Acarologia

A quarterly journal of acarology, since 1959
Publishing on all aspects of the Acari

All information:

http://www1.montpellier.inra.fr/CBGP/acarologia/
acarologia@supagro.inra.fr

Acarologia is proudly non-profit,
with no page charges and free open access

Please help us maintain this system by
encouraging your institutes to subscribe to the print version of the journal
and by sending us your high quality research on the Acari.

Subscriptions: Year 2019 (Volume 59): 450 €
http://www1.montpellier.inra.fr/CBGP/acarologia/subscribe.php
Previous volumes (2010-2017): 250 € / year (4 issues)
Acarologia, CBGP, CS 30016, 34988 MONTFERRIER-sur-LEZ Cedex, France

The digitalization of Acarologia papers prior to 2000 was supported by Agropolis Fondation under
the reference ID 1500-024 through the « Investissements d’avenir » programme
(Labex Agro: ANR-10-LABX-0001-01)

Acarologia is under free license and distributed under the terms of the
Creative Commons-BY-NC-ND which permits unrestricted non-commercial use, distribution, and
reproduction in any medium, provided the original author and source are credited.
A NEW SPECIES OF CERCOMEGISTUS (ACARI : MESOSTIGMATA) FROM CALIFORNIA 1

BY

D. N. KINN.

(Division of Entomology, University of California, Berkeley).

ABSTRACT.

All instars of a new species of Cercomegistidae, Cercomegistus evonicus, are described. This represents the first description of immatures of the genus. This mite occurs under the bark of Pinus monophylla Torr. and Frém. killed by Ips confusus (Lec.).

The genus Cercomegistus, until now, has contained but two species, C. bruckianus Berlese (1914) and C. simplicior Vitzthum (1935). The new species, C. evonicus, conforms to Berlese’s description of the genus, except for the male “cerci” which are quite distinct and located postero-dorsally on C. bruckianus; these are absent in the new species. C. evonicus males have a small, heavily sclerotized, elevated medial postero-dorsal plate which bears three pairs of stout setae. Males of C. bruckianus and C. simplicior lack this structure and the latter also lack “cerci”.

The sclerotization of both dorsal and ventral surfaces, and the chelicerae of C. evonicus are quite similar to those of C. bruckianus. Nevertheless, the chaetotaxy of the idiosoma and the presence of “cerci” on C. bruckianus distinguish these two species.

Unfortunately, the immature instars of C. bruckianus and C. simplicior (described from only the male) are unknown. Thus, no comparisons can be made among the immature instars of the three species.

Both C. bruckianus and C. evonicus occupy similar habitats. C. bruckianus is found under the bark of trees and C. evonicus inhabits abandoned mines of Ips bark beetles in Pinus monophylla Torr. and Frém. Vitzthum collected C. simplicior from dead fern stems.

1. This work has been supported in part by grants from the National Science Foundation (GB4124), the California State Division of Forestry, the T. B. Walker Foundation, the Surdna Foundation and various forest industries.

FEMALE (Fig. 1-2).

Length of dorsal shields 746 μ (735-856) ; width 394 μ (373-464). Shape oblong, oval, widest just behind coxae IV ; both anterior and posterior margins broadly rounded.

*Tritosternum.* Located posterior to coxae I ; laciniae fused for most of their length, being free only at distal end (Fig. 1C).

*Jugular shields.* Lightly sclerotized ; each bears a single pilose seta ; pore I located posterior to seta (Fig. 1C).

*Sternal shield.* Wedge-shaped, with slightly concave anterior margin ; pointed posterior margin projects between latigynial shields. Setae II on anterior angles of plate between coxae II ; pores II located midway between sternal setae II and III (Fig. 1C).

*Latigynial shield.* Elongate, curved, overlapping mesogynial plate posteriorly ; each plate bears 3 setae and a porous area between setae II and III. Setae I lie opposite coxae III and setae III lie opposite coxae IV.

*Ventral-anal shield.* Combined plate truncate anteriorly and broadly rounded posteriorly ; densely beset with simple setae, which tend to become pilose posteriorly. Anal orifice near posterior margin (Fig. 1A).

*Metapodal shields.* Acuminate posteriorly, extending beyond midpoint of ventro-anal plate ; fused anteriorly with parapodal and peritremal plates. Stigmata lateral to coxae IV ; peritremes extend anteriorly terminating lateral to coxae II. Membranous areas between ventro-anal and metapodal shields tend to become secondarily sclerotized.

*Dorsal surface.* Covered by two shields (Fig. 1B) ; podosomal shield longest, being about as long as wide, acuminate anteriorly and truncate posteriorly ; opisthosomal shield slightly wider than long, broadly rounded posteriorly. Both shields and surrounding membrane heavily armed with pilose setae ; four long stout setae lie anterior to podosomal shield. Membranous area tending to become secondarily sclerotized.

*Legs.* All legs beset with pilose setae ; spines absent ; chaetotaxy given in Table 1 (EVANS, 1963).

*Hypostome.* Corniculi stout ; denticles absent. Hypostome armed with three pairs of pilose setae, the distal pair being stoutest ; basis capituli with a fourth pair of setae (Fig. 2A). Deutosternum with two rows of teeth at level of gnathosomal and proximal hypostomal setae. Hypopharyngeal processes with fringe-like setae.

*Palps.* Armed with pilose setae ; palpal claw three tined. Chaetotaxy of palpal trochanter, femur, and genu : 2-5-6.
Fig. 1. — *Cercomegistus evonicus*, female paratype.
A. Venter; B. Dorsum; C. Sterno-genital region.
Chelicerae. Fixed digit armed with numerous small teeth; movable digit almost devoid of teeth (Fig. 2B). A single pilose appendage arises from base of movable
digit.

Tectum. Lacks a keel; margins smooth, sinuate, except for apex which ter-
minates in five long projections (Fig. 2C).

MALE (Fig. 3A).

Length of dorsal podosomal and opisthosomal shields 718 μ (702–799); width
391 μ (366–444).

Shape similar to that of female, but slightly narrower.

Ventral surface. Tritosternum similar to that of female. Jugular shields bear
setae I and pores I. Sternal, ventral, anal, metapodal and parapodal shields fused.
Pores II located midway between setae II and III. Genital orifice semi-spherical
in shape, lying between coxae III. Stigmata like that of female.

Dorsal surface. Similar to that of female, but posterior margin of opisthosomal
shield with a concavity. A small, cone shaped, heavily sclerotized shield bearing
three pairs of stout spines projects posteriorly from membrane separating dorsal opisthosomal shield and composite ventral shield.

*Legs.* Chaetotaxy like that of female (Table 1).

*Gnathosome.* Similar to that of female.

---

**Fig. 3.** *Cercomagnostus evonicus.*

A. Male, ventral and dorsal aspects; B. Deutonymph, ventral and dorsal aspects.
Deutonymph (Fig. 3B).

Average length of idiosoma 668 μ (579-811); average width 465 μ (377-583). Shape similar to that of adults.

Ventral surface. Tritosternum as in adults. Sternal setae I and pores I on distinct, but lightly sclerotized jugular shields. Pores II located behind setae II level with hind margins of coxae II. Sterno-ventral shield indistinct. Anal plate broadly rounded anteriorly and more pointed posteriorly; armed with a single pair of setae; anal orifice in posterior portion of shield. Oval or crescent shaped metapodal plates, usually armed with a single seta, lie posterior to coxae IV. Venter of opisthosoma armed with numerous setae. Stigmata lateral to coxae IV; peritremes extend to middle of coxae III.

Dorsal surface. Covered by two shields. Podosomal shield largest; acuminate anteriorly, widening posteriorly, with a truncate posterior margin. Opisthosomal shield semicircular, truncate anteriorly and broadly rounded posteriorly. Both shields and surrounding membrane armed with pilose setae. Anterior margin of dorsum bearing 4 long, pilose setae.

Legs. Armed with pilose setae; chaetotaxy like that of adults (Table 1).

Gnathosome. Like that of adult.

Protonymph (Fig. 4A).

Average length of idiosoma 574 μ (463-633); average width 379 μ (336-418). Shape oblong, oval, similar to that of deutonymph.

Ventral surface. Tritosternum as in other instars. Sternal setae I and pores I on distinct, but lightly sclerotized jugular shields. Pores II located behind setae II level with hind margin of coxae II. Sterno-ventral shield indistinct. Anal plate broadly rounded anteriorly; armed with a single pair of setae; anal orifice in posterior portion of plate. Metapodal plates absent. Venter of opisthosoma armed with 11 pairs of setae. Stigmata located lateral to coxae IV; peritremes extend anteriorly to middle of coxae III.

Dorsal surface. Podosomal region covered by a single triangular shield, about twice as long as wide, having truncate posterior margin. Shield and surrounding membranous area armed with numerous pilose setae. Antero-dorsal margin broadly rounded; armed with four stout pilose setae; posterior margin more pointed.

Legs. Armed with pilose setae. Chaetotaxy given in Table 1.

FIG. 4. — Cercomegistus evonicus.
A. Protonymph, ventral and dorsal aspects; B. Larva, ventral and dorsal aspects.
Larva (Fig. 4B).

Average length of idiosoma 420 μ (353-479); average width 267 μ (216-337).
Shape oblong, oval; 1.5 times as long as wide.

Ventral surface. Tritosternum as in other instars. Jugular and sterno-ventral shields very lightly sclerotized; indistinct, but jugular shields appear fused. Posterior end of idiosoma covered by a lightly sclerotized plate. Opisthosoma armed with 5 pairs of setae, para-anal setae longest.

Dorsal surface. Lightly sclerotized, covered by a single, longitudinally striated shield bearing 9 pairs of setae. Membranous area of opisthosoma beset with 10 pairs of setae plus a single, medium terminal seta, almost as long as entire idiosoma.

Legs. Armed with pilose setae. Chaetotaxy similar to that of protonymph, except for femur II (Table I).


Table I: Leg chaetotaxy, exclusive of coxa and tarsus, for all instars of Cercomegistus evonicus.

<table>
<thead>
<tr>
<th></th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trochanter</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L, P</td>
<td>(1-0/2-1)</td>
<td>(1-0/2-1)</td>
<td>(1-1/2-0)</td>
<td>P (1-1/2-0)</td>
</tr>
<tr>
<td>D, A</td>
<td>(1-2/2-1)</td>
<td>(1-0/3-1)</td>
<td>(1-1/3-0)</td>
<td>(1-1/3-0)</td>
</tr>
<tr>
<td>Femur</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>(1-4/4-1)</td>
<td>(1-4/1-1)</td>
<td>(1-3/1-0)</td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>(1-4/4-1)</td>
<td>(1-4/2-1)</td>
<td>(1-3/1-0)</td>
<td>(1-3/0-0)</td>
</tr>
<tr>
<td>D, A</td>
<td>(1-4/6-1)</td>
<td>(2-4/3-1)</td>
<td>(1-4/2-0)</td>
<td>(2-5/1-0)</td>
</tr>
<tr>
<td>Genu</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D, A</td>
<td>(2-6/2-2)</td>
<td>(2-6/2-2)</td>
<td>(2-6/2-2)</td>
<td>(2-6/2-1)</td>
</tr>
<tr>
<td>Tibia</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L, P</td>
<td>(1-4/2-1)</td>
<td>(1-3/2-1)</td>
<td>(1-3/2-1)</td>
<td>P (1-3/2-1)</td>
</tr>
<tr>
<td>D, A</td>
<td>(2-5/4-2)</td>
<td>(2-4/2-2)</td>
<td>(2-4/2-2)</td>
<td>(2-4/3-2)</td>
</tr>
</tbody>
</table>

Type material.

Holotype: female, Scheideck, Ventura Co., California, April 24, 1966, D. N. Kinn, Y. L. Kinn, and N. D. Kinn, from under the bark and in Ips confusus (Lec.) galleries in dead Pinus monophylla Torr. and Frém. Allotype: same data. Paratypes: 24 females, 11 males, 11 deutonymphs, 6 protonymphs, 15 larvae, same
data; 11 females, 6 males, 2 deutonymphs, 1 larva, same locality, April 30, 1966, D. N. KINN and Y. L. KINN, same host; 2 females, 2 males, 2 deutonymphs, 1 larva, Frazier Park, Kern Co., California, Sept. 9, 1965, D. N. KINN and D. E. BRIGHT, same host.

Primary types are deposited in the collection at the U. S. National Museum, Washington, D. C. Paratype specimens are in the collection of the British Museum (Natural History), London, England; The Institute of Acarology, Ohio State University, Columbus, Ohio; and the Canadian National Collection, Entomology Research Institute, Ottawa, Ontario.

Acknowledgments.

I would like to express my thanks to Dr. J. H. OLIVER for his critical review of this paper. Thanks are also due my wife and son who helped collect the type series.

Literature Cited

BERLESE (A.), 1914. — Acari Nuovi, Manipulus IX. Redia 10: 113-150.