

A NEW SPECIES OF THE GENUS *RHINOPHYTOPTUS* LIRO  
(PHYLLOCOPTINAE: ERIOPHYOIDEA)  
ON *PRUNUS AVIUM* L., *P. CERASUS* L. AND *P. SPINOSA* L.

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ERIOPHYOIDEA  
*RHINOPHYTOPTUS*  
NEW SPECIES  
GERMANY

**SUMMARY:** A new species, *Rhinophytoptus avium*, is described from Germany. It is a vagrant with a preference for the under-surface of leaves of *Prunus avium* L., *P. cerasus* L. and *P. spinosa* L. When numerous, this species causes yellow patches, brownish discolouration, curling or deformation of young leaves, but it does not injure old leaves. The deutogynes hibernate at the base of buds. Protogynous females appear at the beginning, and males in the middle of June. The nymphal stage differs from others by dorsal tubercles, in conjunction with bottle-like middle part bearing long dorsal setae.

ERIOPHYOIDEA  
*RHINOPHYTOPTUS*  
ESPÈCE NOUVELLE  
ALLEMAGNE

**RÉSUMÉ :** Une espèce nouvelle, *Rhinophytoptus avium*, est décrite pour l'Allemagne. Elle vit de préférence sur l'envers des feuilles de *Prunus avium* L., *Prunus cerasus* L. and *Prunus spinosa* L., provoquant des taches jaunes et brunes, l'étiollement et la déformation des jeunes feuilles, si elle se trouve en grand nombre sur la plante. Elle n'endommage pas les vieilles feuilles. Les deutogynes passent l'hiver dans le fond des boutons. Les protogynes femelles apparaissent au début de juin, les mâles à la fin de juin. Les *Rhinophytoptus avium* en phase nymphale se distinguent des autres formes de nymphes et des adultes par un tubercule dorsal auquel se rattache une partie médiane en forme de bouteille et par des soies dorsales particulièrement très longues.

A new species of the genus *Rhinophytoptus* Liro—*Rhinophytoptus avium*—was found on *Prunus avium* L., *P. cerasus* L. and *P. spinosa* L. in Bruchsal, Germany. Members of the genus *Rhinophytoptus* are large-beaked mites with simple featherclaws, a fusiform thanosome and continuous thanosome rings. The chelicerae are abruptly bent downwards at a right angle, a short distance (12–15 µm) from base. Dorsal tubercles are present in front of the rear margin, directing the setae antero-dorsally. The shield is separated from the first tergite by an indentation. *Rhinophytoptus avium* is similar to *Rhinotergum cerasifoliae* (PETANOVIĆ, 1988), but differs in the shield pattern, the lack of deep indentations on the tergites and many other characteristics. Little agreement exists

concerning *Rhinophytoptus dudichi* Farkas, 1966). *Rhinophytoptus avium* has protogynous and deutogynous females. Deutogynes differ from protogynes by the number of sternites (52–69 versus 22–26), the shield pattern and other characteristics.

*Rhinophytoptus avium* n. sp.

**PROTOGYNE FEMALE:** (June–October): 227 µm (range of 27 specimens 150–227 µm,  $\bar{X} = 170$  µm) long; 70 µm (58–70 µm,  $\bar{X} = 67$  µm) wide and 67 µm (38–78 µm,  $\bar{X} = 47$  µm) thick (at hind shield margin); white and fusiform. Rostrum 55 µm long, chelicerae 58 µm long. Dorsal shield 50 µm long and 70 µm

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*Acarologia*, t. XXXIX, fasc. 1, 1998.

wide. Shield pattern distinct (Fig. 1). Dorsal tubercles 5 µm in front of rear shield margin; dorsal setae 20–30 µm long, projecting upwards.

Foreleg 42 µm long; tibia 10 µm, tarsus 10 µm; foretibial seta three times shorter than patellar; patella 5 µm; femur 12 µm, femoral seta 20 µm; trochanter 5 µm. Tarsal solenidion 8 µm, tarsal empodium 10 µm, 4-rayed, simple. Hindleg 36 µm long; tibia 9 µm; tarsus 9 µm long, tarsal solenidion 8 µm, tarsal empodium 10 µm. Forecoxae with 1st coxal setae 10 µm; 2nd coxal setae 25 µm; hind coxal setae 50 µm.

Opisthosoma with 25 tergites and 23 sternites; sternites with small teeth on margin; tergites smooth without deep indentations. Lateral setae 20 µm long on sternite 1; 1st ventral setae 20 µm long on sternite 7; 2nd ventral setae 20 µm long on sternite 11; 3rd ventral setae 40 µm long on sternite 19. Caudal setae 80 µm; accessory setae 2 µm long.

Female genital coverflap 12 µm × 25 µm, smooth; genital setae 13 µm long, arising from middle margin of female coverflap.

DEUTOGYNE FEMALE\* (August–June) red-brown; 206 µm (range of 15 specimens 180–242 µm,  $\bar{X} = 206$  µm) long; 61 µm (50–75 µm,  $\bar{X} = 61$  µm) wide and 55 µm (50–75 µm,  $\bar{X} = 55$  µm) thick, fusiform. Rostrum 50 µm (45–58 µm) long, chelicerae 58 µm (50–65 µm) long.

Dorsal shield 38 µm (35–51 µm) long, 61 µm (50–75 µm) wide; shield pattern as shown in Fig. 2. Dorsal tubercles 5–8 µm long, 5–7 µm ahead of rear shield margin, 35 µm apart. Dorsal setae 20–23 µm long, projecting dorsally or slightly distally, apart.

Foreleg 38–51 µm long; tibia 8–12 µm, tarsus 8–12 µm, foretibial seta approximately three times shorter than patellar; patella 5–7 µm, femur 9–15 µm, femoral seta 15–20 µm; trochanter 3–5 µm. Tarsal solenidion 8–12 µm, tarsal empodium 9–10 µm, 4-rayed, simple. Hindleg 42 µm long; tibia 9 µm; tarsus 10 µm; tarsal solenidion 9 µm, tarsal empodium 10 µm, 4-rayed, simple.

\* Although the shield patterns are very different, the two forms of *Rhinophytoptus avium* do not belong to different species or genera, but are the protogynous and deutogynous of a single species (pers. obs.). The deutogynes of *R. avium* only exist from August to June, at first being on the leaves, but later crawling to buds during autumn. They were not found in summer. Protogynes only live from June to October, on leaves. Protogynes were never found during winter from 1989–1997.

Forecoxae with 1st coxal setae 10–15 µm apart; 2nd coxal setae 25–50 µm apart; hind coxal setae 38–60 µm apart.

Opisthosoma with 18–19 tergites (13–14 tergites broad, 5–6 tergites narrow) and 52–69 sternites, microtuberculate.

Lateral setae 15–30 µm long, on sternites 5–11; 1st ventral setae 15–30 µm long, on sternites 21–31; 2nd ventral setae 15–20 µm long, on sternites 34–46; 3rd ventral setae 30–50 µm long, on sternites 47–61. Caudal setae 63–88 µm, accessory setae 2–3 µm long.

Female genital coverflap 10–12 µm × 25–30 µm, with fine longitudinal lines or smooth; genital setae 13–20 µm.

MALE (mid-June): 113–160 µm long; 50–63 µm wide and 50–60 µm thick (at hind shield margin), white and fusiform. Rostrum 45 µm, chelicerae 52–55 µm. Dorsal shield 38–53 µm long and 50–80 µm wide. Shield pattern as shown in Fig. 1; dorsal tubercles 4–5 µm ahead of rear shield margin; dorsal setae 20–24 µm, projecting upwards.

Foreleg 36–43 µm; tarsus 8–10 µm; tibia 7–11 µm, tibial seta 8–9 µm; patella 6 µm, patellar seta 28–32 µm; femur 12–13 µm, femoral seta 14–20 µm; trochanter 4 µm. Tarsal solenidion 7–9 µm, tarsal empodium 8 µm, 4-rayed, simple. Hindleg 36 µm long, tibia 10 µm, tarsus 8 µm. Forecoxae with 1st coxal setae 10 µm, 2nd coxal setae 20–28 µm; hind coxal setae 35–42 µm.

Opisthosoma with 23–24 tergites and 22–26 sternites. Lateral setae 12–15 µm, on sternite 2; 1st ventral setae 13–20 µm, on sternite 7–8; 2nd ventral setae 15 µm, on sternite 10–13; 3rd ventral setae 35–38 µm, on sternite 18–21. Caudal setae 70–108 µm, accessory setae 1.5–2 µm.

Epiandrium 10 × 27 µm (Fig. 1); genital setae 14–20 µm.

FIRST NYMPH: transparent; 75–107 µm long, 37 µm wide and 37 µm thick (at hind shield margin); Rostrum 35 µm, chelicerae 45 µm. Dorsal shield 28 µm long, 37 µm wide. Shield pattern of five lines (one median line and four admedian lines) (Fig. 3);

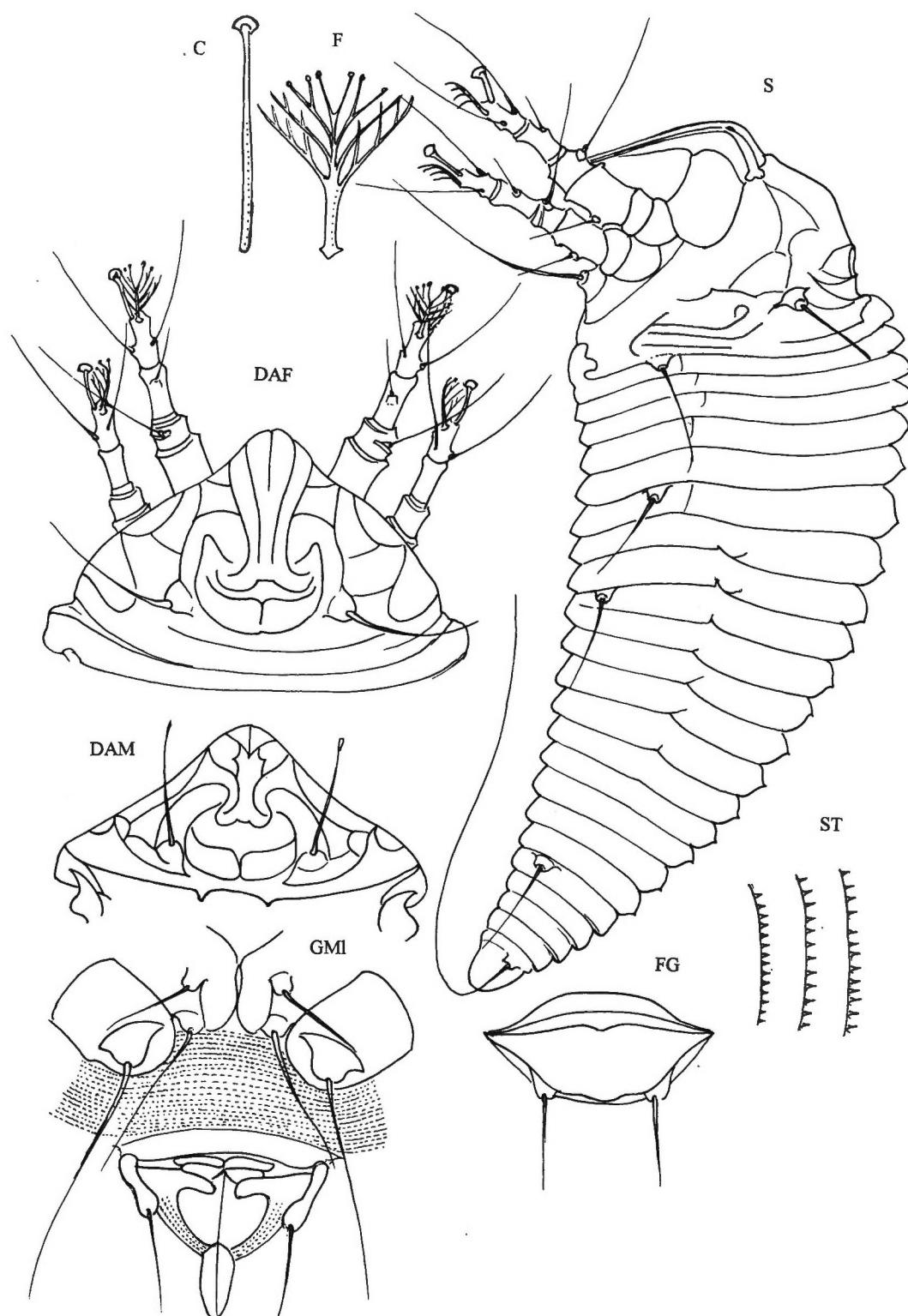


FIG. 1: *Rhinophytoptus avium* n. sp., protogynous female and male.

DAF.—Anterior dorsal view, female. DAM.—Anterior dorsal view, male. F.—Featherclaw. C.—Claw. S.—Lateral view, female. ST.—Sternite. GM1.—Anterior ventral view of external male genitalia. FG.—External female genitalia.

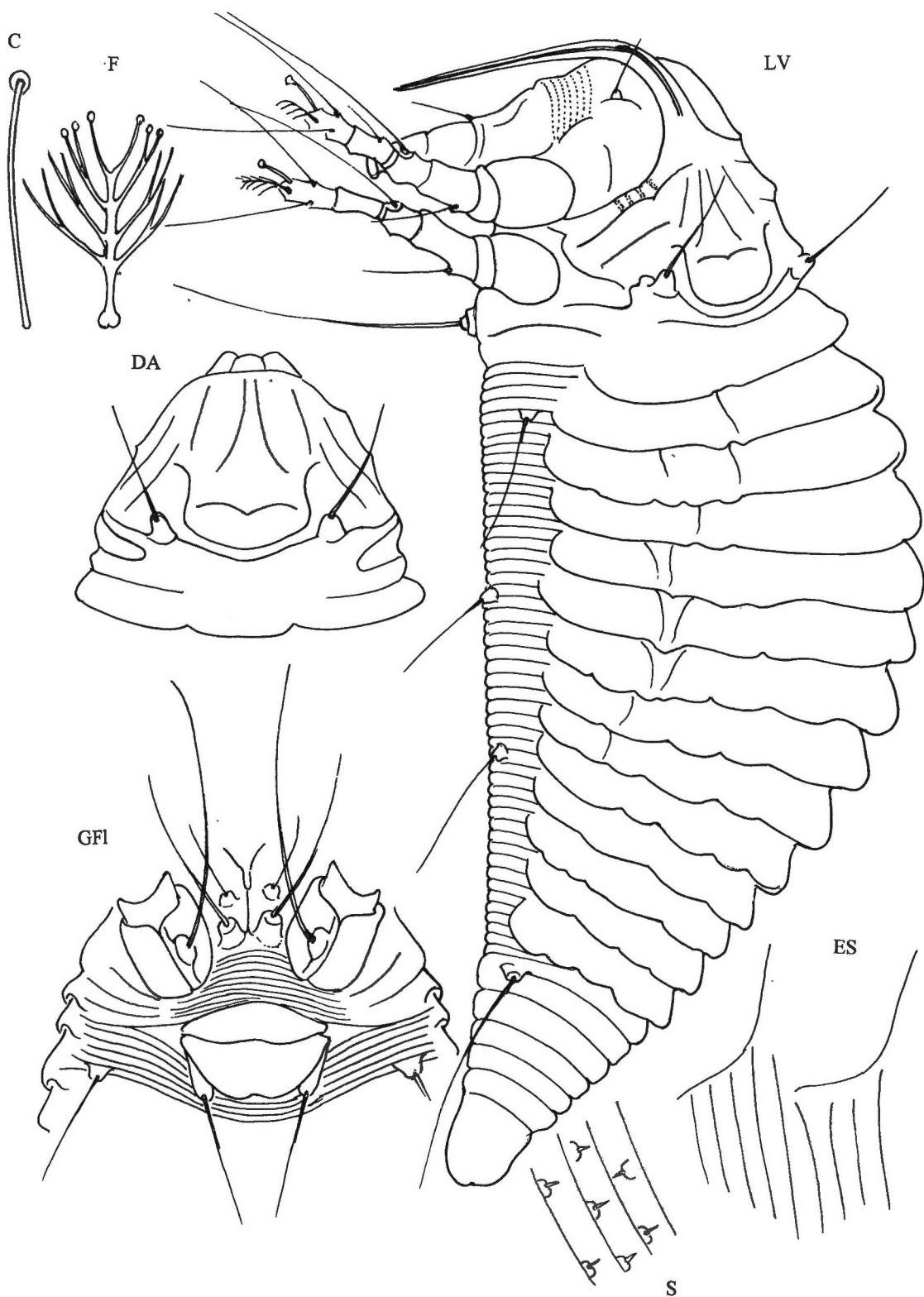


FIG. 2: *Rhinophytoptus avium* n. sp., deutogyne female.

DA. — Anterior dorsal view. F. — Featherclaw. C. — Claw. GF1. — Anterior ventral view of external female genitalia. S. — Sternite (median).  
ES. — Lateral view of tergite-sternite region. LV. — Lateral view.

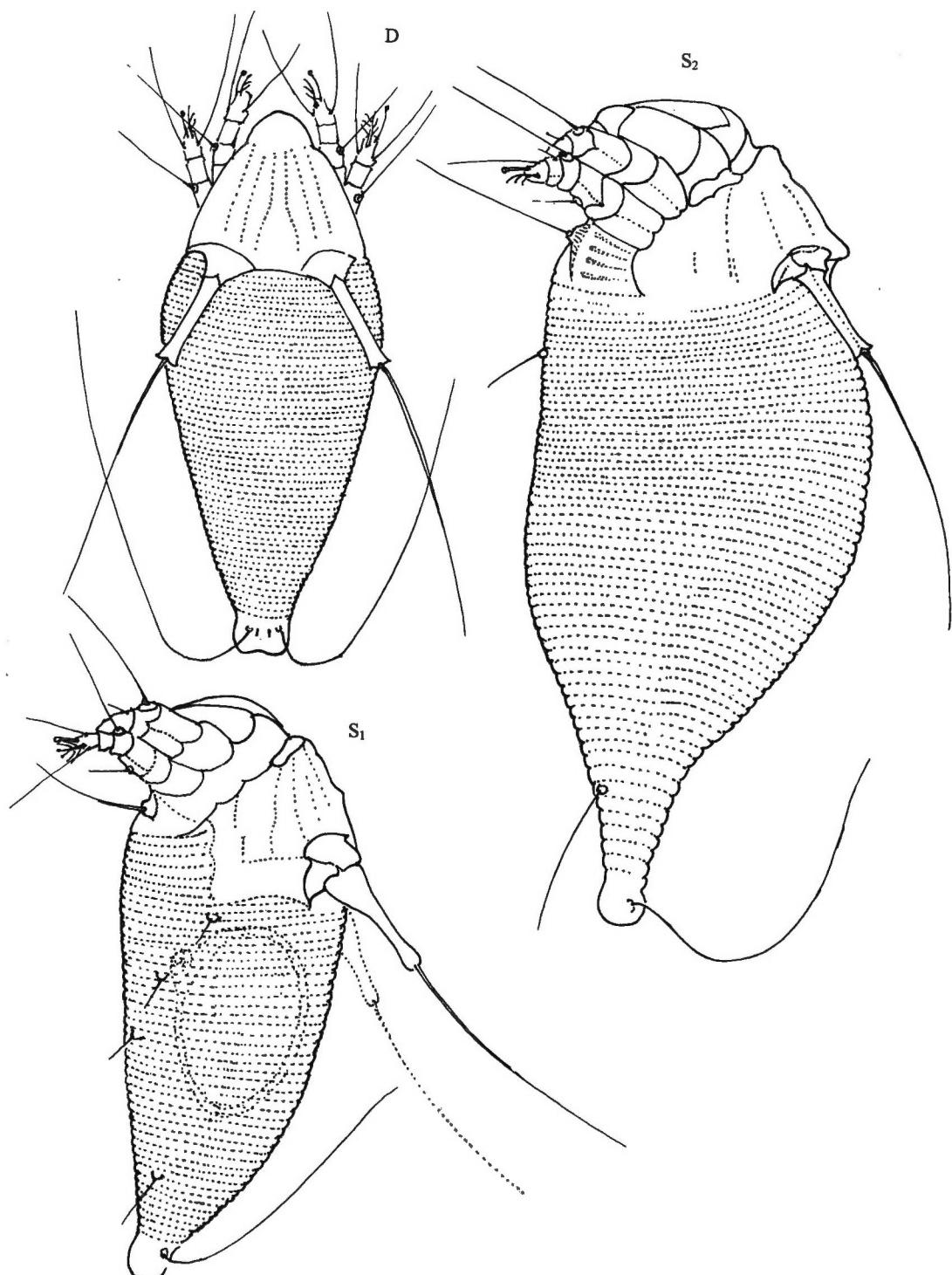


FIG. 3: *Rhinophytoptus avium* n. sp., nymphs 1 and 2.

S<sub>1</sub>. — Lateral view of nymph 1. S<sub>2</sub>. — Lateral view of nymph 2. D. — Dorsal view of nymph 1.

dorsal tubercles (5 µm long = basal part) arising from thickened rear shield margin, in conjunction with bottle-like middle part (12–15 µm long = middle part) bearing dorsal setae 50 µm long, pointing backwards over abdomen.

Foreleg 15 µm long; tarsus 3 µm; tibia 3 µm, tibial seta 4 µm; patella 3 µm, patellar seta 25–27 µm; femur 4 µm, femoral seta 5–6 µm; trochanter 2 µm. Tarsal solenidion 4–6 µm, tarsal empodium 5–6 µm, 4-rayed, simple. Hindleg 22 µm long, tibia 3 µm, tarsus 5 µm. Forecoxae with 1st coxal setae 7 µm, 2nd coxal setae 12 µm; hindcoxal setae 20 µm.

Opisthosoma with 41 tergites and 38–41 sternites, microtuberculate. Lateral setae 10 µm, on sternite 7–12; 1st ventral setae 8 µm, on sternite 14–17; 2nd ventral setae 8–10 µm, on sternite 28–34; 3rd ventral setae 10 µm, on sternite 34–37. Caudal setae 40 µm, accessory setae 1 µm.

**SECOND NYMPH:** transparent; 100–180 µm long, 45–58 µm wide and 47–63 µm thick (at hind shield margin); rostrum 38–50 µm, chelicerae 48–55 µm. Dorsal shield 23–35 µm long and 45–58 µm wide. Shield pattern as in first nymphs (Fig. 3). Dorsal tubercles 5–8 µm long, arising from thickened rear margin, in conjunction with bottle like middle part (15–23 µm long) bearing dorsal setae (50–70 µm long), pointing backwards over abdomen.

Foreleg 23–32 µm long; tarsus 4–8 µm; tibia 5–7 µm, tibial seta 5–8 µm; patella 4–5 µm, patellar seta 25–33 µm; femur 7–11 µm, femoral seta 7–10 µm; trochanter 2–3 µm. Hindleg 25 µm long, tibia 5 µm, tarsus 6 µm. Forecoxae with 1st coxal setae 10–12 µm; 2nd coxal setae 18–20 µm; hind coxal setae 25–35 µm.

Opisthosoma with 44–57 tergites and 50–56 sternites, microtuberculate. Lateral setae 10–22 µm, on sternite 7–14; 1st ventral setae 10–25 µm, on sternite 17–22; 2nd ventral setae 10–20 µm, on sternite 32–33; 3rd ventral setae 18–28 µm, on sternite 40–51. Caudal setae 50–72 µm, accessory setae 1 µm.

Female genital cover flap absent; genital setae 8 µm long, on sternite 13 apart.

**HOSTS:** *Prunus avium* L., *P. cerasus* L. and *P. spinosa* L.

**RELATION TO HOSTS:** vagrants on under surface of leaves of *Prunus avium* L. (sweet cherry), *P. cerasus* L. and *P. spinosa* L. They cause greenish-yellow patches, brownish discoloration, curling or deformation of young leaves, but do not cause injury to old leaves.

**TYPE MATERIAL:** Holotype: protogyn female on slide, ZMH Nr. A 10/97. Allotypes: protogyn male on slide, ZMH Nr. A 11/97; nymph on slide, ZMH Nr. A 11/97. Paratypes: (15) protogyn female on slide, ZMH Nr. A 11/97; (11) deutogyn female on slide, ZMH Nr. A 11/97. All material collected 20 Sept. 1996 and deposited in Zoological Museum, Hamburg, Germany.

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