Review Article

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Review and Check-list of Coccidian Parasites (Apicomplexa: Eucoccidiorida) of Humans and Animals in Bulgaria

Vassil Golemansky

Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences, 1 Tsar Osvoboditel Blvd., 1000 Sofia, Bulgaria; E-mail: golemansky@zoology.bas.bg, v.golemansky@abv.bg

Abstract. The investigations on the coccidian parasites (Apicomplexa: Eucoccidiorida) of humans and animals in Bulgaria started in the beginning of 20-th Century. So far, data about a total of 195 species of coccidian parasites (185 identified and 10 unidentified species) of humans, domestic and wild animals (mainly birds and mammals) were accumulated in Bulgaria. They belong to 13 genera of the families Adeleidae, Klossiellidae, Cryptosporidiidae, Eimeriidae and Sarcocystidae. The predominating part of them belongs to the family Eimeriidae: 6 genera and 183 species. Of the other 4 families, 9 species of 7 genera were found only. Twenty species of the genera *Eimeria* and *Isospora*, found mainly in wild birds and mammals, were described as new taxa from Bulgaria. The hosts of the recorded coccidian parasites in Bulgaria, their site of infection and territorial distribution in the country as well as the main publications on the recorded taxa are presented in the check-list.

Key words: Protozoa, Apicomplexa**,** Eucoccidiorida, Check-list, Bulgaria

Introduction

Coccidian parasites are eukaryotic protists of the phylum Apicomplexa Levine, 1970 (=Sporozoa Leuckart, 1879) that infect large groups of vertebrate and invertebrate animals as well as humans. Many of them cause diseases of their hosts (Levine 1973, Pellerdy 1974). According to the modern classifications of eucaryotic protists, the coccidian parasites belong to the class Conoidasida of the phylum Apicomplexa (Perkins et al. 2000, Addle et al. 2012). A basic characteristic of the Conoidasida is the presence of an ultrastructural *apical complex of organelles* at the anterior pole of certain stages of parasites for easy penetration into the host cells. According to the accepted classification, coccidian parasites (class Conoidasida, subclass Coccidiasina Leuckart, 1879) are divided into four orders: Agamococcidiorida Levine, 1979, Ixorheorida Levine, 1984, Protococcidiorida Kheissin, 1956 and Eucoccidiorida Leger & Dubosq, 1910. The most adequately studied among them at the global scale is the order Eucoccidiorida, with more than 2000 described species (Duzsynski et al. 2015). All Eucoccidiorida are parasitic and many of them are agents of severe diseases of humans and animals as eimeriosis, toxoplasmosis, cryptosporidiosis, sarcocystosis, etc. To the former three orders (Agamococcidiorida, Ixorheorida and Protococcidiorida), mostly parasites from invertebrate animals (worms, echinoderms and arthropods) are affiliated and their pathogenic role is not well known. So far, they have not been studied in Bulgaria.

Because of their medical and veterinary importance, coccidian parasites of the order Eucoccidiorida have been subject of several studies in Bulgaria since the beginning of 20th Century. One of priorities was to examine the coccidian parasites of humans and domestic animals as well as the diseases caused by pathogenic coccidian parasites. In many early Bulgarian publications, parasitic diseases of animals such as coccidiosis, sarcocystosis, toxoplasmosis and others were reported, frequently without any morphological and taxonomical information on

the morphology and taxonomy of pathogens (e.g. Pashev 1911, Drenowsky 1947, Pavlov 1942, 1954, 1956, Angelov et al. 1954, 1956, Mincheva 1956, Mincheva & Chilev 1959).

Since the beginning of the investigations on the coccidian parasites of man and animals in Bulgaria, more than 380 scientific publications were published on this subject. Many of the scientific communications were published in Bulgarian in national journals, books and regional bulletins and they remained poorly known not only for the foreign but also for many Bulgarian researchers. In some early publications, no adequate taxonomic descriptions or illustrations of the reported genera and species have been presented; it is not possible to make now any taxonomic revisions on the basis of these publications. This is the main reason for us to keep in the present Check-List the species names of coccidians and their hosts as given by various authors. In many early publications on coccidians from Bulgaria, the hosts were mentioned with their popular Bulgarian names. In the present check-list, the Latin names of the hosts are given according to the publication of Gentry et al. (2004).

An important part of the publications on coccidian diseases of humans and animals published in Bulgaria discussed mainly the problems of their epizootiology, pathology, immunology, prevention and therapy. In few of them, attention was paid on the morphology, taxonomy, life cycles and the distribution of coccidian agents. Such publications of medical or veterinarian interest mainly were not included in the reference lists of the present review. For the aims of the proposed check-list, the first publications for the records of the coccidian parasites in Bulgaria, the published data for their site of infection and distribution in the country as well as some data on their morphological characteristic and taxonomical identification were considered. In the last 2-3 decades, some recent PhD theses on various coccidian parasites of humans and animals in Bulgaria were worked out as well as some compendious books, tools and catalogues; they were preferably considered and included in the reference list of the present publication.

The aim of the proposed check-list was to summarize the published information in Bulgaria and abroad about the taxonomic diversity, site of infection and distribution of the published to the end of 2016 coccidian parasites of humans and animals in Bulgaria.

The author hopes that the present check-list will be useful basic information for future studies on the diversity, taxonomy and territorial distribution of the important and relatively poorly known coccidian parasites in Bulgaria. All remarks, critical notes and addenda to the proposed check-list will be accepted with gratitude by the author.

Check-list of coccidian parasites from humans and animals in Bulgaria

Phylum Apicomplexa Levine, 1970

Class Conoidasida Levine, 1988

Subclass Coccidiasina Leuckart, 1879

Order Eucoccidiodorida Leger & Duboscq, 1910

Suborder Adeleorina Leger, 1911

Family Adeleidae Mesnil, 1903

***1. Adelina* Hesse, 1911**

***Adelina tribolii* Bhatia, 1937**

Hosts: Insecta: Coleoptera: *Tribolium confusum, T. castaneum*, *Tenebrioides mauretanicus, Anthrenus* sp.

Site of infection: tissue cells.

Distribution: Russe, Pleven, Lovech, Ribaritsa, Chomakovci.

Records: Golemansky & Duhlinska (1982), Duhlinska & Golemansky (1984).

***Adelina dimidiata* Schneider, 1875**

Hosts: Myriapoda: Chilopoda: *Scolopendra cingulata.*

Site of infection: faeces.

Distribution: Melnik.

Records: Kopecna et al. (2006).

***2. Klossia* Schneider, 1875**

***Klossia* sp.**

Hosts: Mammalia: Rodentia: *Apodemus sylvaticus, Spermophilus citellus*; Carnivora: *Vulpes vulpes.*

Site of infection: faeces.

Distributioin: througout the country.

Records: Golemansky & Yankova (1973), Golemansky (1975a, 1975b), Golemansky & Koshev (2009).

Family Klossiellidae Smith & Johnston, 1902

3. *Hepatozoon* Miller, 1908

***Hepatozoon atticorae* (de Beurepaire Arago, 1911) Hoare, 1924**

Hosts: Aves: Passeriformes: *Hirundo rustica.*

Site of infection: monocytes.

Distribution: Nova Cherna near Tutrakan.

Records: Schurulinkov (2005).

***Hepatozoon lanis* Bennet, Earle *&* Pierce, 1992**

Hosts: Aves: Passeriformes: *Lanius colubrio.*

Site of infection: monocytes.

Distribution: Dragoman, Nova Cherna near Tutrakan, Nissovo.

Records: Schurulinkov (2005).

***Hepatozoon parus* Bennet & Pierce, 1989.**

Hosts: Aves: Passeriformes: *Parus major, P. coerulaeus.*

Site of infection: monocytes.

Distribution: Nova Cherna near Tutrakan, Dragoman.

Records: Schurulinkov (2005).

***Hepatozoon sylviae* Benet & Pierce, 1992**

Hosts: Aves: Passeriformes: *Acrocephalus arundinaceus, A. schoenobaenus, A. scirpaceus, A. palustris, Locustella luscinoides, Phyloscopus trochilus.*

Site of infection: monocytes.

Distribution: Nova Cherna near Tutrakan, Dragoman, Durankulak, Shabla, Chelopecene near Sofia.

Records: Schurulinkov (2005), Schurulinkov & Chakarov (2007).

***Hepatozoon sylvestri* Coles, 1914**

Hosts: Mammalia: Rodentia: *Apodemus sylvaticus.*

Site of infection: erythrocytes.

Distribution: Obrochishte near Varna.

Records: Shebek et al. (1968).

***Hepatozoon* sp. 1**

Hosts: Aves: Passeriformes: *Acrocephalus schoenobaenus.*

Site of infection: blood.

Distribution: Nova Cherna near Tutrakan.

Records: Valkiunas et al. (1999).

Suborder Eimeriorina Leger, 1911

Family Cryptosporidiidae Leger, 1911

4. *Cryptosporidium* Tyzzer, 1907

***Cryptosporidium parvum* Tyzzer, 1912**

Hosts: Mammalia: Primates: *Homo sapiens;* Mammalia: Artiodactyla: *Bos taurus.*

Site of infection: faeces, muscles.

Distribution: througout the country.

Records: Halacheva & Belchev (1984), Halacheva et al. (1988), Kurdova-Mintcheva (1989, Kurdova et al. (2002).

Family Eimeriidae Minchin, 1903

5. *Cyclospora* Schneider, 1881

***Cyclospora caryolitica* Shaudin, 1902**

Hosts: Mammalia: Insectivora: *Talpa europaea.*

Site of infection: intestine.

Distribution: Reserve Srebarna.

Records: Golemansky (1979).

6. *Eimeria* Schneider, 1875

***Eimeria absheronae* Mousaev & Mamedova, 1981**

Hosts: Mammalia: Artiodactyla: *Capra hircus.*

Site of infection: intestine.

Distribution: througout the country.

Records: Sabev (2012).

***Eimeria acervulina* Tyzzer, 1929**

Hosts: Aves: Galliformes: *Gallus domestica.*

Site of infection: intestine.

Distribution: througout the country.

Records: Mincheva (1942, 1956), Mincheva et al. (1963), Pavlov (1942), Kolev et al. (1976), Penev & Kassabov (1968).

***Eimeria adenoeides* Moore & Brown, 1951**

Hosts: Aves: Galliformes: *Meleagris gallopavo.*

Site of infection: intestine.

Distribution: througout the country.

Records: Golemansky (1962, 1964), Koinarski & Kamburov (1984), Koinarski (1987).

***Eimeria ahsata* Honess, 1942**

Hosts: Mammalia: Artiodactyla: *Ovis musimon.*

Site of infection: intestine.

Distribution: Stara planina, Rhodopes Mts.

Records: Golemansky & Yuzev (1977).

***Eimeria alabamensis* Christensen, 1941**

Hosts: Mammalia: Artiodactyla: *Bos taurus, Bubalus bubalus.*

Site of infection: intestine.

Distribution: North and North-eastern Bulgaria.

Records: Kurtov (1975), Vitanov (1999), (Vitanov, Halacheva, 2003).

***Eimeria alijevi* Musaev, 1970**

Hosts: Mammalia: Artiodactyla: *Capra hircus.*

Site of infection: intestine.

Distribution: througout the country.

Records: Sabev (2012).

***Eimeria anatis* Scholtyzeck, 1955**

Hosts: Aves: Anseriformes: *Anas plathyrhynchos.*

Site of infection: intestine.

Distribution: througout the country.

Records: Golemansky & Kuldjieva (1981), Golemansky (1986в).

***Eimeria andrewsi* Yakimoff & Gousseff, 1935**

Hosts: Mammalia: Rodentia: *Sciurus vulgaris.*

Site of infection: intestine.

Distribution: Govedarci near Samokov, Sofia, Kyustendil.

Records: Golemansky & Duhlinska (1973).

***Eimeria anseris* Kotlan, 1932**

Hosts: Aves: Anseriformes: *Anser anser.*

Site of infection: intestine.

Distribution: througout the country.

Records: Arnaudov (1969), Golemansky (1964).

***Eimeria apodemi* Pellerdy, 1954**

Hosts: Mammalia: Rodentia: *Apodemus flavicolis, A. sylvaticus, A. agrarius.*

Site of infection: intestine.

Distribution: througout the country.

Records: Golemansky (1973, 1979).

***Eimeria arkutinae* Golemansky, 1978**

Hosts: Mammalia: Rodentia: *Apodemus sylvaticus, A. flavicolis, A. agrarius.*

Site of infection: intestine.

Distribution: Rila Mts, Reserves Parangalitsa, Srebarna, Arkoutino.

Records: Golemansky (1978, 1979).

***Eimeria arloingi (*Marotel, 1905) Martin, 1909**

Hosts: Mammalia: Artiodactyla: *Ovis aries, Capra hircus.*

Site of infection: intestine.

Distribution: througout the country.

Records: Bankov & Ivanov (1958), Mincheva et al. (1966), Meshkov & Yordanov (1970), Halacheva et al. (2004), Sabev (2006, 2012).

Remarks: observed also in *Cervus dama* from Sofia Zoo (Stoyanov et al. 2009).

***Eimeria auburnensis* Christensen & Porter, 1939**

Hosts. Mammalia: Artiodactyla: *Bubalus bubalus, Bos taurus.*

Site of infection: intestine.

Distribution: North and North-eastern Bulgaria.

Records: Kurtov (1975), Vitanov (1999), Vitanov & Halacheva (2003).

***Eimeria austriaca* Superer & Kutzer, 1961**

Hosts: Mammalia: Artiodactyla: *Cervus dama, C. elaphus.*

Site of infection: intestine.

Distribution: Central Balkan (Palamara, Vitinia).
Records: Golemansky (2003).

***Eimeria balozeti* Yakimoff & Gousseff, 1938**
Hosts: Aves: Passeriformes: *Sturnus vulgaris*.
Site of infection: intestine, faeces.
Distribution: Sofia (Opizvet).
Records: Golemansky (1976b).

***Eimeria bareillyi* Gill, Chhabra & Lall, 1963**
Hosts: Mammalia: Artiodactyla: *Bubalus bubalus*
Site of infection: intestine.
Distribution: North and North-eastern Bulgaria (Shumen, Gabrovo, Lovech).
Records: Vitanov (1999), Vitanov, Halacheva (2003).

***Eimeria bateri* Bhatia, Pandey & Pande, 1966**
Hosts: Aves: Galliformes: *Coturnix coturnix.*
Site of infection: intestine.
Distribution: Zamfirovo near Montana.
Records: Golemansky (1976b).

***Eimeria battakhi* Dubey & Pande, 1963**
Hosts: Aves: Anseriformes: *Anas platyrhynchos.*
Site of infection: intestine.
Distribution: Belogradchik.
Records: Golemansky & Kuldjieva (1981), Golemansky (1986b).

***Eimeria bovis* (Zublin, 1908) Fiebiger, 1912**
Hosts: Mammalia: Artiodactyla: *Bos taurus, Bubalus bubalus, Bison bonassus.*
Site of infection: intestine.
Distribution: North and North-eastern Bulgaria, Central Balkan (region of Preslav), Sofia Zoo.
Records: Mincheva & Chilev (1959), Kurtov (1975), Vitanov (1999), Vitanov & Halacheva (2003), Golemansky (2003), Stoyanov et al. (2009).

***Eimeria branchiphila* Dykova, Lom & Grupcheva, 1983**
Hosts: Pisces: Cypriniformes: *Rutilus rutilus.*
Site of infection: kidney, gills, spleen.
Distribution: Batak Dam Lake (Rhodopes Mts).
Records: Dykova et al. (1983), see also Grupcheva et al. (2006).

***Eimeria brasiliensis* Torres & Ramos, 1939**
Hosts: Mammalia: Artiodactyla: *Bubalus bubalus.*
Site of infection: intestine.
Distribution: North and North-eastern Bulgaria (Schumen, Gabrovo, Lovech).
Records: Vitanov (1999), Vitanov & Halacheva (2003).

***Eimeria bukidnonensis* Tubangui, 1931**
Hosts: Mammalia: Artriodactyla: *Bubalus bubalus.*
Site of infection: intestine.
Distribution: North and North-eastern Bulgaria (Schumen, Gabrovo, Lovech).
Records: Vitanov (1999), Vitanov & Halacheva (2003).

***Eimeria canadensis* Bruce, 1921**
Hosts: Mammalia: Artriodactyla: *Bos taurus, Bubalus bubalus.*
Site of infection: intestine.
Distribution: North and North-eastern Bulgaria: (Schumen, Gabrovo, Lovech).
Records: Kurtov (1975), Vitanov (1999), Vitanov & Halacheva (2003).

***Eimeria capreoli* Galli-Valerio, 1927**
Hosts: Mammalia: Arthiodactyla: *Capreolus capreolus.*
Site of infection: intestine.
Distribution: througout the country.
Records: Golemansky (1986a, 1986b).

***Eimeria catubrina* Mantovani, Borelli & Bitti, 1970**
Hosts: Mammalia: Arthiodactyla: *Capreolus capreolus.*
Site of infection: intestine.
Distribution: througout the country.
Records: Golemansky (1986a, 1986b).

***Eimeria cernae* Levine, 1965**
Hosts: Mammalia: Rodentia: *Clethrionomys glareolus.*
Site of infection: intestine.
Distribution: througout the country.
Records: Golemansky & Yankova (1973), Golemansky (1979).

***Eimeria callospermopliili* Henry, 1932**
Hosts: Mammalia: Rodentia: *Spermophilus citellus.*
Site of infection: intestine.
Distribution: througout the country.
Records: Golemansky & Koshev (2007, 2009).

***Eimeria christenseni* Levine, Ivens & Fritz, 1962**
Hosts: Mammalia:Artiodactyla: *Capra hircus.*
Site of infection: intestine.
Distribution: througout the country.
Records: Halacheva et al. (2003, 2004), Sabev (2006, 2012).

***Eimeria citelli* Kartchner & Becker, 1930**
Hosts: Mammalia: Rodentia: *Spermophilus citellus.*
Site of infection: intestine.
Distribution: througout the country.
Records: Golemansky & Koshev (2007, 2009).

***Eimeria coecicola* Cheissin, 1947**
Hosts: Mammalia: Lagomorpha: *Oryctolagus cuniculus.*
Site of infection: intestine.
Distribution: througout the country.
Records: Vladov (2016).

***Eimeria colchici* Norton, 1967**
Hosts: Aves: Galliformes: *Phasianus colchicus.*
Site of infection: intestine.
Distribution: througout the country.
Records: Golemansky & Yuzev (1980), Golemansky (1986b), Yuzev (1987).

***Eimeria columbarum* Nieschulz, 1935**
Hosts: Aves: Columbiformes: *Columba livia, C. oenas, C. palumbus.*
Site of infection: intestine.
Distribution: Berkovica. Borovci and Jivovci near Montana.
Records: Golemansky (1976b).

***Eimeria coturnicis* Chakravarty & Kar, 1947**
Hosts: Aves: Galliformes: *Coturnix coturnix, Alectoris graeca.*

Site of infection: intestine.

Distribution: Berkovica, Furen near Vraca, Zamphirovo and Jivovci near Montana, Haskovo.

Records: Zapryanov (1976), Golemansky (1977b).

***Eimeria crandalis* Honess, 1942**

Hosts: Mammalia: Artiodactyla: *Ovis aries, O.musimon, Capra hircus.*

Site of infection: intestine.

Distribution: througout the country, Sofia Zoo.

Records: Mincheva (1942), Bankov & Ivanov (1958), Mincheva et al. (1966), Meshkov & Yordanov (1970), Golemansky & Yuzev (1977), Halacheva et al. (2004), Stoyanov et al. (2009).

***Eimeria cylindrica* Wilson, 1931**

Hosts: Mammalia: Artiodactyla: *Bos taurus*, *Bubalus bubalus.*

Site of infection: intestine.

Distribution: North Bulgaria (Lovech, Gabrovo, Pleven,Veliko Tarnovo).

Records: Kurtov (1975), Vitanov (1999), Vitanov & Halacheva (2003).

***Eimeria canna* Triffitt, 1924**

Hosts: Mammalia: Artiodactyla: *Oryx leucoryx.*

Site of infection: intestine.

Distribution: Sofia Zoo.

Records: Stoyanov et al. (2009).

***Eimeria cynomysis* Andrews, 1928**

Hosts: Mammalia: Rodentia: *Spermophilus cilellus.*

Site of infection: intestine.

Distribution: througout the country.

Records: Golemansky & Koshev (2007, 2009).

***Eimeria debliecki* Douwes, 1921**

Hosts: Mammalia: Artiodactyla: *Sus scrofa*, *Sus domesticus.*

Site of infection: intestine.

Distribution: Strandja Mts.

Records: Dimitrova et al. (1961), Bankov (1961), Golemansky (1986b).

***Eimeria dissimilis* Yakimoff & Gousseff, 1935**

Hosts: Mammalia: Insectivora: *Sorex minutus.*

Site of infection: intestine.

Distribution: Rila Mts (reserve Parangalitza).

Records: Golemansky (1979).

***Eimeria dyromydis* Zolotarev, 1935**

Hosts: Mammalia: Rodentia: *Dryomys nitedula.*

Site of infection: intestine.

Distribution: Strandja Mts **(**reserve Arkoutino).

Records: Golemansky (1979).

***Eimeria duodenalis* Norton, 1967**

Hosts: Aves: Galliformes: *Phasianus colchicus.*

Site of infection: intestine.

Distribution: Berkovica, Montana, Russe, Sofia.

Records: Golemansky (1977b), Golemansky & Yuzev (1980), Yuzev (1980).

***Eimeria elaphi* Jansen & van Haaften, 1966**

Hosts:Mammalia: Artiodactyla: *Cervus elaphus.*

Site of infection: intestine.

Distribution: Sofia Zoo.

Records: Stoyanov et al. (2009).

***Eimeria ellipsoidalis* Becker & Frye, 1929**

Hosts: Mammalia: Artiodactyla: *Bos taurus*, *Bubalus bubalus.*

Site of infection: intestine.

Distribution: North Bulgaria (Lovech, Gabrovo, Shumen).

Records: Kurtov (1975), Vitanov (1999), Vitanov, Halacheva (2003).

***Eimeria europaea* Pellerdy, 1956**

Hosts: Mammalia: Lagomorpha: *Lepus europaeus.*

Site of infection: intestine.

Distribution: througout the country.

Records: Golemansky (1975d).

***Eimeria exigua* Yakimoff, 1934**

Hosts: Mammalia: Lagomorpha: *Oryctolagus cuniculus.*

Site of infection: intestine.

Distribution: region of Burgas.

Records: Meshkov (1973 a), Vladov (2016).

***Eimeria falciformis* (Eimer, 1870) Schneider, 1885**

Hosts: Mammalia: Rodentia: *Mus musculus.*

Site of infection: intestine.

Distribution: reserves Srebarna and Arkutino.

Records: Golemansky (1979).

***Eimeria faurei* (Moussu & Marotel, 1902) Marotel, 1909**

Hosts: Mammalia: Artiodactyla: *Ovis aries, O. musimon, Capra hircus, Ammotragus lervia.*

Site of infection: intestine.

Distribution: througout the country.

Records: Bankov & Ivanov (1958), Nedialkov et al. (1960),Mincheva et al. (1966), Meshkov (1970), Golemansky & Yuzev (1977), Trifonov (1978), Halacheva et al. (2003, 2004), Stoyanov et al. (2009).

Remarks: the host *Ammotragus lervia* was from Sofia Zoo.

***Eimeria flavescens* (Marotel & Guilhon, 1941**

Hosts: Mammalia: Lagomorpha: *Oryctolagus cuniculus.*

Site of infection: intestine.

Distribution: througout the country.

Records: Vladov (2016).

***Eimeria flexilis* Golemansky, 1978**

Hosts: Mammalia: Insectivora: *Talpa europaea.*

Site of infection: intestine.

Distribution: Strandja Mts, reserve Arkutino.

Records: Golemansky (1978, 1979).

***Eimeria gallopavonis* Hawkins, 1951**

Hosts: Aves: Galliformes: *Meleagris gallopavo.*

Site of infection: intestine.

Distribution: througout the country.

Records: Golemansky (1964), Koinarski & Kambourov (1984), Koinarski (1987).

***Eimeria garzetae* Golemansky & Kuldjieva, 1980**

Hosts: Aves:Ciconiiformes: *Egretta garzetta.*

Site of infection: intestine.

Distribution: Dolni Bogrov near Sofia.

Records: Golemansky & Kuldjieva (1980, 1981).

***Eimeria goussevi* Yakimoff, 1935**

Hosts: Mammalia: Insectivora: *Talpa europaea.*

Site of infection: intestine.

Distribution: reserve Srebarna.
Records: Golemansky (1979).

***Eimeria grenieri* Ivore & Acardi, 1967**
Hosts: Aves: Galliformes: *Numida meleagris.*
Site of infection: intestine.
Distribution: farms near Sofia.
Records: Golemansky & Kuldjieva (1981).

***Eimeria guentheri* Golemansky, 1978**
Hosts: Mammalia: Rodentia: *Microtus guentheri.*
Site of infection: intestine.
Distribution: reserve Arkoutino.
Records: Golemansky (1978, 1979).

***Eimeria hindlei* Yakimoff & Gousseff, 1938**
Hosts: Mammalia: Rodentia: *Mus musculus.*
Site of infection: intestine.
Distribution: reserve Arkoutino.
Records: Golemansky (1979).

***Eimeria hirci* Chevalier, 1966**
Hosts: Mammalia: Artiodactyla: *Capra hircus.*
Site of infection: intestine.
Distribution: througout the country.
Records: Sabev (2006, 2012).

***Eimeria hungarica* Pellerdy, 1956**
Hosts: Mammalia: Lagomorpha: *Lepus europaeus.*
Site of infection: intestine.
Distribution: througout the country.
Records: Golemansky (1975d).

***Eimeria hungariensis* Levine, 1965**
Hosts: Mammalia: Rodentia: *Apodemus flavicollis, A. sylvaticus, A. agrarius.*
Site of infection: intestine.
Distribution: througout the country.
Records: Golemansky & Yankova (1973), Golemansky (1979).

***Eimeria innocua* Moore & Brown, 1952**
Hosts: Aves: Galliformes: *Meleagris gallopavo.*
Site of infection: intestine.
Distribution: througout the country.
Records: Golemansky (1964), Koinarski & Kambourov (1984), Koinarski (1987).

***Eimeria intestinalis* Kcheisin, 1948**
Hosts: Mammalia: Lagomorpha: *Oryctolagus cuniculus.*
Site of infection: intestine.
Distribution: througout the country.
Records: Meshkov (1973a), Kostova (1989), Vladov (2016).

***Eimeria intricata* Spiegel, 1925**
Hosts: Mammalia: Artiodactyla: *Ovis aries, O. musimon, Capra hircus.*
Site of infection: intestine.
Distribution: througout the country.
Records: Bankov & Ivanov (1958), Nedialkov et al. (I960). Mincheva et al. (1966), Golemansky & Yuzev (1977), Trifonov (1978), Halacheva et al.(2004).

***Eimeria ivanovi* Veissov, 1963**
Hosts: Mammalia: Rodentia: *Microtus arvalis.*
Site of infection: intestine.
Distribution: reserve Srebarna.
Records: Golemansky (1979).

***Eimeria irresidua* Kessel & Jankiewiez, 1931**
Hosts: Mammalia: Lagomorpha: *Oryctolagus cuniculus.*
Site of infection: intestine.
Distribution: througout the country.
Records: Meshkov (1973a), Kostova (1989), Vladov (2016).

***Eimeria jolchijevi* Musaev, 1976**
Hosts: Mammalia: Artiodactyla: *Capra hircus.*
Site of infection: intestine.
Distribution: througout the country.
Records: Sabev (2006, 2012).

***Eimeria kocharli* Musaev & Mamedova, 1981**
Hosts: Mammalia: Artiodactyla: *Capra hircus.*
Site of infection: intestine.
Distribution: througout the country.
Records: Sabev (2012).

***Eimeria kofoidi* Yakimoff & Matikaschvili, 1936**
Hosts: Aves: Galliformes: *Alectoris graeca cypriotus.*
Site of infection: intestine.
Distribution: region of Haskovo.
Records: Zapryanov (1976, 1979).

***Eimeria komareki* Cerna & Daniel, 1956**
Hosts: Mammalia: Insectivora: *Sorex araneus.*
Site of infection: intestine.
Distribution: througout the country.
Records: Golemansky (1973, 1979).

***Eimeria leporis* Nieschulz, 1923**
Hosts: Mammalia: Lagomorpha: *Lepus europaeus.*
Site of infection: intestine.
Distribution: througout the country.
Records: Golemansky (1975).

***Eimeria leucodontis* Moussaev & Veissov, 1961**
Hosts: Mammalia: Insectivora: *Crocidura suaveolens.*
Site of infection: intestine.
Distribution: reserve Arkoutino.
Records: Golemansky (1979).

***Eimeria li* Golemansky, 1975**
Hosts: Mammalia: Carnivora: *Vulpes vulpes.*
Site of infection: intestine.
Distribution: regions of Montana, Vratza, Vidin.
Records: Golemansky (1975a), Golemansky & Ridjakov (1975).

***Eimeria macieli* Yakimoff & Matschulski, 1938**
Hosts: Mammalia: Artiodactyla: *Kobus leche cafuensis.*
Site of infection: intestine.
Distribution: Sofia Zoo.
Records: Stoyanov et al. (2009).

***Eimeria magna* Perard, 1925**
Hosts: Mammalia: Lagomorpha: *Oryctolagus cuniculus.*
Site of infection: intestine.
Distribution: througout the country.
Records: Meshkov (1973a), Kostova (1989), Vladov (2016).

***Eimeria marsupialium* Yakimoff & Matschulski, 1936**

Hosts: Mamalia: Marsupialia: *Macropus rufogriseus*.
Site of infection: intestine.
Distribution: Sofia Zoo.
Records: Stoyanov et al. (2009).

***Eimeria maxima* Tyzzer, 1929**
Hosts: Aves: Galliformes: G*allus domesticus*.
Site of infection: intestine.
Distribution: througout the country.
Records: Kolev et al. (1976).

***Eimeria media* Kessel, 1929**
Hosts: Mammalia: Lagomorpha: *Oryctolagus cuniculus*.
Site of infection: intestine.
Distribution: througout the country.
Records: Meshkov (1973a), Kostova (1989), Vladov (2016).

***Eimeria megalostomata* Ormsbee, 1939**
Hosts: Aves: Galliformes: *Phasianus colchicus*.
Site of infection: intestine.
Distribution: Elin Pelin (farm Ognianovo).
Records: Golemansky & Yuzev (1980), Yuzev (1980).

***Eimeria meleagridis* Tyzzer, 1927**
Hosts: Aves: Galliformes: *Meleagris gallopavo*.
Site of infection: intestine.
Distribution: througout the country.
Records: Mincheva (1942), Golemansky (1962, 1964), Koinarski & Kambourov (1984), Koinarski (1987).

***Eimeria meleagrimitis* Tyzzer, 1929**
Hosts: Aves: Galliformes: *Meleagris gallopavo*.
Site of infection: intestine.
Distribution: througout the country.
Records: Golemansky (1962, 1964), Koinarski & Kambourov (1984), Koinarski (1987).

***Eimeria melis* Kotlan & Pospesch, 1933**
Hosts: Mammalia: Carnivora: *Meles meles*
Site of infection: intestine.
Distribution: Sofia Zoo.
Records: Stoyanov et al. (2009).

***Eimeria micromydis* Golemansky, 1978**
Hosts: Mammalia: Rodentia: *Micromys minutus*.
Site of infection: intestine.
Distribution: reserve Srebarna.
Records: Golemansky (1978, 1979).

***Eimeria mira* Pellerdy, 1954**
Hosts: Mammalia: Redentia: *Sciurus vulgaris*.
Site of infection: intestine.
Distribution: Govedarci near Samokov, Kustendil, Jeleznica near Sofia.
Records: Golemansky & Duhlinska (1973).

***Eimeria mitis* Tyzzer, 1929**
Hosts: Aves: Galliformes: *Gallus domesticus*.
Site of infection: intestine.
Distribution: througout the country.
Records: Mincheva (1942, 1956), Kolev et al. (1976), Meshkov (1972), Lozanov (1964), Matov (1956).

***Eimeria mivati* Edgar & Siebold, 1964**
Hosts: Aves: Galliformes: *Gallus domesticus*.
Site of infection: intestine.
Distribution: througout the country.
Records: Kolev et al. (1976).

***Eimeria neomyi* Golemansky, 1978**
Hosts: Mammalia: Rodentia: *Neomys anomalus*.
Site of infection: intestine.
Distribution: Rila Mts (reserve Parangalitza).
Records: Golemansky (1978).

***Eimeria necatrix* Johnson, 1930**
Hosts: Aves: Galliformes: *Gallus domesticus*.
Site of infection: intestine.
Distribution: througout the country.
Records: Penev & Kassabov (1968), Meshkov (1972), Kolev et al. (1976).

***Eimeria ninakohlyakimovae* Yakimoff & Rastegaeff, 1930**
Hosts: Mammalia: Artiodactyla: *Ovis aries*, *O. musimon, Capra hircus*.
Site of infection: intestine.
Distribution: througout the country.
Records: Bankov & Ivanov (1958), Nedialkov et al. (1960), Mincheva et al. (1966), Meshkov & Yordanov, (1970), Golemansky & Yuzev (1977), Trifonov (1979), Halacheva et al. (2004), Sabev (2006, 2012).

***Eimeria nocens* Kotlan, 1933**
Hosts: Aves: Anseriformes: *Anser anser*.
Site of infection: intestine.
Distribution: througout the country.
Records: Arnaudov (1969), Golemansky (1964).

***Eimeria numidae* Pellerdy, 1962**
Hosts: Aves: Galliformes: *Numida meleagris*.
Site of infection: intestine.
Distribution: Sofia.
Records: Golemansky & Kuldjieva (1981).

***Eimeria ovina* (Marotel,1905) Levine & Ivens, 1970**
Hosts: Mammalia: Artiodactyla: *Ovis aries, O. musimon, Amotragus lervia.*
Site of infection: intestine.
Distribution: througout the country, Sofia Zoo.
Records: Mincheva et al. (1966), Golemansky & Yuzev (1977), Stoyanov et al. (2009).

***Eimeria pallida* Christensen, 1938**
Hosts: Mammalia: Artiodactyla: *Capra hircus*.
Site of infection: intestine.
Distribution: througout the country.
Records: Sabev (2006, 2012).

***Eimeria papillata* Ernst, Chobotar & Hammond, 1971**
Hosts: Mammalia: Rodentia: *Mus musculus*.
Site of infection: intestine.
Distribution: reserve Arkoutino.
Records: Golemansky (1979).

***Eimeria parva* Kotlan, Mocsva & Vajda, 1929**
Hosts: Mammalia: Artiodactyla: *Ovis aries, O. musimon,Capra hircus, Amotragus lervia, Cervus dama.*
Site of infection: intestine.
Distribution: througout the country, Sofia Zoo.
Records: Bankov & Ivanov (1958), Mincheva et al. (1966), Meshkov & Yordanov (1970), Golemansky &Yuzev (1977), Halacheva et al. (2003, 2004), Sabev (2006, 2012), Stoyanov et al. (2009).

***Eimeria parvula* Kotlan, 1933**
Hosts: Aves: Anseriformes**:** *Anser anser.*
Site of infection: intestine.
Distribution: througout the country.
Records: Arnaudov (1969).
***Eimeria pacifica* Ormsbee, 1939**
Hosts: Aves: Galliformes: *Phasianus colchicus.*
Site of infection: intestine.
Distribution: Berkovitza, Borovci and Yagodovo near Montana.
Records: Golemansky (1976 b), Golemansky & Yuzev (1980), Yuzev (1980, 1987).
***Eimeria panda* Supperer & Kutzer, 1961**
Hosts: Mammalia: Artiodactyla: *Capreolus capreolus.*
Site of infection: intestine.
Distribution: througout the country.
Records: Golemansky (1986a, b).

***Eimeria pellerdi* Prassad, 1960**
Hosts: Mammalia: Artiodactyla: *Camellus bactrianus.*
Site of infection: intestine.
Distribution: Sofia Zoo.
Records: Stoyanov et al. (2009).
***Eimeria perardi* Yakimoff & Gousseff, 1936**
Hosts: Mammalia: Insectivora: *Erinaceus europaeus.*
Site of infection: intestine.
Distribution: reserve Srebarna.
Records: Golemansky (1979).
***Eimeria perforans* (Leuckart, 1879) Sluiter & Swellengreber, 1912**
Hosts: Mammalia: Lagomorpha: *Oryctolagus cuniculus.*
Site of infection: intestine.
Distribution: througout the country.
Records: Pashev (1911), Meshkov (1973 a), Kostova (1989), Vladov (2016).
***Eimeria perminuta* Henry, 1931**
Hosts: Mammalia: Artiodactyla: *Sus domesticus.*
Site of infection: intestine.
Distribution: througout the country.
Authors: Dimitrova et al. (1961), Bankov (1961).
***Eimeria phasiani* Tyzzer, 1929**
(syn.: *E.fasiani* Anguelov et al., 1954).
Hosts: Aves: Galliformes: *Phasianus colchicus, Alectorix graeca.*
Site of infection: intestine.
Distribution: Berkovica, Elhovo, Yambol, Northwestern Bulgaria.
Records: Angelov et al. (1954), Zapryanov (1976), Golemansky (1976), Golemansky & Yuzev (1980), Yuzev (1980).
***Eimeria piriformis* Kotlan & Pospech, 1934**
Hosts: Mammalia: Lagomorpha: *Oryctolagus cuniculus.*
Localisation: intestine.
Distribution: througout the country.
Records: Kostova (1989), Vladov (2016).
***Eimeria pitymidis* Golemansky & Yankova, 1973**
Hosts: Mammalia: Rodentia: *Microtus (Pitymis) subterraneus.*
Site of infection: intestine.
Distribution: Borovetz, reserve Parangalitza, Balkan (Botev peak).
Records: Golemansky & Yankova (1973), Golemansky (1979).
***Eimeria pragensis* Cerna & Senaud, 1971**
Hosts: Mammalia: Rodentia: *Clethrionomys glareolus.*
Site of infection: intestine.
Distribution: reserve Parangalitza.
Records: Golemansky (1979).
***Eimeria prasadi* Levine & Ivens, 1965**
Hosts: Mammalia: Rodentia: *Apodemus sylvaticus, A. flavicollis.*
Site of infection: intestine.
Distribution: reserves Srebarna and Arkoutino.
Records: Golemansky (1979).
***Eimeria procera* Haase, 1939**
Hosts: Aves: Galliformes: *Alectorix graeca, Perdix perdix.*
Site of infection: intestine.
Distribution: Berkovica, Haskovo.
Records: Golemansky (1976b), Zapryanov (1976).
***Eimeria ponderosa* Wetzel, 1942**
Hosts: Mammalia: Artiodactyla: *Capreolus capreolus.*
Site of infection: intestine.
Distribution: througout the country.
Records: Golemansky (1986a).
***Eimeria riedmuelleri* Yakimoff & Matschulsky, 1940**
Hosts: Mammalia: Artiodactyla: *Rupicapra rupicapra.*
Site of infection: intestine.
Distribution: Rhodopes Mts.
Records: Golemansky (2003).
***Eimeria ridjakovi* Golemansky, 1976**
Hosts: Aves: Galliformes: *Perdix perdix.*
Site of infection: intestine.
Distribution: regions of Montana and Vidin.
Records: Golemansky (1976a, 1977b).

***Eimeria ropotamae* Golemansky, 1978**
Hosts: Mammalia: Insectivora: *Crocidura leucodon.*
Site of infection: intestine.
Distribution: reserve Arkoutino.
Records: Golemansky (1978, 1979).
***Eimeria rotunda* Pellerdy, 1955**
Hosts: Mammalia: Artiodactyla: *Capreolus capreolus.*
Site of infection: intestine.
Distribution: througout the country.
Records: Golemansky (1986a, 1986b).

***Eimeria rupicaprae* Galli-Valerio, 1924**
Hosts: Mammalia: Artiodactyla: *Rupicapra rupicapra.*
Site of infection: intestine.
Distribution: Rhodopes Mts.

Records: Golemansky (2003).

***Eimeria rysavyi* Levine, 1965**

Hosts: Mammalia: Rodentia: *Clethrionomys glareolus.*

Site of infection: intestine.

Distribution: througout the country.

Records: Golemansky & Yankova (1973), Golemansky (1979).

***Eimeria scabra* Henry, 1931**

Hosts: Mammalia: Artiodactyla: *Sus domesticus, Sus scrofa.*

Site of infection: intestine.

Distribution: througout the country.

Records: Bankov (1961), Dimitrova et al. (1961).

***Eimeria sciurorum* Galli-Valerio, 1922**

Hosts: Mammalia: Rodentia: *Sciurus vulgaris.*

Site of infection: intestine.

Distribution: Kustendil, Sofia, Govedarci near Samokov.

Records: Golemansky & Duhlinska (1973).

***Eimeria semisculpta* (Madsen, 1938) Pellerdy, 1956**

Hosts: Mammalia: Lagomorpha: *Lepus europaeus.*

Site of infection: intestine.

Distribution: througout the country.

Records: Golemansky (1975c).

***Eimeria silvana* Pellerdy, 1954**

Hosts: Mammalia: Rodentia: *Sciurus vulgaris.*

Site of infection: intestine.

Distribution: Govedarci near Samokov, Kustendil, Sofia.

Records: Golemansky & Duhlinska (1973).

***Eimeria smithi* Yakimov & Galouzo, 1927**

Hosts: Mammalia: Artiodactyla: *Bos taurus.*

Site of infection: intestine.

Distribution: througout the country.

Remarks: Mincheva & Chilev (1963), Donev (1963).

***Eimeria spinosa* Henry, 1931**

Hosts: Mammalia: Artiodactyla: *Sus domesticus, Sus scrofa.*

Site of infection: intestine.

Distribution: througout the country.

Records: Bankov (1961), Dimitrova et al. (1961).

***Eimeria stankovitschi* Pinto, 1928**

Hosts: Pisces: Cypriniformes: *Abramis brama.*

Site of infection: intestine.

Distribution: Ovcharitsa Dam Lake.

Records: Grupcheva (1987), Grupcheva & Golemansky (1990), Grupcheva et al. (2006).

***Eimeria stiedae* (Lindemann, 1865) Kisskalt & Hartmann, 1907**

Hosts: Mammalia: Lagomorpha: *Lepus europaeus, Oryctolagus cunniculus.*

Site of infection: liver.

Distribution: througout the country.

Records: Pashev (1911), Anguelov et al. (1954), Meshkov (1973), Kostova (1989), Vladov (2016).

***Eimeria subspherica* Christensen, 1941**

Hosts: Mammalia: Artiodactyla: *Bubalus bubalus.*

Site of infection: intestine.

Distribution: North and North-eastern Bulgaria: regions o f Lovech, Shumen, Gabrovo.

Records: Vitanov (1999), Vitanov & Halacheva (2003).

***Eimeria superba* Pellerdy, 1955**

Hosts: Mammalia: Artiodactyla: *Capreolus capreolus.*

Site of infection: intestine.

Distribution: Tervel.

Records: Golemansky (1986a, 1986b).

***Eimeria tenella* (Raillict & Lucet, 1891) Fantham, 1909**

Hosts: Aves: Galliformes: *Callus domesticus, Alectoryx graeca cypriotus.*

Site of infection: intestine.

Distribution: througout the country.

Records: Mincheva (1942, 1956), Matov (1956), Mincheva et al. (1963), Meshkov (1972), Kolev et al. (1976), Zaprianov (1976, 1979).

***Eimeria truncata* Railliet & Lucet, 1891**

Hosts: Aves: Anseriformes: *Anser anser.*

Site of infection: intestine.

Distribution: througout the country.

Records: Mincheva (1942), Monov (1963), Arnaudov (1969), Golemansky (1964).

***Eimeria turturi* Golemansky, 1976**

Hosts: Aves: Columbiformes: *Streptopelia turtur.*

Site of infection: intestine.

Distribution: Blagovo and Jivovci, region of Montana.

Records: Golemansky (1976a, 1977b).

***Eineria vejdovskyi* (Pakandl, 1988)**

Hosts: Mammalia: Lagomorpha: *Oryctolagus cuniculus.*

Site of infection: intestine.

Distribution: througout the country.

Records: Vladov (2016).

***Eimeria ventriosa* Hoare, 1939**

Hosts: Aves: Galliformes: *Tetrao urogallus.*

Site of infection: intestine.

Distribution: Rhodopes Mts (Devin).

Records: Golemansky & Kuldjieva (1981).

***Eimeria vulpis* Galli-Valerio, 1929**

Hosts: Mammalia: Carnivora: *Vulpes vulpes.*

Site of infection: intestine.

Distribution: North-western Bulgaria (Vraca, Montana, Vidin).

Records: Golemansky & Ridjakov (1975).

***Eimeria wyomingensis* Huizinga & Winger, 1942**

Hosts: Mammalia: Artiodactyla: *Bos taurus*, *Bubalus bubalus.*

Site of infection: intestine.

Distribution: North and North-eastern Bulgaria: Lovech, Gabrovo, Shumen.

Records: Kurtov (1975), Vitanov (1999), Vitanov & Halacheva (2003).

***Eimeria yakimoffmatshfulskyi* Superer & Kutzer, 1961**

Hosts: Mammalia: Artiodactyla: *Rupicapra rupicapra.*

Localisation: intestine.

Distribution: Rhodopes Mts (Devin).

Records: Golemansky (2003).

***Eimeria zuernii* (Rivolta, 1872) Martin, 1909**

Hosts: Mammalia: Artiodactyla: *Bos taurus, Bubalus bubalus.*

Site of infection: intestine.

Distribution: througout the country.

Records: Mincheva & Chilev (1959), Kurtov (1975), Vitanov (1999), Vitanov & Halacheva (2003).

***Eimeria cf. subsphaerica* Christensen, 1941**

Hosts: *Bos taurus.*

Site of infection: intestine.

Distribution: Veliko Tarnovo.

Remarks: Kurtov (1975).

***Eimeria* sp. 1.**

Hosts: Pisces: *Alburnus alburnus*, *Aristichtis nobilis, Carassius auratus gibelio, Gobio gobio, Rutilus rutilus.*

Site of infection: intestine., kidney, spleen, gills.

Distribution: many rivers and dam lakes in the country.

Records: See Grupcheva et al. (2006).

***Eimeria* sp. 2.**

Hosts: Aves: Galliformes:*Tetrao urogallus, Anser anser domestica.*

Site of infection: intestine.

Distribution: region o f Plovdiv (Sadovo, Tcheshnigirovo).

Records: Golemansky (1964)/

***Eimeria* sp. 3.**

Hosts: Mammalia: Artiodactyla: *Ovies aries, Capreolus capreolus, Addax nasomaculatus,* Lagomorpha: *Lepus europaeus,* Carnivora: *Vulpes vulpes,* Rodentia: *Cynomys ludovicianus.*

Site of infection: intestine.

Distribution: Sofia Zoo, througout the country.

Records: Mincheva et al. (1966), Golemansky (1975c, 1986), Golemansky & Ridjakov (1975), Stoyanov et al. (2009).

***7. Goussia* Labbe, 1896**

***Goussia alburni* (Stankovitch, 1920)**

(Syn. *Eimeria alburni* Stankovitch 1920, see Grupcheva et al. 2006)

Hosts: Pisces: Cypriniformes: *Alburnus alburnus.*

Site of infection: spleen, gall bladder.

Distribution: Rhodopes Mts (Batak, Dospat Dam Lakes).

Records: See Grupcheva et al. (2006).

***Goussia carpelli* (Leger & Stankovitch, 1921)**

(Syn. *Eimeria carpelli* Leger and Stankovitch, 1921; *Eimeria cyprini* Plehn, 1924, see Grupcheva et al. 2006)

Hosts: Pisces: Cypriniformes: *Cyprinus carpio, Carassius auratus gibelio.*

Site of infection: intestine.

Distribution: many rivers and Dam Lakes in the country.

Records: See Grupcheva et al. (2006).

***Goussia cheni* (Schulmann & Zaika, 1962)**

(Syn. *Eimeria cheni* Schulmann & Zaika, 1962, see Grupcheva et al. 2006)

Hosts: Pisces: Cypriniformes: *Aristichthys nobilis, Hypophthalmichthys molitrix.*

Site of infection: intestine.

Distribution: Fish farms "Mechka", "Plovdiv" and "Polikraishte".

Records: See Grupcheva et al. (2006).

***Goussevia metchnikovi* (Laveran, 1897)**

(Syn. *Eimeria metchnikovi* Laveran. 1897, see Grupcheva et al. 2006)

Hosts: Pisces: Cypriniformes: *Gobio albipinnatus, G. gobio, G. kessleri*

Site of infection: spleen, kidney.

Distribution: Danube River, Dospat Dam Lake.

Records: See Grupcheva et al. (2006).

***Goussia cf. metchnikovi* (Laveran, 1897)**

(Syn. *Eimeria cf. metchnikovi* (Laveran, 1897), see Grupcheva et al. 2006)

Hosts: Pisces: Cypriniformes: *Gobio kessleri, G. albipinnatus.*

Site of infection: liver, kidney.

Distributiobn: River Danube (Baikal, Koshava).

Records: See Grupcheva et al. (2006).

***Goussia sinensis* (Chen, 1956)**

(Syn. *Eimeria sinensis* Chen, 1956, see Grupcheva et al. 2006)

Hosts: Pisces: Cypriniformes: *Aristhichthys nobilis, Hypophthalmichthys molitrix.*

Site of infection: intestine.

Distribution: Fish farms "Mechka", "Plovdiv", "Polikraishte".

Records: See Grupcheva et al. (2006).

***Goussia subepitlielialis* (Moroff & Fiebiger, 1905)**

(Syn. *Eimeria subepithelialis* Moroff & Fiebiger, 1905, see Grupcheva et al. 2006)

Hosts: Pisces: Cypriniformes: *Cyprinus carpio.*

Site of infection: intestine.

Distribution: Fish farms and Dam Lakes througout the country.

Records: See Grupcheva et al. (2006).

8. *Cystoisospora* Garcia, 2006

***Cystoisospora belli* (Wenyon, 1923) Garcia, 2006**

(Syn. *Isospora belli* Wenyon, 1923, see Lalova 1978)

Hosts: Mammalia: Primates: *Homo sapiens.*

Site of infection: intestine.

Distribution: rare in Bulgaria**.**

Records:: Lalova (1978) (Cited after Petrov & Kurdova 2016).

9. *Isospora* Schneider, 1881

***Isospora araneae* Golemansky, 1978**

Hosts: Mammalia: Insectivora: *Sorex araneus.*

Site of infection: intestine.

Distribution: Rila Mts (reserve Parangalitsa).

Records: Golemansky (1978, 1979).

***Isospora bigemina* (Stiles, 1891) Lühe, 1906**

Hosts: Mammalia: Carnivora: *Vulpes vulpes.*

Site of infection: intestine.

Distribution: North-western Bulgaria (Vidin, Vratsa, Montana).

Records: Golemansky & **Ridjakov** (1975).

Isospora bigemina var. hominis ?

Hosts: Mammalia: Primates**:***Homo sapiens.*

Site of infection: men's urine.
Distribution: Sofia.
Records: Todorov & Jelev (1951).

***Isospora canivelocis* (Weidmann, 1915) Wenyon, 1923**

Hosts: Mammalia: Carnivora: *Vulpes vulpes*.
Site of infection: intestine.
Distribution: North-western Bulgaria: regions of Vratsa, Montana, Vidin.
Records: Golemansky & Ridjakov (1975).

***Isospora carduelis* Gottschalk, 1969**

Hosts: Aves: Passeriformes: *Carduelis carduelis.*
Site of infection: intestine.
Distribution: region of Plovdiv (Popenci).
Records: Golemansky (1977b).

***Isospora chloridis* Anwar, 1966**

Hosts: Aves: Passeriformes: *Fringila coelebs.*
Site of infection: intestine.
Distribution: Sredna gora Mts (Sakardja).
Records: Golemansky (1977b).

***Isospora clethrionomydis* Golemansky & Yankova, 1973**

Hosts: Mammalia: Rodentia: *Clethrionomys glareolus.*
Site of infection: intestine.
Distribution: througout the country.
Records: Golemansky & Yankova (1973), Golemansky (1979).

***Isospora felis* Wenyon, 1923**

Hosts: Mammalia: Carnivora: *Felis catus*, *Felis sylvestris, Lynx linx, Panthera tigris altaica.*
Site of infection: intestine.
Distribution: Kyustendil**,** Vitosha Mts, Sofia Zoo.
Records: Kolev et al. (1973), Golemansky (2003), Stoyanov et al. (2009).

***Isospora dilatata* Schwalbach, 1959**

Hosts: Aves: Passeriformes: *Sturnus vulgaris.*
Site of infection: intestine.
Distribution: region of Sofia (Dolni Bogrov, Opitsvet), Primorsko (Burgas).
Records: Golemansky (1976b, 1977b).

***Isospora hominis* Rivolta 1879**

Hosts: Mammalia: Primates: *Homo sapiens.*
Site of infection: intestine.
Distribution: througout the country, mainly in tourists.
Records: Kourdova et al. (2002).

***Isospora hirundinis* Schwalbach, 1959**

Hosts: Aves: Passeriformes: *Hirundo rustica.*
Site of infection: intestine.
Distribution: Primorsko (Burgas).
Records: Golemansky (1977b).

***Isospora lacazei* Labbe, 1893**

Hosts: Aves: Passeriformes: *Parus major, P. coeruleus, P. domesticus, P. hispaniolensis, Monticola saxatilis, Acrocephalus arundinaceus, Galerida cristata, Lanius colurio,* Anseriformes: *Anser anser,* Galliformes: *Meleagris gallopavo.*
Site of infection: intestine.
Distribution: througout the country.
Records: Pavlov (1954), Golemansky (1964a, 1964b, 1977b).

***Isospora lieberkuhni* (Labbe, 1894) Laveran & Mesnil, 1902**

Hosts: Amphibia: Ecaudata: *Bombina variegata.*
Site of infection: kidney.
Distribution: region of Sofia.
Records: Golemansky & Miceva (1975).

***Isospora lusciniae* Golemansky, 1977**

Hosts: Aves: Passeriformes: *Luscinia megarhynchus.*
Site of infection: intestine.
Distribution: Blagoevgrad, Burgas (Primorsko).
Records: Golemansky (1977a, 1977b).

***Isospora nankinovi* Golemansky, 1976**

Hosts: Aves: Passeriformes: *Garrulus glandarius.*
Site of infection: intestine.
Distribution: region of Montana.
Records: Golemansky (1976a, 1977b).

***Isospora neomyi* Golemansky, 1978**

Hosts: Mammalia: Rodentia: *Neomys anomalus, N. fodiens.*
Site of infection: intestine.
Distribution: Rila Mts (reserve Parangalitsa).
Records: Golemansky (1978, 1979).

***Isospora rochalimai* (Yakimoff & Gousseff, 1936) Pellerdy, 1974**

Hosts: Aves: Passeriformes: *Pica pica.*
Site of infection: intestine.
Distribution: Sofia, Berkovica.
Records: Golemansky (1976b).

***Isospora sittae* Golemansky, 19**77
Hosts: Aves: Passeriformes: *Sitta europea.*
Site of infection: intestine.
Distribution: Sredna Gora Mts (Sakardja).
Records: Golemansky (1977a, 1977b).

***Isospora schwetzi* Yakimoff & Matschoulsky, 1939**

Hosts: Aves: Passeriformes: *Corvus corone.*
Site of infection: intestine.
Distribution: region of Montana (Komarevo).
Records: Golemansky (1976b).

***Isospora soricis* Golemansky & Yankova, 1973**

Hosts: Mammalia: Insectivora: *Sorex araneus.*
Site of infection: intestine.
Distribution: Rila Mts (Borovets), Kotel, Sliven, Balkan (Botev peak), Vitosha Mts (Bistritsa).
Record: Golemansky & Yankova (1973).

***Isospora suis* Beister & Murray, 1934**

Hosts: Mammalia: Artiodactyla: *Sus domesticus, Sus scrofa.*
Site of infection: intestine.
Distribution: througout the country.
Records: Bankov (1961), Dimitrova et al. (1961).

***Isospora talpae* Golemansky, 1979**

Hosts: Mammalia: Insectivora: *Talpa europaea.*
Site of infection: intestine.
Distribution: region of Sofia, reserve Srebarna.
Records: Golemansky (1978).

***Isospora turdi* Schwalbach, 1959**

Hosts: Aves: Passeriformes: *Turdus pilaris.*
Site of infection: intestine.
Distribution: Region of Sofia (Dolni Bogrov, Opitsvet).

Records: Golemansky (1976b).

***Isospora vulpina* Nieschulz & Bos, 1933**

Hosts: Mammalia: Carnivora: *Vulpes vulpes.*

Site of infection: intestine.

Distribution: regions of Vratsa, Vidin, Montana.

Records: Golemansky & Ridjakov (1975).

***Isospora vulpis* Galli-Valerio, 1931**

Hosts: Mammalia: Carnivora: *Vulpes vulpes.*

Site of infection: intestine.

Distribution: regions of Vratsa, Vidin, Montana.

Records: Golemansky & Ridjakov (1975).

***Isospora* sp. 1**

Hosts*:* Mammalia: Artiodactyla*: Bos taurus.*

Site of infection:intestine.

Distribution: Veliko Tarnovo.

Remarks: Kurtov (1975).

***Isospora* sp.** 2.

Hosts: Aves: Galliformes: *Phasianus colchicus.*

Site of infection: intestine.

Distribution: Farms in Elhovo and Russe.

Records: Yuzev (1987).

10. *Tyzzeria* Allen, 1936

***Tyzzeria anseris* Nieshulz 1947**

(Syn. *Eimeria parvula* Kotlan, 1933, see Arnaudov 1969)

Hosts: Aves: Anseriformes*: Anser anser domestica.*

Site of infection: intestine.

Distribution: througout the country.

Records: Golemansky (1964b).

***Tyzzeria perniciosa* Allen, 1936**

Hosts: Aves: Galliformes**:** *Anas acuta.*

Site of infection: intestine.

Distribution: Vratca (Fouren).

Records: Golemansky (1977b).

Family Sarcocystidae Poche, 1913

Subfamily Sarcocystinae Poche, 1913

11. *Sarcocystis* Lankester, 1882

***Sarcocystis arieticanis* Heydorn, 1985**

Hosts: Mammalia: Artiodactyla: *Ovis aries*; Carnivora: *Canis familiaris.*

Site of infection: muscles.

Distribution: througout the country.

Records: `Ivanov (1995, 1998, 2006).

***Sarcocystis capracanis* Levine, 1983**

Hosts: Mammalia: Artiodactyla: *Capra hircus*; Carnivora: *Canis familiaris.*

Site of infection: muscles.

Distribution: througout the country.

Records: Ivanov (1995, 1998, 2006).

***Sarcocystis cletrionomybuteonis* (Rommel & Krampitz, 1975) Cerna, Kolarova & Sulc, 1978**

Hosts: Aves: Falconiformes: *Buteo buteo.*

Site of infection: faeces.

Distribution: Sofia (Ravno pole).

Records: Golemansky & Kuldjieva (1981).

***Sarcocystis dispersa* Cerna, Kolarova & Sulc, 1079**

Hosts: Aves: Strigiformes: *Tyto alba.*

Site of infection: faeces.

Distribution: Plovdiv (Brezovo).

Records: Golemansky & Kuldjieva (1981).

***Sarcocystis gigantea* Levine, 1983**

Hosts: Mammalia: Artiodactyla: *Ovis aries*; Carnivora: *Felis catus.*

Site of infection: muscles.

Distribution: througout the country.

Records: Ivanov (2006).

***Sarcocystis hircicanis* Dubey & Odening, 1998**

Hosts: Mammalia: Artiodactyla: *Capra hircus*; Carnivora: *Canis familiaris.*

Site of infection: muscles.

Distribution: througout the country.

Records: Ivanov (2006).

***Sarcocystis miescheriana* Kuhn, 1865**

Hosts: Mammalia: Carnivora: *Canis aureus.*

Site of infection: muscles, faeces.

Distribution: Strandja Mts.

Records: Meshkov (1980).

***Sarcocystis ovicanis* Heydorn, Gestrich, Mehlhorn & Romel, 1975**

Hosts: Mammalia: Artiodactyla: *Ovis aries*; Carnivora: *Canis familiaris.*

Site of infection: muscles.

Distribution: througout the country.

Records: Ivanov & Dinev (1992), Ivanov (2006), Ivanov et al. (2002).

***Sarcocystis* sp. 1**

Hosts: Mammalia: Artiodactyla: *Bos taurus, Ovis aries*.

Site of infection: muscles.

Distribution: South-eastern Bulgaria.

Records: Meshkov (1973a, 1973b).

***Sarcocystis* sp. 2**

Hosts: Mammalia: Carnivora: *Vulpes vulpes, Canis lupus, Canis aureus, Alopex lagopus.*

Site of infection: faeces.

Distribution: througout the country, Sofia Zoo.

Records: Golemansky & Ridjakov (1975), Golemansky (1975b, 1975d, 2003), Stoyanov et al. (2009).

***Sarcocystis* sp. 3**

Hosts: Mammalia: Primates: *Homo sapiens.*

Site of infection: intestine, faeces.

Distribution: througout the country.

Records: Kourdova et al. (2002).

Subfamily Toxoplasmatinae Biocca, 1957

11. *Toxoplasma* Nicolle & Manceaux, 1909

***Toxoplasma gondii* Nicolle & Manceaux, 1908**

Hosts: Mammalia: Primates: *Homo sapiens*; Artiodactyla: *Bos taurus, Capra hircus, Ovies aries*; Perissodactyla: *Equus caballus*; Carnivora: *Canis familiaris*; Insectivora: *Crocidura suaveolens.*

Site of infection: blood, brain, muscles.

Distribution: througout the country.

Records: Drenowsky (1947), Konstantinov et al. (1955), Gigov (1956), Angelov et al. (1956, 1957, 1958), Bratanov (1957),Chipev (1961), Donev (1972, 1974), Kourdova et al. (2002).

12. *Neospora* Dubey et al. 1988

***Neospora caninum* Dubey at al. 1988**

Hosts: Mammalia: Artiodactyla: *Bos taurus,* Carnivora: *Canis familiaris.*

Site of infection: different organs and tissues.
Distribution: througout the country.
Records: Georgieva et al. (2005), Prelezov et al. (2009).

Conclusion

The analysis of the studies on the coccidian parasites (Apicomplexa: Eucoccidiorida) in Bulgaria shows the presence of a total of 195 species of 12 genera and 4 families. A part of them, i.e. 10 species, were not identified at the species level and probably they belong to other recorded species or some of them are undescribed species. The major part of the published taxa from the country belongs to the family Eimeriidae:165 identified and 5 unidentified species of 6 genera: *Eimeria* (135), *Tsospora* (27), *Goussia* (7), *Tyzzeria* (2), *Cyclospora* (1) and *Cystoisospora* (1). Coccidian parasites of humans, domestic and game animals are more adequately studied than other coccidians in the country. The other relatively fully examined animal groups include the small mammals of Rodentia and Insectivora, some wild birds and the freshwater fishes. However, the cocered host species are a very limited part of the reach vertebrate and invertebrate fauna of Bulgaria. The description in the last decades of about 20 new species from the country as well as the presence of many unidentified taxa reported by various authors lead to the suggestion that the important group of coccidian parasites is not well known and needs more intensive investigations.

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