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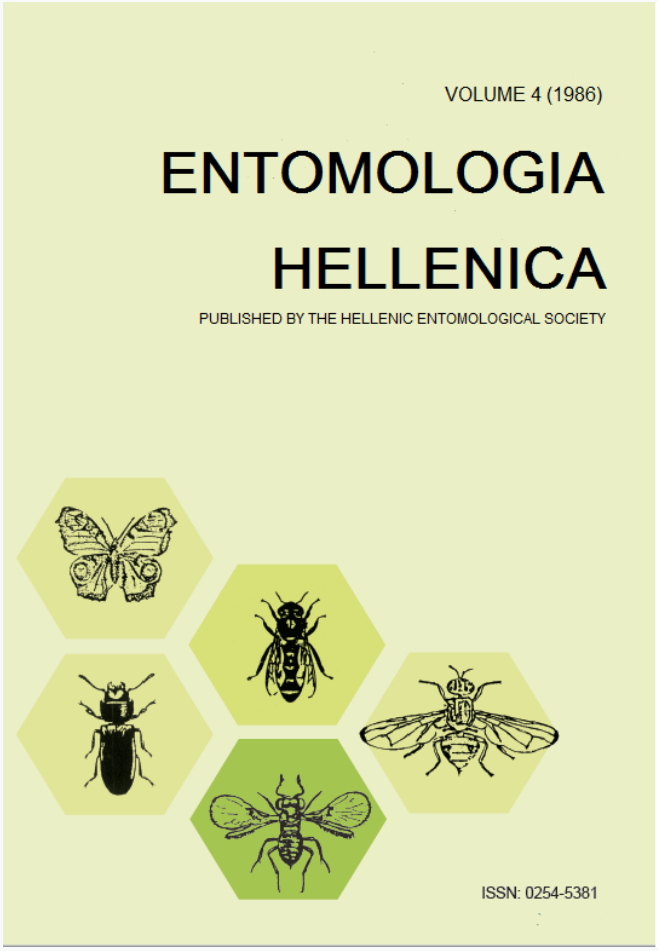

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Contribution to the Description, Record and Onomatology of *Aceria oleae* (Nalepa, 1900) (Acari: Eriophyidae)[1]

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ABSTRACT

The female of *Aceria oleae* is described and illustrated and for first time, the dimensions of the different parts and accessories of the body are given. The male of this mite is also described and illustrated for first time. The world distribution as well as the local distribution in Greece are recorded. Information on the onomatology is provided.

Introduction

Among the various pests of olive trees in Greece, the mites, especially the eriophyids, are of considerable importance. The olive tree has its origin in the eastern Mediterranean area. In Greece it represents one of the most important agricultural crops. The shortage of information relative to the phytophagous mites of olive trees in Mediterranean countries is attributed to the lack of phytophagous mite specialists in the area. This is the reason why, up to 1966, all the mites of olive trees had been identified by scientists from abroad (Nalepa 1900, Keifer 1939, 1959, 1960, Natcheff 1966). Only after 1966 the first papers by Mediterranean researchers appeared, describing four new species and the symptoms of their attack on olive trees (Hatzinikolis 1968, Castagnoli 1977, Zacher 1979).

Aceria oleae has been given diverse names: *Phytoptes oleae*, *Eriophyes oleae*, *Aceria (Eriophyes) oleae*, *Aceria oleae*. This caused confusion over the identity of the mite, especially in Greece where it occurs in large numbers and causes economic damage in most of the olive oil producing areas. Nalepa (1900) first described *A. oleae*. Seventy five years later, Jeppson et al. (1975) illustrated only the female of *A. oleae* and described the shield, coxae and genital coverflap without giving any dimensions of the parts or accessories of the body of the mite. Furthermore, in the paper of Meyer (1981) there is only a description and illustration of the shield of the female. For these reasons, I believe that it is time to update the distribution, onomatology and description of both the female and male mite.

Record

Abroad
Cyprus: *Eriophyes oleae*, Georghiou 1954 and 1959, and *Aceria oleae*, Georghiou 1977.
Egypt: *Aceria (Eriophyes) oleae*, Avidov and Harpaz 1969.
Israel: *Eriophyes oleae*, Harpaz 1955, and *Aceria (Eriophyes) oleae*, Avidov and Harpaz 1969.
Italy: *Eriophyes oleae*, Granati 1954, Laccone and Nuzzaci 1977 and Castagnoli 1981.
Jordan: *Eriophyes oleae*, Castagnoli 1981.
Libya: *Aceria (Eriophyes) oleae*, Avidov and Harpaz 1969.

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Morocco: *Eriophyes oleae*, Saba 1973.
Spain: *Eriophyes oleae*, Castagnoli 1981.
South Africa: *Aceria oleae*, Meyer 1981.
Central areas of the Mediterranean: *Eriophyes oleae*, Jeppson, Keifer and Baker 1975.
In Greece
Phytoptus oleae, Pilio Magnissia, Kavvadas 1927; *Phytoptus oleae*, Pilio Magnissia, Koroneos 1939; *Phytoptus oleae*, Attiki, Anagnostopoulos 1939; *Aceria (Eriophyes) oleae*, location not specified, Pelekassis 1962; *Eriophyes oleae*, Achaia, Lakonia, Korinthos and Kephalinia, Bouchelos, Soueref and Tsoka 1963; *Eriophyes oleae*, Thesprotia, Bouchelos, Soueref and Tsoka 1965; *Aceria (Eriophyes) oleae*, Magnissia, Costacos and Ioannidis 1966; *Aceria oleae*, Attiki and Arkadia, Batzakis 1967; *Aceria oleae*, Central Greece, Macedonia, Peloponnisos, Thessalia, Hatzinikolis 1967; *Aceria oleae*, Central Greece, Macedonia, Peloponnisos, Ipiros, island Crete, Hatzinikolis 1969a; *Aceria oleae*, in some counties, Hatzinikolis 1969b; *Aceria oleae*, in some counties, Hatzinikolis 1969c; *Aceria oleae*, location not defined, Hatzinikolis 1970; *Aceria oleae*, location not defined, Hatzinikolis 1972; *Aceria oleae*, location not defined, Hatzinikolis 1971a; *Aceria oleae*, in 38 olive oil producing areas of Greece, Hatzinikolis 1971b; *Aceria oleae*, location not specified, Hatzinikolis and Papapanou 1975; *Aceria oleae*, location not defined, Hatzinikolis and Papapanou 1976; *Eriophyes oleae*, in 38 counties of Greece, Hatzinikolis 1981; *Eriophyes oleae*, in 42 counties of Greece, Hatzinikolis and Kolovos 1981; *Aceria oleae*, location not defined, Hatzinikolis 1985.

Onomatology

Family: Eriophyidae Nalepa, 1898.
Subfamily: Eriophyinae Nalepa, 1898.
Type genus: *Eriophyes* Von Siebold, 1851.
Species: *Eriophyes oleae* Nalepa, 1900.
Host: *Olea europaea* L.
Collected: G. Cecconi
Type locality: Cyprus

Nalepa (1900) first described the n.sp. *Eriophyes oleae*, which he later redescribed (1904) and also mentioned in 1923 and 1929 using the same name. Keifer (1944) created the genus *Aceria*, to accommodate wormlike mites, which are circular in cross section, or nearly so. The dorsal shield in *Aceria* is usually subtriangular, with dorsal setiferus paired tubercles in subdorsal positions on the rear shield margin and directing the setae caudally. After the above paper by Keifer, *Eriophyes oleae* Nalepa, 1900, has been named *Aceria oleae* (Nalepa). Newkirk and Keifer (1971) further revised the types of the related genera *Eriophyes* Von Siebold 1851 and *Phytoptus* Dujardin 1851, and proposed a new type-species for *Eriophyes*. This action resulted in *Eriophyes* being identical with *Aceria*. Therefore Newkirk and Keifer (1971) synonymised these two genera. However, Shevtchenko (1975), supported by Lindquist (1977) and other acarologists, objected this action and proposed to the International Commission on Zoological Nomenclature that the previous designations of the type-species be retained. Their argument was that the genera *Aceria* and *Eriophyes* as known prior to Newkirk and Keifer (1971), contain many economic species of great importance and a change in their names would create considerable confusion. In a decision by the Internat. Comm. of Zool. Nomenclature (1979), the Secretary reported that the Commission voted on the case (1977) and 18 votes were in favour of Shevtchenkco's proposal and 3 opposed. Therefore the generic name *Aceria* is used here since the name of the species must be *Aceria oleae* (Nalepa 1900).

Description

All measurements are given in microns (μm).
FEMALE
Dimensions, shape and colour (Figs. 1,2). Body length 149-182, width 46-62, depth 47-56, elongate wormlike, whitish.
Rostrum. Length 20-28, projecting forward and down; antapical seta 5 long.
Dorsal shield (Fig. 1). Subsemicircular, 20-23 long, 28-32 wide. The central shield pattern is rather obscure with lines appearing only on the posterior part of the shield. There is the suggestion of a median and two admedian lines at the rear shield margin, and a curved line extends backwards just central of the dorsal tubercles. Dorsal tubercles on rear margin, 21-23 apart, dorsal setae 35-38 diverging to rear.
Legs (Figs. 3, 4). Foreleg 26-31 long; tibia 7-9 long, with a seta 5-6 long at about a third; tarsus 6-7 long; claw 7-8 long, bent down; feather-claw 9-11 long. Hindleg 21-26 long; tibia 6

long, tarsus 7 long; claw 8 long. Coxae ornamented with granules (Fig. 5); 1st coxal seta 8-9 long, slightly ahead of anterior coxal approximation; 1st setiferus coxal tubercles about as far apart as the 2nd, which are considerably ahead of a line through the 3rd tubercles.

Abdomen (Fig. 2). Abdominal thanosome with 55-62 rings, completely microtuberculate with microtubercles more or less oval, 0.7×1.5 in cross section, set ahead of rear ring margin (Fig. 6). Lateral seta 27 long, on ring 9, behind shield; first ventral seta 18 long, on ring 30; second ventral seta 12 long, on ring 44; third ventral seta 23 long on 5th ring from rear. Telosome with 5 and very rarely 6 rings, with microtubercles mostly fine and very elongate. Telosomal seta 39-42 long. Accessory caudal seta 6-7

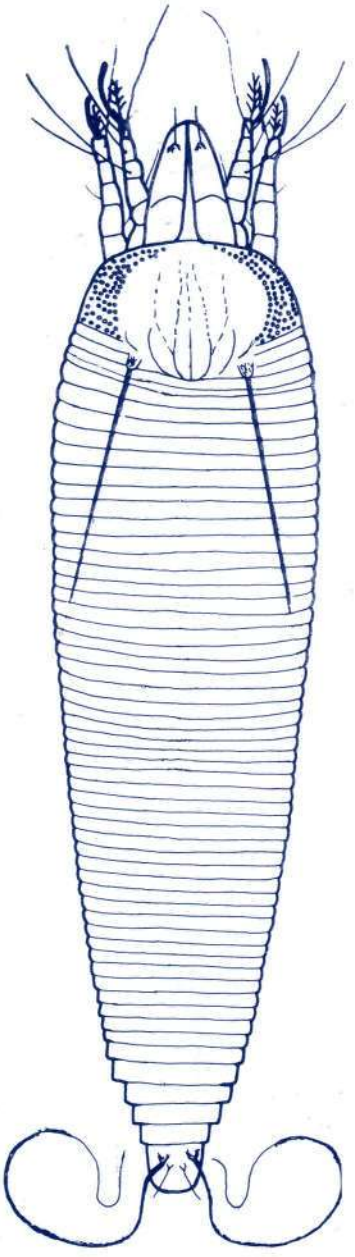

FIG. 1. *A. oleae*, female, dorsal view.

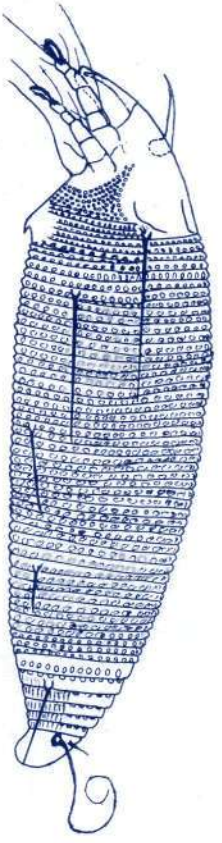

FIG. 2. *A. oleae*, female, lateral view.

FIG. 3. *A. oleae*, female, left anterior leg.

FIG. 4. *A. oleae*, female, claws.

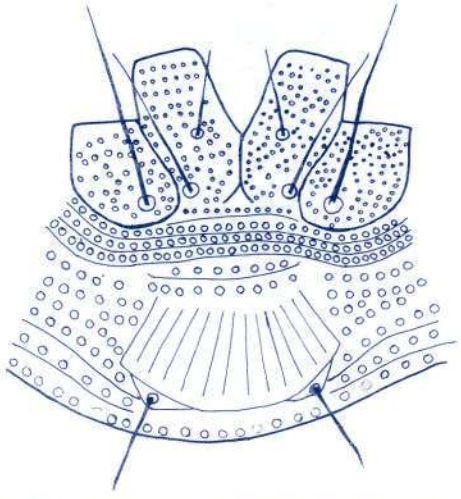

FIG. 5. *A. oleae*, female, coxae and external genitalia.

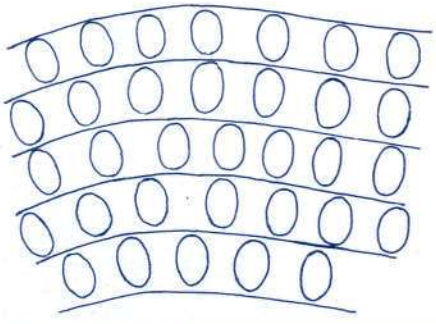

FIG. 6. *A. oleae*, female, lateral view epidermal structures.

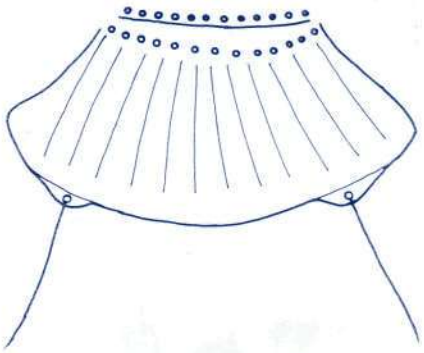

FIG. 7. *A. oleae*, female, genital coverflap.

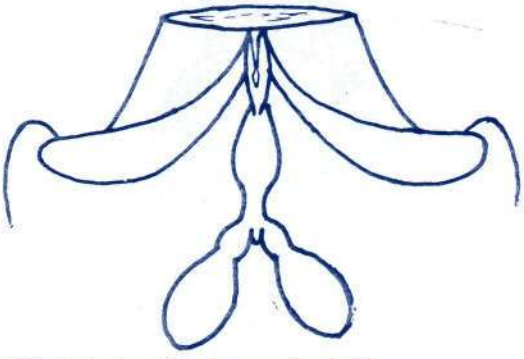

FIG. 8. *A. oleae*, female, internal genitalia.

FIG. 9. *A. oleae*, male, genital coverflap.

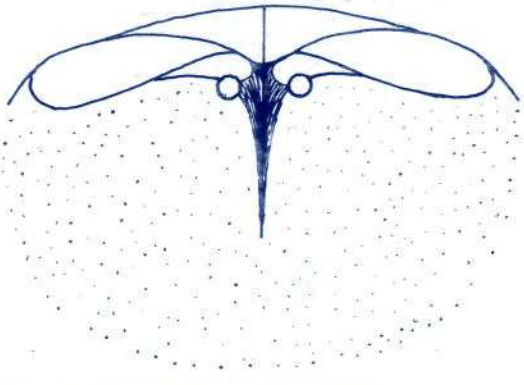

FIG. 10. *A. oleae*, male, internal genitalia.

long. Genital coverflap (Fig. 7) 15-16 long and 17-19 wide with two transverse lines of granules across the base and 12 longitudinal regular striae; genital setae 7-9 long. Internal genitalia in Fig. 8.

Egg. Colour white, shape more or less ellipsoid, dimensions 31-35 long and 20-23 wide.

MALE

The shape, colour and structure is similar to the female. Body length 132-163, width 42-51, depth 37-44. The central shield pattern is more obscure than in the female. Dorsal setae 18-21 apart, dorsal setae 28-33 long diverging to rear. Abdominal thanosoma with 47-53 rings, telosoma with 5 rings. Telosomal setae 32-37 long. Accessory setae 5-6 long. Genital coverflap sparsely granulate, 13-14 long, 16-18 wide, genital setae 11-14 long (Fig. 9). Internal genitalia in Fig. 10.

HOST

Olea europaea L. (Olive tree, Oleaceae).

TYPE MATERIAL

Holotype female on slide, Greece, Marathon Attiki, Greece, 17 October 1983. Paratypes, females (58) and males (11) on slides same location and date as holotype.

Remarks

The female of *A. oleae* (Nalepa) has been described for the same host plant by Keifer for an undefined location (Jeppson et al. 1975) and for Cape Town, S. Africa (Meyer 1981). They can be distinguished by the pattern of dorsal shield, the shape of the microtubercles, the length of the dorsal setae, the length of the setae of the tarsi of the first pair of legs, and the longitudinal ribs of the genital coverflap. Both works (Jeppson et al. 1975, Meyer 1981) concentrated only on certain parts of the mite whose description has thus remained incomplete. Therefore, comparison of these mites has been limited to those parts covered by Jeppson et al. (1975) and Meyer (1981), and not for the whole mite. The descriptions by the above authors have shown that the lines of the dorsal shield extend to the middle of the shield and that the setae of the dorsal tubercles are of medium length. The abdominal microtubercles are shown to be subcircular and rounded off, and the proximal setae of the tarsi of the first leg pair are approximately equal in length. The longitudinal ribs of the genital coverflap are irregular and the tubercles of the first setiferus coxae are situated anteriorly towards the coxal edge.

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KEY WORDS: Acari, Eriophyidae, *Eriophyes oleae*, *Aceria oleae*, Description, Record, Distribution, Onomatology

Συνεισφορά στην Περιγραφή, Εξάπλωση και Ονοματολογία του *Aceria oleae* (Nalepa 1900) (Acari: Eriophyidae)

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ΠΕΡΙΛΗΨΗ

Το θηλυκό του *Aceria oleae* περιγράφεται με κάθε λεπτομέρεια και για πρώτη φορά δίνονται οι διαστάσεις των τμημάτων και εξαρτημάτων του σώματός του. Το αρσενικό περιγράφεται για πρώτη φορά. Παρουσιάζονται στοιχεία για την παγκόσμια εξάπλωση και τη διασπορά του στην Ελλάδα. Επίσης δίνονται πληροφορίες σχετικές με την ονοματολογία του ακάρεος.