Bulletin of the Natural History Museum – Plovdiv

Volume 10
December 2025

REGIONAL NATURAL HISTORY MUSEUM – PLOVDIV
UNIVERSITY OF PLOVDIV PUBLISHING HOUSE

International Standard Serial Number
Online ISSN 2534-9635; Print ISSN 2534-9627

Bulletin of the Natural History Museum – Plovdiv (Bull. Nat. Hist. Mus. Plovdiv) is the official scientific bulletin of the Natural History Museum – Plovdiv, published by Plovdiv University Press. The journal accepts submissions of original studies in the field of palaeontology, natural history, geology and speleology, zoology, botany, ecology, biogeography, museology, history of natural science, information about museum collections, etc.

The official language of the journal is English. Exceptions are possible, certain manuscripts may be published in Bulgarian language, with extensive abstract in English.

Periodicity: Annually – one issue per year (December).

Type: Open Access, hard copy and electronically. Free of charge to publish.

About the Journal

In 1970, the Natural History Museum – Plovdiv issues Volume 1 of the journal "Bulletin of the Natural Science Museum Plovdiv". In 1973 Volume 2 was released.

Before the release of the independent journal of the Natural History Museum – Plovdiv, researchers at the museum published their articles in "Annuals of the Museums in the Plovdiv Region" and from 1975 in “Bulletin of the museums in Southern Bulgaria”, which was published until 1995 (a total of 21 volumes).

With the creation of the Bulletin of the Natural History Museum – Plovdiv, the Regional Museum of Natural History – Plovdiv resumed issuing its scientific journal.

The journal accepts for publishing short messages (up to 4 pages), original research papers (from 4 to 10 pages) and review articles (over 10 pages) in the above mentioned fields and formatted according to the instructions for authors.

The logo of the journal is the paleoendemic beetle *Rhodopaea angelovi* Gruev & Tomov, 1968[1], known only from a small area in the Rhodope Mountains, south of Plovdiv. The species is named after Professor Emeritus Pavel Angelov, one of the first directors of the museum, who collected the type specimens.

From the Editorial Board

[1] Gruev B., V. Tomov. 1968. A new genus and species *Rhodopaea angelovi* gen. et sp. n. (Coleoptera, Chrysomelidae) from Bulgaria. Rev. Ent. URSS, XLVII(3):553-555 (in Russian with English summary).

Contact Publisher

Regional Natural History Museum – Plovdiv

34 Hristo G. Danov Str., Plovdiv 4000, BULGARIA; Phone: +359 32 626683
E-mail: bnhm_plovdiv@abv.bg
Web: https://rnhm.org/en/scientific-journal/

University of Plovdiv Publishing House

24 Tsar Asen Str., Plovdiv 4000, BULGARIA

Open Access Policy

Bulletin of the Natural History Museum – Plovdiv provides immediate open access to its content on the principle that making research freely available to the public supports a greater global exchange of knowledge. Open Access in journal publishing means:
* Direct, barrier-free, online dissemination of scientific results at no charge for readers Authors retain the copyright of their articles;
* Open Access papers may be copied, downloaded, and used for text- and data-mining purposes, provided that such uses are fully attributed on a non-commercial basis;
* High visibility of the work – anyone can read your article at no charge;
* Higher citation rates due to higher visibility;
* Quick publishing as pre-prints published immediately upon acceptance;
* Articles are archived and searched through several major OA repositories.

Peer review process

All articles included in "Bulletin of the Natural History Museum – Plovdiv" are peer reviewed. Submitted manuscripts are sent to two or three independent peer reviewers, unless they are either out of scope or below threshold for the journal. These manuscripts will generally be reviewed by experts with the aim of reaching a first decision as soon as possible. The journal uses the double anonymity standard for the peer-review process.

Abstracting & Coverage

- Crossref
- Index Copernicus (ICv2024 = 58.45)
- GEOBASE (Elsevier)
- Academic Research Index (Research Bible)
- Academic Keys
- Scientific Indexing Services
- CiteFactor
- Genamics JournalSeek
- InfoBASE Index
- Google Scholar Search Engine and others.

Bulletin of the Natural History Museum – Plovdiv

2025, Volume 10 – Contents

Research Articles

Short notes

Miscellaneous

Bulletin of the Natural History Museum - Plovdiv
Bull. Nat. Hist. Mus. Plovdiv, 2025, vol. 10:1-16
https://doi.org/10.65437/bnhmp.10.1.1

The fungus gnats (Diptera: Sciaroidea) collection of the Regional Natural History Museum – Plovdiv

Svetlozara Kazandzhieva[1,2*]

1 - National Museum of Natural History, Bulgarian Academy of Sciences
1 Tsar Osvoboditel Blvd., 1000 Sofia, BULGARIA
2 - Regional Museum of Natural History – Plovdiv, 34 Hristo G. Danov Street, 4000 Plovdiv, BULGARIA
[*]E-mail: svetlozara.k@gmail.com
https://orcid.org/0000-0001-5018-8951

Abstract. A list of 308 identified specimens of fungus gnats of the families Bolitophilidae, Diadocidiidae, Ditomyiidae, Keroplatidae and Mycetophilidae mainly from Bulgaria, and some from Greece, in the collection of Regional Natural History Museum – Plovdiv with notes on the collection and its condition is presented. Detailed information is provided about 32 specimens from the Oriental region - 3 holotypes (*Stenophragma borneense* Bechev & Kazandzhieva, 2020; *Chetoneura lagangensis* Kazandzhieva & Bechev, 2022; *Dziedzickia longistyla* Bechev & Kazandzhieva, 2023), 24 paratypes (*Stenophragma borneense* Bechev & Kazandzhieva, 2020; *Dziedzickia pectinata* Sevcik, Bechev & Hippa, 2011; *Dziedzickia bifida* Sevcik, Bechev & Hippa, 2011), and 5 other identified specimens preserved in the museum collection. Additional information is given about unidentified specimens of Mycetophilidae, Keroplatidae and Sciaridae.

Keywords: fungus gnats, collection, Mycetophilidae, Bulgaria, Greece, Oriental.

Introduction

Fungus gnats are representatives of the families Bolitophilidae, Diadocidiidae, Ditomyiidae, Keroplatidae and Mycetophilidae (Diptera: Sciaroidea). So far, 320 species are known from Bulgaria (Bechev, 2006, 2010; Bechev & Pavlova, 2012, 2016; Kurina & Chandler, 2018; Pavlova, 2020a; Pavlova, 2020b; Pavlova & Stojanova, 2020).

The present article provides a list of identified specimens of fungus gnats deposited at the Regional Natural History Museum – Plovdiv, information about unidentified material, its labeling and/or preservation. The collection was deposited to RNHM – Plovdiv by Dimitar Bechev in 2022 and contains mainly dry specimens from the families Bolitophilidae, Diadocidiidae, Ditomyiidae, Keroplatidae, Mycetophilidae, and very few Sciaridae. The majority of insects were collected by D. Bechev from 1981 to the early 2000s from Bulgaria and some parts of Greece. The collection also contains material from the Oriental region (including holotypes and paratypes) collected by Ignac Sivec, Svetlozara Kazandzhieva and Dimitar Bechev, from Greece collected by Ignac Sivec, and from Turkey collected by Hasan Koch.

Material and methods

The majority of specimens are dry, few are preserved in alcohol. The collection is curated within the Invertebrates Division of the Regional Natural History Museum – Plovdiv and comprises 58 boxes, described as follows: Comparative collection - boxes labeled DB01 to DB29 (Fig. 1.).

Fig. 1. Comparative collection – box DB08. Photograph: Dimitar Bechev.

The comparative and additional collections contain specimens from 308 species collected and identified by D. Bechev.

Additional collection - labeled box 21 to box 29. The additional collection contains more specimens of the species mentioned above.

Unspecified, partially sorted dry material - boxes labeled DB51 to DB70.

Unspecified, partially sorted material in alcohol, preserved in jars and tubes: from Greece – *Mycomya*, *Boletina*, *Trichonta*, *Phronia*, *Zygomyia*, *Cordyla*, *Mycetophila*, Exechiini; from Bulgaria – Rhodopes, Strandzha, Sakar, Tsarevo, Sinemorets.

The identification of most species was done by D. Bechev with few exceptions.

Information from labels is provided for the Oriental specimens only (Table 2), labeling of the dry specimens in comparative and additional collections is mostly hand-written. Genitalia were macerated in KOH and stored in glycerol in welded nylon tubes with stoppers (Fig 2.1.) and plastic blister cavities (Fig 2.2.).

Results

The full collection data is presented below in Table 1 and Table 2.

Data from the partially sorted, unspecified dry specimens is provided here:

DB51 (Mycetophilidae, Keroplatidae, *Bolitophila*, *Diadocidia*), DB52 (Kerpoplatidae, *Macerocera* from Rhodopes), DB53 (Mycetohpilidae, NE, SE Bulgaria, Rhodopes), DB54 (Mycetohpilidae from Yarlovo, Hrabrino, Veslets, Plovdiv, E Rhodopes), DB55 (Mycetophilidae), DB56 (Mycetophilidae from Rila, Varna, Kamchia, Lilkovo, Asenovgrad, Chudnite Mostove, Sitovo), DB57 (Mycetophilidae), DB58 (Mycetophilidae from Hrabrino, Lilkovo), DB59 (Mycetophilidae from Vrachanska Planina, Karash, Slavyanka), DB60 (Mycetophilidae from Strandzha), DB61 (Mycetophilidae from Karash, Vratsa, Rila), DB62 (Mycetohpilidae, *Azana* from Greece, Rila), DB63 (Sciaridae), DB64 (Mycetohpilidae, *Brevicornu*), DB65 (Mycetophilidae), DB66 (Mycetophilidae,

Zygomyia, *Phronia*), DB67 (Mycetophilidae from Rhodopes, Rila), DB68 (Mycetophilidae, Gnoristini, Sciophilini, Leiini), DB69 (Mycetophilidae, *Mycomya*, *Neoempheria*) DB70 (Mycetohpilidae, *Allodia*).

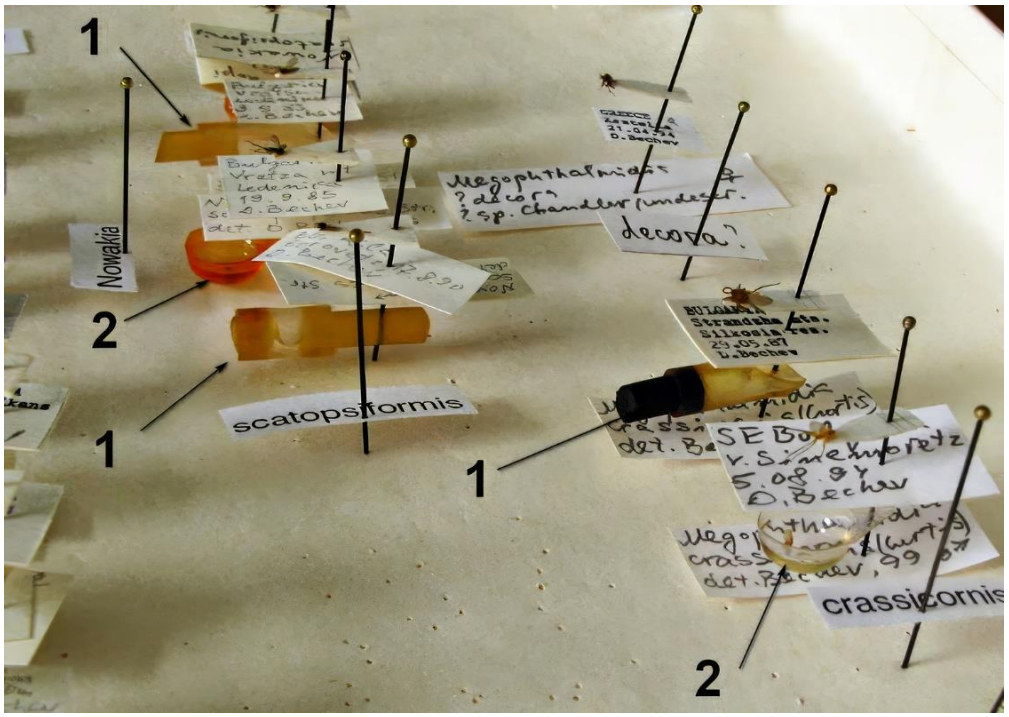

Fig. 2. Storage of genitalia in welded nylon tubes with rubber stoppers (1) and plastic blister cavities (2). Photograph: Dimitar Bechev.

Table 1. List of materials in D. Bechev's comparative (DB01-DB29) and additional (Box 21-Box29) collections deposited at RNHM – Plovdiv.

Family/ Subfamily/ Tribe	**Species**	**Comparative collection in Box DB#**	**Other specimens in Box #**
Bolitophilidae	*Bolitophila* (*Bolitophila*) *basicornis* (Mayer, 1951)	DB01	
	Bolitophila (*Bolitophila*) *cinerea* Meigen, 1818	DB01	Box 23
	Bolitophila (*Bolitophila*) *saundersi* (Curtis, 1836)	DB01	Box 23
	Bolitophila (*Bolitophila*) *tenella* Winnertz, 1863	DB01	
	Bolitophila (*Cliopisa*) *fumida* Edwards, 1941	DB01	
	Bolitophila (*Cliopisa*) *hybrida* (Meigen, 1804)	DB01	

	Bolitophila (*Cliopisa*) *maculipennis* Walker, 1836	DB01	
	Bolitophila (*Cliopisa*) *pseudohybrida* Landrock, 1912	DB01	
Diadocidiidae	*Diadocidia* (*Adidocidia*) *valida* Mik, 1874	DB02	
	Diadocidia (*Diadocidia*) *ferruginosa* (Meigen, 1830)	DB02	Box 23
	Diadocidia (*Diadocidia*) *spinosula* Tollet, 1948	DB02	
Ditomyiidae	*Ditomyia fasciata* (Meigen, 1818)	DB03	Box 21
	Symmerus annulatus (Meigen, 1830)	DB03	
Keroplatidae/ Keroplatinae/ Keroplatini	*Cerotelion racovitzai* Matile & Burghele-Balacesco, 1969	DB04	Box 21
	Cerotelion striatum (Gmelin, 1790)	DB04	
	Keroplatus reaumurii Dufour, 1839	DB04	
	Keroplatus testaceus Dalman, 1818	DB04	
	Keroplatus tipuloides Bosc, 1792	DB04	
Keroplatidae/ Keroplatinae/ Orfeliini	*Antlemon* (*Antlemonopsis*) *brevimanum* (Loew, 1871)	DB05	
	Isoneuromyia semirufa (Meigen, 1818)	DB07	
	Macrorrhyncha collarti (Tollet, 1955)	DB05	
	Macrorrhyncha flava Winnertz, 1846	DB05	
	Monocentrota lundstromi Edwards, 1925	DB07 (England)	
	Neoplatyura modesta (Winnertz, 1863)	DB07	
	Neoplatyura nigricauda (Strobl, 1893)	DB07	
	Orfelia bezzii (Strobl, 1910)	DB06	
	Orfelia bicolor (Macquart,1826)	DB06	
	Orfelia fasciata (Meigen, 1804)	DB06	
	Orfelia nemoralis (Meigen, 1818)	DB06	
	Orfelia nigricornis (Fabricius, 1805)	DB06	
	Orfelia tristis (Lundström, 1911)	DB06	
	Orfelia unicolor (Staeger, 1840)	DB06	Box 21, 27
	Platyura marginata Meigen, 1804	DB07	
	Pyratula oracula Chandler, 1994	DB07	
	Pyratula perpusilla (Edwards, 1913)	DB07	Box 21
	Pyratula subcanariae Chandler, 2001	DB07	
	Urytalpa ochracea (Meigen, 1818)	DB07	
	Urytalpa dorsalis (Staeger, 1840) =*Urytalpa rhapsodica* Chandler, 1995	DB07	
Keroplatidae/ Macrocerinae/ Macrocerini	*Macrocera anglica* Edwards, 1925	DB10	Box 21
	Macrocera angulata Meigen, 1818	DB11	Box 21

	Macrocera centralis Meigen, 1818	DB11	Box 21
	Macrocera crassicornis Winnertz, 1863	DB12	
	Macrocera estonica Landrock, 1924	DB09 (England)	
	Macrocera fasciata Meigen, 1804	DB12	Box 23
	Macrocera fascipennis Staeger, 1840	DB11 (England)	
	Macrocera fastuosa Loew, 1869	DB11	
	Macrocera gemagea Bechev, 1991	DB09	
	Macrocera grandis Lundström, 1912	DB11	
	Macrocera inversa Loew, 1869	DB12	
	Macrocera kerteszi Lundström, 1911	DB10	
	Macrocera lutea Meigen, 1804	DB10	Box 21, 27
	Macrocera maculata Meigen, 1818	DB11 (England)	
	Macrocera nigricoxa Winnertz, 1863	DB12	
	Macrocera parva Lundström, 1914	DB12	
	Macrocera phalerata Meigen, 1818	DB08	
	Macrocera pilosa Landrock, 1917	DB09	
	Macrocera stigma Curtis, 1837	DB08	
	Macrocera stigmoides Edwards, 1925	DB09	
	Macrocera vittata Meigen, 1830	DB10	Box 21
Myceophilidae/ Gnoristinae	*Apolephthisa subincana* (Curtis, 1837)	DB13	
	Boletina anderschi (Stannius, 1831)	DB14	Box 21, 25
	Boletina basalis (Meigen, 1818)	DB14	
	Boletina dubia (Meigen, 1804)	DB14 (England)	
	Boletina gripha Dziedzicki, 1885	DB14	
	Boletina lundstroemi Landrock, 1912	DB14	
	Boletina nigricoxa Staeger, 1840	DB14	
	Boletina nitida Grzegorzek, 1885	DB14	Box 25
	Boletina pallidula Edwards, 1925	DB14	
	Boletina plana (Walker, 1856)	DB14	
	Boletina sciarina Staeger, 1840	DB14	Box 25
	Boletina trispinosa Edwards, 1913	DB14	Box 25
	Boletina trivittata (Meigen, 1818)	DB14	Box 22, 25
	Coelosia flava (Staeger, 1840)	DB13	
	Coelosia fusca (Staeger, 1840)	DB13	
	Grzegorzekia collaris (Meigen, 1818)	DB13	
	Palaeodocosia janickii (Dziedzicki, 1923)	DB13	
	Saigusaia flaviventris (Strobl, 1894)	DB13	
	Synapha fasciata Meigen, 1818	DB13	Box 23
	Synapha vitripennis (Meigen, 1818)	DB13	Box 21, 23

	Tetragoneura ambigua Grzegorzek, 1885	DB13	Box 23
	Tetragoneura sylvatica (Curtis, 1837)	DB13	
Myceophilidae/ Leiinae	*Clastobasis alternans* (Winnertz, 1863)	DB15	Box 23
	Docosia gilvipes (Walker, 1856)	DB15	Box 24
	Docosia moravica Landrock, 1916	DB15	Box 24
	Greenomyia mongolica Laštovka & Matile, 1974	DB15	
	Leia bimaculata (Meigen, 1804)	DB15	Box 21
	Leia cylindrica (Winnertz, 1863)	DB15	Box 21
	Leia picta Meigen, 1830	DB15	
	Leia winthemii Lehmann, 1822	DB15	
	Megophthalmida crassicornis (Curtis, 1837)	DB15	
	Novakia scatopsiformis Strobl, 1893	DB15	
	Rondaniella dimidiata (Meigen, 1804)	DB15	Box 21
Myceophilidae/ Mycetophilinae/ Exechiini	*Allodia* (*Allodia*) *anglofennica* Edwards, 1921	DB16	
	Allodia (*Allodia*) *lugens* Wiedemann, 1817	DB16	
	Allodia (*Allodia*) *ornaticollis* (Meigen, 1818)	DB16	
	Allodia (*Allodia*) *truncata* Edwards, 1921	DB16	
	Allodia (*Brachycampta*) *alternans* (Zetterstedt, 1838)	DB16	
	Allodia (*Brachycampta*) *barbata* (Lundström, 1909)	DB16	
	Allodia (*Brachycampta*) *foliifera* (Strobl, 1910)	DB16	
	Allodia (*Brachycampta*) *grata* (Meigen, 1830)	DB16	
	Allodia (*Brachycampta*) *neglecta* Edwards, 1925	DB16	
	Allodia (*Brachycampta*) *pistillata* (Lundström, 1911)	DB16	
	Allodia (*Brachycampta*) *silvatica* (Landrock, 1912)	DB16	
	Allodia (*Brachycampta*) *triangularis* (Strobl, 1895) as *retracta* Plassmann	DB16	
	Allodia (*Brachycampta*) *westerholti* Caspers, 1980	DB16	
	Allodiopsis domestica (Meigen, 1830)	DB16	
	Allodiopsis pseudodomestica (Lackschewitz, 1937)	DB16	
	Allodiopsis rustica (Edwards, 1941)	DB16	Box 27
	Anatella ciliata Winnertz, 1863	DB17	Box 27
	Anatella lenis Dziedzicki, 1923	DB17	Box 27
	Anatella minuta (Staeger, 1840)	DB17	Box 27
	Anatella novata Dziedzicki, 1923	DB17	

	Anatella simpatica Dziedzicki, 1923	DB17	
	Anatella turi Dziedzicki, 1923	DB17	
	Brevicornu (*Brevicornu*) *fissicauda* (Lundström, 1911)	DB17	Box 28
	Brevicornu (*Brevicornu*) *griseicolle* (Staeger, 1840)	DB17	Box 28
	Brevicornu (*Brevicornu*) *ruficorne* (Meigen, 1838)	DB17	
	Brevicornu (*Brevicornu*) *sericoma* (Meigen, 1830)	DB17	Box 28
	Brevicornu (*Brevicornu*) *spathulatum* (Lundström, 1911)	DB17	
	Brevicornu spp. unidentified	DB17	
	Cordyla brevicornis (Staeger, 1840)	DB29	
	Cordyla crassicornis Meigen, 1818	DB29	
	Cordyla fasciata Meigen, 1830	DB29	
	Cordyla fissa Edwards, 1925	DB29	
	Cordyla flaviceps (Staeger, 1840)	DB29	
	Cordyla fusca Meigen, 1804	DB29	
	Cordyla nitidula Edwards, 1925	DB29	
	Cordyla semiflava (Staeger, 1840)	DB29	
	Exechia bicincta (Staeger, 1840)	DB18	Box 26
	Exechia dizona Edwards, 1925	DB18	
	Exechia dorsalis (Staeger, 1840)	DB18	Box 24
	Exechia exigua Lundström, 1909	DB18	Box 26
	Exechia festiva Winnertz, 1863	DB18	
	Exechia fulva Santos Abreu, 1920 as *peyerimhoffi*	DB18	Box 24
	Exechia fusca (Meigen, 1804)	DB18	Box 26
	Exechia lundstroemi Landrock, 1923	DB18	
	Exechia macula Chandler, 2001	DB18	
	Exechia parva Lundström, 1909	DB18	
	Exechia pseudocincta Strobl, 1909	DB18	Box 26
	Exechia separata Lundström, 1912	DB18	Box 26
	Exechia seriata (Meigen, 1830)	DB18	Box 24
	Exechiopsis (*Exechiopsis*) *clypeata* (Lundström, 1911)	DB19	
	Exechiopsis (*Exechiopsis*) *dumitrescui* (Burghele-Balacesco, 1972)	DB19	
	Exechiopsis (*Exechiopsis*) *furcata* (Lundström, 1912)	DB19	
	Exechiopsis (*Exechiopsis*) *lackschewitziana* (Stackelberg, 1948)	DB19	
	Exechiopsis (*Exechiopsis*) *magnicauda* (Lundström, 1911)	DB19	Box 27
	Exechiopsis (*Exechiopsis*) *subulata* (Winnertz, 1863)	DB19	Box 27

	Exechiopsis (*Exechiopsis*) *unguiculata* (Lundström, 1911)	DB19	
	Exechiopsis (*Exechiopsis*) *vizzavonensis* (Edwards, 1928)	DB19	
	Exechiopsis (*Xenexechia*) *crucigera* (Lundström, 1909)	DB19	
	Exechiopsis (*Xenexechia*) *davatchii* (Matile, 1969)	DB19	
	Exechiopsis (*Xenexechia*) *leptura* (Meigen, 1830)	DB19	
	Notolopha cristata (Staeger, 1840)	DB16	Box 27
	Pseudexechia trisignata (Edwards, 1913)	DB20	
	Pseudobrachypeza helvetica (Walker, 1856)	DB20	Box 27
	Pseudorymosia fovea (Dziedzicki, 1909)	DB20	
	Rymosia affinis Winnertz, 1863	DB20	Box 27
	Rymosia fasciata (Meigen, 1804)	DB20	Box 27
	Rymosia fraudatrix Dziedzicki, 1910	DB20	
	Rymosia placida Winnertz, 1863	DB20	Box 27
	Rymosia setiger Dziedzicki, 1910	DB20	
	Rymosia spinipes Winnertz, 1863	DB20	Box 27
	Rymosia virens Dziedzicki, 1910	DB20	Box 27
	Synplasta gracilis (Winnertz, 1863)	DB20	
	Synplasta exclusa (Lackschewitz, 1937) as *sintenisi*	DB20	
	Tarnania fenestralis (Meigen, 1818)	DB20	
	Tarnania nemoralis (Edwards, 1941)	DB20	
	Tarnania tarnanii (Dziedzicki, 1910)	DB20 (Russia)	
	Rymosia virens Dziedzicki, 1910	DB20	Box 27
	Synplasta gracilis (Winnertz, 1863)	DB20	
	Synplasta exclusa (Lackschewitz, 1937) as *sintenisi*	DB20	
	Tarnania fenestralis (Meigen, 1818)	DB20	
	Tarnania nemoralis (Edwards, 1941)	DB20	
Myceophilidae/ Mycetophilinae/ Mycetophilini	*Dynatosoma fuscicorne* (Meigen, 1818)	DB21	Box 23
	Dynatosoma majus Landrock, 1912	DB21	Box 23
	Dynatosoma nigromaculatum Lundström, 1913	DB21	
	Dynatosoma nobile (Walker, 1848)	DB21 (Russia)	
	Dynatosoma reciprocum (Walker, 1848)	DB21 (Russia)	
	Dynatosoma ussuriense Zaitzev, 1986	DB21 (Russia)	
	Epicypta torquata Matile, 1977	DB21	
	Mycetophila abiecta (Laštovka, 1963)	DB22	
	Mycetophila adumbrata Mik, 1884	DB22	

	Mycetophila alea Laffoon, 1965	DB22	Box 25, 29
	Mycetophila bialorussica Dziedzicki, 1884	DB22	
	Mycetophila blanda Winnertz, 1863	DB22	Box 29
	Mycetophila caudata Staeger, 1840	DB22	
	Mycetophila celator (Laffoon, 1957)	DB22	
	Mycetophila confluens Dziedzicki, 1884	DB22	Box 28
	Mycetophila curviseta Lundstrom, 1911	DB22 (England)	
	Mycetophila czizeki Landrock, 1911	DB22	Box 22
	Mycetophila distigma Meigen, 1830	DB22	
	Mycetophila dziedzickii Chandler, 1977	DB22	
	Mycetophila edwardsi Lundström, 1913	DB22	Box 29
	Mycetophila formosa Lundström, 1911	DB22	
	Mycetophila fraterna Winnertz, 1863	DB22	Box 28
	Mycetophila finlandica Edwards, 1913	DB22 (England)	
	Mycetophila fungorum (De Geer, 1776)	DB22	Box 28
	Mycetophila gibbula Edwards, 1925	DB22	
	Mycetophila hyrcania Laštovka et Matile, 1969	DB22	
	Mycetophila lamellata Lundström, 1911	DB22	
	Mycetophila lastovkai Caspers, 1984	DB22	
	Mycetophila luctuosa Meigen, 1830	DB22	Box 22
	Mycetophila lunata Meigen, 1804	DB23	
	Mycetophila marginata Winnertz, 1863	DB23	Box 22, 29
	Mycetophila mitis (Johannsen, 1912)	DB23	
	Mycetophila morosa Winnertz, 1863	DB23	
	Mycetophila occultans Lundström, 1913	DB23	
	Mycetophila ocellus Walker, 1848	DB23	Box 29
	Mycetophila ornata Stephens, 1829	DB23	Box 28
	Mycetophila pumila Winnertz, 1863	DB23	Box 29
	Mycetophila scotica Edwards, 1941	DB23	
	Mycetophila sigillata Dziedzicki, 1884	DB23	
	Mycetophila signata Meigen, 1830	DB23	Box 22
	Mycetophila signatoides Dziedzicki, 1884	DB23	Box 22
	Mycetophila spectabilis Winnertz, 1863	DB23	Box 29
	Mycetophila stolida Walker, 1856	DB23	
	Mycetophila stylata (Dziedzicki, 1884)	DB23	
	Mycetophila tridentata Lundström, 1911	DB23	
	Mycetophila trinotata Staeger, 1840	DB23	Box 28
	Mycetophila unguiculata Lundström, 1913	DB23	
	Mycetophila vittipes Zetterstedt, 1852	DB23	
	Mycetophila v-nigrum Lundström, 1913	DB23	Box 22
	Phronia cinerascens Winnertz, 1863	DB24	

	Phronia conformis (Walker , 1856)	DB24	
	Phronia exigua (Zetterstedt, 1852)	DB24	
	Phronia forcipata Winnertz, 1863	DB24	
	Phronia nitidiventris (van der Wulp, 1858)	DB24	
	Phronia obtusa Winnertz, 1863	DB24	
	Phronia signata Winnertz, 1863	DB24	
	Phronia tenuis Winnertz, 1863	DB24	
	Platurocypta punctum (Stannius, 1831)	DB21	
	Sceptonia costata (Wulp, 1858)	DB25 (Scotland)	
	Sceptonia cryptocauda Chandler , 1991	DB25	
	Sceptonia flavipuncta Edwards, 1925	DB25	
	Sceptonia fumipes Edwards, 1925	DB25 (England)	
	Sceptonia humerella Edwards, 1941	DB25	
	Sceptonia membranacea Edwards, 1925	DB25	
	Sceptonia nigra (Meigen, 1804)	DB25	
	Sceptonia pilosa Bukowski, 1934	DB25	
	Sceptonia pughi Chandler , 1991	DB25	
	Sceptonia tenuis Edwards, 1925	DB25	
	Trichonta apicalis Strobl, 1898	DB21	
	Trichonta beata Gagné, 1981	DB21	
	Trichonta clavigera Lundström, 1913	DB21	Box 21
	Trichonta conjungens Lundström, 1909	DB21	
	Trichonta falcata Lundström, 1911	DB21	Box 21, 27
	Trichonta fragilis Gagné, 1981	DB21	
	Trichonta fusca Landrock, 1918	DB21	
	Trichonta girschneri Landrock, 1912	DB21	
	Trichonta melanura (Staeger, 1840)	DB21	Box 21, 27
	Trichonta subfusca Lundström, 1909	DB21	
	Trichonta submaculata (Staeger, 1840)	DB21	
	Trichonta terminalis (Walker, 1856)	DB21	Box 21
	Trichonta venosa (Staeger, 1840)	DB21	
	Trichonta vitta (Meigen, 1830)	DB21	Box 21, 27
	Trichonta vulgaris Loew, 1869	DB21	Box 21, 27
	Zygomyia valida Winnertz, 1863	DB25	
Mycetophilidae/ Mycomyinae	*Mycomya annulata* (Meigen, 1818)	DB26 (England)	
	Mycomya (*Cymomya*) *circumdata* (Staeger, 1840)	DB26	Box 26
	Mycomya (*Mycomya*) *bicolor* (Dziedzicki, 1885)	DB26	
	Mycomya (*Mycomya*) *cinerascens* (Macquart, 1826)	DB26	Box 22, 26

	Mycomya (*Mycomya*) *denmax* Väisänen, 1979	DB26	Box 22
	Mycomya (*Mycomya*) *digitifera* Edwards, 1925	DB26	
	Mycomya (*Mycomya*) *fasciata* (Zetterstedt, 1838)	DB26	
	Mycomya (*Mycomya*) *flavicollis* (Zetterstedt, 1852)	DB26	Box 22, 26
	Mycomya (*Mycomya*) *marginata* (Meigen, 1818)	DB26	Box 22, 26
	Mycomya (*Mycomya*) *neohyalinata* Väisänen, 1984	DB26	
	Mycomya (*Mycomya*) *occultans* (Winnertz, 1863)	DB26	
	Mycomya (*Mycomya*) *parva* (Dziedzicki, 1885)	DB26	Box 26
	Mycomya (*Mycomya*) *sigma* Johannsen, 1910	DB26	Box 26
	Mycomya (*Mycomya*) *tenuis* (Walker, 1856)	DB26	Box 22, 26
	Mycomya (*Mycomya*) *tridens* (Lundström, 1911)	DB26	Box 26
	Mycomya (*Mycomya*) *vittiventris* (Zetterstedt, 1852)	DB26	Box 22
	Mycomya (*Mycomya*) *wankowiczii* (Dziedzicki, 1885)	DB26	Box 26
	Mycomya (Mycomya) winnertzi (Dziedzicki, 1885)	DB26	Box 26
	Mycomya (*Mycomyopsis*) *penicillata* (Dziedzicki, 1885)	DB26	
	Mycomya (*Mycomyopsis*) *trilineata* (Zetterstedt, 1838)	DB26	Box 26
	Mycomya (*Neomycomya*) *fimbriata* (Meigen, 1818)	DB26	
	Neoempheria bimaculata (von Roser, 1840)	DB27	
	Neoempheria lineola (Meigen, 1818)	DB27	
	Neoempheria pictipennis (Haliday, 1833)	DB27	
	Neoempheria proxima (Winnertz, 1863)	DB27	
	Neoempheria striata (Meigen, 1818)	DB27	
Mycetophilidae/ Sciophilinae	*Acnemia amoena* Winnertz, 1863	-	Jar DBb2
	Acnemia angusta Zaitzev, 1982	-	Jar DBb2
	Acnemia falcata Zaitzev, 1982	DB 28	
	Acnemia longipes Winnertz, 1863	DB 28	Box 23
	Acnemia nitidicollis (Meigen, 1818)	DB 28	Box 21, 23
	Azana (*Azana*) *anomala* (Staeger, 1840)	DB 28	
	Azana (*Azana*) *flavohalterata* Strobl in Czerny & Strobl 1909	DB 28	
	Azana (*Jugazana*) *nigricoxa* Strobl, 1889	DB 28	
	Megalopelma nigroclavatum (Strobl, 1910)	DB 28	
	Monoclona rufilatera (Walker, 1837)	DB 28	

	Neuratelia minor (Lundström, 1912)	DB 28	Box 23
	Neuratelia nemoralis (Meigen, 1818)	DB 28	Box 23
	Paratinia sciarina Mik, 1874	DB 28	
	Phthinia humilis Winnertz, 1863	DB 28	
	Phthinia winnertzi Mik, 1869	DB 28	
	Polylepta guttiventris (Zetterstedt, 1852)	DB 28	
	Polylepta borealis Lundstrom, 1912	DB 28 (Russia)	
	Sciophila baltica Zaitzev, 1982	DB 28	Box 21, 23
	Sciophila fenestella Curtis, 1837	DB 28	
	Sciophila hirta Meigen, 1818	DB 28	
	Sciophila lutea Macquart, 1826	DB 28	Box 21, 23
	Sciophila nonnisilva Hutson, 1979	DB 28	
	Sciophila rufa Meigen, 1830	DB 28	Box 21, 23
	Sciophila thoracica Staeger, 1840 as *quadriterga*	DB 28	Box 23
	Speolepta leptogaster (Winnertz, 1863)	DB 28	

Table 2. List of identified specimens of fungus gnats from the Oriental region stored in alcohol in the collection of RNHM – Plovdiv (hol = holotype, par = paratype).

Family Subfamily/ Tribe	**Coll. Code**	**Species**	**Type**	**Spec. Sex**	**Locality data**	**Notes**
Mycetophilidae / Sciophilinae	ORI2_ HOL1	*S. borneense* Bechev & Kazandzhieva, 2020	**hol**	1♂	MALAYSIA: Sarawak, Kubah NP, 21.7.2019; Leg. Kazandzhieva	*Holotype Intact, wings folded
Keroplatidae/ Orfeliini	ORI2_ HOL2	*Chetoneura lagangensis* Kazandzhieva & Bechev, 2022	**hol**	1♂	MALAYSIA: Sarawak, Gunung Mulu NP, Lagang cave; 14.7.2019, leg. Kazandzhieva, sweep net	*Holotype Terminali a in microvial with the specimen
Mycetophilidae / Gnoristinae	ORI2_ HOL3	*Dziedzickia longistyla* Bechev & Kazandzhieva 2023	**hol**	1♂	MALAYSIA: Malaysia: Sarawak, Kubah NP, leg. Kazandzhieva	n/a
Mycetophilidae / Sciophilinae	ORI1_ A1	*Stenophragma borneense* Bechev & Kazandzhieva, 2020	par	1♂	MALAYSIA: Sarawak, Kubah NP, 21.7.2019; leg. Kazandzhieva	P2 Almost intact, parts of legs missing
Mycetophilidae / Sciophilinae	ORI1_ A2	*S. borneense* Bechev & Kazandzhieva, 2020	par	1♂	MALAYSIA: Sarawak, Kubah NP, 21.7.2019; leg. Kazandzhieva	P3 Almost intact, parts of legs missing

Mycetophilidae/ Sciophilinae	ORI1_ A3	*S. borneense* Bechev & Kazandzhieva, 2020	par	1♂	MALAYSIA: Sarawak, Kubah NP, 21.7.2019; leg. Kazandzhieva	P4 Intact in good condition
Mycetophilidae/ Sciophilinae	ORI1_ A4	*S. borneense* Bechev & Kazandzhieva, 2020	par	1♂	MALAYSIA: Sarawak, Kubah NP, 21.7.2019; leg. Kazandzhieva	P5 Almost intact, left wing damaged
Mycetophilidae/ Sciophilinae	ORI1_ A5	*S. borneense* Bechev & Kazandzhieva, 2020	par	1♂	MALAYSIA: Sarawak, Kubah NP, 21.7.2019; leg. Kazandzhieva	P6 Intact
Mycetophilidae/ Sciophilinae	ORI1_ A6	*S. borneense* Bechev & Kazandzhieva, 2020	par	1♂	MALAYSIA: Sarawak, Kubah NP, 21.7.2019; leg. Kazandzhieva	P7 Intact in good condition
Mycetophilidae/ Sciophilinae	ORI1_ A7	*S. borneense* Bechev & Kazandzhieva, 2020	par	1♂	MALAYSIA: Sarawak, Kubah NP, 21.7.2019; leg. Kazandzhieva	P8 Almost intact, parts of antennae missing
Mycetophilidae/ Sciophilinae	ORI1_ A8	*S. borneense* Bechev & Kazandzhieva, 2020	par	1♂	MALAYSIA: Sarawak, Kubah NP, 21.7.2019; leg. Kazandzhieva	P11 Almost intact, one leg missing
Mycetophilidae/ Sciophilinae	ORI1_ A9	*S. borneense* Bechev & Kazandzhieva, 2020	par	1♂	MALAYSIA: Sarawak, Kubah NP, 21.7.2019; leg. Kazandzhieva	P12 Legs missing
Mycetophilidae/ Sciophilinae	ORI1_ A10	*S. borneense* Bechev & Kazandzhieva, 2020	par	1♂	MALAYSIA: Sarawak, Kubah NP, 21.7.2019; leg. Kazandzhieva	P13 Almost intact, parts of legs missing
Mycetophilidae/ Sciophilinae	ORI1_ A11	*S. borneense* Bechev & Kazandzhieva 2020	par	1♂	MALAYSIA: Sarawak, Kubah NP, 21.7.2019; leg. Kazandzhieva	P14 Intact
Mycetophilidae/ Sciophilinae	ORI1_ A12	*S. borneense* Bechev & Kazandzhieva 2020	par	1♂	MALAYSIA: Sarawak, Kubah NP, 21.7.2019; leg. Kazandzhieva	P15 Almost intact, parts of legs missing
Mycetophilidae/ Sciophilinae	ORI1_ A13	*S. borneense* Bechev & Kazandzhieva, 2020	par	1♂	MALAYSIA: Sarawak, Kubah NP, 21.7.2019; leg. Kazandzhieva	P16 Almost intact, parts of legs missing

Mycetophilidae/ Sciophilinae	ORI1_ A14	*S. borneense* Bechev & Kazandzhieva, 2020	par	1♂	MALAYSIA: Sarawak, Kubah NP, 21.7.2019; leg. Kazandzhieva	P17 Head, wings and parts of legs missing
Mycetophilidae/ Sciophilinae	ORI1_ A15	*S. borneense* Bechev & Kazandzhieva, 2020	par	1♂	MALAYSIA: Sarawak, Kubah NP, 21.7.2019; leg. Kazandzhieva	P18 Terminalia in microvial with the specimen
Mycetophilidae/ Sciophilinae	ORI1_ A16	*S. borneense* Bechev & Kazandzhieva, 2020	par	1♂	MALAYSIA: Sarawak, Kubah NP, 21.7.2019; leg. Kazandzhieva	P10 Intact, one tarsus missing
Mycetophilidae/ Sciophilinae	ORI1_ A17	*S. borneense* Bechev & Kazandzhieva, 2020	par	1♂	MALAYSIA: Sarawak, Kubah NP, 21.7.2019; leg. Kazandzhieva	P9 Almost intact, parts of antennae and legs missing
Mycetophilidae/ Sciophilinae	ORI1_ A18	*S. borneense* Bechev & Kazandzhieva, 2020	par	1♂	MALAYSIA: Sarawak, Kubah NP, 21.7.2019; leg. Kazandzhieva	P1 Almost intact, parts of antennae and legs missing
Mycetophilidae/ Sciophilinae	ORI2_ A19	*S. borneense* Bechev & Kazandzhieva, 2020	par	1♂	MALAYSIA: Sarawak, Kubah NP, 21.7.2019; leg. Kazandzhieva	P19 Wings slide-mounted in Euparal
Mycetophilidae/ Sciophilinae	ORI2_ A20	*S. borneense* Bechev & Kazandzhieva, 2020	par	1♂	MALAYSIA: Sarawak, Kubah NP, 21.7.2019; leg. Kazandzhieva	P20 Terminalia stored with the specimen, wings slide-mounted in Euparal
Mycetophilidae/ Gnoristinae	ORI2_ PDZ1	*Dziedzickia pectinata* Sevcik, Bechev & Hippa, 2011	par	1♂	THAILAND: Nakhon Nayok: Khao Yai N. P., PA TABAK, 17-28.4.2001	n/a
Mycetophilidae/ Gnoristinae	ORI2_ PDZ4	*Dziedzickia pectinata* Sevcik, Bechev & Hippa, 2011	par	4♂, 1♀	THAILAND: Nakhon Nayok, Khao Yai N. P. Khao - Kheo, 17-28.4.2001	n/a
Mycetophilidae/ Gnoristinae	ORI2_ PDZ2	*Dziedzickia bifida* Sevcik, Bechev & Hippa, 2011	par	1♂	MALAYSIA: Hulu, Perak, Belum Expedition, B. Camp, I. Sivec leg., light trap	n/a

Mycetophilidae/ Gnoristinae	ORI2_ PDZ3	*Dziedzickia bifida* Sevcik, Bechev & Hippa, 2011	par	1♂	THAILND: Chiang Dao Wildlife Research Station, 12-13.5.2004, Sivec & Horvat leg.	n/a
Bolitophilidae	OR1_ B2	*Bolitophila japonica* Okada, 1934	No	1♂	NEPAL: Parvat, Ghorepani, 2860 m, in Rhododendron forest, 13.10.2006, leg. D. Bechev, ♂	n/a
Bolitophilidae	OR1_ B3	*Bolitophila japonica* Okada, 1934	No	2♂	NEPAL: Parvat, Ghorepani, 2860 m, in Rhododendron forest, 13.10.2006, leg. D. Bechev, 2 ♂	n/a
Mycetophilidae/ Sciophilinae	OR1_ B1	*Eudicrana* sp.	No	1♀	MALAYSIA: Sabah, Kinabalu NP, 23.7.2019; leg. Kazandzhieva	n/a
Mycetophilidae/ Leiinae	ORI2_ AL01	*Allactoneura argentosquamosa* (Enderlein, 1910)	No	1♂	THAILAND: Chiangmai, Zoo; 21-28.05.1988; leg. Chantaramongkol	det. D. Bechev, 2022 Terminalia strongly lightened
Mycetophilidae/ Leiinae	ORI2_ AL02	*Allactoneura cincta* De Meijere, 1907	No	1♂	INDONESIA: N. Sumatra, W Pematang Siantar, 750 m; 23.02.1994; Leg Sivec, I.	det. D. Bechev, 2022

Discussion

During the collecting period (1981-2000s), the collection was supplemented without systematic revision of samples or taxonomic re-evaluation.

As the most extensive collection of its kind in the country, it requires a reassessment in light of recent taxonomic advancements. Unidentified specimens should be formally identified, and further research is needed on materials from Greece, Turkey, and the Oriental region. Given the ongoing refinement of species concepts through the study of type specimens, additional materials and molecular genetics, certain designations may be inaccurate and require critical assessment.

Acknowledgements

This work was partially supported by the Bulgarian Ministry of Education and Science under the National Research Programme "Young scientists and postdoctoral fellows – 2" approved by DCM 206/07.04.2022.

RNHM – Plovdiv is grateful to Dimitar Bechev for contributing this valuable collection to the Invertebrates Division and for providing detailed

information on the specimens, ensuring their proper documentation and preservation.

References

Bechev D. 2006. The fungus gnats of the families Bolitophilidae, Diadocidiidae, Ditomyiidae and Keroplatidae (Diptera: Sciaroidea) of Bulgaria. Scientific studies of the University of Plovdiv "Paisii Hilendarski", Biology, *Animalia*, 42: 21-83.

Bechev D. 2010. On the family Mycetophilidae (Insecta: Diptera) in Bulgaria. *ZooNotes*, Supplement 1: 1-72.

Bechev D., Pavlova A. 2012. *Greenomyia tomovi* sp. n. from Bulgaria (Diptera: Mycetophilidae: Leiinae) and a key to the Palaearctic species of the genus. *Acta zoologica bulgarica*, 64 (2): 109-111.

Bechev D., Pavlova A. 2016. Fungus gnats (Diptera: Bolitophilidae, Diadocidiidae, Ditomyiidae, Keroplatidae and Mycetophiliade) of Vrachanska Planina Mountains. *In*: Bechev D., Georgiev D. (Eds) *Faunistic diversity of Vrachanski Balkan Nature Park*. *ZooNotes*, Supplement 3, Plovdiv University Press, Plovdiv, pp 169-179.

Kurina O., Chandler P. 2018. New European records of *Ditomyia macroptera* Winnertz (Diptera: Ditomyiidae) with notes on its distribution. *Biodiversity Data Journal*, 6: 2-8.

Pavlova A. 2020a. First study of fungus gnats (Insecta: Diptera: Sciaroidea) in Tisata Reserve (SW Bulgaria). *ZooNotes*, 154: 1-4.

Pavlova, A. 2020b. New and rare fungus gnats for the fauna of Bulgaria (Diptera: Nematocera: Mycetophilidae). *Historia Naturalis Bulgarica*, 41: 27-31.

Pavlova A., Stojanova A. 2020. Interesting features of the winter activity of fungus gnats (Diptera: Mycetophilidae) in critically endangered Mediterranean habitats in Bulgaria. *Acta zoologica bulgarica*, Supplement 15: 129-140.

Received: 02.04.2025
Accepted: 15.05.2025
Published: 26.05.2025

Bulletin of the Natural History Museum - Plovdiv

Bull. Nat. Hist. Mus. Plovdiv, 2025, vol. 10: 17-23
https://doi.org/10.65437/bnhmp.10.1.2

Psocodea (Insecta) reports from the Upper Thracian Lowland: published data and new records

Dilian G. Georgiev[1, 2, *], Vassil K. Genchev[3]

[1]Department of General Animal Husbandry, Section Ecology, Faculty of Veterinary Medicine, Trakia University – Stara Zagora, 6000 Stara Zagora, BULGARIA
[2]Department of Ecology and Environmental Conservation, Faculty of Biology, Plovdiv University "Paisii Hilendarski", 24 Tzar Assen Str., 4000 Plovdiv, BULGARIA,
*E-mail: diliangeorgiev@uni-plovdiv.bg, dilyan.georgiev@ trakia-uni.bg
https://orcid.org/0000-0003-2885-4895
[3]Bulgarian Society for the Protection of Birds, Plovdiv, BULGARIA

Abstract. This study presents an updated overview of the Psocodea (Insecta) fauna of the Upper Thracian Lowland in Southern Bulgaria, based on both published records and new field collections from 2017 to 2025. A total of 26 species were documented, 18 of which are new for the region. Specimens were collected from a variety of natural and human-modified habitats, including riparian forests, mixed deciduous woodlands, conifer plantations, and urban environments.

Keywords: lowlands, psocids, diversity, species, habitats

Introduction

The Psocodea (barkflies or booklice) are a small but ecologically significant group of insects, playing a key role in the decomposition of organic matter in forest ecosystems. Despite their importance, the knowledge of Psocodea diversity in Bulgaria (a total of 73 species known: Georgiev, 2020, 2022, Georgiev *et al.*, 2024), particularly in the Upper Thracian Lowland, remains fragmented.

The aim of the present study is to summarize the available published information and to provide new data on the psocids of the Upper Thracian Lowland.

Material and methods

Barkflies were collected irregularly between 2017 and 2025 from different habitats and localities of the Upper Thracian Lowland, Southern Bulgaria. Sieving of leaf litter and beating the vegetation were mainly used. The material was preserved in 96% ethanol and examined in the laboratory. Species identifications were based mainly on Lienhard (1998). A review of all published data was made and information was summarized (Georgiev, 2017a, b, 2018).

Results

A total of 26 species are known from the Upper Thracian Lowland, from which 18 were new records to the area. The species were collected across a range of habitats, including floodplain forests (*Salix*, *Ulmus*), mixed deciduous forests (*Quercus*, *Carpinus*, *Acer*), conifer plantations (*Pinus nigra*), shrublands near agricultural land, and urban environments. The greatest species richness was observed in riparian and mixed forests.

Trogiidae

***Lepinotus reticulatus* Enderlein, 1905**

Reported by Georgiev (2018): "Plovdiv, Trihalmie Hill, near the Faculty

of Biology, Plovdiv University, detritus beneath *Robinia pseudoacacia* L. and *Celtis australis* L., N42 08 51.84 E24 45 1.2, 150 m a. s. l., 06.04.2017, 7♀, 3 nymphs."

New material examined: 30.04.2017, Kovach vill., river bank forest (*Salix* sp., *Ulmus* sp.) near water source, N42 17 47.5 E25 50 47.9, 128 m a. s. l., 1♀, from a trunk of *Salix* sp., collected by sieving; 14.09.2021, between Kalitinovo and Preslaven villages, mixed broadleaf forest (*Acer*, *Ulmus*, *Carpinus*), N42 25 00.6 E25 44 35.9, 138 m a. s. l., 1♀, from detritus of leaves and grasses, collected by sieving; 17.11.2021, NE of Pamukchii vill., *Quercus* sp. forest, N42 19 19.9 E25 39 26.7, 131 m a. s. l., 1♀, from dry branches with leaves, collected by beating the vegetation; 25.11.2021, E of Plodovitovo vill., mixed forest (*Quercus* sp., *P. nigra*), 1♀, from *P. nigra*, collected by beating the vegetation; 01.09.2024, Yagodovo vill., N42 05 47.4 E24 51 22.0, 164 m a. s. l., 3 ♀.

***Lepinotus inquilinus* Heyden, 1850**

Reported by Georgiev (2017a): "28.4.2017, north of Lyubenovo vill., bank of Sazliyka river, flood forest of *Salix* sp., among small pieces of wood and detritus deposited by waters at the base of a willow, N42 12 33.2 E25 56 01.3, 99 m a. s. l., 2 ♀, coll. by sieving."

Psyllipsocidae

***Dorypteryx domestica* (Smithers, 1958)**

Reported by Georgiev (2018): "Plovdiv, Kyuchuk Parizh district, apartment in a block of flats, on wall behind a dresser, N42 07 30.27 E24 44 17.15, 120 m a. s. l., 29.08.2017, 1 nymph; Plovdiv, the library of the Regional Natural History Museum of Plovdiv, on a wall, N42 07 30.27 E24 44 17.15, 120 m a. s. l., 29.08.2017, 1 ♀."

***Psyllipsocus ramburii* Selys-Longchamps, 1872**

Reported by Georgiev (2018): "Plovdiv, the library of the Regional Natural History Museum of Plovdiv, on a wall, N42 07 30.27 E24 44 17.15, 120 m a. s. l., 29.08.2017, 1 ♀".

Liposcelididae

***Liposcelis decolor* (Pearman, 1925)**

Reported by Georgiev (2017b): "22.02.2017, Bulgaria, Upper Thracian Lowland, Plovdiv City, The attic of the Regional Natural History Museum – Plovdiv, beneath entomological boxes, N42° 8' 56.55" E24° 44' 34.34", 4 dead, dry specimens, D. Georgiev leg., det., coll.", and Georgiev (2018): "Plovdiv, Kyuchuk Parizh district, apartment in a block of flats, on wall behind a dresser, N42 07 30.27 E24 44 17.15, 120 m a. s. l., 29.08.2017, 1 ♀".

New material examined: 01.09.2024, Yagodovo vill., N42 05 47.4 E24 51 22.0, 164 m a. s. l., 3 ♀.

***Liposcelis corrodens* (Heymons, 1909)**

Reported by Georgiev (2017b): "22.02.2017, Bulgaria, Upper Thracian Lowland, Plovdiv City, The attic of the Regional Natural History Museum – Plovdiv, beneath entomological boxes, N42° 8' 56.55" E24° 44' 34.34", 1 dead, dry specimen, D. Georgiev leg., det., coll."

***Liposcelis bostrychophila* Badonnel, 1931**

Reported by Georgiev (2017a): "28.4.2017, north of Lyubenovo vill., bank of Sazliyka river, flood forest of *Salix* sp., among small pieces of wood and detritus deposited by waters at the base of a willow, and under bark of a willow trunk, N42 12 33.2 E25 56 01.3, 99 m a. s. l., 3 ♀, coll. by sieving", and Georgiev (2018): "Plovdiv, bank of Maritsa River

near Grebna Baza, flood forest, under bark of *Sambucus* sp., N42 09 08.7 E24 43 08.1, 166 m a. s. l., 18.05.2017, 1 ♀; Plovdiv, Bunardzhik Tepe Hill, broadleaf park forest, under bark of *Fraxinus* sp., N42 08 42.9 E24 44 18.1, 199 m a. s. l., 29.08.2017, 1♂."

***Liposcelis pearmani* Lienhard, 1990**

Material examined: 30.04.2017, Kovach vill., river bank forest (*Salix* sp., *Ulmus* sp.) near water source, N42 17 47.5 E25 50 47.9, 128 m a. s. l., 2♀, from a trunk of *Salix* sp., collected by sieving; 11.9.2021, north of Trilistnik vill., near Stryama River, bushes and trees at river bank, N42 12 47.0 E24 51 49.4, 166 m a. s. l., 1♀, from dry branches with leaves of *Salix* sp. and *Rubus* sp., collected by beating the vegetation.

***Liposcelis priesneri* Enderlein, 1925**

Material examined: 17.11.2021, NE of Pamukchii vill., *Quercus* sp. forest, N42 19 19.9 E25 39 26.7, 131 m a. s. l., 1♀, from dry branches with leaves, collected by beating the vegetation.

***Liposcelis rufa* Broadhead, 1950**

Material examined: 14.09.2021, between Kalitinovo and Preslaven villages, mixed broadleaf forest (*Acer*, *Ulmus*, *Carpinus*), N42 25 00.6 E25 44 35.9, 138 m a. s. l., 1♀, from a dry branch, collected by beating the vegetation; 25.11.2021, E of Plodovitovo vill., mixed forest (*Quercus* sp., *P. nigra*), 2♀, from *P. nigra*, collected by beating the vegetation.

Caeciliusidae

***Valenzuela flavidus* (Stephens, 1836)**

Material examined: 17.06.2024, Yagodovo vill., N42 06 38.5 E24 51 03.6, 159 m a. s. l., 1♀; 13.06.2025, near Yagodovo vill., bushes, N42 07 33.6 N24 50 34.8, 154 m a. s. l., from various bushes, 1♀, collected by beating the vegetation.

***Valenzuela piceus* (Kolbe, 1882)**

Material examined: 14.11.2021, E of Byal Izvor vill., *P. nigra* forest, N42 09 36.5 E25 38 43.7, 135 m a. s. l., 2♀, from dry branches with leaves of *P. nigra*, collected by beating the vegetation.

Stenopsocidae

***Graphopsocus cruciatus* (Linnaeus, 1768)**

Material examined: 20.05.2021, East of Stara Zagora city, between agricultural lands and shrubs, N42 26 02.7 E25 42 24.4, 170 m a. s. l., 1♀, from *Prunus cerasifera* Ehrh., collected by beating the vegetation; 14.09.2021, between Kalitinovo and Preslaven villages, mixed broadleaf forest (*Acer*, *Ulmus*, *Carpinus*), N42 25 00.6 E25 44 35.9, 138 m a. s. l., 1♀, from *Acer tataricum* L., collected by beating the vegetation; 15.09.2021, north of Gorno Botevo vill., scrubs and trees between agricultural lands (*Prunus spinosa* L., *P. cerasifera*, *Rubus* sp., *Ulmus* sp.), N42 26 00.0 E25 47 50.9, 129 m a. s. l., 1♀, from dry branches with leaves of *Juglans regia* L., collected by beating the vegetation; 19.10.2021, west of Han Asparuhovo vill., broadleaf trees and shrubs at the boundaries of agricultural lands, N42 26 36.4 E25 50 20.3, 94 m a. s. l., 4♀, from *P. cerasifera*, collected by beating the vegetation; 07.11.2021, E of Trankovo vill., pasture lands near a small river (Dunda River) with very few bushes and trees, N42 17 19.2 E25 49 37.9, 141 m a. s. l., 1♂, from *Carpinus betulus* L., collected by beating the vegetation; 09.11.2021, south of Topolyane vill., along Sazliyka River, river bank forest of *Salix* sp. with scrubs, N42 17 46.8 E25 52 11.9, 102 m a. s. l.,

1♂, 1♀, from dry branches with leaves of *Salix* sp., collected by beating the vegetation; 14.11.2021, E of Byal Izvor vill., *P. nigra* forest, N42 09 36.5 E25 38 43.7, 135 m a. s. l., 1♂, from dry branches with leaves of *P. nigra*, collected by beating the vegetation; 17.11.2021, NE of Pamukchii vill., *Quercus* sp. forest, N42 19 19.9 E25 39 26.7, 131 m a. s. l., 2♂, 10♀, from dry branches with leaves, collected by beating the vegetation; 25.11.2021, E of Plodovitovo vill., bushes, N42 10 43.9 E25 13 21.5, 112 m a. s. l., 1♀, from *Quercus* sp., collected by beating the vegetation; 02.12.2021, S of Dinkata vill., N bank of Topolnitsa River, scattered *Salix* sp. bushes and trees, N42 16 56.4 E24 13 30.2, 220 m a. s. l., 5♀, from dry branches with leaves of *Salix* sp., collected by beating the vegetation; 05.12.2021, near Yastrebovo vill., *Quercus* sp. forest, N42 17 14.8 E25 39 45.0, 160 m a. s. l., 4♂, 3♀, from dry and live branches of *Quercus* sp., collected by beating the vegetation; 28.05.2022, Bozduganovska Koriya forest, *Quercus* sp., *Fraxinus* sp. and *C. betulus* forest, N42 22 17.9 E25 44 30.0, 126 m a. s. l., 1♀, from *P. cerasifera*, collected by beating the vegetation; 27.04.2024, Yagodovo vill., N42 07 33.6 N24 50 34.8, 154 m a. s. l., 3♀.

Amphipsocidae

***Kolbia quisquiliarum* Bertkau, 1882**

Material examined: 25.10.2024, Yagodovo vill., N42 07 33.6 E24 50 34.8, 154 m a. s. l., 1♀.

Lachesillidae

***Lachesilla pedicularia* (Linnaeus, 1758)**

Material examined: 11.9.2021, north of Trilistnik vill., near Stryama river, bushes and trees at river bank, N42 12 47.0 E24 51 49.4, 166 m a. s. l., 1 ♀, from dry branches with leaves of *Salix* sp. and *Rubus* sp., collected by beating the vegetation; 19.10.2021, west of Han Asparuhovo vill., broadleaf trees and shrubs at the boundaries of agricultural lands, N42 26 36.4 E25 50 20.3, 94 m a. s. l., 3♀, from dry branches with leaves of *Carpinus* sp., collected by beating the vegetation; 09.11.2021, south of Topolyane vill., along Sazliyka river, river bank forest of *Salix* sp. with scrubs, N42 17 46.8 E25 52 11.9, 102 m a. s. l., 1♀, from dry branches with leaves of *Salix* sp., collected by beating the vegetation (found dead and dry); 19.09.2024, Yagodovo vill., N42 05 47.4 E24 51 22.0, 164 m a. s. l., 3 ♀, 01.10.2024, same locality, 1 ♂, 1 ♀.

***Lachesilla quercus* (Kolbe, 1880)**

Material examined: 14.09.2021, between Kalitinovo and Preslaven villages, mixed broadleaf forest (*Acer*, *Ulmus*, *Carpinus*), N42 25 00.6 E25 44 35.9, 138 m a. s. l., 1 ♀, from dry branches with leaves of *Acer campestre* L., collected by beating the vegetation; 18.09.2021, south of Kolena vill., near Kumurdzha river, bushes and trees near stream, N42 26 50.1 E25 45 10.7, 187 m a. s. l., 1♀, from dry branches with leaves of *Ulmus* sp., collected by beating the vegetation; 17.11.2021, NE of Pamukchii vill., *Quercus* sp. forest, N42 19 19.9 E25 39 26.7, 131 m a. s. l., 4♀, from dry branches with leaves, collected by beating the vegetation; 25.11.2021, E of Plodovitovo vill., mixed forest (*Quercus* sp., *P. nigra*), 1♀, from *Quercus* sp., collected by beating the vegetation; 17.06.2024, Yagodovo vill., yard of a house, N42 06 38.5 E24 51 03.6, 159 m a. s. l., 4 ♀; 07.01.2025, same locality, from dry leaves on the ground, 1 ♀.

***Lachesilla bernardi* Badonnel, 1938**

Material examined: 15.09.2021, north of Gorno Botevo vill., scrubs and trees between agricultural lands (*P. spinosa*, *P. cerasifera*, *Rubus* sp., *Ulmus* sp.),

N42 26 00.0 E25 47 50.9, 129 m a. s. l., 2♂, 2♀, from dry branches with leaves of *J. regia*, collected by beating the vegetation; 17.11.2021, NE of Pamukchii vill., *Quercus* sp. forest, N42 19 19.9 E25 39 26.7, 131 m a. s. l., 1♀, from dry branches with leaves, collected by beating the vegetation; 28.05.2022, Bozduganovska Koriya forest, *Quercus* sp., *Fraxinus* sp. and *C. betulus* forest, N42 22 17.9 E25 44 30.0, 126 m a. s. l., 2♂, from dry stems with seeds of *Arctium lappa* L., collected by beating the vegetation; 22.03.2025, Yagodovo vill., yard of a house, N42 06 38.5 E24 51 03.6, 159 m a. s. l., from dry leaves on the ground, 2♂, collected by hand; 31.05.2025, near Yagodovo vill., bushes, N42 07 33.6 E24 50 34.8, 154 m a. s. l., from old cloth on the ground, 4♀, collected by hand; 09.06.2025, near Yagodovo vill., bushes, N42 05 47.4 E24 51 22.0, 164 m a. s. l., from old cloth on the ground, 2♀, collected by hand.

Ectopsocidae

***Ectopsocus briggsi* McLachlan, 1899**

Material examined: 09.11.2021, south of Topolyane vill., along Sazliyka river, river bank forest of *Salix* sp. with scrubs, N42 17 46.8 E25 52 11.9, 102 m a. s. l., 1♂, from dry branches with leaves of *Salix* sp., collected by beating the vegetation; 14.11.2021, E of Byal Izvor vill., *P. nigra* forest, N42 09 36.5 E25 38 43.7, 135 m a. s. l., 1♀, from dry branches with leaves of *P. nigra*, collected by beating the vegetation; 17.11.2021, NE of Pamukchii vill., *Quercus* sp. forest, N42 19 19.9 E25 39 26.7, 131 m a. s. l., 1♂, from dry branches with leaves, collected by beating the vegetation; 05.12.2021, near Yastrebovo vill., *Quercus* sp. forest, N42 17 14.8 E25 39 45.0, 160 m a. s. l., 2♂, 1♀, from dry branches with leaves of *Quercus* sp., collected by beating the vegetation.

***Ectopsocus meridionalis* Ribaga, 1904**

Material examined: 17.11.2021, NE of Pamukchii vill., *Quercus* sp. forest, N42 19 19.9 E25 39 26.7, 131 m a. s. l., 1♀, from dry branches with leaves, collected by beating the vegetation.

***Ectopsocus petersi* Smithers, 1978**

Material examined: 23.05.2021, north of Gorno Botevo vill., broadleaf trees and shrubs at the boundaries of agricultural lands planted with *Triticum aestivum* L., N42 26 47.8 E25 46 31.8, 167 m a. s. l., 4♀, 2♂, from *Cupressus* sp., 1♂, from *Quercus* sp., collected by beating the vegetation; 23.05.2021, north of Gorno Botevo vill., broadleaf trees and shrubs at the boundaries of agricultural lands planted with *T. aestivum*, from branches of *P. spinosa*, N42 26 41.8 E25 46 11.2, 158 m a. s. l., 1♂, collected by beating the vegetation; 14.09.2021, between Kalitinovo and Preslaven villages, mixed broadleaf forest (*Acer*, *Ulmus*, *Carpinus*), N42 25 00.6 E25 44 35.9, 138 m a. s. l., 1♀, from dry branches with leaves of *A. campestre*, collected by beating the vegetation; 15.09.2021, north of Gorno Botevo vill., scrubs and trees between agricultural lands (*P. spinosa*, *P. cerasifera*, *Rubus* sp., *Ulmus* sp.), N42 26 00.0 E25 47 50.9, 129 m a. s. l., 1♀, from dry branches with leaves of *J. regia*, collected by beating the vegetation; 18.09.2021, south of Kolena vill., near Kumurdzha river, bushes and trees near stream, N42 26 50.1 E25 45 10.7, 187 m a. s. l., 1♂, from dry branches with leaves of *Ulmus* sp., collected by beating the vegetation; 19.10.2021, west of Han Asparuhovo vill., broadleaf trees and shrubs at the boundaries of agricultural lands, N42 26 36.4 E25 50 20.3, 94 m a. s. l., 4♀, from dry branches with leaves of *Carpinus* sp., collected by beating the vegetation; 19.10.2021, west of Han Asparuhovo vill., mixed broadleaf forest (*C. betulus*, *P. cerasifera Acer* spp., *Quercus* spp.), N42 26 26.8 E25 49 52.1, 78 m a. s. l., 2♂, from dry branches with leaves of *C. betulus*., 1♀,

from *Ulmus* sp., collected by beating the vegetation; 07.11.2021, E of Trankovo vill., pasture lands near a small river (Dunda river) with very few bushes and trees, N42 17 19.2 E25 49 37.9, 141 m a. s. l., 1♂, from *C. betulus*, collected by hand; 09.11.2021, south of Topolyane vill., along Sazliyka river, river bank forest of *Salix* sp. with scrubs, N42 17 46.8 E25 52 11.9, 102 m a. s. l., 6♂, 4♀, from dry branches with leaves of *Salix* sp., collected by beating the vegetation; 17.11.2021, NE of Pamukchii vill., *Quercus* sp. forest, N42 19 19.9 E25 39 26.7, 131 m a. s. l., 2♂, 7♀, from dry branches with leaves, collected by beating the vegetation; 02.12.2021, S of Dinkata vill., N bank of Topolnitsa river, scattered *Salix* sp. bushes and trees, N42 16 56.4 E24 13 30.2, 220 m a. s. l., 3♀, from dry branches with leaves of *Salix* sp., collected by beating the vegetation; 05.12.2021, near Yastrebovo vill., *Quercus* sp. forest, N42 17 14.8 E25 39 45.0, 160 m a. s. l., 4♂, 6♀, from dry and live branches of *Quercus* sp., collected by beating the vegetation; 28.05.2022, Bozduganovska Koriya forest, *Quercus* sp., *Fraxinus* sp. and *C. betulus* forest, N42 22 17.9 E25 44 30.0, 126 m a. s. l., 1♂, from dry branches, collected by beating the vegetation; 28.03.2024, N of Yagodovo vill., bushes near a canal, N42 07 33.6 E24 50 34.8, 153 m a. s. l., 1♂; 08.04.2024, Yagodovo vill., yard of a house, N42 06 38.5 E24 51 03.6, 159 m a. s. l., 2 ♂, 7 ♀; 17.06.2024, Yagodovo vill., N42 06 38.5 E24 51 03.6, 159 m a. s. l., 2 ♂; 04.07.2024, Yagodovo vill., N42 05 47.4 E24 51 22.0, 164 m a. s. l., 1♂, 1♀; 07.01.2025, Yagodovo vill., yard of a house, N42 06 38.5 E24 51 03.6, 159 m a. s. l., from dry leaves on the ground, 2♀, collected by hand.

***Ectopsocus vachoni* Badonnel, 1945**

Material examined: 17.11.2021, NE of Pamukchii vill., *Quercus* sp. forest, N42 19 19.9 E25 39 26.7, 131 m a. s. l., 1♀, from dry branches with leaves, collected by beating the vegetation; 07.01.2025, Yagodovo vill., yard of a house, N42 06 38.5 E24 51 03.6, 159 m a. s. l., 2♀, from dry leaves on the ground, collected by hand; 18.05.2025, near Yagodovo vill., bushes, N42 05 47.4 E24 51 22.0, 164 m a. s. l., 2♀, from old cloth on the ground, collected by hand; 09.06.2025, same data, 1♀; 13.06.2025, near Yagodovo vill., bushes, N42 07 33.6 N24 50 34.8, 154 m a. s. l., from various bushes, 2♀, collected by beating the vegetation.

Elipsocidae

***Cuneopalpus cyanops* (Rostock, 1876)**

Material examined: 14.11.2021, E of Byal Izvor vill., *P. nigra* forest, N42 09 36.5 E25 38 43.7, 135 m a. s. l., 1♀, from dry branches with leaves of *P. nigra*, collected by beating the vegetation; 25.11.2021, E of Plodovitovo vill., mixed forest (*Quercus* sp., *P. nigra*), 3♀, from *P. nigra*, collected by beating the vegetation.

***Elipsocus moebiusi* Tetens, 1891**

Material examined: 23.05.2021, north of Gorno Botevo vill., broadleaf trees and shrubs at the boundaries of agricultural lands planted with *T. aestivum*, from branches of *P. spinosa*, N42 26 41.8 E25 46 11.2, 158 m a. s. l., 1♂, collected by beating the vegetation; 25.11.2021, E of Plodovitovo vill., mixed forest (*Quercus* sp., *P. nigra*), 2♂, 4♀ (1♂, 1♀ found dead), from *P. nigra* and *Paliurus spina-christi* Mill., collected by beating the vegetation.

***Hemineura dispar* Tetens, 1891**

Material examined: 25.11.2021, E of Plodovitovo vill., mixed forest (*Quercus* sp., *P. nigra*), 4♂, 4♀, from *P. nigra* and *P. spina-christi*, collected by beating the vegetation.

***Hemineura* sp.**

Material examined: 19.10.2024, Yagodovo vill., N42 06 38.5 E24 51 03.6, 159 m a. s. l., 3♂.

Psocidae

***Amphigerontia contaminata* (Stephens, 1836)**

Material examined: 28.05.2022, Bozduganovska Koriya forest, *Quercus* sp., *Fraxinus* sp. and *C. betulus* forest, N42 22 17.9 E25 44 30.0, 126 m a. s. l., 1♀, from *P. spinosa*, collected by beating the vegetation.

***Amphigerontia intermedia* (Tetens, 1891)**

Reported by Georgiev *et al.* (2024): 28.05.2022, Bozduganovska Koriya forest, *Quercus* sp., *Fraxinus* sp. and *C. betulus* forest, N42 22 17.9 E25 44 30.0, 126 m a. s. l., 1♂, from *P. spinosa*, collected by beating the vegetation.

Conclusions

The diversity of Psocodea in the Upper Thracian Lowland reflects the region's complex mosaic of habitats. Species richness was highest in riparian and mixed deciduous forests, which offer a variety of microhabitats such as moist detritus, decaying wood, and rich vegetation structure. Several species, such as *Graphopsocus cruciatus* and *Ectopsocus petersi*, were widely distributed across multiple habitat types, indicating ecological plasticity. In contrast, species like *Dorypteryx domestica* and *Liposcelis decolor* were restricted to urban and synanthropic environments, highlighting the importance of human-modified habitats as refuges for some taxa. The presence of both habitat generalists and specialists suggests a relatively stable and functionally diverse barkfly community in the region.

Acknowledgements

This study was partially supported by the National Science Fund of Bulgaria under Grant contract number KP-06/6-14.12.2022.

References

Georgiev D. 2017a. Little known and newly recorded species of Psocoptera in Bulgaria. *Ecologica Montenegrina*, 11: 74-79.

Georgiev D. 2017b. Two species from the genus *Liposcelis* Motschulsky, 1852 - New to the fauna of Bulgaria found in the building of the Natural History Museum – Plovdiv (Insecta: Psocoptera). *Bulletin of the Natural History Museum – Plovdiv*, 2: 29-30.

Georgiev D. 2018. Psocoptera records in the city of Plovdiv. *Bulletin of the Natural History Museum - Plovdiv, 2018*, Supplement, 1: 47-48.

Georgiev D. 2020. Two species of Psocoptera (Insecta) as new records to the Bulgarian fauna with a country checklist. *Historia Naturalis Bulgarica*, 41: 71-75.

Georgiev D. 2022. New records of Psocoptera species from Bulgaria. *Historia Naturalis Bulgarica*, 44(1): 1-3.

Georgiev D., Beshkov S., Nahirnić-Beshkova A. 2024. New records of Psocoptera (Insecta) from Albania, Bulgaria and Serbia. *Acta Entomologica Serbica*, 29(1): 33-36.

Lienhard C. 1998. *Psocoptères euro-méditerranées*. Faune de France 83, Fédération Francaise des Sociétés de Sciences Naturelles, Paris, 517 p.

Received: 02.07.2025
Accepted: 17.07.2025
Published: 22.07.2025

Bulletin of the Natural History Museum - Plovdiv

Bull. Nat. Hist. Mus. Plovdiv, 2025, vol. 10: 25-27
https://doi.org/10.65437/bnhmp.10.2.1

Short Note

First records of Psocodea (Insecta) from La Désirade Island, Guadeloupe

Dilian G. Georgiev[1, 2, *], Todor M. Mishev[2]

[1]Department of General Animal Husbandry, Section Ecology, Faculty of Veterinary Medicine, Trakia University – Stara Zagora, 6000 Stara Zagora, BULGARIA
[2]Department of Ecology and Environmental Conservation, Faculty of Biology, Plovdiv University "Paisii Hilendarski", 24 Tzar Assen Str., 4000 Plovdiv, BULGARIA,
*E-mail: diliangeorgiev@uni-plovdiv.bg, dilyan.georgiev@ trakia-uni.bg
https://orcid.org/0000-0003-2885-4895

Abstract. This study presents the first records of four Psocodea species from the Island of La Desirade, Guadeloupe. Barkflies were collected during a one-day survey on August 20, 2025, from three distinct localities. The recorded species are: *Liposcelis bostrychophila* Badonnel, 1931, *Ectopsocus maindroni* Badonnel, 1935, *Ectopsocus thibaudi* Badonnel, 1979, and an unidentified species from the genus *Archipsocus* Hagen. *Liposcelis bostrychophila* is a new record for the entire Antilles, while the species from the genus *Archipsocus* is a new record for Guadeloupe.

Keywords: Caribbean, diversity, habitats, psocids, species

Introduction

The Antilles, in particular, are a group of islands with unique ecological characteristics, yet their psocid fauna is still poorly known. Prior studies in the region, such as those by Badonnel (1979, 1981, 1988, 1989), have provided initial insights, but extensive areas, including the island of La Desirade, have not been systematically explored. The collection of psocid specimens from these lesser-studied islands is crucial for creating accurate regional checklists and understanding species distribution patterns.

The aim of the present study is to provide the first records of Psocodea species from the Island of La Desirade, Guadeloupe, based on specimens collected during a recent field survey.

Material and methods

Barkflies were collected during one day, 20.08.2025, by the second author from three localities on La Desirade Island, Guadeloupe (Fig. 1.):

1: 20.08.2025, near Plage des Galets, 16°17'47.3"N 61°05'32.8"W, 13 m a. s. l., arid bush;

2: 20.08.2025, near Plage du Desert, dry bush, 16°18'25.0"N 61°03'16.5"W, 55 m a. s. l.;

3: 20.08.2025, Guadeloupe, East Part of La Desirade Island, 16°20'21.0"N 61°00'32.3"W, 20 m a. s. l., forest of Manchineel (*Hippomane mancinella*), from dry and fresh leaves.

All material was collected by beating the vegetation above a plastic container, by brush and stored in 96% ethanol and examined in the laboratory. The photos

(specimens in glycerin) were taken by a camera Canon PowerShot SX500IS through the eyepiece of a light microscope Optika.

Species identifications were based on Mockford (1993) and Lienhard (1998), distributions were considered according Badonnel (1981) and Lienhard (2016).

Fig. 1. Sampling localities on the La Desirade Island (numbers correspond with those in Material and Methods).

Results and Discussion

Four species were recorded as new records for the La Desirade Island, and one – as a new record for the Antilles:

Family Liposcelididae

***Liposcelis bostrychophila* Badonnel, 1931**

Material examined: loc. 3, 1 ♀ (Fig. 2A). Remark: This species is cosmopolitan (Lienhard, 2016). New record for the entire Antilles.

Family Ectopsocidae

***Ectopsocus maindroni* Badonnel, 1935**

Material examined: loc. 1, 2 ♂ (Fig. 2B). Remark: The species was reported for Guadeloupe only from the area of Morne Claire Fontaine, Basse Terre Island (Badonnel, 1981).

***Ectopsocus thibaudi* Badonnel, 1979**

Material examined: loc. 1, 12 ♀, 8 ♂; loc. 2, 16 ♀, 9 ♂; loc. 3, 10 ♀, 5 ♂. Remark: The species is known from USA, Antilles, Mexico, Puerto Rico and the Guianas (Lienhard, 2016). Considering the numerous specimens collected, probably widely distributed and abundant in the area of La Desirade Island, inhabiting dry vegetation of various species, including the highly toxic Manchineel (*Hippomane mancinella*).

Family Archipsocidae

***Archipsocus* sp.**

Material examined: loc. 1, 1 ♂.
Remark: Identification of species from this genus is difficult and specific.

Series of both male and female specimens are sometimes required, along with a detailed study of their distinctive characteristics. Nevertheless, a species from this genus has not been reported from Guadeloupe until now. This is the first record of the genus in the region.

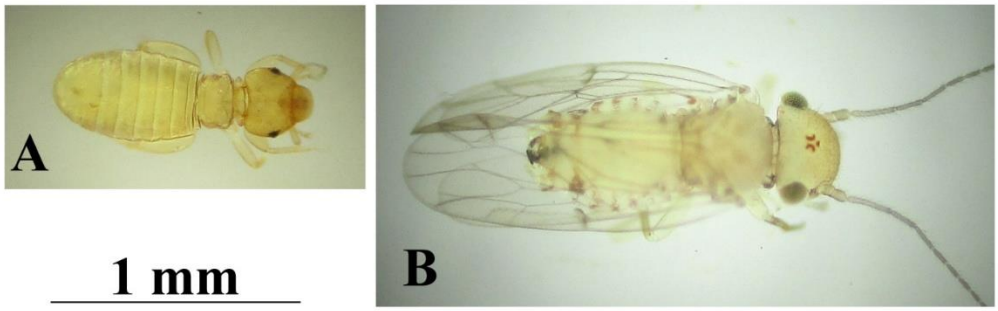

Fig. 2. Two of the Psocodea species recorded from La Desirade Island: A – *Liposcelis bostrychophila* (female, loc. 3), B – *Ectopsocus maindroni* (male, loc. 1).

References

Badonnel A. 1979. *Ectopsocus thibaudi* n. sp., du département de la Guadeloupe, avec remarques sur le groupe *hirsutus* [Psocoptera Ectopsocidae]. *Bulletin de la Société entomologique de France*, 84(3-4): 52-57.

Badonnel A. 1981. Psocoptères géophiles des Petites Antilles. *Revue d'Écologie et de Biologie du Sol*, 18(3): 425-434.

Badonnel A. 1988. *Tapinella dichromoptera*, n. sp. de la Guadeloupe (Psocoptera, Pachytroctidae). *Revue Française d'Entomologie (Nouvelle Série)*, 10(4): 284-288.

Badonnel A. 1989. Psocoptères de la Guadeloupe et de la Martinique. Le genre *Indiopsocus* Mockford [Psocidae]. *Bulletin de la Société entomologique de France*, 94(3-4): 69-78.

Lienhard C. 1998. *Psocoptères euro-méditerranéens*. Faune de France 83. Fédération Française des Sociétés de Sciences Naturelles, Paris, 517 p.

Lienhard C. 2016. Country checklists of the Psocoptera species of the world, extracted from Lienhard & Smithers, 2002: "Psocoptera (Insecta) – world catalogue and bibliography". *Psocid News, Special Issue I*: 1-123.

Mockford E. 1993. *North American Psocoptera*. CRC Press, New York, 455 p.

Received: 27.08.2025
Accepted: 29.09.2025
Published: 30.09.2025

Bulletin of the Natural History Museum - Plovdiv

Bull. Nat. Hist. Mus. Plovdiv, 2025, vol. 10: 29-32
https://doi.org/10.65437/bnhmp.10.2.2

Short Note

A new record of Telescopus fallax (Fleischmann, 1831) (Squamata: Colubridae) near the border between Bulgaria and Greece in the Rhodope Mountains, Xanthi Regional Unit

Teodor D. Chetalbashev*

Regional Natural History Museum – Plovdiv, 34 Hristo G. Danov Str., Plovdiv 4000, Bulgaria
*E-mail: t.chetalbashev@gmail.com
https://orcid.org/0009-0000-5738-8550

Abstract. This study presents a new record of the European Cat Snake (*Telescopus fallax*), based on a deceased juvenile specimen from the Western Rhodopes in the Xanthi Regional Unit, Greece, 2.4 km away from the border with Bulgaria. The record fills a gap within the known range of the species and raises the question of its distribution in the neighboring parts of Bulgaria, where known records are extremely limited.

Keywords: European Cat Snake, Mediterranean Cat Snake, Northern Greece, Western Rhodopes

Introduction

The Xanthi Regional Unit is a part of the Eastern Macedonia and Thrace administrative region located in North-Eastern Greece and has a total area of 1,793 km^2. About 54% of its territory is occupied by forests, followed by cultivated and fallow land (32%), pastures (7.5%) and areas under water (4%) (IMSI, 1999–2000). Furthermore, the area includes some of the southernmost parts of the Western Rhodopes, which have a unique Continental-Mediterranean climate and biodiversity (Stefanov, 2006). It borders the Aegean Sea to the south and the Bulgarian provinces of Smolyan and Kardzhali to the north. To the west lies the regional unit of Kavala, to the northwest - that of Drama and to the east - that of Rodopi.

The European Cat Snake *Telescopus fallax* (Fleischmann, 1831) is a secretive and almost completely crepuscular and nocturnal species. It inhabits warm stony areas such as degraded or rocky deciduous woodlands, slopes, old walls, ruins and orchards, sometimes near human settlements. (Arnold & Ovenden, 2004; Speybroeck *et al.*, 2018). In the Balkans, it occurs mainly along the Mediterranean coast, as well as the Greek mainland and most of the Aegean and Ionian Islands. Its range in Bulgaria is limited, consisting of the valleys of the Struma and Arda Rivers (Beshkov & Nanev, 2002; Naumov, 2007).

Despite the relatively wide distribution, its detection has largely remained difficult, likely due to its nighttime activity and the scarcity of research, focused specifically on it (Domozetski *et al.*, 2019). Therefore, each report can be of great value for understanding its biological and ecological characteristics.

Material and methods

On the 24th of August 2025 at 17:57 h, a deceased juvenile snake was found at the immediate vicinity of the Iamatikes Piges settlement, on the pathway to the hot springs located there (41.3477 °N, 25.0132 °E; elevation 400 m), just 2.4 km south-southeast from the border with Bulgaria (Smolyan province) - Fig.1. The specimen, measured approximately 23 cm in total length, was being actively moved by ants (*Cataglyphis* sp.) which initially brought attention to it - Fig. 2. It was identified *in situ* as *T. fallax* by the dorsal spots, the head shape and the vertical eye slits (Naumov, 2007). The occurring habitat corresponded to 91AA of the EUNIS Habitat Classification – white-oak forests, dominated by *Quercus pubescens* Willd on stony places with a varying rock type foundation (Kavrakova *et al.*, 2009). Due to the immediate proximity of the urban territory, the terrain was under strong anthropogenic pressure.

Results and Discussion

The specimen was rather preserved and did not show signs of predation. The only visible damage was a small crushed spot in the upper body area. Possible causes of death could be a human intervention or the result of an attack from a domestic cat which are known to sometimes kill prey, including snakes, without feeding on it (Cecchetti *et al.*, 2021).

Publications throughout the years have given some knowledge on the extension of this species in North-Eastern Greece (Fig. 1.): Southern Evros area (Helmer & Sholte, 1985); Central Xanthi area - about 23.4 km to the south of the presented data and the closest to it (Chondropoulos, 1989); Southern (Cattaneo & Cattaneo, 2014) and North-Eastern (Christopoulos, 2022) Rodopi area. Yet, on the Bulgarian side of the Rhodope Mountains, the data about its distribution is exceptionally scarce with

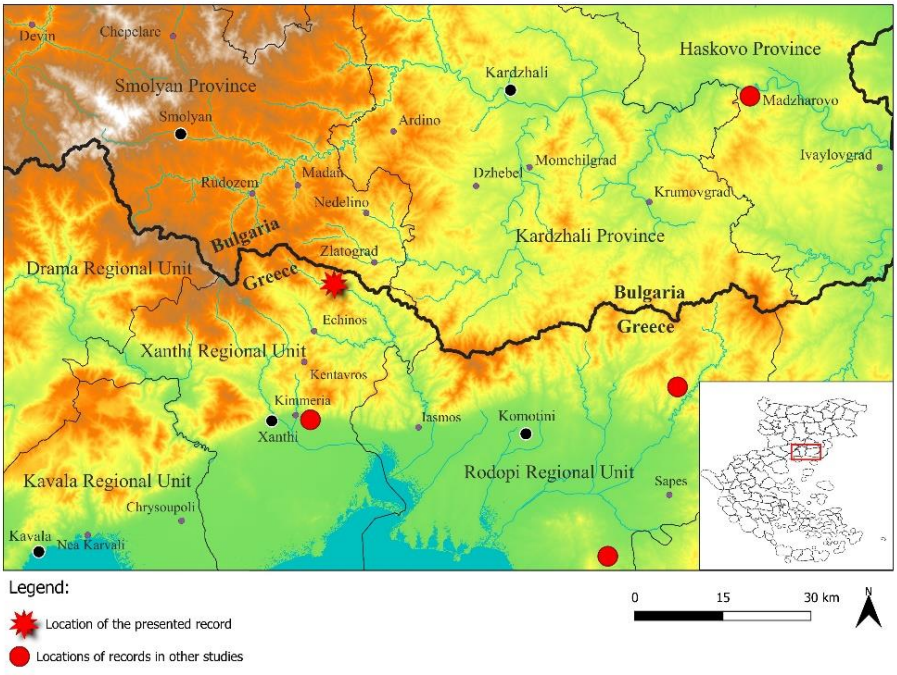

Fig. 1. Map of the presented and other reported records of *Telescopus fallax* in the Xanthi Regional Unit and the neighboring provinces in Greece and Bulgaria (map created with QGIS v.3.40.11 (QGIS.org, 2025)).

just one published record from the Eastern Rhodopes - Madzharovo, Haskovo Province (Petrov *et al.*, 2002) - about 77 km away to the northeast from the presented record. Additionally, all of these localities, except for the Southern Evros and North-Eastern Rodopi areas, have been further invigorated by community observations within the iNaturalist network from the last few years (iNaturalist, 2025).

Similarly to other reports on new herpetofauna records (Georgiev & Mollov, 2016; Christopoulos, 2022; Georgiev, 2025), the presented data fills a gap in the distribution of the species, even though it falls within its expected range. Additionally, the close distance to the Smolyan Province of Bulgaria, from which there are no known records of *T. fallax*, raises the question about its potential presence there. While most distribution maps portray this part of the border between the two countries as the limit of this snake's extension, it should always be taken into consideration that species and ecosystems rarely follow the political boundaries which humans draw on maps (Speybroeck *et al.*, 2018). For these reasons, this report is of great interest to herpetology and may serve as the pavement for further studies in the area, where missing links between the populations of this species in the two countries clearly exist.

Fig. 2. Dorsal (left) and ventral (right) view of the deceased juvenile *Telescopus fallax*, found in the Xanthi Regional Unit.

Acknowledgements

The author owes gratitude to Assoc. Prof. Dr. Ivelin Mollov for his continuous support and guiding with regards to various details during the preparation of the manuscript. Heartfelt gratitude is owed to Dr. Svetlozara Kazandzhieva, Co-Editor-In-Chief of Bull. Nat. Hist. Mus. – Plovdiv, for the articulate corrections and tips in regards to the manuscript. Sincere gratitude is also owed to Dr. Yulian Marinov for his help with the determination of the floristic characteristics of the area, and to

Dr. Kaloyan Ivanov for his expertise in identifying the ant genus. Lastly, the author owes special thanks to his good friend Tsvetomir, who pointed out the deceased specimen, which otherwise could have been missed.

References

Arnold E., Ovenden D. 2004. *A Field Guide to the Reptiles and Amphibians of Britain and Europe (2nd ed.)*. HarperCollins, London, 288 p. (Original work published 2002).

Beshkov V., Nanev K. 2002. *Amphibians and Reptiles in Bulgaria*. Pensoft, Sofia, 120 p. (in Bulgarian).

Cattaneo A., Cattaneo C. 2014. Sulla presenza di *Montivipera xanthina* (Gray, 1849) nella Tracia greca centrale e note eco-morfologiche sull'erpetofauna locale (Reptilia Serpentes). *Naturalista siciliano*, 38(2): 307-330.

Cecchetti M., Crowley S., McDonald, R. 2021. Drivers and facilitators of hunting behaviour in domestic cats and options for management. *Mammal Review*, 51(3), 307-322.

Chondropoulos B. 1989. A checklist of Greek reptiles. 2. The snakes. *Herpetozoa*, 2: 3-36.

Christopoulos A. 2022. New record of *Telescopus fallax* (Squamata: Colubridae) in Rhodope Prefecture, Thrace, Greece. *Herpetology Notes*, 15: 873-877.

Domozetski L., Pulev, A., Sakelarieva L., Manolev G., Naumov, B. 2019. Distribution of European Cat Snake *Telescopus fallax* (Fleischmann, 1831) (Reptilia: Colubridae) in South-Western Bulgaria. *Ecologia Balkanica, Special Edition 2*: 139-146.

Georgiev D. 2025. A Record of *Eryx jaculus* Linnaeus, 1758 (Squamata: Boidae) at Mount Ismaros, Northern Greece. *ZooNotes*, 273: 1-3.

Georgiev D., Mollov I. 2016. Notes on the herpetofauna of Ismaros Mts. (Northern Greece, Rhodopi County). *Ecologica Montenegrina*, 5: 41-43.

Helmer W., Sholte P. 1985. *Herpetological research in Evros, Greece. - Proposal for a biogenetic reserve.* Societas Europaea Herpetologica, Nijmegen, 142 p.

IMSI [Information Management Systems Institute]. 1999-2000. Table of Land Use: Distribution of the Country's Area into Generalized Land Cover/Land Use Categories, by Regional Development Offices, Department, Municipality/Commune. Athena Research Center, Athens. Available at: http://geodata.gov.gr/dataset/ab0731e9-5ed4-44b0-9436-964399a845a9/resource/6a61ded3-b5d9-4653-8b1a-ccd6c411d6ed/download/xrhseisghs19992000.xls.zip (Accessed on 14 October 2025).

iNaturalist. 2025. Available at: https://www.inaturalist.org (Accessed on 27 November 2025).

Kavrakova V., Dimova D., Dimitrov M., Tzonev R., Belev T., & Rakovska K. (Eds.). 2009. *Manual for Determination of Habitats with European Importance in Bulgaria (2nd ed.)*. WWF–Danube Carpathian Programme & Green Balkan Federation, Sofia, 131 p. (in Bulgarian).

Naumov B. 2007. Order Snakes (Serpentes). *In:* Biserkov V. (Ed.), *A Field Guide to Amphibians and Reptiles of Bulgaria*. Green Balkans, Sofia, pp. 128-129. (in Bulgarian).

Received: 21.10.2025
Accepted: 05.12.2025
Published: 15.12.2025

Bulletin of the Natural History Museum - Plovdiv

Bull. Nat. Hist. Mus. Plovdiv, 2025, vol. 10: 33-36
https://doi.org/10.65437/bnhmp.10.2.3

Short Note

A Recent Record of Sturgeon (Acipenser sp.) in the Maritsa River near Plovdiv, Southern Bulgaria, with Reference to Historical Data

Kristiyan B. Vladov *

Regional Natural History Museum – Plovdiv, 34 Hristo G. Danov Str., Plovdiv 4000, Bulgaria
*E-mail: vladovkristiyan@gmail.com
https://orcid.org/0009-0009-2444-1074

Abstract. In 2022, a single specimen belonging to the genus *Acipenser* was recorded in a suburban section of the Maritsa River near Plovdiv, Southern Bulgaria. The fish was captured during recreational spinning angling, photographed, and released alive. Reliable identification to species level was not possible. The record provides new data on the contemporary ichthyofauna of the Maritsa River.

Keywords: fish, ichthyofauna, Maritsa River, Plovdiv, sturgeon

Introduction

Over the years, the species composition of the fish fauna of the Maritsa River and its tributaries has been documented by various authors. The earliest data were provided by Heckel (1837), who reported 17 fish species from five families. In the early 20th century, Kovatcheff (1921) recorded 25 species from 11 families, while Chichkoff (1935) noted 26 species from nine families, including the presence of *Acipenser sturio* (Linnaeus, 1758). Records of sturgeon occurrence in the Maritsa River are found only in a limited number of early publications (Kovatcheff, 1921; Morov, 1931; Zashev, 1961).

In the mid-20th century, Mihaylova (1965) documented 18 species from eight families and reported a significant decline in the ichthyofauna compared to the 1930s, with sturgeons no longer being recorded. Subsequent studies conducted in the Plovdiv region and along the Maritsa River during the late 20th and early 21st centuries also failed to record representatives of the genus *Acipenser* (Velcheva & Mehterov, 2005; Kolev, 2013; Gecheva *et al*., 2011; Georgiev *et al.*, 2015; Mollov & Georgiev, 2015; Petrov & Mollov, 2022; Georgiev, 2022).

The present note complements the most recent published data (Georgiev, 2022) by reporting a new occurrence of sturgeon in a suburban section of the Maritsa River near Plovdiv (Fig. 1.), contributing to the current understanding of the river's ichthyofauna (Fig. 2.).

Material and Methods

The present note is based on field observations and an analysis of published

data. Field observations were carried out in a suburban section of the Maritsa River near Plovdiv, Southern Bulgaria, during the period 2022–2024.

Field data originate from opportunistic capture during recreational fishing with a rod. The recorded specimen of the genus *Acipenser* was caught in 2022 using spinning fishing with an artificial lure. The study is non-systematic in nature and was not aimed at quantitative assessment of the fish fauna.

The specimen was identified in situ based on external morphological characters. No ichthyological material was fixed or preserved, and no specimens were deposited in collections. The fish was photographed and released alive immediately after capture.

Fig. 1. Sturgeon specimen caught in the suburban zone of the Maritsa River near Plovdiv, Bulgaria, during fieldwork in 2022. Photo: Personal archive.

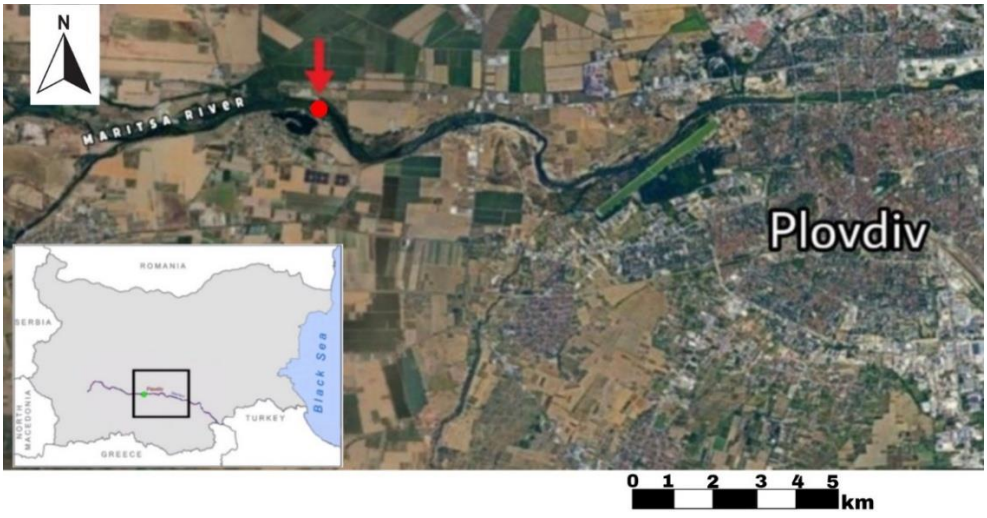

Fig. 2. Exact location of the sturgeon capture along the Maritsa River, marked with a red arrow. The site is situated in the *Benta* locality near the 9th kilometer, west of the city of Plovdiv, Southern Bulgaria.

Species identification was performed using standard ichthyological identification keys (Karapetkova & Zivkov, 1995; Kottelat & Freyhof, 2007). Due to the lack of detailed morphometric data and genetic material, the specimen could not be reliably identified to species level and is therefore referred to as *Acipenser* sp.

Results and Discussion

During the period 2022–2024, the capture of a single specimen belonging to the genus *Acipenser* was documented in a suburban section of the Maritsa River near Plovdiv. The specimen was caught in 2022 during recreational spinning angling. The fish was photographed and released alive, and due to the lack of detailed morphometric and genetic data, reliable identification to species level was not possible. Historical records indicate that sturgeons were present in the river basin in the past, but they have been considered absent since the mid-20th century. In this context, possible explanations for the origin of the recorded specimen include long-distance natural movement within the river system or anthropogenic introduction, for example through escape from aquaculture facilities (Koutrakis & Economidis, 2006; Koutrakis *et al*., 2011).

References

Berg, L. S. 1948. *Freshwater Fishes of USSR and Adjacent Countries* (Vol. I). IPST, Jerusalem (English translation, 1962).

Chichkoff, G. 1935. Sur un barbeau peu connu. *Annuaire de l'Université de Sofia, Faculté Physico-mathématique*, Tome XXXI, Livre 3 (Sciences Naturelles), 1934/1935.

Gecheva, G., Yurukova, L., Ganeva, A. 2011. Assessment of pollution with aquatic bryophytes in Maritsa River (Bulgaria). *Bulletin of Environmental Contamination and Toxicology*, 87(4): 480-485.

Georgiev, D. 2022. The fish species (Pisces) in the city of Plovdiv – A review. *Bulletin of the Natural History Museum – Plovdiv*, Supplement 2: 1-2.

Georgiev, D., Petrova, S., Gecheva, G., Velcheva, I., Tsekov, A., Yancheva, V., Mollov, I. 2015. Freshwater habitats in Plovdiv town and its surroundings and their importance for the biodiversity. *Journal of BioScience & Biotechnology*, 4 (2).

Heckel, J. 1837. *Ichthyologische Beiträge zu den Familien der Cottoiden, Scorpaeniden, Gobioiden und Cyprinoiden*, 155 p.

Karapetkova, M., Zivkov, M. 1995. *Fishes of Bulgaria*. Gea-Libris Publ., Sofia, 247 p. (in Bulgarian).

Kolev, V. 2013. Species composition of the ichthyofauna of some tributaries of the Maritza River. *Forestry Ideas*, 19(2): 129-139.

Kottelat, M., Freyhof, J. 2007. *Handbook of European freshwater fishes* (Vol. 13). Publications Kottelat, Cornol, Switzerland.

Koutrakis, E. T., Economidis, P. S. 2006. Did sturgeons return to River Evros? *Alieftika Nea*, 306: 68-83 (in Greek).

Koutrakis, E., Sapounidis, A., Favre-Krey, L., Krey, G., Economidis, P. S. 2011. Incidental catches of Acipenseridae in the estuary of the River Evros, Greece. *Journal of Applied Ichthyology*, 27(2): 366-368.

Kovatcheff, V. 1921. Attempt to study the ichthyofauna of the Maritza and its tributaries. *Proceedings of the Bulgarian Naturalist Society*, 9: 90-94 (in Bulgarian).

Mihaylova, L. 1965. On the ichthyofauna of Thrace. *In: Thrace Fauna*, Part II. Bulgarian Academy of Sciences, Zoological Institute and Museum, pp. 265-289.

Mollov, I., Georgiev, D. 2015. Plovdiv. *In:* Kelcey, J. G. (Ed.), *Vertebrates and Invertebrates of EuropeanCities: Selected Non-Avian Fauna*. Springer, 700 pp.

Morov, T. 1931. Freshwater fishes in Bulgaria. Bulgarian Fishermen's Union. *"Artist"*, 39-40 (in Bulgarian).

Petrov, A., Mollov, I. 2022. Species composition and distribution of the vertebrates at Maritsa River in the city of Plovdiv. *Bulletin of the Natural History Museum – Plovdiv*, Supplement 2: 41-57.

Velcheva, I., Mehterov, N. 2005. A study on the ichtyocenosis diversity in the downstream of the Maritza River. *Scientific Studies – Biology*, Paisii Hilendarski University of Plovdiv, 41: 69-78.

Zashev, D. 1961. *Ichthyology*. State Publishing House "Science and Art", Sofia, 283 p. (in Bulgarian).

Received: 10.11.2025
Accepted: 22.12.2025
Published: 23.12.2025

Bulletin of the Natural History Museum - Plovdiv
Bull. Nat. Hist. Mus. Plovdiv, 2025, vol. 10: 37-44
https://doi.org/10.65437/bnhmp.10.4.1

Miscellaneous

Assist. Prof. Dr. Ognyan Todorov: Between Wildlife and Living Science – 50 Years Dedicated to Biology, Museums, and Society

Kristiyan B. Vladov*

Regional Natural History Museum – Plovdiv, Hristo G. Danov Str. 34,
BG-4000 Plovdiv, BULGARIA
*E-mail: vladovkristiyan@gmail.com
https://orcid.org/0009-0009-2444-1074

Abstract. This jubilee article is dedicated to the 50th anniversary of Assist. Prof. Dr. Ognyan Todorov, a biologist, lecturer, and director of the Regional Natural History Museum – Plovdiv. It outlines his scientific and professional biography, emphasizing his leadership in the museum, participation in field studies and international expeditions, scientific contributions, and recognitions. The article discusses the significance of his work for contemporary museum practices, environmental education, and popularizing biological sciences in Bulgaria.

Keywords: Ognyan Todorov, Natural History Museum of Plovdiv, invertebrates, museum pedagogy, science communication, biodiversity

Introduction

The personality of Assist. Prof. Dr. Ognyan Todorov (Fig. 1.) embodies the characteristics of a researcher, educator, leader, and public figure, making lasting contributions to modernizing museum practices, integrating science into societal life, and building a cultural dialogue between humans and nature. His professional journey exemplifies the successful combination of academic biology with applied and educational practices aimed at the broader public. His commitment to environmental education and conservation has inspired numerous projects that significantly impacted public awareness and involvement in biodiversity protection initiatives. Due to his dedication and approachable manner, Dr. Todorov has established himself as a well-recognized and influential figure in both the scientific community and wider society. As an educator, he encourages students toward critical thinking and independent scientific projects, fostering curiosity and a passion for research. Museum exhibitions and events created under his guidance have become models for innovation and effective communication of complex scientific topics to a broad audience. Dr. Todorov actively participates in various media appearances and public forums, presenting scientific knowledge in an accessible and engaging manner. His notable public contributions also include mentoring young people, inspiring them to discover a passion for natural sciences and environmental conservation.

Dr. Todorov's personal motto, *"There's always a way,"* underscores his persistent determination and optimism in overcoming challenges throughout his extensive career. This principle has guided his scientific explorations, innovative educational methods, and successful management of various museum and conservation projects.

Fig. 1. Assist. Prof. Dr. Ognyan Todorov presenting his monograph „Atlas of Invertebrates“, September 2021. Photo: Personal archive.

Education and Academic Development

Ognyan Todorov was born in 1975 in Plovdiv. He graduated in Biology and Chemistry from the Faculty of Natural Sciences at Plovdiv University “Paisii Hilendarski.” His education was followed by in-depth research in zoology, which led to the successful defense of his doctoral dissertation at the Agricultural University – Plovdiv. His dissertation, entitled “Biodiversity, Distribution, and Economic Importance of Entomophagous Insects of the Family Aphidiidae (Hymenoptera) from Southwestern Bulgaria,” was successfully defended before the then Higher Attestation Commission in 2006.

Teaching and Educational Activities

Dr. Todorov’s professional career includes long-term teaching at Plovdiv University, where he delivers lectures and practical courses in Invertebrate Zoology, General Ecology, Nature Conservation, Hydrobiology, and Museum Studies, Botanical and Zoological Gardens. Known among students for his engaging teaching style and focus on field and practical work, he has trained generations of specialists with a strong focus on conservation and applied science.

Leadership and Transformation of the Regional Natural History Museum – Plovdiv

Since 2012, Assist. Prof. Dr. Ognyan Todorov has served as the director of the Regional Natural History Museum – Plovdiv. Under his leadership, the museum has

undergone a remarkable transformation from a traditional institution into a dynamic scientific-educational center of national and international importance (Todorov, 2016).

He executed an ambitious program for the comprehensive renovation of exhibition spaces, created a modern public aquarium, and established the museum as a platform for innovative educational practices, scientific forums, and nature conservation events. His vision and energy significantly expanded the museum's scope, audience, and scientific network.

Additionally, under his guidance, a tropical butterfly hall—one of the few in Europe—was constructed, combining biological attraction with educational value, allowing visitors immersive experiences among numerous tropical butterfly species.

Dr. Todorov developed and implemented the first digital 3D planetarium in Bulgaria, which already enriches astronomical education in the region and complements the multidisciplinary profile of the museum. These achievements have brought wide national and international recognition to the institution, including prestigious awards for innovation in museum practices (Fig. 2.).

Fig. 2. Assist. Prof. Dr. Ognyan Todorov receiving the "Museum of the Year" award, 2016. Photo: Personal archive.

Scientific Expeditions and Field Research

Dr. Todorov's field and expeditionary work has been extensive at both national and international levels. He has participated in numerous scientific trips across Bulgaria, focusing on wetland fauna, karst springs, and mountain lakes, as well as international expeditions to Uganda, the Amazon (Fig. 3.), and Southeast Asia (Fig. 8.), and fieldwork in the Andes (Figs 4 and 5). In 2024, he participated in a research mission to East Africa, documenting the faunal diversity of seven national parks, including gorillas, chimpanzees, rare bird species, and hoofed animals (Figs 6 and 7). The photographs collected during these journeys significantly enhance Dr. Todorov's personal archive and the museum's resources, supporting research, education, and public awareness of biodiversity.

Fig. 3. Assist. Prof. Dr. Ognyan Todorov during field research on the Amazon River, 2024. Photo: Personal archive.

Fig. 4. Field research at Vinicunca (Rainbow Mountain), Andes, Peru, conducted by Assist. Prof. Dr. Ognyan Todorov in 2024. Photo: Personal archive.

Fig. 5. During field research in the Andes, Assist. Prof. Dr. Ognyan Todorov points to the Inca ruins of Choquequirao, Peru, 2024. Photo: Personal archive.

Fig. 6. Wild gorillas observed during fieldwork in Bwindi Impenetrable National Park, Uganda, 2024, as part of a research expedition led by Assist. Prof. Dr. Ognyan Todorov. Photo: Personal archive.

Fig. 7. During field research in 2024, Assist. Prof. Dr. Ognyan Todorov observed African elephants along the Nile in Murchison Falls National Park, Uganda. Photo: Personal archive.

Fig. 8. Assist. Prof. Dr. Ognyan Todorov during field research at the historical site of Ayutthaya, Thailand, 2025. Photo: Personal archive.

Scientific Publications and Contributions

Dr. Ognyan Todorov's research encompasses diverse fields, including marine biology, invertebrate zoology, entomology, parasitology, herpetology, science communication, and museum education. He is the author and co-author of over 19 scientific publications indexed in international databases, contributing significantly to biodiversity research and documentation in Bulgaria and the region.

In 2021, Dr. Todorov published the monograph Atlas of Invertebrates (Todorov, 2021), featuring over 1700 illustrations, 1164 of which are his original works. The atlas covers systematics, morphology, habitats, and adaptations of major invertebrate groups and is extensively used in educational settings, from university students to specialized conservation and ecology schools.

His notable scientific contributions include entomological studies on the subfamily Aphidiinae (Hymenoptera: Braconidae), aphid parasitoids with new species records for Bulgaria; description of a new parasitoid wasp species (*Boreogalba julianae*, Todorov, 2023) discovered in Osogovo Mountain; herpetological research documenting new amphibian and reptile occurrences in Strandzha Nature Park and the Southern Black Sea Coast; co-authorship in an ornithological catalog of the former "St. Augustine" College collection housed in the museum, detailing 193 bird species from 81 families; parasitological studies of ixodid ticks affecting domestic animals near Plovdiv, with epidemiological importance; and active participation in science popularization through educational exhibitions and nature conservation programs.

Awards and Recognitions

Assist. Prof. Dr. Ognyan Todorov has been honored with numerous awards, including:

– "Plovdiv" Honorary Badge for contributions to culture and education;

– Certificate from the Ministry of Culture of Bulgaria for contributions to museum practices;

– Recognition for innovative museum practices by the Bulgarian Museums Association;

– Awards from educational and conservation organizations for contributions to biodiversity protection.

The following photographs (Figs 9 and 10) illustrate some of these recognitions and awards received by Dr. Todorov, showcasing his achievements and the esteem with which he is regarded by cultural and scientific institutions.

Conclusion

Assist. Prof. Dr. Ognyan Todorov exemplifies a modern scientist adeptly integrating field and laboratory research, teaching, science communication, leadership, and innovation. He does more than manage a museum—he builds bridges between knowledge and inspiration, academic science, and youthful curiosity about nature. On the occasion of his 50th anniversary, Dr. Todorov deserves recognition from colleagues, students, and the wider public as a figure who has significantly contributed to bridging science, culture, and society.

Fig. 9. Assist. Prof. Dr. Ognyan Todorov honored for cultural contributions. Photo: Personal archive.

Fig. 10. Assist. Prof. Dr. Ognyan Todorov with a certificate and plaque recognizing his support and cooperation with the Faculty of Plant Protection and Agroecology. Photo: Personal archive.

References

Todorov O. 2016. Regional Natural History Museum – Plovdiv. *Bulletin of the Natural History Museum – Plovdiv*, 1: vii-xiv (in Bulgarian).

Todorov O. 2021. *Atlas of Invertebrates*. Regional Natural History Museum – Plovdiv. 504 p. (in Bulgarian).

Received: 11.06.2025
Accepted: 05.08.2025
Published: 06.08.2025

Bulletin of the Natural History Museum - Plovdiv
Bull. Nat. Hist. Mus. Plovdiv, 2025, vol. 10: 45-59
https://doi.org/10.65437/bnhmp.10.4.3

Miscellaneous

Andon Darakchiev (1934-2018) – a prominent worker of Bulgarian ornithology

Zlatozar N. Boev*

National Museum of Natural History, Bulgarian Academy of Sciences,
1, Blvd. Tsar Osvoboditel, 1000 Sofia, Bulgaria
*E-mail: boev@nmnhs.com, zlatozarboev@gmail.com
https://orcid.org/0000-0002-8049-7509

Abstract. Assoc. Prof. Dr. Andon Iliev Darakchiev (1934–2018) was a prominent Bulgarian ornithologist whose career at Plovdiv University shaped generations of biologists and contributed substantially to national avifaunal research. He founded the university's ornithological collection, taught key zoological disciplines, and authored widely used textbooks and field guides. His study of the Chernatitsa Ridge remains a landmark work for the Western Rhodopes. Darakchiev published over 100 scientific and popular-science papers, containing valuable data on bird biology, ecology, and distribution. As founder of the university's Ornithology Circle, he supervised numerous theses and inspired future specialists in bird conservation. His contributions also supported the designation of several protected areas. This article provides a biographical overview and the most complete bibliography of his works to date.

Keywords: Andon Darakchiev, avifauna research, bird conservation, Bulgarian ornithology, ornithological bibliography, Plovdiv University

Fig. 1. Assoc. Prof. Dr. Andon Darakchiev (ca. 2010).

Andon Iliev Darakchiev (Fig. 1.) was born in 1934 in the village of Malki Tsalim (Blagoevgrad Province, SW Bulgaria). In 1956 he graduated from Sofia University "St. Kliment Ohridski" and all his scientific career passed in the field of ornithology.

The name of Associate Professor Dr. Andon Iliev Darakchiev is inextricably linked to university biology education in Plovdiv. He entered Plovdiv University in 1963 and retired there in 2001.

After the establishment of the Department of Zoology, he created its ornithological collection of total dry-mounted preparations of the most common birds in Bulgaria.

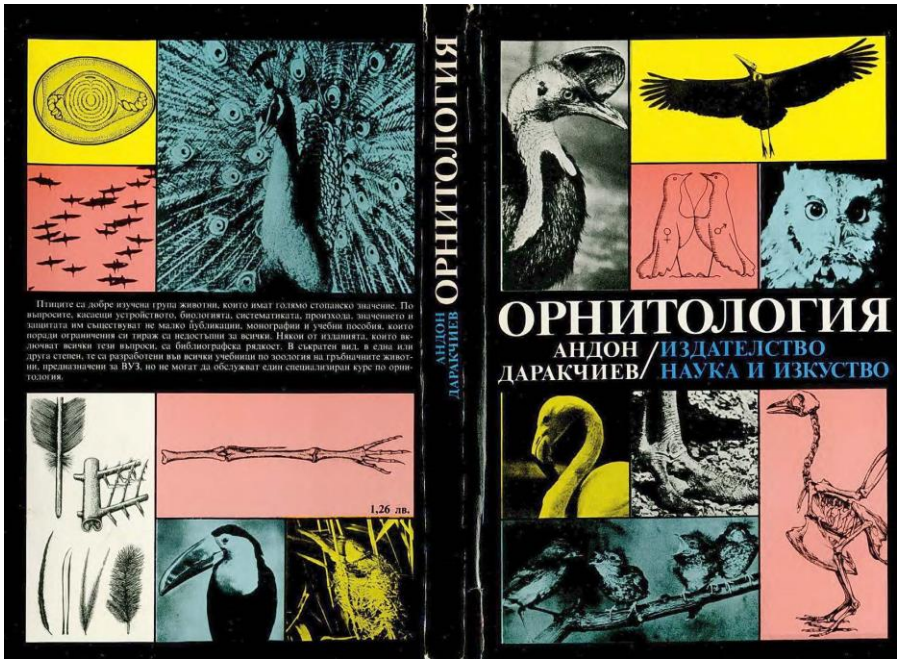

Fig. 2. Covers of the book "Ornithology" (Darakchiev, 1987).

A. Darakchiev has lectured on Vertebrate Zoology, Ornithology, Animal Behavior, Parkland Fauna. He is the author of university textbooks and study guides on ornithology (Figs 2, 3), and coauthor of textbooks for secondary schools. Assoc. Prof. A. Darakchiev was Deputy Dean of the Faculty of Chemistry and Biology of the university since 1979 to 1987.

In 1970 he obtained his PhD in the Faculty of Biology and since 1979 he is Associate Professor in that faculty. His comprehensive study (Darakchiev, 1970) on the avifauna of the Chernatitsa mountain Ridge in the Western Rhodopes still remains the most thorough and comprehensive study of this large and difficult-to-explore mountainous part of Bulgaria.

In 1993, Assoc. Prof. A. Darakchiev submitted his manuscript entitled: "Contribution to the abundance, density and reproductive biology of the nesting species of the Hirundinidae family in settlements" to the scientific council of the former Institute of Zoology – BAS for enrollment in doctoral studies for the degree of DSc ("Doctor of Biological Sciences") – a product of his many years of research, mainly in Southern Bulgaria. Unfortunately, during the discussion of this work in early 1994, he was unable to gather the necessary votes to disclose this procedure.

Assoc. Prof. A. Darakchiev publishes his scientific works in Bulgarian, German, and French. They have been published in scientific journals in Bulgaria, Germany, and France.

In the present bibliography scientific publications in Bulgarian are cited verbatim according to their summaries in a foreign language. No corrections have been made in the translation, even when there is a discrepancy. It is also important to note that the surname of Assoc. Prof. A. Darakchiev in his scientific publications is spelled in five different ways: Darakchiev, Daraktchiev, Darakčiev, Daraktschiev, and Daraktschiew. Close colleagues and friends called Andon by the nickname Anilda (Anildata). He probably didn't mind and wasn't offended that "Anilda" seemed feminine.


А. ДАРАКЧИЕВ

РЪКОВОДСТВО

ЗА

ПОЛЕВА РАБОТА ПО ОРНИТОЛОГИЯ —
ОПРЕДЕЛИТЕЛНИ ТАБЛИЦИ

ПЛОВДИВ, 1983

Fig. 3. Front cover of the book “Guide to fieldwork in ornitology - Identification tables” (Darakchiev, 1983).

In his short biographical article about Assoc. Prof. Andon Darakchiev Bechev (2018) mentions that the number of his published scientific papers is over 80. The present list includes for the first time the complete bibliographic data for almost all 105 scientific and popular science publications of the author. Although most of them were published in regional scientific editions (mainly in the departmental scientific journal "Travaux scientifiques, Université de Plovdiv "Paissi Hilendarski", Biologie"), they contain extremely rich information on various issues of the biology and distribution of birds in Bulgaria. Many of these studies have remained the only ones of their kind or the only ones for the respective regions of the country. Thus, they represent a valuable contribution to ornithological research in Bulgaria.

In addition to being a field scientist and researcher, Assoc. Prof. A. Darakchiev was a remarkable lecturer at the university. It seemed that his work with students absorbed the main part of his strength and attention. In 1979, he founded an Ornithology Circle at the Faculty of Biology, in which he attracted and ignited the interest in birds of over 40

students. Subsequently, they became his graduates and defended their diploma theses in the field of ornithology. Some of them are now prominent specialists and activists in the field of bird and nature conservation. According to Bechev (2018), one doctoral (PhD) and over 200 student diploma theses were successfully defended at the Plovdiv University "Paisiy Hilendarski" under his leadership. Among its graduates is the ornithologist Ventsislav Petkov - former director of the "Ecomuseum with Aquarium" in the city of Ruse and current director of "Plovdiv Zoo".

Assoc. Prof. Darakchiev's nature conservation activities are mainly expressed in the preparation of scientifically substantiated proposals for the declaration of six new protected natural territories, one of which is the managed nature reserve "Atanasovsko Ezero" near the city of Burgas – one of the most important places for birds in Bulgaria. In 1988 members of the Ornithology Circle founded the Green Balkans Federation - one of the most active and influential environmental organizations in the country at present.

Fig. 4. Front cover of the book "Manual of Ornithology" (Darakchiev, 1988).

In the prime of his life, Assoc. Prof. A. Darakchiev published, albeit a short one, the first "Ornithology" (Fig. 2.) in Bulgarian (Darakchiev, 1987). To this day, it remains the only publication of its kind in the country.

In addition to the books included in this list, in 1989 A. Darakchiev prepared and submitted for publication his popular science book "Where Our Birds Come From and Where They Go". Unfortunately, it remained unpublished. His guides to identifying Bulgarian birds (Darakchiev, 1983, 1988; Figs 3, 4), however, are still used by students and naturalists. At the Plovdiv University he was a valued and respected colleague and lecturer (Figs 5, 6). He was also valued, respected and modest to his fellow ornithologists throughout the country.

Fig. 5. Assoc Prof. Andon Darakchiev (crouching in the middle) with his colleagues from Plovdiv University, Plovdiv, 1986.

Bibliography of scientific and popular-science publications of Andon Darakchiev

As mentioned above, in the present bibliographic list of the works of Assoc. Prof. Andon Darakchiev, scientific publications that have summaries in a foreign language are presented with their titles from the summary. However, their translation is often inconsistent with the original Bulgarian titles.

1966

1. Darakchiev, A. 1966. Birds building incubators. *Priroda i znanie*, 1: 15-17. (in Bulgarian).
2. Darakchiev, A. 1966. Sanitaires of forests. *Eho*, 9/ 06.06.1966. (in Bulgarian).

1967

3. Beskov, V., Undshian, E., Simeonov, S. & Darakčiev, A. 1967. Neue angaben ober die verbreitung einiger amphibien und reptilien in Bulgarien. *Bulletin de l'Institut de zoologie et Musée, BAS*, 25, 1967, 5-10. (in Bulgarian, German summary).
4. Daraktschiev, A. 1967. Über die vermehrung der gebirgsstehe (*Motacilla cinerea* Tunstall) im Plovdiver Bezirk. *Travaux scientifiques, École Normale Supérieure Plovdiv – Bulgarie*. *Natura*, 5 (3): 139-145. (in Bulgarian, German summary).

Fig. 6. Assoc Prof. Andon Darakchiev, Stara Zagora, c. 2015.

1968

5. Angelov, P. & Darakchiev, A. 1968. On the food of *Motacilla cinerea* Tunstall and *Motacilla alba* L. *Travaux scientifiques, École Normale Supérieure Plovdiv – Bulgarie. Natura*, 6 (3): 147-157.
6. Daraktschiev, A. 1968. Sur certaines donneés de la biologie reproductrice de la mésange a longue queue *Aeglthalos caudats macedonicus*, Salvadori et Dresser. *Travaux scientifiques, École Normale Supérieure Plovdiv – Bulgarie. Natura*, 6 (3): 159-167. (in Bulgarian, French summary).
7. Darakchiev, A. 1968. Defenders of the green kingdom. *Eho*, 14/ 05.04.1968. (in Bulgarian).

1969

8. Darakchiev, A. 1969. Contribution sur le migrations saisonnieres des certains oiseaux dans le Rhodopes. *Travaux scientifiques, École Normale Supérieure Plovdiv – Bulgarie. Natura*, 7 (1): 193-198. (in Bulgarian, French summary).
9. Darakchiev, A. 1969. *A study of the ornithofauna in the Chernatica Mountain of the Rhodopes with some biological and ecological notes*. Higher Pedagogical Institute of Natural Sciences „Paissi Hilendarski" – Plovdiv. Department of Zoology. Plovdiv. Abstract of PhD thesis. 12 pp. (in Bulgarian).

1970

10. Daraktchiev, A. 1970. Le rouge-queue noir (*Phoenicurus ochruros* Gmelin) dans les Rhodopes Centrales. *Travaux scientifiques, École Normale Supérieure Plovdiv – Bulgarie. Natura*, 8 (1): 153-158. (in Bulgarian, French summary).

1971

11. Nankinov, D. & Daraktschiev, A. 1971. Die winterliche orinthofauna bei den quellen und staubecken des dorfes Trivodici, Raum von Plovdiv. *Travaux scientifiques, École Normale Supérieure Plovdiv – Bulgarie. Natura*, 6 (1): 129-132.
12. Darakchiev, A.1971. Sur la biologie de la mésange noire (*Parus ater* L.) dans les Rhodopes. *Travaux scientifiques, École Normale Supérieure Plovdiv – Bulgarie. Natura*, 9 (3), 155-159. (in Bulgarian, French summary).
13. Dontschew, S., Daraktschiew, A. 1971. Erganzungen zur Vogelwelt Thraziens. *Beiträge zur Vogelkunde*, 17 (2): 244-250.
14. Darakchiev, A. 1971. Contribution on the cultivation of birds in the Rhodopi Mountains. *Travaux scientifiques, École Normale Supérieure Plovdiv – Bulgarie. Natura*, 4 (1): 125-127. (in Bulgarian).
15. Nankinov, D. & Daraktschiev, A. 1971. The Winter Birdlife at the Springs and Ponds of the Village of Trivodici, Plovdiv Region. *Travaux scientifiques, École Normale Supérieure Plovdiv – Bulgarie. Natura*, 6 (1): 129-131. (in Bulgarian).

1972

16. Darakchiev, A. 1972. On the Seasonal Dynamics of Some Birds in the Rhodope Mountains. *Scientific Proceedings of the Bulgarian Institute of Physics and Technology -*

Plovdiv, 10 (2): 1957-1961. (in Bulgarian, English summary).
17. Darakchiev, A. & Germanov, A. 1972. On the Food of *Turdus pilaris* L. and *Turdus musicus* L. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski", 10 (1) Biologie*: 167-170. (in Bulgarian, English summary).
18. Darakchiev, A. & Nankinov, D. 1972. Influence du milieu geooraphique sur la reproduction de l' *Erithacus rubecula* L. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski", 5 (1) Biologie*: 127-131. (in Bulgarian, French summary).

1973

19. Nankinov, D. & Darakchiev, A. 1973. The reproduction of the song thrush (*Turdus ericetorum* Turton) depending on its horizontal and vertical distribution. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski", 11 (5) Biologie*: 521-531. (in Bulgarian, French summary).
20. Daraktchiev, A. & Nankinov, D. 1973. Particularites geographiques dans la biologie du troglodyte. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski", 11 (2) Biologie*: 149-155. (in Bulgarian, French summary).
21. Nankinov, D. & Darakchiev, A. 1973. Geographical variability in the seasonal life of the dunnock. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski", 13 (4) Biologie*: 11 (5): 167-173. (in Bulgarian, Russian summary).
22. Darakchiev, A. 1973. On the migration of some birds in the Rhodopes. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski", 11 (5) Biologie*: 509-517. (in Bulgarian, Russian summary).
23. Daraktchiev, A. & Germanov, A. 1973. Sur la nourriture de la *Saxicola torquta* (L.) dans les Rhodopes. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski", 6 (1) Biologie*: 151-153. (in Bulgarian, French summary).
24. Darakchiev, A. & Germanov, A. 1973. Sur la nourriture de *Turdus torquatus* L. et de *Turdus viscivorus* L. Dans le Rhodopes. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski", 11 (5) Biologie*: 189-198. (in Bulgarian, French summary).
25. Nankinov, D. & Darakchiev, A. 1973. On the food of the song thrush (*Turdus ericeturum* Turton). *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski", Biologie*: 11 (5): 177-186. (in Bulgarian, Russian summary).
26. Darakchiev, A. 1973. Geographical variability in the seasonal life of the grey-breasted wagtail. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski", Biologie* 11 (5): 167-173. (in Bulgarian).
27. Darakchiev, A. & Nankinov, D. 1973. Ecological-geographical sketch on migration and the reproductive cicle of the European white wagtail (*Motacilla alba alba* L.). *Bulletin of the Natural Science Museum, Plovdiv*, 2: 89-96. (in Bulgarian, English summary).
28. Darakchiev, A. 1973. Geographical features in the biology of the nuthatch. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski", Biologie* 11 (2): 149-155. (in Bulgarian).
29. Darakchiev, A. 1973. On the food of *Saxicola torquata* (L.) in the Rhodopes. *Travaux scientifiques, École Normale Supérieure Plovdiv – Bulgarie. Natura*, 4 (1): 153-157. (in Bulgarian).
30. Darakchiev, A. & Nankinov, D. 1973. Some observations on the biology of the subspecies of the yellowhammers. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 13 (4) Biologie: 11 (5): 534-544. (in Bulgarian, Russian summary).

1974

31. Daraktchiev, A. & Germanov, A. 1974. Über die nahrung des neuntoters in dem Rhodopi-gebirge. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski", Biologie*: 8 (1): 107-110.

1975

32. Darakchiev, A. 1975. Electrophoretic studies of serum proteins in birds. I. Separation of the protein complex in the carder (*Carduelis carduelis* L.) by disk electrophoresis on a polyacrylamide gel. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 13 (4): 205-211. (in Bulgarian).
33. Darakchiev, A. 1975. Comparative hematological studies in the domestic pigeon (*Columba livia* Gmelin) and the wild cuckoo (*Streptopelia decaocto* Friv.). *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 13 (5): 41-51. (in Bulgarian).
34. Darakchiev, A. 1975. Hematological studies in *Rana ridibunda*. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 13 (5): 33-40. (in Bulgarian).
35. Nankinov, D. & Darakchiev, A. 1975. On some comparative investigations on the European red-backed shrike (*Lanius cristatus collurio* L.). *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski", 13 (4) Biologie*: 13, 1975, 4, 213-219. (in Bulgarian, English summary).
36. Darakchiev, A. 1975. Sound signalization in birds and its biological significance. *Zashtita na prirodata*, 7-8. (in Bulgarian).
37. Darakchiev, A. & Nankinov, D. 1975. The mating flight of the forest tree-pipit (*Anthus trivialis trivialis* L.). *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 13 (4) Biologie: 11 (5): 221-225. (in Bulgarian, Russian summary).

1976

38. Darakchiev, A. 1976. Study of the karyotype of *Turdus ericetorum philomelus* Brehm. Number of chromosomes. *Collection of works of young scientists and students at PU "P. Hilendarski"*, 4: 179-185. (in Bulgarian).
39. Darakchiev, A. 1976. Comparative hematological characteristics of the erythrocytes of two of our representatives from the families Fringillidae and Sturnidae. *Collection of works of young scientists and students at PU "P. Hilendarski"*, 4: 205-209. (in Bulgarian).
40. Darakchiev, A. 1976. Comparative studies of erythrocytes and hemoglobin of the blood in our representatives of the genus *Carduelis*. *Collection of works of young scientists and students at PU "P. Hilendarski"*, 4: 211-221. (in Bulgarian).

1977

41. Darakchiev, A. 1977. Dynamics of the number and main feeding places of the sow crow in the region of the city of Plovdiv during the autumn-winter period. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 33 (6): 85-92. (in Bulgarian).

42. Darakchiev, A. 1977. Electrophoretic separation of the protein complex in the egg white and yolk in birds. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 15 (4): 45-54. (in Bulgarian).
43. Darakchiev, A. & Nankinov. D. 1977. On the *Bombxcilla garrulus* L. feeding problem. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 15 (4) Biologie: 55-60. (in Bulgarian, English summary).
44. Darakchiev, A. & Nankinov, D. 1977. Hirundinidae family swallows locations in the Rhodopes. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 15 (4) Biologie: 61-73. (in Bulgarian, English summary).
45. Nankinov, D. & Darakchiev, A. 1977. Ornitofauna structure of the Atanasov Lake - May, 1978. *Travaux scientifiques, Université de Plovdiv*, 15 (4) Biologie: 75-96. (in Bulgarian, English summary).
46. Nankinov, D. & Darakchiev, A. 1977. The winter wagtail (*Anass craeca* L.) a breeding bird in Bulgaria. *Travaux scientifiques, Université de Plovdiv*, 15 (4) Biologie: 97-103. (in Bulgarian, English summary).

1978

47. Nankinov, D. & Darakchiev, A. 1978. The population of the avosette (*Recurvirostra avosetta* L.) in Bulgaria - localization, abundance and breeding biology. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 16 (4) Biologie: 165-186. (in Bulgarian, English summary).
48. Darakchiev, A. & Nankinov, D. 1978. Locations and nest biology of the Black-winged stilt (*Himantopus himahtopus* L.) in Bulgaria. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 16 (4) Biologie: 187-197. (in Bulgarian, English summary).
49. Darakchiev, A. Nankinov, D. 1978. Shoveler (*Anas clypeata* L.) as a nestingbird in the Atanasov Lake – Burgas District. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 16 (4) Biologie: 199-203. (in Bulgarian, English summary).

1979

50. Darakchiev, A. & Nankinov, D. 1979. On the biology of the Rentish plover (*Charadius alexandrinus* L.) in Bulgaria. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski",* 17 (4) Biologie: 111-123. (in Bulgarian, English summary).
51. Darakchiev, A. & Nankinov, D. 1979. Oomorphological investigations of three bird specimens of plovers (*Recurvirostra avosetta* L., *Charadrius alexandrinus* L. and *Himantopus himantopus* L.). *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 17 (4) Biologie: 125-138. (in Bulgarian, English summary).
52. Nankinov, D. & Darakchiev, A. 1979. Relationships and areal pulsation of the range of the barred warbler (*Sylvia nisoria* Bechctein) and the rebacked shrike (*Lanius collurio* L.). *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 17 (4) Biologie: 139-148. (in Bulgarian).
53. Nankinov, D. & Darakchiev, A. 1979. In protection of the Atanasovsko Lake (Materials from the one-year studies of the ornithological station). *Ornitologicheski informatsionen byuletin, BAS*, 5: 19-23. (in Bulgarian).

1980

54. Nankinov, D. & Darakchiev, A. 1980. Pintail (*Anas acuta* L.) in Bulgaria and some notes on its nest area & 121-129. (in Bulgarian, English summary). *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 18 (4) Biologie: 18 (4): 121-129.
55. Nankinov, D. & Darakchiev, A. 1980. Gull-billed tern (*Gelochelidon nilotica* Gmelin) spreading and ecology in Bulgaria. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 13 (4) Biologie: 18 (4): 103-120. (in Bulgarian, English summary).
56. Nankinov, D. & Darakchiev, A. 1980. Investigations and biology of Little tern (*Sterna albifrons* Pall.) in Bulgaria. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski", 13 (4) Biologie*: 18 (4): 131-152. (in Bulgarian, English summary).
57. Darakchiev, A. 1980. Timing and intensity of singing of some birds in the Plovdiv region and the central part of the Rhodopes. *Ornitologicheski informatsionen byuletin, BAS*, 7-8, 1980, 15-23. (in Bulgarian).

1981

58. Daraktchiev, A. 1981. On the food of the birds of the Chernatitsa section of the Rhodopes. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski", 19 (4) Biologie*: 18 (4): 173-207. (in Bulgarian, English summary).
59. Nankinov, D. & Darakchiev, A. 1981. The flamingo (*Phoenicopterus roseus* Pall.) in Bulgaria. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski",* 19 (4) Biologie: 209-211. (in Bulgarian, English sumary).
60. Nankinov, D. Darakchiev, A. 1981. Little egret colony in the Dobry Dol storage lake (Veliko-Turnovo District). *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 13 (4) Biologie: 19 (4): 213-224. (in Bulgarian, English summary).

1982

61. Nankinov, D. & Darakchiev, A. 1982. Little bunting (*Emberiza pusilla* Pallas 1776) has been encountered in Bulgaria. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski", 20 (4) Biologie*: 233-237. (in Bulgarian, English summary).
62. Darakchiev, A. Nankinov, D. & Mavrodiev, A. 1982. Investigation os the rest biology of Magpie (*Pica pica* (L.)). *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 20 (4) Biologie: 171-199. (in Bulgarian, English summary).
63. Darakchiev, A., Nankinov, S. & Marinov, H. 1982. Nest biology and behavior of the Coot (*Fulica atra* L.). *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 20 (4) Biologie: 201-232. (in Bulgarian, English summary).

1983

64. [Darakchiev, A.] 1983. "Ornis'82". *Priroda i znanie*, 4: 37. (in Bulgarian).
65. Darakchiev, A. Nankinov, D. Marinov, Hr. 1983. Investigations on the biology of Moorhen (*Gallinula chloropus* L.). *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 20 (1) Biologie: 69-89. (in Bulgarian, English summary).
66. Darakchiev, A. 1983. On the number of swallow in habiting some settlements situated

in the south part of Sredna Gora properly. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 21 (4) Biologie: 45-55. (in Bulgarian, English summary).

67. Darakchiev, A., Georgieva, I., Delchev, K. 1983. A contribution to the distribution study of some rare birds the District of Kurdjuli. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 21 (4) Biologie: 57-68. (in Bulgarian, English summary).
68. Darakchiev, A., Nankinov, D., & Nikolov, Hr. 1983. Fund einer Ficht ammer (*Emberiza leucocephala* Gmelin) in Bulgaria (Aves, Passeriformes, Emberizidae). *Faunistische Abhandlungen, Staatliches Museum für Tierkunde Dresden*, 2: 194.
69. Nankinov, D. & Darakchiev, A. 1983. The First Finding of the Rustic Bunting (*Emberiza rustica* Pallas) in Bulgaria. *Acta zoologica bulgarica*, 23: 54-56. (in Bulgarian, English summary).
70. Nankinov, D. & Daraktchiev, A. 1983. Le geoland marin (*Larus marinus* L.) en Bulgarie. *Alauda*, 51 (4): 313 p.
71. Darakchiev, A. 1983. *Guide to fieldwork in ornitology - Identification tables*. Plovdiv University "Paisiy Hilendarski". Plovdiv, 194 p. (in Bulgarian).
72. Darakchiev, A. 1983. *Ornithology. Textbook for students of the "Paisiy Hilendarski" University*. Plovdiv University "Paisiy Hilendarski". Plovdiv. (in Bulgarian)

1984

73. Nankinov, D. & Darakchiev, A. 1984. The Sand Tern (*Thalasseus sandvicensis* Lath.) is again nesting again on the Bulgarian Black Sea coast. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 13 (4) Biologie: 22 (1): 143-147. (in Bulgarian, English summary).
74. Nankinov, D. & Darakchiev, A. 1984. Black-winged kite (*Elanus caeruleus* Desfontaines) in Bulgaria. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 22 (1) Biologie: 149-152. (in Bulgarian, English summary).
75. Darakchiev, A. & Todorova, S. 1984. Swallow population in the villages of Stejerevo and Bojourluk, the Pleven District. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 22 (1) Biologie: 153-177. (in Bulgarian, English summary).
76. Darakchiev, A. & Hristova Zl. 1984. Swallow population in the villages of Kourtovo Konare, Novo Selo and Trivodici, Plovdiv District. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski",* 22 (1) Biologie: 189-211. (in Bulgarian, English summary).
77. Darakchiev, A. 1984. Territorial distribution of the oystercatcher (*Haematopus ostralegus* L.) in Southern Bulgaria. Notes on its reproduction biology. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 13 (4) Biologie: 22 (2): 195-202. (in Bulgarian, English summary).
78. Darakchiev, A. Nankinov, D. 1984. Oomorphological studies of three species of our gallinaceous birds. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 22 (2) Biologie: 22 (2): 183-193. (in Bulgarian, English summary).
79. Darakchiev, A. & Nickolov, H. 1984. A contribution to the distribution of black stork (*Ciconia nigra* L.) in Plovdiv District. *Travaux scientifiques, Université de Plovdiv„Paissi Hilendarski",* 13 (4) Biologie: 22 (2): 203-208. (in Bulgarian, English summary).
80. Darakchiev, A., Nankinov, D. & Hadjiev, St. 1984. Invesigation on the number and nest biology of Little bittern (*Ixobrychus minuius* L.) in Plovdiv District. *Travaux*

scientifiques, Université de Plovdiv „Paissi Hilendarski", 22 (1) Biologie: 180-188. (in Bulgarian, English summary).

1985

81. Darakchiev, A. 1985. Territorial distribution of the common crow (*Corvus frugilegus* L.) in the Veliko Tarnovo district. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski*", 23 (1): 103-111. (in Bulgarian).
82. Darakchiev, A., Nankinov, D. Penchev, V. 1985. Territorial distribution of the hoopoe (*Upupa epops* L.) in Bulgaria. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski",* 23 (1) Biologie: 97-101. (in Bulgarian, English summary).

1986

83. Darakchiev, A. 1986. Structure of the heron colony near the village of Hristo Milevo, Plovdiv region. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski*", 24 (1): 197-200. (in Bulgarian).
84. Darakchiev, A. 1986. Territorial distribution and numbers of the bee-eater (*Merops apiaster* L.) in the Plovdiv District. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski",* 24 (1) Biologie: 192-196. (in Bulgarian, English summary).
85. Darakchiev, A. 1986. Territorial distribution of some plovers along the middle reaches of the Struma River. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski*", 24 (1): 201-206. (in Bulgarian).
86. Darakchiev, A., Nankinov, D. & Stoyanova, I. 1986. Studies on the number of swallows in the town of Gabrovo. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski",* 24 (1) Biologie: 181-190. (in Bulgarian, English summary).

1987

87. Angelov, P. Tsvetkov, T., Darakchiev, A. & Abadzhieva S. 1987. *Biology. Textbook for the 7th grade of the unified secondary polytechnic schools*. State Publishing House. Sofia, "Narodna Prosveta", 240 p. (in Bulgarian).
88. Darakchiev, A. 1987. Contribution to the demography of the Eurasian collared dove (*Streptopelia decaocto* Friv.) in Plovdiv. *Modern achievements of Bulgarian zoology*. Sofia, BAS. 171-173. (in Bulgarian).
89. Darakchiev, A.1987. On the leukocyte formula of our representatives of the families Colubridae, Viperidae, Testudinidae of the class Reptilia. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski*", 25 (6): 251-257. (in Bulgarian).
90. Darakchiev, A., Zaimova, H. & Tchouvitev, D. 1987. On the nest ornithofauna of the town Smoljan. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski*", 25 (6) Biologie: 93-100. (in Bulgarian, English summary).
91. Darakchiev, A. 1987. *Ornithology*. State publishing House "Nauka i izkustvo, Sofia. 264 p.

1988

92. Darakchiev, A. 1988. *Manual of ornithology. Identification tables*. State publishing House "Nauka i izkustvo, Sofia. 310 p. (in Bulgarian).

1989

93. Daratschiev, A., Brankova, E., Seisov, G., Nedjalkov, A., Deltschev, K., Kundev, G., Babatscheva, T., Komunisova, S., Marinovar, K. & Stojtschev, K. 1989. Über die Schwalbenfauna der dorfer von Sudbulgarien. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski",* 27 (6) Biologie: 185-197. (in Bulgarian, German summary).
94. Darakchiev, A. 1989. Annual dynamics of the number of swallows nesting in the settlements of the Panagyurishte settlement system. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 27 (6): 211-216. (in Bulgarian).
95. Daraktschiev, A. & Tschafudova, M. 1989. Über die turkentauben-ansiedlungen in Bulgarien. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 27 (6) Biologie: 199-209. (in Bulgarian, German summary).
96. Darakchiev, A. Distribution, abundance, density, use and economic importance of some resource species of wild animals in the former Smolyan district. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 2 (6): 189-201. (in Bulgarian).
97. Daraktschiev, A. & Nawastanova, A. 1989. Jahresdynamik der aezahl von den in Panagjuriste und in den dörfern: seiner umgebung nistenden schwalben. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski",* 27 (6) Biologie: 211-216. (in Bulgarian, German summary).

1990

98. Darakchiev, A. 1990. On the density and nesting biology of the cuckoo (*Streptopelia decaocto* Friv.) in some of our settlements. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 28 (6): 153-158. (in Bulgarian).
99. Daraktschiev, A., Staikov, St., Vasilev, V. 1990. Nestfundstaetten der Saatkraehe (*Corvus frugilegus* L.) in Nordbulgarien. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski",* 28 (6) Biologie: 171-188. (in Bulgarian, German summary).
100. Daraktschiev, A., Stojanova, I., Seisov, G., Brankova, E., Smiljanova, M., Stoeva, N., Dimitrova, R., Gintscheva, S., Dilova, S., Jetscheva, P., Kostadinova, K., Djilgerova & A., Kirtcheva, A. 1990. Territoriale verteilung und kolonienbildung von mehl und rauchschwalben in unseren stadtische siedlungen. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 28 (6) Biologie: 139-151. (in Bulgarian, German summary).
101. Darakchiev, A. On the nesting biology of swallows nesting in populated areas in our country. *Travaux scientifiques, Université de Plovdiv „Paissi Hilendarski"*, 28 (6): 159-169. (in Bulgarian).

1996

102. Darakchiev, A. 1996. *Biology. Textbook for the 7th grade of the unified secondary general education school.* State Publishing House “Narodna Prosveta”, 1996, 151 p. (in Bulgarian).

2009

103. Ishev, V., Nikolova, M., Darakchiev, A., Panayotova, M., Mihova-Nankova, I. 2009.

Teacher's Book. Biology, Grade 8. "Prosveta", Sofia, 48 p. ISBN: 9789540123547 (in Bulgarian).

104. Ishev, V., Nikolova, M., Darakchiev, A., 2009. *Biology, Grade 8.* "Prosveta", Sofia, 240 p. ISBN: 978-954-01-2292 (in Bulgarian).

2024

105. Undjian, E., Nankinov, D., Darakchiev, A., Petrov, T., Apostolov, A., Boev, Z. 2024. Avifauna of the Sandanski-Petrich Valley (Blagoevgrad Region, SW Bulgaria) after data from the Rupite Ornirhological Station (1976-1978). *Bulletin of the Natural History Museum, Plovdiv*, 9: 1-38.

Acknowledgements

The author thanks Borislav Borisov (Regional Inspectorate for Environment and Water – Haskovo) and Lyubomir Profirov (Ecological Consultant & Wildlife Tourguide) for providing some of the photos.

References

Bechev, D. 2018. Andon Darakchiev (1934-2018) - In Memoriam. *Bulletin of the Natural History Museum – Plovdiv*, 3: 47. (in Bulgarian).

Darakchiev, A. 1969. *A study of the ornithofauna in the Chernatica Mountain of the Rhodopes with some biological and ecological notes*. Higher Pedagogical Institute of Natural Sciences „Paissi Hilendarski" – Plovdiv. Department of Zoology. Plovdiv. Abstract of PhD thesis. 12 pp. (in Bulgarian).

Darakchiev, A. 1983. *Guide to fieldwork in ornitology - identification tables*. Plovdiv University "Paisiy Hilendarski". Plovdiv, 194 p.

Darakchiev, A. 1987. *Ornithology*. State publishing House "Nauka i izkustvo, Sofia. 264 p.

Darakchiev, A. 1988. *Manual of ornithology - Identification tables*. State publishing House "Nauka i izkustvo, Sofia. 310 p. (in Bulgarian).

Received: 22.10.2025
Accepted: 16.12.2025
Published: 17.12.2025

Bulletin of the Natural History Museum - Plovdiv
Bull. Nat. Hist. Mus. Plovdiv, 2025, vol. 10: 61-66
https://doi.org/10.65437/bnhmp.10.4.6

Miscellaneous

The importance of political, economic, and cultural factors in explaining fundamental ornithological problems (A case study from Bulgaria)
Part I. The range expansion of the Eurasian collared dove (Streptopelia decaocto (Frivaldszky, 1838))

Wolfgang Baumgart[1], Zlatozar N. Boev[2]*

1 - 13435 Berlin, Guhllener Zeile 9A, Germany
wolfgang.baumgart1@freene.de
2 - National Museum of Natural History, Bulgarian Academy of Sciences,
1, Blvd. Tsar Osvoboditel, 1000 Sofia, Bulgaria
*E-mail: boev@nmnhs.com, zlatozarboev@gmail.com
https://orcid.org/0000-0002-8049-7509

Abstract. The process of the range expansion of *Streptopelia decaocto* in Bulgaria, the Balkans, Central and Western Europe and North America is explained by the cultural-religious and economic-political characteristics of the population. The main importance of the place of the Eurasian collared dove in the religious world of Muslims and the technology of collecting, storing and transporting the grain harvest are emphasized. It is assumed that in Europe and North America the process of the spread of the species was subject to the similar regularities.

Keywords: Balkan avifauna, Collared doves, Human impact on bird distribution, Recent birds of Bulgaria, Species range extension

Introduction

Political, economic, and cultural factors, which are almost exclusively anthropogenically determined, are usually given little or no consideration when solving relevant ornithological problems. As a rule, efforts are made to resort to "modern methods" and employ statistical or molecular procedures. They are often ignored due to a lack of prior knowledge.

During the professional development of W.B., he was involved in a variety of fields and was thus able to acquire a wealth of knowledge that is unusual even for a veterinarian. Of particular importance were a previous apprenticeship in the pharmaceutical industry, the study of veterinary medicine in Bulgaria (1960-1965), later activities in the administration and inspection of veterinary medicine, development aid assignments in other cultural circles (Mongolia, Syria), and extensive travel, especially after the fall of communism in 1990. In addition to the primary focus on birds of prey, these activities also involved gathering insights into these problem areas, some of which were not always comprehensible to conventionally minded ornithologists.

This publication breaks new ground, not only for Bulgaria, which inspired W.B. to

collaborate. Bulgaria has experienced several major upheavals in these areas since the end of the 19th century. This not only provides the key to explaining the expansion of the Eurasian collared dove (*Streptopelia decaocto* (Frivaldszky, 1838; Fig. 1.), which was first described based on a type specimen from Plovdiv (Bulgaria). This is the only species of the modern World's avifauna, described from that country (Boev, 2022). However, three subspecies have also been described from Bulgaria, which are today considered invalid: *Phasianus colchicus europaeus* Hachisuka, 1937, *Picus canus caesaris* Steinbacher, 1938 and *Prunella modularis meinertzhageni* Harrison & Patev, 1937 (Mlíkovský & Boev, 2025).

The Eurasian collared dove's expansion from Bulgaria to Central Europe before WW2

The Eurasian collared dove came to Bulgaria with the Ottoman conquest and annexation of large parts of the Balkans.

According to sources found by Boev (1963), as early as the mid-16th century, the species was widespread on some of the Greek islands. According to other sources, by that time it had already been brought to Europe by Dutch sailors from Central Asia. By that time, it had already come under the protection of the Turks in the Ottoman Empire.

Due to the Muslim sympathy for doves, Muhammad, on his flight from Mecca to Medina during the Hijra in 633, hid in a cave at the entrance to which, according to tradition, Allah placed a nesting dove and cobwebs, which deterred his pursuers from searching it. Thus, the Collared Dove was tolerated and protected wherever it settled as part of the "garden ornithological fauna". Like the Laughing Dove (*Spilopelia senegalensis* (Linnaeus, 1766)), it was part of harem culture and, for its food, was highly dependent on the feeding of the ethnic Turkish population, which Boev (1963) describes in further detail.

Fig. 1. Eurasian collared dove (*Streptopelia decaocto*), Lovech (CN Bulgaria), 05.04.2016. Photo: Z. Boev

With the gradual liberation of the Balkans from Turkish rule, the collared dove also disappeared, as feeding ceased after the departure of large parts of the Turkish population. In Bulgaria, this occurred in 1878. Its presence in other states, such as North Macedonia, which only achieved independence in 1912, remained undiminished probably because it did not achiueved independence. For a good two decades, it had apparently largely disappeared from Bulgaria (Kasparek, 1996). Reiser (1894) encountered it only in Stara Zagora on his Balkan travels between 1890 and 1893, but retrospectively noted (Reiser, 1939) that it reappeared in many places around 1907. Floericke (1918), on the other hand, does not mention it at all.

More historical data are provided by Boev (1963): *S. decaocto* nested in vicinity of Sofia (1890), in Stara Zagora (1893), Ruse and Vidin along Danube river (about 1899), settlements in Dobrudzha (about 1926) and Varna (1943).

Subfossil finds of *S. decaocto*, proving its subrecent distribution, are extremely scarce. Only four non-anthropogenic localities are known, all with inaccurate dating (Late Holocene) and located in Northeastern Bulgaria (Boev, 2019).

The comeback of the collared dove is, as already explained (Baumgart, 2000; 2001; Fig. 2.), probably primarily a result of the developments that began after the country's liberation. A land and tax reform, which simultaneously marked the transition from the feudal Ottoman agrarian society to an early capitalist industrial society, led to significant increases in yields. The large land holdings of Turkish beys who had left Bulgaria were distributed among local village communities and peasants. The tax reform consisted of a shift from the previously often arbitrarily determined tithe to a land tax. The levies remained constant in relation to land ownership; whatever was harvested above this amount remained available to the peasants for their own use. This created significant incentives for increased yields. The expansion of the transport network facilitated trade in surplus agricultural products, especially grain. The first Bulgarian railway line between Ruse and Varna had already been put into operation in 1866. Since the isolation of the former Ottoman territories from Europe was lifted, trade routes to Central Europe were open, which primarily benefited Austria-Hungary, which soon established bank branches in many places in the Balkans.

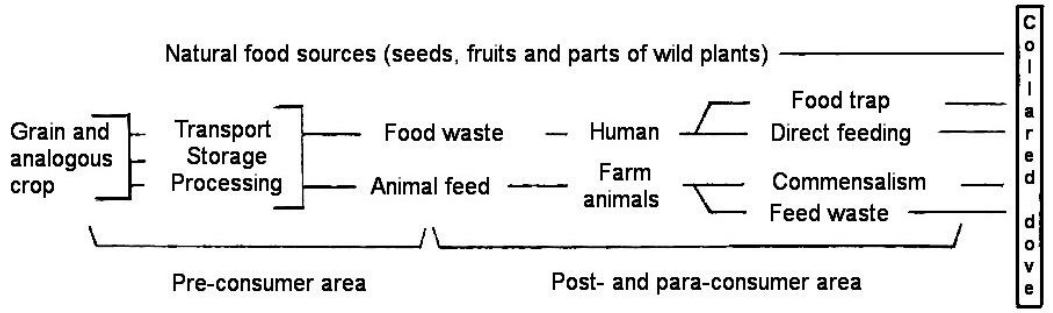

Fig. 2. Scheme of the Human - Eurasian collared dove food interactions: From the Eurasian collared dove to usable resources for food (after Baumgart, 2000)

Grain storage facilities and transshipment points were established along the transport routes, providing the Eurasian collared dove with a rich food supply along the railway lines. This is also where the collared dove's repeatedly postulated niche shift took place, although it has never been fully identified. Previously dependent on grain and similar crops from the post-consumer and para-consumer sectors in the form of human-derived food waste and direct

feeding, as well as feed waste and commensalism in the livestock sector, the collared dove now derived its livelihood primarily from the pre-consumer sector, which included the transport, storage, and processing of grain.

The distribution of the Eurasian collared dove in Europe after WW2

In preparation for World War II, the integration of the Balkans into Hitler's Germany was promoted to ensure the supply of food to the population in the event of war, a supply that had collapsed during World War I. In 1910, only 12% of the already low exports went to Germany, compared to 65.5% in 1939. Many seemingly insignificant factors were taken into account. Since soldiers who lack tobacco become unmotivated, Adolf Hitler (1889-1945) ordered the return of Southern Dobrudzha (7,412 km^2), which had been lost to Romania in the Second Balkan War. There was now room here for grain cultivation, while the freed-up areas in the interior of Bulgaria (southern regions of the country) could be used for tobacco cultivation. All this included the expansion of transport links from the Balkans to Central Europe and paved the way for the collared dove to advance northwestward into the local economic and cultural area.

It was first sighted in Vienna in 1943, and in the 1950s, it spread explosively across Germany and neighboring countries, as documented in detail by Glutz & Bauer (1980). The species entered England in 1952, and Scandinavia and the Iberian Peninsula in 1970 (Lever, 2005). Populations declined again in the late 1960s and 1970s, giving rise to a variety of speculations. In our experience (W.B.), however, the main reason lies in the low-loss transition to containerized transport of grain and other similar food and feed products. We were personally involved in this to a certain extent, because in 1972, as a member of the Berlin State Veterinary Medical Examination Institute, W.B. responsible for drafting hygiene regulations for the containerized transport of animal feed products, which included specifications for declaration, sampling, container cleaning, and other procedures.

The previously common, wasteful open shoveling or reloading using blowers was thus eliminated, not only at railway stations, in storage facilities, or production sites. It deprived the collared dove of its food source in many places. However, it persisted in reduced numbers in the post- and para-consumer areas and became dependent again on human-derived food waste and direct feeding, as well as on feed waste and commensalism in the livestock sector. The species persisted primarily in villages where private chicken farming was still practiced. However, since this now mostly takes place in large, isolated facilities, the Eurasian collared dove's livelihood is significantly restricted. The natural food supply available in the environment is apparently insufficient. However, further developments of this flagship species of anthropogenic ecology cannot be ruled out.

Distribution of Eurasian collared dove in North America

In North America, it was introduced to the Bahamas (1970) and reached eastern Florida (1974), from where its rapid spread throughout the Midwestern United States began in the 1990s (Lever, 2005). In Texas and North Carolina *S. decaocto* entered in the early 1990s. It soon reached the Pacific coast and Canada. In the densely forested eastern United States, it is rare or largely absent (Alderfer, 2006).

Due to its explosive spread in some parts of the world, the species is recognized as invasive (Downs & Hart, 2020). In the last decade, it has been recorded apart from the USA and Canada, but also in Mexico, reaching as far south as Central America and even the

northern part of South America (Downs & Hart, 2020).

The maintenance of the northwestward dispersal direction already recorded in Europe could be considered evidence of corresponding genetic fixation (Kasparek, 1996). However, as Fujisaki *et al.* (2010) found, it also follows human-made environmental structures such as transport routes and agricultural land, as well as general geographical trajectories such as coastlines or thermal cliffs.

Conclusions

The importance of political, economic and cultural factors/developments in solving fundamental ornithological problems (one of which is the distribution of the Eurasian collared dove) has so far been unjustifiably underestimated. In this case, this is proven for Bulgaria.

Over the past 150 years, Bulgaria has undergone a variety of political, economic, and cultural upheavals that have had a direct or indirect impact on bird life, offering surprising new solutions to the problems associated with the species mentioned here.

The Eurasian collared dove came to the Balkans with the Ottomans as part of harem culture, earning its keep through direct feeding and food and feed waste in the protected human environment. With the collapse of the Ottoman Empire and the withdrawal of the Turks from Bulgaria (after 1878), the collared dove lost these food sources in the post- and para-consumer sector and disappeared in most regions of the country, where the natural food sources are apparently not sufficient to meet its needs.

Early capitalist development at the turn of the 20th century, with increases in agricultural yields and the expansion of transport routes, now offered it sources of sustenance in the pre-consumer sector (storage, transport, and processing of cereals). On its way to Central Europe, where it arrived in the 1940s, it followed the supply routes expanded by Hitler's Germany in preparation for World War II. The decline that began in the 1960s occurred in parallel with the introduction of low-loss grain transport (containers), which again left it with mainly sources of sustenance in the post- and paraconsumption sectors. When it spread to North America from Florida in 1970, it also followed mainly man-made environmental structures and has reached the Atlantic coast of Canada.

This analysis demonstrates how political, economic, and cultural developments in the Anthropocene are becoming increasingly significant for bird life, and how the framework for scientific research approaches needs to be significantly expanded from this point of view. Bulgaria offers a number of good examples and promising approaches in this regard.

Note

The present manuscript was composed by W.B. in German. Its translation into English, some additions, and its layout were made by Z.B.

References

Alderfer J. 2006. *Field Guide to Birds of Arizona and New Mexico. Field Guide to Birds*. National Geographic. ISBN: 9780792253129. 200 p.

Baumgart W. 2000. Die Ausbreitung der Türkentaube (*Streptopelia decaocto*) als Folge politischer und wirtschaftlicher Entwicklungen auf dem postosmanischen Balkan – Retrospektive und Wertungen. *Berliner ornithologische Berichte*, 10: 3–34.

Baumgart W. 2001. Betrachtungen zur Türkentauben-Frage (*Streptopelia decaocto*). *Mitteilungen des Vereins Sächsischer Ornithologen*, 8: 671-682.

Boev N. 1963. Materiaux sur l' de l'habitat et la biologie de la „Tourterelle turque" (*Streptopelia decaocto* Frivaldszkyj en Bulgarie. *Bulletin de l'Institut de zoologie et Musée*, BAS, 13: 5-32. (in Bulgarian, French summary)

Boev Z. 2019. The Eurasian Collared Dove (*Streptopelia decaocto* Frivaldszky, 1838) – a subrecent invasive species of the avifauna of Bulgaria (subfossil records). *ZooNotes*, 141: 1-3.

Boev Z. 2022. History of the Bulgarian ornithology (A review of the research fields and achievements for 277 years with complete bibliography). *Bulletin of the Natural History Museum, Plovdiv*, Supplement 3: 1-55.

Downs, C. T. & Hart, L. A., eds. 2020. Invasive Birds: Global Trends and Impacts. 1st edn. Wallingford, UK: CAB International. ISBN 978-1-789242-06-5. 384 pp.

Floericke K. 1918. *Forscherfahrt in Feindesland*. Stuttgart. Kosmos, Gesellschaft der Naturfreunde Geschaftsstelle: Franckh'sche Verlagshandlung. Stuttgarter Vereins-Buchdruckerei, 128 p.

Fujisaki I., Pearlstine, E. V., Mazzotti, F. J. 2010. The rapid spread of invasive Eurasian Collared Doves *Streptopelia decaocto* in the continental USA follows human-altered habitats. *Ibis*, 152 (3): 622-632.

Glutz von Blotzheim U. & K. Bauer 1980. *Handbuch der Vögel Mitteleuropas*. *Band 9. Columbiformes-Piciformes*. Frankfurt am Main, Akademische Verlagsgesellschaft, 1148 p. ISBN: 3400004529

Kasparek M. 1996. Dismigration und Brutarealexpansion der Türkentaube *Streptopelia decaocto. Journal für Ornithologie*, 137 (1): 1-33.

Lever C. 2005. Naturalised Birds of the World. T & A D Poyser. London, 352 p.

Mlíkovský J. & Boev Z. N. 2025. Type Specimens of Recent Birds in the National Museum of Natural History, Sofia, Bulgaria. *Acta zoologica bulgarica*, 77.

Reiser O. 1894. *Materialien zu einer Ornis Balcanica. II. Bulgarien (einschliesslich Ost-Rumeliens und der Dobrudscha)*. Bosnisch-Hercegovinischen Landesmuseum in Sarajevo. Carl Gerold's Sohn, Wien, 204 p.

Reiser, O. 1939. *Materialien zu einer Ornis Balcanica. I Bosnien und Herzegovina*. Bosnisch-Hercegovinischen Landesmuseum in Sarajevo. Wien. pp. 662-688.

Received: 07.09.2025
Accepted: 23.12.2025
Published: 26.12.2025

Bulletin of the Natural History Museum - Plovdiv
Bull. Nat. Hist. Mus. Plovdiv, 2025, vol. 10: 67-83
https://doi.org/10.65437/bnhmp.10.4.7

Miscellaneous

The importance of political, economic, and cultural factors in explaining fundamental ornithological problems (A case study from Bulgaria) Part II. The Old World vultures (Gypaetinae Vieillot, 1816, Aegypiinae Sclater, W. L., 1924 - Accipitriformes Vieillot, 1816)

Wolfgang Baumgart[1], Zlatozar N. Boev[2]*

1 - 13435 Berlin, Guhllener Zeile 9A, Germany
wolfgang.baumgart1@freene.de
2 - National Museum of Natural History, Bulgarian Academy of Sciences,
1, Blvd. Tsar Osvoboditel, 1000 Sofia, Bulgaria
*E-mail: boev@nmnhs.com, zlatozarboev@gmail.com
https://orcid.org/0000-0002-8049-7509

Abstract. The importance of political, economic and cultural factors/developments in explaining fundamental ornithological problems, one of which is the existence of vultures, is analyzed, with a special emphasis on Bulgaria. Over the past 150 years, Bulgaria has undergone a variety of political, economic, and cultural upheavals that have had a direct or indirect impact on birdlife, offering surprising new solutions to the problems associated with the vulture species. The religious characteristics of the population, the organization of veterinary services, changes in animal husbandry, the distribution and extermination of wolves as important factors for the existence of vultures in Bulgaria have been analyzed along with electrocution mortality, poisonings, and mortality during migration.

Keywords: Balkan avifauna, European vultures, Human impact on bird distribution, Recent birds of Bulgaria, Species range decline

Introduction

Over the past few millennia, the vultures' diet has gradually shifted from free-roaming wild animals to farm animals, whose husbandry and care have been subject to increasingly newly defined regulations and even legislative measures, reflecting fundamental social changes, largely abandoning previous practices (Fischer, 1963). Trends such as the transition to indoor husbandry, intensified veterinary prophylaxis to reduce animal losses, and the commercial utilization of carcasses and animal by-products, among others, have gradually reduced the diet of vultures in many countries, including Bulgaria, to a degree that, along with poisoning of predators (wolves), has led to the extinction of their populations. The placement of non-selective poison baits to poison wolves and foxes had a very strong impact on the number of wolves in the

country. This can be successfully counteracted through broad-based management with systematic supplementary feeding. However, due to its ecological positioning as a processor of smaller prey, this is more difficult for the Egyptian vulture (*Neophron percnopterus* (Linnaeus, 1758)) than for the three major species - cinereous vulture (*Aegypius monachus* (Linnaeus, 1766)), Eurasian griffon vulture (*Gyps fulvus*) (Hablizl, 1783), and bearded vulture (*Gypaetus barbatus* (Linnaeus, 1758)). It should be added here that the Egyptian vulture is a migratory species and spends half of its life outside Bulgaria. Therefore, it faces unfavorable factors along its migration route and in its wintering areas that we cannot influence (Fig. 1.).

The purpose of this summary is to present the impact of certain socio-cultural circumstances on the status of vulture populations in Bulgaria without delving into the analysis of quantitative data on the impact of specific direct negative factors, which have so far been the subject of numerous and diverse specialized studies.

Vultures and social order

In Europe, Old World vultures (Gypaetinae Vieillot, 1816, Aegypiinae Sclater, W. L., 1924: Accipitridae Vieillot, 1816 - Accipitriformes Vieillot, 1816) are highly dependent on livestock raised outdoors (pasture cattle breeding in the mountains) for their food, the keeping and utilization of which is subject to diverse legal regulations by the state. The declining population of vultures in southern Europe, including Bulgaria, where all four Palearctic species were once widespread in their typical eco-functional positions (Baumgart 2000a), is usually attributed primarily to poisoning of wolves and human persecution. This is thoroughly discussed by Boev & Michev (1981), Boev (1985), Michev (1985a; b; c), Boev (2011), Marin *et al*. (2011), Iankov *et al*. (2011), Kurtev *et al*. (2011), and especially Dobrev *et al*. 2021. One of the first recorded cases of poisoned bearded vultures in Bulgaria (1903, village of Dushintsi in Erulska Mountain) was reported by Anonym. (1903).

In addition, the decreasing food sources are mentioned. Past distribution of vultures in Bulgaria, based on theit bone fossil/subfossil bone remains has been examined by Boev (2024).

It is a fortunate circumstance that W.B., as a passionate ornithologist, was given in-depth interdisciplinary insights in the veterinary medicine. Through his studies in Bulgaria, he also gained insights in this regard, which shed more light on this complex of factors and will be briefly presented here. More detailed descriptions can already be found in Baumgart (1989; 2001; 2025). Following the collapse of the Ottoman Empire and Bulgaria's attainment of independence in 1878, fundamental changes occurred in many areas, which significantly restricted the living conditions of vultures until the fall of the monarchy (1944) and led to their almost complete extinction in the subsequent socialist period.

Conditions in the Ottoman Empire and vultures

In the vast Ottoman Empire, the existence of vultures was highly secure, as Reiser (1894) vividly describes in his account of his ornithological explorations immediately before the turn of the 20th century. The numerous livestock were mostly kept outdoors year-round, and since the cultivation of forage plants was rare on small farms and contributed little to their livelihood, year-round grazing was the preferred method (Dobrev *et al*., 2021). This usually involved a seasonal shift between the lowlands and the foothills and mountains near settlements, but also developed supra-regionally within the unlimited empire and, in

Bulgaria, was largely practiced by the Karakatchans (Dimitrov, 2022), a herding ethnic group originating from the Greek Pintos Mountains. In addition, long-distance transhumance existed between the mountains of the Balkans and the Middle East, as far as the Sinai.

Animal losses were high in winter and dry summers, as well as due to a lack of knowledge about the causes of epidemics. Since veterinary services were virtually nonexistent and there were hardly any epidemic control measures, animal diseases such as rinderpest, sheep pox, anthrax, equine snot, and rabies were widespread. Dead livestock were left lying around or dragged to "horse cemeteries" near villages (Özlü, 2012).

For the needs of frequent military campaigns of the Ottoman empire, livestock had to be transported to supply the troops. For example, in 1526, Sultan Suleiman (1494-1566) requisitioned 174,200 sheep from northwestern Bulgaria for his campaign against Hungary (Káldy Nagy, 1975).

Such cattle drives, which also occurred regularly during tax collection, contributed significantly to the spread of animal diseases. In 1886, for example, an epidemic in northeastern Bulgaria, which may have been rinderpest, is said to have killed 200,000 cattle annually (Kalupov *et al*. 1959). During this period, another type of domestic animal was also widespread in Bulgaria, and was used extensively until the end of Ottoman rule, and even in the first decades of the 20th century. These were camels, mainly dromedary, the one-humped camel, *Camelus dromedarius* Linnaeus, which were usually used as draft animals, mainly in the southeastern part of the country. Camel transport was most widespread in Eastern Thrace - Edirne, Burgas, Sliven, Yambol, Haskovo, Kardzhali and Stara Zagora. In these regions, camel breeding as an economic sector existed until 1930 (Primovski, 1958).

The Post-Ottoman Period and vultures

During the process of the disintegration of the Ottoman Empire (1878–1918), several nation-states emerged in the Balkans (Albania, Bulgaria, Montenegro, Romania, Serbia), each with its own legislation. They sought trade relations with Western Europe to stabilize their economies. This primarily involved agricultural products.

The situation in the Principality of Bulgaria and the later Third Bulgarian Kingdom (until 1944)

Livestock mortality due to disease and improved veterinary care has generally decreased. But even with these changes, there were still large herds of livestock in the mountain pastures, many of which died freely while grazing (Popov, 1989).

Russian army veterinarians laid the foundation for the development of a veterinary system after 1878. For example, Bulgaria sought a veterinary convention with Austria-Hungary in 1887, but the country rejected it due to a lack of sufficient prerequisites.

Important legislative steps in further development were: 1891 – Law on the Export and Import of Livestock and Animal Raw Materials; 1894 – Law on Veterinary Meat Inspection; 1897 – Law on Veterinary Police (now known as State Veterinary Science). A network of inspection stations was established (Kalupov, 1972). The large slaughterhouses built in 1928 in Sofia, Plovdiv, Varna, Ruse, and Stara Zagora (Emanuilov, 1956) played a significant role in this regard. While previously veterinarians had to travel to Germany, Austria and other countries to study, in 1921 a separate educational institution was established with the founding of the Faculty of Veterinary Medicine.

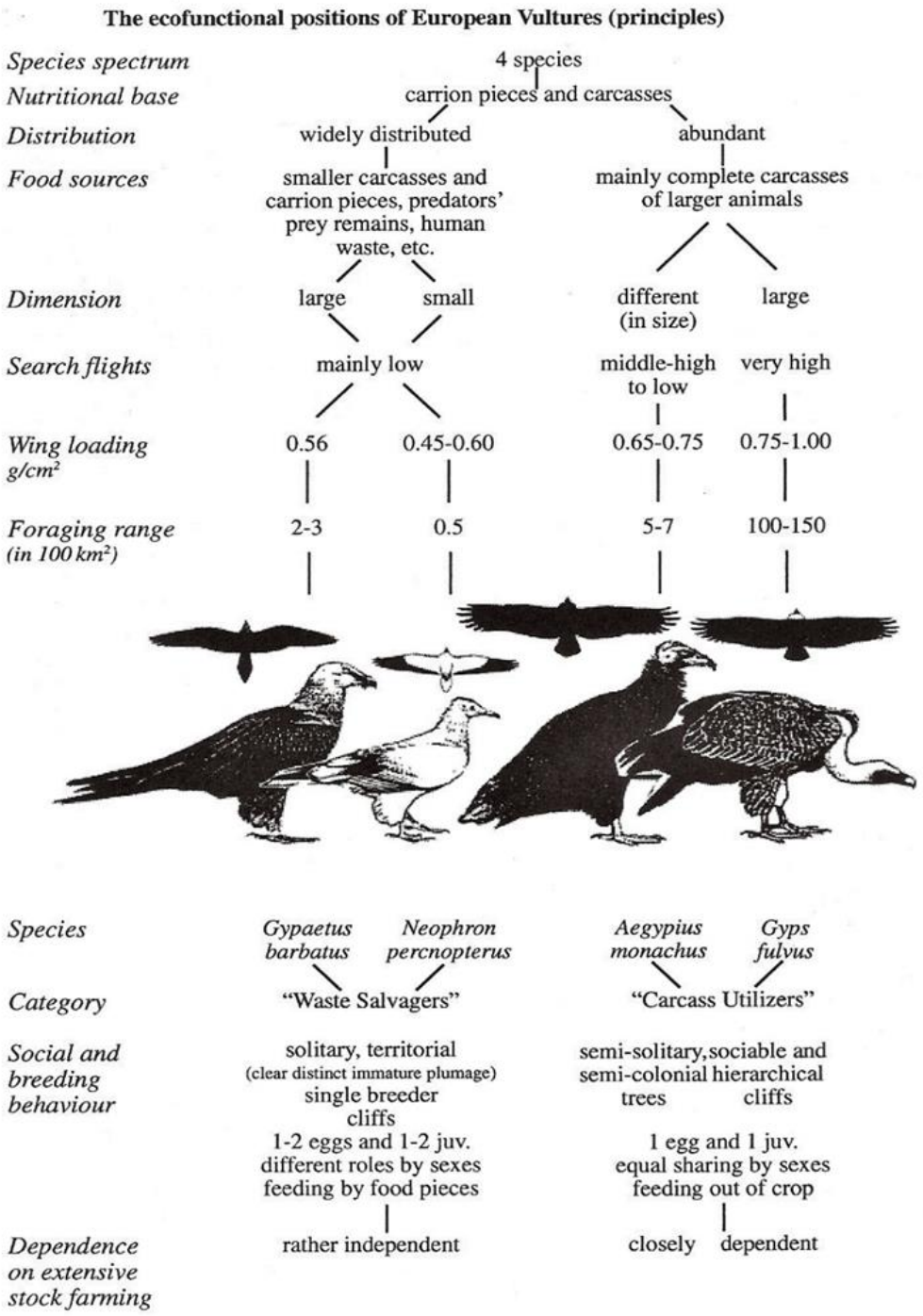

Fig. 1. Ecofunctional positions of European vultures (after Baumgart, 2000a).

While there were 42 veterinarians in the country in 1893, their number rose to 93 by 1915, 150 by 1925, and 250 by 1931 (Iliev, 1957; Kalupov *et al*., 1959).

Effective organizational structures were created to address the challenges at hand, particularly in the fight against the introduction of animal diseases from Turkey. The systemof "Social Veterinary Medicine" combined disease prevention and animal insurance. Farmers were required to join this system, but received free treatment for their animals in case of disease, ensuring an effective reporting system in case of disease outbreaks. In close cooperation with the "Office International des Épizooties" in Paris, founded in 1924, Bulgaria became a secure frontline state against epidemics imported from the Orient (Iliev, 1957).

Direct persecution was virtually non-existent because the rural population understood the role of vultures in the natural balance. The only exception was the shooting by foreign military forces during World War I (Gengler, 1920). In 1894, the first documented cases of vultures (bearded vultures *Gypaetus barbatus* (Linnaeus, 1758); Fig. 2.) dying from poison used to control wolves (*Canis lupus* Linnaeus, 1758) and brown bears (*Ursus arctos* Linnaeus, 1758) (Baumgart, 1989), and their numbers steadily increased thereafter. Thus, wolves, which were previously an important part of the accompanying fauna of vultures, became an indirect threat to their conservation.

Livestock attacks by wolves were countered with poison, which also severely decimated vultures.

The annual amount of strychnine used to control predators amounted to approximately 60 kg, and in 1943, the peak number of wolves killed was 521 (Dragoev, 1970). According to data from Boev (1997), 44% of the wolves killed in Bulgaria in 1970 were poisoned with strychnine.

Fig. 2. Bearded vulture (*Gypaetus barbatus*). Photograph: Lyubomir Hristov – Lupy.

The common raven (*Corvus corax* Linnaeus, 1758), an important sympatric scavenger for vultures, also declined significantly for these reasons. Ravens presence facilitate vultures to finding the locations of some carcasses. All of this reduced vulture populations nationwide, whose occurrence was soon limited to remote, arid and mountainous regions. Several authors reported on this from the 1920s onwards (von Boetticher 1927, Harrison & Pateff 1933, Rensch 1934, Boev & Michev 1981, and Baumgart 1989).

The founding of the People's Republic of Bulgaria following the overthrow of the monarchy on September 9, 1944, also led to fundamental changes in agriculture and veterinary medicine. Collectivization of agriculture was completed by 1958. Among themost important changes relevant to vultures were the decline in sheep farming in the mountains and the transition from coarse-wooled to improved fine-wooled breeds. Barn-keeping in winter became common practice. The Karakachans (also called Sarakatsans) were prohibited from nomadic animal husbandry for reasons of epidemic prevention (Ivanov *et al*., 1961; Kalupov, 1964), but prosperous industrialization offered them sufficient alternative sources of income, so many abandoned the way of life they had practiced for centuries. When attempts were made to revive mountain pasture farming in the 1970s, they were only rarely willing to move from comfortable lives in residential areas back to the mountains.

The development of a modern veterinary system progressed rapidly. From 2,500 veterinarians in 1963, their number rose to 4,036 by 1985 (Ivanova, 1986). Animal losses due to epidemics were significantly reduced (Wilke, 1967). In addition, animal carcass processing plants were established in all districts. While in 1961 just 1.2% of carcasses were recorded, by 1966, aided by an increasingly developed road network, this figure had risen to 55.1%. To prevent acts of sabotage, dead animals had to be reported within twelve hours, and from 1961 onwards even within one hour, under threat of severe penalties (Kühnast 1986). According to a historical review of meat control and official inspection systems, after World War II, national networks of official inspections for the control of livestock and meat developed, including ante- and post-mortem inspections of animals, as well as regulated control of slaughterhouses to ensure the safety and quality of meat products (Delchev & Mladenov, 1978).

Wolves, which had increased significantly during World War II, were now intensively controlled. While 22,300 head of livestock were killed in 1951, according to relevant reports, this number had fallen to just 1,052 in 1968. During World War II and in the first post-war years, an increase in the number of wolves killed in the country was observed - 500 and 700 individuals per year. A second maximum was reached in 1953/1954, when about 1,000 wolves were shot. The peak number of wolves killed was 1,079 in 1954. In the period 1970 - 1978, about 90 wolves were killed per year (Boev, 1997). After that, their population declined steadily, and by the 1980s, it had reached 150-200 nationwide. They became strictly protected (Dragoev, 1970, Spiridonov & Spasov, 1985).

The extinction of vultures cannot therefore be attributed solely to poisoning and shooting. The increasing food shortage caused by the aforementioned developments appears to be of greatest importance. These suggest that from the 1950s onward, there were virtually no continuously available food sources for large vultures throughout Bulgaria. Only occasional sporadic incursions occurred, especially in border regions. During this period, in the semi-mountainous and mountainous regions of the country, dead domestic animals continued to be thrown out into the open outside the villages.

Large herds continued to graze in the open and dead animals were abandoned in the open. Therefore, it is believed that the lack of food is not the main negative factor in the decline of vulture populations. Poisoning, shooting and incidents of electric shock from the power grid are now at the forefront of their mortality.

Data from the 1960s and 1970s are extremely scarce. Donchev (1974) reported indirect evidence of a pair of *G. fulvus* breeding near the town of Kotel. In Ludogorie (NE Bulgaria) a non-breeding pair was observed around a nest on a rock as early as 1983 (Spiridonov, 1988). As a result, Demerdzhiev *et al*. (2007) and Demerdzhiev *et al*. (2014) suggest that the species in the Eastern Rhodopes did not become extinct in Bulgaria.

Some extremely rare records after 1960: In August 1961, Simeon Dimitrov saw an adult Bearded vulture between the peaks of Chatalka and Kutelka in the Sinite Kamani Nature Park (Eastern Stara Planina; Michev, 1968). In the autumn of 1980, a Bulgarian Red Cross and Red Crescent Society employee found a half-alive young bearded eagle near the village of Vranino, Dobrich Region, poisoned with pesticides through mouse-like rodents that it had been feeding on (Michev, 1982). This juvenile Bearded vulture probably drifted here with the autumn migration of Steppe buzzard (*Buteo buteo vulpinus* (Gloger, C.W.L., 1833)) from the Caucasus, just as young bearded vultures regularly arrive in Central Europe with the spring migration of European honey buzzards (*Pernis apivorus* (Linnaeus, 1758) from the Pyrenees and Alps (Baumgart 2001b). On the other hand, there is an equal probability that this bird originated in the Balkans, since at that time the species was still breeding in neighboring Greece and Macedonia. This may also apply to other immature bearded vultures recorded in the Bulgarian Black Sea coastal region in autumn.

Fig. 3. Cinereous vulture (*Aegypius monachus*). Photograph: Georgi Gerdzhikov.

On 13.02.1983, a juvenile *G. barbatus* was observed in the western part of Devnya Lake (Michev, 1983). In the period 1980-1990, 147 observations of Cinereous vulture (*Aegypius monachus* (Linnaeus, 1766); Fig. 3.) were recorded in the country (Iankov *et al*., 1992). On 13.06.1981, an inhabited nest (occupied by 2 birds and abandoned) of *G. fulvus* (Fedtke, 1984) was discovered near the town of Kardzhali. In 1978, between May 19 and June 20, a total of 9 adults, 4 young birds with transitional plumage and 15 juveniles of *G. fulvus* were observed in the Eastern Rhodopes (Michev *et al*., 1980). Observations of the Egyptian vulture (*Neophron percnopterus* (Linnaeus, 1758); Fig. 4.) after 1960, although sharply decreasing, are relatively numerous. In the Bulgarian part of the Strandzha Mountains, the species was last observed on 16.08.2000 by Boev (2008) near the town of Malko Tarnovo.

Fig. 4. Egyptian vulture (*Neophron percnopterus*). Photograph: Georgi Gerdzhikov.

From the end of the 1990s onward, spontaneous resettlements of the Eurasian griffon vulture (*Gyps fulvus* (Hablizl, 1783); Fig. 5.) occurred in the Eastern Rhodopes in connection with populations in Greece, and individual breeding of black vultures was also recorded. This was facilitated by the high proportion of the Muslim population there, who have a positive attitude towards vultures. There is a shortage of veterinarians, and the animal rendering plant in the Kardzhali Province was closed due to lack of profitability (Baumgart, 2025). However, the greatest importance for the restoration of the breeding population of *G. fulvus* and *A. monachus* in Bulgaria was the several large-scale projects of environmental non-governmental organizations, which, through imported (mainly from Spain) birds, managed to breed them in captivity and reintroduce them to their former habitats. managed to breed them in suitable areas (Vrachanski Balkan, Kresna Gorge, Kotlenski Balkan) and through regular

feeding by taking out carrion to the so-called "vulture restaurants" they successfully multiplied them. Thus they gradually occupy some of their former habitats. In Bulgaria there is no captive breeding of Griffons and Cinereous vultures so far. Many of the birds resettled in the country originate from released birds that were bred in captivity in Spain.

Developments after the fall of communism in 1989

After the fall of communism in 1989, which led to a significant population decline and a reduction in livestock numbers, because the livestock was distributed to presumed former owners upon the dissolution of the TKZS, who, no longer able to keep them, then largely slaughtered them. The spectrum of both positive and negative effects is broad. The orientation towards the West modernized nature and species conservation, and vultureprojects with international support and funding have led to a considerable increase in the griffon vulture population, and the black vulture has also regained a foothold (Bearded Vulture LIFE, 2024; Baumgart 2025). Preparations for the reintroduction of the bearded vulture are underway. On May 17, 2025, the first 3 young male birds were released in the Sinite Kamani Nature Park, one of which died soon after.

Fig. 5. Eurasian griffon vulture (*Gyps fulvus*). Photograph: Georgi Gerdzhikov.

In contrast to the larger vultures, the lesser Egyptian vulture remained widespread throughout the country (Michev, 1986; Baumgart, 1991). After 1960, it was still found in several locations where eagle owls were present. It even profited from the remains of their prey. In July 1977, Z.B. observed Egyptian vultures and Eagle owls coexisting on the rocks near the village of Reselets (Pleven Province). The same thing was observed in August of the same year on the rocks near village of Krivnya (Ruse Province) in the Beli Lom Nature

Reserve. Close connections in terms of the feeding of the two species were mentioned by Professor Nikolay Burchak-Abramovich (1902-1997) for the rocks on the hills in the city of Tbilisi in Georgia in the 1950s (oral comm.).

However, it was vital for it that in remote settlements with poor transport links, there was often no connection to the electricity grid, which also meant a lack of refrigeration. This made it impossible to store perishable food in the summer. For the settlers there, a balanced diet included meat once a week, usually provided by a freshly slaughtered chicken. For Egyptian vultures, the esophagus, crop, glandular stomach, intestinal tract, head, and legs were removed, allowing it to easily meet its basic needs within one or more settlements. This insight also provided us with a solution to the question, which our ancestors had been asking at the time: why the Egyptian vulture is missing from Crete. During our explorations in 1994 (Baumgart & Baumgart, 1995), we noticed that grain is scarce on the island and is mostly grown as an undercrop in citrus plantations. This is insufficient for chickens, so their weekly meat needs are met by rabbits. Their slaughterhouse waste, however, offers little to the Egyptian vulture. However, another hypothesis is possible: the rapid decline in the population in recent years is also related to the very high risk of migration to Africa, mainly due to the long flight over the Mediterranean Sea. It is not at all excluded that the species may have bred there in the past. According to data provided by Handrinos (1985), it is possible that this vulture may have bred on the island.

In Bulgaria, it has now become extremely rare. North of the Balkan Mountains, the species is on the verge of extinction, but there are still 5-7 breeding pairs. In the south, it is mainly found in areas with a high Muslim population, such as the Eastern Rhodopes.
There, the reintroduction of large vultures is very successful (Stoynov, 2018; Kmetova-Biro *et al*., 2021; Stoyanov *et al*., 2023; Baumgart, 2025) and it benefits locally from the feeding grounds established for them.

Bulgaria's rapprochement with the EU appears to have played a significant role in its decline after 2000. After applying for membership in 1993, Bulgaria became a candidate for accession and received funding even before accession in 2007 (e.g. pre-accession aid for the rehabilitation and expansion of the road network, including electrification). The isolation and thus self-sufficiency of residents in remote villages is significantly reduced, as is waste generation. They are no longer dependent on self-sufficiency. There are now shops, refrigeration systems, and access to the labor market in the wider area. This largely eliminates the livelihood of Egyptian vultures. This may also have contributed to the rapid decline of 32% between 2003 and 2007.

The "National Action Plan for Conservation of the Egyptian Vulture in Bulgaria" (Kurtev *et al*., 2007) has been in place since 2007. It identifies a multitude of factors responsible for the decline of the Egyptian vulture. These factors are particularly complex because the Egyptian vulture is a migratory bird and can likely suffer significant losses even in its wintering grounds. The effects of poison are considered particularly important in this regard. The "vulture poison" diclofenac has also been speculated about in personal conversations, especially with W.B. However, based on studies in India, a definitive statement can be made on this issue, as it is an event limited primarily to the Hindu cultural sphere, in which “sacred cows” play a special role (Baumgart, 2017).

The widespread use of poisons and its detrimental impact on vultures (and other scavengers) and the lack of good monitoring in Bulgaria has been extensively documented by Kostadinova & Gradinarov (2019). In addition to poisons, the Egyptian vulture suffers greatly from electric shocks from power lines, including in its winter range (Sudan - Angelov *et al*., 2012; Qaneer & Demerdzhiev, 2023) and during the seasonal

transcontinental migrations (Bounas *et al*., 2023). During migrations, vultures also die from poisoning, habitat loss, and poaching along the migration route (Peshev *et al*., 2022).

Egyptian vultures can also visit some of the supported additional feeding stations for vultures on a daily basis, such as the one near the village of Potochnitsa (Kardzhali Province). In recent years, the station in the new aviary for the reintroduction of black vultures has been visited almost daily by different pairs. Up to 30 individuals of this vulture have been counted there.

Maintaining Egyptian vulture populations in southern Europe is so difficult because of their territorial nature. In the worst case scenario, each pair would need its own feeding ground with small portions of carcasses - replenishment several times a week - that would quickly dry out and become unusable. This is easier with larger vultures. One feeding ground, which needs to be replenishment with large carcasses once or twice a week, is sufficient to support a large number of them.

Despite the numerous difficulties arising from the specific biological characteristics of this species of vulture, in recent years conservation efforts have been crowned with positive results, some of which are presented in detail by Arkumarev *et al*. (2020).

Decline of the vulture population in India and Diclofenac and parallels with EU

In connection with the diclofenac disaster in India, which almost completely wiped out the population of *Gyps* vultures (Indian vulture *Gyps indicus* (Scopoli, 1786), slender-billed vulture *G. tenuirostris* Gray, 1844), and Bengal vulture, *G. bengalensis* (Gmelin, 1788)) was almost completely wiped out – according to BirdLife International (2016; 2016b), 99.9% of Bengal vultures died – there was repeated criticism of the approval of this painkiller in the EU. There were fears that this would pose a threat to European vulture populations. However, research conducted on site in India (Baumgart, 2017) showed that this risk is extremely low.

Diclofenac was purchased here from wholesalers by intermediaries (pharmacists, veterinarians, etc.), mostly as bulk goods in large packages, and then sold in bags to livestock owners without any controls, who administered it to their animals with their drinking water when they were ill, especially in cases of mobility disorders. Diclofenac is very stable and accumulates in the digestive tract, especially in the rumen. If a cow dies despite treatment—slaughter is rarely carried out for religious reasons, as cows are sacred—and is left out for vultures, this poses an acute threat, especially to *Gyps* vultures, which consume large amounts of entrails. Due to its high toxicity to vultures, with an LD50 of 0.1-0.2 mg/kg body weight, even an intake of 1.5 mg leads to fatal kidney failure in these birds. The ingestion of just 1.5 mg of this drug by a vulture can lead to death from kidney failure. With a population of 300 million cattle and an assumed annual mortality rate of 10%, 30 million cattle carcasses represent a difficult disposal and hygiene problem. Meloxicam, which is harmless to vultures but significantly more expensive, is recommended as a replacement for diclofenac, which has been banned in India since 1995.

In the EU, diclofenac is approved in some countries for veterinary medicine only as an injectable preparation, but not for oral administration, with controlled dosing. It is rapidly excreted, partially metabolized in the animal body. Consequently, there is little sign of a threat to European vulture populations from this phenomenon, which is limited to the Hindu cultural area.

Conclusions

It turns out that the study of vultures is important for the final assessment of the consequences of political, economic and cultural developments for solving fundamental ornithological problems. This is because it sometimes encompasses these three complex factors in a rather hidden way, and in this way it clarifies what needs to be taken into account for their conservation.

This opens up a previously largely untouched area of action and research that is becoming increasingly important in the Anthropocene. The problems addressed here only became relevant because the relevant knowledge was assigned to other disciplines and thus hardly available to ornithologists. Bulgaria, with its eventful history, offers impressive examples as well as further approaches to solutions. Bulgaria has undergone diverse political, economic, and cultural upheavals over the past 150 years, which have directly or indirectly impacted the bird population and thus offered surprisingly new approaches to solving the problems associated with the species mentioned here.

In southeastern Europe, large vultures (*G. fulvus*, *A. monachus*, and *G. barbatus*) depend almost exclusively on the carcasses of free-range farm animals for food. These animals, in turn, are subject to regulations resulting from husbandry practices (pasture grazing with transhumance or stable housing with feed crops) and veterinary care.

In addition to the control of predatory animals with poison, fundamental developments arose that led to population limitations. From the time of Ottoman rule, through the monarchy, and into the socialist era, these developments led to a steady reduction in the food supply. It may have almost disappeared around the mid-1950s, but since then and to this day, there have always been large dead animals for vultures to eat in the wilds of Bulgaria. Since 1989, projects have ensured the mostly limited, feed-dependent existence of local populations.

However, for the Egyptian vulture, which was still relatively widespread throughout the country but has declined sharply in recent decades, relevant projects are proving more difficult due to a series of infrastructure changes. However, the threat posed by the "vulture poison" diclofenac is negligible for both this species and the others, as it depends on specific conditions in Hindu culture that are irrelevant for Europe.

Over the past decade, vulture mortality has been driven by electrocution, poisoning and migration incidents. These factors have had a decisive impact on vulture populations in Bulgaria and the Balkans.

This analysis shows how political, economic and cultural developments in the Anthropocene are becoming increasingly significant for bird life and how the framework for scientific research approaches needs to be significantly expanded from this perspective. The use of medicines for livestock, the organization of slaughterhouses, rendering plants, the use of poisons in nature, engineering solutions for the country's electricity grid, supporting feeding in nature, the upbringing and education of the population and dozens of other activities turn out to be related to the conservation of vulture populations in the country. Despite the negative experience at times, Bulgaria undoubtedly offers a number of good examples and promising approaches in this regard.

Acknowledgements

The authors are very grateful to two anonymous reviewers for their extremely helpful recommendations and additions to the initial version of the manuscript.

Note

The initial version of the present manuscript was composed by W.B. in German. Its translation into English, some additions, and its layout were made by Z.B.

References

Angelov I., Hashim I., Oppel St. 2012. Persistent electrocution mortality of Egyptian Vultures *Neophron percnopterus* over 28 years in East Africa. *Bird Conservation International*, 0:1–6. BirdLife International, 2012 doi:10.1017/S0959270912000123

Anonym. 1903. Poisoned harmful game. *Balgarski lovets*, 3: 30. (in Bulgarian).

Arkumarev V., Dobrev V., Klisurov I., Petrov R., Delchev A. & Nikolov S.C. 2020. *Develop and pilot a restocking strategy for the Egyptian Vultures on the Balkans: Integrated report on the release of captive-bred Egyptian Vultures in the Eastern Rhodopes, Bulgaria in 2020*. Technical report under action C3 of the LIFE project "Egyptian Vulture New LIFE" (LIFE16 NAT/BG/000874). BSPB & Green Balkans, Bulgaria. 70 p.

Baumgart W. 1989. Verbreitung und Existenzbedingungen von Gänse-, Kutten- und Bartgeier (*Gyps fulus*, *Aegypius monachus*, *Gypaetus barbatus*) in Bulgarien in Vergangenheit und Gegenwart. *Acta ornitoecologica*, Jena 2, 1: 15-38.

Baumgart W. 1991. Über die Geier Bulgariens, A. Der Schmutzgeier (*Neophronpercnopterus*). – *Beiträge zur Vogelkunde*, 37: 1-48.

Baumgart W. 2000. The Ecounctnal Positions of Palearctic Vultures. In: Chancelor, R. D. & B. U. Meyburg eds. 2000, *Raptors at Risk*. - WWGPP/Hacock House. p. 239-243.

Baumgart W. 2001a. *Europas Geier: Flugriesen im Aufwind*. - AULA-Verlag. Wiebelsheim. 143 p.

Baumgart W. 2001b. Ist das Auftreten immaturer Bartgeier Gypaetus barbatus im nördlichen Mitteleuropa Folge eines Verdriftens mit dem Wespenbussard *Pernis apivorus* - Frühjahrszug? *Ornitologische Mitteilungen*, 53: 368-374.

Baumgart W. 2017. Das durch Diclofenac verursachte Geiersterben in Indien - Ein Tierarzneimittel erschüttert einen subkontinentalen Kulturkreis. *Deutsches Tierärzteblatt*, 65: 306-312.

Baumgart W. 2025. Zur Situation von Gänse- und Mönchsgeiern *Gyps fulvus* bzw. *Aegypius monachus* in Bulgarien im Ergebnis laufender Wiedereinbürgerungsprojekte. Greifvögel und Falknerei 2023/2024: 108-143.

Bearded Vulture LIFE. Record numbers of 20 pairs of the Cinereous Vulture and over 200 of the Griffon Vulture in Bulgaria in 2024. Last Modified 21 March 2024. Available online: https://vultureslife.fwff.org/en/bearded-vulture-life/record-numbers-of-20-pairs-of-the-cinereous-vulture-and-over-200-of-the-griffon-vulture-in-bulgaria-in-2024/ (accessed on 28 August 2025).

BirdLife International 2016a. Species factsheet: *Gyps indicus*. Downloaded from http://www.birdlife.org on 01/02/2016.

Boetticher H. v. 1927. Kurze Übersicht über die Raubvögel und Eulen Bulgariens. *Verhandlungen der Ornithologischen Gesellschaft in Bayern*, 17: 535-549.

Boev N. & Michev T. 1981. Past and present Distribution of Vultures in Bulgaria. In: *Regional Symposium under Project 8—MAB "Conservation of natural areas and of the genetic material they contain"*, 20-24 October 1980 Blagoevgrad: pp. 566-575. (in Bulgarian, English summary).

Boev N. 1985. Bearded Vulture, Bearded Eagle *Gypaetus barbatus* (L., 1758) In: Botev, B. & Peshev, Ts. (Eds.). *Red Book of the Republic of Bulgaria*, Vol. 2. Animals, Sofia, pp. 82-83. (in Bulgarian).

Boev N. 1997. The Wolf (*Canis lupus* L., 1758) in Bulgaria for 100 years (1878 - 1978). *Historia naturalis bulgarica*, 8: 35-49.

Boev Z. 2011. Lammergeier *Gypaetus barbatus* (Linnaeus, 1758). *In*: Golemanski, V. *et al*. (Eds.) 2011. *Red Data Book of the Republic of Bulgaria*. Volume 2. Animals. IBEI – BAS & MOEW, Sofia. p. 38.

Boev Z. 2024. Quaternary history of vultures (Accipitridae Vieiilot, 1916) in Bulgaria – fossil and subfossil records. *Larus*, 59: pp. 105-116.

Boev Z., Georgiev, B. Raychev R. Georgieva, U. 2008. The wetland zone of thee Malkotarnovska River near the town of Malko Tamovo (Burgas District) - an example of high biodiversity (vertebrate fauna) under intensive antropogenic impact. In: *7th International Symposium "Ecology – Sustainable Development"*. Proceedings. 23-25 October 2008, Vratsa. Union of Scientists in Bulgaria, Vratsa, 66-72. (in Bulgarian, English summary).

Bounas A., Saravia-Mullin V., Mendez M., Arkumarev V., Aghajanyan L., Ararat K., Buechley E., Dobrev V., Dobrev D., Efrat R., Klisurov I., Kret E., Skartsi T., Oppel St., Petrov R., Şekercioglu Ç., Vaidl A., Donazar J. A., Nikolov S. C., Sotiropoulos K. 2023. Assessing genetic diversity patterns at neutral and adaptive loci to inform population reinforcement of an endangered migratory vulture. *Journal of Ornithology*, 1-12. https://doi.org/10.1007/s10336-023-02048-w

Delchev, H. D., & Mladenov, M. G. 1978. Veterinary and sanitary control of meat in small slaughterhouses.. Zemizdat. Sofia. 94 p.

Demerdzhiev, D., Hristov, Hr., Dobrev, D., Angelov, I. Kurtev, M. 2014. Long-term Population Status, Breeding Parameters and Limiting Factors of the Griffon Vulture (*Gyps fulvus* Hablizl, 1783) Population in the Eastern Rhodopes, Bulgaria. Acta zoologica bulgarica, 66 (3), 2014: 373-384.

Dimitrov, N. 2022. Labor Mobility, Gender Order and Family: Illustrated by the Example of the Karakachans in Bulgaria. Genealogy, 6(3), 77. https://doi.org/10.3390/genealogy6030077

Dobrev D., Tsiakiris R. Skartsim T., Dobrev V., Arkumarev V., Stara K., Stamenov A., Probonas N., Kominos T., Galanaki A., Kret E., Hallmann B., Grubač Br., Sušič G., Marinkovič S., Hribsek I., Skorič St., Jerrentrup H., Lucič V., Kapelj Sv., Stoyanov G., Zakkak S., Hrisov Hr., Stoychev St., Siropoulos L., Bino T., Demerdzhiev D. 2021. Long-term size and range changes of the Griffon Vulture *Gyps fulvus* population in the Balkans: a review. Bird Conservation International, 1-16. Cambridge University Press. BirdLife International.doi:10.1017/S0959270921000198

Donschev, St. 1974. Die vögel im Mittleren und Ostlichen Balkangebirge. *Bulletin de l'Institut de zoologie et Musée*, BAS, Sofia 41: 33-63. (in Bulgarian, German summary).

Dragoev P. 1970. The wolf abroad and here at us. *Lov i ribolov*, 70: 7-8. (in Bulgarian).

Emanuilov I. 1956. *Veterinary-sanitary Expertisa of foodstuffs from animal origin*. Textbook. High Veterinary Medical University. Sofia. pages 320. (in Bulgarian).

Fedtke B. 1984. Nachweis einer Gänsegeierbrut 1981 in Sűdbulgarien. *Der Falke*, 31: 228-129.

Fischer W. 1963. Die Geier. A. Ziemsenverlag. Wittenberg Lutherstadt, 145 p.

Galushin V. M. 1975. A comparative analysis of the density of predatory birds in two selected areas within the Palaearctic and Oriental regions, near Moscow and Delhi. In: International Ornithological Congress, Abstrats, Section IX: Regional Avifaunas. *Emu*, 74: 331.

Gengler J., 1920. *Balkanvögel. Ein ornithologisches Tagebuch*. Verlagsbuchhandlung. A. Ritter, Altenburg and Leipzig. p. 228.

Green R. S., I. Newton S. Shultz A., Cunningham A., Gilbert M., Pain D. J. & Prakash V. 2004. Diclofenac poisoning as a cause of vulture population declines across the Indian subcontinent. *Joural of Applied Ecology*, 41: 793-800.

Handrinos G. 1985. The status of vultures in Greece. ICBP Technical Publication No. 5, 1985& 103-115.

Harrison J. & Pateff P. 1933. A contribution to the Ornithology of Bulgaria. *Ibis* (13) 3, 494-521).

Iankov P., Hristov H. & Avramov S. 1992. Changes In Status of the Black Vulture *Aegypius monachus* in Bulgaria during 1980-1990. In: *IV World Conference on Birds of Prey*, Berlin, 10.-17.5.1992. Abstracts.

Iankov P., Marin S., Kurtev M., Hristov H. & Ivanov I. 2011. Griffon Vulture *Gyps fulvus* Hablizl, 1783. *In*: Golemanski, V. *et al*. (Eds.) 2011. *Red Data Book of the Republic of Bulgaria*. Volume 2. Animals. IBEI – BAS & MOEW, Sofia. p. 167.

Iliev T. 1957. *General epizootiology and zooprophylaxis*. Textbook. High Veterinary Medical Institute. Sofia. (in Bulgarian).

Ivanov P., Gruev V. & Kadinski E. 1961. *Livestock breeding*. Textbook. Agricultural University Plovdiv. Plovdiv (in Bulgarian).

Ivanova T. G. 1986. *Status and prospects for satisfying the demand for veterinary doctors in the People's Republic of Bulgaria until the year 2000.* Diss. Vet.-med. Stara Zagora. 210 p. (in Bulgarian).

Káldy Nagy, G. 1975. Ottoman military organization origins. Budapest: Akadémiai Kiadó. https://www.scribd.com/document/569720243/The-First-Centuries-of-the-Ottoman-Military-Ogranization-Gyula-Kaldy-Nagy. pp. 186–187.

Kalùpov I., A. Kalojanov S. Ivanov, Dimitrov D. & Spasova D. 1959. *Contribution a l'Historie de la Medecine Veterinaire en Bulgarié.* Bulgarian Academy of Science, Sofia. pages 252 (in Bulgarian).

Kalupov, I. 1972. History of Veterinary Medicine. State Publishing House for Agricultural Literature "Zemizdat", Sofia. 172 p. (in Bulgarian).

Kmetova-Biro E, Stoynov E, Ivanov I, Peshev H, Marin S, Bonchev L, Stoev IP, Stoyanov G, Nikolova Z, Vangelova N, Parvanov D, Grozdanov A. 2021. Re-introduction of Griffon Vulture (*Gyps fulvus*) in the Eastern Balkan Mountains, Bulgaria - completion of the establishment phase 2010-2020. *Biodiversity Data Journal*, 9: e66363. https://doi.org/10.3897/BDJ.9.e66363

Kostadinova I. & Gradinarov D. 2019. *Gap analysis of the publically available information on the use of VMPs/NSAIDs that could be potentially dangerous for vultures and other birds of prey in Bulgaria.* Technical report under action A2 of the Egyptian Vulture New LIFE project (LIFE16 NAT/BG/000874). BSPB, Sofia. 24 pp.

Kühnast G. 1968. *Kritische Studie über das bulgarische Tierkörperbeseitigungs- und -verwertungswesen nebst Auswertung der Sektionsstatistik der TKBA Sofia.* Vet. - Diss. Leipzig. pages 147.

Kurtev M., Iankov P. & Angelov I. 2007. *National Action plan for Conservation of the Egyptian Vulture (Neophron percnopterus) in Bulgaria*. BSPB, Sofia, 44 p.

Kurtev M., Vatev I., Demerdjiev D. 2011. Egyptian Vulture *Neophron percnopterus* Linnaeus, 1758. In: Golemanski V. *et al*. (Eds.) 2011. *Red Data Book of the Republic of Bulgaria*. Volume 2. Animals. IBEI – BAS & MOEW, Sofia. p. 166.

Marin S., Iankov P., Ivanov I. & Kurtev M. 2011. Black Vulture Monk Vulture, Eurasian Black Vulture *Aegypius monachus* Linnaeus, 1766. In: Golemanski V. *et al*. (Eds.) 2011. *Red Data Book of the Republic of Bulgaria*. Volume 2. Animals. IBEI – BAS & MOEW, Sofia. p. 39.

Michev T. 1968. The Bearded Vulture. *Tourist*, 4: 24-26. (in Bulgarian).

Michev T. 1968. Über die Verbreitung und Nistbiologie des Schmutzgeiers (*Neophron percnopterus*) in Bulgarien. *Bulletin de l'Institut de zoologie et Musée*, BAS, Sofia 27: 65-79. (in Bulgarian, German summary).

Michev T. 1982 Operation "Bearded Eagles". *Vecherni novini*, 124/18.05.1982: 6.

Michev T. 1983. Unique observation of a bearded eagle. *Otechestven front*, 11,556/ 18.02.2983: 3. (in Bulgarian).

Michev T. 1985 a. Egyptian Vulture, Stravnik *Neophron percnopterus* (L., 1758) In: Botev B. & Peshev Ts. (Eds.). *Red Book of the Republic of Bulgaria*, Vol. 2. Animals, Sofia, p. 81. (in Bulgarian).

Michev T. 1985b. Black vulture, Kartal *Aegypius monachus* (L., 1766) (*Vultur monachus* L., 1766— Reiser, 1894 and Klein, 1909). In: Botev B. & Peshev Ts. (Eds.). *Red Book of the Republic of Bulgaria*, Vol. 2. Animals, Sofia, pp. 83-84. (in Bulgarian).

Michev T. 1985c. Eurasian griffon vulture *Gyps fulvus* (Hablizl, 1783) In: Botev B. & Peshev Ts. (Eds.). *Red Book of the Republic of Bulgaria*, Vol. 2. Animals, Sofia, pp. 84-85. (in Bulgarian).

Michev T. M., Pomakov V. A., Stefanov Vl. St., Yankov P. N. 1980. A Breeding Colony of the Griffon Vulture (*Gyps fulvus* Hab1iz1) in the Eastern Rhodopes. *Ecology*, BAS, 6: 74-79.

Özlü Z. 2012. 19. Yüzyıl Sonlarında Osmanlı Devletinde Veterinerlik Mesleği ile İlgili Bir Değerlendirme. *Belleten*, 76(275), 239–260. DOI:10.37879/belleten.2012.239

Pateff P. 1950. *The Birds of Bulgaria*. BAS, Sofia. 364 pp. (in Bulgarian, English summary).

Peshev H., Mitrevichin E., Stoyanov G., Grozdanov A., Stoynov E. 2022. GPS tracking data relates vulture mortality due to acute intoxication at a considerable distance from the site of poisoned bait consumption. *Forensic Science International: Animals and Environments*, 2: 100052. www.sciencedirect.com/journal/forensic-science-international-animals-and-environments

Popov M. 1989. Materials on the history of Bulgarian veterinary medicine. Bulgarian Veterinary Medical Publishing House. Sofia. 336 p. (in Bulgarian).

Primovski A. 1958. *Camel breeding in the Black Sea Thrace*. BAS, Sofia, 165 p. (in Bulgarian, French summary).

Qaneer T. & Demerdzhiev D. 2023. First Data on Bird Electrocution in Jordan, with Comments on the Undertaken Conservation Efforts. *Acta zoologica bulgarica*, Supplement 17, December 2023: 59-66.

Reiser O. 1894. *Materialien zu einer Ornis Balcanica. II. Bulgarien (einschliesslich Ost-Rumeliens und der Dobrudscha)*. Bosnisch-Hercegovinischen Landesmuseum in Sarajevo. Carl Gerold's Sohn, Wien, 204 p.

Rensch B. 1934. Beitrag zur Kenntnis der Vogelwelt bulgarischer Gebirge. *Omithologische Monatsberichte*, 42; 1-9.

Risebrough R. W. 2004. Population Collapses of Three Species of *Gyps* Vultures in the Indian Subcontinent: an overview. In: Chancellor, R. D. & B.-U. Meyburg (Eds.). *Raptors Worldwide* WWGBP/MME: pp. 197-214.

Shultz S., Baral H. S., Charman S., Cunningham A. A, Das D., Ghalsasi G. R., Goudar M. S. G., Green R. E., Jones A., Nighot P., Pain D. J. & Prakash V. 2004. Diclofenac poisoning is widespread in declining vulture populations across the Indian subcontinent. *Proceedings of the Royal Society, London B (Subl)*. 120:1-3.

Spiridonov Z. & Spasov N. 1985. Wùlk *Canis lupus* (L. 1758). In: Botev, B. & Peshev, Ts. (Eds.). *Red Book of the Republic of Bulgaria*, Vol. 2. Animals, Sofia, p. 132. (in Bulgarian).

Stoyanov G, Peshev HV, Kmetova-Biro E, Stoynov E, Ivanov I, Vangelova N, Nikolova Z, Mitrevichin E, Grozdanov A. 2023. Results of the re-introduction of the Griffon Vulture (*Gyps fulvus*) in Vrachanski Balkan Nature Park, Bulgaria - completion o f the establishing phase 2010-2020. *Biodiversity Data Journal*, 11: e100834. https://doi.org/10.3897/BDJ.11.e100834

Stoynov 2018. Population Boost of the Griffon Vulture Gyps fulvus (Hablizl, 1783) (Accipitridae) in Bulgaria Based on Reintroductions. *Acta zoolfgica bulgarica*, Suppl. 12: 59-65.

Wilke D. 1967. *Organisation und Aufgaben des Veterinärwesens in der Volksrepublik Bulgarien.* - Vet. - Diss. Berlin. pages 152.

Received: 07.09.2025
Accepted: 23.12.2025
Published: 26.12.2025

Bulletin of the Natural History Museum - Plovdiv
Bull. Nat. Hist. Mus. Plovdiv, 2025, vol. 10: 85-95
https://doi.org/10.65437/bnhmp.10.4.5

Miscellaneous

Регионалният природонаучен музей в Пловдив и Националният природонаучен музей в София – 70 години сътрудничество в полза на природознанието

Златозар Н. Боев*

Национален природонаучен музей – БАН
Бул. Цар Освободител, № 1
1000 София
*E-mail: boev@nmnhs.com, zlatozarboev@gmail.com
https://orcid.org/0000-0002-8049-7509

Резюме. Представени са разнообразните форми на сътрудничество между Националния природонаучен музей в София и Регионалния природонаучен музей в Пловдив в различните области на музейното дело (създаване и куриране на музейни фондове, експозиции, научна популяризация, научно-изследователска дейност) от учредяването на Регионалния природонаучен музей в Пловдив (1955) до 2025 г. Изтъкнато е значението на този музей в изграждането и възпитаването на екологически грамотни и природозащитно образовани граждани на съвременното българското общество.

Увод

Музеите, библиотеките и архивите са най-важните институции за съхраняването на националната идентичност във всяка една съвременна държава. Те са хранителите на материалните основи на националната история, нейната уникалност и значимост. Природонаучните музеи имат важната и специфична роля да представят богатството и разнообразието на природата на страната, областта или отделната природна забележителност. В наши дни все повече се осъзнава, че опазването на Родината и природозащитата са неразривно свързани. Без да познаваме и опазваме природата в страната си, не можем да я опазим. Затова защитата на природата е израз на нашия патриотизъм. Опазвайки природата в страната си по същество ние пазим нея самата.

В националната система на природонаучните музеи Националният природонаучен музей при Българската академия на науките в София (НПМ) и Регионалният природонаучният музей в Пловдив (РПНМ - Пловдив; Фиг. 1.) заемат първите две водещи места. Първият, учреден преди 136 години през 1889 г. и вторият – преди 70 години през 1955 г., и до днес са двата най-големи природонаучни музеи в България. В тях се съхраняват почти 2 милиона природни образци – минерали, скали, вкаменелости, гъби (вкл. лишеи), растения и животни, произлизащи от всичките седем континенти.

През тези 7 десетилетия двата музея, макар и в състава на различни ведомства, непрестанно са поддържали активни контакти, изразяващи се в изключително разнообразни форми на сътрудничество във всички области на музеологията –

научноизследователската работа, колекционирането на музейни природни образци и обмен на колекции, работа в съвместни екипи в изпълнението на национални и международни научни и научно-приложни проекти, създаването на музейни експозиции и популяризирането на природонаучни и природозащитни знания сред обществеността.

Настоящият преглед цели да представи в хронологичен ред основните изяви на интензивното междуинституционално сътрудничество на тези два първи и най-големи природонаучни музеи в България.

Фиг. 1. Сградата на Регионалния природонаучен музей – Пловдив след реконструкцията. 05.09.2024. Сн.: З. Боев.

Регионалният природонаучният музей в Пловдив при управлението на Атанас Маринов (1955-1960)

Чрез внушителната природонаучна колекция на закрития през 1948 г. Френски колеж „Св. Августин“ в Пловдив (Collège Frangais „Saint Augustin“, Philippopoli) се полагат основите на съвременните фондове и отчасти – на експозицията на съвременния РПНМ - Пловдив. За рождена дата на музея може да се смята 05.09.1955 г., когато с част от образците на Френския колеж е организирана „Временна изложба на материали за бъдещ природонаучен музей”. За нейн уредник, а след това и за директор е назначен дългогодишният преподавател по естествени науки Атанас Маринов. Впоследствие се изготвят тематико-експозиционни планове от двама изтъкнати зоолози от НПМ - д-р ст.н.с. Нено Атанасов (тогава директор на б. Зоологически институт на БАН) и ст.н.с. Георги Пешев, сътрудник в секция „Музей“ (Тодоров, 2016). В една своя статия Г. Пешев отбелязва, че въпреки допуснатите грешки в наредбата на експозицията, с помощта на сътрудници от музея в София, пловдивският музей придобил една прилична експозиция, на основата богатите си колекции (Пешев, 1956).

Регионалният природонаучният музей в Пловдив при управлението на проф. д.б.н. Павел Ангелов (1960-1963)

Скоро след откриването на музея Ат. Маринов се пенсионира и на местото му е назначен младият ентомолог Павел Ангелов. Създаването и обогатяването на природонаучните сбирки в музея през този период са били първостепенни задачи за неговия все още малоброен научен състав. В това отношение помощ е оказал НПМ чрез предоставяне и обмен на някои образци, представени с по-многобройни екземпляри (Тодоров, 2016). НПМ съдейства и за обогатяването на научна библиотека на РПНМ - Пловдив като му дарява пълен комплект от реномираните „Известия на царските природонаучни институти“, както и друга дублетна научна литература.

Регионалният природонаучният музей в Пловдив при управлението на доц. д-р Илко Басамаков (1963–2010)

След хабилитирането си П. Ангелов напуска РПНМ - Пловдив и за директор е назначен 25-годишният хидробиолог Илко Басамаков (1938-2022). За 47 години с 6000 експоната той организира изграждането на 9 експозиции в РПНМ - Пловдив.

През 60-те и 70-те години на 20 в. сътрудниците на РПНМ - Пловдив. В публикуват научните си трудове (над 30 публикации) в най-реномираното на времето си национално научно зоологично издание „Известия на Зоологическия институт с музей“ на БАН. Обособената научна група от специалисти-естественици (1963-1971 г.) с активна изследователска дейност (основно в Родопите, Тракийската низина, Средна гора, Стара планина, Рила и др. райони; Станев, 1997) впоследствие (от 1970 г.) довежда до учредяването на собствено научно периодично издание на РПНМ - Пловдив – „Известия на Природонаучния музей в Пловдив“ (Станев, Басамаков, 1970).

През 1976-1978 г. специалисти от НПМ участват в изграждането на експозициите на РПНМ - Пловдив и Музея на родопския карст в гр. Чепелраре (Боев, 2023).

Палеонтологът ст.н.с, к.г.-м.н. Иван Николов от НПМ оказва ценна помощ за определянето на множество фосили (кости и зъби) на терциерни бозайници от палеонтологичната колекция на РПНМ - Пловдив. В резултат на работата му се появяват няколко научни публикации съвместно с тогавашния директор на РПНМ - Пловдив – ст.н.с., к.б.н. Илко Басамаков (Басамаков, Николов 1978; Николов, Басамаков 1970; 1979). Учени от НПМ и по-късно определят фосили от едри бозайници от фондовете на РПНМ - Пловдив. Доц. д-р Георги Марков определя колекцията от фосилни хоботни бозайници (Proboscidea Illiger, 1811; Марков, 2005; Фиг. 2.).

Дългогодишният служител на РПНМ - Пловдив и бележит български ботаник проф. д.б.н. Стефан Станев има огромен принос за историографията на ботаниката в България. Верен на своите пристрастия той публикува (Станев, 2025) и съставената от него биография на проф. Борис Стефанов – ботаник в Царските природонаучни институти, чийто наследник днес е НПМ. В многобройните си книги той изтъква значението на НПМ като основен национален център за изследване на растителното богатство на страната (Станев, 2008; 2010). През 1978 г. той публикува специална статия за приноса на акад. Иван Буреш (дългогодишен директор на б. „Естественоисторически музей на Царят на всички българи“ в София, чийто наследник е НПМ) за развитието на ботаниката в България. В нея особено значение Ст. Станев отдава на учредяването на Ботаническия отдел в музея (Станев, 1978).

В обобщаващата си монография Станев (2010) включва отделен раздел, озаглавен „Ботанически отдел на Царския естественоисторически музей“. Фактически Ст. Станев се явява и единственият изследовател на историята на този отдел в НПМ и до днес. Той задълбочено анализира и водещата роля на двата музея (НПМ и РПНМ - Пловдив) в цялата система от природонаучни музеи в страната (Станев, Божикова, 1974; Станев, 1978.). С основание през 2006 г. по предложение на доц. А. Попов, тогавашен директор на НПМ, проф. Ст. Станев е удостоен с почетния плакет „Акад. Иван Буреш“. Това отличие НПМ дава на изтъкнати български и чуждестранни учени със значим принос за развитието на музея и науката.

Организираната през 2009 г. от Британския съвет в България и НПМ изложба „Дарвин сега“ (от 16 панела) след София, е показана и в Пловдив и Асеновград.

Фиг. 2. Част от експозицията от фосили на хоботни бозайници в Регионалния природонаучен музей – Пловдив, 08.02.2023. Сн.: З. Боев.

Регионалният природонаучният музей в Пловдив при управлението на гл. ас. д-р Огнян Тодоров (2010-)

През 2018 г. проф. д.б.н. Златозар Боев от НПМ по молба на директора О. Тодоров се заема с определянето на оцелелите тотални сухи монтирани препарати от птици – наследство от Френския колеж. За съжаление оказва се, че цялата документация със съответната съпътстваща информация за тях скоро след закриването на колежа е била безвъзвратно загубена. Въпреки това екземплярите от тази колекция с голяма историческа стойност са определени и информацията за тях е публикувана (Boev &Todorov, 2019). Оказва се, че тя включва 193 вида птици от 81 семейства и 28 разреда, представени чрез 205 екземпляра (1,67 % от съвременната световна орнитофауна). Над 15 процента от видовете имат природозащитен статус по

IUCN (NT до CR). Сред най-ценните й екземпляри са застрашеният сивогръб скорец (~ майна) (*Acridotheres tricolor* (Horsfield, 1821)) и два уязвими вида – маврикийски огърличен (ехо) папагал (*Psittacula eques* (Boddaert, 1783); Фиг. 3.) и северен (тъмногръб) опушен албатрос (*Phoebetria fusca* (Hilsenberg, 1822)). Това е втората по големина колекция от екзотични птици в България.

Фиг. 3. Маврикийски огърличен (ехо) папагал (*Psittacula eques* (Boddaert, 1783)) от колекцията на б. Френски колеж „Св. Августин“ в Пловдив. Сн.: Огнян Тодоров.

През 2014 г. проф. д-р Николай Спасов от НПМ определя част от сборове с фосили от едри бозайници, сред които са находки от алпийски козирог (*Capra ibex* Linnaeus, 1758), тур (*Bos primigenius* Bojanus, 1825), пещерна мечка (*Ursus spelaeus* Rosenmüller, 1794) и др. (Георгиев, 2017).

През 2017 г. със специален договор между НПМ и РПНМ - Пловдив за експозицията на последния в НПМ са препарирани екземпляри от десетина вида едри бозайници, собственост на НПМ, сред които: евроазиатски рис (*Lynx lynx* (Linnaeus, 1758)), леопард (амурски и персийски; *Panthera pardus* (Linnaeus, 1758)), тръстикова котка (*Felis chaus* Schreber, 1777), сервал (*Leptailurus serval* (Schreber, 1776)), ягуар (*Panthera onca* (Linnaeus, 1758)), гребенесто африканско бодливо свинче (*Hystrix cristata* Linnaeus, 1758) и др. По този начин е реализирано едно от най-значимите попълнения на експозицията на РПНМ - Пловдив през последните няколко десетилетия.

Настоящият директор на РПНМ - Пловдив, О. Тодоров (Фиг. 4.) освен отличен организатор на поверената му институция, е и изявен природолюбител и пътешественик. В последното си качество той създава извънредно богат фотоархив от превъзходни фотографии на животни от редица екзотични кътчета на света. За три академични издания на НПМ (Boev, 2025 a; b; c) той предоставя безвъзмездно за първо публикуване 156 свои фотографии на 33 вида неврабчоподобни, 63 вида врабчоподобни птици и 59 вида бозайници.

Фиг. 4. Гл.ас. д-р Огнян Тодоров с Грамота от Министерството на културата за значими приноси в развитието и популяризирането на българските култура и изкуство, София, 05.11.2019. Сн.: З. Боев.

С участието на проф. З. Боев и съставена и публикувана биобиблиография на изтъкнатия наш орнитолог ст.н.с., к.б.н. Цено Петров (Фиг. 5.) – дългогодишен сътрудник на РПНМ - Пловдив и настоящ доайен на българските орнитолози (Demerdzhiev & Petrov, 2023). В нея са събрани данни за 202 публикации, публикувани в периода 1970-2022 г. З. Боев и Д. Демерджиев организираха и тържественото честване на 80-годишнината на ст.н.с. Ц. Петров в РПНМ - Пловдив на 23.06.2023 г.

Учени от НПМ са чести лектори в организираната от ръководството на РПНМ - Пловдив образователна лектория по актуални научни теми, на които присъстват и студенти от Биологическия факултет на Пловдивския университет „Паисий Хилендарски“, както и граждани на Пловдив. Сред лекторите са специалистите от НПМ проф. д.б.н. З. Боев (2011 г.), проф. д-р Стоян Бешков (2021 г.), доц. д-р Латинка Христова (2023 г.), ас. Владимир Николов (2023 г. – 2 лекции), доц. д-р Тихомир Стефанов (2024 г.) и др.

Тези лекции се провеждат в новата лекционна зала, снабдена с необходимата за предназначението ѝ съвременна техника. Специалисти от НПМ в рамките на действащата работилница за палеоарт, освен в НПМ, водят занятия и в РПНМ - Пловдив (ас. Владимир Николов - „Да нарисуваме велосираптор“ - 2023 г.; Фиг. 6.).

Фиг. 5. Доц. д-р Цено Петров в Националния природонаучен музей, 10.10.2018. Сн.: З. Боев.

Фиг. 6. Плакат за палеоарт-работилницата „Да нарисуваме велосираптор“ на Владимир Николов в Регионалния природонаучен музей – Пловдив (2023 г.).

Доц. д-р Марио Лангуров изнася 2 лекции (2022 и 2025 г.) на организираните две издания на „Фестивал на Перудите“. Някои от временните изложби, организирани от НПМ са били показвани и на пловдивската общественост в залите на РПНМ - Пловдив. Такива са изложбите „100 години от рождението на Николай Боев“ (2022 г.; Фиг. 7.), „Illustratorium II“ на Деница Пенева (2025 г.) и „Юрски свят“ на Владимир Николов (2025 г.).

Проф. П. Берон и ас. Вл. Николов представят свои новоизлезли книги в РПНМ - Пловдив: „Пет месеца в Нова Гвинея“ (2018 г.), „Сану Батуре“ (2018 г.) и „Панорама на българската зоология“ (2023 г.) – и трите на проф. Петър Берон и "Песента на титаните: история за динозаври" (2023 г.) на ас. Вл. Николов.

Двама от хабилитираните зоолози от НПМ (херпетологът проф. Георги Попгеоргиев и териологът доц. Недко Недялков) започват научната си кариера в РПНМ - Пловдив. За първи път там те се запознават със спецификата на музейната работа като куратори на зоологичнни колекции. Д-р Светлозара Казанджиева от екипа на РПНМ - Пловдив провежда своята постдокторантска специализация по ентомология в НПМ. Същата е определила ентомологичната колекция на РПНМ - Пловдив от 5 семейства гъбни комари (двукрили насекоми от надсемейство Sciaroidea), представени с 308 екземпляра (Kazandzhieva, 2025).

Фиг. 7. Част от изложбата „100 години от рождението на Николай Боев (1922-2022) в Регионалния природонаучен музей – Пловдив. 09.02.2023. Сн.: З. Боев.

НПМ заедно с РПНМ - Пловдив и още няколко други институции са съорганизатори на Деветата международна конференция „Минералогия и музеи, София' 2021“. Учени от НПМ и РПНМ - Пловдив публикуват съвместно някои от своите изследвания върху видове от националната ни Червена книга (Петров и др. 2011; Мичев и др., 2011).

Още от учредяването на новото научно списание на РПНМ - Пловдив - Bulletin of the Natural History Museum – Plovdiv през 2016 г. в редакционната му колегия са привлечени и учени от НПМ. Проф. З. Боев е нейн член в продължение на 5 години (2016-2020). Учени от НПМ редовно публикуват резултати от свои научни изследвания в това списание. З. Боев в него е публикувал 33 научни статии.

Проф. Здравко Хубенов от НПМ през 2020 г. рецензира монографичното издание на РПНМ - Пловдив „Атлас на безгръбначните животни“ (Тодоров, 2021). През 2020 г. проф. З. Боев въз основа на огромния му принос за модернизирането и разширяването на РПНМ - Пловдив аргументирано номинира гл. ас. Огнян Тодоров за кандидат за удостояване със Специалната награда „Пловдив” в областта на изкуството и културата, в категория „12.9. Опазване на културното наследство и съхраняване на паметта“.

През 2019 г. проф. З. Боев рецензира новооткритата експозиция от гръбначни животни в РПНМ - Пловдив – най-впечатляващата и обширно представена в залите на музея. През 2021 г. той рецензира и новооткритата палеонтологичната експозиция „Динозаври“ (Фиг. 8.) от анимирани макети на някои най-популярни видове. През 2025 г. проф. д-р Павел Стоев (директор на НПМ) и проф. З. Боев рецензират изготвения от екип на РПНМ - Пловдив тематико-експозиционен план за реконструкцията на Отдел „Природа“ на Регионалния исторически музей в Благоевград. Рецензиите им съдържат множество конструктивни препоръки, подобряващи плана и заложените в него дейности.

Фиг. 8. Част от експозицията „Динозаври“ в Регионалния природонаучен музей – Пловдив. 08.12.2021. Сн.: З. Боев.

Настоящият преглед, макар и непълен, очертава формите и насоките на тясното сътрудничество на учените от двата музея. Постигнатото с общи усилия е гаранция за успешното им развитие и в бъдеще в името на природонаучната просвета за опознаването и опазването на българската природа.

Благодарности

Авторът благодари на гл. ас. д-р Огнян Тодоров (РПНМ - Пловдив) и д-р Светлозара Казанджиева (РПНМ - Пловдив) за някои предоставени данни.

Литература

Boev Z. 2025a. *Terminologia ornithological bulgarica. Vol. I. Taxonomia. Illustrated trilingual dictionary of the birds of the world. English - Latin – Bulgarian. Part 1. Non-Passeriformes.* National Museum of Natural History – Bulgarian Ornithological Society. Sofia. 432 pp. ISBN 978-954-8828-20-8

Boev Z. 2025b. *Terminologia ornithological bulgarica. Vol. I. Taxonomia. Illustrated trilingual dictionary of the birds of the world. English - Latin – Bulgarian. Part 2. Passeriformes.* National Museum of Natural History – Bulgarian Ornithological Society. Sofia. 508 pp. ISBN: 978-954-8828-21-5

Boev Z. 2025c. *Terminologia theriologica taxonomica bulgarica. Illustrated trilingual dictionary of the mammals of the world. English – Latin – Bulgarian*. National Museum of Natural History. Sofia. 462 pp. ISBN 978-954-8828-22-2

Boev Z., Todorov O. 2019. The avian collection of the former Saint Augustine College of the Regional Natural History Museum in Plovdiv. *Historia naturalis bulgarica*, 35: 1-11.

Demerdzhiev D., Boev Z. 2023. Assoc. Prof. Dr. Tseno Petrov and the modern Bulgarian ornithology (A bio-bibliography of an honored Bulgarian ornithologist on occasion of his 80th anniversary). *Bulletin of the Natural History Museum, Plovdi*v, 8: 1-21.

Kazandzhieva Sv. 2025. The fungus gnats (Diptera: Sciaroidea) collection of the Regional Natural History Museum – Plovdiv. *Bulletin of the Natural History Museum – Plovdiv*, 10: 1-16.

Басамаков И., Николов И. 1978. Нови находки на плиоценска и плейстоценска бозайна фауна от Южна България. *Известия на музеите от Южна България*, 4: 23-35.

Боев З. 2022. Националният природонаучен музей при БАН под ръководството на д-р Нено Атанасов (1947-1962 г.) - 15 следвоенни години на траен подем. *Bulletin of the Natural History Museum, Plovdiv*, 7 Online First: 1-19.

Боев З. 2023. Националният природонаучен музей при Българската академия на науките - 14 години на повторно възстановяване под ръководството на акад. проф. д-р Иван Костов (1974-1988 г.). *Обучение по природни науки и върхови технологии*, 32 (5-6): 422-456.

Георгиев Д. 2017. Палеонтологичната сбирка на Регионален Природонаучен Музей – Пловдив. *Bulletin of the Natural History Museum – Plovdi*v, 2: VII-XI.

Марков Г. 2005. Фосилните хоботни (Proboscidea, Mammalia) на България. Национален природонаучен музей, БАН. София. Автореферат на дис. тр. за обр. н. ст. „доктор“, 1-32.

Мичев Т., Петров Ц., Николов Х., Боев З. 2011. Сива чапла *Ardea cinerea* Linaeus, 1758. - В: Големански В. (гл. ред.). 2011. *Червена книга на Република България. Том. 2. Животни*. ИБЕИ-БАН & МОСВ, София. 248.

Николов И., И. Басамаков. 1970. Нови находки от плиоценската бозайна фауна от с. Ахматово, Пловдивско. *Известия на Природонаучния музей Пловдив*, 1: 65-70.

Николов И., И. Басамаков. 1979. Терциерна и кватернерна бозайна фауна от Пловдивско и Старозагорско. *Известия на музеите от Южна България*, 5: 33-45.
Петров Ц., Боев З., Далакчиева С. 2011. Стридояд *Haematopus ostralegus* (Linnaeus, 1758). - В: Големански В. (гл. ред.). 2011. *Червена книга на Република България. Том. 2. Животни*. ИБЕИ-БАН & МОСВ, София. 87.
Пешев Г. 1956. Задачите на природонаучните отдели при окръжните и околийските музеи. Музеи и паметници на културата, 4: 7-14.
Станев С. 1991. Ботаническите колекции на Националния Природонаучен музей при БАН *Historia naturalis bulgarica*, 3: 15-22.
Станев Ст. 2025. *Борис Стефанов - един бележит български учен*. Университетско издателство „Паисий Хилендарски". Пловдив, 1-133. ISBN 978-619-281-030-6.
Станев Ст., Басамаков И. 1970. Природонаучният музей в Пловдив. – Известия на Природонаучния музей в Пловдив, 1: 5-17.
Станев, Ст. 1978. Дейността на академик д-р Иван Буреш, свързана с развитието на българската ботаника. *Известия на музеите от Южна България*, 4: 9-21.
Станев Ст. 1978. Природонаучните музеи — мрежа, структура, кадри. *Музеи паметници на културата*, 3: 12-16.
Станев Ст. 1997. Природонаучният музей в Пловдив. *Природа – БАН*, 3-4: 82-86.
Станев Ст. 2008. *Първостроители на българската ботаника*. Университетско издателство „Паисий Хилендарски", Пловдив, 1-278.
Станев Ст. 2010. *История на ботаниката в България (до 1944 година)*. Университетско издателство „Паисий Хилендарски", Пловдив, 1-701.
Станев Ст., Божикова Е. 1974. Състояние и проблеми на природонаучните музеи и отдели в страната. *Въпроси на музейното дело*, София, 2: 161-177.
Тодоров О. 2016. Регионален природонаучен музей – Пловдив. *Bulletin of the Natural History Museum – Plovdiv*, 1: VII-XIV.
Тодоров, О. 2021. *Атлас на безгръбначните животни*. РПНМ-Пловдив. 504 с. ISBN 978-619-91987.

The Regional Museum of Natural History in Plovdiv and the National Museum of Natural History in Sofia – 70 years of cooperation for the benefit of natural science

(Summary)

The various forms of cooperation between the National Museum of Natural History in Sofia and the Regional Museum of Natural History in Plovdiv are presented in the various areas of museum work (creation and curation of museum collections, exhibitions, scientific popularization, scientific research activities) from the establishment of the Regional Museum of Natural History in Plovdiv (1955) to 2025. The importance of this museum in the development and education of ecologically literate and nature conservation-educated citizens of modern Bulgarian society is highlighted.

Received: 01.12.2025
Accepted: 23.12.2025
Published: 26.12.2025

Bulletin of the Natural History Museum - Plovdiv
Bull. Nat. Hist. Mus. Plovdiv, 2025, vol. 10: 97-162
https://doi.org/10.65437/bnhmp.10.4.2

Miscellaneous

Prof. Dr. Zlatozar Boev DSc, pillar of modern Bulgarian ornithology. Biobibliography on the occasion of his 70th anniversary

Dimitar Demerdzhiev[1,2*]

1 - Bulgarian Society for the Protection of Birds/BirdLife Bulgaria, 5, Leonardo da Vinci Str.,
4000 Plovdiv, Bulgaria;
2 - National Museum of Natural History, Bulgarian Academy of Sciences, 1000 Sofia, Bulgaria;
*E-mail: dimitar.demerdzhiev@bspb.org, dimitar.demerdzhiev@gmail.com
https://orcid.org/0000-0001-7124-4959

Abstract. This paper honors the 70th anniversary of Professor Zlatozar Boev, DSc, a pilar in modern Bulgarian ornithology. During his 46-year career at the National Museum of Natural History (Sofia, Bulgaria), Prof. Boev pioneered the fields of avian osteology, paleornithology, and archaeornithology in Bulgaria. He founded three new ornithological branches in the country: (1) osteology, (2) exterior morphology and (3) paleo- and archaeo-ornithology. His work includes describing 41 avian taxa new to science and establishing one of the most significant paleornithological collections in Europe. With over 930 scientific and popular science articles, books, and textbooks published in more than 20 countries, he is the most productive author in the history of Bulgarian ornithology.

Keywords: Archaeo-ornithology, Avian Morphology, Biobibliography, Bulgaria, National Museum of Natural History, Paleornithology

Short biographical data

Prof. Zlatozar Nikolaev Boev (Fig. 1) was born on 20.10.1955 in Sofia, in a family of intellectuals. His father Nikolay Boev (1922–1985) was a prominent Bulgarian ornithologist, the founder of modern nature conservation in Bulgaria. His mother, Nadezhda Boeva, was a philologist and teacher of Bulgarian language and literature. Zlatozar Boev's family origins were in the town of Aytos, with one of his great-grandfathers being the volunteer Nikola Boev, a participant in the Battle of Stara Zagora during the Russian-Turkish War of Liberation, and the other - the Bulgarian revolutionary leader Diko Dzhelebov, standard-bearer of the Ilinden- Preobrazhenie Uprising.

He finished his elementary, primary, and secondary education in 15th School (Adam Mickiewicz High School) in Sofia. In 1973-1975 he fulfilled his mandatory military service in the town of Plovdiv. Zlatozar Boev completed his higher education, majoring in "Biology", at the Department of Zoology, Faculty of Biology of "St. Kliment Ohridski"

Sofia University in 1980, under the supervision of Prof. Tsolo Peshev (1922–2009), with a thesis on small mammals from the Ograzhden Mountain, titled "Ecological and faunistic studies of insectivorous mammals and rodents (Insectivora et Rodentia, Mammalia) from the Ograzhden Mountain".

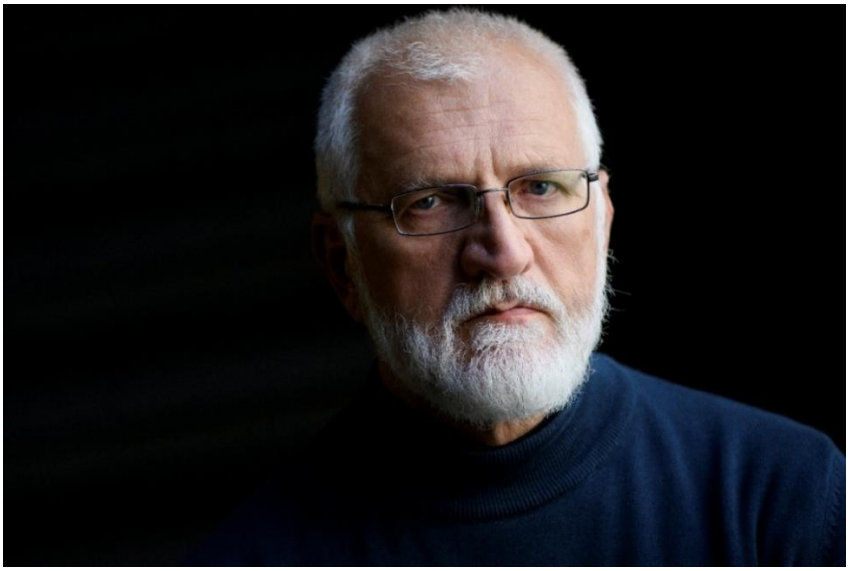

Fig. 1. Prof. Dr. Zlatozar Boev, DSc

He joined the National Museum of Natural History (NMNH) at the Bulgarian Academy of Sciences in 1980 and until 1983 worked as a part-time associate at the Zoology Departrment under the supervision of Prof. Dr. Petar Beron. There, he inventoried, arranged, and restored museum collections of birds, mammals, mollusks (shellfish snails and mussels), corals, etc. (Fig. 2). In the period 1984–1986, he was a full-time PhD student at the National Museum of Natural History at the Bulgarian Academy of Sciences, where the ornithologist Assoc. Prof. Simeon Simeonov (1935–1991) was his scientific supervisor. In 1986, he defended his PhD thesis on the topic "Comparative morphological studies of herons (family Ardeidae – Aves) from Bulgaria". Zlatozar Boev defended his DSc dissertation in 1999 titled "Neogene and Quaternary birds (Aves) from Bulgaria" – the first study of the Bulgarian fossil and subfossil avifauna.

Zlatozar Boev was also among the founders of the first nature conservation organization in Bulgaria, the Bulgarian Society for the Protection of Birds, and served as its first secretary (Fig. 3). He also came up with the idea for the organization's logo, the endangered Egyptian vulture (*Neophron percnopterus*). Prof. Boev was among the founders of the Bulgarian Ornithological Society and is currently a member of nine international and foreign scientific organizations (Fig. 4).

He has been working at the National Museum of Natural History for forty-six years, holding various positions including head of "Fossil and Recent Birds" Department, head of "Vertebrate Animals "Department, scientific secretary, etc.

In recognition of his contributions to paleontology, the fossil species *Plioperdix boevi* Zelenkov, 2024, described from a Miocene locality in Rostov Oblast, Russia, is named after Prof. Boev.

Fig. 2. Zlatozar Boev as a technical assistant at the Zoology Department of the National Museum of Natural History, Bulgarian Academy of Sciences, arranging the collection of grey wolf (*Canis lupus*) skulls. 1982

Fig. 3. Zlatozar Boev (fourth from the left in the 4th row) among the founders of the Bulgarian Society for the Protection of Birds in front of the Faculty of Biology of "St. Kliment Ohridski" Sofia University. 03.06.1988

Zlatozar Boev is also a great admirer of Bulgaria's natural beauty, deeply loving the mountains. Over the last 20 years, he has climbed more than 100 Bulgarian peaks in various mountains, including some of Bulgaria's and Greece's highest peaks (Fig. 5).

Research interests

Palaeornithology; archaeornithology; evolution of birds and palaeoavifaunas; bone and external morphology of birds; disappearance and extinction of avian taxa; history of zoology, ornithology, palaeontology and natural science collections.

Fig. 4. Zlatozar Boev (2nd row, wearing a gray shirt) among the founders of the Bulgarian Ornithological Society at the former Institute of Ecology of the Bulgarian Academy of Sciences in Sofia. 08.06.2001.

Main scientific contributions

The contribution of Prof. Zlatozar Boev to the Bulgarian and world science is enormous and encompasses a variety of aspects. His basic scientific contributions to ornithology can be grouped into three main areas:

(1) Paleornithology and Archaeornithology

For 45 years he explored bird remains from 130 localities, turning Bulgaria into one of the best-studied countries in terms of fossil and subfossil avifauna. He found over 410 taxa and 318 species, 120 of which had been extinct in Bulgaria since the late Tertiary and Quaternary periods (Boev, 2023). Prof. Boev discovered and described 41 taxa, 5 genera, 35 species and 1 subspecies of fossil birds that were new to the science (Table 1). He discovered the first fossil remains of ostriches (Boev & Spasov, 2009), peacocks,

hornbills (Boev & Kovachev, 2007), snowy owls, waldrapps and many more in Bulgaria. For the first time in Europe, he discovered the distribution of a new order of birds-the tropical hornbills (Bucerotiformes). Based on his studies, in the 1990s, four Bulgarian localities of fossil avifauna (Varshets, Slivnitsa, Dorkovo and Muselievo) were included in the list of the most significant paleornithological localities in Europe, and the first two were ranked among the most important localities for Plio-Pleistocene avifauna in the entire Palearctic (Mlíkovský, 1996; Tyrberg, 1998).

Fig. 5. Zlatozar Boev on Gotsev peak in the Slavyanka mountain. 26.07.2025.

Table 1. List of avian taxa described by Zlatozar Boev

No	Latin name	English name
	Genera	
1.	*Balcanas* (Boev 1998)	Balkan dabbling duck
2.	*Chauvireria* (Boev 1997)	Partridge of Cécile Mourer-Chauviré
3.	*Dobrosturnus* (Boev 2020)	Dobrudzha-starling
4.	*Eremarida* (Boev 2012)	Rock-steppe lark
5.	*Euroceros* (Boev, Kovachev 2007)	European ground hornbill

	Species	
6.	*Actitis balcanica* (Boev 1998)	Balkan sandpiper
7.	*Alauda xerarvensis* (Boev 2012)	Dry-field skylark
8.	*Aquila kurochkini* (Boev 2013)	Eagle of Evgeniy Kurochkin
9.	*Balcanas pliocaenica* (Boev 1998)	Pliocene Balkan dabbling duck
10	*Branta thessaliensis* (Boev, Koufos 2006)	Thessalian black goose
11	*Buteo spassovi* (Boev, Kovachev 1998)	Buzzard of Nikolay Spassov
12	*Chauvireria balcanica* (Boev 1997)	Balkan Partridge of Cécile Mourer-Chauviré
13	*Chauvireria bulgarica* (Boev 2020)	Bulgarian Partridge of Cécile Mourer-Chauviré
14	*Circaetos haemusensis* (Boev 2015)	Haemus Snake-eagle
15	*Circaetos rhodopensis* (Boev 2012)	Rhodopean Snake-eagle
16	*Coccothraustes balcanicus* (Boev 1998)	Balkan Hawfinch
17	*Coccothraustes simeonovi* (Boev 1998)	Hawfinch of Simeon Simeonov
18	*Cygnus verae* (Boev 2000)	Swan of Vera
19	*Dobrosturnus kardamensis* (Boev 2020)	Kardam Dobrudzha-starling
20	*Eremarida xerophila* (Boev 2012)	Dry-loving rock-steppe lark
21	*Eremophila prealpestris* (Boev 2012)	Pre-Alpine horned lark
22	*Euroceros bulgaricus* (Boev, Kovachev 2007)	Bulgarian European ground hornbill
23	*Falco bakalovi* (Boev 1999)	Falcon of Petar Bakalov
24	*Falco bulgaricus* (Boev 2011)	Bulgarian falcon
25	*Galerida bulgarica* (Boev 2012)	Bulgarian crested lark
26	*Gallinula balcanica* (Boev, 1999)	Balkan moorhen
27	*Geronticus balcanicus* (Boev, 1998)	Balkan bald ibis
28	*Gyps bochenskii* (Boev, 2010)	Griffon of Zygmunt Bocheński
29	*Lagopus balcanicus* (Boev, 1995)	Balkan ptarmigan
30	*Loxia patevi* (Boev, 1999)	Crossbill of Pavel Patev
31	*Lullula balcanica* (Boev 2012)	Balkan woodlark
32	*Lullula slivnicensis* (Boev 2012)	Slivnitsa woodlark
33	*Melanocorypha donchevi* (Boev 2012)	Black lark of Stefan Donchev
34	*Melanocorypha serdicensis* (Boev 2012)	Serdica black lark
35	*Otis hellenica* (Boev 2013)	Hellenic bustard
36	*Phasianus bulgaricus* (Boev 2020)	Bulgarian pheasant
37	*Pica praepica* (Boev 2021)	European pre-magpie
38	*Porzana botunensis* (Boev 2015)	Botunya River crake
39	*Regulus bulgaricus* (Boev, 1999)	Bulgarian firecrest
40	*Tetrao rhodopensis* (Boev, 1998)	Rhodopean capercaillie
	Subspecies	
41	*Fulica atra pontica* (Boev, Karaivanova 2012)	Pontian Eurasian coot

(2) Morphology and ecology of recent birds

Morphological studies of herons are among the most detailed and elaborate studies ever conducted (Fig. 6.). Zlatozar Boev compiled a complete "Osteological Atlas" and an identification guide on all elements of the skeleton of the representatives of a family of birds, herons (Ardeidae), from the European avifauna, as well as studies on their bone morphological abnormalities (Boev, 1986). He studied the exterior and skeletal morphology of all heron species in Europe and established the related adaptation mechanisms and the evolution trends. He was the first scientist in the world to study the adaptations of this group with regards to their on-land movements and foraging, and established the correlation between their anatomical structure, the type of habitats they use, and the degree of adaptation to ichthyophagy (Boev, 1987 a; b; c).

Fig. 6. Zlatozar Boev with a night heron chick that fell from the nest. Tsibar Island, Danube River. 05.06.1984.

Zlatozar Boev also explored the breeding biology and ecology of rare and endangered species in Bulgaria (Fig. 7). With regard to the oystercatcher (*Haematopus ostralegus*), he was the first one to establish an intracontinental extension of the breeding area, reported an unknown new subspecies for the country, *Haematopus ostralegus longipes*, and also discovered new nesting sites (the first nesting of the species along the Danube) (Fig. 8). The survey on the diet of rare and protected diurnal and nocturnal raptors, such as the Eagle Owl (*Bubo bubo*), the Barn Owl (*Tyto alba*), the Eastern Imperial Eagle (*Aquila heliaca*), the Saker Falcon (*Falco cherrug*), and the Egyptian Vulture (*Neophron percnopterus*), carried out by Zlatozar Boev in collaboration with other researchers, was among the most detailed and long-term studies.

(3) Faunistics and zoogeography of recent birds

Zlatozar Boev was the first researcher to identify zoogeographically the entire composition of the modern avifauna of Bulgaria (419 species, 266 breeding). Prof. Boev studied the distribution of several dozens of bird species in Bulgaria, summarizing and

elaborating the first comprehensive zoogeographical analysis of Bulgaria's contemporary avifauna (Boev, 1997). He implemented the first review and evaluation of bird studies carried out over the last 262 years (1744–2006), the composition of the avifauna of Bulgaria (96 Neogene, 160 Pleistocene, and 399 recent species) and the changes therein in the last 100 years, the importance of the Bulgarian territory for the migration and wintering of birds in Europe, migratory routes, wintering areas and the network of important bird sites, as well as the modern ornithographic regionalization of the country (Boev *et al*., 2007).

Fig. 7. Zlatozar Boev during ornithological observation in the Chepan Mountain. 24.04.1993.

Besides his ornithological publications, Prof. Boev also published a series of articles on the history of the National Museum of Natural History, which contain a lot of information about the history of ornithology in Bulgaria. It should be mentioned that a significant part of his research has also been related to recent, subfossil and fossil mammals. He is the author of dozens of studies summarizing the past distribution of large mammals in Bulgaria - rhinoceros, tapirs, deer, camels, bear, lynxes, cave hyena, red wolf, leopard, ibexes, badger, the aurochs, beaver, monk seal, etc.

Bulgarian science owes a debt of gratitude to Prof. Boev, for he laid the foundations of Paleornithology in our country. Zlatozar Boev founded three new ornithological branches in Bulgaria: (1) osteology, (2) exterior morphology and (3) paleo- and archaeo-ornithology. In addition to Bulgaria, he has studied modern and fossil birds from Azerbaijan, Brazil, Vietnam, Greece, Kazakhstan, New Zealand, Serbia and Türkiye. For Greece, he reported for the first time 15 species unknown in the fossil record of the country. The description of the world's first fossil goose, the Thessalian goose (*Branta thessaliensis*) from Greece, proved the ancient origin (Miocene) of the genus differentiation.

Fig. 8. Zlatozar Boev during ornithological observation in the "Ibisha" nature reserve on the island of Tsibar in the Danube River. 22-28.05.1989.

Zlatozar Boev built the richest collections of fossil (Neogene and Pleistocene) and subfossil birds on the Balkan Peninsula and in Southeast Europe, a comparative osteological collection of recent birds and a scientific library (over 15,000 publications) on paleornithology and bird evolution (Fig. 9.). He created two new collections: (1) the osteological and (2) the paleo- and archaeo-ornithological collections (Boev, 2024).

Prof. Boev has participated with over 100 reports in national and international forums (Fig. 10.). He has also been part of dozens of field expeditions and research projects (Fig. 11.). Prof. Boev authored essays on a number of bird species for the second edition of the Bulgarian Red Data Book (Golemansky *et al*., 2011) and the Atlas of breeding birds in Bulgaria (Iankov, 2007).

Prof. Boev's contributions to paleornithology are world-renowned, ranking him among the world's most respected specialists in this field. He is the author of over 930 scientific and popular science articles, books and textbooks, printed in more than 20 countries in Europe, Asia and North America, which makes him the most productive author in Bulgaria’s ornithology.

Fig. 9. Zlatozar Boev and Prof. Nikolay Spasov before the presentation of their scientific work at the National Museum of Natural History, Bulgarian Academy of Sciences, to foreign experts for international evaluation by the European Science Foundation and the European Federation of National Academies of Sciences. 09.07.2009.

Educational activity

Prof. Zlatozar Boev is also a leader in developing the scientific and educational capacity of the Bulgarian ornithological community. He was the supervisor of ten PhD students and four master students who developed their theses on different ornithological topics. Prof. Boev also participated in the training and evaluation of scientific personnel in paleornithology in Greece, Russia, Serbia, and Ukraine.

Zlatozar Boev has translated into Bulgarian and edited over 160 popular science books and 282 films (Fig. 12). He regularly contributes to two of Bulgaria's oldest journals: "The Fossil Record" in "Priroda" ("Nature"), published by the Bulgarian Academy of Sciences (since 2012) and "Game in the past on our lands" in "Lov i ribolov" (since 2022). In 2016, he was awarded the Prize of the Union of Translators in Bulgaria for his overall activity in the field of translation (specialized translation and editing of scientific and popular science literature from English).

Fig. 10. Zlatozar Boev (to the right of the tallest one in front of the entrance) among the participants in the Third International Symposium of the Society for Avian Paleontology and Evolution (SAPE) at the Senckenberg Natural History Institute and Museum in Frankfurt am Main. 21.06.1992.

Fig. 11. Zlatozar Boev (wearing a black shirt on the 2nd row) among participants in the Bulgarian-British archaeological expedition to the Roman city of Nicopolis ad Istrum at the village of Nikyup (Veliko Tarnovo Region). 1988 year.

On the occasion of his 70th anniversary, the Scientific Council of NMNHS-BAS awarded him the "Academician Ivan Buresh" award in 2025 for his significant scientific contribution in the fields of ornithology, paleontology and archaeozoology, as well as for his contribution to the development of the museum. The Regional Museum of Natural History in Plovdiv awarded him the "70 Years of the Regional Museum of Natural History Plovdiv" award in the same year for his contribution to the cooperation between the two museums.

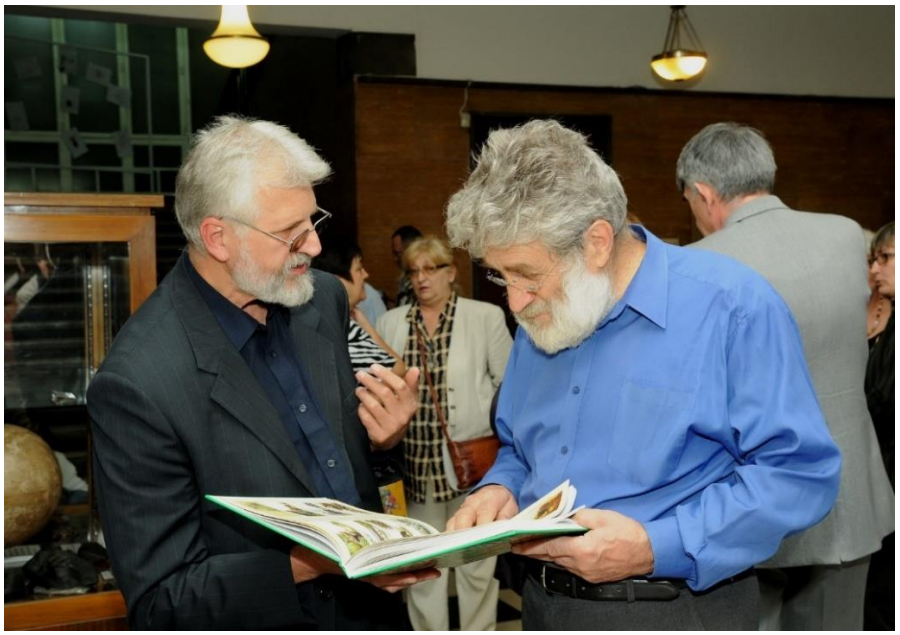

Fig. 12. Zlatozar Boev with Prof. Petar Beron at the presentation of the Bulgarian edition of the book "Animals. Illustrated Encyclopedia" (Bulgarian translation by Zlatozar Boev) at the National Museum of Natural History, Bulgarian Academy of Sciences. 28.09.2009.

His promotion activity is extensive. Prof. Boev has had more than 70 interviews on radio, TV, and social media, and has written hundreds of popular science articles and books for children and older birders (Fig. 13). Zlatozar Boev has participated in dozens of scientific juries in procedures for academic scientific positions and scientists' degrees in the fields of zoology, paleontology, ecology, and hunting. He has reviewed hundreds of scientific publications in over 30 international, foreign and national specialized journals. He was a member of the editorial boards of Bulletin of the Natural History Museum – Plovdiv, Online ISSN 2534-9635; Print ISSN 2534-9627; ZooNotes — "Paisiy Hilendarsky" Plovdiv Univer, ISSN 1313-9916 and Natural Science and Advanced Technology Education / Education in Natural Sciences and High Technologies, ISSN 2738-7135 (print), ISSN 2738-7143 (online) AzBuki — Ministry of Education and Science.

Zlatozar Boev compiled the first Bulgarian-language dictionaries of the scientific names of all species of birds and mammals in the world (Boev, 2025 a; b; c).

It is difficult to briefly cover all the activities and contributions of this dedicated and tireless ornithologist. It would not be an exaggeration to say that he is the pillar of modern Bulgarian ornithology! May we wish him good health and many more great achievements in the second half of his life journey!

Fig. 13. Zlatozar Boev shows some of the emblematic exhibits at the National Museum of Natural History, Bulgarian Academy of Sciences to Prime Minister Simeon Saxe-Coburg-Gotha and the Minister of Education and Science, Assoc. Prof. Daniel Valchev. 29.04.2009.

Bibliography of the scientific publications by Prof. Dr. Zlatozar Boev DSc

1979

1. Boev, Z. 1979. Some preliminary results of the ecological-faunal studies on small mammals (Insectivora and Rodentia) in Ograzhden Mountain. - In: X National Review of TNTM, II stage, Biology Faculty, Sofia University "Kl. Ohridski", Sofia, 19-21.04.1979. [Abstracts], P. 17. (in Bulgarian).

1980

2. Boev, Z. 1980. Ecological and faunistic studies of insectivorous mammals and rodents (Insectivora; Rodentia; Mammalia) from the Ograzhden Mountain. – XI National Review of TNTM. Student Scientific Session. Sofia, 08.05.1980. Section Zoology, Phytology, Ecology and Biology Teaching Methodology. Biology Faculty, Sofia University “Kliment Ohridski”. Invitation [Abstracts]. P. 3-4. (in Bulgarian).

1983

3. Boev, Z. 1983. Observations on birds in the northern part of the Devetashko Plateau. – Ornithological information bulletin. Institute of Zoology - BAS, 13-14: 31-36. (in Bulgarian).

4. Boev, Z. 1983. Insectivorous mammals and rodents (Mammalia; Insectivora, Rodentia) from Ograzhden. - Acta zoologica bulgarica, 21: 59-66. (in Bulgarian, English summary).

1984

5. Boev, Z. 1984. On the comparative morphology of the flight apparatus of the night heron and little egret (*Nycticorax nycticorax* (L.) et *Egretta garzetta* (L.) - Ardeidae; Aves). - Ornithological information bulletin. Institute of zoology - BAS, 15-16: 58-67. (in Bulgarian).
6. Boev, Z. 1984. The osteology of birds - current state and prospects. - In: III National Conference on Zoology, Blagoevgrad, 18-20.10.1984. Abstracts of the reports: 52-53. (in Bulgarian).
7. Boev, Z. 1984. Skeleton weights of herons in Bulgaria (family Ardeidae - Aves). - In: National Conference on Biology, Mihaylovgrad, 11-13 Sept. 1984, Abstracts, P. 41-42. (in Bulgarian).

1985

8. Boev, Z. 1985. Two bone anomalies in the pelvic skeleton of the squacco heron (*Ardeola ralloides* Scop.) and the little egret (*Egretta garzetta* L.) (Ardeidae - Aves). - Ornithological information bulletin. Institute of zoology - BAS, 17: 34-36. (in Bulgarian).
9. Boev, Z. 1985. Observations on the birds of the Emen Canyon. - Ornithological Information Bulletin. Institute of Zoology - BAS, 18: 28-33. (in Bulgarian).
10. Boev, Z. 1985. Problems of the conservation of herons (family Ardeidae - Aves) in fish farms in Bulgaria. - In: National Student Conference with International Students on Ecosystem Research and Environmental Protection, Faculty of Biology, Sofia University "Kl. Ohridski", Sofia, May 1985, Collection of Abstracts, pp. 26-27. (in Bulgarian).
11. Boev, Z. 1985. Skeleton weights of herons (family Ardeidae - Aves) in Bulgaria. - In: National Conference on Biology (Reports and Communications). Section "Entomology, Hydrobiology and Ornithology", pp. 108-113. (in Bulgarian).

1986

12. Boev, Z. 1986. Bird bone remains. - In: Zh. Vazharova. The medieval settlement of Garvan, Silistra district, 6th - 11th centuries, Sofia, Bulgarian Academy of Sciences, p. 68. (in Bulgarian).
13. Boev, Z. 1986. Morphological abnormalities of the skeletal system of the herons (Aves, Ardeidae). - Acta zoologica bulgarica, 31: 24-31. (in Bulgarian).
14. Boev, Z. 1986. A Comparative Morphological Characterization of the Flying Apparatus of the little bittern (*Ixobrychus minutus* L.) and the grey heron (*Ardea cinerea* L.) (Aves: Ardeidae). - Acta zoologica bulgarica, 30: 15-24.
15. Boev, Z. 1986. Comparative morphological studies of herons (family Ardeidae – Aves) from Bulgaria. – National Museum of Natural History, Bulgarian Academy of Sciences, Author's abstract of the PhD dissertation, S., Bulgarian Academy of Sciences: 1-30. (in Bulgarian).

1987

16. Boev, Z. 1987. Morphometric characteristics of sexual dimorphism and individual variability of herons (Aves, Ardeidae) from Bulgaria. I. Somatometric characters. - Acta zoologica bulgarica, 33: 44-59. (in Bulgarian, English summary).
17. Boev, Z. 1987. Morphometric characteristics of sexual dimorphism and individual variability of herons (Aves, Ardeidae) from Bulgaria. II. Osteometric characters. - Acta zoologica bulgarica, 34: 53-67. (in Bulgarian, English summary).
18. Boev, Z. 1987. Morphometric characteristics of the sexual dimorphism and the individual variability of the herons (Aves, Ardeidae) in Bulgaria. III. Indices. - Acta zoologica bulgarica, 35: 53-64. (in Bulgarian, English summary).
19. Boev, Z. 1987. Comparative morpho-functional analysis of the feeding apparatus of the purple heron and grey heron (*Ardea purpurea* L. and *Ardea cinerea* L.; Ardeidae - Aves). - In: Modern achievements of Bulgarian zoology - Materials from the 4th June Scientific Conference on Zoology, Sofia, 25-30.05.1987. S., BAS: 363-366. (in Bulgarian).
20. Boev, Z. 1987. Comparative morpho-ecological study on the wingspan of herons (family Ardeidae - Aves) from Bulgaria. - In: Yub. nat. conf. biol., Pleven, 29-31.05.1986. Section "Zoology, ecology and environmental protection". Reports and announcements. P. 57-60. (in Bulgarian).
21. Boev, Z. 1987. [Notes on fossil birds from] Bulgaria. - Information Letter, Society of Avian Paleontology and Evolution. Lyon, 1: 1.

1988

22. Boev, Z. 1988. [Notes on fossil birds from] Bulgaria. - Society of Avian Paleontology and Evolution. Information Letter, Lyon, 2: 4.
23. Boev, Z. 1988. Osteological features for identification of herons (Aves, Ardeidae). - Acta zoologica bulgarica, 36: 56-62.
24. Boev, Z. 1988. Morphometric characteristics of the adaptations of herons (Aves, Ardeidae) in relation to their movement along the substrate. - Acta zoologica bulgarica, 36: 63-71. (in Bulgarian, English summary).
25. Boev, Z. 1988. First proofs for the existence of the black grouse (*Tetrao tetrix* /L./) (Aves, Tetraonidae) in Bulgaria. - Acta zoologica bulgarica, 36: 72-77. (in Bulgarian, English summary).
26. Simeonov, S., Boev, Z. 1988. Study of the nutritive spectrum of the eagle owl (*Bubo bubo* /L./) in Bulgaria. - Ecology, 21: 47-56. (in Bulgarian).

1989

27. Boev, Z. 1989. [Notes on fossil birds from] Bulgaria. - Information Letter, Society of Avian Paleontology and Evolution. Lyon, 3: 1-2.
28. Boev, Z. 1989. Variability of the wing of the herons (family Ardeidae - Aves) from Bulgaria. - Historia naturalis bulgarica, 1: 36-43. (in Bulgarian, English summary).
29. Boev, Z. 1989. Morphometrical characteristics of the adaptations in relation to the getting of food of the herons (Aves, Ardeidae). - Acta zoologica bulgarica, 37: 49-62. (in Bulgarian, English summary).
30. Boev, Z. N., Ribarov, G. K. 1989. Les oiseaux dans la vie de la localité moyenageuse de Hissrlik (Sliven) (X—XII s.). – Bulletin des musees de la Bulgarie du Sud-Est., 12: 207-212. (in Bulgarian, French summary).

31. Boev, Z., Iliev, N. 1989. Les oiseaux dans la nourriture de la population de la ville interieure de Veliki Preslav (Ixe –Xe s.). - Archeologiya, BAS, 4: 40-43. (in Bulgarian, French summary).

1990

32. Boev, Z. 1990. [Notes on fossil birds from] Bulgaria. - Information Letter, Society of Avian Paleontology and Evolution. Lyon, 4: 2.
33. Boev, Z. 1990. Birds from Antiquity in Bulgaria. - In: Internat. Council for Archaeozoology. Sixth Internatational Conference, National Museum of Natural History, Smithsonian Institution, Washington, 21.-25.05.1990. Abstracts.
34. Boev, Z. 1990. Die Insel Zibar - ein perspektivreiches Reservat der Donau. - In: Limnologische Berichte der 28 Tagung der IAD, Varna, 24.-28.09.1990. Wissenschaftliche Kurzreferate: 395-398.
35. Boev, Z. 1990. Parrots (Order Psittaciformes) in the collection of the National Museum of Natural History - Sofia. - Historia naturalis bulgarica, 2: 3-6.
36. Boev, Z. 1990. 100 years of ornithological research in Bulgaria. - Historia naturalis bulgarica, 2: 25-35. (in Bulgarian, English summary).
37. Boev, Z. 1990. Conservation status of diurnal and nocturnal birds of prey (Falconiformes et Strigiformes; Aves) in the avifauna of Bulgaria. - In: Second Young Scientific Conference with International Students "The Contribution of Young Scientists to Solving the Ecological Problem", Vratsa, 24-27.09.1990. Vratsa: 7-11. (in Bulgarian).
38. Boev, Z. 1990. Conservation status of diurnal and nocturnal birds of prey (Falconiformes et Strigiformes; Aves) in the avifauna of Bulgaria. - In: Second Young Scientific Conference with International Students "The Contribution of Young Scientists to Solving the Ecological Problem", Vratsa, 24-27 September 1990. Program [and short summaries]. Vratsa, 6. (in Bulgarian).
39. Boev, Z., Ribarov, G. 1990. La faune ornithologique de la localité sombrée prés d'Urdoviza (actuellement Kiten) de l'âge du bronze rècent- Archeologiya, BAS, 2: 53-57. (in Bulgarian).
40. Iliev, N., Boev, N. 1990. Birds in the food of the inhabitants of the Outer town of Veliki Preslav (9-10-th century). - Interdisciplinarny izsledvaniya, AIM-BAS, 17: 91-94. (in Bulgarian).
41. Ribarov, G., Boev, Z. 1990. Investigation of the animal remains from the late Iron Age Yassa-Tepe near Yambol - Interdisciplinarny izsledvaniya, AIM-BAS, 17: 83-90. (in Bulgarian).

1991

42. Boev, Z. 1991. [Notes on fossil birds from] Bulgaria. - Society of Avian Paleontology and Evolution. Information Letter, Lyon, 5: 3-4.
43. Boev, Z. 1991. Darting stroke morphological adaptation to the getting of prey of Herons (Family Ardeidae - Aves). – 22nd Internat. Ethological Conf. Kyoto, Japan. [Abstracts].
44. Boev, Z. 1991. The Eneolithic and Early Bronze Age Birds from the Submerged Settlement at Sozopol (Black Sea Coast, Bulgaria). - In: Thracia Pontica V. Sozopol, 07.-12.1991. Les ports dans la vie de la Thrace ancienne. Resumes: 5-6.
45. Boev, Z. 1991. Waterfowl in Ancient Bulgaria. - In: Queiroga, F.; Dinis, A. P. (Eds.). Paleoecologia e Arqueologia II. Vila Nova de Famalicao: 111-120.

46. Boev, Z. 1991. The centenary of the birth of Pavel Patev – the founder of modern ornithology in Bulgaria. - Historia naturalis bulgarica, 3: 111-116. (in Bulgarian, English summary).
47. Boev, Z. 1991. The ornithological collections of the National Museum of Natural History at the Bulgarian Academy of Sciences. - Historia naturalis bulgarica, 3: 37-48. (in Bulgarian, English summary).
48. Boev, Z. 1991. The birds of the Roman city of Nicopolis ad Istrum (2nd - 6th c.) at Nikjup, Lovech region. - Historia naturalis bulgarica, 3: 92-102. (in Bulgarian, English summary).
49. Boev, Z. 1991. Distribution and status of the oystercatcher (*Haematopus ostralegus* L. 1758) (Haematopodidae - Aves) in Bulgaria. - Historia naturalis bulgarica, 3: 75-91. (in Bulgarian, English summary).
50. Boev, Z., Iliev, N. 1991. Les oiseaux et leur importance pour les habitants de Veliki Preslav (IXe—X e s.). - Archaeologiya, BAS, 3: 43-48. (in Bulgarian).

1992

51. Boev, Z. 1992. [Notes on fossil birds from] Bulgaria. - Society of Avian Paleontology and Evolution. Information Letter, Lyon, 6: 6.
52. Boev, Z. 1992. Archaeornithology and the synanthropization of birds (a case study for Bulgaria). – Bird Working Group – ICAZ First Meeting. Ornithoarchaeology: Birds of the past from a paleocultural perspective. Abstracts. Madrid, 7-10.10.1992. Archaeofauna. Technical paper No 1.
53. Boev, Z. 1992. Birds in the Ancient Art of Bulgaria. – The 6th Internat. Conf. on Human-Animal Interactions "Animals and Us". Montreal, Canada, 21-25.07.1992. [Programme and Abstracts].
54. Boev, Z. 1992. Paleornithological studies in Bulgaria. - In: Campbell, K. E. (ed.). Papers in Avian Paleontology Honoring Pierce Brodkorb. (Incorporating the Proceed. of the 2nd Internat. Symp. of the Soc. of Avian Paleont and Evol., 28-30.09.1988. Los Angeles), Science Series, No 36, Nat. Hist. Mus. of Los Angeles County, Los Angeles: 459-463.
55. Boev, Z. 1992. Raptors and Owls (Falconiformes et Strigiformes - Aves) from the Archaeological Excavations in Bulgaria. - In: Society of Ethnobiology, Fifteen Annual Conf., March 25-27, 1992. National Museum of Natural History, Smiths. Inst., Washington, D.C. [Abstracts].
56. Boev, Z. 1992. Upper Pliocene Birds from Varshets (West Balkan Range, Bulgaria). – 3. Symposium der Society of Avian Paleontology and Evolution. Frankfurt am Main 22.-26. Juni 1992. Forschungsinstitut Senckennberg [Abstracts].
57. Boev, Z. 1992. First International Meeting on Ornithoarchaeology. - Archaeologiya, BAS, 4: 63-64. (in Bulgarian).
58. Iliev, N., Boev, Z., Spasov, N. 1992. Restes osseux d'annimaux de la villa de l'époque antique basse et de la localité de l'époque haute byzantine dans le quartier Bela voda, dstrict de Pernik. - Archaeologiya, BAS, 1: 44-53. (in Bulgarian).

1993

59. Bochenski, Zb., T. Tomek, Z. Boev, Iv. Mitev. 1993. Patterns of bird bone fragmentation in pellets of the Tawny Owl (*Strix aluco*) and the Eagle Owl (*Bubo bubo*) and their taphonomic implications. - Acta zoologica cracoviensia, 36 (2): 313-328.
60. Boev, Z. 1993. [Notes on fossil birds from] Bulgaria. - Society of Avian Paleontology

and Evolution. Information Letter, Lyon, 7: 2.
61. Boev, Z. 1993. Archaeo-ornithology and the synanthropisation of birds: a case study for Bulgaria. - In: Archaeornithology: Birds and the Archaeological Record. Proceedings of the First Meeting of the ICAZ Bird Working Group. Madrid. October 1992. - Archaeofauna, 2: 145-153.
62. Boev, Z. 1993. The Bulgarian in Bulgaria – a master or an enemy of nature (115 years degradation of the environment in Bulgaria). – 1st World Optimum Population Congr., Cardiff (United Kingdom), August 1993. [Programme and Abstracts].
63. Boev, Z. 1993. Species composition and metrical characterization of birds-victims of the eagle owl (*Bubo bubo* /L., 1758/) (Aves, Stigidae). - Historia naturalis bulgarica, 4: 47-56. (in Bulgarian, English summary).
64. Boev, Z. 1993. The National Museum of Natural History and protection of nature in Bulgaria. - Historia naturalis bulgarica, 4: 78-86. (in Bulgarian, English summary)
65. Boev, Z. 1993. Neolithic birds from the prehistoric settlement at Kazanluk. - Historia naturalis bulgarica., 4: 57-67. (in Bulgarian, English summary).
66. Boev, Z. 1993. The osteological collections and their significance for the ornithological researches. - Historia naturalis bulgarica, 4: 3-9. (in Bulgarian, English summary)
67. Boev, Z., Ribarov, G. 1993. The birds from the ancient town of Kabile (1st millennium BC - 6th century AD) near Kabile (Burgas district). - Historia naturalis bulgarica, 4: 68-77. (in Bulgarian, English summary).
68. Iliev, N., Boev, Z., Spasov N. 1993. Ossements d'animaux de la ville romaine de Ratiaria (He—IVe s.) pres d'Arčar, village de la région de Montana - Archaeologiya, BAS, 4: 52-59. (in Bulgarian, French summary).

1994

69. Boev, Z. 1994. [Notes on fossil birds from] Bulgaria. - Society of Avian Paleontology and Evolution. Information Letter, Lyon, 8: 4-5.
70. Boev, Z. 1994. The Black Grouse (*Tetrao tetrix* /L., 1758) - A Disappeared Species in Bulgaria (Paleolithic and Neolithic Records). - In: Kokabi, M., J. Wahl, T. Uldin, J. Rehmet (eds.). Internat. Council for Archaeozoology. 7. Internationaler Kongress, 26.09.-02.10.1994 in Konstanz. Landesdenkmalamt Baden-Wűrttemberg. Archäologiches Landesmuseum Baden-Wűrttemberg. Abstracts.
71. Boev, Z. 1994. The Upper Pleistocene Birds. - In: Kozlowski, J. K., H. Laville, B. Ginter (eds.) Temnata Cave. Excavations in Karlukovo Karst Area, Bulgaria. Jagellonian Univ. Press. Cracow. 1.2.: 55-86.

1995

72. Boev, Z. 1995. [Notes on fossil birds from] Bulgaria. - Society of Avian Paleontology and Evolution. Information Letter, Lyon, 9: 2-3.
73. Boev, Z. 1995. Bulgaria: the Pleistocene record of birds. - In: Baryschnikov, G., I. Kuzmina, J. Saunders (eds.). First Internat. Mammoth Symp., 16-22.10.1995, Saint Petersburg, Abstracts. RAS. Saint Petersburg: 664-665.
74. Boev, Z. 1995. Eneolithic and Early Bronze Age birds from the sunken settlement at Sozopol Bay (Bulgarian Black Sea Coast). - Historia naturalis bulgarica, 5: 51- 60.
75. Boev, Z. 1995. Middle Villafranchian birds from Varshets (Western Balkan Range - Bulgaria). - In: Peters, D. (ed.). Acta palaeornithologica. 3. Symposium SAPE. 5. Internat.

Senckenberg-Konferenz 22-26 Juni 1992. - Courier Forschungsinstitut Senckenberg. Frankfurt a. M., 181: 259-269.
76. Boev, Z. 1995. On the appearance of the domestic fowl (*Gallus gallus domestica*) in Bulgaria and Balkan Peninsula and the question of domestication of Junglefowls (Genus *Gallus* Brisson, 1760) in Southeast Europe. - Historia naturalis bulgarica, 5: 37-49.
77. Boev, Z. 1995. The Gamefowl in Bulgaria in the Last 8 000 Years. - International Union of Game Biologists, XXII Congr. "The Game and the Man", Sofia, 04-08.09.1995: 54.
78. Boev, Z. 1995. The wild galliform and gruiform birds (Aves, Galliformes and Gruiformes) in the archaeological record of Bulgaria. - ICAZ Bird bone working group. Second meeting - Southampton, England, 25-28.09.1995, 18.
79. Boev, Z. 1995. Varshets (Western Stara Planina Mts. - Bulgaria): an example of a Middle Villafranchian forest-steppe ornithocoenosis. - In: Ecosystem Evolution. Internat. Symposium. Moscow, 26-30.09.1995. Abstracts. Paleontol. Inst., RAS. Moscow, 14.
80. Boev, Z. N., D. S. Dimitrov. 1995. On the Lanner falcon (*Falco biarmicus* Temminck, 1825) in Bulgaria. - Acta zoologica bulgarica, 48: 105-112.
81. Boev, Z. 1995. Birds from medieval settlements in Bulgaria. - Historia naturalis bulgarica, 5: 61-67. (in Bulgarian, English summary).

1996

82. Anonym. [Z. Boev]. 1996. The Bulgarian Ornithological Society is finally established. - Historia naturalis bulgarica, 6: 82.
83. Boev, Z. 1996. [Notes on fossil birds from] Bulgaria. - Information Letter, Society of Avian Paleontology and Evolution. Lyon, 10: 4-5.
84. Boev, Z. 1996. Gamefowl in Bulgaria over the last 8,000 years. - In: Botev, N. (Sen. ed.) Procedings of the Internatational Union of Game Biologists. XXII Congress "The Game and the Man", Sofia, Bulgaria, September 4-8, 1995. Pensoft Publ., Sofia - Moscow - St. Petersburg, 398-401.
85. Boev, Z. 1996. Raptors and Owls (Aves: Falconiformes et Strigiformes) in the Archaeological Record of Bulgaria. - Historia naturalis bulgarica, 6: 83-92.
86. Boev, Z. 1996. Tertiary Avian Localities of Bulgaria. - In: Mlíkovský, J. (ed.) Tertiary avian localities of Europe. - Acta universitatis Carolinae Geologica. Univerzita Karlova. Praha, 39 (1995): 541-545.
87. Boev, Z. 1996. The Holocene avifauna of Bulgaria (A review of the ornitho-archaeological studies). - Historia naturalis bulgarica, 6: 59-81.

1997

88. Bernard-Laurent, A., Z. Boev. 1997. *Alecrotis graeca* Rock Partridge. - In: - Hagemeijer, W. J. M., M. J. Blair (eds.). The EBCC Atlas of European Breeding Birds. Their Distribution and Abundance. T & A D Poyser, London: 207.
89. Boev, Z. 1997. [Notes on fossil birds from] Bulgaria. - Society of Avian Paleontology and Evolution. Information Letter, Lyon, 11: 2-3.
90. Boev, Z. 1997. An attempt for an ornithofaunistical and ornithogeographical characterization of Bulgaria. - In: Biodiversity and Ecological Problems of Balkan Fauna. Sofia, 26-29.05.1997. Institute of Zoology - BAS, Sofia. Abstracts: 55.
91. Boev, Z. 1997. *Chauvireria balcanica* gen. n., sp. n. (Phasianidae - Galliformes) from the Middle Villafranchian of Western Bulgaria. - Geologica Balcanica, 27 (3-4): 69-78.

92. Boev, Z. 1997. Development and recent achievements of Bulgarian ornithoarchaeology. – 3rd Annual Meeting of the European Association of Archaeologists. Ravenna, Italy, 24.-28.09.1997. [Abstracts].
93. Boev, Z. 1997. Ornithoarchaeology in Bulgaria: development and results. - Archaeologia bulgarica, Sofia. I (2): 71-80.
94. Boev, Z. 1997. Stuart Baker's collection of birds in the National Museum of Natural History (Sofia). - Historia naturalis bulgarica, 7: 5-12.
95. Boev, Z. 1997. The Alagoas (Eastern-Brazil Razor-Billed) Curassow - *Mitu mitu* (L.) - a World rarity in the collection of the National Museum of Natural History, Sofia (Aves: Galliformes: Cracidae). - Historia naturalis bulgarica, 7: 105-108.
96. Boev, Z. 1997. The Black Grouse, *Tetrao tetrix* (L., 1758) (Tetraonidae, Aves), a dsappeared species in Bulgaria (Paleolithic and Neolithic records). - Anthropozoologica, 25-26: 643-646.
97. Boev, Z. 1997. Wild Galliform and Gruiform Birds (Aves, Galliformes and Gruiformes) in the Archaeological Record of Bulgaria. – International Journal of Osteoarchaeology, 7: 430-439.
98. Boev, Z. 1997. 75 years of the birth of Nikolay Boev - the founder of the modern nature conservation of Bulgaria. - Historia naturalis bulgarica, 8: 9-22. (in Bulgarian, English summary).
99. Boev, Z. 1997. Species composition and rates of evolution of birds (Aves): a review of current views. - Historia naturalis bulgarica, 8: 137-146. (in Bulgarian, English summary).
100. Boev, Z. 1997. On some ornithofaunistic and ornithogeographical peculiarities of Bulgaria. - Historia naturalis bulgarica, 8: 147-154. (in Bulgarian, English summary).
101. Boev, Z. 1997. From the bibliography of Nikolay Boev. - Historia naturalis bulgarica, 8: 23-34. (in Bulgarian, English summary).
102. Boev, Z. 1997. Prof. Dr. Nikolay Yosifovich Burchak-Abramovich (26.09.1900 - 15.10.1997). - Historia naturalis bulgarica, 8: 126. (in Bulgarian).
103. Boev, Z. 1997. Birds from the Roman settlement of Arbanas - 1 near the town of Pernik. - Historia naturalis bulgarica, 7: 28. (in Bulgarian).
104. Boev, Z. 1997. Falconry in Bulgaria - history and significance. - In: 7th Scientific Session of the Faculty of Biology, Sofia University "St. Kliment Ohridski", May 1997, Sofia. Program and abstracts, 39. (in Bulgarian, English summary).
105. Panovska-Asenova, H., Asenov, L., Bechev, B., Boev, Z. 1997. Results of the census of the white stork (*Ciconia ciconia*) in the former Lovech district in 1994-1995. - In: Petrov, T. (ed.) The White Stork (*Ciconia ciconia*) in Bulgaria. Nature Conservation Series, vol. 2, BSPB, Plovdiv, "Pygmalion", 75-79. (in Bulgarian, English summary).
106. Ribarov, G., Boev, Z. 1997. Bone remains of wild and domestic animals from the Telish-Redoutite prehistoric settlement near Telish (Pleven district). - Historia naturalis bulgarica, 7: 61-70. (in Bulgarian, English summary).

1998

107. Boev, Z. 1998. [Notes on fossil birds from] Bulgaria. - Society of Avian Paleontology and Evolution. Information Letter, Lyon, 12: 5-6.
108. Boev, Z. 1998. A range fluctuation of Alpine swift (*Apus melba* (L., 1758)) (Apodidae - Aves) in Nothern Balkan Peninsula in the Riss-Wurm interglacial. - Biogeographia, Nuova Serie, Siena, 19 - 1997: 213-218.
109. Boev, Z. 1998. *Actitis balcanica* sp. n. - a Late Pliocene Sandpiper (Aves:

Scolopacidae) from Bulgaria. - Historia naturalis bulgarica, 9: 71-77.
110. Boev, Z. 1998. First fossil record of the Snowy Owl *Nyctea scandiaca* (Linnaeus, 1758) (Aves: Strigidae) from Bulgaria. - Historia naturalis bulgarica, 9: 79-86.
111. Boev, Z. 1998. Fossil birds of Dorkovo - an Early Pliocene site in the Rhodope Mts. (Southern Bulgaria). - Geologica Balcanica, 28 (1-2): 53-60.
112. Boev, Z. 1998. Late Pleistocene to Holocene Avifauna of Bulgaria: Diversity and Impoverishment. - In: Second International Congress on the Biodiversity, Ecology and Conservation of the Balkan Fauna BIOECCO 2. Information, Programme, Plenary Lectures, Abstracts. 16-20.09.1998, Ohrid: 94-95.
113. Boev, Z. 1998. Late Pliocene Hawfinches (Coccothraustes Brisson, 1760) (Aves: Fringillidae) from Bulgaria. - Historia naturalis bulgarica, 9: 87-99.
114. Boev, Z. 1998. Peafowls (g. Pavo Linnaeus, 1758) and Ptarmigans (g. Lagopus Brisson, 1760): an unique coexistance in North Bulgaria over 3 m. y. ago. - Biogeographia, Nuova Serie, Siena, 19 - 1997: 219-222.
115. Boev, Z. 1998. Presence of Bald Ibises (*Geronticus* Wagler, 1832) (Threskiornithidae - Aves) in the Late Pliocene of Bulgaria. - Geologica Balcanica, 28 (1-2): 45-52.
116. Boev, Z. 1998. Sur la presence de la bernache a cou roux *Branta ruficollis* (Pallas, 1769) au wurm en Bulgarie. - Branta, 3: 18-19.
117. Boev, Z. 1998. The Paleolithic Avifauna of Bulgaria. - ICAZ Bird Working Group Meeting. University of Victoria, Victoria, BC, Canada, 19-22.08.1998. Final Program and Abstracts: 12-13.
118. Boev, Z., Kovachev, D. 1998. *Buteo spassovi* sp. n. - a Late Miocene Buzzard (Accipitridae, Aves) from SW Bulgaria. - Geologica Balcanica, 29 (1-2): 125-129.
119. Boev, Z., Karaivanova, E. 1998. *Fulica atra pontica* subsp. n. from the Middle Holocene on the South Black Sea Coast, Bulgaria. - Historia naturalis bulgarica, 9: 53-69.
120. Simeonov, S., Milchev, B., Boev, Z. 1998. Study of the Eagle Owl (*Bubo bubo* (L.)) (Aves: Strigiformes) in the Strandzha mountain (Southeast Bulgaria). II. Food spectrum and trophic specialization. - Acta zoologica bulgarica, 50 (2/3): 87-100.

1999

121. Boev, Z. 1999. [Notes on fossil birds from] Bulgaria. - Information Letter, Society of Avian Paleontology and Evolution. Lyon, 13: 4-5.
122. Boev, Z. 1999. Earliest finds of crossbills (genus *Loxia*) (Aves: Fringillidae) from Varshets (NW Bulgaria). - Geologica Balcanica, 29 (3-4): 51-57.
123. Boev, Z. 1999. *Falco bakalovi* sp. n. - a Late Pliocene falcon (Falconidae, Aves) from Varshets (W Bulgaria). - Geologica Balcanica, 29 (1-2): 131-135.
124. Boev, Z. 1999. *Gallinula balcanica* sp. n. (Rallidae: Gruiformes) - a middle villafranchian moorhen from Western Bulgaria. - Acta zoologica bulgarica, 51 (1): 43-48.
125. Boev, Z. 1999. Late Pliocene Bustards (Aves: Otitidae) from Western Bulgaria. - Historia naturalis bulgarica, 10: 97-108.
126. Boev, Z. 1999. On the presence of *Tetrao partium* (Kretzoi, 1962) (Tetraonidae - Galliformes) in the Late Pliocene of Bulgaria. - Historia naturalis bulgarica, 10: 85-96.
127. Boev, Z. 1999. *Regulus bulgaricus* sp. n. - the first fossil Kinglet (Aves: Sylviidae) from the Late Pliocene of Varshets (W Bulgaria). - Historia naturalis bulgarica, 10: 109-115.

128. Boev, Z. 1999. The Late Pleistocene avifauna of Cave No 16 (NW Bulgaria) and its palaeoecological implication. - 8th International Congress on the Zoogeography and Ecology of Greece and Adjacent Regions, Kavala, 17-21.05.1999. 8th ICZEGAR Abstracts. Hellenic Zoological Society, 21-22.
129. Boev, Z. 1999. 60 years since the birth of Tanyu Michev - ornithologist, conservationist, photographer. - Historia naturalis bulgarica, 10: 116. (in Bulgarian)
130. Boev, Z. 1999. Neogene and Quaternary birds (Aves) from Bulgaria. – National Museum of Natural History, Bulgarian Academy of Sciences. S., Author's abstract of the dissertation for the degree of Doctor of Sciences. 1-68. (in Bulgarian, English summary).
131. Boev, Z. 1999. Distribution of the Little Bustard (*Tetrax tetrax* /Linnaeus, 1758/) and the Great Bustard (*Otis tarda* Linnaeus, 1758) (Aves: Otididae Gray, 1845) in Bulgaria during the Late Pleistocene and Holocene. - VIII Scientific Session of the Faculty of Biology, Sofia University "St. Kliment Ohridski", 27.-28.05.1999, Sofia. Program and abstracts: P. 44.

2000

132. Boev, Z. 2000. [Current investigations on fossil birds of] Bulgaria. Society of Vertebrate Paleontology. 178 (Spring 200). Supplement to Journal of Vertebrate Paleontology, 20 (I): 80-81.
133. Boev, Z. 2000. A Lower Miocene gull (Larinae gen. indet.) (Laridae Vigors, 1825 - Charadriiformes Huxley, 1867) from Hrabarsko (W Bulgaria). - Geologica Balcanica, 30 (1-2): 25-31.
134. Boev, Z. 2000. Additional Material of *Geronticus balcanicus* Boev, 1998, and Precision of the Age of the Type Locality. - Acta zoologica bulgarica, 52 (2): 53-58.
135. Boev, Z. 2000. *Cygnus verae* sp. n. (Anseriformes: Anatidae) from the Early Pliocene of Sofia (Bulgaria). - Acta zoologica cracovienzia, Krakow, 43 (1-2): 185-192.
136. Boev, Z. 2000. Early Pleistocene and Early Holocene avifauna of the Cherdzhenitsa Cave, Northwestern Bulgaria. - Historia naturalis bulgarica, 11: 107-116.
137. Boev, Z. 2000. Late Pleistocene and Holocene avian finds from the vicinity of the Lakatnik r/w Station (W Bulgaria). - Environment and Cultural Heritage in the Karst Areas. 1st National Conference, 10-12.11.2000, Sofia. Summaries: 11.
138. Boev, Z. 2000. Late Pleistocene and Holocene avifauna from three caves in the vicinity of Tran (Pernik District - W Bulgaria). - Environment and Cultural Heritage in the Karst Areas. 1st National Conference, 10-12.11.2000, Sofia. Summaries: 12.
139. Boev, Z. 2000. Late Pleistocene Avifauna of the Razhishkata Cave, Western Bulgaria. - Historia naturalis bulgarica, 12: 71-87.
140. Boev, Z. 2000. Late Pleistocene birds from the Kozarnika Cave (Montana District; NW Bulgaria). - Environment and Cultural Heritage in the Karst Areas. 1st National Conference, 10-12.11.2000, Sofia. Summaries: 11.
141. Boev, Z. 2000. Neogene avifaunas of Bulgaria. - Vertebrata PalAsiatica, Beijing, 38 – Suppl.: 2-3.
142. Boev, Z. 2000. The Presence of *Apus baranensis* Janossy, 1977, (Aves: Apodidae) in the Late Pliocene of Bulgaria. - Acta zoologica bulgarica, 52 (2): 43-52.
143. Boev, Z., Koufos, G. 2000. Presence of *Pavo bravardi* (Gervais, 1849) (Aves, Phasianidae) in the Ruscinian locality of Megalo Emvolon, Macedonia, Greece. - Geologica Balcanica, 30 (1-2): 69-74.
144. Boev, Z. 2000. 70th anniversary of the birth of Dr. Nikolay Iliev - veterinarian, local.

historian, archaeozoologist. – Historia naturalis bulgarica, 11: 160. (in Bulgarian).

145. Boev, Z. 2000. The paleornithology and archaeornithology as paleozoological branches. - Historia naturalis bulgarica, 12: 157-166. (in Bulgarian, English summary).

2001

146. Boev, Z. 2001 Early Pliocene avifauna of Muselievo (C Northern Bulgaria) - Acta zoologica cracoviensia, 44 (1): 37-52.
147. Boev, Z. 2001. [Current investigations on fossil birds of] Bulgaria. - Society of Vertebrate Paleontology. News Bulletin. 181 (Fall 2001): 18-20. Supplement to Journal of Vertebrate Paleontology.
148. Boev, Z. 2001. [Notes on fossil birds from] Bulgaria. – Newsletter. Society of Avian Paleontology and Evolution, Frankfurt am Main, 15: 3-4.
149. Boev, Z. 2001. Birds over the mammoth's head in Bulgaria. – In: Cavaretta, G., P. Gioia, M. Mussi, M. R. Palombo. The World of Elephants. Proceedings of the 1st International Congress. Roma, 16-20.10.2001: 180-186.
150. Boev, Z. 2001. Late Pleistocene and Holocene avian finds from the vicinity of the Lakatnik r/w Station (W Bulgaria). – In: Delchev, P., St. Shanov, Al. Benderev (Eds.). Karst. Vol. I. Proceedings of the First National Conference on Environment and Cultural Heritage in Karst. Sofia, 10.-11.11.2000. Earth and Man National Museum. Association of Environment and Cultural Heritage in Karst. Sofia, 107-112.
151. Boev, Z. 2001. Late Pleistocene and Holocene avifauna from three caves in the vicinity of Tran (Pernik District - W Bulgaria). – In: Delchev, P., St. Shanov, Al. Benderev (Eds.). Karst. Vol. I. Proceedings of the First National Conference on Environment and Cultural Heritage in Karst. Sofia, 10.-11.11.2000. Earth and Man National Museum. Association of Environment and Cultural Heritage in Karst. Sofia, 98-106.
152. Boev, Z. 2001. Late Pleistocene birds from the Kozarnika Cave (Montana District; NW Bulgaria). – In: Delchev, P., St. Shanov, Al. Benderev (Eds.). Karst. Vol. I. Proceedings of the First National Conference on Environment and Cultural Heritage in Karst. Sofia, 10.-11.11.2000. Earth and Man National Museum. Association of Environment and Cultural Heritage in Karst. Sofia, 113-128.
153. Boev, Z. 2001. Tetraonidae Vigors, 1825 (Galliformes - Aves) in the Neogene-Quaternary record of Bulgaria and the origin and evolution of the family. – International Counsil for Archaeozoology. Bird Working Group. IV Meeting, Krakow, Poland, 11.-15.09.2001. (Abstracts): 13.
154. Boev, Z. 2001. The Ornithological Collection of Dr. Emil Werner in the National Museum of Natural History in Sofia. – In: Bird Collections in Europe: The Challenge of Mutual Cooperation. 2nd European Symposium 09-12.11.2001, Bonn & Bad Honnef. Programme, Abstracts, Participants: 9.
155. Boev, Z. 2001. The Ornithological Collections of the National Museum of Natural History of the Bulgarian Academy of Sciences: their History and Scientific Value. – In: Bird Collections in Europe: The Challenge of Mutual Cooperation. 2nd European Symposium 09-12.11.2001, Bonn & Bad Honnef. Programme, Abstracts, Participants: 8.
156. Spasov, N., Iliev, N., Boev, Z. 2001. Animal remains from the Eneolithic site near the village of Dolnoslav, Plovdiv District, South Bulgaria. - Historia naturalis bulgarica, 13: 159-179. (in Bulgarian, English summary).

2002

157. Boev, Z. 2002. Der bulgarische Ornithologe Doz. Dr. Stefan Dontschev 70 Jahre alt. – Ornithologische Mitteilungen. 54 (10): 358-359.
158. Boev, Z. 2002. Fossil record and disappearance of peafowl (Pavo Linnaeus) from the Balkan Peninsula and Europe (Aves: Phasianidae). – Historia naturalis bulgarica, 14: 109-115.
159. Boev, Z. 2002. Tetraonidae Vigors, 1825 (Galliformes - Aves) in the Neogene-Quaternary record of Bulgaria and the origin and evolution of the family. – In: Proceedings of the 4th Meeting of the ICAZ Bird Working Group, Krakow, Poland, 11-15.09.2001. Acta zoologica cracoviensia, 45 (special issue): 263-282
160. Boev, Z. 2002. Neogene avifauna of Bulgaria. - In: Zhou, Z., Zhang, F. (eds.). Proceedings of the 5th Symposium of the Society of Avian Palaeontology and Evolution, Beijing, 01-04.06.2000. Science Press, Beijing, 29-40.
161. Boev, Z. 2002. The international project "Fauna Europaea" and Bulgaria's participation in it. – Historia naturalis bulgarica, 15: 54. (in Bulgarian, English summary).
162. Boev, Z. 2002. A useful book about the birds of Vitosha Mountain. - Historia naturalis bulgarica, 14: 72. (in Bulgarian, English summary).
163. Boev, Z. 2002. A book about European buntings. - Historia naturalis bulgarica, 14: 116. (in Bulgarian, English summary).

2003

164. [Boev, Z.] 2003. Member News and Notes [Bulgaria]. – International Council for Archaeozoology. Newsletter, 4 (2): 6.
165. Boev, Z. 2003. [Notes on fossil birds from] Bulgaria. – Newsletter. Society of Avian Paleontology and Evolution, Frankfurt am Main, 17: 3-5.
166. Boev, Z. 2003. Distribution of the Little Bustard (*Tetrax tetrax* /Linnaeus, 1758/) and the Great Bustard (*Otis tarda* Linnaeus, 1758) (Aves: Otididae Gray, 1845) in Bulgaria during the Late Pleistocene and the Holocene. – Annual of Sofia University "St. Kliment Ochridski", Faculty of Biol., Book 1 – Zoology, T. 93-94 (2003): 41-47.
167. Boev, Z. 2003. Specimens of extinct and threatened birds in the collections of the National Museum of Natural History in Sofia, Bulgaria. – In: Collar, N., C. Fisher, Ch. Feare (Eds.). Why Museums Mater; Avian Archives in Age of Extinction. - Bulletin of the British Ornithologists' Club. 123A – Suppl. 2003: 234-245.
168. Boev, Z. 2003. The collection of fossil birds of the National Museum of Natural History in Sofia: composition, development and scientific value. – dead BUT alive. 3rd European Conference on Bird Collections. National Museum of Natural History – Naturalis, Leiden, The Netherlands, 10.-12.10.2003. [Programme and Summaries]: 33
169. Boev, Z. 2003. The Ornithological Collection of Emil Werner in the National Museum of Natural History of Sofia. – In: Rheinwald, G. (ed.) - Bonner zoologische Beiträge, 51 (2/3) (2002). Spec. issue: Bird Collection in Europe: 193-195.
170. Boev, Z. 2003. The Ornithological Collections of the National Museum of Natural History of the Bulgarian Academy of Sciences: their History and Scientific Value. – In: Rheinwald, G. (ed.) - Bonner zoologische Beiträge, 51 (2/3) (2002). Spec. issue: Bird Collection in Europe: 157-163.
171. Milchev, B., Boev, Z., Toteva, Ts. 2003. Diet composition of the Long-eared Owl (*Asio otus*) during the autumn-winter period in the Northern Park of Sofia. – Annual of Sofia University "St. Kliment Ochridski", Faculty of Biol., Book 1 – Zoology, T. 93-94 (2003): 49-56.

2004

172. [Boev, Z.] 2004. Recent Publications [from Bulgaria]. – International Council for Archaeozoology. Newsletter, 5 (1): 6.
173. Boev, Z. 2004. [Notes on fossil birds from] Bulgaria. – Newsletter. Society of Avian Paleontology and Evolution, Frankfurt am Main, 18: 3.
174. Livezey, B., Boev, Z., Bochenski, Z., Ballman, P., Dyke, G. 2004. Comments on the proposed conservation of ussage of the specific name *Palaeortyx phasianoides* Milne-Edwards, 1869 (Aves, Galliformes) by the designation of a neotype. Case 3266. – Bulletin of Zoological Numenclature, 61 (1), 31 March 2004: 47
175. Marin, S., Ivanov, I., Georgiev, D., Boev, Z. 2004. On the Food of the Imperial Eagle *Aquila heliaca* on Sakar Mountain and Dervent Heights, Bulgaria. – In: Chancellor, R. D. and B.-U. Meyburg (eds.). 2004. Raptors worldwide: Proceedings of the VI World Conference on Birds of Prey and Owls, Budapest, Hungary, 18-23 May 2003. World Working Group on Birds of Prey and Owls, Berlin, and MME/BirdLife Hungary, Budapest, Hungary: 589-592.
176. Miltschev, B., Boev, Z., Georgiev, V. 2004. Die Nahrung der Schleiereule (*Tyto alba*) in Südost-Bulgarien. – Egretta, 47/1: 66-77.
177. Boev, Z. 2004. Second book about owls. – Historia naturalis bulgarica, 16:58. (in Bulgarian).
178. Boev, Z. 2004. Middle and Late Holocene birds from the Eastern Upper Thracian Plane (S Bulgaria). – Historia naturalis bulgarica, 16: 123-132. (in Bulgarian, English summary).

2005

179. Boev, Z. 2005. [Notes on fossil birds from] Bulgaria. – Newsletter. Society of Avian Paleontology and Evolution, Frankfurt am Main, 19: 5.
180. Boev, Z. 2005. Fossil birds in the National Museum of Natural History, Sofia: composition, development and scientific value. – Zoologische Mededelingen, Leiden 79-3 (4): 35-44.
181. Boev, Z. 2005. News and Notes [from Bulgaria]. – International Council for Archaeozoology Newsletter, 6 (2): 3.

2006

182. [Boev, Z.] 2006. Recent Publications [from Bulgaria]. – International Council for Archaeozoology. Newsletter, 7 (1): 7.
183. Boev, Z. 2006. [Notes on fossil birds from] Bulgaria. – Newsletter. Society of Avian Paleontology and Evolution, Frankfurt am Main, 20: 4.
184. Boev, Z. 2006. Avian remains from the Early Bronze Age settlement near Dyadovo village (vicinity of the town of Nova Zagora (Stara Zagora Region, SE Bulgaria) – Historia naturalis bulgarica, 17: 133-135.
185. Boev, Z. 2006. Deuxième trouvaille de la Bernache a cou roux *Branta ruflcollis* (Pallas, 1769) (Aves: Anatidae) au Quaternaire en Bulgarie. – Historia naturalis bulgarica, 17: 124.
186. Boev, Z. 2006. Early Pleistocene avifauna of Kunino (NW Bulgaria). - Historia naturalis bulgarica, 17: 125-132.

187. Boev, Z. 2006. Late Holocene avian remains from the localities of the Roman period in Bulgaria. - Historia naturalis bulgarica, 17: 109-123.
188. Boev, Z. 2006. Middle Pleistocene birds from the Morovitsa Cave (Lovech District, NC Bulgaria). – In: Zhalov, Al., Tr. Daaliev (Eds.) Proceed. of Jubilee Scientific Conference "75 years of organized speleology in Bulgaria", Bulgarian Federation of Speleology, Sofia, 4-5 April, 2004, 103-110.
189. Boev, Z. 2006. Pleistocene avifaunas of Bulgaria: a brief review. – Historia naturalis bulgarica, 17: 95-107.
190. Boev, Z., Koufos, G. 2006. The late Miocene vertebrate locality of Perivolaki, Thessaly, Greece. 2. Aves. – In: Koufos, G. (ed.). The late Miocene vertebrate locality of Perivolaki, Thessaly, Greece. - Palaeontographica, 276: 11-22.
191. Milchev, B., Boev, Z., Georgiev, V. 2006. Birds in the Diet of Barn Owl *Tyto alba* in SE Bulgaria. – Acrocephalus, 27: 59-63.
192. Milchev, B., Boev, Z., Kodjabashev, N. 2006. Breeding Distribution and Diet composition of the Barn Owl (*Tyto alba* (Scopoli, 1769)) (Aves: Strigiformes) in the North-Western Upper Thracian Plane (Bulgaria). – Acta zoologica bulgarica, 58 (1): 83-92.
193. Boev, Z. 2006. 120th anniversary of the birth of academician Ivan Buresh. – Bulletin of the Bulgarian Academy of Sciences, 4 (98), vol. 9, April 2006: 17-18. (in Bulgarian)
194. Boev, Z. 2006. First finds of ancient ground-hornbills of Europe discovered in Bulgaria. – In: Popov, Al. S. Slavova (eds.) 2007. News 2006, BAS, 108-111.
195. Boev, Z. 2006. First finds of ancient ostriches discovered in Bulgaria. – In: Popov, Al. S. Slavova (eds.) 2007. News 2006, BAS, 106-108.
196. Boev, Z. 2006. First summary of the biodiversity of the Eastern Rhodopes – Historia naturalis bulgarica, 17: 108. (in Bulgarian).

2007

197. [Boev, Z.] 2007. Member News and Notes [Bulgaria]. – Internat. Council for Archaeozoology. - Newsletter, 8 (2): 3.
198. Boev, Z. 2007. [Notes on fossil birds from] Bulgaria. – Newsletter. Society of Avian Paleontology and Evolution, Frankfurt am Main, 21: 3-4.
199. Boev, Z. 2007. Neogene avifaunas of Bulgaria (a brief review). – In: Bakardjieva, N. St. Chankova, B. Krastanov, Sv. Gateva (Compilers). Evolution and Ecology – 2007. Union of the Scientists of Bulgaria. 3rd National Seminar. Proceedings, Sofia, 26-35.
200. Boev, Z., Beech. M. 2007. The Bird Bones. - In: A. G. Poulter (ed.). Nicopolis ad Istrum. A Late Roman and Early Byzantine City. The Finds and the Biological Remains. Oxbow Books. The Society of Antiquaries of London. London. 242-253+307-318.
201. Boev, Z. 2007. Prof. Nikolay Burchak-Abramovich's Private Collection of Late Pleistocene Birds from Binagada (Azerbaijan). – In: 5th thInternational Meeting of European Bird Curators "Collections in Context", Natural History Museum Vienna, August 29th - 31th, 2007 Vienna, Austria. [Programme and Abstracts]: 13.
202. Boev, Z., Milchev, B., Popov V. 2007. Fauna, Zoogeography, and Ecology of Birds in Bulgaria. - In: Fet, V., A. Popov (Eds.) Biogeography and Ecology of Bulgaria. Springer, Dordrecht, 39-84.
203. Boev, Z., Kovachev D. 2007. *Euroceros bulgaricus* gen. nov., sp. nov. from Hadzhidimovo (SW Bulgaria) (Late Miocene) – the first European record of Hornbills.

(Aves: Coraciiformes). – Geobios, 40: 39-49.
204. Boev, Z. 2007. Bulgarian contribution to the exploration of the fossil avifauna of Indochina. – In: Popov, Al. S. Slavova (eds.) News 2007, BAS, 107-111.
205. Boev, Z. 2007. First finds of megantereon discovered in Bulgaria. – In: Popov, Al. S. Slavova (eds.) 2007. News 2007, BAS, 104-107.
206. Boev, Z., Gerasimov, G. 2007. *Phasianus colchicus* Common (Hybrid) Pheasant. - In: Iankov, P. (ed.) 2007. Atlas of Breeding Birds in Bulgaria. Bulgarian Society of the Protection of Birds, Conservation Series, Book 10. Sofia, BSPB, 206-207.
207. Boev, Z., Gerasimov, G. 2007. *Phasianus colchicus colchicus* (Colchic) Pheasant. - In: Iankov, P. (ed.) 2007. Atlas of Breeding Birds in Bulgaria. Bulgarian Society of the Protection of Birds, Conservation Series, Book 10. Sofia, BSPB, 204-205.
208. Boev, Z., Gerasimov, G., Nikolov, S. 2007. *Tetrao urogallus* Capercaillie. - In: Iankov, P. (ed.) 2007. Atlas of Breeding Birds in Bulgaria. Bulgarian Society of the Protection of Birds, Conservation Series, Book 10. Sofia, BSPB, 194-195
209. Gerasimov, G., Boev, Z., Shurulinkov, P. 2007. *Bonasa bonasia* Hazel Grouse. - In: Iankov, P. (ed.) 2007. Atlas of Breeding Birds in Bulgaria. Bulgarian Society of the Protection of Birds, Conservation Series, Book 10. Sofia, BSPB, 190-191.
210. Kovachev, A., Michev, T., Boev, Z., Delov, V. 2007. *Nycticorax nycticorax* (Black-crowned) Nigth Heron. - In: Iankov, P. (ed.) 2007. Atlas of Breeding Birds in Bulgaria. Bulgarian Society of the Protection of Birds, Conservation Series, Book 10. Sofia, BSPB, 68-69.
211. Kovachev, A., Michev, T., Boev, Z., Todorov, E., Alexandrov, T. 2007. *Platalea leucorodia* (Eurasian) Spoonbill. - In: Iankov, P. (ed.) 2007. Atlas of Breeding Birds in Bulgaria. Bulgarian Society of the Protection of Birds, Conservation Series, Book 10. Sofia, BSPB, 88-89.
212. Kovachev, A., Michev, T., Boev, Z., Kutsarov, I. 2007. *Ardea purpurea* Purple Heron. - In: Iankov, P. (ed.) 2007. Atlas of Breeding Birds in Bulgaria. Bulgarian Society of the Protection of Birds, Conservation Series, Book 10. Sofia, BSPB, 80-81.
213. Mitev, I., Boev, Z. 2006. Food spectrum of the Eagle owl (*Bubo bubo* (L., 1758)) (Aves - Strigiformes) in two Holocene localities from Northeastern Bulgaria. – Historia naturalis bulgarica, 17: 153-165. (in Bulgarian, English summary).
214. Michev, T., Boev, Z., Todorov, E., Kutsarov, I. 2007. *Egretta alba* Great White Egret. - In: Iankov, P. (ed.) 2007. Atlas of Breeding Birds in Bulgaria. Bulgarian Society of the Protection of Birds, Conservation Series, Book 10. Sofia, BSPB, 76-77.
215. Nikolov, S., Boev, Z., Delov, V. 2007. *Alectoris graeca* Rock Partridge. - In: Iankov, P. (ed.) 2007. Atlas of Breeding Birds in Bulgaria. Bulgarian Society of the Protection of Birds, Conservation Series, Book 10. Sofia, BSPB, 198-199.
216. Petkov, N., Michev, T., Boev, Z., Stefanov, T., Gigov, S. 2007. *Botaurus stellaris* (Great) Bittern. - In: Iankov, P. (ed.) 2007. Atlas of Breeding Birds in Bulgaria. Bulgarian Society of the Protection of Birds, Conservation Series, Book 10. Sofia, BSPB, 64-65.
217. Petrov, T., Stoychev, S., Boev, Z. 2007. *Haematopus ostralegus* (Eurasian) Oystercatcher. - In: Iankov, P. (ed.) 2007. Atlas of Breeding Birds in Bulgaria. Bulgarian Society of the Protection of Birds, Conservation Series, Book 10. Sofia, BSPB, 232-233.
218. Ruskov, K., Anelov, I., Yankov, P., Tonchev, B., Stoynov, E., Boev, Z. 2007. *Falco biarmicus* Lanner Falcon. - In: Iankov, P. (ed.) 2007. Atlas of Breeding Birds in Bulgaria. Bulgarian Society of the Protection of Birds, Conservation Series, Book 10. Sofia, BSPB, 184-185.
219. Stoychev, S. Boev, Z., Delov, V. 2007. *Alectoris chukar* Chukar.- In: Iankov, P. (ed.)

2007. Atlas of Breeding Birds in Bulgaria. Bulgarian Society of the Protection of Birds, Conservation Series, Book 10. Sofia, BSPB, 196-197.

220. Hristov, I., Boev, Z., Kovachev, A., Mitev, I. 2007. *Bubo bubo* (Eurasian) Eagle Owl. - In: Iankov, P. (ed.) 2007. Atlas of Breeding Birds in Bulgaria. Bulgarian Society of the Protection of Birds, Conservation Series, Book 10. Sofia, BSPB, 324-325.
221. Iankov, P., Boev, Z. 2007. *Tetrao tetrix* (Eurasian) Black Grouse. - In: Iankov, P. (ed.) 2007. Atlas of Breeding Birds in Bulgaria. Bulgarian Society of the Protection of Birds, Conservation Series, Book 10. Sofia, BSPB, 192-193.

2008

222. [Boev, Z.] 2008. Recent Publications [from Bulgaria]. – International Council for Archaeozoology. Newsletter, 9 (1): 8.
223. Boev, Z. 2008. [Notes on fossil birds from] Bulgaria. - Newsletter, Society of Avian Paleontology and Evolution. Frankfurt am Main, 22: 4-5.
224. Boev, Z. 2008. A brief review of the history of the nature protection in Bulgaria. – In: Seminar of Ecology – 2008, 17-18 April 2008, Sofia. Programme and Abstracts, Union of Scientists in Bulgaria, Biology Section, 14.
225. Boev, Z. 2008. A case of "unusual" late breeding of the House Martin (Delichon urbica Linnaeus, 1758) (Hirundinidae – Aves) in Bulgaria. - In: Velcheva, I. (Sc. Ed.). Jubilee Scientific Conference of Ecology, Plovdiv University "Paisiy Hilendarski", Faculty of Biology, Dept. of Ecology andEnvironment Conservation, 01.11.2008. Summaries, Plovdiv, 47.
226. Boev, Z. 2008. Afro-tropical and Afro-Indo-Malayan elements in the Neogene avifauna of Bulgaria and their paleozoogeographical implementations. – EGU 2008 session SSP16: "Paratethys - Mediterranean - Indopacific climatic, biotic and sedimentologic evolution"; Geophysical Research Abstract, Vol. 10 EGU2008-A-01628, 2008 SRef-ID: 1607-7962/gra/EGU2008-A-01628 European Geosciences Union. General Assembly 2008, Vienna, 13-18 April 2008. [ID-NR: EGU2008-A-01798].
227. Boev, Z. 2008. House martin *Delichon urbica*. – Acrocephalus, 29 (136): 74-75.
228. Boev, Z., Spassov, N., Kovachev, A. 2008. First Remains of Fossil Ostriches (Aves: Struthioniformes – Struthionidae) from Bulgaria. – Acta zoologica bulgarica, 60 (1): 89-98.
229. Boev, Z. 2008. Brief review of the history of the nature protection in Bulgaria. – Ecological Engineering and Environmental Protection, 7 (2-3): 140-149. (in Bulgarian, English summary).
230. Boev, Z. 2008. New records of the Northern Gannet (*Morus bassanus* (Linnaeus, 1 758), a poorly known sea bird in the Black Sea. National Oceanographic Commission. Varna. Bulletin. 5: 20-22. (in Bulgarian).
231. Boev, Z., B. Georgiev, R. Raichev, U. Georgieva 2008. The wetland zone of the Malkotamovska River near the town of Malko Tamovo \ (Burgas District, SE Bulgaria) - an example of rich biodiversity (Vertebrate fauna) under intensive anthropogenic impact. - Seventh International Symposium "Ecology – Sustainable Development", Scientific Proceedings, Vratsa, 23.10-25.10.2008. Union of Scientists – Vratsa, 66-72. (in Bulgarian, English summary).

2009

232. [Boev, Z.] 2009. News and Notes [Bulgaria]. – International Council for Archaeozoology. Newsletter, 10 (1): 3.

233. Boev, Z. 2009. [Notes on fossil birds from] Bulgaria. – Newsletter. Society of Avian Paleontology and Evolution, Frankfurt am Main, 23: 4-5.
234. Boev, Z. 2009. A case of "unusual" late breeding of the House Martin (*Delichon urbica* Linnaeus, 1758) (Hirundinidae – Aves) in Bulgaria. - In: Velcheva, I. G., A. G. Tsekov (Eds.). Proceeding of the Anniversary Scientific Conference of Ecology, Plovdiv, November 1st 2008, 191-193.
235. Boev, Z. 2009. Avian remains from the Early Chalcolithic settlement in Burgas (SE Bulgaria). – Acta zoologica bulgarica, 61 (2): 157-160.
236. Boev, Z. 2009. Avian remains from the Early Neolithic settlement of Slatina (Present Sofia City, Bulgaria). – Acta zoologica bulgarica, 61 (2): 151-156.
237. Boev, Z. 2009. Avian Remains from the Early Neolithic Settlement Near Yabalkovo Village (Haskovo Region, South-East Bulgaria). – Acta zoologica bulgarica, 61 (3): 317-322.
238. Boev, Z. 2009. Avian remains from the Late Chalcolithic settlement near Hotnitsa Village (Veliko Tarnovo Region, CN Bulgaria). – Acta zoologica bulgarica, 61(1): 49-54.
239. Boev, Z. 2009. Status of the Gannet *Morus bassanus* in the Black Sea Region. – Acrocephalus, 30 (140): 31-34.
240. Boev, Z., Spassov, N. 2009. First record of ostriches (Aves, Struthioniformes, Struthionidae) from the late Miocene of Bulgaria with taxonomic and zoogeographic discussion. – Geodiversitas, 31 (3): 493-507.
241. BUNARCO [Ivanov, B., Iankov, P., Boev, Z., Georgiev, D., Profirov, L., Dimitrov, M.] 2009. List of the Birds Recorded in Bulgaria. – Acta zoologica bulgarica, 61(1): 3-26.
242. Stoyanov, G. Boev, Z. 2009. Die Nahrung des Schmutzgeiers *Neophron percnopterus* in Norwest-Bulgarien. – Ornithologische Mitteilungen, 61 (10): 333-335.
243. Boev, Z. 2009. First finds of giant land tortoises discovered in Bulgaria. – In: Popov, Al. S. Slavova (eds.) 2009. News 2009, BAS, 90-96.
244. Boev, Z., Gál, E. 2009. Fowling in Lowlands. Neolithic and Chalcolithic bird exploitation in south-east Romania and the Great Hungarian Plain. (Archaeolingua. Series Minor, 24). Budapest 2007. 149 pp. ISBN 978-963-8046-85-7. – Archaeology, BAS, 1-2: 134.
245. Boev, Z. 2009. Earliest remains of Old World vultures discovered in Bulgaria. – In: Popov, Al. S. Slavova (eds.) News 2009, BAS, 39-44.Darakchiev, A. 1971. Contribution on the cultivation of birds in the Rhodopi Mountains. *Travaux scientifiques, École Normale Supérieure Plovdiv – Bulgarie. Natura*, 4 (1): 125-127. (in Bulgarian).

2010

246. Boev, Z. 2010. [Notes on fossil birds from] Bulgaria. – Newsletter. Society of Avian Paleontology and Evolution, Frankfurt am Main, 24: 5-6.
247. Boev, Z. 2010. *Gyps bochenskii* sp. n. (Aves: Falconiformes) from the Late Pliocene of Varshets (NW Bulgaria). – Acta zoologica bulgarica, 62 (2): 211-242.
248. Boev, Z. 2010. Prof. Nikolay Burchak-Abramovich's private collection of Late Pleistocene birds from Binagada (Azerbaijan) - a lost treasure of avian paleontology: general review of the exploration of the site and its scientific value. – Proc. 5th Int. Meet. Europ. Bird Curators. - Nat. Hist. Mus. Vienna, Vienna, January 2010: 169-198.
249. Boev, Z. 2010. The natural paleoenvironment in Bulgaria during the Pliocene and Quaternary – a brief overview. – In: Petkov (ed.) Bulgaria and the Bulgarians in Europe.

Union of Scientists in Bulgaria. Veliko Tarnovo Branch. Faber Publishing House, Veliko Tarnovo. 366-384. (in Bulgarian, English summary).

2011

250. [Boev, Z.] 2011. Recent Publications [from Bulgaria]. – International Council for Archaeozoology. Newsletter, 12 (1): 9.
251. Boev, Z. 2011. [Notes on fossil birds from] Bulgaria. – Newsletter. Society of Avian Paleontology and Evolution, Frankfurt am Main, 25: 4
252. Boev, Z. 2011. *Falco bulgaricus* sp. n. (Aves, Falconiformes) from the Middle Miocene of Hadzhidimovo (SW Bulgaria). – Acta zoologica bulgarica, 63 (1): 17-35.
253. Boev, Z. 2011. In memoriam. Assoc. Prof. Dr. Stefan Donchev (09.05.1931-12.12.2010). – Acta zoologica bulgarica, 63 (1): 116.
254. Boev, Z. 2011. New fossil record of the Late Pliocene kestrel (*Falco bakalovi* Boev, 1999) from the type locality in Bulgaria. - Geologica Balcanica, 40 (1–3): 13–30.
255. Michev, T. M., Boev, Z.N., Kamburova, N.T. 2011. Red List of the Birds of Bulgaria. – In: National Scientific Conference "Biological Diversity and Environment". 24-25 June 2010. Sofia University "St. Kliment Ohridski", Sofia, Bulgaria. Scientific Program. Abstracts and Posters, 67-69.
256. Michev, T., Boev, Z., Kambourova-Ivanova, N. 2011. Red List of the birds of Bulgaria. – In: Scientific Papers, Part II. Natural and Agriculture Sciences. Medicine. Natural Sciences. Medicine. - Union of Scientists in Bulgaria, Jubilee National Scientific Conference with international participation "The Man and the Universe", October, 6th-8th, 2011, Smolyan, Bulagria, ISBN: 978-954-397-025-4, 416-431.
257. Boev, Z. 2011. Fossil avifauna of Greece and the Bulgarian contribution to its exploration. – In: Popov, Al. S. Slavova (eds.). News 2011, BAS, 42-48.
258. Boev, Z. 2011. Study of Neogene birds of Bulgaria – achievements, results and prospects. – In: Batashev, M. S., Makarov, N. P., Martynovich, N. V. (ed.). Arkady Yakovlevich Tugarinov is enlightened. Collection of scientific articles. Krasnoyarsk Regional Museum of Local Lore, Krasnoyarsk, 35-43, ISBN 978-5-904896-32-4. (In Russian, English summary).
259. Boev, Z. 2011. Utilization of birds by man (materials of exploration of the utilitary importance of birds). – In: Collection of papers, Part II. Natural and agricultural sciences. Medicine. Natural sciences. Medicine. - Union of Scientists in Bulgaria – Smolyan Jubilee national scientific conference with international participation: "Man and the Universe", October 6-8, 2011, Smolyan, Bulgaria, ISBN: 978-954-397-025-4, 356-369.
260. Boev, Z. 2011. Lammergeier *Gypaetus barbatus* (Linnaeus, 1758). - In: Golemanski, V. (Editor-in-Chief) 2011. Трябва ли 2011 да се повтаря?Red Data book of the Republic of Bulgaria. Volume 2. Animals. IBER-BAS & MOEW, Sofia. 38.
261. Boev, Z. 2011. Colchic Pheasant *Phasianus colchicus colchicus* Linnaeus, 1758. - In: Golemanski, V. (Editor-in-Chief) 2011. Red Data book of the Republic of Bulgaria. Volume 2. Animals. IBER-BAS & MOEW, Sofia. 42.
262. Boev, Z. 2011. Little Bittern *Ixobrychus minutus* (Linnaeus, 1758). - In: Golemanski, V. (Editor-in-Chief) 2011. Red Data book of the Republic of Bulgaria. Volume 2. Animals. IBER-BAS & MOEW, Sofia. 160.
263. Boev, Z. 2011. Crane *Grus grus* (Linnaeus, 1758). - In: Golemanski, V. (Editor-in-Chief) 2011. Red Data book of the Republic of Bulgaria. Volume 2. Animals. IBER-BAS & MOEW, Sofia. 43.

264. Boev, Z. 2011. Little Bustard *Tetax tetrax* (Linnaeus, 1758). - In: Golemanski, V. (Editor-in-Chief) 2011. Red Data book of the Republic of Bulgaria. Volume 2. Animals. IBER-BAS & MOEW, Sofia. 45.
265. Boev, Z. 2011. Black Grouse *Tetrao tetrix* Linnaeus, 1758. - In: Golemanski, V. (Editor-in-Chief) 2011. Red Data book of the Republic of Bulgaria. Volume 2. Animals. IBER-BAS & MOEW, Sofia. 41.
266. Boev, Z., Michev, T. 2011. Spoonbill *Platalea leucorodia* Linaeus, 1758. - In: Golemanski, V. (Editor-in-Chief) 2011. Red Data book of the Republic of Bulgaria. Volume 2. Animals. IBER-BAS & MOEW, Sofia. 70.
267. Boev, Z., Iankov, P. 2011. Lanner Falcon *Falco biarmicus* Temminck, 1825. - In: Golemanski, V. (Editor-in-Chief) 2011. Red Data book of the Republic of Bulgaria. Volume 2. Animals. IBER-BAS & MOEW, Sofia. 81.
268. Boev, Z., Michev, T., Kamburova, N. 2011. Purple Heron *Ardea purpurea* Linnaeus, 1758. - In: Golemanski, V. (Editor-in-Chief) 2011. Red Data book of the Republic of Bulgaria. Volume 2. Animals. IBER-BAS & MOEW, Sofia. 162.
269. Boev, Z., Nikolov, S. 2011. Rock Partridge *Alectoris graeca* (Meisner, 1804). - In: Golemanski, V. (Editor-in-Chief) 2011. Red Data book of the Republic of Bulgaria. Volume 2. Animals. IBER-BAS & MOEW, Sofia. 176.
270. Boev, Z., Nikolov, S. 2011. Capercaillie *Tetrao urogallus* Linnaeus, 1758. - In: Golemanski, V. (Editor-in-Chief) 2011. Red Data book of the Republic of Bulgaria. Volume 2. Animals. IBER-BAS & MOEW, Sofia. 174.
271. Boev, Z., Petkov, N. 2011. Great Bittern *Botaurus stellaris* (Linnaeus, 1758). - In: Golemanski, V. (Editor-in-Chief) 2011. Red Data book of the Republic of Bulgaria. Volume 2. Animals. IBER-BAS & MOEW, Sofia. 159.
272. Boev, Z. Petkov, N. 2011. Demoiselle Crane *Anthropoides virgo* (Linnaeus, 1758). - In: Golemanski, V. (Editor-in-Chief) 2011. Red Data book of the Republic of Bulgaria. Volume 2. Animals. IBER-BAS & MOEW, Sofia. 44.
273. Boev, Z., Stoyanov, G. 2011. Sparrowhawk *Accipiter nisus* (Linnaeus, 1758). - In: Golemanski, V. (Editor-in-Chief) 2011. Red Data book of the Republic of Bulgaria. Volume 2. Animals. IBER-BAS & MOEW, Sofia. 170.
274. Boev, Z., Hristov, Y. Domuschiev, D. 190. Eurasian Eagle Owl *Bubo bubo* (Linnaeus, 1758). - In: Golemanski, V. (Editor-in-Chief) 2011. Red Data book of the Republic of Bulgaria. Volume 2. Animals. IBER-BAS & MOEW, Sofia. 190.
275. Zehtindzhiev, P., Boev, Z., Georgiev, D., Karaivanov, N. 2011. Great Bustard *Otis tarda* L., 1758. - In: Golemanski, V. (Editor-in-Chief) 2011. Red Data book of the Republic of Bulgaria. Volume 2. Animals. IBER-BAS & MOEW, Sofia. 86.
276. Michev, T., Boev, Z., Delov, V., Nikolov, H. 2011. Black-crowned Night heron *Nycticorax nycticorax* (Linnaeus, 1758). - In: Golemanski, V. (Editor-in-Chief) 2011. Red Data book of the Republic of Bulgaria. Volume 2. Animals. IBER-BAS & MOEW, Sofia. 246.
277. Michev, T., Petrov, Ts., Nikolov, H., Boev, Z. 2011. Grey Heron *Ardea cinerea* Linaeus, 1758. - In: Golemanski, V. (Editor-in-Chief) 2011. Red Data book of the Republic of Bulgaria. Volume 2. Animals. IBER-BAS & MOEW, Sofia. 248.
278. Petrov, T., Boev, Z., Dalakchieva, S. 2011. Eurasian Oystercatcher *Haematopus ostralegus* (Linnaeus, 1758). - In: Golemanski, V. (Editor-in-Chief) 2011. Red Data book of the Republic of Bulgaria. Volume 2. Animals. IBER-BAS & MOEW, Sofia. 87.

279. Stoyanov, G., Boev, Z. 2011. Goshawk *Accipiter gentilis* Linnaeus, 1758. - In: Golemanski, V. (Editor-in-Chief) 2011. Red Data book of the Republic of Bulgaria. Volume 2. Animals. IBER-BAS & MOEW, Sofia.

2012

280. [Boev, Z.] 2012. Recent Publications [from Bulgaria]. – International Council for Archaeozoology. Newsletter, 13 (1): 10.
281. Boev, Z. 2012. [Notes on fossil birds from] Bulgaria. – Newsletter. Society of Avian Paleontology and Evolution, Frankfurt am Main, 26: 5.
282. Boev, Z. 2012. *Circaetus rhodopensis* sp. n. (Aves, Accipitriformes) from the Late Miocene of Hadzhidimovo (SW Bulgaria). - Acta zoologica bulgarica, 64 (1): 5-12.
283. Boev, Z. 2012. Neogene Larks (Aves: Alaudidae (Vigors, 1825)) from Bulgaria - Acta zoologica bulgarica, 64 (3), 2012: 295-318.
284. Boev, Z. 2012. Sub-recent avian remains from two cave localities of the Devetashko Plateau (Lovech Region, CN Bulgaria). – ZooNotes, 31: 1-3.
285. Boev, Z. 2012. Unusual late mass occurrence of the Common Swift (*Apus apus* (Linnaeus, 1758)) (Aves: Apodidae) in Sofia (Bulgaria). – ZooNotes, 27: 1-2.
286. Guadelli J.-L., Sirakov N., Sirakova S., Boev Z., Boudadi-Maligne M., Dimitrova I., Fernandes P., Ferrier C., Guadelli A., Iordanova D., Iordanova N., Kovacheva M., Krumov I., Leblanc J.-C., Miteva V., Popov V., Queffelec A., Spassov R., Taneva S., Tsanova T. 2012. Earliest dispersals and migrations to Europe via Balkans in Lower to Upper Palaeolithic: evidence from Northern Bulgaria. – In: International Symposium Human Evolution in the Southern Balkans, Tübingen, 6-8 December 2012. 5 Years 2007-2012. Eberhard Karls Universität Tübingen, Abstracts, 9.
287. Nedialkov, N., Ragyov, D., Boev, Z., Dixon, A. 2012. Diet of Saker falcon (*Falco cherrug*) from Moldova and Ukraine. - International Conference on Zoology "50 years Department of Zoology", Programme & Abstracts, University of Plovdiv "Paisii Hilendarski", Faculty of Biology, Department of Zoology, October 8 – 10, 2012, Hissar, Bulgaria, Plovdiv University Press, 107.
288. Boev, Z. 2012. Ones of the earliest larks of Europe were flying over the former lands of Bulgaria. – In: Popov, Al. S. Slavova (eds.) – News 2011, BAS, 64-70.
289. Spasov, N., Boev, Z. 2012. Dr. Nikolay Iliev at 80 years old. - Historia naturalis bulgarica, 20: 40.

2013

290. [Boev, Z.] 2013. Recent Publications [from Bulgaria]. – International Council for Archaeozoology. Newsletter, 14 (1): 9-10.
291. Boev, Z. 2013. [Notes on fossil birds from] Bulgaria. – Newsletter. Society of Avian Paleontology and Evolution, Frankfurt am Main, 27: 6.
292. Boev, Z. 2013. Avian remains from the Late Neolithic settlement of Sarnevo (Stara Zagora Region, SC Bulgaria) - Acta zoologica bulgarica, 65 (2), 259-262.
293. Boev, Z. 2013. Aquila kurochkini sp. n., a New Late Pliocene Eagle (Aves, Accipitriformes) from Varshets (NW Bulgaria). - Paleontological Journal, 2013, Vol. 47, No. 11, pp. 1344–1354.
294. Boev, Z.N., Lazaridis, G. Tsoukala, E. 2013. *Otis hellenica sp. nov.*, a new Turolian

bustard (Aves: Otididae) from Kryopigi (Chalkidiki, Greece). Geologica Balcanica 42 (1-3), 59-64.

295. Böhme, M., Aiglstorfer, M., Boev, Z., Bullmann, L., Dolezych, M., Havlik, P., Hristova, L., Ilg, A., Markov, G., Ognjanova, N., Prieto, J., Uhl, D., Vasilyan, D., Spassov, N. 2013. Staniantsi - an exceptional vertebrate locality from the Miocene-Pliocene transition of Western Bulgaria. – Abstracts, 5th International Workshop on the Neogene from the Central and South-Eastern Europe Varna, 16th - 20th May 2013, Varna.

2014

296. Boev, Z. 2014. Recent Publications [from Bulgaria]. – International Council for Archaeozoology. Newsletter, 15 (1): 16.

297. Boev, Z. 2014. [Notes on fossil birds from] Bulgaria. – Newsletter. Society of Avian Paleontology and Evolution, Frankfurt am Main, 28: 5

298. Boev, Z. 2014. Animal remains of the Late Antiquity settlement near Dyakovo Village (Kyustendil Region (SW Bulgaria). – ZooNotes, 65: 1-7.

299. Boev, Z. 2014. Animal remains of the Middle Neolithic settlement near Krum Village (Haskovo Region (SE Bulgaria). – ZooNotes, 58: 1-6.

300. Boev, Z. 2014. Late Holocene distribution of the European Shag (*Phalacrocorax aristotelis* (Linnaeus, 1761) in Bulgaria. – ZooNotes, 54: 1-3.

301. Bounas, A., Boev, Z., Vavylis, D., Kret, E., Sidiropoulos, L., Saravia-Mullin, V. 2014. Study of the diet of the Egyptian Vulture (*Neophron percnopterus*) in Greece. Poster at the 7th Hellenic Ecological Society Congress at Mitilini, Lesvos, 9th -12th October 2014. (cn Greek).

302. Demerdzhiev, D., Dobrev, D., Isfendiyaroglu, S., Boev, Z., Stoychev, S., Terziev, N., Spasov, S. 2014. Distribution, abundance, breeding parameters, threats and prey preferences of the Eastern Imperial Eagle (*Aquila heliaca*) in European Turkey. - Slovak Raptor Journal, 8 (1): 17–25.

303. Milchev, B., Boev, Z. 2014. First record of the Naumann's Thrush (*Turdus naumanni* Temminck, 1820 s. l.) in Bulgaria. – Acta zoologica bulgarica 66 (4): 559-561.

304. Nedyalkov, N., Levin, A., Dixon, A., Boev, Z. 2014. Diet of Saker Falcon (*Falco cherrug*) and Eastern Imperial Eagle (*Aquila heliaca*) from Central Kazakhstan. - Ecologia Balkanica, 6 (1): 25-30.

305. Boev, Z. 2014. The Creation. 125 Years of the National Museum of Natural History at the Bulgarian Academy of Sciences. – Journal of the Bulgarian Academy of Sciences, 1: 53-58. (in Bulgarian).

2015

306. Boev, Z. 2015. [Notes on fossil birds from] Bulgaria. – Newsletter. Society of Avian Paleontology and Evolution, Frankfurt am Main, 29: 5-6.

307. Boev, Z. 2015. An Early Pleistocene Snake-eagle (*Circaetus haemusensis sp. n.* - Aves, Accipitriformes) from Varshets (NW Bulgaria). – Acta zoologica bulgarica. 67 (1), 2015: 127-138.

308. Boev, Z. 2015. Fossil and subfossil remains of birds and mammals from the Mirizlivka cave (Vidin Region – NW Bulgaria). – ZooNotes, 75:1-3.

309. Boev, Z. 2015. *Porzana botunensis sp. n.*, a New Early Pleistocene Crake (Aves: Rallidae) from Bulgaria. – Acta zoologica bulgarica, 67 (2), 2015: 283-290.

310. Dobrev, V. Boev, Z., Arkumarev, V. Dobrev, D., Kret, E., Saravia, V., Bounas, A., Vavylis, D., Nikolov, S., Oppel, S. 2015. Diet is not related to productivity but to territory occupancy in a declining population of Egyptian Vultures *Neophron percnopterus*. Bird Conservation International, Available on CJO 2015 doi:10.1017/S0959270915000155
311. Dobrev, V., Boev, Z., Oppel, S., Arkumarev, V., Dobrev, D., Kret, E., Vavylis, D., Saravia, V., T., Bounas, A. & Nikolov, S.C. 2015. Diet of the Egyptian vulture (*Neophron percnopterus*) in Bulgaria and Greece (2005-2013). Technical report under action A5 of the LIFE+ project "The Return of the Neophron" (LIFE10 NAT/BG/000152). BSPB, Sofia. 1-31.
312. Ivanov, B., Iankov, P., Boev, Z., Georgiev, D., Profirov, L., Dimitrov, M. 2015. List of the birds recorded in Bulgaria by 31.12.2014 (Bulgarian List). (1-23). – At: http://www.bunarco.org/bg/dokladi.html
313. Zelenkov, N., Boev, Z., Lazaridis, G. 2015. A large ergilornithine (Aves, Gruiformes) from the Late Miocene of the Balkan Peninsula. – Palaontologische Zeitschrift. DOI 10.1007/s12542-015-0279-z
314. Boev, Z. 2015. A new summary of the biodiversity of the Western Rhodopes. – Historia naturalis bulgarica. 21: 272. (in Bulgarian).
315. Vandova, V., Meshekov, Y., Spasov, R., Anastasova, E., Mitkova, R., Stefanova, T., Todorov, V., Atanasova-Timeva, N., Galabova, B., Boev, Z. 2015. Rescue archaeological excavations in the Gerena area near the village of Mursalevo. – In: Kabakchieva, G. (ed. chief). National Archaeological Institute with Museum. Archaeological Discoveries and Excavations in 2014. Sofia, "ACTIVE COMMERCE" EOOD, ISSN: 1313-0889. BAS, NAIM, 51-53. (in Bulgarian).

2016

316. Boev, Z. 2016. [Notes on fossil birds from] Bulgaria. – Newsletter. Society of Avian Paleontology and Evolution, Christchurch, 30: 6.
317. Boev, Z. 2016. New animal remains from Pliska, the medieval capital (10 c. AD) of Bulgaria, (Shumen Region, NE Bulgaria). – ZooNotes, 87: 1-3.
318. Boev, Z. 2016. Paleobiodiversity of the Vrachanska Mountains in the Villafranchian: a case study of the Varshets (Dolno Ozirovo) Early Pleistocene locality of fossil fauna and flora. – In: Bechev, D. Georgiev, D. (Eds.). 2016. Faunistic Diversity of Vrachanski Balkan Nature Park, ZooNotes, Supplement 3. Plovdiv University Press. Plovdiv, 299-323.
319. Boev, Z. 2016. Subfossil Vertebrate Fauna from Forum Serdica (Sofia, Bulgaria), 16-18th Century. - Acta zoologica bulgarica, 68 (3): 415-424.
320. Nedyalkov, N. Boev, Z. 2016. Diet of Barn owl (*Tyto alba*) and Tawny owl (*Strix aluco*) in Central Anatolia, Turkey. – Sandgrouse, 38: 79-81.
321. Boev, Z. 2016. Bibliography of Ivan Mitev's natural science publications. – In: Mitev, Iv. 2016. Collected Works, vol. 1. Bulgarian Nature, Logos Publishing House, Sofia, 7-10. ISBN 978-954-8289-10-8. (in Bulgarian)
322. Boev, Z. 2016. Biography of Ivan Mitev (1973-2008). – In: Mitev, Iv. 2016. Collected Works, vol. 1. Bulgarian Nature, Publishing House "Logis", Sofia, 11-24. ISBN 978-954-8289-10-8. (in Bulgarian).
323. Boev, Z. 2016. Biodiversity of vertebrates in Sofia Valley based on their bone remains in "Forum Serdica" in the center of Sofia City (16th-18th century AD). - Journal of the Bulgarian Academy of Sciences, 3:16-22. (in Bulgarian, English summary).

324. Boev, Z. 2016. First book on the biodiversity of Vratchanska Mountain. – Bulletin of the Natural History Museum – Plovdiv, 2016 (1): 37-38. (in Bulgarian).

2017

325. Boev, Z. 2017. [Notes on fossil birds from] Bulgaria. – Newsletter. Society of Avian Paleontology and Evolution, Christchurch, 31: 6-7.
326. Boev, Z. 2017. Avian finds from the Early Neolithic settlement near Kapitan-Dimitrievo village (Pazardzhik Region). – ZooNotes, 112: 1-3.
327. Boev, Z. 2017. Bone remains of the Late Antiquity – Early Medieval deposits of the National Academy of Art (Sofia, Bulgaria). - Bulletin of the Natural History Museum - Plovdiv ISSN 2534-9635; Print ISSN 2534-9627, 2: 9-11
328. Boev, Z. 2017. Fossil and subfossil record of Reptiles (Reptilia Laurenti, 1768) in Bulgaria. – Historia naturalis bulgarica, 24: 165-178. ISSN 0205-3640 (print).
329. Boev, Z. 2017. Fossil and Subfossil Record of Species of the Genus Lynx Kerr, 1792 (Mammalia: Felidae) in Bulgaria. - Acta zoologica bulgarica, 69 (3): 303-306.
330. Boev, Z. 2017. Fossil and Subfossil Record of Vertebrate Animals (Vertebrata J.-B. Lamarck, 1801) along the Western Black Sea Coast (Bulgaria). – In: Georgieva, E., Peev, D. (eds.). First European Symposium: Research, Conservation and Management of Biodiversity in the European Seashores. RCMBES 2017. Primorsko, Bulgaria, 8-12 May 2017. Book of Abstracts. Avangard Prima, 2017. ISBN 978-619-160-793-8., p. 30.
331. Boev, Z. 2017. Fossil record of Tapirs (Tapirus Brünnich, 1772) (Tapiridae Gray, 1821 - Peryssodactyla Owen, 1848) in Bulgaria. – ZooNotes, 108: 1-3.
332. Boev, Z. 2017. Fossil records of Rhinoceroses (Rhinocerotoidea Gray, 1821), Chalicotheres (Chalicotherioidea Gill, 1872) and Brontotheres (Brontotherioidea (Marsh, 1873) (Peryssodactyla Owen, 1848 - Mammalia Linnaeus, 1758) in Bulgaria. – Bulletin of the Natural History Museum – Plovdiv, 2: 1-7.
333. Boev, Z. 2017. Late Neolithic and Late Antiquity avian finds of Chavdarova Cheshma (Simeonovgrad, Haskovo Region). – ZooNotes, 111: 1-3.
334. Boev, Z. 2017. New data on the subfossil fauna from “Forum Serdica” (Sofia City, Bulgaria; 3-19th century A. D.). – Historia naturalis bulgarica, 24: 179-186. ISSN 0205-3640 (print).
335. Boev, Z. 2017. On the breeding of some mouse-like rodents (Muroidea Illiger, 1811) from Ograzhden Mountain (Southwestern Bulgaria). – In: Ivanov, I. (ed.). Collection of papers from the national scientific conference dedicated to the 55th anniversary of the establishment of the Teachers' Institute in the city of Smolyan and the 20th anniversary of its transformation into a Branch of the Plovdiv University "Paisiy Hilendarski". Education and science for personal and social development. Vol. 2. Natural sciences, mathematics and informatics. Technical sciences. Biology and chemistry. Medicine. Smolyan, October 27-28, 2017. Plovdiv University "Paisiy Hilendarski", Branch - Smolyan. 45-54. (in Bulgarian, English summary).
336. Boev, Z. 2017. The National Museum of Natural History at the Bulgarian Academy of Sciences: second birth (1972 -1974). – Journal of the Bulgarian Academy of Sciences, ISSN 0007-3989; 6: 77-79. (in Bulgarian).

2018

337. Boev, Z. 2018. [Notes on fossil birds from] Bulgaria. – Newsletter. Society of Avian Paleontology and Evolution, Christchurch, 32: 6-7.
338. Boev, Z. 2018. A specimen of little bush moa *Anomalopteryx didiformis* (Owen, 1844), Emeidae Bonaparte, 1854 from the National Museum of Natural History, Sofia. – Historia naturalis bulgarica, 32: 3-5.
339. Boev, Z. 2018. Birds in everyday life and art in Bulgaria (Thracian and Roman periods). - Historia naturalis bulgarica, 27: 3-39.
340. Boev, Z. 2018. Bulgarian Names of Domestic Animals in the Balkan Peninsula and Their Correspondences in the Scientific Literature. - Bulletin of the Natural History Museum – Plovdiv, 3: 1-5.
341. Boev, Z. 2018. Fossil and subfossil record of vertebrate animals (Vertebrata J.-B. Lamarck, 1801) along the Western Black Sea Coast (Bulgaria). - In: Peev, D. et al. (Eds.). Proceedings of the First European Symposium "Research, Conservation and Management of Biodiversity of European Seashores" (RCMBES). Acta zoologica bulgarica, Suppl. 11, 2018: 105-110. ISSN 0324-0770
342. Boev, Z. 2018. Subfossil fauna from "Forum Serdica" (Sofia City, Bulgaria) of Antiquity (2nd – 4th century AD) and Ottoman Epoch (15th –18th century AD) (Excavations 2017). - Bulletin of the Natural History Museum – Plovdiv, 2018, vol. 3: 7-13.
343. Plachiyski, D., Popgeorgiev, G., Avramov, S., Boev, Z. 2018. The Balkan Capercaillie *Tetrao urogallus rudolfi* Dombrowski, 1912 (Galliformes: Phasianidae): Distribution History and Current Status in Bulgaria. - Acta zoologica bulgarica, 70 (1), 2018: 101-111.
344. Boev, Z. 2018. The National Museum of Natural History in the years around World War II (1942 - 1947). – Journal of the Bulgarian Academy of Sciences, 4: 35-40. (in Bulgarian).
345. Boev, Z. 2018. The National Museum of Natural History in the period 1942-1947 - difficult restoration, painful development. – In: Cultural Memory in Time and Space. Collection dedicated to the 65th anniversary of Prof. Dr. Simeon Nedkov. University Publishing House "St. Kliment Ohridski". Sofia, 149-157. (in Bulgarian).
346. Boev, N., Boev, Z. 2018. The aurochs (*Bos primigenius* Bojanos, 1827) (Artiodactyla, Mammalia) in the nature and culture of Bulgaria. – ZooNotes. Supplement 5. ISSN 1313-9916. University Publishing House "Paisiy Hilendarski". Plovdiv. 1-120. (in Bulgarian).
347. Demerdzhiev, D., Dobrev, D., Stoychev, S., Levent, I., Petrov, T., Boev, Z. 2018. Long-term Population Survey of the Eastern Imperial Eagle in the Thracian Eco-region (Bulgaria and Turkey). – Raptors Conservation (Suppl. 1), 111-112.

2019

348. Boev, Z. 2019. [Notes on fossil birds from] Bulgaria. – Newsletter. Society of Avian Paleontology and Evolution, Christchurch, 33: 7-8.
349. Boev, Z. 2019. A White Stork (*Ciconia ciconia* (Linnaeus, 1758)) nest – a unique case of multiple nesting commensalism of five species from Dragoman (W Bulgaria). – ZooNotes, 144: 1-4.
350. Boev, Z. 2019. Animal remains of the medieval settlement near Brankovtsi village (Vidin Region, NW Bulgaria). – ZooNotes, 148: 1-4.
351. Boev, Z. 2019. Fossil record of the Irish Elk (*Megaloceros giganteus* (Blumenbach, 1799)) (Artiodactyla: Cervidae) in Bulgaria. - Bulletin of the Natural History Museum – Plovdiv, 4: 27-31.

352. Boev, Z. 2019. Late Antiquity (3-5 century A.D.) Fauna from Building Excavations on Exarch Joseph Street (Sofia City, Bulgaria. - Bulletin of the Natural History Museum – Plovdiv, 4: 1-8.
353. Boev, Z. 2019. Late Antiquity animal remains of the military settlement near Barkach village (Pleven Region, CN Bulgaria). – ZooNotes, 145: 1-3.
354. Boev, Z. 2019. Late Pleistocene avifauna of Nanin Kamak Cave (CN Bulgaria). - Bulletin of the Natural History Museum – Plovdiv, 4: 21-25.
355. Boev, Z. 2019. Past distribution of *Camelus bactrianus* and *Camelus dromedarius* in Bulgaria: subfossil record (Artiodactyla: Camelidae). - Lynx, n. s. (Praha), 50: 29–36 (2019). ISSN 0024-7774 (print), 1804-6460 (online).
356. Boev, Z. Spassov, N. 2019. Past distribution of *Castor fiber* in Bulgaria: fossil, subfossil and historical records (Rodentia: Castoridae). - Lynx, n. s. (Praha), 50: 37-49 (2019). ISSN 0024-7774 (print), 1804-6460 (online)
357. Boev, Z. 2019. Past distribution of *Monachus monachus* in Bulgaria – subfossil and historical records (Carnivora: Phocidae. - Lynx, n. s. (Praha), 49: 163–176 (2018). ISSN 0024-7774 (print), 1804-6460 (online).
358. Boev, Z. 2019. The Eurasian Collared Dove (*Streptopelia decaocto* Frivaldszky, 1838) – a subrecent invasive species of the avifauna of Bulgaria (subfossil records). – ZooNotes, 141: 1-3.
359. Boev, Z., Todorov, O. 2019. The avian collection of the former Saint Augustine College of the Regional Natural History Museum in Plovdiv. – Historia naturalis bulgarica, 35: 1-11.
360. Boev, Z., Tsoukala, E. 2019. Late Pleistocene and Earliest Holocene avifauna from the Loutra Almopias Cave (Macedonia, Greece). - Historia naturalis bulgarica 40: 1-31.
361. Boev, Z. 2019. Second book on the biodiversity of Vratchanska Mountain. – Bulletin of the Natural History Museum – Plovdiv, 4: Online First. (in Bulgarian).
362. Boev, Z. 2019. The National Museum of Natural History at the Bulgarian Academy of Sciences - 60 years of the management of Corresponding Member Prof. Dr. Georgi Paspalev and the problem of the survival of the museum (1959-1965). – Bulletin of the Natural History Museum – Plovdiv, vol. 4: vii-xvii. (in Bulgarian, English summary).
363. Boev, Z. 2019. The National Museum of Natural History at the Bulgarian Academy of Sciences analysis of the current state, problems and development guidelines (An inside view). - Bulletin of the Natural History Museum – Plovdiv, 4: xix-xxxiii.

2020

364. Boev, Z. 2020. [Notes on fossil birds from] Bulgaria. – Newsletter. Society of Avian Paleontology and Evolution, Christchurch, 34: 6-7.
365. Boev, Z. 2020. A Little Dabbling Duck (Anatini Vigors, 1825 – Anseriformes Wagler, 1831) from the Late Miocene of Kremikovtsi (Bulgaria). – Bulletin of the Natural History Museum - Plovdiv, 5: 25-31.
366. Boev, Z. 2020. A new Middle Miocene Starling (Sturnidae Rafinesque, 1815) from Kardam (NE Bulgaria). – Bulletin of the Natural History Museum – Plovdiv, 5: 33-41.
367. Boev, Z. 2020. Bird images in the mosaics of Late Antique basilicas in the town of Sandanski (Blagoevgrad Region, SW Bulgaria). - Historia naturalis bulgarica, 41: 13-21.
368. Boev, Z. 2020. Chauvireria bulgarica sp. n. – an extinct Early Pleistocene small phasianid of Phasianinae Horsfield, 1821 from Bulgaria. - Historia naturalis bulgarica, 41: 55–70.

369. Boev, Z. 2020. First European Neogene record of true pheasants from Gorna Sushitsa (SW Bulgaria). – Historia naturalis bulgarica.41: 33-39.
370. Boev, Z. 2020. Fossil and subfossil records of Shrikes (Laniidae Swainson, 1824 – Passeriformes Linnaeus, 1758) in Bulgaria. – Historia naturalis bulgarica, 41: 77-81.
371. Boev, Z. 2020. New Data on the Fauna of the Late Antiquity Northern Fortification Walls of Serdica (3rd-6th century A.D.) from Building Excavations on Exarch Joseph Street (Sofia, Bulgaria). – Bulletin of the Natural History Museum, Plovdiv. 5: 15-23.
372. Boev, Z. 2020. Studen Kladenets Reservoir (CS Bulgaria), a stopover of the migratory Great White Pelicans (*Pelecanus onocrotalus* Linnaeus, 1758) through the Balkan Peninsula. – ZooNotes, 164: 1-4.
373. Boev, Z., Gradev, G., Klisurova, H., Klisurov, I. Petrov, R. 2020. First record of the Northern Bald Ibis (*Geronticus eremita* (Linnaeus, 1758)) in Bulgaria. – Historia naturalis bulgarica, 41: 23-26.
374. Boev, Z., Milošević, S. 2020. Late Pleistocene avifauna of the Pešturina Cave (Nišava District, SE Serbia) and its implications for Late Pleistocene refugia on the Central Balkans. – Bulletin of the Natural History Museum, Plovdiv. 5: 1-14.
375. Boev, Z., Stallibrass, S. 2020. Avian remains from the Thracian trade settlement Pistiros (5-2 c. BC) near Vetren, Pazardzhik Province, SC Bulgaria). – Bulletin of the Natural History Museum – Plovdiv, 5: 43-47.
376. Boev, Z. 2020. Corrigendum to the article "The National Museum of Natural History at the Bulgarian Academy of Sciences - analysis of the current state, problems and development guidelines (An inside view). – Bulletin of the Natural History Museum – Plovdiv, 5: 51-52. (in Bulgarian).
377. Boev, Z. 2020. Past distribution of *Ursus arctos* in Bulgaria: fossil and subfossil records (Carnivora: Ursidae). – Lynx (Prague), 51: 5-18.
378. Boev, Z. 2020. Late Pleistocene *Crocuta crocuta spelaea* in Bulgaria: distribution and history of research (Carnivora: Hyaenidae). – Lynx (Prague), 51: 19-29.

2021

379. Boev, Z., Bozukov, V. 2021. Satovcha (Blagoevgrad Province, SW Bulgaria), a new Middle Miocene avian locality. – Comptes rendus de l'Académie bulgare des Sciences, 74 (3): 406-411.
380. Boev, Z., Popgeorgiev, G. 2021. Animal remains of the medieval settlement (9th-10th century A. D.) near Nedan village (Veliko Tarnovo Region, CN Bulgaria). – ZooNotes, 170: 1-4.
381. Boev, Z. 2021. Data on the study of bird distribution in Bulgaria in the last 45 years (1976-2020). – Bulletin of the Natural History Museum, Plovdiv, 6: 1-45.
382. Boev, Z. 2021. An Early Pleistocene magpie (*Pica praepica sp. n.*) (Corvidae Leach, 1820) from Bulgaria. – Bulletin of the Natural History Museum, Plovdiv, 6: 51-59.
383. Boev, Z. 2021. Animal remains of the medieval settlement near Petarch village (Sofia Province, CW Bulgaria). – ZooNotes, 184: 1-4.
384. Boev, Z. 2021. Karvav Kamak Mnt. – a new locality of the Spotted Nutcracker (*Nucifraga caryocatactes* (Linnaeus, 1758)) in Bulgaria. – ZooNotes, 188: 1-3.
385. Boev, Z. 2021. [Notes on fossil birds from] Bulgaria. - Newsletter, Society of Avian Paleontology and Evolution. Christchurch, New Zealand, 35: 6.
386. Boev, Z. 2021. The last *Bos primigenius* survived in Bulgaria (Cetartiodactyla: Bovidae). – Lynx (Prague), 52: 139–142.

387. Boev, Z. 2021. *Coelodonta antiquitatis* in the Pleistocene of Bulgaria (Perissodactyla: Rhinocerotidae). – Lynx (Prague), 52: 55–62.

2022

388. Best, J., Doherty, S., Armit, I., Boev, Z., Büster, L., Cunliffe, B., Foster, A., Frimet, B., Hamilton-Dyer, S., Higham, T., Lebrasseur, O., Miller, H., Peters, J., Seigle, M., Skelton, C., Symmons, R., Thomas, R., Trentacoste, A., Maltby, M., Larson, G., Sykes, N. 2022. Redefining the timing and circumstances of the chicken's introduction to Europe and north-west Africa. - Antiquity 2022 Vol. 0 (0): 1–16. Published by Cambridge University Press on behalf of Antiquity Publications Ltd. https://doi.org/10.15184/aqy.2021.90

389. Boev, Z. 2022. [Notes on fossil birds from] Bulgaria. - Newsletter, Society of Avian Paleontology and Evolution. Christchurch, New Zealand, 36: 9-10.

390. Boev, Z., Boev, Z. Jr. 2022. First observation of the White-tailed eagle (*Haliaeetus albicilla* (Linnaeus, 1758)) in CW Bulgaria for the last 132 years. - ZooNotes, 207: 1-4.

391. Boev, Z. 2022. Alpine ibex (*Capra ibex* Linnaeus, 1758) in Bulgaria – fossil record, distribution and disappearance. – Bulletin of the Natural History Museum – Plovdiv, 7: 13-20.

392. Boev, Z. 2022. Animal remains of the Late Antique fortified site (4^{th} -6^{th} century AD) near Shipot village (Vidin Region, NW Bulgaria. – Bulletin of the Natural History Museum – Plovdiv, 7: 5-11.

393. Boev, Z. 2022. Avian remains from the Palace Center and the Citadel of the medieval capital Pliska of Bulgaria (10th century AD). – ZooNotes, 195: 1-4.

394. Boev, Z. 2022. European bison (*Bison bonasus* Linnaeus, 1758) in Bulgaria: fossil and historical records, distribution, and disappearance. – Journal od Wildlife and Biodiversity, 6(x), x-x. DOI: https://doi.org/10.5281/zenodo.6849950

395. Boev, Z. 2022. First record of the Long-billed Dowitcher (*Limnodromus scolopaceus* (Say, 1823)) (Scolopacidae – Aves) in Bulgaria. – ZooNotes, 194: 1-3.

396. Boev, Z. 2022. History of the Bulgarian ornithology (A review of the research fields and achievements for 277 years with complete bibliography). – Bulletin of the Natural History Museum, Plovdiv, Supplement 3: 1-55.

397. Boev, Z. 2022. In memoriam 100 Years since the Birth of Nikolay Boev (1922-1985). – Acta zoologica bulgarica, 74 (3): 493-502.

398. Boev, Z. 2022. Owls (Strigiformes Wagler, 1830) in Bulgaria: Past and Present (A Review of the Fossil Record and Present Status of Recorded Species). - In: Mikkola, H. J., editor. Owls - Clever Survivors. London: IntechOpen; [cited 2022 Sep 27]. Available from: https://www.intechopen.com/online-first/83799 doi: 10.5772/intechopen.107371

399. Boev, Z. 2022. Past Distribution of the Red Deer (*Cervus elaphus* Linnaeus, 1758) (Cervidae, Mammalia) in Bulgaria. - Bulletin of the Natural History Museum – Plovdiv, 7: 27-48.

400. Boev, Z. Late Pleistocene and Early Holocene Birds of Northern Vietnam (Caves Dieu and Maxa I, Thanh Hoa Province) - Paleornithological Results of the Joint Bulgarian-Vietnamese Archaeological Expeditions, 1985–1991 (Paleoavifaunal Research). Quaternary 2022, 5, 31. https://doi.org/10.3390/quat5030031

401. Boev, Z., Mikkola, H. 2022. First Pleistocene record of Great Grey Owl (*Strix nebulosa* Forster, 1772) in Bulgaria. – Comptes rendus de l'Académie bulgare des Sciences, 75 (5): 680-685.

402. Demerdzhiev, D., Boev, Z., Dobrev, D., Terziev, N., Nedyalkov, N., Stoychev, S., Petrov, T. 2022. Diet of Eastern Imperial Eagle (*Aquila heliaca*) in Bulgaria: composition, distribution and variation. Biodiversity Data. Journal 10: e77746. https://doi.org/10.3897/BDJ.10.e77746
403. Demerdzhiev, D., Boev, Z., Dobrev, D., Nedyalkov, N., Petrov, T. 2022. Does Temporal and Spatial Diet Alteration Lead to Successful Adaptation of the Eastern Imperial Eagle, a Top Predator? Diversity 2022, 14, 1000. https://doi.org/10.3390/d14111000
404. Boev, Z. 2022. The National Museum of Natural History at the Bulgarian Academy of Sciences under the leadership of Dr. Neno Atanasov (1947-1962) - 15 post-war years of lasting growth. – Bulletin of the Natural History Museum, Plovdiv, 7 Online First: 1-19. (in Bulgarian, English summary).
405. Boev, Z. 2022. Additional material of *Buteo spassovi* Boev & Kovachev, 1998 from the Upper Miocene locality Hadzhidimovo (Blagoevgrad region, SW Bulgaria). - Geologica Balcanica, 51 (3): 17-19.
406. Boev, Z. 2022. [Notes on fossil birds from] Bulgaria. - Newsletter, Society of Avian Paleontology and Evolution. Christchurch, New Zealand, 36: 9-10.
407. Boev, Z. 2022. Pleistocene distribution of the Asiatic wild dog (Cuon Hodgson, 1838) (Carnivora, Bowdich, 1821 – Mammalia Linnaeus, 1758) in Bulgaria – a review. Acta zoologica cracoviensia, 65(1): 15-20.
408. Boev, Z. 2022. The National Museum of Natural History at the Bulgarian Academy of Sciences – overcoming crisis changes (1994-2005). – In: Dimitrova-Dyulgerova, I., Nikolova, E. (eds.). Collection of reports from the National Scientific Conference with international participation on the topic "Education, Science, Society", November 3-4, 2022, Smolyan. Plovdiv University "Paisiy Hilendarski", Branch – Smolyan. University Publishing House "Paisiy Hilendarski".668-692. ISBN 978-619-7663-43-3 (online).

2023

409. Boev, Z. 2023. From the history of the National Museum of Natural History at the Bulgarian Academy of Sciences: The difficult restoration. The museum under the leadership of Corresponding Member Prof. Dr. Alexander Valkanov (1965 – 1971). - Education in Natural Sciences and Advanced Technologies, 32 (1): 767-87.
410. Demerdzhiev, D. A., Dobrev, D. D., Boev, Z. N. 2023. Grassland Alterations Do Not Affect Breeding Success, but Can Explain Dietary Shifts of a Generalist Raptor Species. Diversity 2023, 15, 422. https://doi.org/10.3390/d15030422
411. Boev, Z. 2023. Quaternary vertebrate fauna of Bulgaria - composition, chronology and impoverishment. Geologica Balcanica 52 (1), Sofia, April 2023, pp. 21–48. DOI: 10.52321/GeolBalc.52.1.21
412. Boev, Z. 2023. Fossil record and distribution of the Hazel Grouse (*Tetrastes bonasia* (Linnaeus, 1758) (Phasianidae - Aves) in Bulgaria. - Comptes rendus de l'Académie bulgare des Sciences, 76(4): 549-553. DOI:10.7546/CRABS.2023.04.06
413. Fladerer, F.A., Chatzopoulou, K., Steier, P., Bolka, M., Boev, Z. 2023. Eagle owls' predation within a highly diversified Late Glacial landscape: remains of pikas and hares (Lagomorpha) from the Loutra Almopias Cave (Central Macedonia, Greece). Geologica Balcanica 52 (2): 3–28.
414. Boev, Z. 2023. Animal remains of the Late Antiquity settlement (1-4th c. AD) near Dolni Lukovit (Pleven Region, CN Bulgaria). – ZooNotes 222: 1-2.

415. Golemanski, V., Boev, Z. 2023. Pioneer of environmental protection, notable scientist and popularizer of Bulgarian science. (On the occasion of the 100th anniversary of the birth of Assoc. Prof. Nikolay Boev). – Education in Natural Sciences and Advanced Technologies, 32(2): 158-168. https://doi.org/10.53656/nat2023-2.05
416. Boev, Z. 2023. Holocene distribution of Common Crane (*Grus grus* (Linnaeus, 1758)) (Gruidae Vigors, 1825) in Bulgaria. – Acta zoologica bulgarica, 75 (3): 439-443
417. Boev, Z. 2023. The leopard (*Panthera pardus* (Linnaeus, 1758) in Bulgaria. A review of the paleontological record and archaeological finds. – Bulletin of the Natural History Museum, Plovdiv, 8: 1-14.
418. Boev, Z. 2023. The Woolly Mammoth *Mammuthus primigenius* Blumenbach, 1799 (Elephantidae Gray, 1821) in the Pleistocene in Bulgaria. – Bulletin of the Natural History Museum, Plovdiv, 8: 15-23.
419. Boev, Z. 2023. Past and present distribution of Greater Flamingo (*Phoenicopterus roseus* Pallas, 1811) (Phoenicopteridae Bonaparte, 1831) in Bulgaria. – Bulletin of the Natural History Museum – Plovdiv, 8: 25-35.
420. Boev, Z. 2023. Petar Shurulinkov (1975-2023) - A Promising Bulgarian Ornithologist, Suddenly Stopped by Fate. A Biobibliography– Bulletin of the Natural History Museum, Plovdiv, 8: 1-15. Online first.
421. Demerdzhiev, D.A., Dobrev, D.D., Delchev, A.G., Angelov, I.D., Terziev, N.G., Iliev, M.D., Georgiev, G.S., Boev, Z.N., Nedyalkov, N.P., Arkumarev, V.S. 2023. Distribution, population status, habitats, and conservation of Lesser Spotted Eagle in Bulgaria. – Proceedings of Conferences Raptors Conservation 2023, Suppl. 2: 32-34. DOI: http://dx.doi.org/10.19074/1814-8654-2023-2-32-34
422. Demerdzhiev, D.A., Dobrev, D.D., Boev, Z.N., Nedyalkov, N.P., Delchev, A.G., Stoychev, S.A., Petrov, Ts.H. 2023. Grassland alterations do not affect breeding success, but lead to dietary shifts of Eastern Imperial Eagle, a top predator: a case of successful adaptation. – Proceedings of Conferences Raptors Conservation 2023, Suppl. 2: 290-294. DOI: http://dx.doi.org/10.19074/1814-8654-2023-2-290-294
423. Milošević, S., Boev, Z., Dimitrijević, V., Mihailović, D. 2023. First Fowlers of Europe: evidence for bird exploitation during MIS 8/7 from Velika Balanica cave (Serbia). – In: Marković, S. B., Hrvojević, M. P., Lazić, L. (Editors in Chief). Natural Resources and Environmental Risks: Towards a Sustainable Future. International Conference. Novi Sad, Serbia. Abstract Book. Serbian Academy of Sciences and Arts, p. 41. ISBN 978-86-7031-650-8
424. Demerdzhiev, D., Boev, Z. 2023. Assoc. Prof. Dr. Tseno Petrov and the modern Bulgarian ornithology (A bio-bibliography of an honored Bulgarian ornithologist on occasion of his 80th anniversary). – Bulletin of the Natural History Museum, Plovdiv, 8: 1-21.
425. Boev, Z. 2023. [Notes on fossil birds from] Bulgaria. - Society of Avian Paleontology and Evolution. Information Letter, Christchurch, 37: 7-8.
426. Boev, Z. 2023. Bulgarian Folk Anti-Natural Customs and Superstitions - Education in Natural Sciences and Advanced Technologies. – Education in Natural Sciences and Advanced Technologies, 32 (3-4): 213-225. (in Bulgarian, English summary).
427. Boev, Z. 2023. Unresolved problems of contemporary natural geographical and settlement toponymy of Bulgaria. – Education in Natural Sciences and Advanced Technologies, 32 (3-4): 305-322. (in Bulgarian, English summary).
428. Boev, Z. 2023. The National Museum of Natural History at the Bulgarian Academy of Sciences around its 100th anniversary (1989 – 1993). – In: Boev, Z., Tsonev, R. (eds.).

The Museum – an intersection of exhibits and innovations on the way to the ecological challenges facing nature. Collection of reports from a scientific conference, Department of Nature, Regional Historical Museum – Pleven, November 3-4, 2022, Pleven, "Mediatech" EOOD – Pleven, ISBN 978-619-91027-5-6 – print, 42-61. (in Bulgarian, English summary).

429. Boev, Z. 2023. [Welcome to the participants]. – In: Boev, Z., Tsonev, R. (eds.) The Museum – an intersection of exhibits and innovations on the path to environmental challenges facing nature. Collection of reports from a scientific conference, Department of Nature, Regional Historical Museum – Pleven, November 3-4, 2022, Pleven, "Mediatech" EOOD – Pleven, ISBN 978-619-91027-5-6 – print, 7-8. (in Bulgarian).
430. Boev, Z., Boev, Z. Jr. 2023. New record of the Pygmy Cormorant *Microcarbo pygmaeus* during the breeding season In CW Bulgaria. – Larus, 58:50-54.
431. Boev, Z. 2023. Alces alces and Rangifer tarandus in the Pleistocene of Bulgaria (Artiodactyla: Cervidae). - Lynx, n. s. (Praha), 54: 69-74.
432. Boev, Z. 2023. The National Museum of Natural History at the Bulgarian Academy of Sciences - 14 years of reconstruction under the leadership of Academician Prof. Dr. Ivan Kostov (1974-1988). Education in Natural Sciences and Advanced Technologies, 32 (5-6): 422-456. (in Bulgarian, English summary).

2024

433. Boev, Z., Bautista, J. 2024. Golden Eagle Paleosubspecies. Around the World, with Emphasis on the Balkan Peninsula. – In: Bautista-Rodríguez J., Ellis D. (Eds.). The Golden Eagle Around the World. Biology and Conservation the Golden Eagle Around the World. Hancock House Publishers Ltd. Surrey, Canada. 22-27.
434. Boev, Z., Nedyalkov, N., Georgiev, D., Spassov, N. 2024. Late Pleistocene birds and mammals from the Kiliite Cave (Central Stara Planina Mts – Central North Bulgaria) – Geologica Balcanica, 53 (1): 105-115.
435. Boev, Z. 2024. New locality of the invasive Monk parakeet *Myiopsitta monachus* (Boddaert, 1783) in Greece. - ZooNotes 240: 1-4.
436. Boev, Z. 2024. One Hundred and Thirty-Five Years of Ornithology in Bulgaria: The Role of the National Museum of Natural History at the Bulgarian Academy of Sciences in the Development of Ornithology in Bulgaria—Representatives, Collections and Achievements. Diversity 2024, 16, 284. https://doi.org/10.3390/d16050284
437. Boev, Z. 2024. Past distribution of the White-tailed eagle (*Haliaeetus albicilla* (Linnaeus, 1758)) in Bulgaria – subfossil record. - Comptes rendus de l'Acad emie bulgare des Sciences, 77 (5): 669-674.
438. Undjian, E., Nankinov, D., Darakchiev, A., Petrov, T., Apostolov, A., Boev, Z. 2024. Avifauna of the Sandanski-Petrich Valley (Blagoevgrad Region, SW Bulgaria) after data from the Rupite Ornirhological Station (1976-1978). – Bulletin of the Natural History Museum, Plovdiv, 9: 1-38.
439. Boev, Z. 2024. Dr. Petar Iankov – a talented and dedicated researcher and conservator of birds in Bulgaria. Biobibliography on the occasion of his 70th anniversary. - Bulletin of the Natural History Museum – Plovdiv, 9: 1-37.
440. Petrova, V. D., Lyuncheva, M., Iliev, I., Yaneva, M., Nikolov, V., Vitezovic, S., Zidarov, P., Mitov, K., Hadzhipetkov, I., Taneva, S., Boev, Z., Fidanoska, A., Hristova, I., Marinova, E. 2024. Archaeological excavations at a Late Neolithic pit site near the village of Hadzhidimitrovo, Yambol region. – In: Alexandrov, St. (Ed.). Archaeological

Rescue Excavations along the Trakia Motorway Route, LOT 1 – 4. Part I. Prehistory, Bulged, Sofia, 7-94. (in Bulgarian, English summary).

441. Boev, Z. 2024. Birds and people in Medieval Bulgaria: Review of the subfossil record of birds during the First and Second Bulgarian Empires. – 2nd ICAZ Medieval Period Working Group Meeting. Sofia, 02.-06.10.2024. Book of Abstracts, 11
442. Boev, Z. 2024. Biobibliography of Assoc. Prof. Dr. Simeon Simeonov on occasion of his 90th anniversary of birth. - Bulletin of the Natural History Museum – Plovdiv, 9: Online First: 1-19.
443. Boev, Z. 2024. Images of birds on the ancient floor mosaics from Bulgaria from an ornithological aspect: Species, origin and trade (2nd – 6th c. AD). – In: Topalliov, I. (Ed.). XVI Conference of the Association Internationale pour l'Étude de la Mosaïque Antique AIEMA, Sofia 2024. Mosaics between East and West: Common traits, differences, exchanges, 14 - 20 October 2024, Sofia, Bulgaria. Abstracts. 73.
444. Boev, Z. 2024. Eberhard Undzhiyan. A bio-bibliography of a distinguished Bulgarian ornithologist on the occasion of his 90th birthday. - Rousse Regional Museum of History. Proceedings, 28: 458-483.
445. Boev, Z. 2024. Animal remains from the Late Byzantine settlement (4th-7th c. AD) Gradishteto near Gabrovo City (CN Bulgaria). – ZooNotes, 250: 1-3. ISSN 1313-9916 DOI: 10.69085/zn20240250
446. Boev, Z. 2024. Quaternary history of vultures (Accipitridae Vieiilot, 1916) in Bulgaria – fossil and subfossil records. – Larus, 59: 105-116.
447. Iankov, P., Boev, Z. 2024. Atanasovsko Lake (Black Sea Coast, Bulgaria) – a new European breeding site of the Greater flamingo (*Phoenicopterus roseus* Pallas, 1811). – Larus, 59: 163-167.
448. Boev, Z., Manev, Al. Harizanov, Al., Dedov, I. 2024. Archaeozoological material from the Late Antique fortified settlement near the modern-day town of Dimovo, northwestern Bulgaria. - Bulgarian e-Journal of Archaeology, 14(2): 217-233. - https://be-ja.org. ISSN:1314-5088
449. Boev, Z. 2024. Quaternary record of Eagles (Aquilinae Gadow, 1893 – Accipitriformes Vieillot, 1816) and Falcons (Falconidae Leach, 1819 – Falconiformes Sharpe, 1874) in Bulgaria. – Acta zoologica bulgarica, 76 (4): 561-569.
450. Boev, Z. 2024. Quaternary history of the European Badger *Meles meles* (Linnaeus, 1758) in Bulgaria. – Lynx. Lynx, n. s. (Praha), 55: 133–142. ISSN 0024-7774 (print), 1804-6460 (online).

2025

451. Boev, Z. 2025.Animal remains from the Monastery of Chargubilya Mostich in Veliki Preslav (10-12th c. AD) – NE Bulgaria. – ZooNotes, 255: 1-4, DOI: 10.69085/zn20250255
452. Boev, Z. 2024. Birds in Medieval Bulgarian Art. - Education in Natural Sciences and Advanced Technologies, 5-6: 375-383. (in Bulgarian, English summary).
453. Boev, Z.N. 2025. Woodland Birds from Neolithic Settlements in Bulgaria. Diversity, MDPI, 17, 107. https://doi.org/10.3390/d17020107
454. Boev, Z.N. 2025. Birds from Chalcolithic Settlements in the Plains of Bulgaria. Quaternary, MDPI, 8, 10: 1-11. https://doi.org/10.3390/quat8010010
455. Boev, Z. 2025. Terminologia ornithological bulgarica. Vol. I. Taxonomia. Illustrated trilingual dictionary of the birds of the world. English - Latin – Bulgarian.

Part 1. Non-Passeriformes. National Museum of Natural History – Bulgarian Ornithological Society. Sofia. 432 pp. ISBN 978-954-8828-20-8

456. Boev, Z. 2025. Terminologia ornithological bulgarica. Vol. I. Taxonomia. Illustrated trilingual dictionary of the birds of the world. English - Latin – Bulgarian. Part 2. Passeriformes. National Museum of Natural History – Bulgarian Ornithological Society. Sofia. 508 pp. ISBN: 978-954-8828-21-5
457. Boev, Z. 2025. The images of birds in the ancient floor mosaics from Bulgaria from an ornithological aspect: species, origin and trade relations (2^{nd} – 6^{th} centuries AD). - Education in Natural Sciences and Advanced Technologies, 34 (1): 93-101. https://doi.org/10.53656/nat2025-1.06 (in Bulgarian, English summary).
458. Milosevic, St., Boev, Z., Dimitrijevic, V., Mihailovic, D. 2025. Early fowlers of Europe: evidence for bird exploitation during MIS 8/7 from Velika Balanica cave (Serbia). - Quaternary International, 738 (2025) 109868: 1-9. https://doi.org/10.1016/j.quaint.2025.109868
459. Boev, Z. 2025. Birds and People in Medieval Bulgaria—A Review of the Subfossil Record of Birds During the First and Second Bulgarian Empires. Quaternary, 8, 36. https://doi.org/10.3390/quat8030036
460. Boev, Z. 2025. Terminologia theriologica taxonomica bulgarica. Illustrated trilingual dictionary of the mammals of the world. English – Latin – Bulgarian. National Museum of Natural History. Sofia. 462 pp. ISBN 978-954-8828-22-2
461. Boev, Z. 2025. A case of partial albinism in the western jackdaw *Coloeus monedula* (Linnaeus, 1758). – ZooNotes, 282: 1-3.
462. Mlíkovský, J., Boev, Z. N. 2025. Type specimens of recent birds in the National Museum of Natural History, Sofia, Bulgaria. – Acta zoologica bulgarica, 77 (3): 1-4. DOI: https://doi.org/10.71424/azb77.3.002878
463. Boev, Z. 2025. Bulgarian taxonomic terminology of birds and mammals (Aves et Mammalia-Vertebrata, Animalia). – Terminological Bulletin, 8: 193-200. https://doi.org/10.37919/2221-8807- 2025-8-17
464. Boev, Z. 2025. Specimens of the globally extinct Slender-billed curlew (*Numenius tenuirostris*) in the collection of the National Museum of Natural History in Sofia. – Larus, 60: 65-69. DOI10.21857/ygjwrce15y
465. Gwee, Ch. Y., Tassoni, L., Boev, Z., Tomek, T., Bochenski, Z. M., Talamo, S., Wolf, J. B. W. 2025. Performance of Two Custom Probe Kits for In-Solution Enrichment of Ancient Avian DNA. – Molecular Ecology Resources, 0: e70071: 1-14. https://doi.org/10.1111/1755-0998.70071
466. Boev, Z. History of the Archaeozoology in Bulgaria - Fields, Researchers and Achievements for 120 Years. Quaternary 2025, 8,73. https://doi.org/10.3390/quat8040073
467. Boev, Z. 2025. Andon Darakchiev (1934-2018) - a prominent worker of Bulgarian ornithology. - Bulletin of the Natural History Museum – Plovdiv, 10: 1-15 Online First.

Authored and co-authored popular science books and book chapters

1. Boev, Z. 1990. What we know about birds. Sofia, Otechestvo, 1-200. (in Bulgarian).
2. Boev, Z. 1991. The scary lizards. Sofia, Delta Books. 1-16. (in Bulgarian).
3. Boev, Z. 1992. The ten rarest animals on Earth. Sofia, Meridian Press, 1-16. (in Bulgarian).
4. Boev, Z. 1993. Encyclopedia of birds. Sofia, Otechestvo, 1-128. (in Bulgarian).

5. Boev, Z. 1993. Parrots. Sofia, Meridian Press, 1-16. (in Bulgarian).
6. Boev, Z. 1994. In the world of Amphibians. Sofia, Prosveta, 1-32. (in Bulgarian).
7. Boev, Z. 1994. In the world of Fish. Sofia, Prosveta, 1-32. (in Bulgarian).
8. Boev, Z. 1995. In the world of Butterflies. Sofia, Prosveta, 1-32. (in Bulgarian).
9. Boev, Z. 2000. Ten animals equipped with weapons. Sofia. Pensoft. 1-24. (in Bulgarian).
10. [Boev, Z.] 2005. Boev Nikolay Krumov (May 8, 1922, Aytos - November 12, 1985, Sofia). – In: Concise Encyclopedia, BAS. Acad. Publ. house "Prof. Marin Drinov." (in Bulgarian).
11. [Boev, Z.] 2005. Animals in natural landscapes. First Illustrated Encyclopedia. Sofia, Publ. House "Fyut," 1-335. (in Bulgarian).
12. Boev, Z. 2006. Ten flying cats. Pensoft Publishers. Sofia – Moscow, 1-28. (in Bulgarian).
13. Boev, Z. 2008. A brief history of nature conservation in Bulgaria. - Pensoft. Sofia - Moscow, 1-46. (in Bulgarian).
14. Boev, Z. 2011. Ornithologist Stefan Donchev. Brief bio-bibliography. Published by the Union of Scientists in Bulgaria. Sofia, 1-20. (brochure). (in Bulgarian)
15. [Boev, Z.] 2011. Boev Nikolay Krumov 8.V.1922 – 12.XI.1985. – In: Gyuzelev, V. (ed.). Great Encyclopedia Bulgaria, vol. 1 A-Bul. Sofia, Trud Publishing House, pp. 310-311. (in Bulgarian).
16. Boev, Z. 2012. Mammals. Living nature – Illustrated Encyclopedia, Sofia: Geya Libris Publishing House, 1-80. (in Bulgarian).
17. Zhalov, A., Boev, Z., Sirakov, N., Ivanova, S. 2014. Caves in Bulgaria. 1-87. – At: https://www.academia.edu/2465154/THE_CAVES_in_BULGARIA_Peshterite_v_Bulgaria_(in Bulgarian).
18. Boev, Z. 2014. History of the Animal World. – In: Popov, A. (ed.) 2014. The Natural Wealth of Vitosha Nature Park, Directorate of Vitosha Nature Park, National Museum of Natural History – BAS. Sofia, Military Publishing House Ltd. 102-106. (in Bulgarian).
19. Boev, Z. 2016. Bibliography of Ivan Mitev's natural science publications. – In: Mitev, Iv. 2016. Collected Works, vol. 1. Bulgarian Nature, Logos Publishing House, Sofia, 7-10. (in Bulgarian).
20. Boev, Z. 2016. Biography of Ivan Mitev (1973-2008). – In: Mitev, Iv. 2016. Collected Works, vol. 1. Bulgarian Nature, Logos Publishing House, Sofia, 11-24. (in Bulgarian).
21. Boev, Z. 2018. As Long as There Are Quails ... (Instead of a Foreword). In: Nyagolov, K. The Quail - Amazing but Vulnerable. Published by ET Burgaski Ezera, Sofia, 4. (in Bulgarian).

Publications in popular science periodicals

1977

1. Boev, Z. 1977. Students and nature conservation. - Echo newspaper, issue 5 (839)/28.01.1977: 3. (in Bulgarian).

1978

2. Boev, Z. 1978. Map of the status of nature reserves and landmarks in the People's

Republic of Bulgaria. – club for technical and scientific creativity of young people, expedition sector. Biol. Fac. [Sofia University "St. Kliment Ohridski"], 1-16. (in Bulgarian).

1980

3. Boev, Z. 1980. (Untitled - Interesting) - Priroda i znanie, 6: 18. (in Bulgarian).

1981

4. Boev, Z. 1981. Ograzden Mountain. - Priroda i znanie, 4: 11-12. (in Bulgarian).
5. Boev, Z. 1981. "Srebarna" is now saved. - Priroda i znanie, 7: 40. (in Bulgarian).
6. Boev, Z. 1981. Communication among mammals. -Priroda, BAS, 6: 60-63. (in Bulgarian).

1982

7. Boev, Z. 1982. Impoverishment of the Balkan mammal fauna in the historical epoch. - Priroda, BAS, 3: 42-47. (in Bulgarian).
8. Boev, Z. 1982. How do mammals communicate with each other? - Priroda i znanie, 7: 7-8. (in Bulgarian).
9. Boev, Z., Pchelarov, G. 1982. The Beli Lom nature reserve. - Priroda, BAS, 5: 65-69. (in Bulgarian).
10. Boev, Z. 1982. Expedition "Devetashko Plateau - 82". - Priroda i znanie, 10: 24-25. (in Bulgarian).

1983

11. Boev, Z. 1983. Archaeopteryx and the origin of birds. -Priroda, BAS, 1: 52-56. (in Bulgarian).
12. Boev, Z. 1983. Parasitism in birds. - Priroda, BAS, 3: 47-52. (in Bulgarian).
13. Boev, Z. 1983. Mercy for the bee-eater. -Priroda i znanie, 8: 18-19. (in Bulgarian).
14. Boev, Z. 1983. Herons. – Priroda i znanie, 9: 23-26. (in Bulgarian).
15. Boev, Z. 1983. Cannibalism in birds. - Priroda, BAS, 5: 49-53. (in Bulgarian).

1984

16. Boev, Z. 1984. The bird sings - the forest sways. – Zastita na prirodata, 5: 13-14. (in Bulgarian).
17. Boev, Z. 1984. The explorer of Africa (170 years since the birth of David Livingstone). – Priroda i znanie, 5: 44-45. (in Bulgarian).
18. Pchelarov, G., Boev, Z. 1984. The Beli Lom Nature Reserve. - Pobeda newspaper, issue 9 (33)/09.05.1984: 1. (in Bulgarian).
19. Boev, Z. 1984. "Tsibritsa - 84." – Priroda i znanie, 9: 34. (in Bulgarian).
20. Boev, Z. 1984. Expedition "Emenski Canyon - 84." – Priroda i znanie, 10: 21. (in Bulgarian).
21. Boev, Z. 1984. Geography of birds. - Geografia, 10: 1-5. (in Bulgarian).
22. Boev, Z. 1984. The Danube Island of "Tsibur". - Priroda, BAS, 6: 79-81. (in Bulgarian).

1985

23. Boev, Z. 1985. Essays on the history of geographical discoveries. - Geografia, 3: 23. (in Bulgarian).
24. Boev, Z. 1985. The Natural Landmark "Canyon of the Negovanka River." - Priroda, BAS, 3: 89-91. (in Bulgarian).
25. Boev, Z. 1985. The birds of the Tsibritsa river valley. - Priroda i znanie, 7: 28-29. (in Bulgarian).
26. Boev, Z. 1985. Expedition "Strandzha - 85". – Priroda i znanie, 10: 33. (in Bulgarian).
27. Boev, Z. 1985. Comparative morphological studies in ornithology. - Priroda, BAS, 5: 66-68. (in Bulgarian).
28. Boev, Z. 1985. Problems of heron conservation in fish farms in Bulgaria. - Priroda, BAS, 6: 71-73. (in Bulgarian).
29. Boev, Z. 1985. Morphological adaptations in the skeleton of herons. - Priroda, BAS, 2: 66-70. (in Bulgarian).

1986

30. Boev, Z. 1986. International symposium of the project 8-MAB "Conservation of natural areas and their genetic resources." - Priroda, BAS, 1: 88-89. (in Bulgarian).
31. Boev, Z. 1986. New Danube reserve. – Zastita na prirodata, 10-11: 67-68. (in Bulgarian).
32. Boev, Z. 1986. Cattle Egret. – Zastita na prirodata, 12: 28. (in Bulgarian).
33. Boev, Z. 1986. Birds of the Shrikes family. - Priroda, BAS, 5: 60-65. (in Bulgarian).
34. Boev, Z. 1986. About the author (1922 - 1985). - In: N. Boev. Decorative birds, Zemizdat, Sofia, 344 pp.: 5-6. (in Bulgarian).
35. Boev, Z. 1986. The bone morphology of birds. - Priroda, BAS, 6: 50-55. (in Bulgarian).

1987

36. Boev, Z. 1987. Cinereous vulture (Black vulture). – Zastita na prirodata, 2: 19. (in Bulgarian).
37. Boev, Z. 1987. What about wild animals? - in: Trezvenost, issue 22/05.06.1987: 5. (in Bulgarian).
38. Nikolaev, [Z. Boev] 1987. A book about the colorful feathery beauty. – Priroda i znanie, 6: 42-43. (in Bulgarian).
39. Boev, Z. 1987. Paradise for marsh birds. - Trezvenost newspaper, issue 34/28.08.1987: 8. (in Bulgarian).
40. Boev, Z. 1987. A guide for everyone. – Lov i ribolov, 12: 31. (in Bulgarian).
41. Boev, Z. 1987. The Short-toed Eagle. – Zastita na prirodata, 11: 20. (in Bulgarian).
42. Boev, Z. 1987. The Eagle Owl. – Zastita na Prirodata, 12: 19. (in Bulgarian).

1988

43. Boev, Z. 1988. The stronghold of seabirds in England. – Priroda i znanie, 1: 16-17. (in Bulgarian).

44. Boev, Z. 1988. Coombes Valley - a forest reserve in England. – Priroda i znanie, 3: 25-26. (in Bulgarian).
45. Nikolaev, Z. (Z. Boev) 1988. Do you like soup made of nests? – Zastita na prirodata, 3: 34. (in Bulgarian).
46. Boev, Z. 1988. Who was the last to see the Roc bird? – Priroda i znanie, 3: 17-18. (in Bulgarian).
47. Boev, Z. 1988. Protecting birds. - Rabotnichesko Delo newspaper, issue 193/11.07.1988: 4. (in Bulgarian).
48. Boev, Z. 1988. Titchwell - paradise for marsh birds in England. – Zastita na prirodata, 6: 29-30. (in Bulgarian).
49. Boev, Z. 1988. A Cormorant named Serdica. – Priroda i znanie, 6: 10-11. (in Bulgarian).
50. Boev, Z. 1988. Their last flight. - in: Trezvenost, issue 30/02.08.1988: 8. (in Bulgarian).
51. Boev, Z. 1988. The Greylag Goose. – Priroda i znanie, 4: 45-46. (in Bulgarian).
52. Boev, Z. 1988. Strandzha - a blank spot on our ornithogeographical map. - Geografia, 6: 4-6. (in Bulgarian).
53. Boev, Z. 1988. IV National conference of the movement for the protection and reproduction of the natural environment. - Priroda, BAS, 6: 81-84. (in Bulgarian).
54. Boev, Z. 1988. [The bulgarian society for the protection of birds has been established]. – Zastita na prirodata, 9: 10. (in Bulgarian).
55. Boev, Z. 1988. Paleontological studies of birds in Bulgaria. - Priroda, BAS, 5: 63-67. (in Bulgarian).

1989

56. Boev, Z. 1989. The Los Angeles Zoo. – Priroda i znanie, 1: 20-21. (in Bulgarian).
57. Boev, Z. 1989. The Dvoynitsa river. - Priroda, BAS, 1: 65-68. (in Bulgarian).
58. Boev, Z. 1989. Has the Black Grouse been seen in our lands? – Lov i ribolov, 4: 14-15; 38. (in Bulgarian).
59. Spasov, N., Boev, Z., Pomakov, V. 1989. Who got caught in the trap? - Anteni newspaper, issue 13 (949)/29.03.1989: 4. (in Bulgarian).
60. Boev, Z. 1989. The Hoatzin. – Priroda i znanie, 3: 35. (in Bulgarian).
61. Boev, Z. 1989. The common tree-creeper. – Zastita na prirodata, 3: 17. (in Bulgarian).
62. Boev, Z. 1989. The Bearded vulture. – Zastita na prirodata, 4: 20. (in Bulgarian).
63. Boev, Z. 1989. The Mound-builders. – Priroda i znanie, 5: 17-18. (in Bulgarian).
64. Boev, Z. 1989. When did the California condor disappear? – Zastita na prirodata, 7: 9. (in Bulgarian).
65. Boev, Z. 1989. The trusting "fool." – Priroda i znanie, 7: 9-10. (in Bulgarian).
66. Boev, Z. 1989. Second international symposium on paleontology and evolution of birds. - Priroda, BAS, 3: 87-89. (in Bulgarian).
67. Boev, Z. 1989. The riches of the world. - in Rabotnichesko Delo, issue 273/30.09.1989: 3. (in Bulgarian).
68. Boev, Z. 1989. Small mammals in Ograzhden. - Priroda, BAS, 5: 56-61. (in Bulgarian).
69. Boev, Z. 1989. Birds and archaeology. - Kosmos – Nauka i tehnika za mladezhta, 12: 38-41. (in Bulgarian).

1990

70. Boev, Z. 1990. The Common Eider. – Lov i ribolov, 2: 26. (in Bulgarian).

71. Boev, Z. 1990. The White-throated Dipper. – Zastita na prirodata, 1: 12. (in Bulgarian).
72. Boev, Z. 1990. Something about dinosaurs. – Priroda i znanie, 2: 13-15. (in Bulgarian).
73. Boev, Z. 1990. Homo versus Animalia - chronicles of relations. - Orbita newspaper, issue 28 (1122) / 14.07.1990, pp. 2-3. (in Bulgarian).
74. Boev, Z. 1990. The Resurrected Corncrake. – Priroda i znanie, 7: 7-8. (in Bulgarian).
75. Boev, Z. 1990. The Bulgarian zoological society is established. – Priroda i znanie, 8: 38. (in Bulgarian).
76. Boev, Z. 1990. What bird feathers are used for. – Zastita na prirodata, 8: 14-15. (in Bulgarian).
77. Boev, Z. 1990. Bird tracks in the snow. - Venche newspaper, issue 1/ 15.11.1990: 5. (in Bulgarian).
78. Boev, Z. 1990. The rescued owl. – Priroda i znanie, 3: 40-41. (in Bulgarian).
79. Boev, Z. 1990. The Greater Rhea. – Lov i ribolov, 5: 15. (in Bulgarian).
80. Boev, Z. 1990. Will we protect the winged sanitation workers? - Sofia University newspaper, issue 10 (467) / June 1990: 7. (in Bulgarian).
81. Boev, Z. 1990. What do we know about ...birds. - ABV newspaper, issue 31(603)/ 3107.1990: 7. (in Bulgarian).
82. Boev, Z. 1990. Birds and humans. – Opazvane na prirodata. 11-12: 32. (in Bulgarian).
83. Boev, Z. 1990. A beautiful park in Virginia. – Priroda i znanie, 9: 33-35. (in Bulgarian).
84. Boev, Z. 1990. The Natural history museum in Washington. – Priroda i znanie, 10: 35-37. (in Bulgarian).
85. Boev, Z. 1990. S. Simeonov, T. Michev, D. Nankinov. Fauna of Bulgaria, Vol. 20. Aves, Part I, 350 pp. with illustrations. - Priroda, BAS, 3: 61-62. (in Bulgarian).
86. [Boev, Z.] 1990. [On the need for a second edition of the Red Data Book of Bulgaria]. –Otechestven Vestnik newspaper (published between 09.06. and 31.08.1990). (in Bulgarian).
87. Boev, Z. 1990. The Black woodpecker. – Lov i ribolov, 9: 29. (in Bulgarian).

1991

88. Boev, Z. 1991. Studies of birds from archaeological sites in Bulgaria. - Priroda, BAS, 1: 35-39. (in Bulgarian).
89. Boev, Z. 1991. Animals listed in the Red Data Book before Bulgarians. - Demokratsia newspaper, issue 62 (328)/ 14.03.1991: 4. (in Bulgarian).
90. Boev, Z. 1991. Birds in the ancient Bulgarian lands. – Lov i ribolov, 1: 4-6. (in Bulgarian).
91. Boev, Z. 1991. Don't shoot your winged helpers! - in: Terra newspaper, issue 3/10-16.04.1991: 11. (in Bulgarian).
92. Boev, Z. 1991. Protect useful birds! - in: Terra newspaper, issue 5/8-14.05.1991: 13. (in Bulgarian).
93. Boev, Z. 1991. Seagulls above Sofia. - in Demokracia newspaper, issue 114(380)/ 15.05.1991: 5. (in Bulgarian).
94. Boev, Z. 1991. The paleontological treasure of Varshets. – Priroda i znanie, 1: 19-20. (in Bulgarian).

95. Boev, Z. 1991. Parrots. - Lobby-Hobby magazine newspaper, issue 5/ 18-25.06.1991: 6. (in Bulgarian).
96. Boev, Z. 1991. Parrot diversity. - in Lobi-Hobi magazine newspaper, issue 13/12-19.08.1991: 6. (in Bulgarian).
97. Boev, Z. 1991. The first hens in Bulgaria. – Priroda i znanie, 3: 28-29. (in Bulgarian).
98. Boev, Z., Radoynova, D. 1991. Will the birds of Atanasovsko lake lay golden eggs? - Chernomorski Far newspaper, issue 200 (961)/12.11.1991: 2. (in Bulgarian).
99. Boev, Z. 1991. The George Page Museum in Los Angeles. – Priroda i znanie, 5: 39-41. (in Bulgarian).
100. Boev, Z. 1991. On the benefits and "harm" of the eagle owl. - Lov i ribolov, 9: 12-13. (in Bulgarian).
101. Boev, Z. 1991. The damage caused by greed, or the truth about the Colchis pheasant. 3E – Evolucia, Ekologia, Ecopolitiki, 2: 32-33. (in Bulgarian).
102. Boev, Z., Iliev, N. 1991. The Lepenitsa Cave near Belogradchik. - Priroda, BAS, 3-4: 72-73. (in Bulgarian).
103. Boev, Z. 1991. Falcons in Bulgaria. - Priroda i znanie, 7-8: 31-34. (in Bulgarian).
104. Boev, Z. 1991. The Oystercatcher in Bulgaria. - Lov i ribolov, 12: 5. (in Bulgarian).
105. Boev, Z. 1991. The Monkey-eating Eagle. - Priroda i znanie, 10: 19-20. (in Bulgarian).

1992

106. Boev, Z. 1992. Lovebirds. - in Lobby-Hobby Magazine, issue 10/ 9-16.03.1992: 6. (in Bulgarian).
107. Boev, Z. 1992. Aye-aye. - Priroda i znanie, 2: 20-21. (in Bulgarian).
108. Boev, Z. 1992. The Ivory-billed Woodpecker. - Lov i ribolov, 7: 18-19. (in Bulgarian).
109. Boev, Z. 1992. Waldrapp. - Lov i ribolov, 1: 12-13. (in Bulgarian).
110. Boev, Z. 1992. Extinct and endangered animals in Bulgaria. – Tiyneydzhar Daidzhest newspaper, issue 3/ 19.03.1992: 5. (in Bulgarian).
111. Boev, Z. 1992. The Lowland Anoa. - Lov i ribolov, 3: 17. (in Bulgarian).
112. Boev, Z. 1992. A unique creation of Priroda. - Zemya newspaper, issue 157 (517)/ 11.08.1992: 2. (in Bulgarian).
113. Boev, Z. 1992. Requiem for the Black Sea monk seal. - Chernomorski Far newspaper, issue 91(1085)/ 13.05.1992: 2. (in Bulgarian).
114. Boev, Z. 1992. The birds of the Burgas lakes. - in: Chernomorski Far, issue 106 (1100)/ 03.06.1992., p. 4. (in Bulgarian).
115. Boev, Z. 1992. The clouded leopard. - Priroda i znanie, 1: 28-29. (in Bulgarian).
116. Boev, Z. 1992. The Tuatara. - Priroda i znanie, 5: 27-28. (in Bulgarian).
117. Boev, Z. 1992. Birds and soil. - Priroda i znanie, 6: 5-7. (in Bulgarian).
118. Boev, Z. 1992. Alarm for Ibisha. - Priroda i znanie, 7-8: 28-29. (in Bulgarian).
119. Boev, Z. 1992. The Panamanian Golden Frog. - Priroda i znanie, 9: 36-37. (in Bulgarian).
120. Boev, Z. 1992. The Migratory Locust - dangerous and unknown. - Priroda i znanie, 10: 8-9. (in Bulgarian).

1993

121. Boev, Z. 1993. A new look at the past. – Naukata i nie, 1: 35. (in Bulgarian).
122. Boev, Z. 1993. The Golden Fish. - Priroda i znanie, 1: 41-42. (in Bulgarian).
123. 01.02.1993: 4. / Boev, Z. 1993. How far will we get with the "scorched earth" tactic? - in Zemya, issue 21 (639) / 01.02.1993: 4. (in Bulgarian).
124. Boev, Z. 1993. Monk seal. - Lov i ribolov, 2: 8-9. (in Bulgarian).
125. Boev, Z. 1993. Salmon. - Lov i ribolov, 3: 10. (in Bulgarian).
126. Boev, Z. 1993. Don't shoot at wintering pelicans! - Zemya newspaper, issue 47(665) / 10.03.1993: 6. (in Bulgarian).
127. Boev, Z. 1993. The San Clemente Loggerhead Shrike. - Priroda i znanie, 2: 32-34. (in Bulgarian).
128. Boev, Z. 1993. How to breed Danio rerio? - Priroda i znanie, 3-4: 44. (in Bulgarian).
129. Boev, Z. 1993. Is the Lanner falcon found in Bulgaria? - Ecocourrier, 2: 30-31. (in Bulgarian).
130. Boev, Z. 1993. Winged pest. - Vik, 6: 6. (in Bulgarian)
131. Boev, Z. 1993. Owls on the road! - Zemya newspaper, issue 86 (704)/ 05.05.1993: 6. (in Bulgarian).
132. Boev, Z. 1993. A delicacy from antiquity. - Lov i ribolov, 6: 17. (in Bulgarian).
133. Boev, Z. 1993. The Bonobo. - Priroda i znanie, 7-8: 43-44. (in Bulgarian).
134. Boev, Z. 1993. North American bison. - Lov i ribolov, 8: 37. (in Bulgarian).
135. Boev, Z. 1993. Cardinal. - Priroda i znanie, 9: 43. (in Bulgarian).
136. Boev, Z. 1993. Winter guests in the fields. - in Zemya, issue 234 (850)/ 30.11.1993: 4. (in Bulgarian).
137. Boev, Z. 1993. New eagle species in Europe. - Priroda i znanie, 10: 20-21. (in Bulgarian).

1994

138. Boev, Z. 1994. The Cape penguin. - Priroda i znanie, 1: 11-12. (in Bulgarian).
139. Boev, Z. 1994. A visitor from Asia. - Lov i ribolov, 3-4: 48. (in Bulgarian).
140. Boev, Z. 1994. Every fisherman's dream. - Lov i ribolov, 3-4: 46-47. (in Bulgarian).
141. Boev, Z. 1994. Game in the Asenovgrad region 6,000 years ago. - Lov i ribolov, 5: 40. (in Bulgarian).
142. Boev, Z. (trans.) 1994. The birdlife of Bulgaria - 34 years ago - 1. Guy Mountfort - "Shrikes, storks, and stilts ... discovered by amateur ornithologists in Bulgaria." - Zemya newspaper, issue 141 (1013)/ 29.09.1994: 4. (in Bulgarian).
143. Boev, Z. (trans.) 1994. The birdlife of Bulgaria - 34 years ago - 2. Guy Mountfort - "The amateur ornithologist behind the Iron Curtain: Great white pelicans in Burgas Lake". - Zemya newspaper, issue 143 (1015)/ 02.08.1994: 6. (in Bulgarian).
144. Boev, Z. (trans.). 1994. The birdlife of Bulgaria - 34 years ago - 3. Guy Mountfort - "The amateur ornithologist in Bulgaria: Searching for Eagles in the Marsh Forest." - Zemya newspaper, issue 148 (1020)/ 09.08.1994: 6. (in Bulgarian).
145. Boev, Z., N. Spasov. 1994. Armored Giants Have Splashed Their Tails in the Bulgarian lands. - Kosmos, 11: 28-29. (in Bulgarian).
146. Boev, Z. 1994. Test "Do you know dinosaurs". - Kosmos, 11: 29. (in Bulgarian).
147. Boev, Z. 1994. The Villafranchian birds from Varshets. - Priroda, BAS, 1: 85-88. (in Bulgarian).

148. Boev, Z. 1994. Wild birds in ancient settlements in Bulgaria. - Priroda, BAS, 3: 77-81. (in Bulgarian).
149. Boev, Z. 1994. The National Museum of Natural History through the years. - Priroda, BAS, 3: 88-94. (in Bulgarian).
150. Boev, Z. 1994. Japanese salamander. - Lov i ribolov, 11-12: 23. (in Bulgarian).
151. Petrov, Zl. [Z. Boev] 1994. Game in the Vidin region in the 18th century. - Lov i ribolov, 11-12: 43. (in Bulgarian).
152. Boev, Z. 1994. The wings of death. - Vik, 6: 8. (in Bulgarian).

1995

153. Boev, Z. 1995. The life of the white stork. - Lov i ribolov. 5: 21. (in Bulgarian).
154. Boev, Z. 1995. Going frog hunting with a gun. - Nasluka newspaper, issue 12 (94)/ 03.07. - 16.07. 1995: 11. (in Bulgarian).
155. Boev, Z. 1995. Eco-impressions from Lyon. - Priroda, BAS, 3: 80-84. (in Bulgarian).
156. Boev, Z. 1995. World fishing favorite. - Nasluka newspaper, issue 23-24 (105-106)/ 18.12. - 31.12.1995: 7. (in Bulgarian).
157. Boev, Z. 1995. For Nile fishermen, the Bichir is a delicacy. - Nasluka newspaper, issue 20 (102)/ 06.11 - 20.11.1995: 8. (in Bulgarian).
158. Boev, Z. 1995. The croaking navigator. - Svyat, 3: 6. (in Bulgarian).

1996

159. Boev, Z. 1996. The Frankfurt Zoo. - Priroda, BAS, 1: 95-99. (in Bulgarian).
160. Boev, Z. 1996. Karapetkova, M., M. Zhivkov. Fish in Bulgaria. Sofia, Geya-Libris Publishing House, 1995. 245 pp. - Priroda, BAS, 1: 113-114. (in Bulgarian).
161. Boev, Z. 1996. Birds in ecosystems in the past and present. - Priroda, BAS, 4: 37-40. (in Bulgarian).
162. Boev, Z. 1996. Animals in the Black Sea. - in RIKI - kandidat-gimnazist newspaper, issue 41/ 19.11.1996: 11. (in Bulgarian).
163. Boev, Z. 1996. Animals in forests and orchards. - in RIKI - kandidat-gimnazist newspaper, issue 42/ 26.11.1996: 10. (in Bulgarian).
164. Boev, Z. 1996. Animals in the lower parts of the mountains. - in RIKI - kandidat-gimnazist newspaper, issue 43/ 03.12.1996: 11. (in Bulgarian).
165. Boev, Z. 1996. The environment-forming role of animals. - in RIKI - kandidat-gimnazist newspaper, issue 45/ 17.12.1996: 12. (in Bulgarian).

1997

166. Boev, Z. 1997. Biological control. - in RIKI - kandidat-gimnazist newspaper, issue 1/ 07.01.1997: 10. (in Bulgarian).
167. Boev, Z. 1997. Animals in grassland communities and vegetable gardens. - in RIKI - kandidat-gimnazist newspaper, issue 2/ 14.01.1997: 11. (in Bulgarian).
168. Boev, Z. 1997. Animal husbandry by humans. - in RIKI - kandidat-gimnazist newspaper, issue 3/21.01.1997: 11. (in Bulgarian).
169. Boev, Z. 1997. Structure of fish. - in: RIKI - kandidat-gimnazist newspaper, issue 5/ 04.02.1997: 10. (in Bulgarian).

170. Boev, Z. 1997. Structure and classification of chordate animals. - in RIKI - kandidat-gimnazist newspaper, issue 6/ 11.02.1997: 10. (in Bulgarian).
171. Boev, Z. 1997. Protection of the animal world. (Part I). - in RIKI - kandidat-gimnazist newspaper, issue 6/11.02.1997: 10-11. (in Bulgarian).
172. Boev, Z. 1997. Protection of the animal world. (Part II). - in RIKI - kandidat-gimnazist newspaper, issue 9/04.03.1997: 13. (in Bulgarian).
173. Boev, Z. 1997. Classification and diversity of reptiles. - in RIKI - kandidat-gimnazist newspaper, issue 10/ 11.03.1997: 10. (in Bulgarian).
174. Boev, Z. 1997. Diversity of amphibians. - in RIKI - kandidat-gimnazist newspaper, issue 11/18.03.1997: 10-11. (in Bulgarian).
175. Boev, Z. 1997. Human use of animals. - in RIKI - kandidat-gimnazist newspaper, issue 4/ 28.01.1997: 10. (in Bulgarian).
176. Boev, Z. 1997. Structure of reptiles. - in RIKI - kandidat-gimnazist newspaper, issue 12/ 25.03.1997: 10. (in Bulgarian).
177. Boev, Z. 1997. Structure of amphibians. - in RIKI - kandidat-gimnazist newspaper, issue 13/ 01.04.1997: 10. (in Bulgarian).
178. Boev, Z. 1997. The Animal kingdom and the science that studies it. - in RIKI - kandidat-gimnazist newspaper, issue 14/08.04.1997: 10. (in Bulgarian).
179. Boev, Z. 1997. Structure of birds. - in RIKI - kandidat-gimnazist newspaper, issue 16-17/ 22.04.1997: 10-11. (in Bulgarian).
180. Boev, Z. 1997. The living wealth of the Rupite area. – Minno delo i geologia, 1-2: 17-18. (in Bulgarian).
181. Boev, Z. 1997. Biological characteristics of birds. - in RIKI - kandidat-gimnazist newspaper, issue 18/ 06.05.1997: 10-11. (in Bulgarian).
182. Boev, Z. 1997. Classification and diversity of birds - in RIKI - kandidat-gimnazist newspaper, issue 15/ 15.04.1997: 10. (in Bulgarian).
183. Boev, Z. 1997. Game farm. - in RIKI - kandidat-gimnazist newspaper, issue 9/04.03.1997: 10. (in Bulgarian).
184. Boev, Z. 1997. Structure of mammals. - RIKI - kandidat-gimnazist newspaper, issue 20/ 20.05.1997: 10-11. (in Bulgarian).
185. Boev, Z. 1997. Evolution of the animal world. Invertebrates. - in RIKI - kandidat-gimnazist newspaper, issue 23/10.06.1997: 10-11. (in Bulgarian).
186. Boev, Z. 1997. About an unknown letter from my father - Nikolay Boev. – Za pticite. Spring/Summer: 28. (in Bulgarian).
187. Boev, Z. 1997. Classification and distribution of mammals. - in RIKI - kandidat-gimnazist newspaper, issue 31/7-13.10.1997: 11. (in Bulgarian).
188. Boev, Z. 1997. Diversity of mammals. - in RIKI - kandidat-gimnazist newspaper, issue 32/ 14-20.10.1997: 11. (in Bulgarian).
189. Boev, Z. 1997. Animals in the high mountains. - in RIKI - kandidat-gimnazist newspaper, issue 33/ 21.10.1997: 11. (in Bulgarian).
190. Boev, Z. 1997. Animals in the soil. - in RIKI - kandidat-gimnazist newspaper, issue 35/ 04.11.1997: 15. (in Bulgarian).
191. Boev, Z. 1997. Animals in different natural environments. - in RIKI - kandidat-gimnazist newspaper, issue 36/ 11.11.1997: 15. (in Bulgarian).
192. Boev, Z. 1997. Biological diversity, the living environment, and sustainable development. - in RIKI - kandidat-gimnazist newspaper, issue 39/ 2.12.1997: 10. (in Bulgarian).
193. Boev, Z. 1997. Test: Animals in forests and orchards. - in RIKI - kandidat-gimnazist

newspaper, issue 42/23.12.1997: 11. (in Bulgarian).
194. Boev, Z. 1997. Test: Animals in the Black Sea. - in RIKI - kandidat-gimnazist newspaper, issue 42/ 23.12.1997: 11. (in Bulgarian).
195. Boev, Z. 1997. Test: Animals in grassland communities and vegetable gardens. - in RIKI - kandidat-gimnazist newspaper, issue 42/23.12.1997: 11. (in Bulgarian).
196. Boev, Z. 1997. Ibises. - Priroda, BAS. 1-2: 75-79. (in Bulgarian).
197. Boev, Z. 1997. Vasil Golemanski, Dimo Bozhkov. Notable Bulgarian Zoologists. Sofia, Prof. Marin Drinov Academic Publishing House, 1997, 180 pp. - Priroda, BAS, 3-4: 169-170. (in Bulgarian).
198. Boev, Z. 1997. Falconry in Bulgaria. - Priroda, BAS, 3-4: 74-81(in Bulgarian).
199. Boev, Z. 1997. In memoriam. Prof. Dr. Nikolay Burchak-Abramovich has passed away. - Priroda, BAS, 3-4: 163-166. (in Bulgarian).

1998

200. Boev, Z. 1998. Test: structure and classification of chordate animals. - in RIKI - kandidat-gimnazist newspaper, issue 3/ 20.01.1998 15. (in Bulgarian).
201. Boev, Z. 1998. Test: structure of fish. - in RIKI - kandidat-gimnazist newspaper, issue 3/ 20.01.1998: 15. (in Bulgarian).
202. Boev, Z. 1998. Test: biological control. - in RIKI - kandidat-gimnazist newspaper, issue 3/ 20.01.1998: 15. (in Bulgarian).
203. Boev, Z. 1998. Test: The environment-shaping role of animals. - in RIKI - kandidat-gimnazist newspaper, issue 4/27.01.1998: 11. (in Bulgarian).
204. Boev, Z. 1998. Test: use of animals by humans. - in RIKI - kandidat-gimnazist newspaper, issue 2/13.01.1998: 10. (in Bulgarian).
205. Boev, Z. 1998. Test: animal husbandry by humans. - in: RIKI - kandidat-gimnazist newspaper, issue 2/13.01.1998: 10. (in Bulgarian).
206. Boev, Z. 1998. Test: animals in the lower parts of the mountains. - in RIKI - kandidat-gimnazist newspaper, issue 2/ 13.01.1998: 10. (in Bulgarian).
207. Boev, Z. 1998. Test: evolution of the animal world. Invertebrates. - in RIKI - kandidat-gimnazist newspaper, issue 10/10.03.1998: 11. (in Bulgarian).
208. Boev, Z. 1998. Test: structure of amphibians. - in RIKI - kandidat-gimnazist newspaper, issue 11/ 17.03.1998: 15. (in Bulgarian).
209. Boev, Z. 1998. Test: diversity of mammals. - in RIKI - kandidat-gimnazist newspaper, issue 17/28.04.1998: 10. (in Bulgarian).
210. Boev, Z. 1998. Test: biological diversity, living environment, and sustainable development. - RIKI - kandidat-gimnazist newspaper, issue 16/21.04.1998: 10. (in Bulgarian).
211. Boev, Z. 1998. Test: classification and diversity of reptiles. - in: RIKI - kandidat-gimnazist newspaper, issue 14/7.04.1998: 11. (in Bulgarian).
212. Boev, Z. 1998. Test: animals in different natural environments. - in: RIKI - kandidat-gimnazist newspaper, issue 15/14.04.1998: 15. (in Bulgarian).
213. Boev, Z. 1998. Test: structure of reptiles. - in RIKI - kandidat-gimnazist newspaper, issue 7/17.02.1998: 15. (in Bulgarian).
214. Boev, Z. 1998. Test: The animal kingdom and the science that studies it. - in RIKI - kandidat-gimnazist newspaper, issue 7/17.02.1998: 15. (in Bulgarian).
215. Boev, Z. 1998. Test: internal structure of birds. - in RIKI - kandidat-gimnazist newspaper, issue 19/12.05.1998: 10. (in Bulgarian).

216. Boev, Z. 1998. Test: external structure of mammals. - in RIKI - kandidat-gimnazist newspaper, issue 19/ 12.05.1998: 10. (in Bulgarian).
217. Boev, Z. 1998. Test: internal structure of mammals. - in RIKI - kandidat-gimnazist newspaper, issue 20/ 19.05.1998: 12. (in Bulgarian).
218. Boev, Z. 1998. Test: game farm. - in RIKI - kandidat-gimnazist newspaper, issue 20/19.05.1998: 12. (in Bulgarian).
219. Boev, Z. 1998. Test: animals in the high mountains. - in RIKI - kandidat-gimnazist newspaper, issue 20/19.05.1998: 12. (in Bulgarian).
220. Boev, Z. 1998. Birds during the Neogene-Quaternary period. - Priroda, BAS, 1-2: 57-67. (in Bulgarian).

1999

221. Boev, Z. 1999. They will devastate the Natural History Museum. - in "24 chasa" newspaper, issue 241 (2896), 04.09.1999: 14. (in Bulgarian).
222. Boev, Z. 1999. Bird gems at the National Museum of Natural History in Sofia. – Za pticite. Winter 1999-2000: 18. (in Bulgarian).
223. Boev, Z. 1999. A useful conference for ornithologists in Europe. -Za pticite. Winter 1999-2000: 18. (in Bulgarian).
224. Boev, Z. 1999. Eco-impressions from Krakow - Priroda, BAS, 2: 100-102. (in Bulgarian).

2000

225. Boev, Z. 2000. European way of thinking and... geese! - In: Dneven Trud, issue 68 (16288)/ 13.03.2000: 14. (in Bulgarian).
226. Boev, Z. 2000. Wilstone lake - a nature reserve in Hertfordshire, UK. - Priroda, BAS, 3: 100-104. (in Bulgarian).
227. [Boev, Z.]. 2003. National Museum of Natural History. – In: Bulgarian Academy of Sciences. Godishni dokladi1999, BAS, pp. 33-34. (in Bulgarian).
228. Boev, Z. 2000. Autumn conference of the British Ornithologists' Union. – Priroda, BAS, 1-2: 147-148. (in Bulgarian).

2001

229. [Boev, Z.]. 2001. National Museum of Natural History. – In: Report on the Activities of the Bulgarian Academy of Sciences in 2000, BAS, p. 33. (in Bulgarian).
230. Boev, Z. 2001. The Paleontological Site of Late Pliocene Fauna and Flora near Varshets. – In: Varshets. City of Health. [Tourist Guide]. Published by Gradina Publishing House, Sofia, 5. (in Bulgarian).
231. Boev, Z. 2001. Ornithologist Stefan Donchev at 70. – Nauka, SUB, 11 (3): 70. (in Bulgarian).

2002

232. [Boev, Z.]. 2002. National Museum of Natural History. – In: Report on the Activities of the Bulgarian Academy of Sciences in 2001, BAS, pp. 30-31. (in Bulgarian).

2003

233. [Boev, Z.] 2003. Longfin batfish Platax teira. Nestlé – Adventure. Water World Collection, 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
234. [Boev, Z.] 2003. Clown triggerfish Balistes conspicillatum. Nestlé – Adventure. Water World Collection, 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
235. [Boev, Z.] 2003. Small-spotted (European) cat shark *Scyliorhinus cunicula*. Nestlé – Adventure. Water World Collection, 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
236. [Boev, Z.] 2003. Blue Chromis Chromis cyanea. Nestlé – Adventure. Water World Collection, 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
237. [Boev, Z.] 2003. Large spotted boxfish (Large spotted trunkfish) *Lactophrys bicaudalis*. Nestlé – Adventure. Water World Collection, 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
238. [Boev, Z.] 2003. Sea sponge (class Demospongiae). Nestlé – Adventure. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
239. [Boev, Z.] 2003. Blue-tailed shrimp Peneus sp. Nestlé – Adventure. Water World Collection, 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
240. [Boev, Z.] 2003. Pacific white-sided dolphin *Lagenorhynchus obliquidens*. Nestlé – Adventure. Collection "Water World", 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
241. [Boev, Z.] 2003. Brain coral (order Scleractinia). Nestlé – Adventure. Water World Collection, 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
242. [Boev, Z.] 2003. Yellow cluster anemone *Parazoanthus axinellae*. Nestlé – Adventure. Water World Collection, 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
243. [Boev, Z.] 2003. Subergorgia mollis. Nestlé – Adventure. Water World Collection, 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
244. [Boev, Z.] 2003. Common brittlestar Ophiothrix sp. Nestlé – Adventure. Water World Collection, 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
245. [Boev, Z.] 2003. Black-blotched porcupinefish *Diodon liturosus*. Nestlé – Adventure. Water World Collection, 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
246. [Boev, Z.] 2003. Dorid nudibranch Doris sp. Nestlé – Adventure. Water World Collection, 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
247. [Boev, Z.] 2003. Multicolored pecten *Chlamys varia*. Nestlé – Adventure. Water World Collection, 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
248. [Boev, Z.] 2003. Spotted moray *Gymnothorax moringa*. Nestlé – Adventure. Collection "Water World", 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
249. [Boev, Z.] 2003. Bellybutton nautilus *Nautilus macromphalus*. Nestlé – Adventure. Water World Collection, 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
250. [Boev, Z.] 2003. African (Senegalese) manatee *Trichechus senegalensis*. Nestlé – Adventure. Water World Collection, 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
251. [Boev, Z.] 2003. Common dolphin *Delphinus delphis*. Nestlé – Adventure. Water World Collection, 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
252. [Boev, Z.] 2003. Cuttlefish Sepia sp. Nestlé – Adventure. Water World Collection, 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
253. [Boev, Z.] 2003. Loggerhead sea turtle *Caretta caretta*. Nestlé – Adventure. Water World Collection, 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).

254. [Boev, Z.] 2003. European (short-snouted) seahorse *Hippocampus hippocampus*. Nestlé – Adventure. Water World Collection, 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
255. [Boev, Z.] 2003. Bluespotted ribbontail ray *Taeniura lymma*. Nestlé – Adventure. Water World Collection, 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
256. [Boev, Z.] 2003. Great white shark *Carcharodon carcharias*. Nestlé – Adventure. Water World Collection, 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
257. [Boev, Z.] 2003. Mediterranean moray *Muraena helena*. Nestlé – Adventure. Water World Collection, 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
258. [Boev, Z.] 2003. Moon jellyfish *Aurelia aurita*. Nestlé – Adventure. Collection "Water World", 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
259. [Boev, Z.] 2003. Starfish class Asteroidea. Nestlé – Adventure. Collection "Water World", 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
260. [Boev, Z.] 2003. Sea sponge, class Porifera. Nestlé – Adventure. Water World Collection, 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
261. [Boev, Z.] 2003. Bicolour parrotfish *Cetoscarnus bicolor*. Nestlé – Adventure. Water World Collection, 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
262. [Boev, Z.] 2003. Giant sea devil (giant sea stingray, manta) *Manta birostris*. Nestlé – Adventure. Water World Collection, 01-50. Nestlé – Bulgaria. Sofia, 1 p. (in Bulgarian).
263. Boev, Z. 2003. Answer to the riddle [European roller]. – Usuri, 2: 124. (in Bulgarian).
264. [Boev, Z.]. 2003. National Museum of Natural History. – In: Bulgarian Academy of Sciences. Annual Report 2002, BAS, pp. 38-39. (in Bulgarian).

2004

265. Boev, Z. 2004. The Paleontological treasure near Varshets. – In: Varshets Municipality, Bulgaria. Tour Club ReMark, 23. and: Boev, Z. 2004. The paleontological treasure near Varshets. – In: Varshets Municipality, Bulgaria. Tour Club ReMark, 23. (in Bulgarian).
266. Boev, Z. 2004. Zoology of mysteries. – Usuri, 10: 39-43. (in Bulgarian).
267. [Boev, Z.]. 2004. National Museum of Natural History. – In: Bulgarian Academy of Sciences. Annual Report 2003, BAS, p. 41. (in Bulgarian).

2005

268. Boev, Z. 2005. Animals in Art. – Usuri, 4: 25-27. (in Bulgarian).
269. Boev, Z. 2005. Healing animals. – Usuri, 1: 46-49. (in Bulgarian).
270. Boev, Z. 2005. Spices – the flavorings we cannot do without. – Usuri, 24: 4-7. (in Bulgarian).
271. [Boev, Z.]. 2005. National Museum of Natural History. – In: Bulgarian Academy of Sciences. Annual Report 2004, BAS, S. XX-XX. (in Bulgarian).

2006

272. Boev, Z. 2006. "Degenerate" plants. – Usuri, 25: 60-63. (in Bulgarian).
273. Boev, Z. 2006. Predators with leaves. – Usuri, 34, year 4: 60-63. (in Bulgarian).
274. [Boev, Z.]. 2006. National Museum of Natural History. – In: Bulgarian Academy of Sciences. Annual Report 2005, BAS, p. 43. (in Bulgarian).

2007

275. Boev, Z. 2007. The Black Grouse – the unrehabilitated troubadour. – Usuri, 42 (7/2007): 92-93. (in Bulgarian).
276. Boev, Z. 2007. Corals and coral reefs. – Usuri, 43 (8/2007): 88-92. (in Bulgarian).
277. [Boev, Z.]. 2007. National Museum of Natural History. – In: Bulgarian Academy of Sciences. Annual Report 2006, BAS, p. 42. (in Bulgarian).
278. Anonymous. [Boev, Z.] 2007. Nothing will grow from watering the sand. – Dnevnik newspaper, issue 244 (1699), year VII/14.12.2007: 12-13. (in Bulgarian).

2008

279. Boev, Z. 2008. Living off someone else's back. - Usuri, 1 (47): 86-89. (in Bulgarian).
280. Boev, Z. 2008. The politics of hunger. - Usuri, 4 (50): 82-85. (in Bulgarian).
281. Boev, Z. 2008. On the wasted money or the appetizing properties? – Dnevnik.bg newspaper, 15.12.2008, p. 13. (in Bulgarian).
282. Boev, Z. 2008. Observation of northern gannets in the Varna region. – Za pticite (in Bulgarian).

2009

283. Boev, Z. 2009. A pilot with a special mission. – Usuri, 60 (03/2009): 86-89. /(in Bulgarian).
284. Boev, Z. 2009. List of birds found in Bulgaria. – Za ptitsite, BSPB. 1: 25. (in Bulgarian).
285. Boev, Z. 2009. All about birds of Bulgaria and their researchers. – Za pticite, 2: 32. (in Bulgarian).
286. Boev, Z. 2009. Darwin's theory is one of the most unshakeable theories. – Hristiyanstvo i kultura, 9 (44): 6-12. (in Bulgarian).

2010

287. Boev, Z. 2010. The oldest remains of vultures in the Old World have been found in Bulgaria. – Balgarski elen, 5: 6-9. (in Bulgarian).
288. Boev, Z. 2010. 25 years since the death of Nikolay Boev (May 8, 1922 – November 12, 1985). –Za pticite, 2: 36-37. (in Bulgarian).

2011

289. Boev, Z. 2011. There is no mystery: Man is to blame. – Sedmichen Trud newspaper, issue 5/02.02.2011, p. 14. (in Bulgarian).
290. Boev, Z. 2011. In memoriam: Senior Researcher II Dr. Stefan Donchev (09.05.1931-12.12.2010). – Nauka, SUB. 1:80. (in Bulgarian).
291. Boev, Z. 2011. A valuable source for the history of Bulgarian zoology. - Nauka, SUB. 1:84. (in Bulgarian).
292. Boev, Z. 2011. Ornithologist Stefan Donchev (09.05.1931 – 12.12.2010) has passed away. – Za pticite, 1: 39. (in Bulgarian).

2012

293. Boev, Z. 2012. The paleontological site near the town of Varshets – a place of great scientific importance and potential for tourism. – Varshets newspaper, issue 7, July 2012, p. 3. (in Bulgarian).
294. Boev, Z. 2012. Ostriches in Bulgaria – ancient and modern. – Priroda, BAS, 1: 42-46. (in Bulgarian).
295. Boev, Z. 2012. The last refuges of ancient peacocks in Europe. – Priroda, BAS, 2: 54-59. (in Bulgarian).

2013

296. Boev, Z. 2013. The Bulgarian paleopark near Varshets. – Priroda, BAS, 3:28-33. (in Bulgarian).
297. Boev, Z. 2013. Paleopathology of animals. – Priroda, BAS, 1: 70-76. (in Bulgarian).
298. Boev, Z. 2013. Miocene rhinoceros birds and the "eruption" of Pirin. – Priroda, BAS, 2: 70-77. (in Bulgarian).
299. Boev, Z. 2013. Extinct mammals from Bulgaria. – Priroda, BAS, 4: 76-82. (in Bulgarian).
300. Anonymous. [Boev, Z.] 2013. The Paleontological Find near the Village of Dolno Ozirovo, the Municipality of Varshets. – In: Gyurova, N. (ed.) 2013. 100 Reasons to Be Proud of Being from Varshets. KOTA Printing House, Stara Zagora, Standard Publishing House, ISBN 978-954-305-357-5, 1-96. 2014 (in Bulgarian).

2014

301. Boev, Z. 2014. The paleontological site of Pliocene fauna near the town of Slivnitsa. – Priroda, BAS, 1: 26-31. (in Bulgarian).
302. Boev, Z. 2014. Caves – the natural archive of our animal world. – Priroda, BAS, 2: 23-31. (in Bulgarian).
303. Boev, Z. 2014. Dinosaurs, cobras, and monitor lizards – the fossil reptiles of Bulgaria. – Priroda, BAS, 4: 84-92. (in Bulgarian).
304. Boev, Z. 2014. Bright trace in the Bulgarian ornithology. Five years since the tragic death of Ivan Mitev (February 2, 1973 – October 12, 2008). – Za pticite, 2: 28. (in Bulgarian).

2015

305. Boev, Z. 2015. Binagada – the World's largest asphalt trap. – Priroda, BAS, 1: 66-74. (in Bulgarian).
306. Boev, Z. 2015. The site near the village of Muselievo – a window into the animal world of Bulgaria during the early Pliocene. – Priroda – BAS, 2: 40-46. (in Bulgarian).
307. Boev, Z. 2015. The largest mastodon graveyard in the world near the village of Dorkovo. - Priroda, BAS, 3: 52-60. (in Bulgarian).
308. Boev, Z. 2015. There are no such animals. – Osem, 10: 102-109. (in Bulgarian).

2016

309. Boev, Z. 2016. The big chicks. – Osem, 4: 66-75. (in Bulgarian).

310. Boev, Z. 2016. Our Balkan lion. – Osem, 6: 98-105. (in Bulgarian).
311. Boev, Z. 2016. Saber-toothed "tigers" in Bulgaria. – Priroda, BAS, 3: 56-59. (in Bulgarian).
312. Boev, Z. 2016. Hadzhidimovo – the Miocene museum of paleontologists. – Priroda, BAS, 4-26-32. (in Bulgarian).
313. Boev, Z. 2016. Safari in the square. – Osem, 8: 90-97. (in Bulgarian).
314. Boev, Z. 2016. The Kingdom of the larks. – Osem, 10: 104-111. (in Bulgarian).

2017

315. Boev, Z. 2017. Birds and the aquatic environment – nowadays and in the past. – Priroda, BAS, 1: 26-32. (in Bulgarian).
316. Boev, Z. 2016. Peacocks, ostriches, hornbills. - Osem, 12: 60-66. (in Bulgarian).
317. Boev, Z. 2017. Uninvited guests, sometimes unwanted. – Osem, 4: 54-64. (in Bulgarian).
318. Boev, Z. 2017. Ergilornitids – the crane version of ostriches – Priroda, BAS, 2: 64-68. (in Bulgarian).
319. Boev, Z. 2017. Migrants in Europe. – Osem, 6: 68-75. (in Bulgarian).
320. Boev, Z. 2017. Rhinoceroses in the land of roses. – Osem, 7: 82-89. (in Bulgarian).
321. Boev, Z. 2017. Feathers on the island. – Osem, 8: 120-129. (in Bulgarian).
322. Boev, Z. 2017. Tapirs in Bulgaria. – Priroda, BAS, 3: 8-13. (in Bulgarian).
323. Boev, Z. 2017. Harvest: 20th century. – Osem, 9: 60-67. (in Bulgarian).
324. Boev, Z. 2017. Vital Vitosha. – Osem, Magazine 10: 116-123. (in Bulgarian).
325. Boev, Z. 2017. Kunino – a look at the Pleistocene Priroda of Bulgaria. - Priroda, BAS, 4: 34-41. (in Bulgarian).
326. Boev, Z. 2017. The nerd in the class. – Osem, 11: 126-131. (in Bulgarian).
327. Boev, Z. 2017. "Cock-a-doodle-doo" Traveler. – Osem, 12: 116-125. (in Bulgarian).
328. 2. Boev, Z. 2018. Wingless Fliers. – Osem, 4: 68-75. (in Bulgarian).

2018

329. Boev, Z. 2018. The Bird world of Devetashka cave. – Priroda, BAS, 1: 46-52. (in Bulgarian).
330. Boev, Z. 2018. The Green giants. – Osem, 6: 94-101. (in Bulgarian).
331. Boev, Z. 2018. 80,000 years old wings, feathers, and beaks in the Kozarnika cave. – Priroda, BAS, 2: 82-87. (in Bulgarian).
332. Boev, Z. 2018. The smart delicacy. – Osem, 8: 110-117. (in Bulgarian).
333. Boev, Z. 2018. The butterflies of the night. – Osem, 9: 104-111. (in Bulgarian).
334. Boev, Z. 2018. Scent ... of days gone by from the Mirizlivka cave. – Priroda, BAS, 3: 68-71. (in Bulgarian).
335. Boev, Z. 2018. Living lights. – Osem, 10: 106-113. (in Bulgarian).
336. Boev, Z. 2018. Birds in holes. – Osem, 11: 100-107. (in Bulgarian).
337. Boev, Z. 2018. The forum of Serdica – a zoopantheon under the pavement in the center of Sofia. – Priroda, BAS, 4: 62-68. (in Bulgarian).
338. Boev, Z. 2018. Count Philip Alléon visits the National Museum of Natural History – BAS. – Informatsionen byuletin – BAS, 3: 13-14. (in Bulgarian).

2019

339. Boev, Z. 2019. Herons – those ancient perfect fish-catchers. Priroda – BAS, 1: 86-94. (in Bulgarian).
340. Boev, Z. 2019. Unknown miniatures by Count Amédée Alléon in the collections of the National Museum of Natural History at BAS. – Priroda – BAS, 1: 110-112. (in Bulgarian).
341. Boev, Z. 2019. Speleoornithology. - Priroda – BAS, 2: 72-78. (in Bulgarian).
342. Boev, Z. 2019. Globally critically endangered ibis landed at the National Museum of Natural History at BAS. - Priroda – BAS, 2: 110-112. (in Bulgarian).
343. Boev, Z. 2019). Hands and wings. – Osem, 6: 116-123. (in Bulgarian).
344. Boev, Z. 2019. Millions of millipedes. – Osem, 7: 118-123. (in Bulgarian).
345. Boev, Z. 2019. Fierce, gentle, scary crocodiles. – Osem, 8: 106-111. (in Bulgarian).
346. Boev, Z. 2019. 17 centuries old underground livestock farm in the center of Sofia. - Priroda – BAS, 3: 72-77. (in Bulgarian).
347. Boev, Z. 2019. The last leopards in Bulgaria. - Priroda – BAS, 3: 78-83. (in Bulgarian).
348. Boev, Z. 2019. Marine souvenirs – a threat to the planet's biodiversity. - Priroda – BAS, 3: 108-111. (in Bulgarian).
349. Boev, Z. 2019. Living decoration. – Osem, 11: 120-125. (in Bulgarian).
350. Boev, Z. 2019. Giant parrot ruled the forests of New Zealand – Priroda – BAS, 4: 80-81. (in Bulgarian).
351. Boev, Z. 2019. Giant ostrich roamed the Northern Black Sea coast 1.8 million years ago – Priroda – BAS, 4: 88-89. (in Bulgarian).
352. Boev, Z. 2019. Camels in Bulgaria. – Priroda – BAS, 4: 98-103. (in Bulgarian).
353. Boev, Z. 2019. Immobile animals. – Osem, 12: 128-133. (in Bulgarian).

2020

354. Boev, Z. 2020. The Late Pleistocene record of birds from the Razhishka cave. – Priroda – BAS, 1: 80-88. (in Bulgarian).
355. Boev, Z. 2020. The sad fate of the Mediterranean monk seal in Bulgaria. – Priroda – BAS, 2: 106-112. (in Bulgarian).
356. Anonymous. [Boev, Z.] 2020. First find of the black francolin in Eastern Europe. – Priroda – BAS, 3: 25. (in Bulgarian).
357. Anonymous. [Boev, Z.] 2020. The world's first fossil find of the black-winged starling was discovered in Bulgaria. – Priroda – BAS, 3: 81. (in Bulgarian).
358. Boev, Z. 2020. Birds from the Late Pleistocene in the Nanin Kamak cave near the village of Muselievo. – Priroda – BAS, 3: 100-104. (in Bulgarian).
359. Boev, Z. 2020. Birds in ancient art in the Bulgarian lands. – Priroda – BAS, 4: 60-71. (in Bulgarian).

2021

360. Boev, Z. 2021. The brown bear – a predator with an interesting history in Bulgaria. – Priroda, BAS, 1: 106-112. (in Bulgarian).
361. Boev, Z. 2021. Fossil amphibians in Bulgaria. – Priroda, BAS, 2: 92-96. (in Bulgarian).

362. Boev, Z. 2021. Tropical birds in Siberia. – Priroda, BAS, 2: 98-101. (in Bulgarian).
363. Boev, Z. 2021. The cave hyena – a competitor of Paleolithic man in Bulgaria. – Priroda, BAS, 3: 102-105. (in Bulgarian).
364. Boev, Z. 2021. The Irish elk in Bulgaria. – Priroda, BAS, 3: 106-108. (in Bulgarian).
365. Boev, Z. 2021. The history of beaver in Bulgaria. – Priroda, BAS, 4: 50-53. (in Bulgarian).

2022

366. [Boev, Z. 2022]. First summary of ornithology in Bulgaria. At: https://www.facebook.com/nmnhs (26.01.2022). (in Bulgarian).
367. [Boev, Z. 2022]. A sensational find from the center of Sofia changes the history of Aurochs in the world. https://www.facebook.com/nmnhs/photos/a.194775470576176/4763744353679242/ (11.02.2022). (in Bulgarian).
368. [Boev, Z. 2022]. The first paleopark in Bulgaria was officially opened in Varshets with discoveries made by scientists from the National Museum of Natural History at the Bulgarian Academy of Sciences. https://www.facebook.com/nmnhs/photos/4869918009728542 (22.03.2022). (in Bulgarian).
369. Boev, Z. 2022. Fossil birds bearing the name of Bulgaria. – Priroda – BAS, 1: 46-51. (in Bulgarian).
370. [Boev, Z. 2022]. An international team involving Prof. Zlatozar Boev from the NMNH-BAS reveals new evidence of the era and the centers of domestication of the Red junglefowl. https://www.facebook.com/nmnhs/ (12.06.2022). (in Bulgarian).
371. [Boev, Z. 2022]. Large-scale study of late-Quaternary birds from Northern Vietnam. - At: https://www.facebook.com/nmnhs/ (08.07.2022). (in Bulgarian).
372. Boev, Z. 2022. 100 years since the birth of zoologist Nikolay Boev. Birds' best friend. – Lov i ribolov, 7: 38-49. (in Bulgarian).
373. Boev, Z. 2022. The first feathers of fossil birds in the National Museum of Natural History – Priroda – BAS, 2: 100-102. (in Bulgarian).
374. Boev, Z. 2022. The woolly rhinoceros in Bulgaria – giant game for Paleolithic hunters. – Lov i ribolov, 8: 38-42. (in Bulgarian).
375. Boev, Z. 2022. Game animals in the Sofia region in antiquity and the Middle Ages. – Lov i ribolov, 9: 70-75. (in Bulgarian).
376. Boev, Z. 2022. The Bearded Warbler – an ancient guest in the Pleistocene forests of Bulgaria. – Priroda – BAS, 3: 88-91. (in Bulgarian).
377. [Boev, Z.] 2022. [Abstract]. – In: Boev, N. 2022. As long as larks sing. National Museum of Natural History, BAS., pp. 1-152. (in Bulgarian).
378. Boev, Z. 2022. Preface to the second edition. – In: Boev, N. 2022. As long as larks sing. National Museum of Natural History, BAS., pp. 5-6. (in Bulgarian).
379. Boev, Z. 2022. The last bustards in Bulgaria. – Lov i ribolov, 10: 64-69. (in Bulgarian).
380. Boev, Z. 2022. Capricorns in Bulgaria. – Priroda – BAS, 4: 100-104. (in Bulgarian).
381. Boev, Z. 2022. The last aurochs in Bulgaria. – Lov i ribolov, 11: 52-57. (in Bulgarian).
382. Boev, Z. 2022. The black grouse – game long-forgotten by Bulgarian hunters. – Lov i ribolov, 12: 72-77. (in Bulgarian).

2023

383. Boev, Z. 2023. The Common crane – a former game bird, today's icon of Priroda conservation. – Lov i ribolov, 1: 68-73. (in Bulgarian).
384. Boev, Z. 2023. The mammoth – game for the bravest hunters. – Lov i ribolov, 2: 70-75. (in Bulgarian).
385. Boev, Z. 2023. The terrible birds. – Priroda – BAS, 1: 56-61. (in Bulgarian).
386. Boev, Z. 2023. Ostriches in Antarctica. – Priroda, BAS, 1: 62-65. (in Bulgarian).
387. Boev, Z. 2023. The Red Deer in the past of Bulgaria. – Lov i ribolov, 3: 64-69. (in Bulgarian).
388. Boev, Z. 2023. The Eurasian Capercaillie – an ancient and modern hunting trophy. – Lov i ribolov, 4: 64-68. (in Bulgarian).
389. Boev, Z. 2023. How did the Hazel Grouse become a mountaineer? – Lov i ribolov, 5: 56-60. (in Bulgarian).
390. Boev, Z. 2023. Giant eagles in the past and nowadays. – Priroda – BAS, 2: 70-75. (in Bulgarian).
391. Boev, Z. 2023. A unique museum collection of birds. – Priroda – BAS, 2: 102-111. (in Bulgarian).
392. Boev, Z. 2023. The Reindeer – a guest from the far north. – Lov i ribolov, 8: 58-61. (in Bulgarian).
393. Boev, Z. 2023. The moose – the king of deer – game for prehistoric hunters. – Lov i ribolov, 6: 56-60. (in Bulgarian).
394. Boev, Z. 2023. The beaver – a forgotten game in the Bulgarian lands. – Lov i ribolov, 7: 56-60. (in Bulgarian).
395. Boev, Z. 2023. Requiem for the monk seal. – Lov i ribolov, 9: 38-41. (in Bulgarian).
396. Boev, Z. 2023. The ancient inhabitant of the Dobrudzha steppe: the European wild donkey. – Lov i ribolov, 10: 54-57. (in Bulgarian).
397. Boev, Z. 2023. Mesozoic birds. – Priroda – BAS, 3: 72-78. (in Bulgarian).
398. Boev, Z. 2023. The Lesser White-fronted Goose – an ancient winter guest in our country. – Lov i ribolov, 11: 52-55. (in Bulgarian).
399. Boev, Z. 2023. The Eurasian woodcock - back in the team of birds breeding in our country. – Lov i ribolov, 12: 54-57. (in Bulgarian).
400. Boev, Z. 2023. The Chalicotheriums in Bulgaria – ancient and unknown Neozoic giants. – Priroda – BAS, 4: 42-46. (in Bulgarian).

2024

401. Boev, Z. 2023. The Corncrakes. – Priroda – BAS, 4: 48-53. (in Bulgarian).
402. Boev, Z. 2024. Images of animals in the caves of Bulgaria. – Lov i ribolov, 1: 70-73. (in Bulgarian).
403. Boev, Z. 2024. The European hare - the ancient small game. – Lov i ribolov, 2: 58-61. (in Bulgarian).
404. Boev, Z. 2024. First data on the Pleistocene fauna from a previously unexplored cave in the Central Balkan Mountain. //www.facebook.com/nmnh (02.04.2024). (in Bulgarian).
405. Boev, Z. 2024. White Partridge and Rock Ptarmigan. Long since flown away from our lands. – Lov i ribolov, 4: 62-65. (in Bulgarian).

406. Boev, Z. 2024. The Cardam Starling Dobrosturnus kardamensis – the most ancient bird in Bulgaria. – Priroda, BAS, 1: 100-105. (in Bulgarian).
407. [Boev, Z. 2024]. The role of the National Museum of Natural History at BAS in the development of ornithology in Bulgaria. https://www.nmnhs.com/24051401-news_bg.html (14.05.2024). (in Bulgarian).
408. Boev, Z. 2024. The Grey Partridge – important in the past and nowadays. – Lov i ribolov, 3: 64-67. (in Bulgarian).
409. Boev, Z. 2024. The Common Coot – valued in antiquity as a hunting object. – Lov i ribolov, 5: 66-69. (in Bulgarian).
410. Boev, Z. 2024. The delicious badger. – Lov i ribolov, 6: 62-65. (in Bulgarian).
411. Boev, Z. 2024. The European turtle dove – favourite game for centuries. – Lov i ribolov, 7: 66-69. (in Bulgarian).
412. Boev, Z. 2024. A prominent Polish scientist visiting the National Museum of Natural History – BAS. https://www.facebook.com/nmnhs (09.09.2024). (in Bulgarian).
413. Boev, Z. 2024. The Quail – our smallest ancient game. – Lov i ribolov, 8: 64-67. (in Bulgarian).
414. Boev, Z. 2024. Toothed birds. – Priroda, BAS, 2: 96-100. (in Bulgarian).
415. Boev, Z. 2024. Opposite birds. – Priroda, BAS, 2: 102-107. (in Bulgarian).
416. Boev, Z. 2024. The roe deer – this old benefactor. – Lov i ribolov, 9: 66-69. (in Bulgarian).
417. Boev, Z. 2024. The wild cat – the secret sister of Lynx. – Lov i ribolov, 10: 62-65. (in Bulgarian).
418. Boev, Z. 2024] Article published in Ukrainian: Boev, Z. 2008. Politics of hunger. - Ussuri, 4 (50): 82-85. //www.facebook.com/stromatapage/posts/pfbid0N6jE497ET7uGSE89jA9AD4oaVfNeuGuBkqcW43EQVSnysWVSMvZRaJMQ3D9EVBGpl on the Day of Remembrance of the Victims of the Famine in Ukraine. (23.11.2024).
419. Boev, Z. 2024. The Common Wood Pigeon – the largest pigeon in Europe. – Lov i ribolov, 11: 56-59. (in Bulgarian).
420. [Boev, Z. 2024.]. The Pink Flamingo – a nesting species of the Bulgarian bird fauna. https://www.facebook.com/nmnhs (11.12.2024). (in Bulgarian).
421. Boev, Z. 2024. The Lynx as … game. – Lov i ribolov, 12: 66-69. (in Bulgarian).
422. Boev, Z. 2024. The Greater Flamingo in the Priroda of Bulgaria in recent centuries. – Priroda, BAS, 3-4: 80-86. (in Bulgarian).
423. Boev, Z. 2024. The Megapodes – misunderstanding or invention of Priroda? – Priroda, BAS, 3-4: 104-109. (in Bulgarian).
424. Boev, Z. 2024. Three-toed birds. – Priroda, BAS, 3-4: 122-128. (in Bulgarian).
425. Boev, Z. 2024. Verila Mountain – wild and close, but little-known. – Priroda, BAS, 3-4: 142-153. (in Bulgarian).

2025

426. Boev, Z. 2025. The bear – threat or game? – Lov i ribolov, 1: 56-59. (in Bulgarian).
427. Boev, Z. 2025. Rulers of the crown. – Lov i ribolov, 2: 60-63. (in Bulgarian).
428. Boev, Z. 2025. Where did the catfish in Sofia come from? – Lov i ribolov, 3: 70-73. (in Bulgarian).
429. Boev, Z. 2025. A patriotic Bulgarian. – In: Yordanov, G. 2025. Topchii. The cause of a personal existence. Book ten. Topchii – Ruse. Dema Press Ltd. – Ruse, Academic

Publishing House of the University of Ruse "Angel Kanchev", ISBN 978-619-7767-30-8, p. 46. (in Bulgarian).

430. Boev, Z. 2025. The Saiga Antelope – Asian exotic species for our medieval hunters. – Lov i ribolov, 4: 70-73. (in Bulgarian).
431. Boev, Z. 2025. Wild goat or virtuous antelope? Lov i ribolov, 5: 64-67. (in Bulgarian).
432. Boev, Z. 2025. Great Crested Grebe – great benefit! Lov i ribolov, 6: 46-49. (in Bulgarian).
433. Boev, Z. 2025. Leopards in Bulgaria. Lov i ribolov, 7: 30-33. (in Bulgarian).
434. Boev, Z. 2025. Land tortoises – "game" or medicine? Lov i ribolov, 8: 70-73. (in Bulgarian).
435. Boev, Z. 2025. The mallard – screaming and beautiful! Lov i ribolov, 9: 66-69. (in Bulgarian).
436. Boev, Z. 2025. Notoungulates – unique and diverse. Priroda, BAS, 1: 102-106. (in Bulgarian).
437. Boev, Z. 2025. Close to people from prehistoric times. Lov i ribolov, 10: 58-61. (in Bulgarian).
438. Boev, Z. 2025. 40 years without Nikolay Boev. Lov i ribolov, 11: 86-88. (in Bulgarian).

Publications in popular science periodicals abroad

439. Boev, Z. 1997. Places to go birdwatching in Bulgaria. by P. Iankov, Pensoft, Sofia, 1996, 182 pp., J12, 95 pb. ISBN 954 642 011 5. - World Birdwatch, Cambridge, 19 (3): 23.

Other publications

440. Boev, Z. 2008. Krakow. – In: Pernishka, E., I. Arsenova, P. Lazarova (eds.). Steps. Poems by Bulgarian Scientists. "European Integration and Information" Association, S., 28. (in Bulgarian).

References

Boev Z. 1986. Morphological abnormalities of the skeletal system of the herons (Aves, Ardeidae). *Acta zoologica bulgarica*, 31: 24-31 (in Bulgarian).

Boev Z. 1987 a. Morphometric characteristics of sexual dimorphism and individual variation of herons (Aves, Ardeidae) from Bulgaria. I. Somatometric features. *Acta zoologica bulgarica*, 33: 44-59 (in Bulgarian, English Summary).

Boev Z. 1987 b. Morphometric features of the sexual dimorphism and individual variability of herons (Aves, Ardeidae) from Bulgaria II. Osteometric features. *Acta zoologica bulgarica*, 34: 53-67 (in Bulgarian, English Summary).

Boev Z. 1987 c. Morphometric characteristics of the sexual dimorphism and the individual variability of the herons (Aves, Ardeidae) in Bulgaria. III. Indices. *Acta zoologica bulgarica*, 35: 53-64 (in Bulgarian, English Summary).

Boev Z. 1997. On some ornithofaunistical and ornithogeographical peculiarities of Bulgaria. *Historia Naturalis Bulgarica*, 8: 147-154 (in Bulgarian, English Summary).

Boev Z. 2023. Quaternary vertebrate fauna of Bulgaria - composition, chronology and impoverishment. *Geologica Balcanica*, 52 (1): 21-48.

https://doi.org/10.52321/GeolBalc.52.1.21

Boev Z. 2024. One Hundred and Thirty-Five Years of Ornithology in Bulgaria: The Role of the National Museum of Natural History at the Bulgarian Academy of Sciences in the Development of Ornithology in Bulgaria - Representatives, Collections and Achievements. *Diversity*, 16: 284. https:// doi.org/10.3390/d16050284

Boev Z. 2025 a. Terminologia ornithological bulgarica. Vol. I. Taxonomia. Illustrated trilingual dictionary of the birds of the world. English - Latin – Bulgarian. Part 1. Non-Passeriformes. National Museum of Natural History – Bulgarian Ornithological Society, Sofia, 432 p. ISBN 978-954-8828-20-8

Boev Z. 2025 b. Terminologia ornithological bulgarica. Vol. I. Taxonomia. Illustrated trilingual dictionary of the birds of the world. English - Latin – Bulgarian. Part 2. Passeriformes. National Museum of Natural History – Bulgarian Ornithological Society, Sofia, 508 p. ISBN: 978-954-8828-21-5

Boev Z. 2025 c. Terminologia theriologica taxonomica bulgarica. Illustrated trilingual dictionary of the mammals of the world. English – Latin – Bulgarian. National Museum of Natural History, Sofia, 462 p. ISBN 978-954-8828-22-2

Boev Z., D. Kovachev. 2007. *Euroceros bulgaricus gen. nov., sp. nov*. from Hadzhidimovo (SW Bulgaria) (Late Miocene) - The first European record of Hornbills (Aves: Coraciiformes). *Geobios*, 40: 39-49.

Boev Z., B. Milchev, V. Popov. 2007. Fauna, Zoogeography, and Ecology of Birds in Bulgaria. *In*: Biogeography and Ecology of Bulgaria; Fet, V., Popov, A. (Eds.), Springer: Dordrecht, The Netherlands, pp. 39-84.

Boev Z., N. Spassov. 2009. First record of ostriches (Aves, Struthioniformes, Struthionidae) from the late Miocene of Bulgaria with taxonomic and zoogeographic discussion. *Geodiversitas*, 31: 493-507.

Golemanski V. et al. (Eds.) 2011. Red Data Book of the Republic of Bulgaria. Volume 2. Animals. IBEI - BAS & MOEW, Sofia.

Iankov P. (ed.). 2007. Atlas of the Breeding Birds in Bulgaria. Bulgarian Society for the Protection of Birds, Conservation Series, Book 10. Sofia, BSPB, 679 p.

Mlĭkovský J. 1996. Tertiary avian Faunas of Europe. *In*: Tertiary Avian localities of Europe; Mlĭkovský, J. (ed.), *Acta Universitatis Carolinae Geologica*, 39: 777-818.

Tyrberg T. 1998. Pleistocene Birds of the Palearctic: A Catalogue; Publication of the Nuttall Ornithological Club: Cambridge, MA, USA, Volume 27, p. 720.

Received: 08.10.2025
Accepted: 28.12.2025
Published: 30.12.2025

List of reviewers, who participated in the peer-review process of Bulletin of the Natural History Museum – Plovdiv (Bull. Nat. Hist. Mus. Plovdiv), Online ISSN 2534-9635; Print ISSN 2534-9627 in 2025.

Aneliya Pavlova – National Natural History Museum, Bulgarian Academy of Sciences – Sofia, Bulgaria / Zoological garden - Plovdiv

Boris Nikolov – Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences – Sofia, Bulgaria

Dilian Georgiev – Trakia University – Stara Zagora, Bulgaria / Plovdiv University "Paisii Hilendarski", Faculty of Biology, Department of Ecology and Environmental Conservation, Bulgaria

Dimitar Bechev – Plovdiv University "Paisii Hilendarski", Faculty of Biology, Department of Zoology, Bulgaria

Dimitar Demerdzhiev – Bulgarian Society for the Protection of Birds, Bulgaria / National Natural History Museum, Bulgarian Academy of Sciences – Sofia, Bulgaria

Emil Yordanov – Rewilding Rhodopes, Bulgaria / Plovdiv University "Paisii Hilendarski", Faculty of Biology, Department of Ecology and Environmental Conservation, Bulgaria

Ivaylo Angelov – National Natural History Museum, Bulgarian Academy of Sciences – Sofia, Bulgaria / Bulgarian Society for the Protection of Birds, Bulgaria

Ivelin Mollov – Plovdiv University "Paisii Hilendarski", Faculty of Biology, Department of Ecology and Environmental Conservation, Bulgaria

Manos Stratakis – Natural History Museum of Crete / School of Sciences and Engineering, University of Crete, Irakleio, Greece

Mario Langourov – National Natural History Museum, Bulgarian Academy of Sciences – Sofia, Bulgaria

Miroslav Antov – Plovdiv University "Paisii Hilendarski", Faculty of Biology, Department of Zoology, Bulgaria

Ognyan Todorov – Regional Natural History Museum – Plovdiv, Bulgaria / Plovdiv University "Paisii Hilendarski", Faculty of Biology

Petar Beron – National Natural History Museum, Bulgarian Academy of Sciences – Sofia, Bulgaria

Petar Boyadzhiev – Plovdiv University "Paisii Hilendarski", Faculty of Biology, Department of Zoology, Bulgaria

Svetlozara Kazandzhieva – National Natural History Museum, Bulgarian Academy of Sciences – Sofia, Bulgaria / Regional Natural History Museum – Plovdiv, Bulgaria

Tihomir Stefanov – National Natural History Museum, Bulgarian Academy of Sciences – Sofia, Bulgaria

Tseno Petrov – Regional Natural History Museum – Plovdiv, Bulgaria

Vesela Yancheva – Plovdiv University "Paisii Hilendarski", Faculty of Biology, Department of Ecology and Environmental Conservation, Bulgaria

Yulian Marinov – Regional Natural History Museum – Plovdiv, Bulgaria, Botany Department

Zdravko Hubenov – National Natural History Museum, Bulgarian Academy of Sciences – Sofia, Bulgaria

BULLETIN OF THE NATURAL HISTORY MUSEUM – PLOVDIV
INSTRUCTIONS FOR AUTHORS

General information

Submissions to Bulletin of the Natural History Museum – Plovdiv (Bull. Nat. Hist. Mus. Plovdiv) accepts submissions of original studies in the field of palaeontology, natural history, geology and speleology, zoology, botany, ecology, biogeography, museology, history of natural science, information about museum collections, etc. *The Editorial Board reserve their right to reject publication of any manuscript that does not fit the aim and scope of the journal or does not comply with these instructions!*

Manuscript submission

The following types of manuscripts are accepted: short research notes (up to 4 pages), research articles (4 to 10 pages) and review papers (10 to 20 pages). Short research notes are shorter submissions of a preliminary nature or those including new records or observed phenomenon, etc. Research articles should present significant original research in the various fields, mentioned above. Review papers should deal with topics of general interest or of contemporary importance, being synthetic rather than comprehensive in emphasis. Authors of Review papers should consult with the Editor before submission. The Editor may also invite review articles concerning recent developments in particular areas of interest. The Editor reserves the right to decide if a manuscript should be treated as a Short note or Research article.

The official language of the journal is English. It is recommended for the authors to consult the translation of their manuscripts with a native speaker, before sending. The journal does not provide any translations or language corrections. If the English translation is not good enough, the manuscript will be sent back to the author. Exceptions are possible, certain manuscript may be published in Bulgarian language, with extensive English summary.

All manuscripts must be written according to *International Code of Zoological Nomenclature* (IV edition, 1999) and *International Code of Nomenclature for algae, fungi, and plants* (2012). For the correct geographical names transcriptions, please see THIS article.

All scientific names (genus and species) must be written in *italic* font. When the name is written for the first time in the manuscript it must be written in full (including author, year, etc.). Between the author's name and the year, a comma should be placed (for example *Belgrandiella pussila* Angelov, 1959).

Manuscripts must conform strictly with the instructions for authors and must be sent to the Editor to the journal's e-mail. Incoming manuscripts are initially judged by the Editor. Manuscripts may be rejected without peer review if they do not comply with the instructions to authors or are beyond the scope of the journal. If the manuscript is acceptable, it will be forwarded to referees for evaluation. All manuscripts are peer-reviewed by 2 or 3 independent reviewers. After final edition and approval by the Editorial Board, the manuscript will be accepted for publication. The Editor reserves the right to make editorial changes. Authors agree, after the manuscript's acceptance, with the transfer of copyright to the publisher.

Legal requirements
Bulletin of the Natural History Museum – Plovdiv (BNHMP) follows the standards for Ethics and Publication Malpractice set by the Committee on Publication Ethics (COPE). Conformance to standards of ethical behavior is therefore expected of all parties involved: Authors, Reviewers, Editors, and the Publisher. Submission of a manuscript implies: that the work described has not been published previously (except in the form of an abstract, or as part of a published lecture, or thesis); that it is not under consideration for publication anywhere else; that its publication has been approved by all co-authors, if any, as well as by the responsible authorities – tacitly or explicitly – at the institute where the work has been carried out. The publisher will not be held legally responsible should there be any claims for compensation.

Technical requirements
The following formats are accepted: *.doc, *. docx or *.rtf. The text should be all with same font (with no bold font, no uppercase, except for abbreviations), no footnotes, no following intervals, no brakes and unnecessary formatting). The title, authors' names, address, abstract, key words, the chapters and the subchapters, also the references should be separated with a blank row. Italic font should be used only for the genus or the species names.

Page and text formatting
Page size should be 17.6x25.01 cm (ISO B5), margins 1.5 cm from left and right and 2 cm from top and bottom. Times New Roman font, 11pt, with single spacing. Do not use software for hyphenation, additional spaces and tabulators. In case of inserting a symbol, please use font Symbol. Pages should not be numbered and with no additional information in the header and footer.

Manuscript formatting
The manuscripts should conform to the following format:
Title: Provide a title that is concise, but also an informative synthesis of the study. Where appropriate, include mention of the family or higher taxon.
Author(s): Full first name(s), middle initials and surname(s). The corresponding author should be marked with the *-symbol.
Affiliation: As complete as possible. Also include postal address. E-mail address is given only for the corresponding author.
Abstract: Maximum length 300 words. The abstract should state briefly the objective of the research, the primary results and major conclusions, with no description of methods, discussions, references and abbreviations.
Key words: Usually 3–6 words suitable for information-retrieval system.

The standard order of sections should be: Abstract, Key words, Introduction, Material and Methods, Results, Discussion (or Results and Discussion), Conclusions (optional), Acknowledgements (optional) and References.

The *Introduction* has to explain the actuality of the researched problem and give the aim of the study. *Materials and Methods* have to provide sufficient information to permit repetition of the experiment and/or fieldwork. The technical description of study methods should be given only if such methods are new; otherwise a short presentation is enough. The *Results* section

must be a concise presentation of the finding of the study. Avoid presentation of the same information as text and/or figure and/or table. *Discussion* section should be separate from the results section at full length papers and should deal with the significance of the results and their relationship to the aims of the paper. Also include how the findings of the paper will change or influence the state of our knowledge about the topic at hand. In separate cases a joint section "Results and Discussion" is allowed, but not preferable. *Conclusions* should shortly describe the main contributions and recommendations of the study without including citations and statistics. In the *Acknowledgements* section all persons and organizations that helped during the study in various ways, as well as the organization that financed the study must be listed.

Short Notes (generally less than four-five manuscript pages) should be produced as continuous text, preceded by an abstract of no more than 150 words. Key words are also included.

Tables: The tables must not repeat information already presented in the figures or in the text. Each table must be self-explanatory and as simple as possible. No fold-outs (landscape oriented tables) are accepted. Tables must be numbered consecutively. They should be placed within the text at the desired position by the author(s). An explanatory caption, located on the top of the table, should be provided. No shading should be added to tables.

Figures: They must not repeat information already presented in the tables or in the text. Lines and letters in figures must allow to be enlarged or reduced without reduction in quality. They should conform to the size of the type area. Magnification should be shown by scale bars. Colour illustrations are accepted, but will appear only in the electronic version of the journal (PDF). The illustrations in the hardcopy printed version will be greyscale. All illustrations must be sharp, of high quality with at least 300 dpi. The following formats are acceptable: JPEG, GIF, TIFF, EPS. Figures must be numbered consecutively and should be provided with an explanatory legend below them. They must be placed within the text at the desired position by the author(s). All tables and figures must be referred to in the text! Please send all figures attached as separate files (with the same size and resolution) as well as in the text. If the figures are charts made with Excel, please provide the Excel file as well.

Citations and formatting of the references list

All references should be cited in the text in the following way: "Josifov (1996)" or "(Josifov, 1996)"; "Josifov & Kerzhner (1995)" or "(Josifov & Kerzhner, 1995)"; "Golemansky *et al.* (1993)" or "(Golemansky *et al.,* 1993)". Citations in brackets should be divided with semicolons and the author's name and the year of publication with comma (example: Carlin, 1992; Brooks & Carlin, 1992; Shapiro *et al.*, 1968). Where there are more than two authors "*et al.*" in *italic* font is added after the name of the first author.

References at the end of the paper should be listed in alphabetical order by the first author's family name and chronologically. If there is more than one work by the same author or team of authors in the same year, a, b, etc. is added to the year both in the text and in the list of references. Each citation in the text must be accompanied by a full reference in the list of references and vice versa. In case of papers written in other than Latin letters, if there is an English (or German, or French) title in the summary, it is recommended to be used. If there is

not such a summary, the author's names must be transcribed and the title of the paper must be translated into English and put in square brackets. If the name of the journal is also not in Latin letters it also should be transcribed (not translated). This should be noted in round brackets at the end of the paragraph, for instance: (In Bulgarian, English summary).

Examples:
Article in Cyrillic, without summary in western language:
Joakimoff D. 1899. Contribution to the insect fauna of Rila Mountain. *Periodichesko spisanie na Balgarskoto Knizhovno Druzhestvo,* 60: 858-884 (in Bulgarian).

Article in Cyrillic, with summary in western language:
Popov S. 1999. Species of family Tipulidae (Diptera) known to the fauna of Bulgaria till 1998. *Travaux Scientifiques de l'Universite de Plovdiv, Biologie, Animalia,* 35: 33-36 (in Bulgarian, English summary).

Journal article:
Theowald B., P. Oosterbroek. 1986. Zur Zoogeographie der westpalacarctischen Tipulidae. VII Die Tupilidae der Balkanhalbinsel (Diptera, Tipulidae). *Tijdschrift voor Entomologie,* 129(1): 1-13.

Book:

Evenhuis N.L. 1994. *Catalogue of the fossil flies of the world (Insecta: Diptera)*. Backhuys Publishers, Leiden, 600 p.

Book chapter:

Krivosheina N.P. 1988. Family Diadocidiidae. *In:* Soos, A., L. Papp. (Eds.), *Catalogue of Palaerctic Diptera. Vol. 3. Ceratopogonidae - Mycetophilidae*. Akadeiai Kiado, Budapest, pp. 210-211.

Internet site:

Oosterbroek P. 2004. Fauna Europaea: Tipulidae. *In:* de Jong, H. (Ed.), *Fauna Europaea: Diptera: Nematocera. Fauna Europaea* version 1.3. Available at: http://www.faunaeur.org. (Accessed on 13 March 2022).

Software:

Statsoft Inc. 2004. STATISTICA (Data analysis software system), Vers. 7. Computer software. Available at: http://www.statsoft.com.

Garmin Ltd. 2007. MapSource, Vers. 6.12. Computer software. Available at: http://www.garmin.com.

Unpublished theses (BSc, MSc, PhD, DSc) are not considered officially published scientific literary sources, therefore they are not allowed. If you absolutely must cite such a source, you may cite it as an exception as "personal communication".

Citing references that are still "in press" is also considered frown upon, but not forbidden. If possible, please avoid using such references.

Ethics

The authors of articles that are based on experiments that caused injuries or death of animals should explain and justify the grounds of the study and state that the scientific results of the study is at least in trade-off with the sufferings caused. In the Materials and Methods section of the manuscript, the authors should detail as precisely the conditions of maintenance, transport, anesthesia, and marking of animals. When available, references should be added to justify that the techniques used were not invasive. When alternative non-harming techniques exist, but were not used, the manuscripts may not be considered for publication.

Proofs and Reprints

Proof will be sent to the first (or corresponding) author for checking (a PDF file) only once and it should be returned without delay. Corrections should be limited to typographical errors. No additional changes of the manuscript are allowed. Following publication, the first (or corresponding) author will be provided with electronic copy (PDF) of the article.

E-mail: bnhm.plovdiv@gmail.com