

Phytoseiid mites (Mesostigmata: Phytoseiidae) of Thrace, Turkey

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ABSTRACT

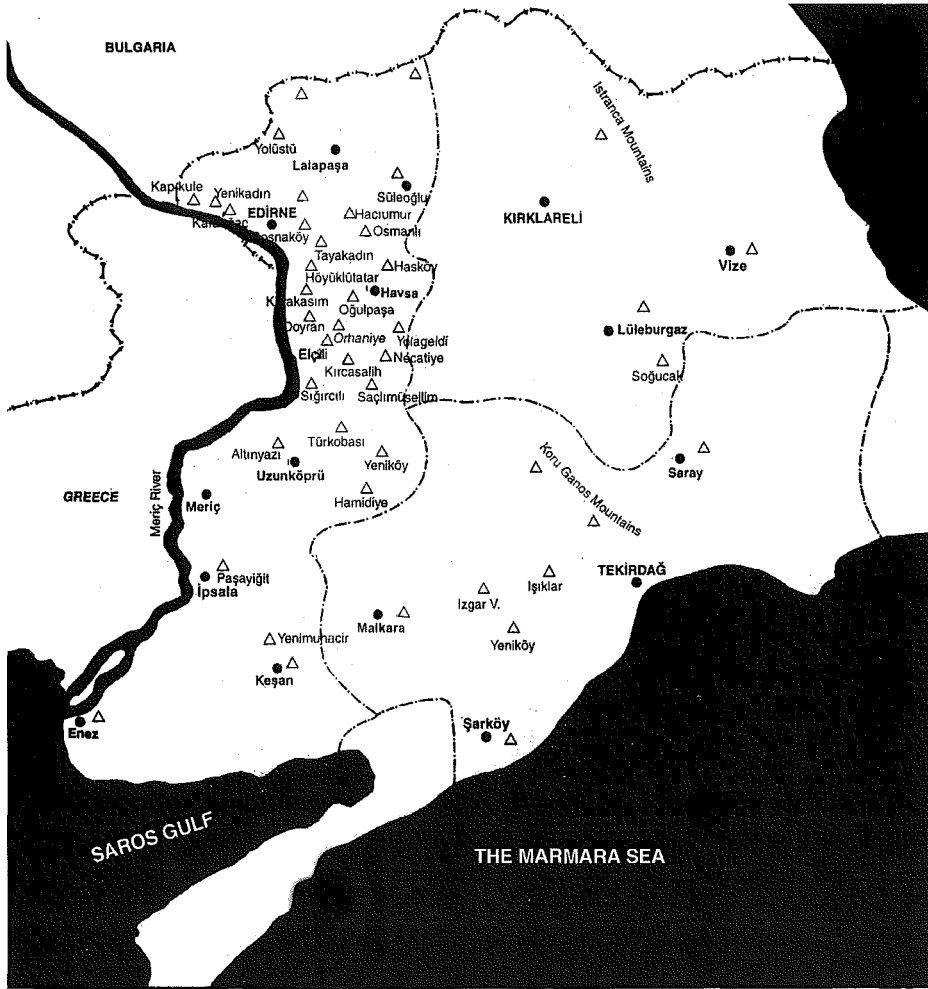
Nineteen species of phytoseiid mites are recorded from Thrace, the European part of Turkey: *Kampimodromus aberrans* (Oudemans), *Euseius finlandicus* (Oudemans), *Amblyseius andersoni* (Chant), *A. riparius* Kolodochka*, *Typhlodromus cotoneastri* Wainstein, *T. pyri* Scheuten, *Anthoseius bakeri* (Garman), *A. foenilis* (Oudemans)*, *A. intercalaris* (Livschitz et Kuznetsov), *A. recki* (Wainstein), *Paraseiulus soleiger* (Ribaga), *P. talpii* (Athias-Henriot), *P. triporus* (Chant and Yoshida-Shaul)*, *Neoseiulella tiliarum* (Oudemans), *N. aceri* (Collyer), *Phytoseius plumifer* (Canestiini and Fanzago), *P. echinus* Wainstein et Arutunjan, *P. salicis* Wainstein et Arutunjan*, and *P. ribagai* Athias-Henriot*. Five of them (marked *) are new to the Turkish acarofauna.

INTRODUCTION

Several detailed studies on the phytoseiid mites (Mesostigmata, Phytoseiidae) of Anatolia ("Asia Minor"), the Asian part of Turkey, were carried out by Qobanoglu (1989,1991,1992) and Sekeroglu (1984). However, there have been no available data on the phytoseiid mites of Thrace, the European part of Turkey, prior to this study. This paper is based on a survey of phytoseiid mites that was conducted in Thrace between 1990 and 1992. The collection sites are marked on a map (Fig. 1). Asterisks in the text refer to species recorded for the first time from Turkey.

During the survey, 449 samples were collected from various plants in the Edirne, Tekirdag, and Kirklareli provinces in Thrace. Weekly samples, mainly from unsprayed areas, were taken between April and November. Phytoseiid mites were collected off the leaf samples using a stereomicroscope. All specimens were stored in 70% alcohol. Specimens were mounted on slides using Hoyer's medium. The slides were deposited in the collection of the Department of Plant Protection, Faculty of Agriculture, University of Ankara.

Setal terminology follows Rowell et al. (1978), Kolodochka (1978), Beglyarov (1981), Evans and Momen (1988), and Chant and Yoshida-Shaul (1982, 1987, 1989). The samples were compared with type material or other identified specimens, borrowed from the Department of Zoology, University of Toronto, Canada (E. Yoshida-Shaul) and the Institute of Zoology, Kiev-Ukraine (L.A. Kolodochka). Abbreviations used in the material examined lists are: Imm-Immature stages; L-Larvae; N-Nymphs. Full names for host plants mentioned throughout the article can be found in Table 3.



△ COLLECTION SITES

Fig. 1. Thrace, the European part of Turkey: cities or villages (●), and collection sites (△).

TAXONOMY

Amblyseius andersoni (Chant, 1957)

Material examined

Bahçeköy-Saray, Tekirdağ 18.vii.1992, *C. avellana* (3 ♀). Istranca Mountains-Kırklareli, 14.vi.1992, *F. orientali* (4 ♀, 1 Imm.). Söğütlük, 30.v.1992, *Convolvulus* sp. (2 ♀), *S. ebulus* (3 ♀). Bosnaköy-Edirne, 23.x.1991, *P. canadensis* (2 ♀); 3.vii.1991, *M. communis* (3 ♀). Necatiye-Havsa, 10.vii.1991, *J. regia* (1 ♀) *M. communis* (3 ♀).

Comments

This species was previously recorded from the Black Sea and the Marmara and Mediterranean regions of Turkey (Sekeroglu, 1984; Çobanoğlu 1989, 1991 and 1992), but it was only rarely collected in Turkey. In Thrace, it was obtained in the samples from Edirne and Kirklareli.

Amblyseius riparius Kolodochka, 1991
(Figs. 2, 3)

Material examined

Sogucak-Vize, Kirklareli, 29.vii.1992, *Salix* sp. (1 ♀).

Comments

This is the first record of *A. riparius* from Turkey. It was collected from a leaf gall on *Salix* sp. It was previously known only from Russia, also on leaves of *Salix* sp. (Kolodochka, 1991).

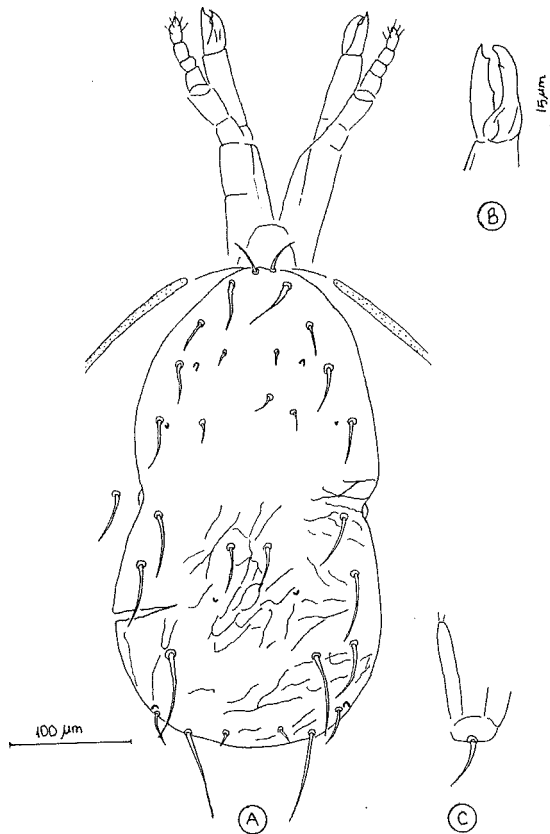


Fig. 2. *Amblyseius riparius* Kolodochka, female: A—dorsal scutum. B—chelicera. C—leg IV.

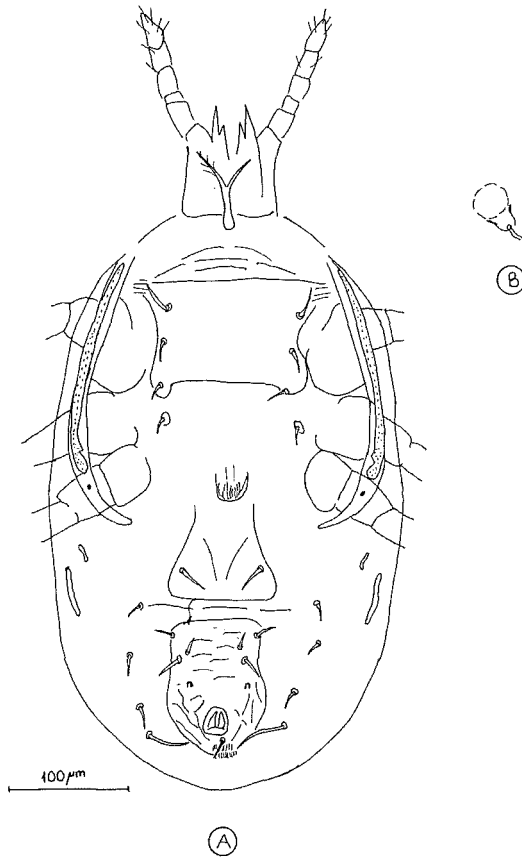


Fig. 3. *Amblyseius riparius* Kolodochka, female. A—ventral scutum. B—spermatheca.

Anthoseius bakeri (Garman, 1948)

Material examined

Söğütlük-Edirne, 30.v.1992, *M. alba* (1 ♀).

Comments

This rare species was previously recorded from the central part of Turkey from apple bark (Düzgünes and Kiliç, 1983). It was found in association with a tarsonemid colony in Edirne.

Anthoseius foenilis (Oudemans, 1930)

(Figs. 4, 5)

Material examined

Kömürcü-Vize, Kırklareli, 17.vii.1992, *M. alba* (1 ♀). Kiyık-Edirne, 12.vii.1992, *P. cerasus* (1 ♀). Bosnaköy-Edirne, 23.x.1991, *Populus* sp. (2 ♀). Kircasalih-Edirne, 3.vi.1991, *P. cerasus* (1 ♀).

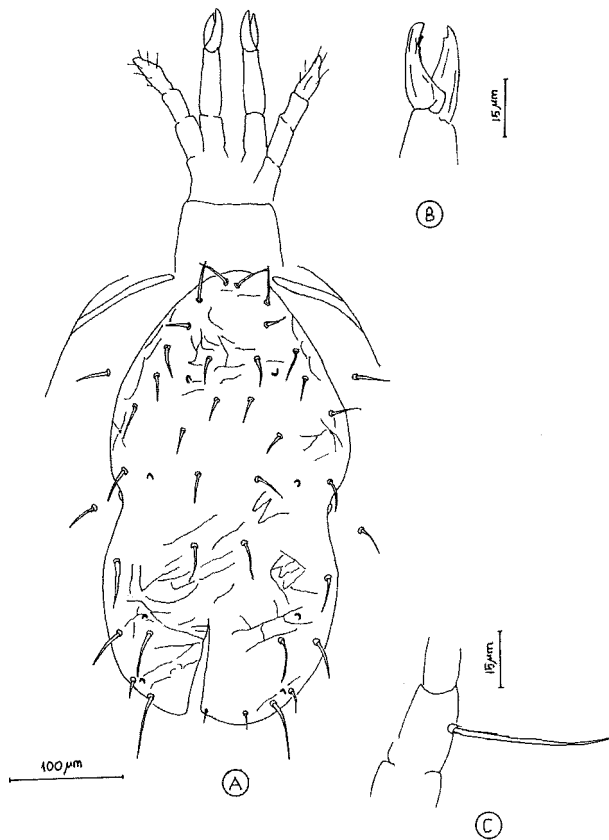


Fig. 4. *Anthoseius foenilis* Oudemans, female. A–dorsal scutum. B–chelicera. C–leg IV.

Comments

T. foenilis is a new record for the Turkish fauna. It was found in Edirne and Kırklareli provinces but was uncommon in samples. The species was found in association with the phytophagous mite *Eotetranychus populi* (Koch) (Tetranychidae) (5 ♀, 3 ♂) on poplar trees.

Anthoseius intercalaris (Livschitz and Kuznetsov, 1972)

Material examined

Istranca Mountains-Kırklareli, 14.6.1992, *F. orientalis* (1 ♀). Lalapasa-Edirne, 20.v.1992, *U. campestris* (1 ♀).

Comments

This rare species was collected previously from the Mediterranean region (Düzgünes and Kiliç, 1983; Sekeroglu, 1984). It was found in association with Eriophyidae and Tydeidae.

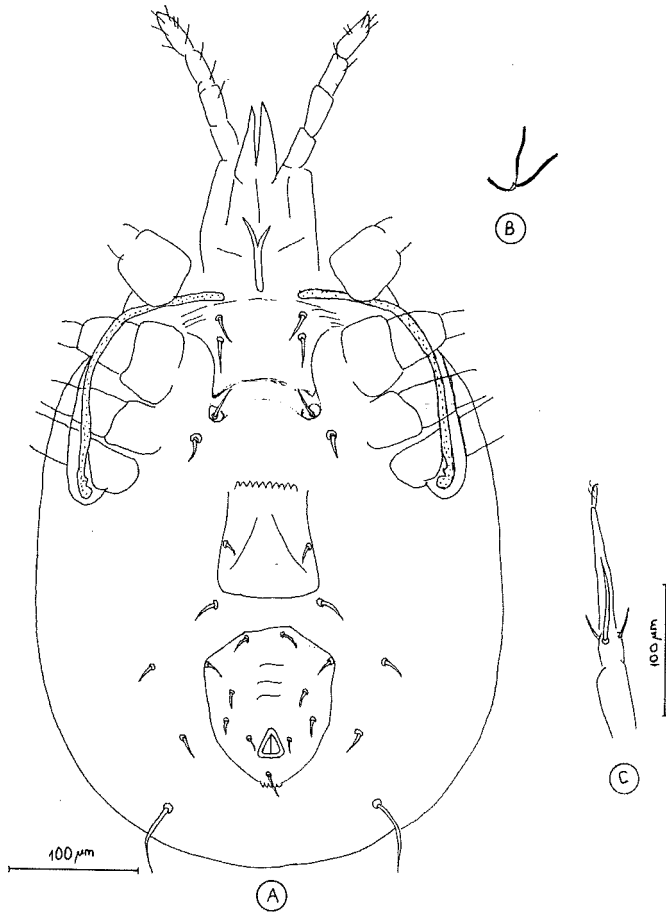


Fig. 5. *Anthoseius foenilis* Oudemans, female. A—ventral scutum. B—spermatheca.

Anthoseius recki (Wainstein, 1958)

Material examined

Kiyik-Edirne, 12.vii.1992, *V. vinifera* (2 ♀, 3 ♂), *P. eleagrifolia* (1 ♂), *R. fruticosus* (1 ♀, 1 ♂); 20.v.1991, *V. vinifera* (1 ♂). Yolageldi-Edirne, 5.vi.1991, *R. fruticosus* (2 ♀, 1 Imm.). Uzunköprü-Edirne, 7.v.1991, *R. canina* (1 ♀, 2 Imm.), *R. fruticosus* (1 ♀). Sarköy-Tekirdag, 7.viii.1991, *C. vitalba* (1 ♀).

Comments

This species was previously recorded from all the regions of Turkey (Swirski and Amitai, 1982; Sekeroglu, 1984; Çobanoğlu, 1989, 1991; Madanlar, 1992). In Thrace it was found in Edirne and Tekirdag, mainly on shrubs.

Euseius finlandicus (Oudemans, 1915)**Material examined**

Sogucak-Vize, 29.vii.1992, *J. regia* (10 ♀, 2 ♂). Kiyik-Edirne, 12.vii.1992, *J. regia* (4 ♀), *M. communis* (1 ♀, 2 ♂, 1 N), *P. avium* (17 ♀, 3 ♂), *F. carica* (1 ♀), *R. fruticosus* (4 ♀, 1 ♂); 3.v.1992, *P. persica* (1 ♀), *P. domestica* (4 ♀, 1 ♂, 2 N); 2.vi.1991, *J. regia* (1 ♀), *P. domestica* (1 ♀, 1 ♂). Edirne, 14.vii.1992, *Convolvulus* sp. (1 ♀); 7.vii.1992, *A. hippocastanum* (1 ♀, 3 ♂), *M. alba* (10 ♀, 3 ♂); 29.v.1991, *P. domestica* (1 ♀), *U. campestris* (1 ♀), *V. opulus* (8 ♀, 4 ♂, 1 N), *Rosa* sp. (5 ♀, 3 ♂, 2 N), *M. floribunda* (1 ♀). Söğütlik, 30.v.1992, *Convolvulus* sp. (2 ♀), *M. alba* (5 ♀, 1 ♂, 1 N), *P. domestica* (1 ♀), *S. ebulus* (5 ♀, 1 N); 28.vii.1991, *J. regia* (2 ♀); 6.vi.1991, *J. regia* (1 ♀); 20.vii.1991, *M. alba* (6 ♀, 2 ♂). Yenikadın-Edirne, 23.vi.1992, *M. alba* (2 ♀, 1 ♂, 1 N), *P. domestica* (7 ♀, 5 ♂, 1 L, 1 N), *M. communis* (11 ♀, 7 ♂, 1 L), *P. communis* (2 ♀); 8.v.1992, *M. alba* (4 ♀, 1 ♂, 1 N, 1 L); 4.xi.1991, *M. alba* (2 ♀); 24.x.1991, *M. communis* (15 ♀), *P. domestica* (7 ♀). Lüleburgaz, 3.vii.1992, *P. domestica* (4 ♀), *M. alba* (2 ♀, 1 ♂), *M. communis* (3 ♀, 1 ♂); 25.vi.1992, *M. communis* (3 ♀, 1 ♂, 2 L), *P. cerasus* (1 N), *M. alba* (2 ♀, 1 ♂); 18.v.1992, *P. cerasus* (1 ♀, 1 ♂, 1 N), *P. domestica* (2 N); 25.x.1991, *P. domestica* (21 ♀), *M. communis* (2 ♀), *M. alba* (15 ♀). Izgar Village, Malkara, 14.vi.1992, *P. cerasus* (4 ♀), *M. alba* (3 ♀, 3 ♂, 1 Imm.). Altinyazi, Uzunköprü, 4.vi.1991, *P. armeniaca* (2 ♀, 1 Imm.), *M. alba* (1 ♀). Türkobasi, Uzunköprü, 4.vi.1992, *P. domestica* (1 ♀, 1 ♂). Kesan, 4.vi.1992, *M. alba* (3 ♀). Edirne, 21.v.1992, *M. alba* (7 ♀, 1 ♂, 1 L, 2 N); 7.v.1992, *V. opulus* (1 ♀, 2 ♂); 12.ix.1991, *V. opulus* (3 N); 22.vii.1991, *T. platyphyllos* (11 ♀); 19.vii.1991, *Campanula* sp. (1 ♀), *M. alba* (15 ♀), *V. vinifera* (2 ♀); 11.vii.1991, *Punica* sp. (3 ♀), *V. opulus* (3 ♀); 3.vii.1991, *L. nobilis* (1 ♀), *P. cerasus* (13 ♀), *M. alba* (5 ♀, 1 Imm.), *V. vinifera* (2 ♀, 2 ♂), 21.vi.1991, *M. alba* (10 ♀); 21.v.1991, *T. platyphyllos* (2 ♀); 29.v.1991, *T. platyphyllos* (7 ♀, 2 ♂, 1 Imm.); 23.v.1991, *T. platyphyllos* (4 ♀, 2 ♂); 20.v.1991, *T. platyphyllos* (3 ♀, 1 Imm.); 6.vi.1991, *V. opulus* (1 ♂); 28.iv.1991, *Acer* sp. (1 ♀); 22.v.1991, *F. vesca* (1 ♀); 6.v.1991, *Acer* sp. (3 ♀), *V. opulus* (2 Imm.); 30.iv.1991, *T. platyphyllos* (1 ♀); 7.xi.1991, *P. domestica* (2 ♀), *Platanus* sp. (2 ♀). Sarayıçi-Edirne, 7.vii.1991, *P. domestica* (12 ♀), *M. alba* (16 ♀); 30.v.1991, *J. regia* (1 ♂). Höyükütatar-Edire, 11.x.1991, *P. domestica* (3 ♀); *V. vinifera* (1 ♀); 15.v.1991, *E. japonica* (7 ♀), *M. communis* (1 ♀). Hacıumur Village-Süleoglu, 1.viii.1992, *V. vinifera* (1 ♀, 1 Imm.); 30.vii.1991, *M. alba* (17 ♀, 3 ♂); 21.vii.1991, *P. communis* (2 ♀, 1 ♂), *M. alba* (4 ♀, 2 ♂). Hasköy-Havsa, 5.vi.1991, *P. cerasus* (1 ♀); 10.vii.1991, *V. vinifera* (6 ♀), *P. domestica* (17 ♀, 4 ♂, 1 Imm.), *J. regia* (4 ♀). Necatiye-Havsa, 10.vii.1991, *P. domestica* (12 ♀), *P. communis* (3 ♀, 2 ♂), *V. vinifera* (9 ♀, 1 ♂), *J. regia* (4 ♀, 4 ♂), *P. avium* (8 ♀), *M. communis* (2 ♀). Havsa, 5.vi.1991, *M. alba* (11 ♀, 1 ♂). Bosnaköy-Edirne, 3.vii.1991, *J. regia* (3 ♀), *M. communis* (11 ♀, 4 ♂); 20.vi.1991, *J. regia* (8 ♀). Kircasalih, 3.vi.1991, *M. alba* (1 ♀), *C. mas* (4 ♀), *M. communis* (1 ♀, 1 Imm.), *P. cerasus* (2 ♀, 2 ♂, 2 Imm.), *F. carica* (3 ♂), *P. domestica* (1 ♀, 1 ♂); 3.v.1991, *P. persica* (1 ♂); 7.v.1991, *P. cerasus* (11 ♀, 1 Imm.). Ganos Mountains-Tekirdag, 6.viii.1991, *Rhamnus* sp. (1 ♀). Sarköy-Tekirdag, 7.viii.1991, *P. domestica* (12 ♀, 1 N), *J. regia* (6 ♀, 2 ♂), *P. cerasus* (1 ♂).

Yeniköy-Tekirdag, 7.viii.1991, *C. avellana* (5 ♀, 1 ♂), *J. regia* (1 ♀, 1 ♂, 1 Imm.), *P. domestica* (14 ♀, 1 ♂), *M. alba* (1 ♀, 1 Imm.). Isiklar Village-Tekirdag, 7.viii.1991, *P. cerasus* (3 ♀, 1 ♂), *J. regia* (9 ♀).

Comments

E. finlandicus was previously recorded from the central part of Anatolia, and the Marmara, Black Sea, and Mediterranean regions of Turkey (Swirski and Amitai, 1982; Düzgünes and Kılıç, 1983; Sekeroglu, 1984). It was found in the Edirne, Kirklareli, and Tekirdag provinces of Thrace.

This species was collected with colonies of *Tetranychus urticae* Koch, *Bryobia rubrioculus* (Scheuten) (Tetranychidae), *Cenopalpus* sp. (Tenuipalpidae), *Tydeus* sp. (Tydeidae), *Aculus* sp. (Eriophyidae), *Zetzellia* sp. (Stigmaeidae), Tarsonemidae, *Czenspinska* sp. (Winterschmidtidae), *Leptus* sp. (Erythraeidae), and *Anystis* sp. (Anystidae). Some specimens were observed while they were feeding on thrips.

Kampimodromus aberrans (Oudemans, 1930)

Material examined

Kiyik-Edirne, 3.v.1992; 12.vii.1992, *U. campestris* (3 ♀, 1 ♂); 12.vii.1992, *M. communis* (10 ♀, 1 ♂), *R. fruticosus* (6 ♀, 1 ♂), *P. eleagrifolia* (2 ♀), *P. cerasi* (8 ♀, 1 ♂), *P. domestica* (3 ♀, 1 ♂), *C. vulgaris* (8 ♀, 2 ♂), *F. carica* (4 ♀), *V. vinifera* (2 ♀, 2N), *M. alba* (5 ♀, 1 ♂); 20.vii.1991, *V. vinifera* (1 ♀), 2.vi.1991, *Mespilus* sp. (15 ♀, 2 ♂), *M. communis* (4 ♀); 3.vi.1991, *P. domestica* (1 ♀, 1 ♂). Edirne, 28.vii.1991, *M. alba* (1 ♀); 22.vii.1991, *T. platyphyllos* (1 ♀); 6.vi.1991, *T. platyphyllos* (1 ♀), 29.v.1992, *T. platyphyllos* (1 ♀), *V. opulus* (2 ♀), 7.v.1992, *Mespilus* sp. (2 ♀), *V. opulus* (1 ♀); 16.vi.1992, *C. avellana* (44 ♀, 16 ♂); 30.iv.1991, *M. communis* (1 ♀); 7.xi.1990, *Rosa* sp. (1 ♀); 6.v.1991, *Acer* sp. (1 ♀); 9.xi.1990, *M. communis* (1 ♀). Yenikadın-Edirne, 26.x.1991, *M. communis* (2 ♀), *P. domestica* (4 ♀). Söğütlük-Edirne, 30.v.1992, *C. vulgaris* (1 ♀), *R. fruticosus* (3 ♀); 20.vii.1991, *M. alba* (1 ♀). Süleoglu-Edirne, 21.vii.1991, *M. alba* (3 ♀). Havsa, 10.vii.1991, *P. domestica* (12 ♀, 1 ♂). Hasköy, 5.vi.1991, *V. vinifera* (1 ♀). Bosnaköy, 3.vii.1991, *M. communis* (4 ♀, 2 ♂). Kircasalih, 3.vi.1991, *M. alba* (3 ♀), *C. mas* (2 ♀), *F. carica* (7 ♀, 1 ♂, 1 Imm.), *P. domestica* (1 ♀); 7.v.1991, *F. carica* (1 ♀). Elçili, 15.v.1991, *M. communis* (1 ♀) Höyüklütatar, 15.v.1991, *E. japonica* (1 ♀), *M. alba* (1 ♀); 11.x.1991, *M. communis* (13 ♀), *P. domestica* (4 ♀), *F. carica* (4 ♀), *Mespilus* sp. (13 ♀), *M. alba* (7 ♀), *C. vulgaris* (2 ♀), *V. vinifera* (7 ♀); 31.vii.1991, *C. vulgaris* (3 ♀), *M. alba* (5 ♀), *F. carica* (10 ♀). Lüleburgaz, 23.v.1991, *M. communis* (1 ♀, 2 ♂); 3.vii.1992, *M. alba* (3 ♀), *M. communis* (3 ♀, 3 ♂); 25.vi.1992, *M. communis* (6 ♀), *M. alba* (1 ♀, 3 ♂); 3.10.1991, *P. domestica* (1 ♀); *C. vulgaris* (3 ♀), *U. campestris* (9 ♀); *M. alba* (6 ♀); 25.x.1991 *M. communis* (17 ♀), *M. alba* (2 ♀); 25.vi.1992, *M. communis* (8 ♀), *M. alba* (1 ♀, 1 ♂). Altinyazi-Uzunköprü, 3.vii.1992, *M. alba* (6 ♀, 2 ♂); 4.vi.1992, *M. alba* (15 ♀, 3 ♂). Türkobasi-Uzunköprü, 4.vi.1992, *M. alba* (2 ♀, 3 ♂). Yeni Muhacir Köyü, Kesan, 4.vi.1992, *M. communis* (3 ♀). Kesan, 4.vi.1991, *P. domestica* (6 ♀, 1 ♂), *C. vulgaris* (3 ♀),

Mespilus sp. (6 ♀), *M. alba* (1 ♀). Enez, 8.vi.1992, *C. vulgaris* (1 ♀, 1 ♂), *F. carica* (1 ♀, 1 ♂). Saçlı Müsellim-Edirne, 3.vi.1991, *P. domestica* (1 N). Istranca Mountains-Kirklareli, 14.vi.1992, *Crataegus* sp. (4 ♀). Ganos Mountains-Tekirdag, 6.viii.1991, *C. avellana* (3 ♀, 2 ♂), *A. campestre* (1 ♀, 1 ♂). Yeniköy-Tekirdag, 7.viii.1991, *P. domestica* (13 ♀, 1 ♂), *M. alba* (4 ♀), *R. fruticosus* (13 ♀, 2 ♂), *P. orientalis* (1 ♀), *C. vulgaris* (1 ♀), *C. avellana* (2 ♀, 1 ♂), *V. vinifera* (10 ♀), *J. regia* (8 ♀). Tekirdag, 25.viii.1991, *V. vinifera* (5 ♀), *C. avellana* (2 ♀). Malkara, 14.vi.1992, *C. vulgaris* (6 ♀, 5 ♂, 1 L). Sarköy, 7.viii.1991, *P. domestica* (1 ♀), *C. vulgaris* (2 ♀). Saray-Tekirdag, 18.vii.1992, *C. avellana* (3 ♀). Sogucak-Vize, 12.vii.1992, *J. regia* (4 ♀, 1 ♂), *P. domestica* (1 ♀, 1 ♂). Vize-Kirklareli, 16.vii.1992, *M. communis* (4 ♀, 2 ♂, 3 N).

Comments

This species was found with colonies of Eriophyidae, Tarsonemidae, and *Cenopalpus* sp. (Tenuipalpidae). Some specimens were observed feeding on *Cenopalpus* sp. It is very common in all regions of Turkey on many plants, including apple and quince (Swirski and Amitai, 1982; Çobanoğlu 1991, 1992).

Neoseiulella aceri (Collyer, 1957)

Material examined

Kiyık-Edirne, 12.vii.1992, *J. regia* (5 ♀), *M. alba* (1 ♀, 1 Imm); 18.vii.1992, *J. regia* (2 ♀). Ganos Mountains-Tekirdag, 6.viii.1991, *U. campestris* (2 ♀).

Comments

This rare species was collected in samples from Edirne and Tekirdag, together with colonies of Tydeidae.

Neoseiulella tiliarum (Oudemans, 1930)

Material examined

Bahçeköy-Saray, Tekirdag, 18.vii.1992, *C. avellana* (1 ♀). Bosnaköy-Edirne, 3.vii.1991, *J. regia* (1 ♀, 1 ♂). Saçlımüsellim-Uzunköprü, Edirne, 3.vi.1991, *P. domestica* (1 ♀). Oğulpasa-Havsa, 8.v.1991, *P. domestica* (1 ♀).

Comments

This species was previously recorded from the central part of Anatolia as well as the Mediterranean and Marmara regions of Turkey (Swirski and Amitai, 1982; Çobanoğlu 1991, 1992). It is an uncommon species, collected in Edirne and Tekirdag.

Paraseiulus soleiger (Ribaga, 1902)

Material examined

Uludag-Bursa, 25.viii.1991, *Ulmus* sp. (2 ♀).

Comments

P. soleiger is similar to *P. triporus*, but has indistinct pores on the dorsal shield. The peritreme apex reaches setae j_3 , and the spermathecal shape is different from that of *P. triporus*.

P. soleiger was recorded on various plants and from various parts of Turkey. However, Chant and Yoshida-Shaul (1982) noticed that many samples, previously identified as *P. soleiger*, in fact belong in *P. triporus*. Therefore, it is necessary to recheck all previous samples that were identified as *P. soleiger*.

Paraseiulus talbii (Athias-Henriot, 1960)

Material examined

Edirne, 29.v.1992, *M. floribunda* (1 ♀); 11.vii.1991, *V. opulus* (1 ♂). Lüleburgaz, 25.x.1991, *M. communis* (4 ♀), *M. alba* (1 ♀). Yenikadin Köyü-Edirne, 24.x.1991, *P. domestica* (3 ♀). Necatiye-Havsa, 10.vii.1991, *P. domestica* (1 ♀). Ganos Mountains-Tekirdag, 6.viii.1991, *F. orientalis* (1 ♀, 1 N).

Comments

This species was previously recorded from all regions of Turkey except the Black Sea region (Çobanoğlu 1989, 1991). In Thrace, it was collected in Edirne and Tekirdag provinces. It occurs mainly on trees and shrubs.

Paraseiulus triporus (Chant and Yoshida-Shaul, 1982) (Figs. 6, 7)

Material examined

Ganos Mountains-Tekirdag, 6.viii.1991, *C. mas* (1 ♀). Isiklar Village-Yilanlidere, Tekirdag, 6.viii.1991, *C. vulgaris* (2 ♀). Kiyik-Edirne, 12.vii.1992, *C. vulgaris* (2 ♀), *M. communis* (1 ♀).

Comments

This species is a new record for the Turkish acarofauna. The specimens from Turkey were compared with the type specimen of *P. triporus*, and all measurements, as well as other characteristics, are identical.

This species was found in association with Tenuipalpidae (*Cenopalpus* sp.) and also together with Stigmaeidae on trees.

Phytoseius (Dubininellus) plumifer (Canestrini and Fanzago, 1876)

Material examined

Kesan-Edirne, 4.vi.1992, *Ulmus* sp. (1 ♀, 1 ♂). Kapikule-Edirne, 29.v.1991, *U. campestris* (1 ♂), *F. carica* (3 ♀, 6 ♂). Tasocagi-Edirne, 30.v.1991, *R. fruticosus* (2 ♀, 2 ♂). Doyran-Edirne, 31.vii.1991, *R. fruticosus* (15 ♀, 6 ♂). Elçili-Edirne,

15.v.1991, *P. domestica* (1 Imm.). Necatiye-Havsa, 10.vii.1991, *M. communis* (1 ♀). Orhaniye-Havsa, 15.v.1991, *R. fruticosus* (1 ♀, 1 ♂). Kircasalih-Edirne, 3.vi.1991, *F. carica* (1 ♀, 1 Imm.). Ganos Mountains-Tekirdag, 6.viii.1991, *C. avellana* (1 ♀, 4 ♂), *R. fruticosus* (9 ♀, 3 ♂), *U. campestris* (1 N), *V. vinifera* (5 ♀, 1 ♂), *Rhamnus* sp. (2 ♀, 2 ♂), *C. mas* (2 ♀), *C. vulgaris* (1 ♀), *P. domestica* (1 ♀). Uçmakedere-Sarköy, 7.viii.1991, *F. carica* (5 ♀), *C. vitalba* (1 ♀, 1 Imm.), *Ailanthus* sp. (9 ♀, 1 ♂), *P. domestica* (1 ♀); 6.vii.1992, *F. carica* (5 ♀). Yeniköy-Tekirdag, 7.viii.1991, *V. vinifera* (5 ♀, 1 ♂, 1 Imm.), *M. nigra* (6 ♀, 1 Imm.). Isiklar Village-Yilanlidere, Tekirdag, 7.viii.1991, *C. vulgaris* (3 ♀), *V. vinifera* (11 ♀), *P. spinosa* (9 ♀, 1 ♀), *F. carica* (3 ♀).

Comments

P. plumifer is a very common species in all parts of Turkey (Sekeroglu, 1984; Çobanoğlu, 1989, 1991), including the Edirne and Tekirdag provinces. The concept of this species follows Chant and Athias-Henriot, 1960.

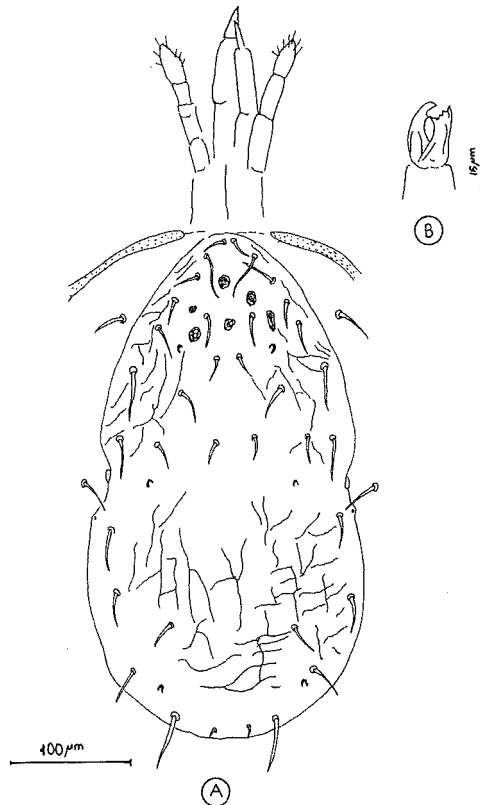


Fig. 6. *Paraseiulus triporus* (Chant and Yoshida-Shaul) female. A—dorsal scutum. B—chelicera.

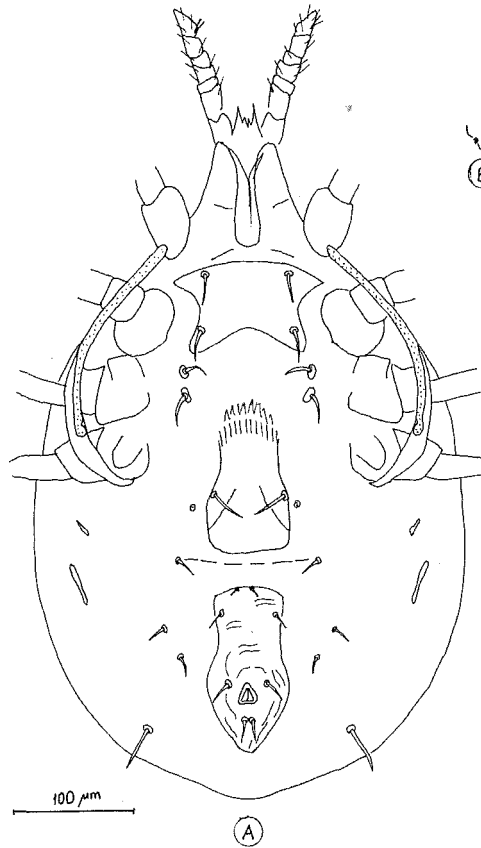


Fig. 7. *Paraseiulus triporus* (Chant and Yoshida-Shaul), female. A—ventral scutum. B—spermatheca.

Phytoseius (Phytoseius) echinus Wainstein et Arutunjan, 1970

Material examined

Kiyik-Edirne, 12.vii.1992, *U. campestris* (3 ♀). Lüleburgaz, 30.x.1991, *C. vulgaris* (2 ♀), *P. domestica* (19 ♀), *C. avellana* (1 ♀). Necatiye-Havsa, 10.vii.1991, *P. domestica* (2 ♀), *C. vulgaris* (5 ♀). Kircasalih-Edirne, 3.vi.1991, *F. carica* (5 ♀), *C. avellana* (1 ♀). Ogulpasa Village, 8.v.1991, *R. canina* (1 ♀), *P. domestica* (2 ♀).

Comments

P. echinus is a fairly common species in Turkey. It was recorded from the Marmara Sea, Black Sea, and central regions (Swirski and Amitai, 1982; Düzgünes and Kiliç, 1983;

Çobanoğlu, 1989). It was found in association with *Czenspinksia* sp. and Tarsonemidae colonies.

Phytoseius (Phytoseius) ribagai Athias-Henriot, 1960
(Figs. 8, 9)

Material examined

Saray-Vize, Kırklareli, 18.vii.1992, *C. avellana* (3 ♀, 1 ♂). Bahçeköy-Saray, Kırklareli, 18.vii.1992, *C. avellana* (1 ♀, 1 ♂).

Comments

Phytoseius ribagai is a new record for the Turkish acarofauna. It was found on *Rubus ulmifolius* in Italy (Chant and Athias-Henriot, 1960; Denmark, 1966).

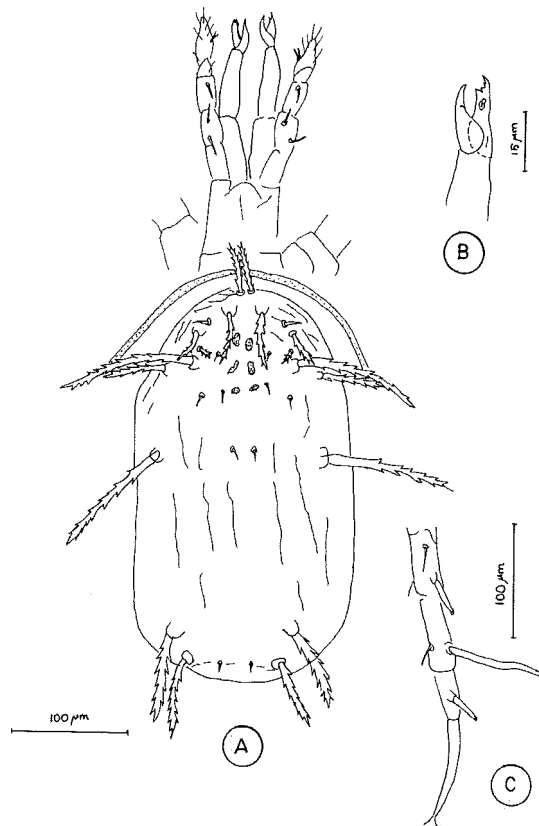


Fig. 8. *Phytoseius ribagai* Athias-Henriot, Female. A—dorsal scutum. B—chelicera. C—leg IV.

Phytoseius (Phytoseius) salicis Wainstein et Arutunjan, 1970
(Figs. 10, 11)

Material examined

Istranca Mountains, 14.vi.1992, *F. orientalis* (5 ♀, 2 ♂).

Comments

P. salicis is a new record for the Turkish acarofauna. It was found in association with Eriophyidae and Tydeidae.

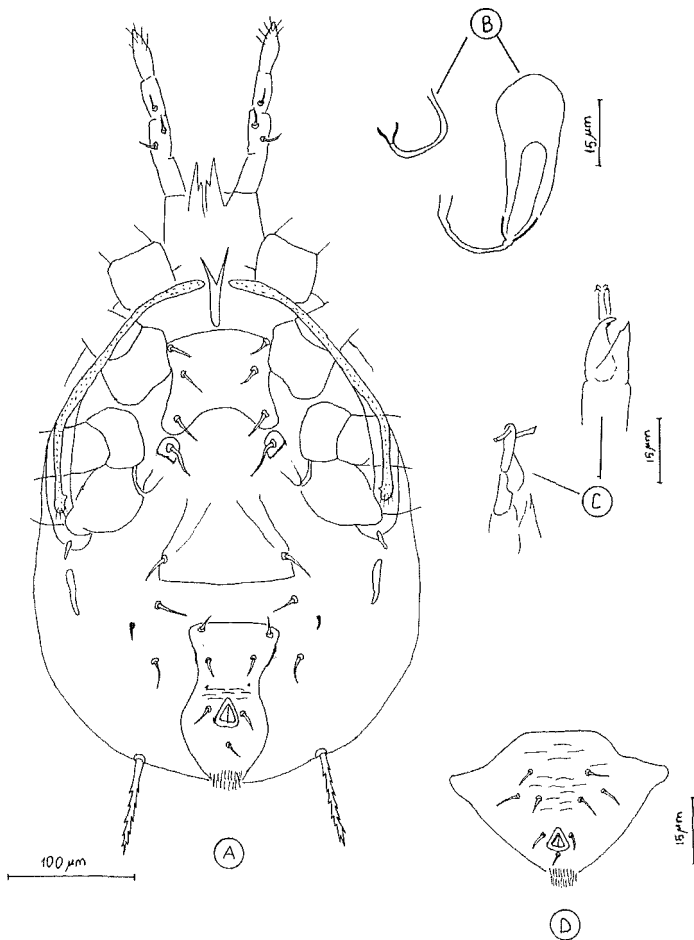


Fig. 9. *Phytoseius ribagai* Athias-Henriot. Female: A—ventral scutum. B—chelicera. Male: C—spermatodactyl. D—ventrianal shield.

Typhlodromus cotoneastri Wainstein, 1961**Material examined**

Sogucak-Vize, Kirklareli, 29.vii.1992, *P. domestica* (1 N). Kiyik-Edirne, 12.vii.1992, *F. orientalis* (1 N). Lüleburgaz, 3.vii.1992, *P. cerasus* (1 ♀, 4 ♂); 25.vi.1992, *P. domestica* (6 ♀, 2 ♂), *P. cerasus* (13 ♀, 1 ♂), *M. alba* (1 ♀), *V. vinifera* (1 ♀); 18.v.1992, *M. alba* (3 ♀, 2 ♂); 30.x.1991, *C. vulgaris* (1 ♀); 25.x.1991, *P. cerasus* (8 ♀), *P. domestica* (1 ♀); 23.v.1991, *M. communis* (1 ♀). Edirne, 29.v.1991, *V. opulus* (2 ♀); 19.vii.1991, *Campanula* sp. (1 ♀). Kircasalih, 3.vi.1991, *F. carica* (1 ♀). Ganos Mountains-Tekirdag, 6.viii.1991, *U. campestris* (2 ♀), *Quercus* sp. (Fagaceae) (1 ♀), *C. avellana* (4 ♀, 1 ♂), *C. orientalis* (1 ♀, 1 ♂), *R. fruticosus* (1 ♀), *C. mas* (7 ♀). Yeniköy-Tekirdag, 7.viii.1991, *C. avellana* (1 ♀). Isiklar Village-Tekirdag, 7.viii.1991, *M. alba* (1 ♀), *P. cerasus* (1 ♀, 1 ♂), *V. vinifera* (2 ♀). Yilanlidere-Tekirdag, 7.viii.1991, *P. cerasus* (6 ♀, 2 ♂).

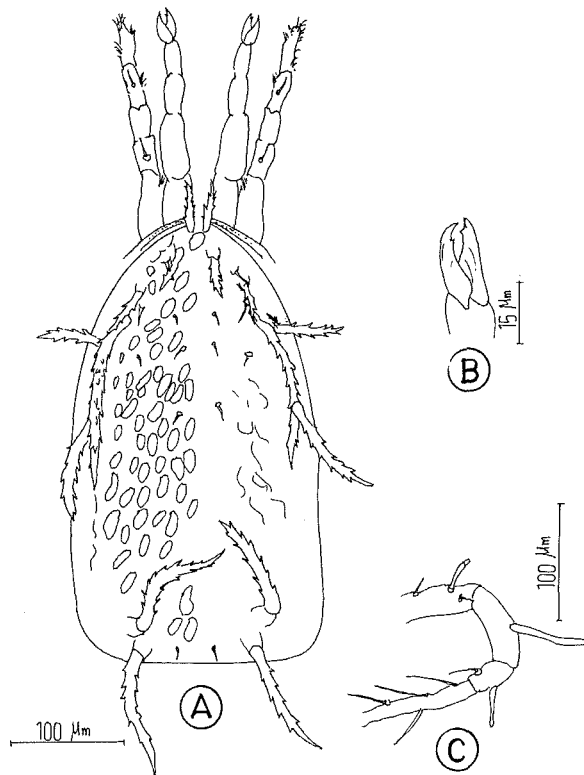


Fig. 10. *Phytoseius salicis* Wainstein et Arutunjan, female. A—dorsal scutum. B—chelicera. C—leg IV.

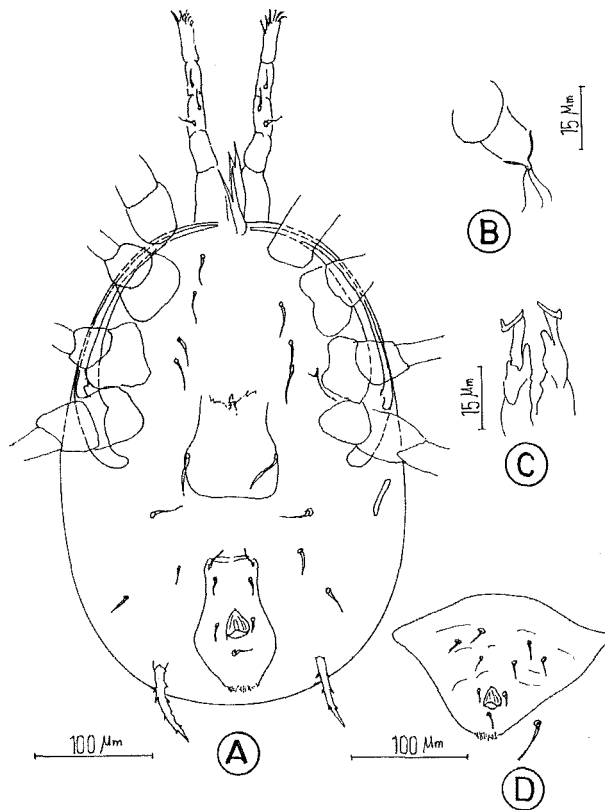


Fig. 11. *Phytoseius salicis* Wainstein et Arutunjan. Female: A–ventral scutum. B–spermatheca. Male: C–spermatodactyl. D–ventrianal shield.

Comments

T. cotoneastri was collected in Edirne, Tekirdag, and Kırklareli provinces. It was also recorded from the central part of Anatolia (Swirski and Amitai, 1982; Çobanoğlu, 1991) and the Marmara region of Uludag-Bursa, on a species of *Quercus* (1 ♀).

T. cotoneastri was mostly collected from forest trees. It was frequently found in association with *Bryobia rubrioculus*, *Panonychus ulmi* (Koch), and species of Eriophyidae (especially *Colomerus vitis* (Pagenstecher)). It was also observed together with Stigmaeidae and Tydeidae colonies.

Typhlodromus pyri Scheuten, 1857

Material examined

Ganos Mountains-Tekirdag, 6.viii.1991, *U. campestris* (1 ♀).

Comments

This species was previously recorded from the Marmara region and the central part of Anatolia, Turkey (Çobanoğlu, 1991). In Thrace, it was found only at one location.

Key to Genera, Subgenera, and Species of Female *Phytoseiidae* of Thrace

1. Four pairs of anterior lateral setae on dorsal scutum 2
- Six pairs of anterior lateral setae on dorsal scutum 5
2. Less than nine pairs of lateral setae
..... *Kampimodromus* Nesbitt [1 sp., *K. aberrans* (Oudemans)]
- Nine pairs of lateral setae 3
3. Ventrianal shield narrow and almost oval in outline. Preanal setae arranged in transverse row on anterior part of ventrianal shield
..... *Euseius* Wainstein [1 sp., *E. finlandicus* (Oudemans)]
- Ventrianal plate variously shaped. Preanal setae not arranged in transverse row on anterior part of ventrianal shield *Amblyseius* Berlese [2 spp.]...4
4. Some setae on dorsal shield noticeably longer than others. At least one prolateral seta over 3 times as long as any dorsal seta. Dorsal scutum smooth. Lateral setae z2 shorter than distance between z2–z3. Apex of peritreme reaches seta j1. Spermatheca cup-shaped. Lateral margins of ventrianal shield markedly constricted and with pair of distinct crescent-shaped pores *A. andersoni* (Chant)
- Length of prolateral setae and dorsal setae not noticeably different. Dorsal scutum reticulated. Lateral setae z2 equal to distance between z2–z3. Apex of peritreme reaches setae j3. Ventrianal shield with pair of indistinct small pores. Spermatheca bell-shaped (Figs. 2,3)
..... *A. riparius* Kolodochka
5. At most three pairs of posterolateral setae on dorsal scutum 6
- More than three pairs of posterolateral setae on dorsal scutum 8
6. Anterior sublateral setae (r3) located on interscutal membrane. Posterior sublateral seta (R1) present *Typhlodromus* Scheuten [2 spp.]...7
- Anterior sublateral setae (r3) located on dorsal scutum. Posterior sublateral setae (R1) present on interscutal membrane or absent *Phytoseius* Ribaga [4 spp.]...16
7. Macroseta on leg IV without bulbous tip, spermatheca funnel elongate cylindrical with short neck. On shrubs or orchards *T. pyri* Scheuten
- Macroseta on Leg IV with bulbous tip. Spermatheca funnel short, cup-shaped, with long neck. On orchard and forest trees *T. cotoneastri* Wainstein
8. With 4 pairs of posterolateral setae 9
- With 5 pairs of posterolateral setae *Neoseiulella* Muma [2 spp.]...15
9. With 2 pairs of mediolateral setae (z5 and Z4). Ventrianal scutum elongately pentagonal, with four pairs of preanal setae *Anthoseius* De Leon [4 spp.]...10
- With 3 or 4 pairs of mediolateral setae (z5, z6, Z3, and Z4). Ventrianal scutum sandal-shaped, with two pairs of preanal setae *Paraseiulus* Muma [2 spp.]...13
10. Anterior pair of preanal setae situated on interscutal membrane. Preanal pore present. Peritreme short *A. intercalaris* (Livschitz et Kuznetsov)
- All preanal setae located on ventrianal shield. Peritreme longer 11
11. Dorsal scutum densely sclerotised and with lateral constriction. Ventrianal shield strongly sclerotised and robust. Leg IV without macrosetae. Setae Z4 serrated

-*A. bakeri*(Garman)
- . Dorsal scutum not densely sclerotised. Ventrianal shield not as above. Leg IV with macrosetae **12**
12. Peritreme long with apex reaching vertical setae. Preanal pores absent. Setae Z5 with pointed tips. DM (Mobile Digit) of chelicera bears two teeth. Basitarsus of leg IV with long macrosetae with bulbous tip (Figs. 4,5) *A. foenilis* (Oudemans)
- . Peritreme long with apex reaching setae j3. DM with one tooth. Basitarsus IV with short macrosetae with tapering tip. Preanal pores small and hardly visible. Mainly on shrubs and orchards *A. recki* (Wainstein)
13. Setae Z3 present, with two pairs (Z3 and Z4) of posteromediolateral setae situated on posterior dorsal scutum *P. talbii* (Athias-Henriot)
- . Setae Z3 absent, pair of (Z4) posteromediolateral setae present on posterior dorsal shield. **14**
14. One pair of pores on dorsal scutum. Spermatheca with cup-shaped funnel and separated neck. Peritreme extending to level of seta j1 *P. soleiger* (Ribaga)
- . Three pairs of very distinct pores on dorsal scutum, spermatheca cone-shaped. Peritreme extending to level of seta j3 (Figs. 6,7) *P. triporus* (Chant and Yoshida-Shaul)
15. Ventrianal scutum longer than wide, oblong in shape and with four pairs of preanal setae. Peritreme short, reaching base of setae z4. Spermatheca bell-shaped. Mainly on trees and shrubs *N. tiliarum* (Oudemans)
- . Ventrianal scutum wider, peritreme longer, with apex reaching base of setae j3. Sublateral seta R1 on dorsal scutum. Spermatheca not as above. On trees *N. aceri* (Collyer)
16. With 6 pairs of dorsal setae, seta J2 present. Posterior sublateral setae (R1) present *P. subgenus Phytoseius Ribga* [1 sp., *P. plumifer* (Canestrini and Fanzago)]
- . With 5 pairs of dorsal setae, seta J2 absent. Posterior sublateral setae (R1) absent *P. subgenus Dubininellus Wainstein* [3 spp.]...**17**
17. Seta z2 and seta z4 equal in length or seta z2 slightly longer. With two pairs of preanal setae on ventrianal scutum **18**
- . Seta z2 shorter than seta z4. With three pairs of preanal setae on ventrianal scutum. Seta s4 1.3–1.6 times as long as s6. Macrosetae of leg IV obtuse and with very small clava. On orchard and forest trees *P.(D.) echinus Wainstein et Arutunjan*
18. Seta z6 shorter than seta Z5. Macrosetae of leg IV with distinct clava. Macrosetae on basitarsus slightly longer than on genu (Figs. 10,11) *P.(D.) salicis Wainstein et Arutunjan*
- . Seta s6 longer than setae Z4 and Z5. Macroseta on basitarsus equal to or slightly shorter than on genu (Figs. 8,9) *P.(D.) ribagai* (Athias-Henriot)

DISCUSSION

A total of 449 samples were examined from the most important agricultural areas of Thrace. Of these, 226 samples contained phytoseiid mites, while 58 samples included mites other than phytoseiids. The rest, 165 samples, yielded no mites.

Five of the nineteen species of phytoseiids that are reported from Thrace are new records for the Turkish acarofauna: *Amblyseius riparius*, *Anthoseius foenilis*, *Paraseiulus triporus*, *Phytoseius salicis*, and *Phytoseius ribagai* (Table 1).

The ten most common species, in descending order of frequency of occurrence, were *E. finlandicus* (30.1%), *K. aberrans* (21.8%), *P. plumifer* (6.2%), *T. cotoneastri* (5.8%), *P. echinus* (2.4%), *A. recki* (1.8%), *P. talbii* (1.6%), *A. andersoni* (1.8%), *N. tiliarum* (0.9%), and *N. aceri* (0.9%) (Table 1).

Some species had very low frequencies, such as *A. riparius*, *A. bakeri*, *T. pyri*, *P. soleiger*, and *P. salicis*, which were obtained from one sample only, while *A. intercalaris* and *P. ribagai* were found in two samples (Table 1).

The distribution of phytoseiid mites recorded in this present paper in various geographical regions of Turkey is given in Table 2. *A. riparius*, *A. foenilis*, *N. aceri*, *P. triporus*, *P. ribagai*, and *P. salicis* were found only in Thrace. The most common species, *E. finlandicus*, *K. aberrans*, *P. plumifer*, and *A. recki*, were present almost all over the country. Other species, such as *A. andersoni*, *T. cotoneastri*, *A. intercalaris*, *T. pyri*, *P. soleiger*, and *P. talbii*, were distributed only in some regions of Turkey. The

Table 1

Number of specimens of each phytoseiid species, the number of samples comprising each species, and the frequency (percentage of positive samples in 449 samples examined) of the species among the samples taken from Thrace, Turkey

Species	Total number of specimens collected	Number of samples with mite species	Frequency: % of samples comprising each species
<i>Amblyseius andersoni</i>	22	8	1.8
<i>Amblyseius riparius</i> *	1	1	0.2
<i>Anthoseius bakeri</i>	1	1	0.2
<i>Anthoseius foenilis</i> *	5	4	0.9
<i>Anthoseius intercalaris</i>	3	2	0.4
<i>Anthoseius recki</i>	17	8	1.8
<i>Euseius finlandicus</i>	684	135	30.1
<i>Kampimodromus aberrans</i>	511	98	21.8
<i>Neoseiulella aceri</i>	11	4	0.9
<i>Neoseiulella tiliarum</i>	5	4	0.9
<i>Paraseiulus soleiger</i>	2	1	0.4
<i>Paraseiulus talbii</i>	13	7	1.6
<i>Paraseiulus triporus</i> *	7	4	0.9
<i>Phytoseius echinus</i>	41	11	2.4
<i>Phytoseius plumifer</i>	139	28	6.2
<i>Phytoseius ribagai</i> *	6	2	0.4
<i>Phytoseius salicis</i> *	7	1	0.2
<i>Typhlodromus cotoneastri</i>	82	26	5.8
<i>Typhlodromus pyri</i>	3	1	0.2
Total	1560		

*New records for the Turkish acarofauna.

Table 2
Distribution of phytoseiid mites of Thrace in the regions of Thrace and Anatolia

Species	Thrace			Regions of Anatolia			
	Edirne	Tekirdag	Kirklareli	Marmara	Central Aegean	Medi-terranean	Black Sea
<i>Amblyseius andersoni</i>	+		+	+		+	+
<i>Amblyseius riparius</i> *			+				
<i>Anthoseius bakeri</i>	+				+		
<i>Anthoseius foenilis</i> *	+		+				
<i>Anthoseius intercalaris</i>	+		+			+	
<i>Anthoseius recki</i>	+	+		+	+	+	+
<i>Euseius finlandicus</i>	+	+	+	+	+	+	+
<i>Kampimodromus aberrans</i>	+	+	+	+	+	+	+
<i>Neoseiulella tiliarum</i>	+	+		+	+		+
<i>Neoseiulella aceri</i>	+	+					
<i>Paraseiulus soleiger</i>		+		+	+	+	+
<i>Paraseiulus talbii</i>	+	+		+	+	+	
<i>Paraseiulus triporus</i> *	+	+					
<i>Phytoseius echinus</i>	+	+		+	+		+
<i>Phytoseius plumifer</i>	+	+		+	+	+	+
<i>Phytoseius ribagai</i> *			+				
<i>Phytoseius salicis</i> *			+				
<i>Typhlodromus cotoneastri</i>	+	+	+	+	+		
<i>Typhlodromus pyri</i>		+		+	+		

* New records for the Turkish acarofauna.

species *K. aberrans*, *E. finlandicus*, *A. andersoni*, *A. bakeri*, *A. intercalaris*, *N. tiliarum*, *A. recki*, *P. talbii*, *T. cotoneastri*, and *T. pyri* were also recorded from various plants in Greece, which is adjacent to Thrace (Papaioannou-Souliotis et al., 1994).

In Thrace, various plants were populated by different numbers of phytoseiid species, from a single species up to eight species on a host plant (Table 3). The highest number of host plants were infested by *E. Finlandicus*, with over 29 hosts, followed by *K. Aberrans*—21, *T. cotoneastri*—17, *P. plumifer*—15, *A. andersoni*, *P. echinus*, and *P. talbii*—6 each, *A. recki*—5, *N. tiliarum*, *P. triporus*, *A. foenilis*, and *N. aceri*—3 each, and *A. intercalaris*—2 host plant species. The remaining species, *A. bakeri*, *A. riparius*, and *P. soleiger*, were obtained from only one host plant species.

It seems that *K. aberrans*, *E. finlandicus*, and *A. andersoni* prefer trees, but they occasionally occurred on shrubs and on herbaceous plants. *A. recki* clearly preferred shrubs. Other phytoseiid species were mainly found on forest trees, and also in orchards and on herbaceous plants.

Most of these predaceous species live in association with spider mites and regulate their population density; the phytophagous mites belong mostly to the family

Table 3
Host plants of of phytoseiid mites of Thrace

Family	Host plant Genus and species	Phytoseiidae species
Aceraceae	<i>Acer campestre</i> <i>Acer</i> sp.	<i>Kampimodromus aberrans</i> <i>Euseius finlandicus</i> <i>Kampimodromus aberrans</i>
Betulaceae	<i>Corylus avellana</i> <i>Carpinus orientalis</i>	<i>Amblyseius andersoni</i> <i>Euseius finlandicus</i> <i>Kampimodromus aberrans</i> <i>Neoseiulella tiliarum</i> <i>Phytoseius echinus</i> <i>Phytoseius plumifer</i> <i>Phytoseius ribagai</i> <i>Typhlodromus cotoneastri</i> <i>Typhlodromus cotoneastri</i>
Campanulaceae	<i>Campanula</i> sp.	<i>Euseius finlandicus</i> <i>Typhlodromus cotoneastri</i>
Caprifoliaceae	<i>Sambucus ebulus</i> <i>Viburnum opulus</i>	<i>Euseius finlandicus</i> <i>Amblyseius andersoni</i> <i>Euseius finlandicus</i> <i>Kampimodromus aberrans</i> <i>Paraseiulus talbii</i> <i>Typhlodromus cotoneastri</i>
Cornaceae	<i>Cornus mas</i>	<i>Euseius finlandicus</i> <i>Kampimodromus aberrans</i> <i>Paraseiulus triporus</i> <i>Phytoseius plumifer</i> <i>Typhlodromus cotoneastri</i>
Convolvulaceae	<i>Convolvulus</i> sp.	<i>Amblyseius andersoni</i> <i>Euseius finlandicus</i>
Fagaceae	<i>Fagus orientalis</i> <i>Qurecus</i> sp.	<i>Amblyseius andersoni</i> <i>Anthoseius intercalaris</i> <i>Paraseiulus talbii</i> <i>Phytoseius salicis</i> <i>Typhlodromus cotoneastri</i> <i>Typhlodromus cotoneastri</i>
Hippocastanaceae	<i>Aesculus hippocastanum</i>	<i>Euseius finlandicus</i>
Juglandaceae	<i>Juglans regia</i>	<i>Amblyseius andersoni</i> <i>Euseius finlandicus</i> <i>Kampimodromus aberrans</i> <i>Neoseiulella aceri</i> <i>Neoseiulella tiliarum</i>

table continues next page

Table 3 continued

Family	Host plant Genus and species	Phytoseiidae species
Lauraceae	<i>Laurus nobilis</i>	<i>Euseius finlandicus</i>
Moraceae	<i>Ficus carica</i>	<i>Euseius finlandicus</i> <i>Kampimodromus aberrans</i> <i>Phytoseius echinus</i> <i>Phytoseius plumifer</i> <i>Typhlodromus cotoneastri</i>
	<i>Morus alba</i>	<i>Anthoseius bakeri</i> <i>Anthoseius foenilis</i> <i>Euseius finlandicus</i> <i>Kampimodromus aberrans</i> <i>Neoseiulella aceri</i> <i>Paraseiulus talbii</i> <i>Typhlodromus cotoneastri</i> <i>Phytoseius plumifer</i>
	<i>Morus nigra</i>	
Platanaceae	<i>Platanus orientalis</i>	<i>Kampimodromus aberrans</i>
	<i>Platanus</i> sp.	<i>Euseius finlandicus</i>
Punicaceae	<i>Punica</i> sp.	<i>Euseius finlandicus</i>
Ranunculaceae	<i>Clematis vitalba</i>	<i>Anthoseius recki</i> <i>Phytoseius plumifer</i>
Rhamnaceae	<i>Rhamnus</i> sp.	<i>Euseius finlandicus</i> <i>Phytoseius plumifer</i>
Rosaceae	<i>Crataegus</i> sp.	<i>Kampimodromus aberrans</i>
	<i>Cydonia vulgaris</i>	<i>Kampimodromus aberrans</i> <i>Paraseiulus triporus</i> <i>Phytoseius echinus</i> <i>Phytoseius plumifer</i> <i>Typhlodromus cotoneastri</i>
	<i>Eriobotrya japonica</i>	<i>Euseius finlandicus</i> <i>Kampimodromus aberrans</i>
	<i>Fragaria vesca</i>	<i>Euseius finlandicus</i>
	<i>Malus communis</i>	<i>Amblyseius andersoni</i> <i>Euseius finlandicus</i> <i>Kampimodromus aberrans</i> <i>Paraseiulus talbii</i> <i>Paraseiulus triporus</i> <i>Phytoseius plumifer</i> <i>Typhlodromus cotoneastri</i>
	<i>Malus floribunda</i>	<i>Euseius finlandicus</i> <i>Paraseiulus talbii</i>
	<i>Mespilus</i> sp.	<i>Kampimodromus aberrans</i>
	<i>Prunus armeniaca</i>	<i>Euseius finlandicus</i>
	<i>Prunus avium</i>	<i>Euseius finlandicus</i>
	<i>Prunus cerasus</i>	<i>Anthoseius foenilis</i> <i>Euseius finlandicus</i>

Table 3 (continued)

Family	Host plant Genus and species	Phytoseiidae species
Rosaceae (cont.)	<i>Prunus domestica</i>	<i>Kampimodromus aberrans</i> <i>Typhlodromus cotoneastri</i> <i>Euseius finlandicus</i> <i>Kampimodromus aberrans</i> <i>Neoseiulella tiliarum</i> <i>Paraseiulus talbii</i> <i>Phytoseius echinus</i> <i>Phytoseius plumifer</i> <i>Typhlodromus cotoneastri</i>
	<i>Prunus persicae</i>	<i>Euseius finlandicus</i>
	<i>Prunus spinosa</i>	<i>Phytoseius plumifer</i>
	<i>Pyrus communis</i>	<i>Euseius finlandicus</i>
	<i>Pyrus eleagrifolia</i>	<i>Anthoseius recki</i> <i>Kampimodromus aberrans</i>
	<i>Rosa</i> sp.	<i>Euseius finlandicus</i> <i>Kampimodromus aberrans</i>
	<i>Rosa canina</i>	<i>Anthoseius recki</i> <i>Phytoseius echinus</i>
Salicaceae	<i>Salix</i> sp. <i>Populus canadensis</i> <i>Populus</i> sp.	<i>Amblyseius riparius</i> <i>Anthoseius andersoni</i> <i>Amblyseius foenilis</i>
Saxifragaceae	<i>Ribes fruticosus</i>	<i>Anthoseius recki</i> <i>Euseius finlandicus</i> <i>Kampimodromus aberrans</i> <i>Phytoseius plumifer</i> <i>Typhlodromus cotoneastri</i>
Simarubaceae	<i>Ailanthus</i> sp.	<i>Phytoseius plumifer</i>
Tiliaceae	<i>Tilia platyphyllos</i>	<i>Euseius finlandicus</i> <i>Kampimodromus aberrans</i>
Ulmaceae	<i>Ulmus campestris</i>	<i>Anthoseius intercalaris</i> <i>Euseius finlandicus</i> <i>Kampimodromus aberrans</i> <i>Neoseiulella aceri</i> <i>Phytoseius echinus</i> <i>Phytoseius plumifer</i> <i>Typhlodromus cotoneastri</i> <i>Typhlodromus pyri</i>
	<i>Ulmus</i> sp.	<i>Paraseiulus soleiger</i> <i>Phytoseius plumifer</i>
Vitaceae	<i>Vitis vinifera</i>	<i>Anthoseius recki</i> <i>Euseius finlandicus</i> <i>Kampimodromus aberrans</i> <i>Phytoseius plumifer</i> <i>Typhlodromus cotoneastri</i>

Tetranychidae, and occasionally to the families Tenuipalpidae, Eriophyidae, or Tarsonemidae. The predaceous mites attack the phytophagous mite colonies of Tetranychidae: *Tetranychus urticae*, *Eotetranychus populi*, *Panonychus ulmi*, *Tetranychus viennensis*, and *Bryobia rubrioculus*. These phytophagous species are very common and have an important role as prey for predator species. *Czenspinksia* sp. colonies were also very common, but it was not clear if they have a role as prey or not. Probably, this species depends mostly on molds. Species of Tydeidae and Stigmaeidae were also commonly observed with Phytoseiidae species.

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