

**DIVERSITY OF MITES (ARACHNIDA: ACARIFORMES ET PARASITIFORMES)
ON THE LEAVES OF WILD TREES AND SHRUBS FROM THE FORESTS
OF THE REPUBLIC OF MOLDOVA**

KULIKOVA Ludmila

Abstract. Mite fauna of trees and shrubs (during 2000 – 2012 years) is represented by one hundred ninety species registered on fifty one species of trees and shrubs in the forests of the Republic of Moldova. The registered mites are strictly confined to fifty three species or can inhabit on several plant species. It was determined that the formation of specific groups of mites is determined by interspecific competition. During the studies it was established that rare species of mites are found only on specific plants.

Keywords: mites, fauna, trees, shrubs, Republic of Moldova.

Rezumat. Diversitatea acarienilor (Arachnida: Acariformes, Parasitiformes) de pe frunzele arborilor și arbuștilor din pădurile Republicii Moldova. Au fost indentificate o sută nouăzeci de specii de acarieni pe frunzele a cincizeci și trei specii (în intervalul de timp 2000 - 2012) de arbori și arbuști în pădurile din Republica Moldova. Acarienii înregistrăți sunt cu predilecție strictă pe o specie sau mai multe specii de arbori sau arbuști. S-a stabilit că formarea unor grupuri specifice de acarieni este rezultatul concurenței interspecifice. Observațiile au demonstrat că speciile rare de acarieni se găsesc doar pe o anumită specie de arbore sau arbuști.

Cuvinte cheie: acarieni, faună, arbori, arbuști, Republica Moldova.

INTRODUCTION

The area of distribution of mites coincides with the area of trees and shrubs species, which represent their source of food, their habitat and have preference to a certain structure of the soil, temperature and humidity and light regime. For a more complete elucidation of the specificity of the relationships between mites and a particular type of trees and shrubs it is necessary to know the features of their distribution among all the species of plants that grow in the forests of various natural areas of the Republic of Moldova.

MATERIAL AND METHODS

The studies were conducted in the forests of the Republic of Moldova during 2000-2012 years. The surveys were conducted on the demarcated sectors of 50x100, 100x100, 200x100, 500x100 meters from the edge of the forest.

Fifty three species of trees and shrubs were examined: *Acer tataricum*, *A. campestre*, *A. platanoides*, *A. negundo*, *Alnus incata*, *Carpinus betulus*, *C. orientalis*, *Cerasus mahaleb*, *C. avium*, *C. fruticosa*, *Cornus mas*, *Cotinus coggygria*, *Corylus avellana*, *Crataegus sanguinea*, *C. curvisepala*, *Euonymus europaea*, *E. verrucosa*, *Fagus sylvatica*, *Frangula alnus*, *Fraxinus excelsior*, *F. ornus*, *F. europaea*, *Ligustrum vulgare*, *Lonicera xylosteum*, *Malus sylvestris*, *Quercus robur*, *Q. borealis*, *Q. petraea*, *Q. pubescens*, *Tilia cordata*, *T. europaea*, *T. platyphyllos*, *T. tomentosa*, *Padus avium*, *P. serotina*, *Prunus insititia*, *P. spinosa*, *Pyrus pyraster*, *Rhamnus cathartica*, *Robinia pseudacacia*, *Sambucus nigra*, *Salix cinerea*, *S. caprea*, *Staphylea pinnata*, *Sorbus torminalis*, *Swida alba*, *S. australis*, *S. sanguinea*, *Ulmus glabra*, *U. carpinifolia*, *U. europaea*, *U. laevis*, *Viburnum lantana*.

A number of 20 leaves from each species of trees and shrubs represented the plant samples. As basis for this served the mite collection of the Institute of Zoology of the Academy of Sciences of Moldova (over 7000 individuals), while studying the diversity and the importance of insects and arthropods in Moldova biocenoses (Figs. 1, 2, 3, 4, 5, 6). Mite individuals were counted under the microscope MBS-10. Species of mites were determined under the binocular microscope Leica CME.



Figure 1. Species *Panonychus ulmi* (Family Tetranychidae).



Figure 2. Species *Amblyseius andersoni* (Family Phytoseiidae).



Figure 3. Species *Tydeus caudatus* (Family Tydeidae).

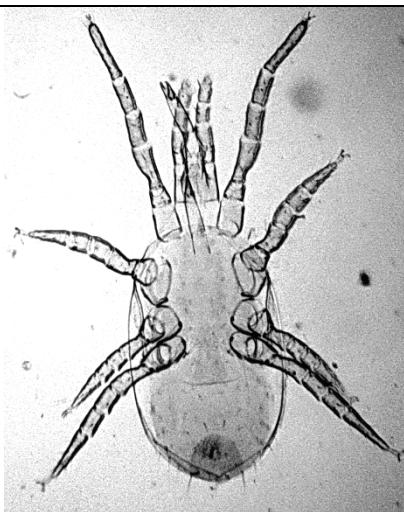


Figure 4. Species *Typhlodromus cotoneastri* (Family Phytoseiidae.)

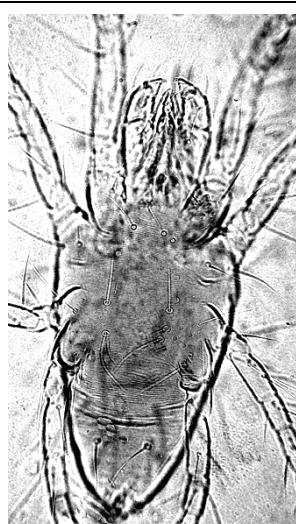


Figure 5. Species *Schizotetranychus fraxini* (Family Tetranychidae).

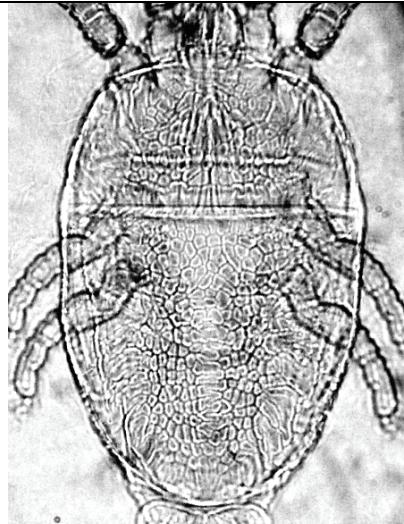


Figure 6. Species *Cenopalpus pulcher* (Family Tenuipalpidae).

RESULTS AND DISCUSSIONS

The mite fauna on the leaves of trees and shrubs of the forests of the Republic of Moldova is represented by one hundred ninety species: *Tarsonemus angulatus*, *T. bifurcatus*, *T. bilobatus*, *T. ellipticus*, *T. lobosus*, *T. nodosus*, *T. confusus*, *T. crassus*, *T. floricolus*, *T. hermes*, *T. talpae*, *T. trapezoides*, *T. pauperoseatus*, *T. virgineus*, *Phytonemus pallidus*, *Xenotarsonemus belemnitooides*, *Schaarschmidtia naegelei*, *Steneotarsonemus erlangensis*, *Tydeus argutus*, *T. diversus*, *T. caudatus*, *T. californicus*, *T. hetero setus*, *T. kochi*, *T. inclusus*, *Lasiotydeus volaticus*, *Lorryia elinguis*, *L. electra*, *L. devexa*, *L. dumosa*, *L. ferula*, *L. formosa*, *L. mali*, *L. matura*, *L. mirabilis*, *L. minuta*, *L. lena*, *L. obligua*, *L. obstinata*, *L. obnoxia*, *L. opifera*, *L. ocellata*, *L. placita*, *L. praefata*, *L. reticulata*, *L. sp. 1*, *L. pinnigera*, *L. scopula*, *L. visenda*, *L. volgini*, *L. woolleyi*, *L. wainsteini*, *Metalorryia armaghensis*, *M. insignita*, *M. delicata*, *Pseudolorryia spineus*, *Paralorryia chapultepecensis*, *Pronematus testatus*, *P. sextoni*, *P. bonatii*, *Neopronematus rapidus*, *Homeopronematus anconai*, *Triophydeus flatus*, *T. immanis*, *Eustigmatus chilensis*, *E. segnis*, *Storchia robustus*, *Cunaxa setirostris*, *Cunaxoides parvus*, *C. biscutum*, *C. fidus*, *Zetzellia mali*, *Imparipes boldi*, *Spinibdella cronini*, *Siteroptes primitivus*, *Cheletocarus raptor*, *Cheletomorpha lepidopterorum*, *Mediolata similans*, *Bdella muscorum*, *B. iconica*, *Cyta coerulipes*, *Cheyletus eruditus*, *C. malaccensis*, *Anystis baccarum*, *Cheletogenes ornatus*, *Cenopalpus pennatisetus*, *C. pulcher*, *C. sp. 3*, *C. piger*, *C. platani*, *C. populi*, *C. ruber*, *Brevipalpus thelicraniae*, *B. sp. 1*, *Eotetranychus fraxini*, *E. orientalis*, *E. latifrons*, *E. raja*, *E. ulmicola*, *E. uncatus exiguus*, *E. uchidai*, *E. pomeranzevi*, *E. populi*, *E. prunicola*, *E. tiliarium*, *Allonychus braziliensis*, *Schizotetranychus spireafolia avetjanae*, *Bryobia angustisetis*, *B. borealis*, *B. lonicerae*, *B. graminum*, *B. obihsaphedi*, *B. confusa*, *B. ulmophila*, *Tetranychus pamiricus*, *T. polygoni*, *T. przewalskii*, *T. armeniaca*, *T. lonicerae*, *T. urticae*, *Oligonychus buschi*, *O. kobachidzei*, *Neotetranychus rubi*, *Amphitetranychus viennensis*, *Tetranychopsis horridus*, *Panonychus ulmi*, *P. citri*, *Acotyledon agilis*, *A. rhizoglyphoides*, *A. redikorzevi*, *A. michaeli*, *A. krameri*, *Tyrophagus humerosus*, *Amblyseius andersoni*, *A. nemorivagus*, *A. rademacheri*, *A. obtusus*, *Transeius herbarius*, *Neoseiulus astutus*, *N. reductus*, *N. marginatus*, *N. umbraticus*, *N. cucumeris*, *Anthoseius inopinatus*, *A. involutus*, *A. clavatus*, *A. caudiglans*, *A. pirianykae*, *A. recki*, *A. rhenanus*, *A. verrucosus*, *Typhlococonus squamiger*, *Galendromus pilosus*, *Typhlodromus graminisilis*, *T. georgicus*, *T. invictus*, *T. halinae*, *T. kazachstanicus*, *T. cerasicolus*, *T. cotoneastri*, *T. rapidus*, *T. phialatus*, *T. pyri*, *T. tubifer*, *T. tiliace*, *Paraseiulus soleiger*, *P. incognitus*, *Kampimodromus aberrans*, *K. langei*, *Eharius marzhaniani*, *Dubininellus juvenis*, *D. echinus*, *D. macropilis*, *Phytoseius salicis*, *P. severus*, *Euseius finlandicus*, *Proprioseiopsis dacus*, *P. okanagensis*, *Typhlodromips bicaudus*, *T. rubini*, *T. tauricus*, *T. maior*, *T. similis*, *T. lutezhicus*, *Seulus simplex*. In the study of the mite species composition of trees and shrubs forests there were identified the differences between the groups of mites on a particular plant species. The registered mites are strictly confined to one species or can inhabit several plant species. It was determined that the formation of specific groups of mites is determined by interspecific competition (KULIKOVA, 2005, 2007, 2007a, 2008, 2009). During the studies it was established that rare species of mites are marked in the text with "*" and the species of mites found only on specific plant species are marked in the text with "**". The number of mite species found on the leaves of trees and shrubs are mentioned in round brackets at each species of trees or shrubs:

1. ***Acer tataricum* (53 species of mites)** - *Schaarschmidtia naegelei*, *Tarsonemus nodosus*, **T. virgineus*, **Tydeus argutus*, *T. caudatus*, *T. californicus*, **T. hetero setus*, *T. kochi*, **Lorryia elinguis*, *L. obstinata*, *L. wainsteini*, *L. lena*, ***L. opifera*, *L. ferula*, *L. mali*, *L. formosa*, *L. placita*, *L. devexa*, *Triophydeus flatus*, *T. immanis*, *Pronematus sextoni*, *Homeopronematus anconai*, **Cunaxa setirostris*, ***Cunaxoides biscutum*, **C. fidus*, *Zetzellia mali*, *Bryobia lonicerae*, *Cenopalpus pennatisetus*, *C. pulcher*, *Eotetranychus fraxini*, *E. orientalis*, **E. raja*, **E. uncatus exiguus*, *E. pomeranzevi*, *E. prunicola*, *Tetranychus lonicerae*, **T. pamiricus*, *Acotyledon agilis*, *Amblyseius andersoni*, *A. nemorivagus*, **Transeius herbarius*, *Neoseiulus reductus*, *Anthoseius caudiglans*, *Typhlococonus squamiger*, *Typhlodromus pyri*, **T. georgicus*, ***T. halinae*, *Paraseiulus soleiger*, **P. incognitus*, *Kampimodromus aberrans*, *Dubininellus juvenis*, *D. echinus*, *Euseius finlandicus*;

2. ***Acer campestre* (61 species of mites)** - *Schaarschmidtia naegelei*, *Tarsonemus lobosus*, *T. talpae*, **T. bilobatus*, *T. angulatus*, *T. hermes*, *T. virgineus*, *Phytonemus pallidus*, *Triophydeus immanis*, *T. flatus*, *Tydeus caudatus*, **T. inclusus*, *T. kochi*, *Lorryia wainsteini*, **L. dumosa*, **L. obstinata*, *L. obnoxia*, *L. praefata*, *L. devexa*, *L. reticulata*, *L. ferula*, *L. formosa*, *L. lena*, *L. mali*, *Pronematus sextoni*, *Homeopronematus anconai*, *Zetzellia mali*, *Eotetranychus prunicola*, *E. pomeranzevi*, **E. raja*, *E. orientalis*, **E. uchidai*, *E. fraxini*, **Oligonychus buschi*, *Acotyledon rhizoglyphoides*, *A. michaeli*, *A. krameri*, *Euseius finlandicus*, **Proprioseiopsis okanagensis*, *Amblyseius andersoni*, *A. nemorivagus*, *Neoseiulus umbraticus*, **N. marginatus*, *N. astutus*, *Anthoseius caudiglans*, *A. inopinatus*, *A. involutus*, *A. pirianykae*, *A. rhenanus*, *Kampimodromus aberrans*, *K. langei*, *Dubininellus juvenis*, *D. echinus*, ***Typhlodromips rubini*, *Typhlococonus squamiger*, *Typhlodromus cotoneastri*, ***T. rapidus*, **T. phialatus*, *T. pyri*, **T. tubifer*, *Paraseiulus soleiger*;

3. ***Acer platanoides* (59 species of mites)** - *Tarsonemus angulatus*, ***T. confusus*, ***T. bifurcatus*, *T. nodosus*, *T. talpae*, **T. virgineus*, **Xenotarsonemus belemnitooides*, *Tydeus californicus*, **T. hetero setus*, **T. inclusus*, *T. kochi*, **Lorryia volgini*, *L. praefata*, *L. obnoxia*, *L. wainsteini*, *L. ferula*, *L. formosa*, *L. placita*, *L. devexa*, **L. ocellata*, *L. lena*, ***L. sp. 1*, *L. mali*, **L. electra*, **L. dumosa*, *Triophydeus immanis*, *T. flatus*, *Pronematus sextoni*, *Homeopronematus anconai*, ***Metalorryia armaghensis*, ***Imparipes boldi*, *Euseius finlandicus*, *Neoseiulus reductus*, *Amblyseius nemorivagus*, **Transeius herbarius*, *Typhlodromus phialatus*, *T. cotoneastri*, **T. tiliace*, **T. tubifer*,

Anthoseius pirianykae, *A. inopinatus*, *A. rhenanus*, *A. caudiglans*, *Kampimodromus aberrans*, *K. langei*, *Eharius marzhaniani*, *Eotetranychus prunicola*, *E. fraxini*, **E. populi*, *Tetranychus lonicerae*, *Cenopalpus pennatisetus*, ***C. sp. 3*, *C. pulcher*, *Acotyledon agilis*, *A. redikorzevi*, *Typhlococonus sguamiger*, **Seulus simplex*, *Zetzellia mali*, **Paraseiulus incognitus*;

4. ***Acer negundo* (48 species of mites)** - **Tydeus argutus*, **T. heterosetus*, *T. californicus*, *T. caudatus*, *Lorryia obstinata*, *L. praefata*, *L. wainsteini*, *L. ferula*, *L. lena*, **L. ocellata*, **L. woolleyi*, *L. formosa*, *L. mali*, *Triophydeus immanis*, ***T. fragarius*, **T. ineditus*, *T. flatus*, *Pronematus sextoni*, *Acotyledon rhizoglyphoides*, *A. redikorzevi*, *Typhlococonus sguamiger*, *Typhlodromus pyri*, *T. cotoneastri*, **T. tiliae*, ***T. invictus*, *Euseius finlandicus*, *Amblyseius andersoni*, *A. rademacheri*, *Neoseiulus umbraticus*, *Anthoseius inopinatus*, *A. caudiglans*, *A. recki*, *A. rhenanus*, *Dubininellus juvenis*, *D. echinus*, **D. macropilis*, **Phytoseius salicis*, *Kampimodromus aberrans*, *Eharius marzhaniani*, *Eotetranychus prunicola*, *E. pomeranzevi*, *Amphitetranychus viennensis*, **Tetranychopsis horridus*, *Tetranychus lonicerae*, *Tarsonemus lobosus*, *T. talpae*, *Zetzellia mali*, **Cunaxoides fidus*;

5. ***Alnus incata* (8 species of mites)** - *Euseius finlandicus*, *Kampimodromus aberrans*, *Lorryia mali*, *L. devexa*, *Dubininellus echinus*, *Eotetranychus fraxini*, *Panonychus ulmi*, *Acotyledon redikorzevi*;

6. ***Carpinus betulus* (38 species of mites)** - *Euseius finlandicus*, *Amblyseius andersoni*, **Typhlodromus graminisilis*, **Transeius herbarius*, *Typhlococonus sguamiger*, *Typhlodromus pyri*, **T. phialatus*, *T. cotoneastri*, *Neoseiulus umbraticus*, *N. astutus*, *Kampimodromus aberrans*, *Eharius marzhaniani*, **Seiulus simplex*, *Lorryia ferula*, *L. devexa*, *L. formosa*, *L. mali*, *L. lena*, *L. wainsteini*, *L. praefata*, **Tydeus heterosetus*, *T. californicus*, *T. caudatus*, *T. kochi*, *Triophydeus flatus*, **T. ineditus*, *Eotetranychus prunicola*, **E. rajae*, *E. pomeranzevi*, *E. orientalis*, *E. fraxini*, *Acotyledon krameri*, **Cunaxa setirostris*, *Schaarschmidtia naegelei*, *Tarsonemus lobosus*, **T. ellipticus*, *Cenopalpus piger*, **C. platani*;

7. ***Carpinus orientalis* (10 species of mites)** - *Euseius finlandicus*, *Neoseiulus umbraticus*, *N. reductus*, *N. astutus*, *Anthoseius involutus*, *A. rhenanus*, *Lorryia ferula*, *L. formosa*, **Tydeus heterosetus*, *Eotetranychus fraxini*;

8. ***Cerasus mahaleb* (10 species of mites)** - *Euseius finlandicus*, *Tydeus californicus*, *T. caudatus*, *Lorryia lena*, *L. praefata*, *L. wainsteini*, *Zetzellia mali*, *Triophydeus flatus*, *Cenopalpus piger*, *Kampimodromus aberrans*;

9. ***Cerasus avium* (40 species of mites)** - *Neoseiulus astutus*, *Amblyseius andersoni*, *A. rademacheri*, *Euseius finlandicus*, *Anthoseius caudiglans*, *Typhlodromus cotoneastri*, *T. pyri*, *Dubininellus juvenis*, *D. echinus*, **Seiulus simplex*, *Paraseiulus soleiger*, **P. incognitus*, ***Spinibdella cronini*, *Tydeus caudatus*, *T. californicus*, *T. kochi*, **T. inclutus*, *Lorryia ferula*, **L. elinguis*, *L. lena*, *L. wainsteini*, *L. praefata*, *L. mali*, *Triophydeus flatus*, *Homeopronematus anconai*, *Pronematus sextoni*, *Schaarschmidtia naegelei*, ***Siteroptes primitivus*, *Eotetranychus fraxini*, *E. pomeranzevi*, *Zetzellia mali*, *Cenopalpus piger*, *C. pulcher*, **C. populi*, **C. platani*, *C. ruber*, *C. pennatisetus*, *Bryobia lonicerae*, **B. confusa*, *Acotyledon rhizoglyphoides*;

10. ***Cerasus fruticosa* (26 species of mites)** - *Amblyseius andersoni*, *Neoseiulus reductus*, *Euseius finlandicus*, *Typhlodromus cotoneastri*, *Kampimodromus aberrans*, *K. langei*, **Anthoseius involutus*, *A. pirianykae*, **Paraseiulus incognitus*, *Lorryia wainsteini*, *L. placita*, *Tydeus californicus*, *T. kochi*, **Triophydeus ineditus*, *Pronematus sextoni*, *Homeopronematus anconai*, *Schaarschmidtia naegelei*, **Oligonychus kobachidzei*, *Panonychus citri*, *Bryobia lonicerae*, *Eotetranychus rajae*, *E. orientalis*, *E. fraxini*, *E. prunicola*, *Zetzellia mali*, **Anystis baccarum*;

11. ***Cornus mas* (48 species of mites)** - *Tarsonemus talpae*, *T. nodosus*, **T. virgineus*, ***T. trapezoides*, *Schaarschmidtia naegelei*, *Tydeus caudatus*, *T. californicus*, **T. argutus*, **T. inclutus*, ***Lorryia obligua*, *L. ferula*, *L. formosa*, *L. obstinata*, *L. lena*, *L. mali*, *L. devexa*, **L. minuta*, **L. elinguis*, *Triophydeus flatus*, *Homeopronematus anconai*, *Pronematus sextoni*, **Cunaxoides parvus*, ***Cheletocarus raptor*, *Acotyledon rhizoglyphoides*, *Eotetranychus fraxini*, ***Neotetranychus rubi*, ***Bryobia borealis*, *B. lonicerae*, *Cenopalpus piger*, *C. pennatisetus*, *C. pulcher*, *C. ruber*, *Zetzellia mali*, *Typhlodromus cotoneastri*, *T. pyri*, **T. phialatus*, *Euseius finlandicus*, *Amblyseius andersoni*, *A. nemorivagus*, *Neoseiulus astutus*, **Transeius herbarius*, **Typhlodromips tauricus*, **Proprioseiopsis okanagensis*, *Anthoseius inopinatus*, **A. verrucosus*, *Kampimodromus aberrans*, *Dubininellus juvenis*, **D. macropilis*;

12. ***Corylus avellana* (38 species of mites)** - *Schaarschmidtia naegelei*, *Tarsonemus talpae*, *T. lobosus*, ***Steneotarsonemus erlangensis*, *Tydeus californicus*, *T. caudatus*, *T. kochi*, **Metalorryia insignita*, **Lorryia electra*, *L. praefata*, ***L. elinguis*, *L. wainsteini*, *L. ferula*, *L. devexa*, *L. lena*, *L. mali*, *Triophydeus flatus*, **Tetranychopsis horridus*, **Tyrophagus humerosus*, *Eotetranychus fraxini*, *Euseius finlandicus*, *Amblyseius andersoni*, *A. nemorivagus*, *Neoseiulus reductus*, *N. umbraticus*, *Anthoseius rhenanus*, *A. involutus*, *Kampimodromus aberrans*, *Eharius marzhaniani*, *Typhlodromus pyri*, **T. phialatus*, *T. cotoneastri*, *Dubininellus juvenis*, *D. echinus*, **D. macropilis*, **Phytoseius severus*, **Typhlodromips tauricus*, *Zetzellia mali*;

13. ***Cotinus coggyria* (24 species of mites)** - *Kampimodromus aberrans*, **Lorryia electra*, **L. dumosa*, *L. praefata*, **L. elinguis*, *L. wainsteini*, *L. ferula*, *L. lena*, **Metalorryia insignita*, *Tydeus californicus*, *T. caudatus*, *Homeopronematus anconai*, ***Pronematus testatus*, *P. sextoni*, *Euseius finlandicus*, *Amblyseius andersoni*, *Dubininellus juvenis*, *D. echinus*, **Phytoseius severus*, *Typhlodromus cotoneastri*, *T. pyri*, *Triophydeus immanis*, *T. flatus*, *Zetzellia mali*;

14. ***Crataegus sanguinea* (18 species of mites)** - *Lorryia ferula*, *L. lena*, *L. mali*, *L. wainsteini*, *Triophydeus flatus*, ***Pseudolorryia spineus*, *Tarsonemus angulatus*, *Phytonemus pallidus*, **Tyrophagus humerosus*, *Eotetranychus fraxini*, **E. uchidai*, *Cenopalpus pennatisetus*, *C. pulcher*, *C. piger*, *Paraseiulus soleiger*, *Typhlodromus pyri*, *Euseius finlandicus*, *Kampimodromus aberrans*;

15. *Crataegus curvisepala* (2 species of mites) - *Euseius finlandicus*, *Triophydeus flatus*;

16. *Euonymus europaea* (18 species of mites) - *Tarsonemus talpae*, *Tydeus caudatus*, *T. californicus*, **T. heterosetus*, *Lorryia ferula*, *L. devexa*, *L. mali*, ***L. mirabilis*, *Triophydeus immanis*, *T. flatus*, *Amblyseius andersoni*, *Euseius finlandicus*, *Amphitetranychus viennensis*, *Eotetranychus fraxini*, *E. prunicola*, *Typhloctonus sguamiger*, *Typhlodromus cotoneastri*, **T. tubifer*;

17. *Euonymus verrucosa* (24 species of mites) - *Paraseiulus soleiger*, **Anthoseius clavatus*, *Kampimodromus aberrans*, *Typhlodromus pyri*, *T. georgicus*, *Typhloctonus sguamiger*, *Amblyseius andersoni*, *Euseius finlandicus*, **Cheletomorpha lepidopterorum*, *Zetzellia mali*, *Cenopalpus pennatisetus*, *C. ruber*, **Schizotetranychus spireafolia avetjanae*, *Eotetranychus fraxini*, *Amphitetranychus viennensis*, *Tydeus caudatus*, *T. californicus*, *Lorryia wainsteini*, *L. ferula*, *L. lena*, *L. mali*, *Triophydeus immanis*, *T. flatus*, **Pronematus bonatii*;

18. *Fagus sylvatica* (26 species of mites) - *Typhloctonus sguamiger*, *Tydeus caudatus*, *T. californicus*, *Typhlodromus cotoneastri*, ***Galendromus pilosus*, *Euseius finlandicus*, ***Proprioseiopsis dacus*, *Amblyseius andersoni*, **Transeius herbarius*, *Eotetranychus fraxini*, *E. pomeranzevi*, *E. orientalis*, *Tarsonemus hermes*, **T. virgineus*, **T. bilobatus*, *T. talpae*, *Lorryia praefata*, *L. lena*, *L. mali*, *L. ferula*, ***Neopronematus rapidus*, *Triophydeus immanis*, *T. flatus*, *Paraseiulus soleiger*, **Phytoseius severus*, *Dubininellus juvenis*;

19. *Frangula alnus* (8 species of mites) - *Euseius finlandicus*, *Amblyseius andersoni*, *A. nemorivagus*, *Neoseiulus reductus*, **Typhlodromips bicaudus*, **Tetranychopsis horridus*, *Panonychus ulmi*, *Eotetranychus fraxini*;

20. *Fraxinus excelsior* (42 species of mites) - *Zetzellia mali*, *Euseius finlandicus*, *Amblyseius andersoni*, *A. rademacheri*, **A. neobernhardi*, *Anthoseius caudiglans*, *A. inopinatus*, *A. rhenanus*, *Typhloctonus sguamiger*, *Typhlodromus cotoneastri*, *T. pyri*, *Dubininellus juvenis*, *D. echinus*, **Phytoseius salicis*, **Paraseiulus incognitus*, *Kampimodromus aberrans*, *Eharius marzhani*, *Tydeus caudatus*, **T. heterosetus*, *T. californicus*, *T. kochi*, *Lorryia wainsteini*, *L. lena*, *L. mali*, *L. obstinata*, *L. ferula*, **L. visenda*, *L. placita*, *Pronematus sextoni*, *Homeopronematus anconai*, *Triophydeus immanis*, *T. flatus*, *Tarsonemus lobosus*, **T. floricolus*, *T. talpae*, *Panonychus ulmi*, **Tetranychus polygoni*, *Eotetranychus fraxini*, **E. tiliarium*, *E. pomeranzevi*, *Acotyledon rhizoglyphoides*, *A. agilis*;

21. *Fraxinus ornus* (42 species of mites) - *Zetzellia mali*, *Euseius finlandicus*, *Amblyseius andersoni*, *A. rademacheri*, **A. neobernhardi*, *Anthoseius caudiglans*, *A. inopinatus*, *A. rhenanus*, *Typhloctonus sguamiger*, *Typhlodromus cotoneastri*, *T. pyri*, *Dubininellus juvenis*, *D. echinus*, **Phytoseius salicis*, **Paraseiulus incognitus*, *Kampimodromus aberrans*, *Eharius marzhani*, *Tydeus caudatus*, **T. heterosetus*, *T. californicus*, *T. kochi*, *Lorryia wainsteini*, *L. lena*, *L. mali*, *L. obstinata*, *L. placita*, *L. ferula*, **L. visenda*, *Pronematus sextoni*, *Homeopronematus anconai*, *Triophydeus immanis*, *T. flatus*, **Tarsonemus floricolus*, *T. talpae*, *T. lobosus*, *Panonychus ulmi*, **Tetranychus polygoni*, *Eotetranychus fraxini*, **E. tiliarium*, *E. pomeranzevi*, *Acotyledon rhizoglyphoides*, *A. agilis*;

22. *Fraxinus europaea* (7 species of mites) - *Euseius finlandicus*, *Tydeus caudatus*, *Lorryia wainsteini*, ***Anthoseius rechi*, *Triophydeus flatus*, **Cunaxa setirostris*, *Typhloctonus sguamiger*;

23. *Ligustrum vulgare* (10 species of mites) - *Amblyseius andersoni*, *Euseius finlandicus*, *Anthoseius caudiglans*, *A. rhenanus*, *Typhlodromus cotoneastri*, **T. phialatus*, *T. pyri*, *Triophydeus flatus*, *Lorryia ferula*, **Tydeus inclusus*;

24. *Lonicera xylosteum* - *Tydeus caudatus*;

25. *Malus sylvestris* (60 species of mites) - *Amblyseius andersoni*, *A. nemorivagus*, **Typhlodromips maior*, **Neoseiulus marginatus*, **Typhlodromips tauricus*, **Proprioseiopsis okanagensis*, *Euseius finlandicus*, *Typhloctonus sguamiger*, *Anthoseius caudiglans*, *A. inopinatus*, *A. pirianykae*, *Kampimodromus aberrans*, *K. langei*, *Dubininellus juvenis*, *D. echinus*, **Phytoseius salicis*, *Tydeus caudatus*, *T. californicus*, *Lorryia wainsteini*, *L. devexa*, *L. placita*, **L. volgini*, *L. lena*, **L. electra*, *L. mali*, *L. obstinata*, *L. ferula*, *L. formosa*, *Triophydeus immanis*, *T. flatus*, **T. ineditus*, *Pronematus sextoni*, *Homeopronematus anconai*, ***Lasiotydeus volaticus*, *Tarsonemus bilobatus*, *T. hermes*, *T. lobosus*, *Schaarschmidtia naegelei*, *Eotetranychus prunicola*, *E. fraxini*, *E. pomeranzevi*, **E. populi*, *Tetranychus urticae*, **Bryobia confusa*, *B. lonicerae*, ***B. angustisetis*, **B. ulmophila*, ***B. obihsaphedi*, ***Eustigmaeus chilensi*, ***E. segnis*, *Zetzellia mali*, ***Storchia robustus*, **Bdella muscorum*, **Cunaxa setirostris*, *Cenopalpus pulcher*, *C. piger*, *C. pennatisetus*, ***Brevipalpus* sp. 1, *Acotyledon rhizoglyphoides*, *A. redikorzevi*;

26. *Quercus robur* (48 species of mites) - *Eotetranychus fraxini*, *E. prunicola*, **E. uncatus exiguus*, **E. tiliarium*, *E. orientalis*, **E. latifrons*, *E. pomeranzevi*, **E. raja*, *Lorryia lena*, *L. mali*, *L. ferula*, *L. wainsteini*, *L. praefata*, *L. obstinata*, *L. formosa*, **Allonychus brasiliensis*, *Kampimodromus aberrans*, *Eharius marzhani*, *Typhlodromus cotoneastri*, *Anthoseius inopinatus*, *A. caudiglans*, *Euseius finlandicus*, *Amblyseius andersoni*, *A. rademacheri*, *A. nemorivagus*, *Paraseiulus soleiger*, *Neoseiulus reductus*, *N. astutus*, *Dubininellus juvenis*, **D. macropilis*, **Phytoseius salicis*, **Seiulus simplex*, *Zetzellia mali*, ***Tydeus diversus*, *T. caudatus*, *T. kochi*, *Triophydeus flatus*, *T. immanis*, *Homeopronematus anconai*, *Schaarschmidtia naegelei*, *Tarsonemus talpae*, *T. lobosus*, *Cenopalpus pulcher*, *Amphitetranychus viennensis*, *Panonychus ulmi*, *Tetranychus lonicerae*, ***Cheletomorpha lepidopterorum*, *Zetzellia mali*;

27. *Quercus borealis* (7 species of mites) - *Tydeus californicus*, *Pronematus sextoni*, *Zetzellia mali*, *Euseius finlandicus*, **Typhlodromips tauricus*, *Typhlodromus cotoneastri*, *Paraseiulus soleiger*;

28. *Quercus petraea* (5 species of mites) - *Euseius finlandicus*, *Triophydeus flatus*, *Lorryia lena*, **L. elinguis*, *L. ferula*;

29. *Quercus pubescens* (14 species of mites) - *Lorryia lena*, *L. ferula*, ***L. matura*, *L. wainsteini*, *Euseius finlandicus*, ***Amblyseius obtusus*, *Eharius marzhaniani*, *Typhlodromus pyri*, ***T. kazachstanicus*, *Zetzellia mali*, *Triophydeus flatus*, *Acotyledon agilis*, *A. michaeli*, *Eotetranychus pomeranzevi*;

30. *Tilia cordata* (46 species of mites) - *Tydeus californicus*, *T. caudatus*, **Lorryia minuta*, **L. elinguis*, *T. placita*, *L. obstinata*, *L. obnoxia*, *L. wainsteini*, **L. dumosa*, *L. lena*, *L. ferula*, *L. mali*, **L. woolleyi*, *L. formosa*, *Homeopronematus anconai*, *Schaarschmidtia naegelei*, ***Tarsonemus crassus*, *T. talpae*, **T. virgineus*, *Triophydeus immanis*, *T. flatus*, **Metalorryia insignita*, *Euseius finlandicus*, *Amblyseius andersoni*, *A. nemorivagus*, *Neoseiulus umbraticus*, *Anthoseius rhenanus*, *A. caudiglans*, **Proprioseiopsis okanagensis*, *Typhlodromus pyri*, *Kampimodromus aberrans*, *K. langei*, *Dubininellus juvenis*, **D. macropilis*, **Seiulus simplex*, *Paraseiulus soleiger*, *Cenopalpus pulcher*, *C. piger*, *C. pennatisetus*, *Acotyledon rhizoglyphoides*, *Eotetranychus pomeranzevi*, *E. orientalis*, **E. uchidai*, *E. prunicola*, *Zetzellia mali*, **Cunaxoides parvus*;

31. *Tilia europaea* - *Euseius finlandicus*;

32. *Tilia platyphyllos* (2 species of mites) - *Euseius finlandicus*, *Tydeus californicus*;

33. *Tilia tomentosa* (34 species of mites) - *Schaarschmidtia naegelei*, **Tarsonemus bifurcatus*, *T. hermes*, *Phytonemus pallidus*, *Lorryia obstinata*, *L. praefata*, *L. wainsteini*, *L. ferula*, *L. formosa*, *L. lena*, *L. mali*, *Triophydeus immanis*, *T. flatus*, *Eotetranychus fraxini*, *E. prunicola*, *E. pomeranzevi*, **E. uncatus exiguus*, *Tetranychus lonicerae*, **T. pamiricus*, *Acotyledon michaeli*, *A. agilis*, *Euseius finlandicus*, *Kampimodromus aberrans*, *Anthoseius inopinatus*, *A. caudiglans*, *A. rhenanus*, *Typhloctonus sguamiger*, *Typhlodromus cotoneastri*, *T. pyri*, **T. tubifer*, **T. phialatus*, *Paraseiulus soleiger*, *Cenopalpus pulcher*, *Zetzellia mali*;

34. *Padus avium* (5 species of mites) - *Euseius finlandicus*, *Amblyseius andersoni*, *Anthoseius rhenanus*, *Triophydeus flatus*, *Lorryia ferula*;

35. *Padus serotina* - *Euseius finlandicus*;

36. *Prunus insititia* (25 species of mites) - *Triophydeus flatus*, **Lorryia elinguis*, *L. lena*, *L. wainsteini*, *Amphitetranychus viennensis*, ***Tetranychus armeniaca*, **Bryobia confusa*, **Oligonychus buschi*, *Eotetranychus fraxini*, *Euseius finlandicus*, *Amblyseius andersoni*, *Neoseiulus reductus*, **Typhlodromus graminisilis*, *Anthoseius caudiglans*, *Kampimodromus langei*, *Dubininellus juvenis*, *D. echinus*, *Typhloctonus sguamiger*, *Paraseiulus soleiger*, *Zetzellia mali*, *Tarsonemus talpae*, *T. nodosus*, *T. bilobatus*, *Homeopronematus anconai*, *Pronematus sextoni*;

37. *Prunus spinosa* (24 species of mites) - *Homeopronematus anconai*, *Pronematus sextoni*, *Cenopalpus pulcher*, *Eotetranychus fraxini*, *E. pomeranzevi*, *Amphitetranychus viennensis*, *Panonychus ulmi*, **Oligonychus kobachidzei*, **Bryobia confusa*, *Tydeus caudatus*, *Kampimodromus aberrans*, *Typhlodromus phialatus*, *T. pyri*, *Dubininellus juvenis*, *D. echinus*, *Triophydeus flatus*, *T. ineditus*, *Lorryia praefata*, **L. elinguis*, *L. mali*, *Zetzellia mali*, ***Cheyletus eruditus*, *Amblyseius andersoni*, *Euseius finlandicus*;

38. *Pyrus pyraster* (16 species of mites) - *Euseius finlandicus*, *Typhlodromus cotoneastri*, **Phytoseius salicis*, *Dubininellus echinus*, *Tydeus californicus*, *Triophydeus flatus*, *Homeopronematus anconai*, *Lorryia lena*, **L. dumosa*, **Metalorryia delicata*, *Eotetranychus prunicola*, *E. fraxini*, ***Mediolata similans*, **Bdella muscorum*, ***B. iconica*, ***Cyta coerulipes*;

39. *Rhamnus cathartica* (4 species of mites) - *Lorryia formosa*, *Euseius finlandicus*, *Bryobia lonicerae*, *Tydeus kochi*;

40. *Robinia pseudacacia* (2 species of mites) - *Lorryia wainsteini*, *Euseius finlandicus*;

41. *Sambucus nigra* (11 species of mites) - **Tarsonemus virgineus*, **Tydeus heterosetus*, *Homeopronematus anconai*, *Lorryia ferula*, *L. lena*, *Tetranychus lonicerae*, *Eotetranychus fraxini*, *Euseius finlandicus*, *Amblyseius andersoni*, ***Neoseiulus cucumeris*, *Kampimodromus aberrans*;

42. *Salix cinerea* (2 species of mites) - *Zetzellia mali*, *Cenopalpus piger*;

43. *Salix caprea* (2 species of mites) - *Triophydeus flatus*, *Cenopalpus pulcher*;

44. *Staphylea pinnata* (15 species of mites) - *Euseius finlandicus*, *Amblyseius andersoni*, *Typhlodromus pyri*, *Paraseiulus soleiger*, **Tarsonemus virgineus*, **Tydeus inclusus*, *Lorryia wainsteini*, *L. ferula*, *L. lena*, *L. mali*, *Homeopronematus anconai*, ***Brevipalpus thelicraniae*, *Tetranychus lonicerae*, **Eotetranychus latifrons*, *E. orientalis*;

45. *Sorbus torminalis* (20 species of mites) - *Amblyseius andersoni*, *Euseius finlandicus*, *Typhlodromus pyri*, *Anthoseius caudiglans*, **Seiulus simplex*, **Paraseiulus incognitus*, *Eotetranychus fraxini*, *E. populi*, *E. prunicola*, *Zetzellia mali*, *Cenopalpus piger*, *C. pulcher*, *C. pennatisetus*, *Lorryia wainsteini*, *L. ferula*, *L. lena*, *L. formosa*, *Tydeus inclusus*, *Schaarschmidtia naegelei*, *Triophydeus flatus*;

46. *Swida alba* (13 species of mites) - *Typhlodromus cotoneastri*, *T. pyri*, *Amblyseius andersoni*, *Euseius finlandicus*, *Cenopalpus pennatisetus*, **Allonychus brasiliensis*, *Eotetranychus pomeranzevi*, *Pronematus sextoni*, *Triophydeus immanis*, *T. flatus*, *Lorryia wainsteini*, *L. devexa*, *Tydeus caudatus*;

47. *Swida australis* (8 species of mites) - *Euseius finlandicus*, *Amblyseius nemorivagus*, *Paraseiulus soleiger*, *Dubininellus echinus*, *Tydeus californicus*, *Triophydeus flatus*, *Tarsonemus talpae*, *T. hermes*;

48. *Swida sanguinea* (9 species of mites) - *Lorryia ferula*, *Triophydeus flatus*, *Pronematus sextoni*, *Cenopalpus pennatisetus*, *C. pulcher*, *Paraseiulus soleiger*, *Kampimodromus aberrans*, *Acotyledon redikorzevi*, *Euseius finlandicus*;

49. *Ulmus glabra* (34 species of mites) - *Tarsonemus hermes*, ***T. pauperoseatus*, *Tydeus californicus*, *T. kochi*, *Lorryia praefata*, *L. ferula*, *L. devexa*, *L. lena*, *L. obstinata*, ***L. pinnigera*, *L. mali*, *Pronematus sextoni*,

Homeopronematus anconai, **Bryobia graminum*, *Typhloctonus sguamiger*, *Triophydeus flatus*, *Zetzellia mali*, *Eotetranychus fraxini*, **E. raja*e, **E. ulmicola*, **Tetranychus pamiricus*, *Kampimodromus aberrans*, *K. langei*, *Amblyseius andersoni*, *A. nemorivagus*, ***Typhlodromips similis*, *Euseius finlandicus*, **Anthoseius verrucosus*, *Dubininellus echinus*, **D. macropilis*, *Typhlodromus pyri*, *T. cotoneastri*, *Acotyledon redikorzevi*, *A. rhizoglyphoides*;

50. ***Ulmus carpinifolia* (25 species of mites)** - *Amblyseius andersoni*, *A. nemorivagus*, *Euseius finlandicus*, *Triophydeus flatus*, *Kampimodromus aberrans*, *Typhloctonus sguamiger*, *Dubininellus echinus*, *Tarsonemus hermes*, *T. angulatus*, **T. bifurcatus*, *Lorryia ferula*, *L. devexa*, *L. lena*, **L. woolleyi*, *L. mali*, **L. mirabilis*, *Pronematus sextoni*, *Homeopronematus anconai*, **Tydeus includus*, *T. californicus*, **T. heterosetus*, **Paraseiulus incognitus*, **Cunaxoides biscutum*, *Amphitetranychus viennensis*, *Eotetranychus fraxini*;

51. ***Ulmus europaea* (23 species of mites)** - *Amblyseius andersoni*, *A. rademacheri*, **Typhlodromips tauricus*, ***T. lutezhicus*, *Euseius finlandicus*, *Typhlodromus pyri*, *T. cotoneastri*, *Typhloctonus sguamiger*, *Kampimodromus aberrans*, ***Cheyletus malaccensis*, *Lorryia ferula*, *L. lena*, *L. mali*, **L. electra*, *L. placita*, *Tydeus californicus*, *T. caudatus*, *Triophydeus flatus*, *T. immanis*, *Pronematus sextoni*, *Paraseiulus soleiger*, *Eotetranychus uchidai*, ***Tetranychus przhevalskii*;

52. ***Ulmus laevis* (44 species of mites)** - *Neoseiulus astutus*, *N. umbraticus*, *N. reductus*, *Amblyseius andersoni*, *A. nemorivagus*, **Typhlodromips tauricus*, **Proprioseiopsis okanagensis*, *Euseius finlandicus*, *Anthoseius verrucosus*, *A. rhenanus*, *A. pirianykae*, *A. clavatus*, *A. caudiglans*, *Typhloctonus sguamiger*, *Typhlodromus cotoneastri*, *Kampimodromus aberrans*, *K. langei*, *Dubininellus echinus*, *Homeopronematus anconai*, *Pronematus sextoni*, *Lorryia ferula*, **L. elinguis*, *L. lena*, *L. praefata*, *L. wainsteini*, **L. electra*, ***L. scopula*, **Metalorryia delicata*, **M. insignita*, *Tydeus kochi*, *T. caudatus*, *Triophydeus immanis*, **Tarsonemus confusus*, *T. hermes*, *Phytomemus pallidus*, *Amphitetranychus viennensis*, *Eotetranychus fraxini*, *E. prunicola*, *E. pomeranzevi*, *E. orientalis*, *Bryobia redicorzevi*, **B. graminum*, **Anystis baccarum*, *Zetzellia mali*;

53. ***Viburnum lantana* (40 species of mites)** - *Zetzellia mali*, *Cenopalpus pulcher*, *Eotetranychus fraxini*, *Tydeus californicus*, **Typhlodromus tiliae*, *T. pyri*, *T. cotoneastri*, *Amblyseius andersoni*, *A. nemorivagus*, *Neoseiulus reductus*, *N. astutus*, *Euseius finlandicus*, *Typhloctonus sguamiger*, *Kampimodromus aberrans*, *Eharius marzhaniani*, *Triophydeus immanis*, *T. flatus*, *Anthoseius rhenanus*, *A. inopinatus*, *A. pirianykae*, **A. clavatus*, ***A. recki*, **A. verricosus*, ***Typhlodromus cerasicolus*, *Dubininellus juvenis*, *D. echinus*, *Tarsonemus angulatus*, *T. bilobatus*, *T. hermes*, **T. confusus*, *Lorryia ferula*, *L. devexa*, *L. lena*, *L. mali*, **L. minuta*, ***Paralorryia chapultepecensis*, *Acotyledon michaeli*, ***Cheletogenes ornatus*, **Anystis baccarum*, *Pronematus sextoni*.

The comparison of mite species composition in investigated tree and shrub species showed: 1. The presence of specific complexes of mites; 2. The highest diversity of mites was registered on: *Acer platanoides* - 59, *A. campestre* - 61, *A. tataricum* - 53, *Quercus robur* - 48, *Tilia cordata* - 46, *Ulmus glabra* - 34, *U. laevis* - 44. These plants are edificators of forests stands.

There were identified 53 species of mites that are found only on a particular species of wild trees and shrubs: *Tarsonemus bifurcatus*, *T. confusus*, *T. crassus*, *T. trapezoides*, *T. pauperoseatus*, *Steneotarsonemus erlangensis*, *Tydeus diversus*, *Lasiotydeus volaticus*, *Lorryia matura*, *L. obligua*, *L. opifera*, *L. sp. 1*, *L. pinnigera*, *L. scopula*, *Metalorryia armaghensis*, *Pseudolorryia spineus*, *Paralorryia chapultepecensis*, *Pronematus testatus*, *Neopronematus rapidus*, *Triophydeus fragarius*, *Eustigmaeus chilensis*, *E. segnis*, *Storchia robustus*, *Cunaxoides biscutum*, *Imparipes boldi*, *Spinibdella cronini*, *Siteroptes primitivus*, *Cheletocarus raptor*, *Mediolata similans*, *Bdella iconica*, *Cyta coerulipes*, *Cheyletus eruditus*, *C. malaccensis*, *Cheletogenes ornatus*, *Cenopalpus sp. 3*, *Brevipalpus thelicraniae*, *B. sp. 1*, *Bryobia angustisetis*, *B. borealis*, *B. obihsaphedi*, *Tetranychus przhevalskii*, *T. armeniaca*, *Neotetranychus rubi*, *Amblyseius obtusus*, *Neoseiulus cucumeris*, *Anthoseius recki*, *Galendromus pilosus*, *Typhlodromus invectus*, *T. halinae*, *T. rapidus*, *Proprioseiopsis dacus*, *Typhlodromips rubini*, *T. similis*.

CONCLUSIONS

In the forests of the Republic of Moldova, mite fauna present on the leaves of trees and shrubs is represented by one hundred ninety species registered on fifty three species of trees and shrubs.

There were registered 65 rare species of mites on wild plants and 53 species were recorded only on specific plant species in the forest stands of the Republic of Moldova.

The highest diversity of mites was registered on the following plants - edificators of the forest stands: *Acer platanoides* - 59, *A. campestre* - 61, *A. tataricum* - 53, *Quercus robur* - 48, *Tilia cordata* - 46, *Ulmus glabra* - 34, *U. laevis* - 44.

REFERENCES

- KULIKOVA LUDMILA. 2005. The specificity of the structure of the fauna of mites plants biocenoses Moldova. *Analele științifice ale Universității de Stat din Moldova. Seria Științe chimico-biologice*. Chișinău: 178-181. [in Russian].
- KULIKOVA LUDMILA. 2007. New species of mites on the plants for the fauna of Moldova. *Buletinul Fcademiei de Științe a Moldovei științele vieții*. Chișinău: 2(302): 89 - 95. [in Russian].

- KULIKOVA LUDMILA. 2007a. Mites on plants of the family Rosaceae. Conferenție a VI-a Zoologilor din Republica Moldovei cu participare internațională. *Probleme actuale ale protecției și valorificării durabile a diversității lumii animale*. Chișinău: 8 - 19; 108 - 110. [in Russian].
- KULIKOVA LUDMILA. 2008. Acarofauna in different types of habitats in the territory of the Republic of Moldova. *Studia Universitatis. Revistă științifică. Seria „Științe ale Naturii”* Chișinău: 2 (12): 111-118. [in Russian].
- KULIKOVA LUDMILA. 2009. Plant mites in different forest types in the Northern Moldavian Plateau. *Diversitatea, valorificarea rațională și protecția lumii*. Simpozion Internațional. Chișinău: 163-166.

Kulikova Ludmila

Institute of Zoology, Academy of Sciences of Moldova,
Academy Str. 1, MD-2028, Chișinău, Republic of Moldova.
E-mail: zoologie@mail.ru

Received: March 29, 2015
Accepted: June 9, 2015