

NEW OBSERVATIONS ABOUT THE INVERTEBRATES AND THE VERTEBRATES FROM DIFFERENT AREAS OF ROMANIA

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ABSTRACT. This paper presents new faunistical data from different parts of Romania during 2018. There were recorded 55 species of invertebrates and 99 species of vertebrates. There were observed some ecological aspects of animals unmentioned in literature.

Keywords: vertebrates, invertebrates, faunistical data, Romania.

REZUMAT. Noi observații despre nevertebratele și vertebratele din diferite zone din România. Această lucrare prezintă noi date faunistice din diferite părți ale României în anul 2018. Au fost identificate 55 specii de nevertebrate și 99 specii de vertebrate. Au fost observate unele aspecte ecologice ale animalelor, nementionate în literatură.

Cuvinte cheie: vertebrate, nevertebrate, date faunistice, România.

INTRODUCTION

Some ecological aspects of the animals and rare species it could be observed during the travels with the car or train. Similar researches were recorded by Ilie (2011, 2015, 2017). This work carries on the presentation of other faunistical observations in different parts of Romania during 2018.

MATERIAL AND METHODS

The observations were performed with binoculars 8x25 and 20x50, completed with direct observations. For the identification of species, different guides were used (Fuhn, 1969; Mac Donald & Barret, 1995; Rákósy, 1996; Valenciuc, 2002; Székely, 2008, 2010; Dijkstra, 2006; Rákósy, 2013; Swensson 2017).

RESULTS AND DISSCUSIONS

In the analysed period, there were identified the following species:

Class GASTROPODA

Order STYLOMMATOPHORA

Family Helicidae:

- *Helix pomatia* LINNAEUS, 1758:

- one specimen, Oradea (BH), High School "Lucian Blaga", February 20, t = 7.5 °C;
- one specimen, Tinca (BH), June 4;
- one specimen, Tinca (BH), June 9;
- one specimen, Băile Felix (BH), August 27;
- one specimen, Oradea (BH), September 22.

Common species.

Class ARACHNIDA

Order ACARI

Family Eriophyidae:

- *Aceria populi* (NALEPA, 1851):

- galls on the branches of the trees of genus *Populus* L., Tinca (BH), September 8.

Species mentioned for the first time in Tinca area. Neacșu (2006) mentioned this species only in the southern part of Romania. The identification of these species of galls attests the existence of 95 species of galls in Tinca area (Ilie & Marinescu, 2018).

Subphylum MYRIAPODA

Class DIPLOPODA

Order JULIDA

Family Julidae:

- *Megaphyllum unilineatum* (KOCH, 1838):

- three pairs in copula, Tinca (BH), October 7, t = 6 °C;
- one pair in copula, Tinca (BH), October 14;
- one pair in copula, Tinca (BH), October 28;
- many specimens in Tinca area during November.

Very common species in Tinca area.

Class INSECTA

Order ODONATA

Suborder ZYGOPTERA

Family Lestidae:

- *Lestes viridis* (VAN DER LINDEN, 1825):

- many pairs in copula, the edge of Tinca forest (BH), October 6, t = 24 °C.

Common species.

- *Sympetma fusca* (VAN DER LINDEN, 1820):

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- one male specimen, Tinca forest (BH), October 6, $t = 24^{\circ}\text{C}$.

Common species.

Family Coenagrionidae:

- *Ischnura elegans* (VAN DER LINDEN, 1820):

- one male specimen, Băile Felix (BH), August 27.

Common species.

Suborder ANISOPTERA

Family Aeshnidae:

- *Aeshna cyanea* (MULLER, 1764):

- one male specimen, Felix forest (BH), August 27.

Common species.

Family Gomphidae:

- *Gomphus vulgatissimus* (LINNAEUS, 1758):

- one male specimen, Tinca (BH), September 25, $t = 25^{\circ}\text{C}$;

- one male specimen, Tinca (BH), October 11, $t = 24^{\circ}\text{C}$;

- one female specimen, Tinca (BH), October 12, $t = 25^{\circ}\text{C}$;

- one female specimen, Tinca (BH), October 16, $t = 23^{\circ}\text{C}$. In this case the flight period was extended with one month, because the raised temperatures.

Common species.

Family Libellulidae:

- *Crocothemis erythraea* (BRULLÉ, 1832):

- one male specimen, Băile Felix (BH), August 27.

Common species.

- *Libellula depressa* (LINNAEUS, 1758):

- one female specimen, Tinca (BH), September 23.

Common species in wetlands.

- *Orthetrum coerulescens* (FABRICIUS, 1798):

- one male specimen, Băile Felix (BH), August 27.

Common species.

- *Sympetrum fonscolombii* (SELYS, 1840):

- three female specimens, four male specimens, Tinca spa (BH), September 8.

Common species.

- *Sympetrum striolatum* (CHARPENTIER, 1840):

- two female specimens, Tinca (BH), October 21, $t = 21^{\circ}\text{C}$.

Common species.

Order MANTODEA

Family Mantidae:

- *Mantis religiosa* (LINNAEUS, 1758):

- three green female specimens (Fig. 1) and one brown female specimen, Tinca (BH), September 3-29;

- one brown female specimen, Tinca (BH), October 10.

Common species in Tinca area.



Figure 1 - *Mantis religiosa* (LINNAEUS, 1758) (foto A. L. Ilie).

Order COLEOPTERA

Family Scarabaeidae:

- *Cetonia aurata* (LINNAEUS, 1758):

- one specimen, Tinca forest (BH), October 6, $t = 24^{\circ}\text{C}$.

Common species in the forests and plains areas.

- *Oryctes nasicornis* (LINNAEUS, 1758):

- one male specimen, Oradea (BH), June 28;

- one specimen, Tinca (BH), July 7.

Common species in the oak forests.

Family Buprestidae:

- *Trachys troglodytiformis* OBENBERG, 1918:

- three specimens, Tinca (BH), November 8, $t = 18^{\circ}\text{C}$.

According to literature (Panin et al., 2015), the period of activity for the adults is till to September. In this case the period was extended with two months, because the raised temperatures ($t = 22-27^{\circ}\text{C}$ in October).

Family Chrysomelidae:

- *Altica oleracea* (LINNAEUS, 1758):

- two specimens, Tinca spa (BH), September 8;

- one specimen, Tinca (BH), September 30. It is very surprising the presence only of one specimen in this place and in this period comparatively to the preceding years.

Generally, common species.

- *Chrysolina herbacea* (DUFTSCHMID, 1825):

- one larva of the third age, many adults, Tinca spa (BH), September 8;

- one female specimens feeding with the leaves of *Cirsium arvense* LINNAEUS, 1758, Schitul Iezer (VL), September 21. The attack was relatively strong, this plant becomes a new host plant for this species, unmentioned in the scientific literature;

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- two female specimens and two larvae of the third age, Schitul Iezer (VL), September 21.

Relatively common species.

- *Chrysolina polita* (LINNAEUS, 1758):

- one male specimen, Schitul Iezer (VL), September 21.

Relatively common species in wetlands.

- *Chrysolina sturmi* (WESTHOFF, 1882):

- one female specimen, Oradea (BH), July 27;

- one female specimen, Tinca (BH), September 28.

Common species.

- *Cryptocephalus sericeus* (LINNAEUS, 1758):

- one specimen feeding with the pollen of *Mentha* sp. LINNAEUS, 1766, Tinca spa (BH), September 8.

Common species in the plain areas.

- *Galeruca tanacetii* (LINNAEUS, 1758):

- one male specimen, Tinca (BH), October 6;

- one male specimen, Tinca (BH), October 30, t = 24 °C.

Common species in the plain areas.

- *Luperus xanthopoda* (SCHRANK, 1781):

- one female specimen, Tinca, August 20.

Common species.

- *Neocrepidodera impressa* (FABRICIUS, 1801) subsp. *obtusangula* (DANIEL, 1904):

- one species, Tinca spa (BH), September 8.

Species mentioned for the first time in Tinca area.

- *Podagrica fuscicornis* (LINNAEUS, 1766):

- one specimen, Tinca spa (BH), September 8.

Relatively rare species in the plain areas.

- *Sphaeroderma rubidum* (GRAELLS, 1858):

- one specimen, Tinca (BH), September 7.

Relatively common species in the plain areas.

Family Curculionidae:

- *Coniocleonus nigrosuturalis* (GOEZE, 1777):

- one specimen, Tinca (BH), September 8.

Common species in the plain areas.

Order LEPIDOPTERA

Family Papilionidae:

- *Papilio machaon* LINNAEUS, 1758:

- one pair, Tinca (BH), September 3;

- two male specimens, Tinca spa (BH), September 8.

Generally common species but being in numerical regress in the last years in Tinca area.

Family Pieridae:

- *Pieris brassicae* (LINNAEUS, 1758):

- many specimens, Oradea (BH), August 30;
- three specimens, Schitul Iezer (VL), September 21;
- many specimens in Tinca area till to November 11, $t = 18^{\circ}\text{C}$;
- one specimen, Maieru (BN), 476 m altitude, October 27.

Very common species.

- *Pieris rapae* (LINNAEUS, 1758):

- two specimens, Oradea (BH), August 27;
- four specimens, Schitul Iezer (VL), September 21;
- many specimens in Tinca area (BH) till to November 14, $t = 15^{\circ}\text{C}$.

Common species.

- *Colias erate* (ESPER, 1805):

- three male specimens, Tinca (BH), September 5;
- many specimens, Tinca spa (BH), till to November 16, $t = 7^{\circ}\text{C}$;
- two specimens, Maieru (BN), October 27, 476 m altitude.

Common species.

- *Colias croceus* (FOURCROY, 1785):

- many specimens in Tinca area (BH) till to November 14, $t = 15^{\circ}\text{C}$.

Common species.

Family Lycaenidae:

- *Lycaena virgaureae* (LINNAEUS, 1758):

- one female specimen, Tinca (BH), October 11, $t = 24^{\circ}\text{C}$;
- one male specimen, Tinca (BH), October 20, $t = 17^{\circ}\text{C}$. According to literature (Szekely, 2008; Rakosy, 2013), the flight period was extended with two months.

Relatively common species.

- *Phengaris (Maculinea) arion* (LINNAEUS, 1758):

- two male specimens, Tinca (BH), December 10, $t = 6^{\circ}\text{C}$.

According to literature (Rákósy, 2013), the flight period is till to June. Maybe is a new generation (the second).

- *Polyommatus (Lysandra) bellargus* (ROTTEMBURG, 1775):

- one female specimen, many male specimens, Tinca spa (BH), September 8.

Common species.

- *Polyommatus icarus* (ROTTEMBURG, 1775):

- many male specimens, three female specimens, Tinca spa (BH), September 8.

Common species.

Family Nymphalidae:

- *Aglais (Inachis) io* (LINNAEUS, 1758):

- one specimen, Tinca (BH), September 16;
- one specimen, Tinca (BH), September 28;
- one specimen, Tinca forest (BH), October 5, $t = 20^{\circ}\text{C}$;
- one specimen, Tinca (BH), October 30, $t = 24^{\circ}\text{C}$;
- one specimen, Tinca (BH), November 4, $t = 25^{\circ}\text{C}$;
- three specimens, Râpa (BH), November 14, $t = 15^{\circ}\text{C}$.

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Generally, common species, but in numerical regress in Tinca area.

- *Brintesia circe pannonica* FRUHSTORFER, 1911:

- one male specimen, Tinca (BH), September 12, $t = 27^{\circ}\text{C}$;
- one male specimen, Tinca (BH), September 28, $t = 23^{\circ}\text{C}$. According to literature (Székely, 2008; Rákósy, 2013), this has the flight period till to August 15. Because the raised temperatures, the flight period is extended with one and half month.

Relative common species.

- *Lasiommata megera* (LINNAEUS, 1767):

- one male specimen, Tinca (BH), November 8, $t = 18^{\circ}\text{C}$;
- one male specimen, Tinca (BH), November 9, $t = 15^{\circ}\text{C}$. According to literature (Rákósy, 2013), the flight period was extended with one month.

Relatively common species.

- *Maniola jurtina* (LINNAEUS, 1758):

- one female specimen, Tinca (BH), November 4, $t = 25^{\circ}\text{C}$. According to literature (Rákósy, 2013) the flight period (till to the end of August) was extended with two months.

Relatively common species.

- *Melitaea athalia* (ROTTEMBURG, 1775):

- one female specimen, Tinca (BH), November 4, $t = 25^{\circ}\text{C}$. The flight period (till to the beginning of September) was extended with two months because the raised temperatures (Rákósy, 2013).

Relatively common species.

- *Melitaea phoebe* (DENIS & SCIFFERMULER, 1775):

- one male specimen, Tinca (BH), November 7, $t = 20^{\circ}\text{C}$. The period of flight is May-the first week of September (Rákósy, 2013), therefore the period of flight was extended with two months.

Common species.

- *Neptis hylas* (LINNAEUS, 1758) syn. *Neptis sappho* (PALLAS, 1771):

- one specimen, the edge of Tinca village (BH), October 6, $t = 24^{\circ}\text{C}$, the flight period was extended with one month (Székely, 2008; Rákósy, 2013).

Common species.

- *Pararge aegeria tircis* (GODAT, 1821):

- two specimens, Felix forest (BH), August 27.

Common species.

- *Polygonia c-album* (LINNAEUS, 1758):

- one specimen, Schitul Iezer (VL) September 21;
- eleven specimens, Tinca (BH), during September 15 - October 20;
- one specimen, Tinca (BH), November 4, $t = 25^{\circ}\text{C}$.

Common species.

- *Pyronia tithonus* (LINNAEUS, 1767):

- one female specimen, Tinca (BH), November 2, $t = 25^{\circ}\text{C}$. The flight period (till to the end of August) was extended with two months (Rakosy, 2013).

Common species.

- *Vanessa atalanta* (LINNAEUS, 1758):

- one specimen, Oradea (BH), July 2;
- two specimens, Schitul Iezer (VL), September 21;
- one specimen flying at $t = 6.5^{\circ}\text{C}$, in the morning (8:15 AM), Tinca (BH), October 6;
- many specimens in Tinca area (BH) till to December;
- two specimens, Tinca (BH), December 10.

Very common species.

- *Vanessa cardui* (LINNAEUS, 1758):

- one male specimens, Oradea (BH), June 28;
- one male specimen, Tinca (BH), September 5.

Common species.

Family Geometridae:

- *Operophtera brumata* (LINNAEUS, 1758):

- one female specimen, Tinca (BH), December 13-15, $t = 0-3^{\circ}\text{C}$ (day), $t = -6^{\circ}\text{C}$ (night).

Common species in Tinca area.

Family Sphingidae:

- *Hyles euphorbiae* (LINNAEUS, 1758):

- one specimen, Tinca (BH), September 8;
- one specimen, Tinca (BH), October 12;
- one specimen, Tinca (BH), November 7, $t = 20^{\circ}\text{C}$;
- one specimen, Tinca (BH), November 13, $t = 17^{\circ}\text{C}$. According to literature (Székely, 2010) in this period the species must to be in the stage of pupa, the flight period is August-first week of September (the second generation), therefore the period of flight was extended with two months.

Relative common species in plain areas.

Family Erebidae:

- *Amata phegea* (LINNAEUS, 1758):

- three specimens, Oradea (BH), July 11.

Relatively common species.

- *Polypogon tentacularia* (LINNAEUS, 1758):

- one male specimen, Tinca (BH), February 15, $t = 5^{\circ}\text{C}$;
- one female specimen, Tinca (BH), November 22, $t = 5^{\circ}\text{C}$;
- three male specimens, Tinca (BH), December 8, $t = 4^{\circ}\text{C}$.

According to literature (Rakosy, 1996), the flight period is 15 May - 15 July.

Order DIPTERA

Family Cecidomyiidae:

- *Contarinia subulifex* KIEFFER, 1897:

- galls on the leaves of *Quercus cerris* L., Tinca forest (BH), October 6.

Species mentioned for the first time in Tinca area.

Family Tipulidae:

- *Tipula oleracea* LINNAEUS, 1758:

- one pair in copula, Tinca (BH), October 11, $t = 17^{\circ}\text{C}$ (20:21 PM). The flight period for this species is June-September.

Common species in plain areas.

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Class AMPHIBIA

Order ANURA

Family Ranidae:

- *Rana dalmatina* FITZINGER, 1838:
- many specimens, Tinca spa (BH), September 8.
Common species in wetlands.
- *Rana ridibunda* (PALLAS, 1771):
- many specimens, Tinca spa (BH), September 8.
Common species.

Order URODELA

Family Salamandridae:

- *Triturus vulgaris* (LINNAEUS, 1758):
- one female specimen, Tinca (BH), October 29, t = 17 °C (7:49 AM).
Common species.

Class REPTILIA

Order SQUAMATA

Family Lacertidae:

- *Lacerta viridis* (LINNAEUS, 1758):
- one female specimen (Fig. 2), Tinca forest (BH), October 6, t = 24 °C.
Common species in Tinca area.



Figure 2 - *Lacerta viridis* (LAURENTI, 1768) (foto A. L. Ilie).

Family Colubridae:

- *Coronella austriaca* (LAURENTI, 1768):
- one female specimen (Fig. 3), Tinca (BH), October 29, t = 27 °C.
Common species.



Figure 3 - *Coronella austriaca* LAURENTI, 1768 (foto A. L. Ilie).

- *Natrix tessellata* (LAURENTI, 1768):

- one specimen, Tinca spa (BH), near Crișul Negru River, September 8.
Common species in Tinca area.

Class AVES

Order PODICIPEDIFORMES

Family Podicipedidae:

- *Podiceps auritus* (LINNAEUS, 1758):

- one male specimen, Oradea (BH), Crișul Repede River (BH), December 20.
Accidental species in Romania, probably mentioned for the first time in Bihor county.

- *Tachybaptus ruficollis* (PALLAS, 1764):

- one specimen, Ghioroc (TM), September 22.
Summer visitor, rare winter visitor, in wetlands.

Order PELECANIFORMES

Family Pelecanidae:

- *Pelecanus onocrotalus* (LINNAEUS, 1758):

- two specimens, Tinca spa (BH), Crișul Negru River, September 5;
- two specimens, Cheșa (BH), October 11;
- two specimens, Tinca spa (BH), Crișul Negru River, November 7.
Passage species or rare summer visitor in Tinca area.

Family Phalacrocoracidae:

- *Phalacrocorax carbo* (LINNAEUS, 1758):

- seven specimens, Craiova (DJ), September 20;
- 13 specimens, Tinca (BH), October 15;

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- 64 specimens, Tinca (BH), October 28;
- seven specimens, Râpa (BH), November 17.
Summer visitor, rare winter visitor.

Order CICONIIFORMES

Family Ardeidae:

- *Ardea cinerea* (LINNAEUS, 1758):
- one specimen, Sântana (lake) (AR), September 19;
- one specimen, Cheşa (BH), June 8;
- one specimen, Tinca (BH), December 21.
Summer or rare winter visitor, common species.
- *Egretta garzetta* (LINNAEUS, 1766):
- one specimen, Cefa (BH), September 19.
Summer visitor.
- *Egretta alba* (LINNAEUS, 1758):
- one specimen, Cheşa (BH), July 22;
- three specimens, Tinca spa, Crişul Negru River, September 5;
- 20 specimens, Zerind (AR), September 22;
- one specimen, Râmnicu Vâlcea (VL), Olt river, September 21;
- one specimen, Salonta (BH), September 19;
- six specimens, Tâmaşda lake (BH), September 19;
- 13 specimens, Tinca (BH), October 6.
Summer or rare winter visitor, common species.
- *Ixobrychus minutus* (LINNAEUS, 1766):
- one specimen, Tinca spa (BH), Crişul Negru River, September 5.
Summer visitor, breeding species in Tinca area.

Family Ciconiidae:

- *Ciconia nigra* (LINNAEUS, 1758):
- one specimen, Cheşa (BH), August 14.
Summer visitor in Romania.

Order ANSERIFORMES

Family Anatidae:

- *Cygnus olor* (LINNAEUS, 1758):
- three specimens, Cheşa (BH), May 18;
- two pairs with six nestlings, Drobeta Turnu-Severin (MH), Danube River, September 19;
- 126 specimens, Tinca (BH), November 3.
Summer or rare winter visitor.
- *Cygnus cygnus* (LINNAEUS, 1758):
- two specimens, Ucuriş (BH), December 22.
Winter visitor in Romania.
- *Anser anser* (LINNAEUS, 1758):
- 57 specimens (in migration), Ciumeghiu (BH), September 22.

Partial migratory species.

- *Anser albifrons* (SCOPOLI, 1769):

- 32 specimens, Tinca (BH), November 2;
- 17 specimens, Tinca (BH), November 11;
- 183 specimens, Râpa (BH), November 12.

Winter visitor in Romania.

- *Anser fabalis* (LATHAM, 1787):

- two specimens, Tinca (BH), November 20.

Winter visitor in Romania.

- *Anas platyrhynchos* (LINNAEUS, 1758):

- five male specimens, Cheşa (BH), March 2;
- four female specimens, Tinca (BH), Crişul Negru River, September 8;
- 23 specimens, Râmnicu Vâlcea (VL), Olt River, September 21;
- 324 specimens, Tinca (BH), November 2.

Sedentary, common species.

- *Aythya fuligula* (LINNAEUS, 1758):

- two male specimens, Cociuba Mare (BH), November 6.

Winter visitor, rarely summer visitor in Romania.

- *Aix galericulata* (LINNAEUS, 1758):

- one male specimen, Cociuba Mare (BH), November 13. Probably, this specimen is escaped from zoo or private bird cage.

Accidental species in Romania.

Order FALCONIFORMES

Family Accipitridae:

- *Aegypius monachus* (LINNAEUS, 1766):

- one immature specimen, forest Tinca, October 16;
- one immature specimen (probably the same specimen), Tinca spa, October 20.

Accidental, very rare species in Romania.

- *Aquila chrysaetos* (LINNAEUS, 1758):

- one specimen, Boga (BH), June 16.

Sedentary, relative rare species in Romania.

- *Aquila heliaca* (SAVIGNY, 1809):

- one specimen, Cheşa (BH), July 5.

Sedentary, relative rare species in Romania.

- *Circus gallicus* (GMELIN, 1788):

- one specimen, Cheşa (BH), June 4.

Summer visitor or passage species in Romania.

- *Milvus migrans* (BODDAERT, 1783):

- one specimen, Cheşa (BH), October 2.

Passage or sedentary, relative rare species in Romania.

- *Circus cyaneus* (LINNAEUS, 1766):

- one male specimen, Tinca (BH), December 1;
- one female specimen, Tinca (BH), December 3.

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Winter visitor, common species in Romania.

- *Circus macrourus* (GMELIN, 1770):

- one male specimen, Tinca (BH), December 16.

Passage or summer visitor in Romania, relatively rare species.

- *Circus pygargus* (LINNAEUS, 1758):

- one female specimen, Tinca (BH), October 18;
- one female specimen, Tinca (BH), October 28;
- one male specimen, Tinca (BH), November 11. Probably, this is the latest observation of the species in Romania.

Summer visitor, common species.

- *Circus aeruginosus* (LINNAEUS, 1758):

- one juvenile specimen, Oradea (BH), September 19;
- one specimen, Cefa (BH), September 19;
- two specimens, Tămașda lake (BH), September 19.

Summer visitor, rare winter visitor, common species in wetlands.

- *Accipiter nisus* (LINNAEUS, 1758):

- one female specimen hunting a swallow, Tinca (BH), September 7;
- one male specimen, Tinca (BH), December 5;
- one female specimen, Tinca (BH), December 31.

Sedentary, common species.

- *Accipiter gentilis* (LINNAEUS, 1758):

- one female specimen, Zăbrani (AR), September 22;
- one female specimen hunting a swallow Tinca (BH), October 3;
- one female specimen, Tinca (BH), October 8;
- one juvenile specimen, Tinca (BH), October 11;
- one female specimen hunting a ring-dove, Tinca (BH), October 25;
- one female specimen, Tinca (BH), November 12;
- one female specimen, Tinca (BH), November, 14;
- one female specimen, Tinca (BH), December 21.

Sedentary, common species.

- *Buteo buteo* (LINNAEUS, 1758):

- one specimen, Tinca spa (BH), September 8;
- two specimens, Cheșa (BH), September 2;
- three specimens, Tinca (BH), October 23;
- one specimen, Tinca (BH), November 3;
- one specimen, Tinca (BH), November 11;
- one specimen, Leș (BH), one specimen, Husasău de Tinca (BH), two specimens, Miersig (BH), November 23;
- many melanistic, brown-blackish specimens, on Oradea (BH) - Timișoara (TM) route, December 21.

Partial migratory, common species.

Family Falconidae:

- *Falco tinnunculus* (LINNAEUS, 1758):

- two juvenile specimens, recent flying, being at 15 cm of their nest, Chişinău (AR), September 19. In this case it comes to a late breeding, registered generally only in mountainous areas, probably is a substitution clutch;
- many specimens in Arad and Timiş countries, September 19-22;
- one male specimen, Tinca (BH), October 23;
- one male specimen, Tinca (BH), November 3;
- one male specimen, Tinca (BH), November 11;
- one specimen, Oradea (BH), November 23.

Partial migratory species, common species.

- *Falco columbarius* (LINNAEUS, 1758):

- one male specimen, Şimandu Nou (AR), December 21;
- one male specimen, Tinca (BH), December 24.

Winter visitor in Romania.

- *Falco peregrinus* (TUNSTALL, 1771):

- one specimen, Tinca (BH), October 15.

Sedentary, rare winter visitor.

Order GALLIFORMES

Family Phasianidae:

- *Phasianus colchicus* (LINNAEUS, 1758):

- 21 specimens, in the vicinity of the railway station, near the people, without fear, Salonta (BH), September 19;
- one male albino specimen, Râpa (BH), November 2;
- many specimens in Tinca area (BH), during November-December.

Sedentary, common species.

- *Perdix perdix* (LINNAEUS, 1758):

- one albino specimen, Râpa (BH), October 1;
- one broken egg, on the field, Râpa (BH), October 20.

These observations confirm again the observations of Ilie (2016).

Sedentary, common species.

Order GRUIFORMES

Family Rallidae:

- *Rallus aquaticus* (LINNAEUS, 1758):

- one specimen, Miersig (BH), November 23.

Partial migratory species or rare winter visitor in Romania.

- *Fulica atra* (LINNAEUS, 1758):

- two specimens, Sântana lake (AR), September 19.

Partial migratory species, common species in wetlands.

Family Gruidae:

- *Grus grus* (LINNAEUS, 1758):

- 26 specimens, Râpa (BH), October 23;
- one specimen, Tinca (BH), December 26.

Passage species and winter visitor in Romania.

Order CHARADRIIFORMES

Family Charadriidae:

- *Vanellus vanellus* (LINNAEUS, 1758):
 - seven specimens, Tâmașda lake (BH), September 19;
 - 32 specimens, Tinca (BH), October 12.
- Summer visitor in Romania.

Family Laridae:

- *Larus michahellis* (NAUMANN, 1840):
 - six specimens, Sântana lake (AR), September 19;
 - five specimens, Cheșa (BH), October 1.
- Relatively common species in wetlands.

Order COLUMBIFORMES

Family Columbidae:

- *Streptopelia decaocto* (FRIVALDSZKY, 1838):
 - one juvenile specimen, recent flying, Salonta (BH), September 19 (the fifth or sixth clutch);
 - many specimens in Tinca and Cheșa area (BH) during November-December.
- Sedentary, very common species.
- *Columba oenas* (LINNAEUS, 1758):
 - one specimen, Cheșa (BH), May 23.
- Summer visitor, relative rare species in Romania.

Order STRIGIFORMES

Family Strigidae:

- *Asio otus* (LINNAEUS, 1758):
 - one specimen, Cheșa (BH), October 20;
 - one specimen, Tinca (BH), November 4;
 - one specimen, Cheșa (BH), November 5;
 - one specimen, Gurbediu forest (BH), December 2;
 - 12 specimens, Tinca (BH), central park, December 14.
- Because the influence of global warming this species appeared later comparatively with 2017 with one month and half.
- Sedentary, common species.
- *Nyctea scandiaca* (LINNAEUS, 1758):
 - one specimen, Cheșa (BH), November 9;
 - one specimen, Cheșa (BH), December 12.
- Accidental species, very rare in Romania.
- *Strix uralensis* (PALLAS, 1771):
 - one specimen, Cheșa (BH), December 3.
- Winter visitor, relative rare species in Romania.

Family Tytonidae:

- *Tyto alba* (SCOPOLI, 1739):
- one specimen, Tinca (BH), November 3;

- one specimen, Cheşa (BH), November 5.
Sedentary, relatively common species in Tinca area.

Order APODIFORMES

Family Apodidae:

- *Apus pallidus* (SHELLEY, 1870):
 - three specimens, Cheşa (BH), October 16. Probably, this is the latest observation for Romania.
- Accidental species.

Order CORACIIFORMES

Family Meropidae:

- *Merops apiaster* (LINNAEUS, 1758):
 - seven specimens, Tinca (BH), September 1;
 - three specimens, Tinca (BH), September 2;
 - twenty specimens, Tinca (BH), September 3;
 - 24 specimens, Tinca (BH), September 6;
 - twenty specimens, Tinca (BH), September 7;
 - three specimens, Tinca (BH), September 8 (the migration).
- Summer visitor, common species in wetlands.

Order PICIFORMES

Family Picidae:

- *Dendrocopos syriacus* (HEMPRICH ET EHRENBURG, 1833):
 - one nest being at 2.17 meters compared to the ground, D = 4.5 cm, depth of nest = 34 cm, inside of depth = 11cm, Tinca forest (BH), October 6.
- Sedentary, common species.
- *Dendrocopos minor* (KOCH, 1816):
 - one female specimen, Tinca (BH), September 6;
 - one specimen, Gurbediu forest (BH), December 3.
- Sedentary, common species.

Order PASSERIFORMES

Family Hirundinidae:

- *Delichon urbica* (LINNAEUS, 1758):
 - one juvenile specimen (Fig. 4) in a nest (the second clutch), Tinca (BH), September 4;
 - one specimen, Tinca (BH), September 8 (the migration).
- Summer visitor, relatively common species.



Figure 4 - *Delichon urbica* (LINNAEUS, 1758) (foto A. L. Ilie).

- *Hirundo rustica* (LINNAEUS, 1758):

- three specimens, Tinca spa (BH), September 8;
- four specimens, Tinca (BH), September 13;
- four specimens, Tinca (BH), September 14;
- seven specimens, Tinca (BH), September 15;
- four specimens, Tinca (BH), September 16;
- one specimen, Șimand (AR), September 19;
- 41 specimens, Tămașda (BH), September 19;
- four specimens, Zăbrani (AR), September 22;
- three specimens, Remetea Mică (TM), September 22 (the migration).

Summer visitor, common species.

Family Motacillidae:

- *Motacilla cinerea* (TUNSTALL, 1771):

- one specimen, Schitul Iezer (VL), September 21;
- two specimens, Băile Olănești (VL), September 21;
- one specimen, Tinca (BH), October 8 (early presence for a plain area!);
- one specimen, Maieru (BN), 476 m altitude, October 27.

Summer visitor in mountainous areas, rare winter visitor in the plain areas.

- *Motacilla alba* (LINNAEUS, 1758):

- two specimens, Racovița lake (SB), October 27;
- one specimen, Maieru (BN), 476 m altitude, October 27.

Summer visitor, common species.

Family Laniidae:

- *Lanius colurio* (LINNAEUS, 1766):

- one male specimen, Salonta (BH), September 19.

Summer visitor, common species.

- *Lanius excubitor* (LINNAEUS, 1758):

- one specimen, Miersig (BH), November 23.

Common species, winter visitor in Romania.

Family Oriolidae:

- *Oriolus oriolus* (LINNAEUS, 1758):

- one juvenile specimen, Tinca (BH), September 8;
- one female specimen, Tinca spa (BH), September 8.

Summer or rare winter visitor, common species.

Family Sturnidae:

- *Sturnus vulgaris* (LINNAEUS, 1758):

- one male specimen singing, Tinca (BH), September 7;
- three male specimens singing, Tinca (BH), September 12;
- many specimens, Tâmașda (BH), September 19;
- many specimens during November in Tinca area;
- two specimens, Tinca (BH), December 7;
- 12 specimens, Tinca (BH), December 26 (generally, rare presence during the winter!).

Partial migratory, common species.

Family Bombycillidae:

- *Bombycilla garrulus* (LINNAEUS, 1758):

- two specimens, Cheșa (BH), October 11.

Winter visitor or accidental species.

Family Corvidae:

- *Corvus corax* (LINNAEUS, 1758):

- one specimen, Schitul Iezer (VL), September 21;
- one specimen, Tinca (BH), during September 6-9;
- one specimen, Tinca (BH), September 23;
- one pair, Tinca (BH), October 2;
- one specimen, Tinca (BH), October 17;
- one male specimen, Tinca (BH), November 4;
- one pair, Tinca (BH), November 10;
- one specimen, Tinca (BH), November 17;
- one specimen, Tinca (BH), December 1;
- two specimens, Tinca (BH), December 31.

Sedentary, relatively common species in Tinca area.

- *Corvus frugilegus* (LINNAEUS, 1758):

- one specimen on nest and other specimen was near nest and arranging together the twigs of nest, although whole tree was covered with snow. This phenomenon was observed by A. L. Ilie too at Oradea (BH) in February 2017 and Ciochia (1992) but it is very rarely.

Family Cinclidae:

- *Cinclus cinclus* (LINNAEUS, 1758):

- one specimen, Schitul Iezer (VL), September 21.

Sedentary species in mountainous areas or winter visitor.

Family Troglodytidae:

- *Troglodytes troglodytes* (LINNAEUS, 1758):

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- one specimen, Tinca (BH), December 2.

Common species, summer visitor or rare winter visitor in Romania.

Family Sylviidae:

- *Sylvia curruca* (LINNAEUS, 1758):

- one male specimen, Tinca (BH), September 14.

Summer visitor, common species in Tinca area.

- *Sylvia atricapilla* (LINNAEUS, 1758):

- one female specimen, Cheşa (BH), December 2. This is the latest observation of this species in Romania.

Relatively common species, summer visitor in Romania.

- *Phylloscopus fuscatus* (BLYTH, 1842):

- one specimen, Tinca (BH), October 6.

Accidental species, rare in Romania, mentioned for the first time in Tinca area and in the western part of Romania.

- *Phylloscopus trochiloides* (SUNDEVALL, 1837):

- one specimen, Tinca (BH), September 1.

Accidental species in Romania, mentioned for the first time in Tinca area.

- *Phylloscopus collybita* (VIEILLLOT, 1817):

- two specimens with winter plumage, Tinca (BH), September 4;

- one male singing and two female specimens, Tinca spa (BH), September 8;

- one male specimen singing, Tinca forest (BH), October 6.

Summer visitor, relatively common species.

- *Regulus regulus* (LINNAEUS, 1758):

- 13 specimens, Tinca (BH), October 29. The presence of many specimens together at this species is very rare in Romania.

Partial migratory species or winter visitor.

Family Turdidae:

- *Erithacus rubecula* (LINNAEUS, 1758):

- one specimen, forest Tinca (BH), October 6.

Summer or rare winter visitor, common species.

- *Phoenicurus ochruros gibraltariensis* (GMELIN, 1789):

- one male juvenile specimen, Pleşoiu (OT), September 21;

- many specimens, Tinca (BH), till to October 24;

- one male juvenile and one adult specimens, Tinca (BH), October 29;

- one male juvenile specimen, Tinca (BH), November 9;

- one male juvenile specimen, Tinca (BH), November 11;

- one male specimen, Tinca (BH), December 17.

Summer visitor, rare winter visitor, common species.

- *Phoenicurus phoenicurus* (LINNAEUS, 1758):

- one male specimen, Tinca (BH), October 20;

- one male specimen, Maieru (BN), October 27.

Summer visitor, common species in the forests.

- *Turdus viscivorus* (LINNAEUS, 1758):

- one specimen, Tinca (BH), October, 31;

- three specimens, Tinca (BH), November 21;
- one specimen, Tinca (BH), November 22;
- one specimen, Tinca (BH), December 4;
- one specimen, Tinca (BH), December 25.

Partial migratory species.

- *Turdus naumanni naumanni* (TEMMINCK, 1820):

- one male specimen, Miersig forest (BH), December 20.

Accidental species in Romania, probably mentioned for the first time in Bihor county.

Family Paridae:

- *Parus lugubris* (TEMMINCK, 1820):

- one specimen, Tinca (BH), September 4.

Sedentary species, relatively rare but breeding species in Tinca area.

- *Parus major* (LINNAEUS, 1758):

- many specimens during analysed period in Tinca area (BH), Craiova (DJ), Râmnicu Vâlcea (VL), Oradea (BH).

Sedentary, very common species.

- *Parus montanus* (LINNAEUS, 1758):

- one specimen, Schitul Iezer (VL), September 21.

Sedentary species in mountainous areas or winter visitor.

Family Aegithalidae:

- *Aegithalos caudatus* (LINNAEUS, 1758):

- four specimens, Tinca spa (BH), September 8;
- one juvenile specimen, Zăbrani (AR), September 22 (the second clutch).

Sedentary, relatively common species.

Family Fringillidae:

- *Coccothraustes coccothraustes* (LINNAEUS, 1758):

- three specimens, Tinca (BH), September 4;
- two specimens, Tinca (BH), September 30;
- one egg (the fourth clutch), Tinca forest (BH), November 2. This clutch, unmentioned in literature, was possible because the raised temperatures registered during the end of October - November 6 (22 - 26 °C).

Sedentary, common species.

- *Carduelis carduelis* (LINNAEUS, 1758):

- one juvenile specimen recent flying, Cheșa (BH), September 30 (the third clutch);
- many specimens in Tinca area during November-December.

Sedentary, very common species.

- *Carduelis chloris* (LINNAEUS, 1758):

- 32 specimens (male and female), Tinca (BH), October 2;
- one male specimen, the edge of Tinca forest (BH), October 6;
- many specimens in Tinca area during November-December.

Sedentary, common species.

- *Carduelis flavirostris* (LINNAEUS, 1758):

- six specimens, Tinca (BH), December 2.

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Accidental species during the winter in Romania, species mentioned for the first time in Tinca area.

- *Fringilla coelebs* (LINNAEUS, 1758):

- two male specimens, Tinca (BH), November 16;
- one male specimen, Tinca (BH), December 16.

Partial migratory, common species.

Family Passeridae:

- *Passer montanus* (LINNAEUS, 1758):

- one pair in copula (!), Tinca (BH), December 28, t = 4 °C;
- many specimens building nests in the garret of A. L. Ilie's house, Tinca (BH), during December!

Very common, sedentary species in Romania.

Family Emberizidae:

- *Plectrophenax nivalis* (LINNAEUS, 1758):

- two male specimens, Râpa (BH), December 8.

Winter visitor in Romania.

- *Emberiza cia* (LINNAEUS, 1766):

- three male specimens, one female specimen, Tinca (BH), December 12.

Sedentary species in Romania in mountainous areas, but winter visitor in Tinca area, mentioned for the first time in Tinca area.

- *Miliaria calandra* (LINNAEUS, 1758):

- 30 specimens, the edge of Oradea city (BH), September 19.

Partial migratory species.

Class MAMMALIA

Order LAGOMORPHA

Family Leporidae:

- *Lepus europaeus* PALLAS, 1778:

- one specimen, Tinca forest (BH), October 6.

Common species.

Order RODENTIA

Family Sciuridae:

- *Sciurus vulgaris* LINNAEUS, 1758:

- two specimens, Băile Olănești (VL), September 21.

Common species in the forests.

Family Muridae:

- *Apodemus flavicollis* (MELCHIOR, 1834):

- one dead specimen, but without traces of violence on his body, Tinca forest (BH), October 5.

Common species in the forests, lands.

Order EULIPOTYPHLA

Family Soricidae:

- *Sorex araneus* LINNAEUS, 1758:
 - one specimen, Tinca (BH), October 10.
- Common species.

Family Erinaceidae:

- *Erinaceus europaeus* LINNAEUS, 1758:
 - one specimen, Leș forest (BH), September 22;
 - one specimen Miersig forest (BH), September 19;
 - one excrement who contained the seeds of hawthorn, Tinca forest (BH), October 6.
- Common species.

Family Cervidae:

- *Capreolus capreolus* (LINNAEUS, 1758):
 - 18 specimens during September 19-22 in Ciurmeșiu (BH), Salonta (BH), Cefa (BH), Leș (BH), Tămașda (BH);
 - two specimens, Tinca forest (BH), October 6.
- Common species.

Order CHIROPTERA

Family Rhinolophidae:

- *Rhinolophus ferrumequinum* (SCHREBER, 1774):
 - one specimen, Tinca (BH), October 20, t = 20 °C;
 - one specimen, Ucuriș (BH), November 3, t = 23 °C.
- Common species in Tinca area.

Family Vespertilionidae:

- *Pipistrellus pipistrellus* (SCHREBER, 1774):
 - five specimens, Oradea (BH), January 7, t = 13 °C. Premature appearance, because the raised temperatures registered during winter 2017-2018, the bats being in hibernation in winter.
- Common species in Romania.

Order CARNIVORA

Family Canidae:

- *Vulpes vulpes* (LINNAEUS, 1758):
 - one specimen, Pădurea Sarului (OT), September 22;
 - one excrement: L = 12 cm, l = 1.9 cm, contained seeds of hawthorn and masticated seeds of maize, Tinca forest (BH), October 6;
 - one female specimen, the edge of Tinca village (BH), November 11;
 - one specimen, Miersig forest (BH), November 23.
- Common species.

CONCLUSIONS

During 2018, there were observed 55 species of invertebrates and 99 species of vertebrates in different parts of Romania. There were obtained new data about the presence of the species at national level, their behaviour and food, phenology and biology. Some species are mentioned for the first time in some areas.

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