

THREE NEW SPECIES OF ERIOPHYID MITES (ACARI: ERIOPHYOIDEA) ON *SOPHORA JAPONICA* L.

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NEW SPECIES
ERIOPHYOIDEA
GERMANY

ESPÈCES NOUVELLES
ERIOPHYOIDEA
ALLEMAGNE

SUMMARY: *Epitrimerus sophorae*, *Vasates sophorae* and *Vasates sophoracolae*, three new species of *Sophora japonica*.

RÉSUMÉ : *Epitrimerus sophorae*, *Vasates sophorae* et *Vasates sophoracolae* sont décrites d'Allemagne sur *Sophora japonica*.

Pagoda tree (*Sophora japonica* L.) is a interesting park trees for Germany because of their late summer flowering and their resistance to low temperature. Eriophyids of these trees were not examined to date. Within the genus *Sophora*, the unique species *Aculops sophorae* was described by KUANG in 1989 from China for *Sophora japonica* var. *pendula*, whereas *Aculus semenovi* for *Sophora alopecuroides*, by SHEVTCHEKO, MARKOWSKI & SAMSUTDINOVA in Russia and for *Sophora microphylla*, *Aceria microphyllae* by MANSON (1984) from New Zealand were identified. Not any of these mites could be found on *Sophora japonica* L. in Bruchsal (Germany), but three species were identified: *Epitrimerus sophorae* n. sp., *Vasates sophorae* n. sp. and *Vasates sophoracolae* n. sp. These mites colonize on leafs, flowers and young fruits without injury on the host plant.

Epitrimerus sophorae n. sp.

Female:

(All measurements are given in μ).

Body size: 140-150 long (mean 145), 55-58 wide and 51 thick (at shield margin), white, fusiform.

1. Kirrlacher Strasse 3,76646 Bruchsal, Germany.

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Gnathosoma 25, chelicerae 23 long.

Dorsal shield 40 long, 55-58 wide, anterior lobe 5 long, 10 wide, shield design netlike (FIG. 1); scapular tubercles *Dt-Sr* 6, *Dt-Dt* 31 apart, setae (*Sc*) 30 long, directed back.

Forelegs 35 long, tibia 6-8, tarsus 7, foretibial setae 8, genual setae 20, genu 6, femoral setae 13, trochanter 4. Tarsal solenidion 9, tarsal empodium 9, 6-rayed. Hindlegs 33 long, tibia 6, tarsus 7, genu 6, genual setae 10, femoral setae 13, trochanter 4. Tarsal solenidion 9, tarsal empodium 9, 6-rayed.

Forecoxal tubercles (*1b*) *Ct1-Ct1* 11 apart, setae (*1b*) 10 long; forecoxal tubercles (*1a*) *Ct2-Ct2* 9 apart, setae (*1a*) 20 long; coxal tubercles (*2a*) *Ct3-Ct3* 25 apart, setae (*2a*) 40 long.

Opisthosoma with 29 dorsal annuli and 64 ventral annuli, microtuberculate; longitudinal ridge on dorsum, 24 wide.

Lateral tubercles (*c2*) *Lt-Lt* 47 apart, on ventral annuli 12-13, setae (*c2*) 40 long; 1st ventral tubercles (*d*) *Vt1-Vt1* 35 apart, on ventral annuli 24-25, setae (*d*) 50 long; 2nd ventral tubercles (*e*) *Vt2-Vt2* 17 apart, on ventral annuli 40-41, setae (*e*) 35 long; 3rd ventral tubercles (*f*) *Vt3-Vt3* 21 apart, on ventral

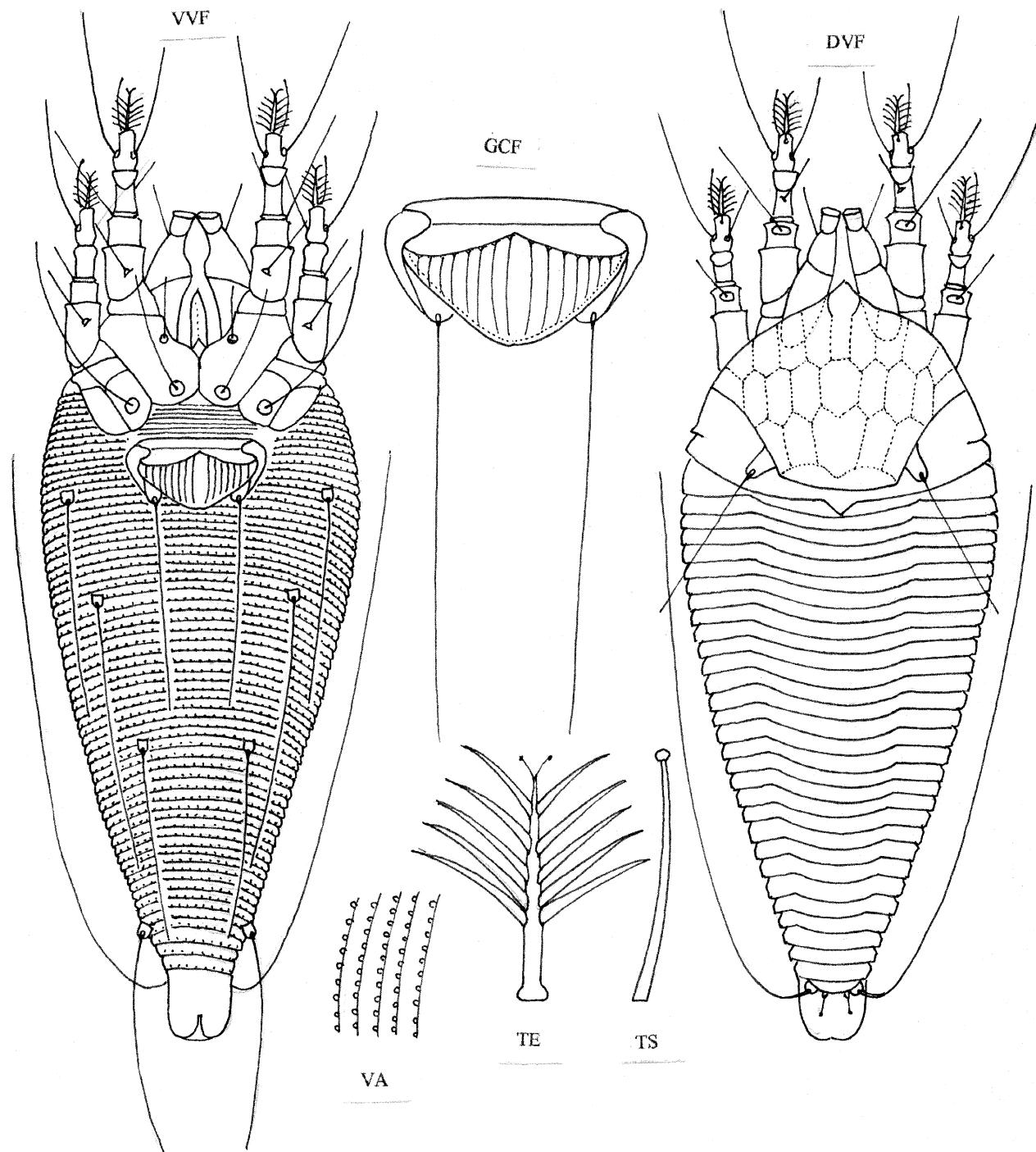


FIG. 1. — *Epitrimerus sophorae* n. sp. Female. — DVF. — Dorsal view. VVF. — Ventral view. GCF. — Genital coverflap. TS. — Tarsal solenidion. TE. — Tarsal empodium. VA. — Ventral annuli.

annuli 59-60, setae (f) 40 long. Caudal setae (h2) 110 long, 10 apart, accessoriae setae (h1) 4 long, 5 apart. Female genital coverflap 21 wide, 10 long with 14-16 longitudinal ridges, genital setae (3a) 40 long, genital tubercles (3a) 15 apart.

Vasates sophorae n. sp.
Female

Body size: 174 long, 60 wide and 51 thick (at hind shield margin), yellow, spindle shaped.

Gnathosoma 30, chelicerae 25 long. Dorsal shield 35 long, 60 wide, anterior lobe 7 long, 13 wide, pointed; shield design without median line, U-shaped line on discal cell margin, scapular tubercles touching, between indistinct netlike design (FIG. 2). Scapular tubercles *Dt-Sr* 5, *Dt-Dt* 27 apart, setae (*Sc*) 35 long, directed backwards. Forelegs 36 long, tibia 8, tarsus 6, foretibial setae 7, genual setae 25, genu 7, femoral setae 13, trochanter 4. Tarsal solenidion 8, tarsal empodium 10, 6-rayed. Hindlegs 34 long, tibia 6, tarsus 6, genu 6, genual setae 8, femoral setae 13, trochanter 4. Tarsal solenidion 10, tarsal empodium 9, 6-rayed.

Forecoxal tubercles (*1b*) *Ct1-Ct1* 10 apart, setae (*1b*) 10 long; forecoxal tubercles (*1a*) *Ct2-Ct2* 8 apart, setae (*1a*) 20 long; coxal tubercles (*2a*) *Ct3-Ct3* 24 apart, setae (*2a*) 40 long. Opisthosoma with 29 dorsal annuli and 65 ventral annuli, microtuberculate, even vaulted on dorsum.

Lateral tubercles (*c2*) *Lt-Lt* 48 apart, on ventral annuli 13-14, setae (*c2*) 42 long; 1st ventral tubercles (*d*) *Vt1-Vt1* 33 apart, on ventral annuli 26-27, setae (*d*) 65 long; 2nd ventral tubercles (*e*) *Vt2-Vt2* 17 apart, on ventral annuli 42-43, setae (*e*) 30 long; 3rd ventral tubercles (*f*) *Vt3-Vt3* 21 apart, on ventral annuli 61-62, setae (*f*) 32 long.

Caudal setae (h2) 100 long, 9 apart, accessoriae setae (h1) 5 long, 6 apart.

Female genital coverflap 20 wide, 10 long with 12 longitudinal ridges, genital setae (3a) 35 long, genital tubercles (3a) 15 apart.

Male (from August)

Body size: 172 long, 60 wide and 51 thick (at hind shield margin), spindle shaped.

Gnathosoma 25, chelicerae 22 long. Dorsal shield 32 long, 60 wide, anterior lobe 9 long, 15 wide, acute; shield design like female. Scapular tubercles *Dt-Sr* 5, *Dt-Dt* 23 apart, setae (*Sc*) 27 long, directed backwards.

Forelegs 34 long, tibia 7, tarsus 7, foretibial setae 7, genual setae 25, genu 6, femoral setae 11, trochanter 3. Tarsal solenidion 8, tarsal empodium 9, 6-rayed. Hindlegs 31 long, tibia 6, tarsus 6, genu 5, genual setae 8, femoral setae 11, trochanter 3. Tarsal solenidion 11, tarsal empodium 9, 6-rayed.

Forecoxal tubercles (*1b*) *Ct1-Ct1* 9 apart, setae (*1b*) 10 long; forecoxal tubercles (*1a*) *Ct2-Ct2* 8 apart, setae (*1a*) 20 long; coxal tubercles (*2a*) *Ct3-Ct3* 19 apart, setae (*2a*) 30 long.

Opisthosoma with 28 dorsal annuli and 63 ventral annuli, microtuberculate, regular arched on dorsum. Lateral tubercles (*c2*) *Lt-Lt* 40 apart, on ventral annuli 11-12, setae (*c2*) 38 long; 1st ventral tubercles (*d*) *Vt1-Vt1* 31 apart, on ventral annuli 25-26, setae (*d*) 60 long; 2nd ventral tubercles (*e*) *Vt2-Vt2* 15 apart, on ventral annuli 40-41, setae (*e*) 25 long; 3rd ventral tubercles (*f*) *Vt3-Vt3* 18 apart, on ventral armuli 59-60, setae (*f*) 30 long.

Caudal setae (h2) 90 long, 9 apart, accessoriae setae (h1) 4 long, 5 apart.

Genitalia 20 wide, setae 28-35 long, *Gt-Gt* 13 apart.

Vasates sophoracolae n. sp.
Female

Body size: 170 long, 57-60 wide and 53 thick (at hind shield margin), white, spindle shaped. Gnathosoma 25, chelicerae 20 long; setae antapicalis 10, setae apicalis 5 long.

Dorsal shield 40 long, 57-60 wide, anterior lobe 6 long, 10 wide, rounded; shield design smooth (FIG. 3). Scapular tubercles *Dt-Sr* 0, *Dt-Dt* 28 apart, setae (*Sc*) 30 long, directed backwards. Forelegs 37 long, tibia 8, tarsus 7, foretibial setae 10, genual setae 25, genu 6, femoral setae 15, trochanter 5. Tarsal solenidion 8, tarsal empodium 11, 7-rayed. Hindlegs 36 long, tibia 7, tarsus 7, genu 6, genual setae 13, femoral setae 15, trochanter 4. Tarsal solenidion 10, tarsal empodium 11, 7-rayed.

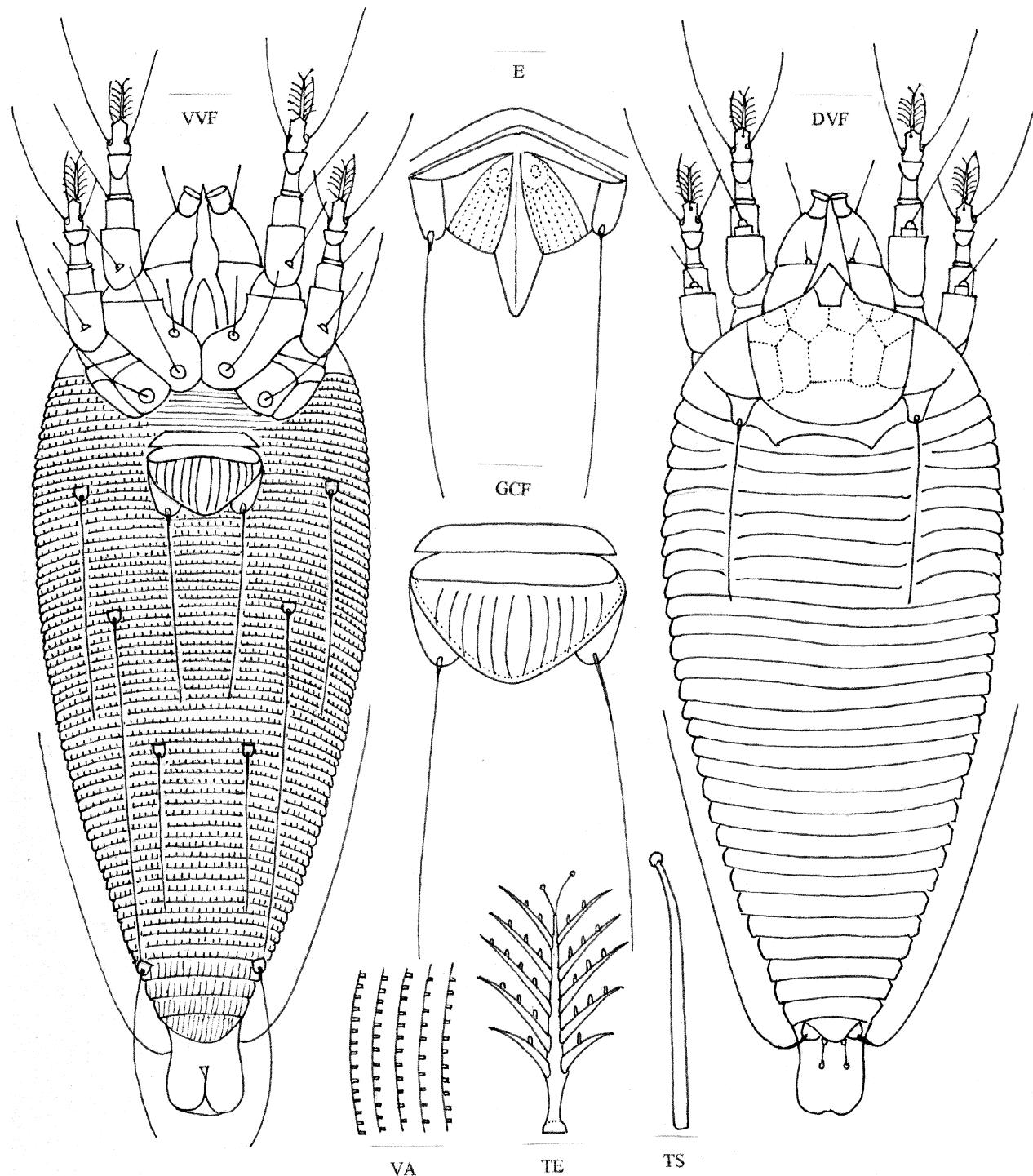


FIG. 2. — *Vasates sophorae* n. sp. Female and male. — DVF. — Dorsal view, female. VVF. — Ventral view, female. GCF. — Genital coverflap, female. E. — Epandrium. TS. — Tarsal solenidion. TE. — Tarsal empodium. VA. — Ventral annuli.

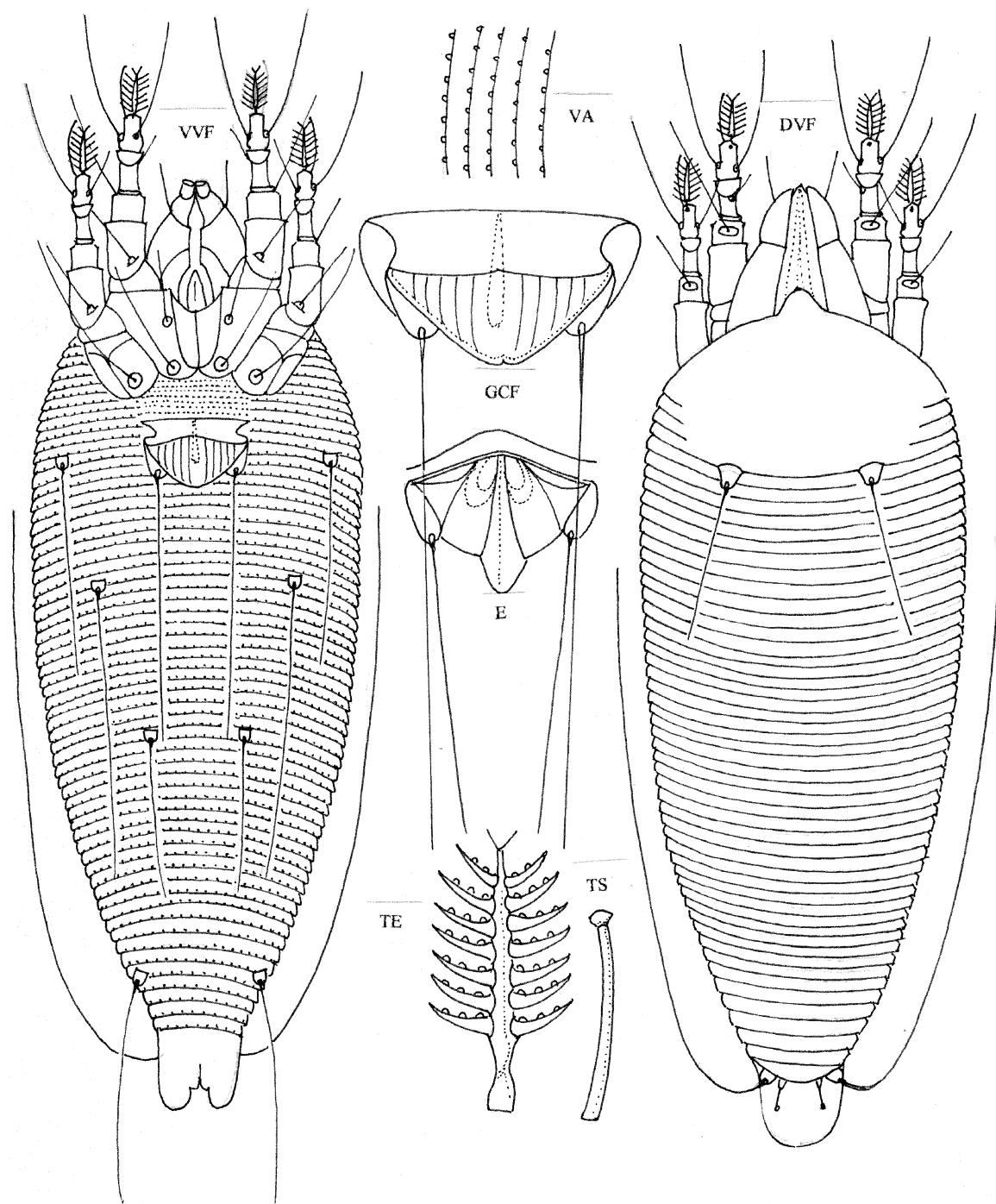


FIG. 3. — *Vasates sophoracolae* n. sp. Female and male. — DVF. — Dorsal view, female. VVF. — Ventral view, female. GCF. — Genital coverflap, female. E. — Epiandrium. TS. — Tarsal solenidion. TE. — Tarsal empodium. VA. — Ventral annuli.

Forecoxal tubercles (*1b*) *Ct1-Ct1* 11 apart, setae (*1b*) 10 long; forecoxal tubercles (*1a*) *Ct2-Ct2* 11 apart, setae (*1a*) 30 long; coxal tubercles (*2a*) *Ct3-Ct3* 24 apart, setae (*2a*) 45 long.

Opisthosoma with 43 dorsal annuli and 60 ventral annuli, microtuberculate, even arched on dorsum. Lateral tubercles (*c2*) *Lt-Lt* 52 apart, on ventral annuli 11-12, setae (*c2*) 40 long; 1st ventral tubercles (*d*) *Vt1-Vt1* 38 apart, on ventral annuli 22-23, setae (*d*) 60 long; 2nd ventral tubercles (*e*) *Vt2-Vt2* 18 apart, on ventral annuli 36-37, setae (*e*) 30 long; 3rd ventral tubercles (*f*) *Vt3-Vt3* 23 apart, on ventral annuli 55-56, setae (*f*) 45 long. Caudal setae (*h2*) 70 long, 11 apart, accessoriae setae (*h1*) 4 long, 7 apart. Female genital cover flap 22 wide, 11 long, with 10-12 longitudinal ridges, genital setae (*3a*) 50 long, genital tubercles (*3a*) 16 apart.

Male (from August)

Body size: 140 long, 50 wide and 50 thick (at hind shield margin), spindle shaped.

Gnathosoma 25, chelicerae 20 long. Dorsal shield 37 long, 50 wide, anterior lobe 6 long, 10 wide, rounded; shield design smooth. (FIG. 3). Scapular tubercles *Dt-Sr* 0, *Dt-Dt* 23 apart, setae (*Sc*) 20 long, directed backwards. Forelegs 36 long, tibia 8, tarsus 6, foretibial setae 10, genual setae 25, genu 6, femoral setae 14, trochanter 5. Tarsal solenidion 10, tarsal empodium 9, 6-rayed. Hindlegs 34 long, tibia 7, tarsus 6, genu 5, genual setae 10, femoral setae 14, trochanter 5. Tarsal solenidion 11, tarsal empodium 9, 6-rayed. Forecoxal tubercles (*1b*) *Ct2-Ct2* 10 apart, setae (*1b*) 11 long; forecoxal tubercles (*1a*) *Ct2-Ct2* 7 apart, setae (*1a*) 25 long; coxal tubercles (*2a*) *Ct3-Ct3* 21 apart, setae (*2a*) 40 long. Opisthosoma with 23 dorsal annuli and 55 ventral annuli, microtuberculate, even arched on dorsum.

Lateral tubercles (*c2*) *Lt-Lt* 45 apart, on ventral annuli 9-10, setae (*c2*) 37 long; 1st ventral tubercles (*d*) *Vt1-Vt1* 29 apart, on ventral annuli 19-20, setae (*d*) 40 long; 2nd ventral tubercles (*e*) *Vt2-Vt2* 15 apart, on ventral annuli 33-34, setae (*e*) 30 long; 3rd ventral tubercles (*f*) *Vt3-Vt3* 19 apart, on ventral annuli 49-50, setae (*f*) 35 long. Caudal setae (*h2*) 80 long, 10 apart, accessoriae setae (*h1*) 4 long, 6 apart. Genitalia 18 wide, setae 30 long, *Gt-Gt* 15 apart.

HOST: *Sophora japonica* L.

RELATION TO HOST: Vagrant on leafs, flowers and young fruits. No apparent damage was observed.

Type material

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| HOLOTYPE | female 1 on slide 1/2007 | Kirrlacher Strasse 3, Bruchsal. |
| HOLOTYPE | female 2 on slide 2/2007 | Kirrlacher Strasse 3, Bruchsal. |
| HOLOTYPE | female 3 on slide 3/2007 | Kirrlacher Strasse 3, Bruchsal. |
| PARATYPE | female 1 on slide 4/2007 | Kirrlacher Strasse 3, Bruchsal. |
| PARATYPE | female 2 on slide 5/2007 | Kirrlacher Strasse 3, Bruchsal. |
| PARATYPE | female 3 on slide 6/2007 | Kirrlacher Strasse 3, Bruchsal. |
| ALLOTYPE | male 2 on slide 7/2007 | Kirrlacher Strasse 3, Bruchsal. |
| ALLOTYPE | male 3 on slide 8/2007 | Kirrlacher Strasse 3, Bruchsal. |

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