-1, -2, -3, larvae RWH 71-1839-4, -5 and egg RWH 71-1839-6: Atlanta, Georgia from **Evarthrus americanus**, collected by P. W. Fattig 1 October 1939. Deposited in the Zoological Museum Hamburg.

REMARKS. Regenfuss (1968) divided **Dorsipes** into 3 groups. The group which included **Dorsipes dorsipes** and **Dorsipes carabi** has the following characteristics: larvae with chelicerae about 50 micrometers or longer and setae v1 shorter than setae c1; females with 2 setae on plate EF; males with genital plate as wide at base as at apex. The group which included **Dorsipes notopus** and **D. inflatus** has the following characteristics: females without solenidion on tarsus II and larvae with h1 setae widely separated. The final group included **D. cryptobius**, **D. platysmae** and **D. adelosiae.** Setae v1 are long in larvae and females but setae h1 are not widely separated in larvae and females have a solenidion on tarsus II.

Dorsipes evarthrusi has more affinities with the **platysmae**-group than with either **dorsipes**-group or **inflatus**-group. Cheliceral stylets are short, no more than 30 in larvae and no longer than 40 in females. All stages have solenidia on tarsus II and setae v1 are long in larvae and females. **Dorsipes evarthrusi** differs from **D. cryptobius** in lacking chelicerae resembling barbed hooks, and in having coxal seta 3a and stigmata with an atrium in females. **D. evarthrusi** lacks genu III seta l' found in both **D. platysmae** and **D. adelosiae.** The lengths of most structures in **D. evarthrusi** are intermediate between **D. platysmae** and **D. adelosiae.**

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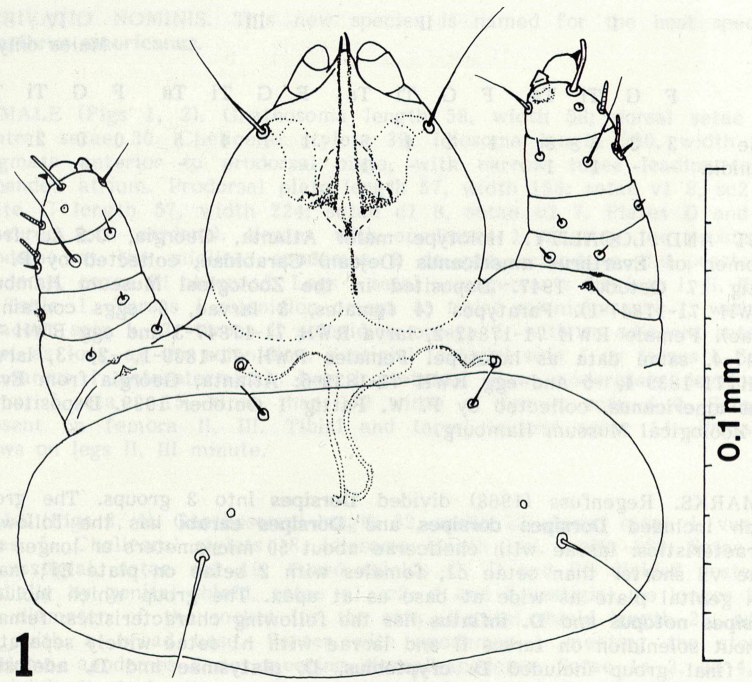

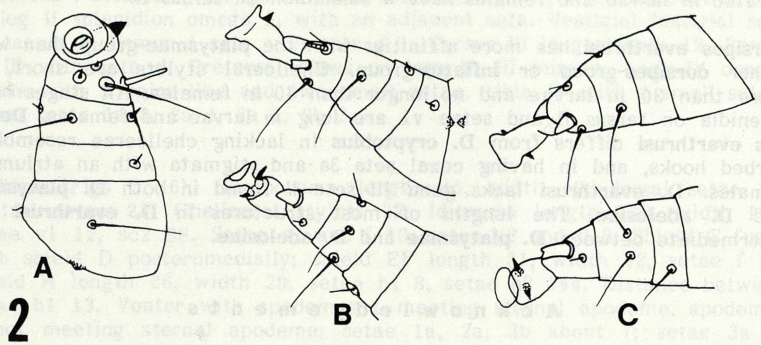

Figs 1, 2: **Dorsipes evarthrusi** sp. n., female, anterodorsal aspect. 2A: Ventral aspect, leg I. 2B: Dorsal and ventral aspects, leg II. 2C: Dorsal and ventral aspects, leg III.

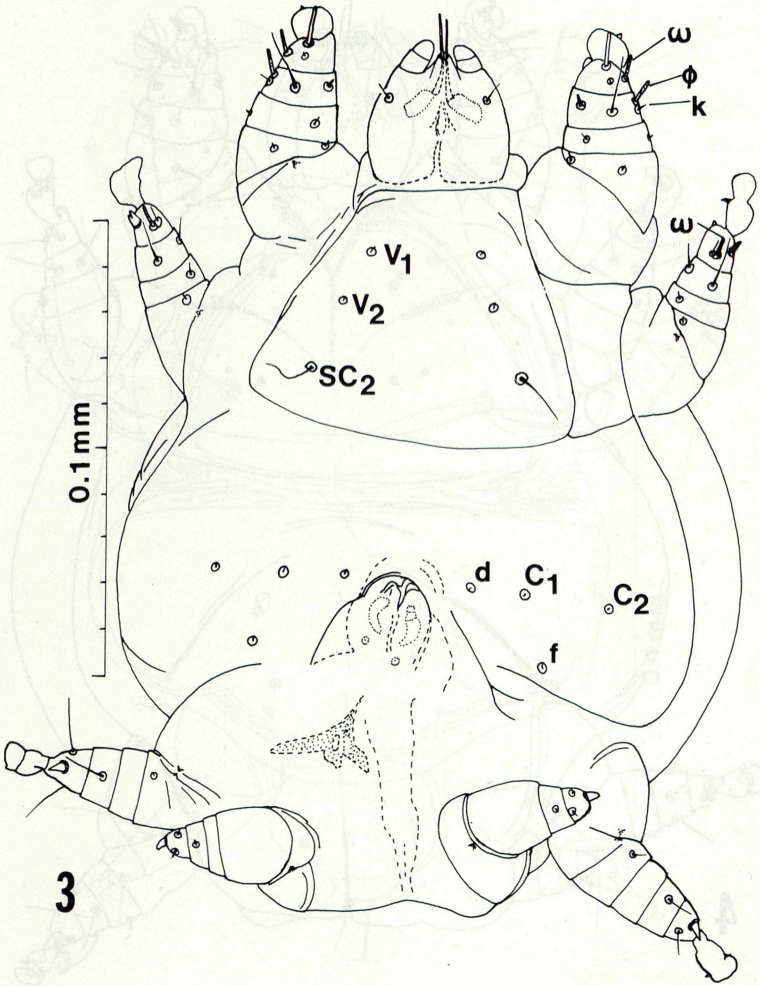

Fig. 3: **Dorsipes evarthrusi** sp. n., male, dorsal aspect.

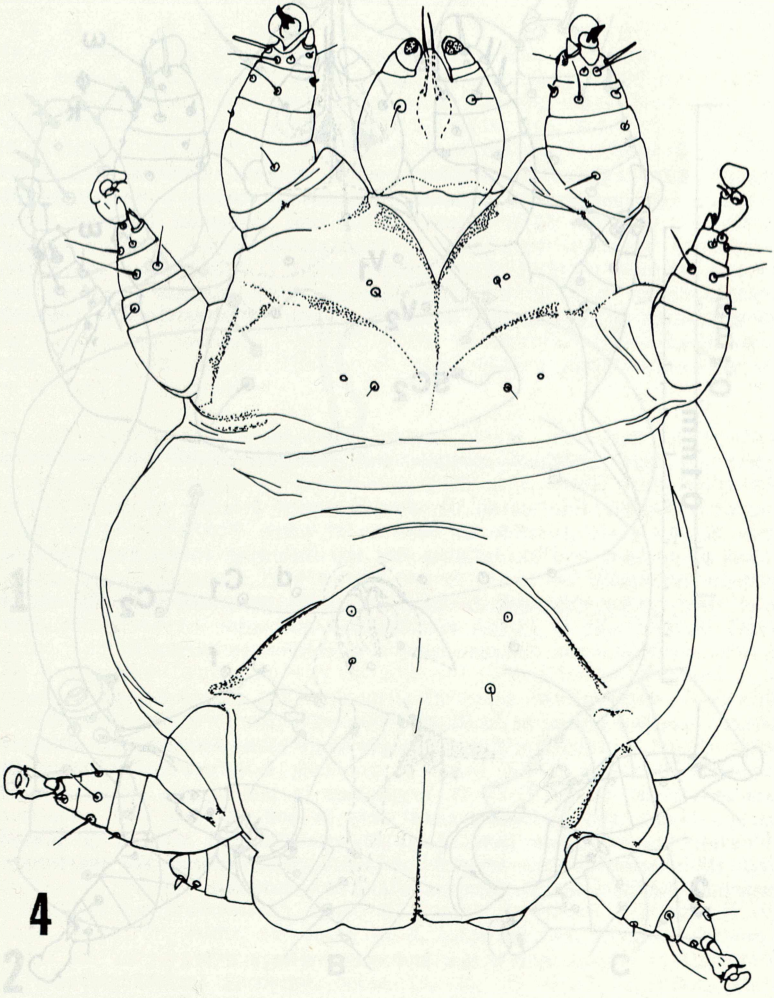

Fig. 4: **Dorsipes evarthrusi** sp. n., male, ventral aspect.

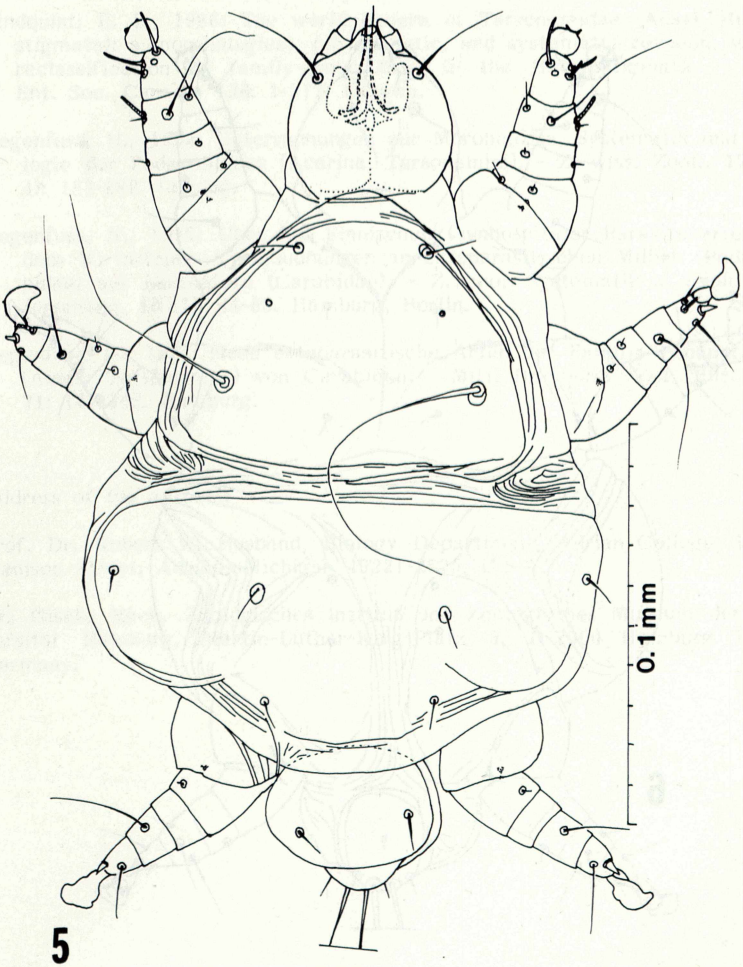

Fig. 5: **Dorsipes evarthrusi** sp. n., larva, dorsal aspect.

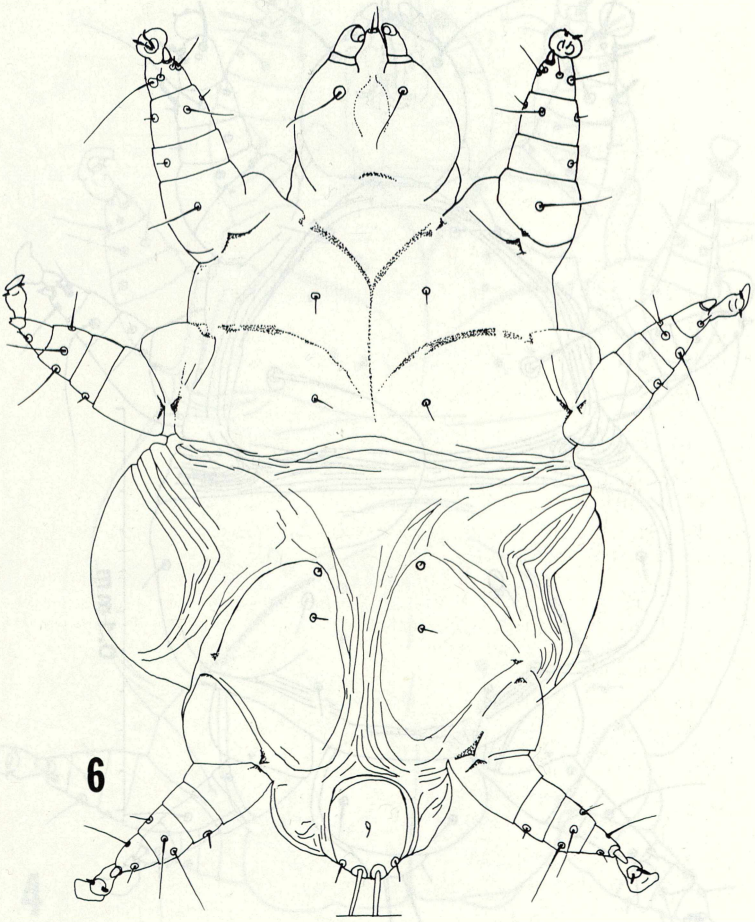

Fig. 6: **Dorsipes evarthrusi** sp. n., larva, ventral aspect.

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