Helminths of Small Mammals (Erinaceomorpha, Soricomorpha, Chiroptera, Rodentia, and Lagomorpha) of Mongolia

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HELMINTHS OF SMALL MAMMALS (ERINACEOMORPHA, SORICOMORPHA, CHIROPTERA, RODENTIA, AND LAGOMORPHA) OF MONGOLIA

DAVID S. TINNIN, SUMIYA GANZORIG, AND SCOTT L. GARDNER
Front cover: Left: Metacestodes of the genus *Taenia* from the body cavity of *Meriones meridianus*, NK166316, MSB199748, from Mongolia, Gobi Gurvan Saikhan National Park; Khongorin Els; Saxaul Forest; 24 July 2009. Top right: Long-eared hedgehog, *Hemiechinus auritus*, in the Gobi Gurvan Saikhan National Park. Bottom right: Typical Mongolian “Ger” in the countryside near Ikh Bogd Mountain, Mongolia. Photographs by team members of the Mongolian Vertebrate Parasite Project.
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DAVID S. TINNIN, SUMIYA GANZORIG, AND SCOTT L. GARDNER

ABSTRACT

Ninety-eight species of small mammal, excluding carnivores and ungulates, are currently recognized in the fauna of Mongolia. A list of species of helminths known to infect these species, both within Mongolia and across their range, is presented in an effort to aid in their study. A detailed bibliography of pertinent survey and related publications is provided.

Key words: Acanthocephala, bat, cestode, helminth, insectivore, lagomorphs, mammal, Mongolia, nematode, rodent, trematode

INTRODUCTION

Within the fauna of Mongolia there are currently 98 recognized species of small mammals (Erinaceomorpha, Soricimorpha, Chiroptera, Rodentia, and Lagomorpha). None of these species are endemic to the country, and their known geographic ranges are highly variable, ranging from narrow distributions along the borders of Mongolia and neighboring regions of northern China or Transbaikal Russia, to Holarctic. Most however, as currently recognized, are moderately distributed across Central Asia (Bannikov 1954; Sokolov and Orlov 1980; Tinnin et al. 2002; Clark et al. 2006).

Much of the literature concerning these species and their helminths is found in disparate, and sometimes questionable, sources from across Eurasia. Few current papers have been published on the parasite biodiversity of the region so, in an effort to aid in the study of the biodiversity of parasites of small mammals of the Mongolian and Central Asian region, we reviewed the literature to provide a list of known parasites from those species. As can be expected, species with the widest distributions, particularly those that occur through Asia and into Europe, are those that have been studied the most. Those species with more limited distributions, particularly those restricted to Central Asia or narrower ranges, are the least studied, or often, these species have never had parasites reported from them and are totally unknown.

Of these 98 species of small mammals known from Mongolia, 63 currently have no known parasites within the country. Of the 35 mammal species from which helminths are known, only 6 currently are known to be hosts for more than two species of parasite. From these host species there are 31 species of helminths known within the country. Across their entire Eurasian ranges, 31 of these mammals have no record of being hosts for parasites. Twelve of those studied across their ranges are currently only known to host a single species of helminth. Currently there is a total of 384 species of helminths known to infect these small mammals across Eurasia outside of Mongolia.

Data for the list was compiled from examination of a total of 449 publications. Due to the evolving nature of our understanding of species limits within helminths, a concerted effort to resolve all synonomies among species reported, over the course of the last century, was not undertaken. As it is easier to resolve the ultimate identity of a species from its most restrictive identification rather than its recent, or past, broader synonymization, it was deemed wiser to list them as identified. However, some effort was exerted to make the species reported, in terms of generic membership, consistent as far as recent taxonomy is concerned.
Hopefully, this list can serve to emphasize what is known, parasitologically, from the region, and as a starting point to further our understanding of host/parasite relationships and the natural history of species from the region.

**Species Accounts**

**ERINACEOMORPHA**

*Erinaceidae*

**Hemiechinus auritus** (Gmelin 1770)

*Long-eared Hedgehog*

*Distribution.*—*Hemiechinus auritus* is found across northern Eurasia from eastern Ukraine to Mongolia, and in the southern part of its range from Libya to western Pakistan. In Mongolia, it is found across the desert and semi-desert areas of the northwestern and southern parts of the country.

*Parasites.*—In Mongolia: ACANTHOCEPHALATA - *Moniliformis moniliformis* (Bremser 1811). Across range: ACANTHOCEPHALATA - *Moniliformis moniliformis* (Bremser 1811), *Nephridiorhynchus major* (Bremser 1811); CESTODA - *Mathevotaenia skrjabini* Spassky 1949, *Mesocestoides lineatus* (Goeze 1782); NEMATA - *Physaloptera anadonta* Shaldybin 1960, *Physaloptera dispar* Linstow 1904, *Physaloptera erinacei* Tokobaev and Erkulov 1970, *Rictularia shaldybin* Skrjabin, Sobolev, and Ivashkin 1967, *Rictularia sp.*, *Skrjabin sp.*, *Sobolevspirura arali* Shaldybin 1960, *Spirura rytipleurites seurati* (Deslongchamps 1824), *Trichinella nativa* Britov and Boev 1972.

*Comments.*—Boev et al. (1975) confirmed identification of *T. nativa* in Kazakhstan, not *T. spiralis* as previously reported by Boev et al. 1966.

*Literature.*—Spassky 1949; Shaldybin 1960; Kurashvili 1967; Skrjabin, Sobolev, and Ivashkin 1967b; Gafurov 1970; Barus, Kullmann, and Tenora 1970; Davlatov 1974; Tokobaev 1976; Boev et al. 1966, 1975; Erkulov and Moldopiyazova 1986; Tinnin et al. 2002, 2008.

**Mesochinus dauricus** (Sundevall 1842)

*Daurian Hedgehog*

*Distribution.*—The Daurian hedgehog ranges from central China across Mongolia into the Amur region of Siberia. In Mongolia they are found in the northeast part of the country in steppe and forest-steppe habitats.

*Parasites.*—In Mongolia: *Moniliformis moniliformis* (Bremser 1811). Across range: *Macracanthorhynchus catulinus* Kostylew 1927.

*Literature.*—Barus, Kullmann, and Tenora 1970; Tinnin et al. 2002; Hutterer 2005a; Tinnin et al. 2008.

**SORICOMORPHA**

*Soricidae*

**Crocidura sibirica** Dukelsky 1930

*Siberian Shrew*

*Distribution.*—The Siberian shrew ranges across southern Siberia, Mongolia, and China. In Mongolia they are known from the Mongolian Altai, Khangay Mountains, and from scattered localities in the eastern Gobi and southern desert near water sources.

*Parasites.*—In Mongolia: None currently known. Across range: CESTODA - *Hepatocestus hepaticus* (Baer 1932).

*Comments.*—In northern regions, these shrews are known to occasionally inhabit mole tunnel systems.

*Literature.*—Karpenko 1996; Tinnin et al. 2002; Hutterer 2005b; Batsaikhan et al. 2010.
Neomys fodiens (Pennant 1771)
Eurasian Water Shrew

Distribution.—Water shrews are found across Eurasia from Great Britain to Korea and Sakhalin Island. In Mongolia they are found in the northern mountains and Great Lakes regions.

Parasites.—In Mongolia: None currently known. Across range: ACANTHOCEPHALA - Polymorphus minutus (Goeze 1782); CESTODA - Choanotaenia estavarensis Euzet and Jourdane 1968, Choanotaenia filamentosae (Goeze 1782), Coronacanthus integra (Hammann 1891), Coronacanthus magnihamatus Vasileva et al. 2005, Coronacanthus omissa (Baer and Joycey 1943), Coronacanthus vassili Genov 1980, Cryptocotylepis globosoides (Soltys 1953), Dintestocotyle diaphana (Cholodkosky 1906), Hepatocestus hepatica (Baer 1932), Hymenolepis alpestris Baer 1931, Hymenolepis anacetabilata Soltys 1953, Hymenolepis fodiensis Vacher 1971, Hymenolepis globosa Baer 1931, Hymenolepis magniostellata Baer 1931, Hymenolepis polyacantha Baer 1931, Hymenolepis neomidis Baer 1931, Hymenolepis tridontophora Soltys 1953, Insectivorolepis infirma Zarnowski 1955, Lineolepis scutigera (Dujardin 1845), Metorchis revilliodi Baer 1931, Neoskrjabinolepis schaldybini Spassky 1947, Pseudobothriolepis mathevossianae Shaldybin 1957, Soricinia soricis (Baer 1927), Sinuterilepis diglobovari Sadovskaya 1965, Staphylocystis bacillaris (Goeze 1782), Staphylocystis jacobsoni Linstow 1907, Staphylocystis loossi (Hilmy 1936), Staphylocystis pistillum (Dujardin 1845), Staphylocystis tiara (Dujardin 1845), Taenia leuckarti Krabbe 1869, Triodontolepis bovanensi Vasileva et al. 2005, Triodontolepis bifurca (Hammann 1891), Triodontolepis hamanni (Mrazek 1891), Triodontolepis kurashvili Prokopi and Matsaberidze 1971, Triodontolepis skrjabini Spassky and Andreiko 1968, Triodontolepis torrentis Murai 1987, Vampyrolepis heleni Shaldybin 1964, Vigilosolepis barbascoleq Spassky 1949, Vigilosolepis spinulosa (Cholodkowsky 1906); NEMATA - Capillaria oesophagicola Soltys 1952, Capillaria incrassata (Diesling 1851), Capillaria konstantini Romashov 1999, Crenosoma skrjabini Pologentsiev 1935, Eucoloeus bernardi Romashov 1983, Longistriata neomi Lyubarskaya 1962, Physaloptera sorigina (Baylis 1934), Porrocaecum depressum larval (Zeder 1800), Syphacia obvelata (Rudolph 1802), Thominx blarinae (Ogren 1953), Trichinella spiralis (Owen 1835), Trichuris (= Trichocephalus) neomi Lyubarskaya 1962; TREMATODA - Brachylaemus oesophagi Shaldybin 1953, Brachylaemus spinulosus (Hoffmann 1899), Cephalotrema elastica Bregenzer 1916, Cephalotrema minutus Baer 1944, Ectosiphon sp., Euryhelmis squamula (Rudolphi 1819), Leucocleridium skrjabini Shaldybin 1953, Maritrema carpatica Matkasi 1984, Maritrema pyrenaica Deblock & Combes 1965, Metorchis albidus (Braun 1893), Microphallus gracilis Baer 1944, Nephrotrema truncatum (Leuckart 1842), Opisthiglyphe locellus (Kossack 1900), Opisthiglyphe megastomus Baer 1944, Opisthiglyphe oschmarini Shaldybin 1953, Panopistus pricei Sintinsin 1931, Parabasus combesi Jourdane 1973, Pseudocephalotrema pyrenaica Combes and Jourdane 1969, Opisthiglyphe exasperatum (Rudolphi 1819), Plagiorchis neomidis Brendow 1970, Plagiorchis obs-tusus Strom 1940, Plagiorchis opisthovietellinus Soltys 1953, Pseudoleucocleodictium soricis Soltys 1952, Pililotorus confertus Machalska 1974, Skrabinophyptus neomysis Dimitrova and Genov 1967.

Comments.—In Germany, Brendow (1970) found the sporocysts of Plagiorchis neomidis in the snail Radix peregra and the metacercaria in caddis-flies; while the snail Bythinella compressa and amphipod Gammarus pulex were hosts to the larvae of Cephalotrema elastica. Combes et al. (1974) determined that in France, Bythinella reyniesii is the first and Rana temporaria the second intermediate host of Euryhelmis squamula. Jourdane (1972) found that in France, the slug Arion lusitanicus is an intermediate host for the cestode Choanotaenia estavarensis. Jourdane (1977 1979) found that in the Pyrenees Microphallus gracilis and Maritrema pyrenaica use the molluse Bythinella reyniesii as the first intermediate host, and the second intermediate host is Gammarus pulex. According to Mas-Coma (1978), the presence of Pililotorus confertus and Pseudoleucocleodictium soricis likely represent accidental infections as the normal hosts for these trematodes are birds, such as members of the genus Turdus. Muari (1987) indicates that Gammarus spp. are the likely intermediate hosts for the cestode Triodontolepis torrentis. Theron (1976) reports that the first and second intermediate hosts, respectively, of Plagiorchis neomidis in the Pyrenees are Radix limosa and the alder fly Sialis lutilia.


**Sorex caecutiens** (Laxmann 1788)

Laxmann’s Shrew

**Distribution.**—Laxmann’s shrew ranges from eastern Europe across to eastern Siberia, south into Ukraine, northern Kazakhstan across the Altai Mountains into Mongolia, northeast China and across into Korea, as well as Sakhalin Island. In Mongolia, they are restricted to regions of the Khentey and Khangay Mountains.

**Parasites.**—In Mongolia: NEMATA - *Soboliphyme atadhai* Ganzorig et al. 2003. Across range: CESTODA - *Cucurbilepis diaphana* (Cholodkowsky 1906), *Ditestolepis quarta* Karpenko 1983, *Ecrinolepis mirabilis* Spassky and Karpenko 1983, *Ecrinolepis orientales* Melnikova et al. 2005, *Lineolepis borealis* Karpenko and Shakhmatova 1985, *Lineolepis scutigera* (Dujardin 1845), *Lineolepis spasskii* Karpenko 1984, *Mathevolepis larbi* Karpenko 1982, *Neoskrjabinolepis schaldybini* Spassky 1947, *Pseudodiorchis prolifer* (Villot 1890), *Sinuterilepis diglobovari* Sadovskaya 1965, *Soricinia aporalis* Karpenko 1984, *Soricinia bargusinica* Eltyshev 1975, *Soricinia cirravaginata* Eltyshev 1975, *Soricinia collaris* Karpenko 1984, *Soricinia macrospina* Karpenko 1984, *Soricinia soricis* (Baer 1927), *Spasskylepis pheodorovi* Karpenko 1984, *Staphylocystis sibirica* (Morozov 1957), *Vigisolepis amurensis* Karpenko 1984, *Zarnowskilla stefanskii* (Zarnowski 1954); NEMATA - *Capillaria capillaria* (Linstow 1882), *Capillaria hepatica* (Bancroft 1893), *Capillaria kuturi* Ruchladeva 1946, *Capillaria oospharmini* Nadtochy and Rassakazova 1971, *Capillaria sp.*. *Longistriata ljamkini* Eltyshev 1975, *Longistriata yamashitai* Chabaud et al. 1963, *Paracrenosoma skrjabini* (Pologentev 1935), *Physaloptera soricina* Baylis 1934, *Soboliphyme baturini* larval Petrow 1930, *Stefanskostongylus mascomai* Kontrimavichus & Delyamure 1979; TREMATODA - *Alaria alata* (Goeez 1782), *Corrigia sobolevi* Nadtochy 1965, *Opisthioglyphe sobolevi* Shaldybin 1953, *Plagiorchis eutamiatis* Schulz 1932, *Sorexeglyphae kamtschatica* Nadtochy 1965.

**Sorex daphaenodon** Thomas 1907

Large-toothed Siberian Shrew

**Distribution.**—This shrew is found from the Ural Mountains in Russia across Asia, into Afghanistan to Korea and Sakhalin Island. In Mongolia it is known from the northern Khangay Mountains, east to the border through the Khentey Mountains and northern steppe regions.

**Parasites.**—In Mongolia: None currently known. Across range: CESTODA - *Ditestolepis quarta* Karpenko 1983, *Ecrinolepis mirabilis* Spassky and Karpenko 1983, *Mathevolepis larbi* Karpenko 1982, *Mathevolepis trioaria* Karpenko 1990, *Neoskrjabinolepis schaldybini* Spassky 1947, *Soricinia aporalis* Karpenko 1984, *Soricinia collaris* Karpenko 1984, *Soricinia macrospina* Karpenko 1984, *Spasskylepis pheodorovi* Karpenko 1984, *Zarnowskilla stefanskii* (Zarnowski 1954); NEMATA - *Soboliphyme baturini* larval Petrow 1930.
Comments.—Karpenko (1985) reported on the use of *S. daphaenodon*, in which he found encapsulated larvae, as a paratenic host for *Soboliphyme baturini*. The intermediate hosts of this nematode, whose definitive hosts are mustelids, are oligochaetes in the family Enchytraeidae.

Literature.—Karpenko 1982; Karpenko 1983; Spassky and Karpenko 1983; Karpenko 1984a; Karpenko 1984c; Karpenko 1985; Karpenko 1989; Karpenko 1990; Karpenko and Chechulin 1990; Tinnin et al. 2002; Ganzorig et al. 2003; Hutterer 2005b.

*Sorex isodon* Turov 1924

Equal-toothed Shrew

Distribution.—The equal-toothed shrew ranges from Scandinavia across Russia to the Pacific, south into Mongolia, China and Korea, as well as onto the islands of Sakhalin and Hokkaido. Its range in Mongolia is unclear as there have been only a few collections of this species from the Khentey Mountains.

Parasites.—In Mongolia: None currently known. Across range: CESTODA - *Ditestolepis quarta* Karpenko 1983, *Ecrinolepis mirabilis* Spassky and Karpenko 1983, *Mathevolepis larbi* Karpenko 1982, *Neoskrjabinolepis schaldybini* Spassky 1947, *Soricina macrospina* Karpenko 1984, *Staphylocystis sibirica* (Morozov 1957), *Zarnowskiella stefanskaei* (Zarnowski 1954).

Literature.—Morozov 1957; Eltyshev 1975; Karpenko 1982; Karpenko 1984a; Karpenko 1989; Karpenko and Chechulin 1990; Tinnin et al. 2002.

*Sorex roboratus* Hollister 1913

Flat-skulled Shrew

Distribution.—This species is found from Russia across to Mongolia and China. In Mongolia, the flat-skulled shrew is restricted to the extreme north in the Khentey and Hovgsgol Mountains.

Parasites.—In Mongolia: None currently known. Across range: CESTODA - *Ditestolepis quarta* Karpenko 1983, *Lineolepis borealis* Karpenko and Shakhmatova 1985, *Mathevolepis larbi* Karpenko 1982, *Soricina aporalis* Karpenko 1984, *Soricina collaris* Karpenko 1984, *Soricina macrospina* Karpenko 1984, *Spasskylepis pheodorovii* Karpenko 1984, *Zarnowskiella stefanskaei* (Zarnowski 1954).

Literature.—Karpenko 1982; Karpenko 1983; Karpenko 1984a; Karpenko 1984c; Karpenko and Shakhmatova 1985; Karpenko and Chechulin 1990; Tinnin et al. 2002; Hutterer 2005b.

*Sorex tundrensis* Merriam 1900

Tundra Shrew

Distribution.—The tundra shrew ranges from western China across Beringia into Alaska and Canada. In Mongolia this shrew is found in across the mountains and steppes in the northern half of the country.

Parasites.—In Mongolia: None currently known. Across range: NEMATA - *Soboliphyme baturini* larval Petrow 1930.
Comments.—Karpenko et al. (2007) also discovered that *S. tundrensis* serves as a paratenic host for *Soboliphyme baturini*. See comments under *Sorex daphaenodon*.

Literature.—Tinnin et al. 2002; Hutterer 2005b; Karpenko et al. 2007.

Talpidae
*Talpa altaica* Nikolsky 1883
Altai Mole

Distribution.—The Altai mole ranges across western and central Siberia into Mongolia. In Mongolia, they are only known from the Hovsgol and northern Great Lakes region.

Parasites.—In Mongolia: None currently known. Across range: NEMATA - Tricninella sp.

Literature.—Fedorov 1976; Tinnin 2002; Hutterer 2005b.

CHIROPTERA
Vespertilionidae
*Eptesicus bottae* (Peters 1869)
Botta’s Bat

Distribution.—Botta’s bat ranges from Greece into the Middle East, through Central Asia to Pakistan and China. Although this species has been reported as occurring in Mongolia, its distribution within the country is unknown.

Parasites.—In Mongolia: None currently known. Across range: None currently known.

Literature.—Tinnin et al. 2002; Simmons 2005.

*Eptesicus gobiensis* Bobrinskii 1926
Gobi Bat

Distribution.—The Gobi bat is found from Tajikistan east through Mongolia and northwest China. In Mongolia the Gobi bat ranges south from the Khangay Mountains, into the eastern Mongolian Altai, Gobi Altai and southeastern parts of the country.

Parasites.—In Mongolia: NEMATA - Litomosa sp.; TREMATODA - Plagiorchis vespertilionis (Müller 1780). Across range: No other helminths are known from this bat.

Literature.—Tinnin et al. 2002; Tinnin et al. 2008.

*Eptesicus nilssonii* (Keyserling and Blasius 1839)
Nilsson’s Bat

Distribution.—Nilsson’s bat ranges from Europe across Russia and into Mongolia and China. In Mongolia, this species ranges across the mountains and steppes in the northern half of the country.

Parasites.—In Mongolia: None currently known. Across range: CESTODA - Vampyrolepis balsaci (Joyce and Baer 1934), Vampyrolepis ezoensis Sawada 1990; TREMATODA - Lechithodendrium chosenicum Ogata 1941, Lechithodendrium granulosum Looss 1907, Lechithodendrium hovorkai Mituch 1959, Lechithodendrium linstowi Dollfus 1931, Lechithodendrium mystacinum Zdjitowiecki 1969, Lechithodendrium spathulatum (Ozaki 1929), Plagiorchis eptesici Ogata 1941, Plagiorchis vespertilionis (Müller 1780), Prosthodendrium aelleni Dubois 1956, Prosthodendrium longiforme (Bhalero 1926), Pycnoporus megacotyle (Ogata 1939).

Literature.—Ogata 1941; Spassky, Ryjikhov and Sudarikov 1952; Dubois 1956; Mituch 1959; Zdzitowiecki 1969; Zdzitowiecki 1970a; Sawada 1990; Tinnin et al. 2002; Simmons 2005; Tinnin et al. 2008.

*Eptesicus serotinus* Schreber 1775
Serotine

Distribution.—The Serotine ranges from North Africa and Europe across southern Asia to south-eastern China. In Mongolia they are known from the southern Gobi.

Parasites.—In Mongolia: None currently known. Across range: ACANTHOCEPHALA - Macracanthorhynchus hirudinaceus (Pallas 1781); CESTODA - Hymenolepis christensonii Macy 1931, Myotolepis
crimensis (Skarbilovitsch 1946), Myotolepis grisea (van Beneden 1873), Staphylocystis syrdeniensis (Skarbilovitsch 1946), *Vampirolepis acuta* (Rudolphi 1819), *Vampirolepis balsaci* (Joyeux and Baer 1934), *Vampirolepis rysavyi* Tenora and Barus 1960, *Vampirolepis skjabinariana* (Skarbilovitsch 1946); *Nemata* - *Litosoma* sp., *Molinostrongylus alatus* (Orlepp 1932), Physaloptera myotis Babos 1955, Rictularia bovieri Blanchard 1886, Strongylacanthus glycirrhiza (van Beneden 1873); *Trematoda* - *Allassogonoporus amphoraeformis* (Mödlinger 1930), *Castroia nycitali* Gvozdev 1953, *Lecithodendrium hovorkai* Mituch 1959, *Lecithodendrium granulosum* Looss 1907, *Lecithodendrium linstowi* Dollfus 1931, *Lecithodendrium spathulatum* (Ozaki 1929), *Ophiosacculus eptesicus* (Matsaberidze and Khotenovskii 1966), *Ophiosacculus mehelyi* (Mödlinger 1930), *Parabascus duboisi* (Hurkova 1961), *Parabascus lepidotus* Loos 1907, *Plagiorchis asper* Stossich 1904, *Plagiorchis koreanus* Ogata 1938, *Plagiorchis vespertilionis* (Müller 1780), *Mesotretes peregrinus* (Braun 1900), *Prosthodendrium ascidia* (Beneden 1873), *Prosthodendrium aelleni* Dubois 1956, *Prosthodendrium carolinum* Hurkova 1959, *Prosthodendrium chilostomum* (Mehlis 1831), *Prosthodendrium ilei* Zdzitowiecki 1969, *Prosthodendrium longiforme* (Bhalero 1926), *Parabascus duboisi* (Hurkova 1961).

**Comments.**—Five individuals from Mongolia were examined by Tinnin et al. (2008), but they were uninfected.

**Literature.**—Ogata 1938; Tinnin et al. 2002, Demidova and Vekhnik 2004; Simmons 2005.

**Myotis daubentoni** (Kuhl 1819)

**Daubenton’s Myotis**

**Distribution.**—Daubenton’s bat is found from the British Isles across Europe and northern Asia to Japan, as far south as India. In Mongolia it is known from Lake Hovsgol, the Khentey, Khangay, and western Altai Mountains.

**Parasites.**—In Mongolia: None currently known. Across range: *Cestoda* - *Hymenolepis christensi* Macy 1931; *Nemata* - *Capillaria neopulchra* Babos 1954, *Capillaria romana* Ricci 1949, *Molinostrongylus daubentoni* Zdzitowiecki 1970, *Molinostrongylus spasskii* Andreiko et al. 1968, *Physaloptera myotis* Babos 1955; *Trematoda* - *Plagiorchis vespertilionis* (Müller 1780), *Lecithodendrium linstowi* Dollfus 1931, *Limatulium duboisi* Hurkova 1961 see *epesicus*, *Parabascus joannae* (Zdzitowiecki 1967), *Parabascus minor* Khotenovskii 1985, *Parabascus semisquamosus* (Braun 1900), *Prosthodendrium carolinum* Hurkova 1959, *Prosthodendrium chilostomum* (Mehlis 1831), *Prosthodendrium hurkovaeae* Dubois 1960, *Prosthodendrium ilei* Zdzitowiecki 1969, *Prosthodendrium longiforme* (Bhalero 1926).

**Comments.**—Tinnin et al. (2008) examined 6 individuals from Mongolia, which were uninfected.
**Literature.**—Hurvka 1959; Soltys 1959; Dubois 1960; Hurkova 1961; Matskasi 1967; Zdzitowiecki 1967a; Andreiko and Skvortsov 1968; Andreiko et al. 1968; Zdzitowiecki 1969; Zdzitowiecki 1970b; Groschaft and Tenora 1973; Bakke and Melh 1977; Khotenovskii 1985; Tkach et al. 1985; Tkach et al. 2000; Tinnin et al. 2002; Shimalov et al. 2002; Tinnin et al. 2008

**Myotis ikkonikovi** Ognev 1912  
Ikonikov’s Bat

**Distribution.**—Ikonikov’s bat is known from eastern Russia south through Mongolia, China, and Korea, as well as Japan. In Mongolia this bats has only been found on the eastern border of the country in the Ikh Hyangan Mountains, and from along the Orkhon river in the north central part of the country.

**Parasites.**—In Mongolia: None currently known. Across range: None currently known.

**Literature.**—Tinnin et al. 2002; Simmons 2005; Dolch et al. 2007; Batsaikhan et al. 2010.

**Myotis mystacinus** (Kuhl 1817)  
Whiskered Bat

**Distribution.**—The whiskered bat is known from across Eurasia into Southeast Asia. In Mongolia they are found across the country.

**Parasites.**—In Mongolia: None currently known. Across range: CESTODA - Hymenolepis christensenoni Macy 1931, Vampirolepis baeri Murai 1976, Vampirolepis acuta (Rudolphi 1819), Vampirolepis skrjabinariana (Skarbilovitsch 1946), Vampirolepis spasskii Andreiko et al. 1969; NEMATA - Capillaria neopulchra Babos 1954, Ascarops strongylina larval (Rudolphi 1819), Molinostrongylus skrjabini (Ortlepp 1932), Molinostrongylus tipula (Beneden 1873), Physaloptera sexalatus larval (Molin 1860), Physaloptera myotis Babos 1955, Riouxgolvania nyctali Bain and Chabaud 1979, Skrjabinocapillaria eubursata Skarbilovich 1946, Spirostrongylus johnstoni Trivedi and Gupta 1990, Spirocerca lupi larval (Rudolphi 1809); TREMATODA - Castroia nyctali Gvozdev 1953, Lecithodendrium granulosum Looss 1907, Lecithodendrium linstowi Dollfus 1931, Lecithodendrium macrostomum (Ozaki 1929), Lecithodendrium rysavyi Dubois 1960, Lecithodendrium spathulatum (Ozaki 1929), Parabascus semisquamosus (Braun 1900), Plagiorchis asper Stossich 1904, Plagiorchis vespertilionis (Müller 1780), Prosthodendrum ascidia (Beneden 1873), Prosthodendrum carolinum Hurkova 1959, Prosthodendrum longiforme (Bhalero 1926), Prosthodendrum parvoterus (Bhalero 1926).

**Literature.**—Ogata 1938; Dubois 1956; Hurkova 1959; Mituch 1959; Hurkova 1961; Mituch 1964a; Andreiko and Skvortsov 1968; Zdzitowiecki 1967b; Zdzitowiecki 1969; Zdzitowiecki 1970a; Zdzitowiecki 1970b; Rysavy 1971; Skvortsov 1971; Yanchev and Steikova 1973; Tokobaev 1976; Barus and Tenora 1977; Shinde and Solunke 1983; Khotenovskii 1985; Tkach and Swiderski 1996; Tkach 2000; Tinnin et al. 2002; Demidova and Vekhnik 2004; Simmons 2005.

**Nyctalus noctula** (Schreber 1774)  
Noctule

**Distribution.**—The noctule is known from across Eurasia into Southeast Asia. In Mongolia they are only currently known from the Great Lakes Region.

**Parasites.**—In Mongolia: None currently known. Across range: CESTODA - Hymenolepis christensenoni Macy 1931, Vampirolepis baeri Murai 1976, Vampirolepis acuta (Rudolphi 1819), Vampirolepis skrjabinariana (Skarbilovitsch 1946), Vampirolepis spasskii Andreiko et al. 1969; NEMATA - Capillaria neopulchra Babos 1954, Ascarops strongylina larval (Rudolphi 1819), Molinostrongylus skrjabini (Ortlepp 1932), Molinostrongylus tipula (Beneden 1873), Physaloptera sexalatus larval (Molin 1860), Physaloptera myotis Babos 1955, Riouxgolvania nyctali Bain and Chabaud 1979, Skrjabinocapillaria eubursata Skarbilovich 1946, Spirostrongylus johnstoni Trivedi and Gupta 1990, Spirocerca lupi larval (Rudolphi 1809); TREMATODA - Castroia nyctali Gvozdev 1953, Lecithodendrium granulosum Looss 1907, Lecithodendrium linstowi Dollfus 1931, Lecithodendrium macrostomum (Ozaki 1929), Lecithodendrium rysavyi Dubois 1960, Lecithodendrium spathulatum (Ozaki 1929), Parabascus semisquamosus (Braun 1900), Plagiorchis asper Stossich 1904, Plagiorchis vespertilionis (Müller 1780), Prosthodendrum ascidia (Beneden 1873), Prosthodendrum carolinum Hurkova 1959, Prosthodendrum longiforme (Bhalero 1926), Prosthodendrum parvoterus (Bhalero 1926).
Comments.—Sharpilo et al. (1996) discussed how Nyctalus serves as “trap host”, a dead-end paratenic host, as the parasite cannot be transmitted to definitive host from such species for Ascarops strongylina, Physocepalus sexualus, and Spirocerca lupi.

Literature.—Gvozdev 1953; Soltys 1959; Dubois 1960; Dancu and Capuse 1966; Matskasi 1967; Andreiko et al. 1969; Zdzitowiecki 1969; Skvortsov 1970; Zdzitowiecki 1970a; Groschaft and Tenora 1973; Chiriac and Barbu 1973; Yanchev and Stoikova 1973; Guildal 1976; Murai 1976; Tokobaev 1976; Khotenovskii 1978; Bain and Chabaud 1979; Erkulov and Moldopiyazova 1986; Trivedi and Gupta 1990; Genov et al. 1992; Sharpilo et al. 1996; Tinnin et al. 2002; Simmons 2005; Tinnin et al. 2008.

Hypsugo alashanicus Bobrinskii 1926

Alashan Bat

Distribution.—The Alashan bat is found in eastern Siberia, Mongolia, China, Korea, and Japan. In Mongolia they are found in the Gobi Altai, and desert and steppe regions in the southwestern part of the country.

Parasites.—In Mongolia: None currently known. Across range: None currently known.

Literature.—Tinnin et al. 2002; Simmons 2005.

Plecotus auritus (Linnaeus 1758)

Brown Big-eared Bat

Distribution.—Members of this species are found from Norway, Ireland, and Spain across to Sakhalin Island and Japan, south into China and Nepal. In Mongolia it is found in the northern steppe and forest-steppe regions.

Parasites.—In Mongolia: None currently known. Across range: CESTODA - Vampirolepis acuta (Rudolphi 1819); TREMATODA - Plagiorchis vespertilionous (Müller 1780), Prosthodendrium chilostomum (Mehlis 1831), Prosthodendrium longiforme (Bhalero 1926).

Comments.—A preliminary analysis of the genus Plecotus conducted by Spitzberger et al. (2006) based on morphological and molecular data suggested that P. auritus found in Mongolia and Siberia should be recognized as Plecotus ognevi Kishida 1927. Pending further analyses we retain it here as P. auritus, but make mention of this fact as some recent publications recognized the revision. Currently, there are no known endo-parasites known from the nominal P. ognevi.

Literature.—Desportes 1946; Biocca and Chabaud 1951; Spassky, Ryjhikov and Sudarikov 1952; Coil and Kuntz 1958; Soltys 1959; Andreiko and Skvortsov 1968; Zdzitowiecki 1969; Skvortsov 1970; Zdzitowiecki 1970a; Tokobaev 1976; Sawada 1980; Khotenovskii 1985; Sawada 1990; Tkach et al. 2000; Shimalov et al. 2002; Tinnin et al. 2002; Spitzberger et al. 2006; Dolch et al. 2007; Tinnin et al. 2008; Batsaikhan et al. 2010.

Plecotus austriacus (Fischer 1899)

Grey Big-eared Bat

Distribution.—The grey big-eared bat ranges from Europe east to China. In Mongolia they are known from the southern Khangay and Mongolian Altai across the south of the country.

Parasites.—In Mongolia: None currently known. Across range: CESTODA - Vampirolepis acuta (Rudolphi 1819); TREMATODA - Plagiorchis vespertilionous (Müller 1780), Prosthodendrium parvouterus (Bhalero 1926).

Comments.—Similarly to P. auritus, Spitzberger et al. (2006) suggested that Plecotus kozlovi Bobrinski 1926 should be recognized as the form inhabiting Mongolia. In addition, Spitzberger also recognized Plecotus strelkovi Spitzberger 2006 and P. turkmenicus Strelkov 1988 as valid species separate from P. austriacus, both of which have been reported from southern Mongolia. See comments above. Currently, there are no known
endo-parasites known from the nominal species *P. kozlovi*, *P. strelckovi*, or *P. turkmenicus*.

*Literature.*—Yanchev and Stoikova 1973; Murai 1976; Shimalov et al. 2002; Tinnin et al. 2002; Sim- mons 2005; Spitzberger et al. 2006; Dolch et al. 2007; Batsaikhan et al. 2010.

**Vespertilio murinus** (Linnaeus 1758)
Particolored Bat

*Distribution.*—The particolored bat is found from Norway and Britain to the Ussuri region of Russia, south into Afghanistan, Mongolia, and China. In Mongolia this species is known from scattered locations in the Khentey, Khangay, and Altai Mountains, as well as the southern Gobi Desert and eastern steppe areas.

*Parasites.*—In Mongolia: *Plagiorchis vespertilionus* (Müller 1780). Across range: NEMATA - *Litomosa ottavianii* Lagrange and Bettini 1948, *Litomosa vaucherii* Petit 1980, *Rictularia bovieri* Blanchard 1886; TREMATODA - *Parabascus magnitests* Khotenovskii 1985, *Plagiorchis vespertilionus* (Müller 1780), *Prost hodendrium ilei* Zdzitowiecki 1969.

*Literature.*—Blanchard 1886; Lagrange and Bettini 1948; Khotenovskii 1985; Tkach 1989; Tkach and Swiderski 1996; Petit 1980; Tkach et al. 2000; Tinnin et al. 2002; Dolch et al. 2007; Tinnin et al. 2008; Batsaikhan et al. 2010.

**Vespertilio sinensis** (Peters 1880)
Asian Particolored Bat

*Distribution.*—This species is known from far eastern Russia south through China, Korea, and Japan. In Mongolia they are only known from riparian and lake habitats in the eastern steppes.

*Parasites.*—In Mongolia: None currently known. Across range: None currently known.

*Literature.*—Tinnin et al. 2002; Simmons 2005.

**Marmota baibacina** Kastschenko 1889
Gray Marmot

*Distribution.*—The gray marmot ranges from Kyrgyzstan through Kazakhstan, southern Russia and into Mongolia, and China. In Mongolia it is only found in a small area of the northwest Mongolian Altai.

*Parasites.*—In Mongolia: None currently known. Across range: CESTODA - *Ctenotaenia marmotae* (Frölich 1802), *Paranoplocephala ryjikovi* Spassky 1950, *Anoplocephaloides transversaria* (Krabbe 1879); Nemata - *Ascaris tarbagan* Schulz 1931, *Citellina altau* Spassky, Rhyzhikov and Sudarikov 1950, *Dictyocaulus filaria* (Rudolphi 1809), *Ostertagiella circumcincta* (Stadelmann 1894), *Tricocephalus surka* (Garkavi 1950); TREMATODA - *Dicrocoelium lanceatum* Stiles and Hassall 1896

*Comments.*—Lin et al. (1982) reported that the oribatid mites *Scheloribates chauhani*, *Scheloribates sp.*, and *Parakalumma lydia* served as intermediate hosts for *Anoplocephaloides transversaria* in China.

*Literature.*—Schulz 1931; Spassky 1950; Tokobaev 1976; Gvozdev and Sharpilo 1978; Lin et al. 1982; Tinnin et al. 2002; Thorington and Hoffmann 2005.
Marmota sibirica (Radde 1862)
Tarbagan

Distribution.—The tarbagan marmot ranges from Kirghizia and Kazakhstan into southern Siberia and across into Mongolia and China. In Mongolia it is found in the mountains and steppes of the northern part of the country.

Parasites.—In Mongolia: ACANTHOCPEHLA - Moniliformis clarki (Ward 1917); CESTODA - Ctenotaenia marmotae (Frölich 1802); NEMATA - Ascaris tarbagan Schulz 1931. Across range: ACANTHOCPEHLA - Macracanthorhynchus catulinus Kostylew 1927, Moniliformis clarki (Ward 1917); CESTODA - anoplocephaloides transversaria (Krabbe 1879), Ctenotaenia marmotae (Frölich 1802), Mesocestoides lineatus (Goeze 1782); NEMATA - Abbreviata leiperi (Skrjabin 1924), Ascaris tarbagan Schulz 1931, Citellina schulzi Korneev 1954, Physaloptera massino Schulz 1926, Streptopharagus sp., Trichuris syrca Garkavi 1951.

Literature.—Schulz 1931; Machulsky 1958; Barus, Kullmann, and Tenora 1970; Sulimov and Obukhov 1975; Meszaros 1974; Zhaltsanova et al. 1980; Zhaltsanova and Shalaeva 1990; Ganzorig et al 1998; Tinnin et al. 2002; Ganzorig et al. 2007; Tinnin et al. 2008.

Sciurus vulgaris Linnaeus 1758
Eurasian Red Squirrel

Distribution.—This squirrel is found in forest habitats across the Palearctic. In Mongolia, it is found in the forest of the northern mountain regions.

Parasites.—In Mongolia: Ctenotaenia dendritica (Goeze 1782). Across range: CESTODA - Ctenotaenia dendritica (Goeze 1782), Cladotaenia globifera larval (Batsch 1786), Hymenolepis arvicolina Cholodkowsky 1912, Hymenolepis diminuta (Rudolphi 1819), Hymenolepis horrida (Litwost 1901), Multi-ceps serialis larval (Gervais 1847), Paranopecophala longivaginata Chechulin and Gulyaev 1998, Paranopecophala omphalodes (Hermann 1783), Taenia polyacantha larval Leuckart 1856, Taenia crassiceps larval (Zeder 1800); NEMATA - Acanthoxyurus sciuro- rorum Galli-Valerio 1932, Aspiculuris dinniki Schulz 1927, Aspiculuris tetraptera (Nitzsch 1821), Capillaria hepatica (Bancroft 1893), Citellina levini Li 1933, Citellinema orientale Schulz 1933, Enterobius apapillus Skrjabin and Schikhabalova 1951, Enterobius sciuri Cameron 1932, Heligmosomum ussurensis Lubimov 1932, Mastophorus muris (Gmelin 1790), Mastophorus petrowi Belayeva 1959, Physalopteriata schulzii (Lubimov 1935), Rictularia skrabini Matchulskii and沃内斯琴卡 1967, Syphabulea mascomai Hugot and Feliu 1990, Syphacia sp., Syphacia sobolevi Lubimov 1964, Syphacia tjaschani Ablasov 1962, Syphacia toschevi Petrov and Bayanov 1962, Syphacia unguata (Litwost 1907), Thomox sadovskaja Morozov 1959, Trichostrongylus retortaeforimis (Zeder 1809); TREMA-TODA - Dicrocoelium dendriticum (Rudolph 1819), Opisthioglyphe exasperatum (Rudolph 1819).

Comments.—Dollfus (1951) regarded his report of 3 adult Hymenolepis diminuta in one squirrel to be an accidental infection in a captive host.

Literature.—Schulz 1927; Galli-Valerio 1932; Li 1933; Dollfus 1948; Dollfus 1951; Spassky, Ryhikov and Sudarikov 1952; Chabaud 1956; Machulsky 1958; Belayeva 1959; Ablasov 1962; Petrov and Bayanov 1962; Horning 1963; Gubanov 1964; Matchulskii and沃内斯琴卡 1967; Hartwich 1971; Elyshv 1975; Rocamora et al. 1978; Chiriac and Popescu 1982; Sharpiolo and Lugovaya 1984; Hugot and Feliu 1990; Zhaltsanova and Shalaeva 1990; Chechulin and Gulyaev 1998; Ganzorig et al. 1999; Shimakov and Shimalov 2002; Tinnin et al. 2002.

Spermophilus alashanicus Buchner 1888
Alashan Ground Squirrel

Distribution.—The Alashan ground squirrel has a narrow distribution across the Alashan and Tien Shan Mountains of China and the Gobi Altai of Mongolia. This species is restricted to the Gobi Altai in Mongolia.

Parasites.—In Mongolia: None currently known. Across range: None currently known.

Comments.—Vuitton et al. (1998) indicated that a previous report of larval Echinococcus multilocularis
Leuckart 1863 found in *Spermophilus alashanicus* in China may possibly have been from *Spermophilus dauricus*.

**Literature.**—Vuitton et al. 1998; Tinnin et al. 2002.

*Spermophilus dauricus* Brandt 1843
Daurian Ground Squirrel

**Distribution.**—The Daurian ground squirrel ranges from Transbaikalia south through Mongolia and China. In Mongolia it is found in the eastern steppes of the country.

**Parasites.**—In Mongolia: None currently known. Across range: *Echinococcus multilocularis* Leuckart 1863.

**Comments.**—Vuitton et al. (1998) indicated that a previous report of larval *Echinococcus multilocularis* Leuckart 1863 found in *Spermophilus alashanicus* in China may possibly have been from *Spermophilus dauricus*. A further survey for *E. multilocularis* in Ningxia China showed that although 27% of *Vulpes vulpes* were infected, only 0.2% (3 of 1500) *O. dauricus* and none of the other 12 rodent species examined were infected (Li et al. 1985).

**Literature.**—Li et al. 1985; Vuitton et al. 1998; Tinnin et al. 2002; Thorington and Hoffmann 2005.

*Spermophilus pallidicauda* (Satunin 1903)
Pallid Ground Squirrel

**Distribution.**—The Pallid ground squirrel ranges across Mongolia and Inner Mongolia, China. In Mongolia this species is found from the Great Lakes region to the eastern border of the country in desert and desert-steppe habitats.

**Parasites.**—In Mongolia: None currently known. Across range: None currently known.

**Comments.**—This ground squirrel has frequently been listed as a subspecies of the *Spermophilus erythrogenys* Brandt 1841, but is currently regarded as a separate species (Harrison et al. 2003; Thorington and Hoffmann 2005). Currently, the status of *S. pallidicauda* as well as the existence of the other putative species in the group, *S. erythrogenys* and possibly *S. brevicauda*, within the country merit additional investigation.

**Literature.**—Tinnin et al. 2002; Harrison et al. 2003; Thorington and Hoffmann 2005.

*Spermophilus undulatus* Pallas 1778
Long-tailed Ground Squirrel

**Distribution.**—The long-tailed ground squirrel ranges from eastern Kazakhstan across southern Siberia and into Mongolia and China. In Mongolia this species is found in the steppes of the Khangay and Khentey Mountains, the Mongolian Altai, and from the vicinity of Lake Hovsgol.

**Parasites.**—In Mongolia: ACANTHOCEPHALA - *Moniliformis clarki* (Ward 1917); CESTODA - *Anoplocephaloides transversaria* (Krabbe 1879), *Ctenotaenia citelli* (Kirschenblatt 1939), *Ctenotaenia marmotae* (Frölich 1802), *Hymenolepis suslica* Shaldybin 1965, *Mesocestoides sp.*; NEMATA - *Ascaris tarbagan* Schulz 1931, *Physaloptera massino* Schulz 1926, *Streptopharagus kutassi* (Schultz 1927). Across range: ACANTHOCEPHALA - *Macracanthorhynchus catulinus* Kostylew 1927, *Moniliformis clarki* (Ward 1917), *Moniliformis moniliformis* (Bremer 1811); CESTODA - *Anoplocephaloides transversaria* (Krabbe 1879), *Aprostandrya macrocephala* (Douthitt 1915), *Ctenotaenia cricetorum* Kirschenblatt 1949, *Ctenotaenia citelli* (Kirschenblatt 1939), *Echinococcus multilocularis* larval Leuckart 1863, *Hymenolepis diminuta* (Rudolphi 1819), *Hymenolepis megaloon* (Linstow 1901), *Hymenolepis suslica* Shaldybin 1965, *Mesocestoides lineatus* (Goeze 1782), *Paranoplocephala brevis* Kirschenblatt 1938, *Paranoplocephala dentata* (Galli-Valerio 1905), *Taeina solium* larval Linnæus 1758; NEMATA - *Abbreviata leiperi* (Skrjabin 1924), *Ascaris japonica* Schulz 1931, *Ascarios tarbagan* Schulz 1931, *Ascarops tuvensis* Sulimov 1961, *Baylisascaris laevis* (Leidy 1856), *Capillaria armeniaca* Kirschenblatt 1939, *Capillaria sibirica* Romanov 1960, *Mastophorus muris* (Gmelin 1790), *Physaloptera citilli* (Rudolphi 1819), *Physaloptera massino* Schulz 1926, *Physaloptera soricina* Baylis 1934, *Protospirura...
suslica Schulz 1927, Streptopharagus kutassi (Schultz 1927), Streptopharagus sp., Subulura citelli Sulimov 1961, Syngamus citelli Ryzhikov 1956, Syphacia obvelata (Rudolphi 1802), Trichinella spiralis (Owen 1835), Trichostrongylus colubriformis (Giles 1892), Trichuris citellorum (Kirschchenblatt 1939), Trichuris muris (Schrank 1788); TREMATODA - Plagiorchis eutamiatis Schulz 1932, Plagiorchis muris Tanabe 1922.

Literature.—Schulz 1931; Spassky, Rhyzhikov and Sudarikov 1952; Rhyzhikov 1956; Machulsky 1958; Romanov 1960; Sulimov 1961; Shaldybin 1965; Nadtochi et al. 1966; Gvozdev et al.; 1970; Eltyshev and Makloko 1971; Eltyshev 1975; Tokobaev 1976; Shalaeva et al. 1987; Bessinov 1998; Ganzorig et al. 1998; Ganzorig et al. 1998b; Tinnin et al. 2002; Zhaltsanova and Shalaeva 2004; Ganzorig et al. 2007.

Tamias sibiricus (Laxmann 1769)
Siberian Chipmunk

Distribution.—The Siberian chipmunk occurs across northern Europe through Siberia and south into Kazakhstan, Mongolia, and China, as well as on Sakhalin, Hokkaido, and the Kuriles. In Mongolia they are found in the taiga and mountain forests of the Khentey, Khangay Mountains and the Mongolian Altai. An additional population is also known from the Nomrog River in eastern Mongolia.

Parasites.—In Mongolia: CESTODA - Passerilepis passeris Gmelin 1790; NEMATA - Syphacia sp. Across range: ACANTHOCEPHALA - Macracanthorhynchus catulinus larval Kostylew 1927; CESTODA - Hymenolepis diminuta (Rudolphi 1819), Hymenolepis horrida (Linstow 1901), Hymenolepis sp., Mesocestoides sp. larval, Paranaoplocephala omphalodes (Hermann 1783); NEMATA - Brevistoriata bergerardi Durette-Desset 1970, Capillaria hepatica (Bancroft 1893), Capillaria sibirica Romanov 1960, Cetillinema orientale Schulz 1933, Heligmosomum ascanius Lubimov 1932, Physaloptera massino Schulz 1926, Rauschivingylus asiaticus Domnich 1984, Rictularia amuresis Schulz 1927, Spiruracercus petrovi Gubanov 1964, Streptopharagus kutassi (Schultz 1927), Thominx sadovskaja Morozov 1959; Trematoda - Dicrocoelium lanceatum Stiles and Hassall 1896, Plagiorchis eutamiatis Schulz 1932.

Comments.—Ganzorig et al. (1998b) discovered the cestode Passerilepis passeris, normally found in passerine hosts, in a chipmunk in the Hovsgol area.

Literature.—Schulz 1932; Schulz 1933; Spassky, Ryhjikov and Sudarikov 1952; Machulsky 1958; Romanov 1960; Gubanov 1964; Durette-Desset 1970a; Eltyshev 1975; Domnich 1984b; Asakawa and Ohbayashi 1986a; Zhaltsanova and Shalaeva 1990; Ganzorig et al. 1999b; Tinnin et al. 2002; Batsaikhan et al. 2010.

Pteromys volans (Linnaeus 1758)
Siberian Flying Squirrel

Distribution.—The Siberian flying squirrel ranges from Scandinavia across Siberia to Hokkaido and Sakhalin, and south into China. In Mongolia they are found in the Mongolian Altai, Hovsgol, and the Khangay and Khentey Mountains.

Parasites.—In Mongolia: None currently known. Across range: Citellina petrowi Schulz 1930.

Literature.—Spassky, Ryhjikov and Sudarikov 1952; Machulsky 1958; Tinnin et al. 2002; Thorington and Hoffmann 2005.

Castoridae

Castor fiber (Linnaeus 1758)
Eurasian Beaver

Distribution.—The beaver is found across northern Eurasia. In Mongolia they are only known from the Djungarian Desert in the southwestern corner of the country; they have been reintroduced into the Mongolian Altai and Khangay Mountains.

Parasites.—In Mongolia: None currently known. Across range: CESTODA - Echinococcus granulosus larval (Batsch 1786), Echinococcus multilocularis larval Leuckart 1863, Taenia hydatigena larval Pallas 1766; NEMATA - Ascaris castoris Rudolphi 1819, Castorstrongylus castoris Chapin 1925, Trichostrongylus axei (Cobbold 1879), Trichostrongylus capricola Ransom 1907, Travassosius rufus Khalil 1922; TREMATODA - Echinostoma orlovi Romashov 1967, Fasciola
hepatica Linnaeus 1758, Opisthorchis felineus (Rivolta 1884), Psilotrema castoris Orlov 1946, Stichorchis subtriquetrus (Rudolphi 1814).

Comments.—Markov et al. (1977) reported that among other demographic factors, river pollution has influenced infection rates of Stichorchis subtriquetrus and Opisthorchis felineus in the Volgograd region of Russia.

Literature.—Orlov 1946; Moskalev 1954; Romashov 1958; Potekhina and Belyaeva 1959; Joszt 1964; Romashov 1967; Romashov 1973; Romashov 1976; Sharpilo 1976; Markov et al. 1977; Solovev et al. 1983; Shimalov and Shimalov 2000; Tinnin et al. 2002; Janovsky et al. 2002; Koubkova et al. 2002; Maleika et al. 2003; Drozd et al. 2004; Helgen 2005.

Dipodidae
Allactaga balikunica Hsia and Fang 1964
Balikun Jerboa

Distribution.—The Balikun Jerboa is narrowly restricted to Xianjiang China and southwest Mongolia. In Mongolia this species is only known from the desert regions south of the Gobi Altai.

Parasites.—In Mongolia: None currently known. Across range: None currently known.

Literature.—Sadikhov and Tarzhimanova 1965; Babaev 1967; Tokobaev 1976; Shakenov 1987; Tinnin et al. 2002; Holden and Musser 2005.

Allactaga bullata Allen 1925
Gobi Jerboa

Distribution.—The Gobi Jerboa ranges across southern Mongolia and northern China. In Mongolia it is known from the Valley of the Lakes, the Great Lakes region, and the desert and desert-steppe in the southern half of the country.

Parasites.—In Mongolia: Mesocestoides linearatus larval (Goeze 1782). Across range: No other helminths are known from this species.

Literature.—Danzan 1978; Ganzorig et al. 1998; Tinnin et al. 2002; Holden and Musser 2005.

Allactaga elater (Lichtenstein 1828)
Small Five-toed Jerboa

Distribution.—This species of jerboa is distributed from Iran east to northern China and southern Mongolia. In Mongolia it is narrowly restricted in the Djungarian region of the far west, south of the Gobi Altai.

Parasites.—In Mongolia: None currently known. Across range: ACANTHOCÆPHALA - Moniliformis moniliformis (Bremser 1811); CESTODA - Aprosotatandrya caucasica (Kirschenblatt 1938); Catenotaenia cricetorum Kirschenblatt 1949, Catenotaenia dentritica (Goeze 1782), Echinococcus multilocularis larval Leuckart 1863, Taenia taeinaeformis larval (Batsch 1786), Matkevotaenia symmetrica (Baylis 1927); NEMATA - Abbreviata leipperi (Skrjabin 1924), Mastophorus muris (Gmelin 1790), Subulura turkenica Babaev 1967, Syphacia obvelata (Rudolphi 1802); TREMATODA - Dicrocoelium lanceatum Stiles and Hassall 1896.

Literature.—Sadikhov and Tarzhimanova 1965; Babaev 1967; Tokobaev 1976; Shakenov 1987; Tinnin et al. 2002; Holden and Musser 2005.

Allactaga sibirica (Forster 1778)
Mongolian Five-toed Jerboa

Distribution.—The Mongolian five-toed jerboa is widely distributed from the Caspian Sea to Transbaikalia, south through Mongolia into China. This species is found in forest-steppe, steppe, and semi-desert areas throughout Mongolia.

Parasites.—In Mongolia: NEMATA - Kaszabospirura steinmani Meszaros 1975, Skrjabinocerina petrovi Matchulskey 1952. Across range: ACANTHOCÆPHALA - Moniliformis moniliformis (Bremser 1811); NEMATA - Eucoelus sp., Skrjabinocerina petrovi Matchulskey 1952, Streptopharagus sp., Subulura sp.

Literature.—Machulsky 1958; Meszaros 1975; Asakawa et al. 2001; Tinnin et al. 2002.
**Cardiocranius paradoxus** Satunin 1903

*Five-toed Pygmy Jerboa*

*Distribution.*—This species of jerboa ranges from the Tuva region of Russia south through eastern Kazakhstan, Mongolia, and China. In Mongolia it is found in the Great Lakes region, the Valley of the Lakes, and across the desert and desert-steppe in the southern part of the country.

*Parasites.*—In Mongolia: None currently known. Across range: None currently known.

*Literature.*—Tinnin et al. 2002; Holden and Musser 2005.

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**Pygeretemus pumilio** (Kerr 1792)

*Dwarf Fat-tailed Jerboa*

*Distribution.*—The fat-tailed jerboa ranges from Iran across Central Asia to Mongolia and China. In Mongolia they are found in the Great Lakes region, the Valley of the Lakes, and the southeastern Gobi desert regions.

*Parasites.*—In Mongolia: None currently known. Across range: None currently known.

*Literature.*—Tokobaev 1976; Tinnin et al. 2002.

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**Dipus sagitta** (Pallas 1773)

*Northern Three-toed Jerboa*

*Distribution.*—The northern three-toed jerboa ranges from the northwest coast of the Caspian Sea south into Iran, east through Central Asia to the Tuva region of Russia, Mongolia and northern China. They are found in the Valley of the Lakes, the Great Lakes region, Gobi Altai, and throughout the desert and semi-desert regions of southern Mongolia.

*Parasites.*—In Mongolia: CESTODA - Mesocestoides lineatus (Goeze 1782). Across range: NEMATA - Aspicularius tetraptera (Nitzsch 1821), Mastophorus muris (Gmelin 1790), Syphacia obvelata (Rudolphi 1802).

*Literature.*—Tokobaev 1976; Ganzorig et al. 1998; Asakawa et al. 2001; Tinnin et al. 2002.

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**Euchoreutes naso** Scleter 1891

*Long-eared Jerboa*

*Distribution.*—The long-eared jerboa is only found in southern Mongolia and northern China. In Mongolia this species is restricted to the Trans-Altai Gobi.

*Parasites.*—In Mongolia: None currently known. Across range: NEMATA - Subulura citelli Sulimov 1961.

*Literature.*—Tinnin et al. 2002; Holden and Musser 2005.
**Stylodipus andrewsi** Allen 1925  
Andrew’s Three-toed Jerboa

**Distribution.**—Andrew’s three-toed jerboa is only found in southern Mongolia and northern China. In Mongolia this species ranges from the Great Lakes and Valley of the Lakes through the desert-steppe in the south-central part of the country.

**Parasites.**—In Mongolia: None currently known. Across range: None currently known.

**Literature.**—Tinnin et al. 2002; Holden and Musser 2005.

**Stylodipus sungorus** Sokolov and Shenbrot 1987  
Dzungarian Three-toed Jerboa

**Distribution.**—The Dzungarian three-toed jerboa is only found in southern Mongolia and northern China. In Mongolia it is restricted to the Dzungarian desert in the southwestern corner of the country.

**Parasites.**—In Mongolia: None currently known. Across range: None currently known.

**Literature.**—Tinnin et al. 2002; Holden and Musser 2005.

Cricetidae  
Arvicolinae

**Alticola barakshin** Bannikov 1947  
Gobi Altai Mountain Vole

**Distribution.**—This species of vole ranges from the Tuva region of Russia south through Mongolia into China. In Mongolia they are found in the western Mongolian and Gobi Altai.

**Parasites.**—In Mongolia: None currently known. Across range: None currently known.

**Literature.**—Tinnin et al. 2002; Musser and Carleton 2005.

**Alticola macrotis** (Radde 1862)  
Large-eared Mountain Vole

**Distribution.**—The large-eared vole ranges from the Altai Mountains of southern Siberia and northwest China through Tuva to the Lake Baikal area. In Mongolia this species of vole is found in the Altai of the west and in the Lake Hovsogol region.

**Parasites.**—In Mongolia: None currently known. Across range: Nemata - *Syphacia obvelata* (Rudolphi 1802).

**Literature.**—Machulsky 1958; Tinnin et al. 2002; Musser and Carleton 2005.

**Alticola semicanus** (Allen 1924)  
Mongolian Mountain Vole

**Distribution.**—The Mongolian mountain vole ranges from The Tuva region of Russia through north and central Mongolia into Inner Mongolia. In Mongolia this vole is commonly found from the Great Lakes region through the Khangay Mountains and east across the steppes of most of the country.

**Parasites.**—In Mongolia: CESTODA - Aprostandrya sp., Hymenolepis horrida (Linstow 1901), Hymenolepis meszarosi Murai and Tenora 1975, Paranoiocephala dentata (Galli-Valerio 1905); NEMATA - Cephaluris andrejevi Schulz 1948, Syphacia sp. . Across range: None currently known.

**Literature.**—Murai and Tenora 1975; Ganzorig et al. 1998b; Tinnin et al. 2002.

**Alticola strelzowi** (Katschenko 1899)  
Strelzow’s Vole

**Distribution.**—Strelzow’s vole is found from Kazakhstan east into the Altai Mountains of Siberia, Mongolia and China. In Mongolia they are restricted to the Mongolian Altai in the far west of the country.

**Parasites.**—In Mongolia: None currently known. Across range: None currently known.

**Literature.**—Tinnin et al. 2002; Musser and Carleton 2005.
Paranoplocephala sp., Taenia crassiceps, Paranoplocephala omphalodes (Hermann 1783), Mastophorus muris (Nitzsch 1821), larval (Batsch 1786), *NEmaTa* - 1800), Taenia hydatigena (Rudolphi 1819), Notocotylus noyeri (Lewis and McConnal 1876), Leucochloridium holostomum (Rudolphi 1802), Opisthorchis felineus (Rivolta 1884), Plagiorchis arvicolae Schulz and Skwarzow 1931, Plagiorchis eutamias Schulz 1932, Psilotrema mariki Skvortsov 1934, Psilotrema simillimum (Mühling 1898), Psilotrema spiculigerum (Mühling 1898), Quinqueserialis wolgensis (Skvortsov 1934), Strigea falconis larval Szidat 1928, Tetraserialis tscherbakovi Petrov and Chertkova 1960.

Comments.—Some authors (see Musser and Carleton 2005 and discussion there-in) use *A. amphibius* for the Eurasian water vole due to recent synonymizing of the two species and its priority. However, as what was previously recognized as *A. amphibius* was restricted to the British Isles most of the relevant data pertaining to the continental forms will be listed under *A. terrestris*.

Biserkov et al. (1998) provides a redescription of Heligmosomum glareoli.

Chechulin (1988) reported that in the area of Novosibirsk, the intermediate hosts of *Notocotylus noyeri* were the snails Anisus contortus, Segmentina nitida and, Planorbis planorbis.

In several regions of Russia, water voles were found to commonly be final hosts for trematodes whose normal hosts were birds or other carnivorous mammals. Gubskii (1965) found Strigea falconis, normally in marsh birds, in water voles along the lower Dnestr River. Sulimov et al. (1983) found the bird trematodes Leucocloridium holostomum and Echinostoma revolutum in *Arvicola* at Lake Tenis near Omsk, Russia.

In the Don River basin, Lisitskaya (1958) found 52% and 5% of cats and water voles, respectively, infected with *Opisthorchis felineus*. Intermediate hosts in this region included the snail Bithynia leachi and cyprinid fish. In Kazakhstan, Smagulov et al. (1985) reported the intermediate of *O. felineus* as the

**Alticola tuvinicus** Ognev 1950

Tuva Mountain Vole

**Distribution.**—The Tuva vole has a distribution from the Altai Mountains of Russia and Mongolia east through, of course, Tuva to Lake Baikal. In Mongolia they are found in the western Altai mountains and the Hovsgol region.

**Parasites.**—In Mongolia: None currently known. Across range: None currently known.

**Literature.**—Tinnin et al. 2002; Musser and Carleton 2005.

**Arvicola amphibius (=terrestris)** (Linnaeus 1758)

Water Vole

**Distribution.**—The water vole ranges across Eurasia. In Mongolia they are only known from a few localities in the Mongolian Altai and Hovsgol.

**Parasites.**—In Mongolia: None currently known. Across range: ACANTHOCEPHALA - Aprostatandrya macrocephala (Douthitt 1915); CESTODA - Cladotaenia cylindrica larval (Krefft 1873), Echinococcus granulosus larval (Batsch 1786), Echinococcus multilocularis larval Leuckart 1863, Hymenolepis horrida (Linstow 1901), Limnolepis transfuga Spassky and Gulyaev and Parandrya feodorovi Gulyaev and Novosibirsk, the intermediate hosts of *Notocotylus noyeri* were the snails Anisus contortus, Segmentina nitida and, Planorbis planorbis.

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fish *Leuciscus idus*. Final hosts, besides *A. terrestris*, included foxes, mustelids, and wild boars; prevalence in domestic cats was 100%, in domestic dogs 11%, while human prevalence was up to 19% in some areas.

The diet of the water vole varies by area and season; although they usually feed on aquatic and riparian plants, they may also be highly carnivorous.

**Literature.**—Skvortsov 1934; Rukhlyadeva 1950; Lisitskaya 1958; Merkusheva 1958; Bernard 1959; Petrov and Cherkova 1960; Sadikho 1960; Gubskii 1965; Chiriac and Hamar 1966; Horning 1968; Sharpilo 1973; Tokobaev 1976; Genov and Yanchev 1980; Fanne and Valence 1981; Kovalchuk and Bonina 1981; Genov and Yanchev 1982; Deblock and Petavy 1983; Fatulijev 1983; Sudimov et al. 1983; Feliu et all. 1984; Smagulov et al. 1985; Artiais and Le Pesteur 1986; Bonnin et al. 1986; Tenora et al. 1986; Chechulin 1988; Bonnin et al. 1989; Genov et all. 1996; Gottstein et al. 1996; Gulyaev and Chechulin 1996; Petavy et al. 1996; Biserkov et al. 1998; Chen et all. 2001; Tinnin et al. 2002; JunJie et al. 2003; Chechulin et al. 2005; Musser and Carleton 2005; Deter et al. 2007; Batsaiykhan et al. 2010.

**Clethrionomys (=*Myodes*) rufocanus** (Sundevall 1846)  
Gray Red-backed Vole

**Distribution.**—Members of *C. rufocanus* are found throughout northern Eurasia from Scandinavia to Kamchatka extending south as far as the Urals in the west and Mongolia in the east. In Mongolia these voles are found in the northern mountain regions of the Altai, Hovsgol region and Khentey and Khangay Mountains.

**Parasites.**—In Mongolia: None currently known. Across range: *ACANTHOCEPHALA - Moniliformis moniliformis* (Bremser 1811); CESTODA - *Andrya microti* Hansen 1947, *Anoplocephaloides dentatooides* Sato et al. 1993, *Anoplocephaloides sp.*, *Aprostandrya sp.*, *Catenotaenia sp.*, *Echinococcus multilocularis* larval Leuckart 1863, *Hymenolepis diminuta* (Rudolph 1819), *Hymenolepis horrida* (Linstow 1901), *Mesocoeloides sp.*, *Paranoplocephala brevis* Kirschblatt 1938, *Paranoplocephala kaeieai* Tenora et al. 1985, *Paranoplocephala buryatensis* Hauksalami et al. 2007, *Paranoplocephala omphalodes* (Hermann 1783), *Relictolepis foedroroi* Gulyaev and Makarikov 2007, *Taenia taeniaeformis* larval (Batsch 1786), *Taenia mustelae* larval Gmelin 1790; NEMATA - *Capillaria muris* (Diesing 1851), *Capillaria hepatica* (Bancroft 1893), *Capillaria sp.*, *Gliovigylus rodentius* (Gubanov and Fedorov 1965), *Heligmosomum costellatum* (Dujardin 1845), *Heligmosomum petrovii* Krotov 1953, *Heligmosomum polygryum* (Dujardin 1845), *Heligmosomum yamaguti* Chabaud et al. 1963, *Heterakis spumosa* Schneider 1866, *Manmadaholoides hokkaidensis* Ohbayashi et al. 1968, *Mammolongistria aspera* Dubinin 1953, *Mastophorus muris* (Gmelin 1790), *Rhabditis orbitalis* Sudhaus and Schulte 1986, *Rauschinghamylus asiaticus* Domnich 1984, *Syphacia montana* Yamaguti 1943, *Syphacia ovelata* (Rudolph 1802), *Syphacia stroma* (Linstow 1884), *Tenorastroynchus speciosus* (Konno 1958), *Trichinella sp.*, *Trichurus sp.*; TREMATODA - *Brachylaema sp.*, *Brachylecithum rodentii* Agapova 1955, *Corrigia vitta* (Dujardin 1845), *Quinqueserialis quinquerginalis* (Barker and Laughlin 1911), *Plagiorchis muris* Tanabe 1922.

**Comments.**—Although *Clethrionomys* has been in common usage for over 80 years as the genus-name for red-backed voles, *Myodes* has priority and is used by some researchers.

**Literature.**—Dubinin 1953; Krotov 1953; Agapova 1955; Machulsky 1958; Chabaud et al. 1963; Ohbayashi et al. 1968; Barus, Kullmann, and Tenora 1970; Surkov and Nadtochy 1971; Ishimoto 1974; Elyshev 1975; Fedorov 1976; Asakawa et al. 1983; Domnich 1984b; Hatakeyama 1986; Tenora et al. 1985a; Sudhaus and Schulte 1986; Tenora et al. 1986; Tenora et al. 1991; Asakawa et al. 1992; Tranbenkova 1992; Iwaki et al. 1993; Sato et al. 1993; Iwaki et al. 1996; Abe et al. 1997; Ganzorig et al. 1998; Asakawa 2001; Tinnin et al. 2002; Musser and Carleton 2005; Gulyaev and Makarikov 2007; Hauksalami et al. 2007; Batsaiykhan et al. 2010.
**Clethrionomys (=Myodes) rutilus** (Pallas 1779)
Northern Red-backed Vole

*Distribution.* The northern red-backed vole is Holarctic in distribution, across Eurasia south into China and Korea in Asia, and as far south as central Canada in North America. In Mongolia they are found in the northern mountains similar in distribution to *C. rufocanus.*

*Parasites.* In Mongolia: CESTODA - *Aprostandrya caucasia* Kirschenblatt 1938; NEMATA - *Rictularia amurensis* Schulz 1927, *Syphacia* sp. Across range: CESTODA - *Andrya arctica* Rausch 1952, *Catenoataenia cricetorum* Kirschenblatt 1949, *Catenoataenia henttoneni* Haukisalmi and Tenora 1993, *Catenoataenia pusilla* (Goeze 1782), *Catenoataenia sp.*, *Dicranotaenia coronula* (Dujardin 1845), *Echinococcus multilocularis* larval Leuckart 1863, *Echinococcus sibiricensis* Rausch and Schiller 1954, *Hymenolepis diminuta* (Rudolphi 1819), *Hymenolepis horrida* (Linstow 1901), *Mesocestoides kirbyi* Chandler 1944, *Nadejdolepis sp.*

*Comments.* See taxonomic comments under *C. rufocanus.*

Surkov and Nadtochy (1971) found the waterfowl cestodes *Dicranotaenia coronula* and *Nadejdolepis sp.* in *C. rutilus* on Sakhalin Island.

*Literature.* Rausch 1952; Dubinin 1953; Krotov 1953; Rausch and Schiller 1956; Rausch et al. 1956; Leikina et al. 1959; Rausch 1962; Machulsky 1958; Morozov 1959; Bernard 1966; Hasegawa 1970; Shultz 1970; Surkov and Nadtochy 1971; Yushkov 1971; Egorova and Nadtochy 1975; Elytsev 1975; Fedorov 1976; Wiger et al. 1976; Domnich 1984b; Bangs 1985; Sudhaus and Schulte 1986; Asakawa and Satoh 1987; Fedorov 1989; Tranbenkova 1992; Haukisalmi and Tenora 1993; Chechulin and Gulyaev 1998; Ganzorig et al. 1998; Ganzorig et al. 1998b; Asakawa 2001; Asakawa et al. 2001; Tinnin et al. 2002; Musser and Carleton 2005; Batsaikhan et al. 2010.

**Ellobius tancrei** Blasius 1884
Zaisan Mole Vole

*Distribution.* This mole vole has a broad geographic distribution from northeastern Turkmenistan and Uzbekistan east through China and Mongolia. They are found throughout the desert and desert-steppe regions of the country.

*Parasites.* In Mongolia: None currently known. Across range: *Capillaria hepatica* (Bancroft 1893).

*Literature.* Asakawa et al. 2001; Tinnin et al. 2002.

**Eolagus luteus** (Eversmann 1946)
Yellow Steppe Lemming

*Distribution.* This species of lemming is narrowly distributed through eastern Kazakhstan, western Mongolia, and northwestern China. In Mongolia, they are found in the western Trans-Altai Gobi.

*Parasites.* In Mongolia: None currently known. Across range: NEMATA - *Trichuris muris* (Schrank 1788).

*Literature.* Asakawa et al. 2001; Tinnin et al. 2002; Musser and Carleton 2005.
**Eolagurus przewalskii** (Büchner 1889)
Przewalski’s Steppe Lemming

*Distribution.*—Przewalski’s lemming is found in northern China and Mongolia. They are found in the Great Lakes region east across the Gobi region of southern Mongolia.

*Parasites.*—In Mongolia: None currently known. Across range: None currently known.

*Literature.*—Tinnin et al. 2002; Musser and Carleton 2005.

**Lagurus lagurus** (Pallas 1773)
Steppe Vole

*Distribution.*—The steppe vole ranges from the Ukraine across Siberia, Kazakhstan, Mongolia and China. In Mongolia they are patchily distributed in the western Trans-Altai Gobi, north of the Gobi Altai and in the Great Lakes region.

*Parasites.*—In Mongolia: None currently known. Across range: CESTODA - *Echinococcus multilocularis* larval Leuckart 1863, *Taenia polycanthra* Leuckart 1856; NEMATA - *Rhabditis orbitalis* larval Sudhaus and Schulte 1986, *Syphacia laguri* Pleschchev 1978, *Syphacia sp.*

*Literature.*—Pleschchev 1978a; Pleschchev 1978b; Sudhaus and Schulte 1986; Martynenko et al. 1988; Asakawa et al. 2001; Tinnin et al. 2002; Musser and Carleton 2005.

**Lasiopodomys brandti** (Radde 1861)
Brandt’s vole

*Distribution.*—Brandt’s vole from Transbaikalia through northwest China. In Mongolia they are found across the steppe and mountain steppes through the center of the country.

*Parasites.*—In Mongolia: CESTODA - *Catenotaenia afghana* Tenora 1977, *Cladotaenia globifera* (Batsch 1786), *Mesocestoides sp.*, *Taenia mustelae* Gemelin 1790, *Taenia polycanthra* Leuckart 1856; NEMATA - *Rictularia cristata* Froelich 1802, *Smirnova gregori* Schulz and Andreeva 1950, *Syphacia nigeriana* Baylis 1928. Across range: CESTODA - *Echinococcus multilocularis* larval Leuckart 1863, *Echinococcus russicensis* larval ChongTi et al. 2007, *Echinococcus sibiricensis* larval Rausch and Schiller 1954, *Mesocestoides lineatus* (Goeze 1782), *Paranoplocephala brevis* Kirschblatt 1938, *Paranoplocephala ophthalmodes* (Hermann 1783); NEMATA - *Syphacia obvelata* (Rudolph 1802).

*Comments.*—This species forms large colonies, undergoes significant cyclic population expansions, serves as a primary food source for many steppe raptors, and is regarded as a significant pest species in many areas across its range.

*Literature.*—Schulz and Andreeva 1950; Machulskaya and Machulsky 1961; Meszaros 1974; Ganzorig, et al. 1998; Ganzorig, et al. 1999; Tang et al. 2004; Tinnin et al. 2002; ChongTi et al. 2007a; ChongTi et al. 2007b; Batsaikhan et al. 2010.

**Lasiopodomys mandarinus** (Milne-Edwards 1871)
Mandarin Vole

*Distribution.*—The Mandarin vole is distributed from Transbaikalia and eastern Siberia south to central China and Korea. In Mongolia they are only reported from the northern Khangay Mountains and in the Orkhon and Selenge river valleys in the north.

*Parasites.*—In Mongolia: None currently known. Across range: None currently known.

*Comments.*—Min (1979) examined specimens from near Seoul, Korea, but all were uninfected.

*Literature.*—Min 1979; Tinnin et al. 2002; Musser and Carleton 2005.

**Microtus arvalis** (Pallas 1778)
Common Vole

*Distribution.*—The common vole covers the western Palearctic in distribution, from Europe south to Iran and east to the region of Tuva then south into China. In Mongolia they are known only from the western Altai and Hovsgol Lake regions of the country.
Parasites.—In Mongolia: ACANTHOCEPHALA - Moniliformis moniliformis (Bremser 1811). Across range: ACANTHOCEPHALA - Moniliformis moniliformis (Bremser 1811); CESTODA - Andrya białowiezęnsis Solty 1949, Andrya sp., Aprostatandra caucasia (Kirschenblatt 1938), Aprostatandra macrheiropha (Douthitt 1915), Catenotaenia cricetorum Kirschenblatt 1949, Catenotaenia pusilla (Goeze 1782), Cladotaenia sp., Echinococcus granulosus larval (Batsch 1786), Echinococcus multilocularis larval Leuckart 1863, Hymenolepis arvicolina Schodkowski 1912; Hymenolepis asymmetrica Janicki 1904, Hymenolepis diminuta (Rudolphi 1819), Hymenolepis horrida (Linstow 1901), Mesocestoides leptothylicus larval, Mesocestoides lineatus larval (Goeze 1782), Paranocephalophara brevis Kirschenblatt 1938, Paranocephalophara dentata (Galli-Valerio 1905), Paranocephalophara janicki Tenora et al. 1985, Paranocephalophara ornalodes (Hermann 1783), Rodentolepis asymmetrica (Janicki 1904), Rodentolepis straminea (Goeze 1782), Taenia crassiceps larval (Zeder 1800), Taenia hydatigena larval Gmelin 1790, Taenia pisiformis (Bloch 1780), Taenia polycantha larval Leuckart 1856, Taenia taeniaeformis larval (Rudolphi 1819), Taenia tenuicollis larval Rudolphi 1819; NEMAT - Boreostrongylus minutus (Dujardin 1845), Capillaria hepatica (Bancoft 1893), Capillaria muris sylvatici (Diesling 1851), Eucoleus lemmi (Retzio 1841), Heligmosomoides laevis (Dujardin 1845), Heligmososomum azerbaidjani Schachnasarova 1949, Heligmososomum borealis (Schulz 1930), Heligmososomum costellatum (Dujardin 1845), Heligmososomum halli (Schulz 1926), Heligmososomum longispiculum Tokobaev and Erkulov 1966, Heligmososomum mixtum Schulz 1929, Heligmososomum polygyrum (Dujardin 1845), Heligmososomum skrjabini (Schulz 1926), Heligmososomum sp., Heligmososomum turgidum (Walten 1923), Mastophorus muris (Gmelin 1790), Rhabditis orbitalis larval Sudhaus and Schulte 1986, Scapheca miricota Erkulov and Moldopiyazova 1975, Syphacia montana Yamaguti 1943, Syphacia nigeriana Baylis 1928, Syphacia obvelata (Rudolphi 1802), Syphacia sp., Thominx sadowskiae Morozov 1959, Trichinella spiralis (Owen 1835), Trichinella sp., Trichurus muris (Schrank 1788), Trichurus arvicola Feliu et al. 2000; TREMATODA - Alaria alata larval (Goeze 1782), Brachylaemus spinulosus (Hoffmann 1899), Notocotylus noyeri Joyceux 1922, Plagiorchis blatnensis Chalupski 1954, Plagiorchis microti Solty 1949, Tetraserialis tscherbakovi Petrov and Chertkova 1960.

Comments.—Microtus obscurus (Eversmann 1841) is currently recognized as a subspecies of the more broadly distributed species M. arvalis. However, many authors have recognized it as a separate species, and information concerning the Mongolian form is sometimes reported under M. obscurus.

According to Feliu at al. (2000), reports of Trichurus muris in arvicolid previous to their work likely represent T. arvicola.

Literature.—Schachnasarova 1949; Solty 1949; Spassky, Rijhikov and Sudarikov 1952; Chalupsky 1954; Akhumyan 1956; Morozov 1959; Bernard 1960; Petrov and Chertkova 1960; Bernard 1961b; Lupu and Coroneanu 1962; Erhardova 1964; Chirac and Hamar 1966; Kurashvili 1967; Dorosz 1968; Prokopic 1970; Barus and Daniel 1972; Kisielewskas et al. 1973; Merkusheva 1973; Murai and Tenora 1973; Sharpilo 1973; Baba 1974; Erkulov and Moldopiyazova 1975; Murai 1975; Tenora and Meszaros 1975; Sharpilo 1976; Tokobaev 1976; Meszaros 1977; Genov and Yanchev 1980; Loos-Frank 1980; Genov and Yanchev 1982; Delattre et al. 1985; Tenora et al. 1985b; Bonnin et al. 1986; Sudhaus and Schulte 1986; Brglez 1989; Barus and Hrb 1991; Gubanyi et al. 1992; Le Pesteur et al. 1992; Petavy et al. 1996; Feliu et al. 2000; Asakawa et al. 2001; Tinnin et al. 2002; Grikieniene 2005; Musser and Carleton 2005; Tinnin et al. 2008.

*Microtus arvalis* Büchner 1889

Reed Vole

*Comments.* The reed vole is found from Transbaikalia to the Amur region of Russia south through Korea and central China. They are known from the steppe and mountains of the extreme northeast of Mongolia.

Parasites.—In Mongolia: None currently known. Across range: TREMATODA - Catatropis morosovi Gubanov et al. 1966, Plagiorchis eutamiatis Schulz 1932, Tetraserialis tscherbakovi Petrov and Chertkova 1960.
Comments.—Dvoryadkin (1987) reported that the intermediate host of *Catatropis morosovi* in the Amur region of Russia is the snail *Bithynia contortrix*.

Literature.—Machulsky 1958; Eltyshev 1975; Dvoryadkin 1987; Dvoryadkin 1989; Tinnin et al. 2002; Musser and Carleton 2005.

*Microtus gregalis* (Pallas 1779)
Narrow-headed Vole

Distribution.—The narrow-headed vole has a fragmented distribution in areas across Russia, through Central Asia to Mongolia and northern China. In Mongolia this species is known from the Mongolia Altai as well as the mountain and steppe region over much of the northern part of the country.

Parasites.—In Mongolia: CESTODA - *Aprostandrya caucasia* Kirschenblatt 1938; NEMATA - *Syphacia* sp. Across range: CESTODA - *Aprostandrya macrocephala* (Douthit 1915), *Caenotaenia pusilla* (Goeze 1782), *Echinococcus multilocularis* larval Leuckart 1863, *Hymenolepis diminuta* (Rudolphi 1819), *Mesocestoides lineatus* (Goeze 1782), *Paranoplocephala brevis* Kirschenblatt 1938, *Paranoplocephala dentata* (Galli-Valerio 1905), *Paranoplocephala omphalodes* (Hermann 1783), *Taenia polycantha* larval Leuckart 1856; Nemata - *Aspiculuris tetraptera* (Nitzsch 1821), *Capillaria hepatica* (Bancroft 1893), *Capillaria muris-sylvatici* (Diesel 1851), *Eucoleus lemmi* (Retzius 1841), *Heligmosomum azerbaijani* Schachnasarova 1949, *Heligmosomum costellatum* (Dujardin 1845), *Heligmosomum longispiculum* Toko-baev and Erkulov 1966, *Heligmosomum polygyrum* (Dujardin 1845), *Mastophorus muris* (Gimelin 1790), *Rictularia cristata* Froelich 1802, *Rictularia sibiricensis* Morozov 1959, *Syphacia obvelata* (Rudolphi 1802), *Trichinella spiralis* (Owen 1835), *Trichuris muris* (Schrank 1788); TREMATODA - *Alaria alaria* (Goeze 1782), *Dicrocoelium lanceatum* Stiles and Hassall 1896.

Comments.—According to Feliu at al. (2000), reports of *Trichuris muris* in arvicolids previous to their work likely represent *T. arvicolae*.

Literature.—Machulsky 1958; Nadtochy et al. 1966; Tokobaev 1976; Ganzorig et al. 1998b; Tinnin et al. 2002; Musser and Carleton 2005.

*Microtus limnophilus* Büchner 1889
Lacustrine Vole

Distribution.—The lacustrine vole ranges from western Mongolia south through northern China. In Mongolia they range from the Mongolia Altai and Great Lakes region south across the Gobi Altai and Trans-Altai Gobi.

Parasites.—In Mongolia: None currently known. Across range: None currently known.

Literature.—Tinnin et al. 2002; Musser and Carleton 2005.

*Microtus maximowiczii* (Schrenk 1859)
Maximowicz’s Vole

Distribution.—Maximowicz’s vole ranges across from Lake Baikal to the Amur region of Russia, south into eastern Mongolia and northeast China. In Mongolia they are known from the eastern Khentey Mountains.

Parasites.—In Mongolia: None currently known. Across range: CESTODA - *Parandrya feodorovi* Gulyaev and Chechulin 1996, *Paranoplocephala omphalodes* (Hermann 1783); TREMATODA - *Tetraserialis tscherbakovi* Petrov and Chertkova 1960, *Catatropis morosovi* Gubanov et al. 1966.

Comments.—Dvoryadkin (1987) reported that the intermediate host of *Catatropis morosovi* in the Amur region of Russia is snail *Bithynia contortrix*.

Literature.—Machulsky 1958; Dvoryadkin 1987; Dvoryadkin 1989; Gulyaev and Chechulin 1996; Tinnin et al. 2002; Musser and Carleton 2005.

*Microtus mongolicus* (Radde 1861)
Mongolian Vole

Distribution.—The Mongolian vole is found in Transbaikalia, of course, Mongolia, and northeastern
China. This vole ranges across the Khentey and parts of the Khangay Mountains as well as the Hovsgol region of the country.

**Parasites.**—In Mongolia: CESTODA - *Taenia mustelae* (larval) Gmelin 1790. Across range: No other helminths from this species are known.

**Literature.**—Ganzorig et al. 1998; Tinnin et al. 2002; Musser and Carleton 2005.

*Microtus oeconomus* (Pallas 1776)

**Root Vole**

**Distribution.**—The root vole is Holarctic in distribution. In the Old World, it ranges from Scandinavia south to the Baltic and east across Siberia, south into China as well as on Sakhalin and the Kurile Islands. In North America they range into north central Canada. In Mongolia, this species is found in the Mongolian Altai, Khentey and Khangay mountain ranges as well as the Hovsgol region.

**Parasites.**—In Mongolia: CESTODA - *Cteno- taenia citelli* (Kirschenblatt 1939). Across range: CESTODA - *Andrya microti* Hansen 1947, *Apros- tatandrya macrocephala* (Douthitt 1915), *Cladotaenia cirri* Yamaguti 1935, *Echinococcus granulosus* larval (Batsch 1786), *Echinococcus multilocularis* larval (Batsch 1786), *Echinococcus larval* (Batsch 1786), *Taenia mustelae* larval Gmelin 1790, *Taenia polyacantha* Leuckart 1856, *Taenia twitchelli* larval Schwartz 1924; NEMATA - *Capillaria hepatica* (Bancroft 1893), *Capillaria uris-sylvatici* (Diesling 1851), *Heligmosomum costellatum* (Dujardin 1845), *Heligmosomum glareoli* (Baylis 1928), *Heligmosomum polygyrum* (Dujardin 1845), *Heligmosomum ryjikovi* Nadtochy et al. 1971, *Heligmosomum schulzi* Nadtochy 1966, *Heligmosomum sp.* , *Mastophorus muris* (Gmelin 1790), *Rauschvingylus asiaticus* Domnich 1984, *Rictularia microti* McPherson and Tiner 1952, *Rhabditis orbitalis* larval Sudhaus and Schulte 1986, *Syngamus sp.* , *Sobolevingylus microti* Rausch and Rausch 1969, *Syphacia nigeriana* Baylis 1928, *Toxascaris leonina* larval (Linstow 1902), *Trichinella spiralis* (Owen 1835), *Trichinella nativa* Britov and Boev 1972, *Trichuris muris* (Schrank 1788), *Trichostrongylus colubriformis* (Giles 1892); TREPATOMIDA - *Dicrocoelium lanceatum* Stiles and Hassall 1896, *Notocotylus noyeri* Jollyeux 1922, *Plagiorchis muris* Tanabe 1922, *Psilotrema simillimum* (Mühling 1898), *Quinqueserialis quinqueserialis* (Barker and Laughlin 1911).

**Comments.**—According to Feliu et al. (2000), reports of *Trichuris muris* in arvicolids previous to their work likely represent *T. arvicolae*. Biserkov et al. (1998) provides a redescription of *Heligmosomum glareoli*.

Kovalchuk (1981) conducted experimental work on *Trichinella* spp. in Siberia. He found that the local carnivores were infected with *T. nativa* and that rodents *M. oeconomus* and *Apodemus agrarius* could only be infected by *T. nativa* and not *T. spiralis*. Many of the records of infection by *T. spiralis* in rodents, at least in this region, may have to be reexamined.

**Literature.**—Rausch and Schiller 1951; McPherson and Tiner 1952; Rausch 1952; Erhardova 1955; Machulsky 1958; Leikina et al. 1959; Rausch 1962; Nadtochy 1966; Nadtochy et al. 1966; Rausch and Rausch 1969; Nadtochy et al. 1971; Murai 1975; Tenora and Meszaros 1975; Tokobaev 1976; Rausch 1977; Tenora et al. 1977; Pleshcheev 1978b; Kovalchuk 1981; Kovalchuk and Bonina 1981; Domnich 1984b; Sudhaus and Schulte 1986; Tenora et al. 1986; Shakhmatova and Yudina 1989; Fujita et al. 1991; Matskasi et al. 1992; Sato and Kamiya 1992; Tranbenkova 1992; Haukisalmi et al. 1995; Gulyaev 1996; Asakawa et al. 2001; Tinnin et al. 2002; Grikieniene 2005; Musser and Carleton 2005; Ganzorig et al. 2006.

*Myopus schisticolor* (Lilljeborg 1844)

**Wood Lemming**

**Distribution.**—The wood lemming is found from Scandinavia across to Kamchatka and south into the Altai Mountains, Mongolia and northeast China. In Mongolia they range across the northern mountain regions.
Parasites.—In Mongolia: None currently known. Across range: Paranoplocephala dentata (Galli-Valerio 1905), Paranoplocephala gubanovi Gulaev and Krivopalov 2003, Paranoplocephala omphalodes (Hermann 1783).

Literature.—Yushkov 1971; Tinnin et al. 2002; Gulyaev and Krivopalov 2003; Musser and Carleton 2005.

Ondatra zibethicus (Linnaeus 1786) Muskrat

Distribution.—This North American species has been introduced to the Palearctic and now is spread from Europe across Siberia and south into Mongolia, China, Korea as well as Japan. In Mongolia at one time they were known across the Khentey, Khangay, and Hovsgol regions of the country.

Parasites.—In Mongolia: None currently known. Across range: ACANTHOCEPHALA - Macracanthorhynchus hirudinaceus (Pallas 1781); CESTODA - Aprostandrya macrocephala (Douthitt 1915), Echinococcus multilocularis larval Leuckart 1863, Paranoplocephala aquatica Genov et al. 1996, Taenia polycanthana Leuckart 1856; NEMATA - Capillaria sp., Trichinella spiralis larval (Owen 1835), Trichuris suis (Schrank 1788); TREMATODA - Echinostoma miyagawi Ishii 1932, Opisthorchis felineus (Rivolta 1884), Plagiorchis arvicola Schulz and Skwarzow 1931, Plagiorchis eutamiatis Schulz 1932, Plagiorchis proximus Barker 1915, Plagiorchis sp., Quinqueserialis quinqueserialis (Barker and Laughlin 1911).

Comments.—As this is an introduced species in the country, only incidental records from the region have been included in the above list.

According to a re-examination of material by Genov et al. (1996), the specimens reported as Paranoplocephala ondatrae by Tenora and Murai (1980) and as Aprostandrya macrocephala by Spassky et al. (1951) belong to P. aquatica.

Literature.—Schulz 1932; Rausch et al. 1956; Leikina et al. 1959; Gvozdev 1969; Martynenko et al. 1988; Tranbenkova 1992; Genov et al. 1996; Tinnin et al. 2002; Maleika et al. 2003; Musser and Carleton 2005.

Cricetinae

Allocricetulus curtatus (Allen 1925) Mongolian Hamster

Distribution.—The Mongolian hamster is distributed across China and Mongolia. In Mongolia they are found in the Great Lakes region and east across the Gobi and Gobi Desert.

Parasites.—In Mongolia: Moniliformis clarki (Ward 1917), Mesocestoides lineatus (Goeze 1782). Across range: No other helminths from this species are currently known.

Literature.—Ganzorig et al. 1998; Tinnin et al. 2002; Musser and Carleton 2005; Tinnin et al. 2008.

Cricetulus barabensis (Pallas 1773) Striped Dwarf Hamster

Distribution.—The striped dwarf hamster ranges from southern Siberia across Mongolia into China and Korea. In Mongolia they are found across the northern half of the country as far south as the southern Khangay Mountains.

Parasites.—In Mongolia: CESTODA - Cateno taenia asiatica Tenora and Murai 1975; NEMATA - Syphacia nigeriana Baylis 1928. Across range: ACANTHOCEPHALA - Moniliformis moniliformis (Bremser 1811); CESTODA - Cateno taenia cricetorum Kirschchennblatt 1949, Dicranotaenia sp., Taenia taeniaeiformis larval (Batsch 1786); NEMATA - Aspiculuris tetraptera (Nitzsch 1821), Mastophorus muris (Gmelin 1790), Nippostrongylus rysavyi (Erhardtova 1959), Orientostrongylus chinensis Durette-Desset 1970, Syphacia obvelata (Rudolphi 1802), Viannella chinensis (Erhardtova 1959); TREMATODA - Plagiorchis eutamiatis Schulz 1932.

Comments.—Durette-Desset (1970b) provided a redescription of Nippostrongylus rysavyi, which was inadequately described by Erhardtova (1959).
Cricetulus longicaudatus (Milne-Edwards 1867)
Long-tailed Dwarf Hamster

Distribution.—This species of hamster is ranges from Tuva south into the Altai and Kazakhstan, through Mongolia to central China. In Mongolia they are found across the western two-thirds of the country with the exception of the Hovsgol area and Trans-Altai Gobi.

Parasites.—In Mongolia: None currently known. Across range: None currently known.

Literature.—Tinnin et al. 2002; Musser and Carleton 2005.

Cricetulus migratorius (Pallas 1773)
Gray Hamster

Distribution.—The gray hamster is distributed from southern Europe south to Iran and Iraq east through Russia, Kazakhstan and Pakistan and into Mongolia and China. This species is found in the Trans-Altai Gobi, Gobi Desert, and eastern Gobi in southern Mongolia.

Parasites.—In Mongolia: CESTODA - Taenia polyacantha Leuckart 1856. Across range: CESTODA - Aprostatodrya cricetuli Lin et al. 1984, Catenotaenia afghana Tenora 1977, Catenotaenia cricetorum Kirschenblatt 1949, Catenotaenia dendritica (Goeze 1782), Echinococcus multilocularis larval Leuckart 1863, Hymenolepis diminuta (Rudolphi 1819), Rodontolepis meriones Tokobaev and Erkulov 1966, Rodontolepis straminea (Goeze 1782), Taenia crassiceps larval (Zeder 1800); NEMATODA - Ascaris lumbricoides Linnaeus 1758, Aspiculuris tetraptera (Nitzsch 1821), Capillaria gastrica (Baylis 1926), Gongylonema neoplasticum (Fibiger and Ditlevsen 1914), Physocyclus quadrialatus Kirschenblatt 1949, Streptopharagus kutassi (Schultz 1927), Syphacia mesocriceti Quentin 1971, Syphacia obvelata (Rudolphi 1802), Syphacia muris (Yamaguti 1935), Syphacia sp., Trichuris muris (Schrank 1788), Trichuris rhombomydis (Schulz and Landa 1934); TREMATODA - Brachylaemus spinulosus (Hoffmann 1899), Plagiorchis eutamias Schulz 1932.

Literature.—Akhumyan 1956; Tenora and Kullmann 1970a; Erhardova and Daniel 1971; Quentin 1971; Sharpilo 1973; Eltyshev 1975; Sharpilo 1976; Tokobaev 1976; Meszaros 1977; Tenora 1977; Sahin 1979; Lin et al. 1984; Shakenov 1987; Ganzorig, et al. 1998; Ganzorig, et al. 1999; Asakawa et al. 2001; Tinnin et al. 2002; Musser and Carleton 2005.

Phodopus campbelli (Thomas 1905)
Campbell’s Hamster

Distribution.—Campbell’s hamster is found from western Mongolia across to Transbaikalia and south into northern China. This species is found in steppe and semi-desert regions across Mongolia.

Parasites.—In Mongolia: ACANTHOCEPHALA - Moniliformis clarki (Ward 1917); CESTODA - Catenotaenia sp.. Across range: Syphacia obvelata (Rudolphi 1802).

Literature.—Machulsky 1958; Ganzorig et al. 1999; Tinnin et al. 2002; Tinnin et al. 2008.
**Phodopus roborovskii** (Satunin 1903)
Roborovski’s Hamster

*Distribution.*—Roborovski’s hamster is found across Tuva, eastern Kazakhstan and Mongolia into central China. This hamster is found from the Great Lakes region east across the desert grasslands and desert regions of the south.

*Parasites.*—In Mongolia: None currently known. Across range: None currently known.

*Literature.*—Tinnin et al. 2002.

**Muridae**

**Apodemus agrarius** (Pallas 1771)
Striped Field Mouse

*Distribution.*—The striped field mouse is broadly distributed from Europe across Siberia and south through Mongolia, China and Korea. In Mongolia this species is restricted to the eastern border of the country in the Ikh Hyangan Mountains.

*Parasites.*—In Mongolia: None currently known. Across range: CESTODA - *Cladotaenia globifera* (Batsch 1786), *Catenotaenia pusilla* (Goeze 1782), *Dilepis undula* (Schrank 1788), *Hymenolepis diminuta* (Rudolphi 1819), *Hymenolepis fraterna* Stiles 1906, *Hymenolepis horrida* Linstow 1901, *Hymenolepis polygyrum* (Dujardin 1845), *Ricturlicia baicalensis* Spassky, Ryhikov and Sudarikov 1952, *Rictularia cristata* Froelich 1802, *Rictularia strumica* Dimitrova et al. 1963, *Syngamus ryjikovi* Sadovskaya 1950, *Syphacia agraria* Sharpilo 1973, *Syphacia obvelata* (Rudolphi 1802), *Syphacia stroma* (Linstow 1884), *Toxocara apodemi* (Olsen 1957), *Trichinella spiralis* (Owen 1835), *Trichurus muris* (Schrank 1788); NEMATA - *Anisakis simplex* (Owen 1835), *Capillaria hepatica* Bancroft 1893, *Catenotaenia pusilla* (Goeze 1782), *Dilepis undula* (Schrank 1788), *Heligmosomum azerbaidjani* Schachnasarova 1931, *Heligmosomum polygyrum* (Dujardin 1845), *Hymenolepis diminuta* (Rudolphi 1819); TREMATODA - *Alaria alata* (Goeze 1782), *Brachylaima sp.*, *Neodiplostomum seoulense* (Seo, Rim, and Lee 1964), *Plagiorchis elegans* (Rudolphi 1802), *Plagiorchis muris* Tanabe 1922, *Plagiorchis stevensii* Furmaga 1956, *Strigea falcinella* Szidat 1928.

*Literature.*—Sadovskaya 1950; Spassky, Ryjkov and Sudarikov 1952; Furmaga 1956; Furmaga 1957; Machulsky 1958; Zarnowsk 1960; Lukashenko and Brzesky 1962; Rausch 1962; Dimitrova et al. 1963; Dorosz 1968; Yeh 1970; Sharpilo 1973; Meszaros et al. 1978; Genov and Yanchev 1980; Zhang and Yin 1980; Kovalchuk and Bonina 1981; Zhang 1985; Arnastauskene and Kazlauskas 1990; Asakawa et al. 1990; Hasegawa et al. 1993; Asakawa et al. 1994; ChunHung and KauHung 2000; Asakawa et al. 2001; Shimalov 2002; Tinnin et al. 2002; Hildebrand et al. 2004; Musser and Carleton 2005; JongYil et al. 2007a; JongYil et al. 2007b.

**Apodemus peninsulae** (Thomas 1907)
Korean Field Mouse

*Distribution.*—The Korean field mouse ranges through southern Siberia from the Altai Mountains to the Ussuri region and south into Mongolia, China and Korea, as well as the islands of Sakhalin and Hokkaido. In Mongolia, this species is found in the forests and forest-steppe of the northern part of the country, including the Mongolian Altai and Khentey and Khangay Mountains.

*Parasites.*—In Mongolia: None currently known. Across range: CESTODA - *Cladotaenia globifera* (Batsch 1786), *Catenotaenia pusilla* (Goeze 1782), *Dilepis undula* (Schrank 1788), *Hymenolepis diminuta* (Rudolphi 1819), *Hymenolepis horrida* Linstow 1901, *Hymenolepis polygyrum* (Dujardin 1845), *Hymenolepis strumula* (Schulz 1930), *Heligmosomum nani* (Zhang and Yin 1980), *Heligmosomoides neopolygyrus* Asakawa and Ohbayashi 1986, *Heligmosomoids sp.*, *Heterakis spumosa* Schneider 1866, *Pelodera sp.*, *Porrocaecum sp.*, *Physaloptera mustelae* (Zhang and Yin 1980), *Physaloptera sp.*, *Rictularia baicalensis* Spassky, Ryhikov and Sudarikov 1952, *Rictularia cristata* Froelich 1802, *Rictularia strumica* Dimitrova et al. 1963, *Syngamus ryjikovi* Sadovskaya 1950, *Syphacia agraria* Sharpilo 1973, *Syphacia obvelata* (Rudolphi 1802), *Syphacia stroma* (Linstow 1884), *Toxocara apodemi* (Olsen 1957), *Trichinella spiralis* (Owen 1835), *Trichurus muris* (Schrank 1788); TREMATODA - *Alaria alata* (Goeze 1782), *Brachylaima sp.*, *Neodiplostomum seoulense* (Seo, Rim, and Lee 1964), *Plagiorchis elegans* (Rudolphi 1802), *Plagiorchis muris* Tanabe 1922, *Plagiorchis stevensii* Furmaga 1956, *Strigea falcinella* Szidat 1928.
**Meriones meridianus** (Pallas 1773)  
**Mid-day Gerbil**

**Distribution.**—The mid-day gerbil is distributed from the Don River in eastern Russia south to Iran and then east to Mongolia and China. In Mongolia, this species is found in the Great Lakes Depression, and south of the Khangay Mountains across the semi-desert and desert regions.

**Parasites.**—In Mongolia: *Acanthocephala* - *Moniliformis moniliformis* (Bremser 1811); CESTODA - *Taenia endotheoracius* (Kirschenblatt 1948). Across range: CESTODA - *Catenotaenia pusilla* (Goeze 1782), *Catenotaenia rhombomydis* Schulz and Landa 1934, *Echinococcus multilocularis* larval Leuckart 1863, *Taenia krepgorski* larval (Schulz and Landa 1934), *Echinococcus multilocularis* larval Leuckart 1863, *Taenia krepkogorski* larval (Schulz 1927), *Dermatopallarya baylisi* Skrjabin 1924, *Heligmosomum azerbaidjani* Schachnasarova 1949, *Heligmosomum skrjabini* (Schulz 1926), *Rictularia bicalensis* Spassky, Ryjhikov, Sudarikov 1952, *Syphacia sp.*., *Trichuris sp.*; NEMATA - *Aspiculuris tetraptera* (Nitzsch 1821), *Dicrocoelium lanceatum* Stiles and Hassall 1896.

**Comments.**—This species, as opposed to its congeners which are found in more arid habitats, is primarily found around oases and salt marshes.

**Literature.**—Schulz 1927; Tokobaev 1976; Asakawa et al. 2001; Tinnin et al. 2002; Musser and Carleton 2005; Tinnin et al 2008; Batsaikhan et al. 2010.

**Meriones unguiculatus** (Milne-Edwards 1867)  
**Mongolian Gerbil**

**Distribution.**—The Mongolian gerbil ranges from the Transbaikal region through Mongolia into northern China. This species is found primarily across the southern half of Mongolia in desert and semi-desert regions, but also penetrates north along river valleys into mountain and forest steppe habitats.

**Parasites.**—In Mongolia: CESTODA - *Echinococcus multilocularis* larval Leuckart 1863, *Dipylidinae* gen. sp., *Echinococcus multilocularis* larval Leuckart 1863; NEMATA - *Gongylonema neoplasticum* (Fibiger and Ditlevsen 1914), *Mastophorus muris* (Gmelin 1790).

**Comments.**—This species is also known to occur commonly in and around towns. They may also use the abandoned burrows of *Lasiopodomys brandti* when available.

**Literature.**—Vuitton et al. 1998; Machulsky 1958; Tang et al. 1988; Ganzorig et al 1998; Tinnin et al. 2002; Batsaikhan et al. 2010.
**Micromys minutus** (Pallas 1771)
Harvest Mouse

**Distribution.**—The harvest mouse is found across the Palearctic realm. In Mongolia this species is restricted to the northern border of the country in the Mongolian Altai, Hovsgol, Khentey Mountains and eastern steppes.

**Parasites.**—In Mongolia: None currently known. Across range: CESTODA - *Hymenolepis diminuta* (Rudolphi 1819), *Rodentolepis microstoma* (Dujardin 1845), *Taenia taeniaeformis* (Batsch 1786); NEMATA - *Aspiculuris tetraptera* (Nitzsch 1821), *Ganguleterakis spumosa* (Schneider 1866), *Heliogonomum polygyrum* (Dujardin 1845), *Heliogonomum skrjabini* (Schulz 1926), *Mastophorus muris* (Gmelin 1790), *Orientestrongylus tenorai* Durette-Desset 1970, *Oxynema boueti* (Gendre 1911), *Physaloptera massinoi* Schulz 1926, *Protospirura armeniana* Aloyan 1951, *Protospirura sp.*., *Rictularia amurensis* Schulz 1927, *Rictularia baikalensis* Spassky, Ryjikov, Sudarikov 1952, *Rictularia muris* Galli-Valerio 1932, *Syphacia obvelata* (Rudolph 1802), *Syphacicuris rodenti* Erkulov and Moldopiyazova 1975, *Tenorastrongylus afghanus* (Tenora 1959), *Trichuris muris* (Schrank 1788); TREMATODA - *Brachylaemus recurvus* (Dujardin 1845).

**Literature.**—Karpinski and Kaminska 1948; Schmidt 1962; Matskasi 1971; Sharpilo and Gritsai 1975; Tenora and Meszaros 1975; Meszaros et al. 1978; Genov and Yanchev 1980; Feliu and Mas-coma 1986; Hasegawa 1986; Tenora et al 1991; Tinnin et al. 2002; Batsaikhan et al. 2010.

**Mus musculus** Linnaeus 1758
House Mouse

**Distribution.**—The house mouse is found worldwide. This species is known from across Mongolia.

**Parasites.**—In Mongolia: *Mesocestoides lineatus* larval (Goeze 1782). Across range: ACANTHOCEPHALA - *Moniliformis moniliformis* (Bremser 1811); CESTODA - *Echinococcus multilocularis* larval Leuckart 1863, *Taenia taeniaeformis* larval (Batsch 1786), *Catenotaenia cricetorum* Kirschenblatt 1949, *Catenotaenia pusilla* (Goeze 1782), *Hymenolepis diminuta* (Rudophi 1819), *Hymenolepis horrida* (Listow 1884), *Joyeuxiella rossicum* (Skrjabin 1923), *Mathevotaenia symmetrica* (Baylis 1927), *Mesocestoides lineatus* larval (Goeze 1782), *Taenia taeniaeformis* larval (Batsch 1786); NEMATA - *Aspiculuris kazakhstanica* Schulz 1927, *Aspiculuris schulzi* Popov and Nazarov 1930, *Aspiculuris tetraptera* (Nitzsch 1821), *Ganguletarakis spumosa* (Schneider 1866), *Heliogonomum polygyrum* (Dujardin 1845), *Heliogonomum skrjabini* (Schulz 1926), *Mastophorus muris* (Gmelin 1790), *Orientestrongylus tenorai* Durette-Desset 1970, *Oxynema boueti* (Gendre 1911), *Physaloptera massinoi* Schulz 1926, *Protospirura armeniana* Aloyan 1951, *Protospirura sp.*., *Rictularia amurensis* Schulz 1927, *Rictularia baikalensis* Spassky, Ryjikov, Sudarikov 1952, *Rictularia muris* Galli-Valerio 1932, *Syphacia obvelata* (Rudolph 1802), *Syphacicuris rodenti* Erkulov and Moldopiyazova 1975, *Tenorastrongylus afghanus* (Tenora 1959), *Trichuris muris* (Schrank 1788); TREMATODA - *Brachylaemus recurvus* (Dujardin 1845).

**Comments.**—This is a partial list of the known parasites of *Mus musculus*, emphasizing those known from Central Asia. In addition to the expected association with human habitation, *Mus* also is widely found in oases and other dense riparian areas across the country.

**Literature.**—Galli-Valerio 1932; Morgan 1943; Schachnasarova 1949; Aloyan 1951; Spassky, Ryjikov and Sudarikov 1952; Akhumyan 1956; Machulsky 1958; Skrjabin and Sobolev 1964; Chiriac and Hamar 1966; Kurashvili 1967; Barus, Kullmann, and Tenora 1970; Durette-Desset 1970d; Eltyshev 1975; Erkulov and Moldopiyazova 1975; Tokobaev 1976; Genov and Yanchev 1980; Erkulov and Moldopiyazova 1986; Martynenko et al. 1988; Haukisalmi and Tenora 1993; Ganzorig et al 1998; Vuitton et al. 1998; Tinnin et al. 2002; Batsaikhan et al. 2010.

**Rattus norvegicus** (Berkenhout 1769)
Norway Rat

**Distribution.**—The Norway rat has a world-wide distribution. In Mongolia they are found in the north-eastern part of the country.

**Parasites.**—In Mongolia: None currently known. Across range: ACANTHOCEPHALA - *Moniliformis moniliformis* (Bremser 1811); CESTODA - *Taenia taeniaeformis* larval (Batsch 1786), *Catenotaenia pusilla* (Goeze 1782), *Hymenolepis diminuta* (Rudolph 1819), *Hymenolepis horrida* (Listow 1884), *Joyeuxiella rossicum* (Skrjabin 1923), *Mathevotaenia symmetrica* (Baylis 1927), *Mesocestoides lineatus* larval (Goeze 1782),
Rodentolepis straminea (Goeze 1782); NEMATA - Aspiculuris tetraptera (Nitzsch 1821), Capillaria annulosa (Dujardin 1845), Capillaria hepatica (Bancroft 1893), Ganglerterakis spumosa (Schneider 1866), Mastophorus muris (Gmelin 1790), Strongyloloides ratti Sandground 1925, Syphacia muris (Yamaguti 1935), Syphacia obvelata (Rudolphi 1802), Trichinella spiralis (owen 1835), Trichosomoides crassicauda (Bellingham 1840); TREMATODA - Isthmiomorpha melis (Schrank 1788), Plagiorchis muris Tanabe 1922.

Comments.—This is a partial list of the known parasites of the Norway rat, emphasizing those known from central Asia. Like Mus, this species of Rattus is often found in dense riparian areas in Mongolia in addition to their association with humans.

Literature.—Spassky, Ryjhikov and Sudarikov 1952; Machulsky 1958; Lupu and Cironneau 1962; Chirac and Hamar 1966; Kurashvili 1967; Matskasi 1971; Elyshev 1975; Meszaros 1977; Min 1979; Genov and Yanchev 1980; Tinnin et al. 2002; Musser and Carleton 2005; Batsaikhan et al. 2010.

Rhombomys opimus (Lichtenstein 1832)  
Great Gerbil

Distribution.—The great gerbil is distributed from Iran east through Pakistan, Afghanistan, Kazakhstan, into Mongolia and China. In Mongolia this species found across the desert and desert-steppe regions of the south.

Parasites.—In Mongolia: CESTODA - Taenia endothoracius (Kirschenblatt 1948). Across range: ACANTHOCEPHALA - Moniliformis sp.; CESTODA - Catenotaenia pusilla (Goeze 1782), Catenotaenia rhombomydis Schulz and Landa 1934, Echinococcus multilocularis larval Leuckart 1863, Taenia krepkogorskaja larval (Schulz and Landa 1934), Hymenolepis horrida (Linstow 1901), Hymenolepis ognevi Skrjabin 1924, Multiceps endothoracicus larval (Kirschenblatt 1948), Taenia macrocestus larval (Diesling 1850), Tae- nia taeniformis larval Batsch 1786, Taenia polyacantha larval Leuckart 1856; NEMATA - Aspiculuris asiatica Schulz 1927, Aspiculuris tetraptera (Nitzsch 1821), Dentostomella translucida Schulz and Krepkogorskaja 1932, Dipetalonema viteae (Krepkogorskaja 1933), Gongylonema neoplasticum (Fiber and Ditlevsen 1914), Physaloptera massino Schulz 1926, Syphacia obvelata (Rudolph 1802), Syphacia stroma (Rudolph 1802), Trichuris rhombomydis (Schulz and Landa 1934), Trichuris spalacis (Petrov and Potekhina 1953), Trichuris sp.

Comments.—This large, up to 250g, gerbil lives in large complex colony systems, which in some areas, such as Kazakhstan, are large enough to be viewed from satellite images. They are widely regarded as a pest species in some areas, and are known to be a prominent species involved in outbreaks of plague (Yersinia pestis).

Literature.—Schulz 1927; Schulz and Kreppogorskaja 1932; Krepkogorskaja 1933; Morgan 1943; Petrov and Potekhina 1953; Shleiker and Samsonova 1953; Buliginskaya et al. 1956; Chabaud 1956; Buliginskaya et al. 1959; Chun-Syun and Alekseev 1960; Davlatov 1967; Kairov 1976; Tokobaev 1976; Shakenov 1987; Ganzorig et al. 1998; Skrjabin and Sobolev 1964; Asakawa et al. 2001; Tinnin et al. 2002; Musser and Carleton 2005; Batsaikhan et al. 2010.

Spalacidae  
Myospalax aspalax (Pallas 1776)  
False Zokor

Distribution.—The false Zokor is found in the Amur region of Russia, Mongolia, and northeast China. In Mongolia they are found in central Mongolia, including the Khentey and Khangay Mountains.

Parasites.—In Mongolia: None currently known. Across range: None currently known.

Comments.—This fossorial species builds extensive tunnel systems, often of 100m in length, which is extensively used by other species such as Spermophilus.

Literature.—Tinnin et al. 2002; Batsaikhan et al. 2010.
**Myospalax psilurus** (Milne-Edwards 1874)
Manchurian Zokor

_Distribution._—This species of zokor is known from the Amur region of Russia, Mongolia, and northeast and central China. In Mongolia the Manchurian zokor is only known from the eastern border in the Ikh Hyangan Mountains.

_Parasites._—In Mongolia: NEMATA - *Ascarops strongylina* (Rudolphi 1819). Across Range: NEMATA - *Heligmosomum myospalaxi* Nadtochy 1970.

_Literature._—Nadtochy 1970; Ganzorig et al. 1999; Elias et al. 2002; Musser and Carleton 2005.

**Myoxidae**

**Dryomys nitedula** (Pallas 1778)
Forest Dormouse

_Distribution._—The dormouse is distributed from Europe and the Middle East across Asia. In Mongolia it has been reported from the Mongolian Altai and the Dzungarian Desert.

_Parasites._—In Mongolia: None currently known. Across range: CESTODA - *Mesocestoides lineatus* larval (Goeze 1782), *Paranoplocephala omphalodes* (Hermann 1783), *Rodentolepis merionis* Tokobaev and Erkulov 1966, *Rodentolepis microstoma* (Dujardin 1845), *Rodentolepis straminea* (Goeze 1782); NEMATA - *Rictularia amurensis* Schulz 1927, *Rictularia elvirae* Parona 1889; TREMATODA - *Brachylaemus spinulosus* (Hoffmann 1899), *Lecithodendrium dryomis* Matsaberidze and Khoteovski 1966, *Plagiorchis maculosus* (Rudolphi 1802), *Plagiorchis talassensis* Tokobaev and Erkulov 1966.

_Literature._—Matsaberidze and Khoteovski 1966; Tokobaev and Erkulov 1966; Tenora 1967; Sharpio 1976; Tokobaev 1976; Erkulov and Moldopiayzova 1986; Khudaibergenov 1986; Tinnin et al. 2002; Holden 2005.

**Ochotonidae**

**Ochotona alpina** (Pallas 1773)
Alpine Pika

_Distribution._—The alpine pika is found from northwestern Afghanistan across southern Russia, northern Mongolia, and China. In Mongolia this species ranges across the Mongolian Altai and the Khentey and Khangay Mountains.

_Parasites._—In Mongolia: CESTODA - *Schizorchis mongoliensis* Tinnin et al. 2008; *Catenotaenia sp.*; NEMATA - *Dermatoxys schumakovitschi* (Schulz 1948). Across range: CESTODA - *Schizorchis altaica* Gvozdev 1951, *Hydatigena sp.*, *Paruterina candelabaria* (Goeze 1782), *Taenia hydatigena* larval Pallas 1766, *Taenia mustelae* larval Gmelin 1790, *Taenia tenuicollis* larval Rudolphi 1819; NEMATA - *Capillaria muris-sylvatici* (Diesling 1851), *Cephaluris andrejevi* Schulz 1948, *Citellinema orientale* Schulz 1933, *Eugenuris sp.*, *Dermatoxys schumakovitschi* (Schulz 1948), *Graphidiella olsoni* Gvozdev 1966, *Heligmosomum dubini* Gvozdev 1966, *Labiostomum naimi* Akhtar 1941, *Labiostomum vesicularis* Gvozdev 1956, *Murielus harpespiculus* Dikmans 1939, *Ohbayashinema dubini* (Gvozdev 1966), *Thominx sadovskajae* Morozov 1959.

_Literature._—Schulz 1948; Gvozdev 1951; Spassky and Ryjikhov 1951; Spassky, Ryjikhov and Sudarikov 1952; Gvozdev 1956; Gvozdev 1962; Gvozdev 1966; Gvozdev et al. 1970; Savalev 1972; Fedorov and Potapkina 1975; Durette-Desset et al. 2000; Tinnin et al. 2002; Tinnin et al. 2008.

**Ochotona dauurica** (Pallas 1776)
Daurian Pika

_Distribution._—The Daurian pika is found in the steppes from the Altai across Tuva and Transbaikalia south into Mongolia and China. In Mongolia they range through the Mongolian and Gobi Altai Mountains as well as steppe habitats in the northern part of the country.
Parasites.—In Mongolia: CESTODA - Ctenocephalides citelli (Kirschschott 1939), Diuterinotaenia spasskyi Gvozdev 1961, Schizorchis altaica Gvozdev 1951, Taenia retracta Linstow 1903; NEMATA - Cephaluris andrejevi Schulz 1948, Dermatoxys schumakovitschi (Schulz 1948), Heligmosomum mongolicum (Danzan 1976), Labiostomum vesicularis Gvozdev 1956. Across range: ACANTHOCEPHALA - Moniliformis clarki (Ward 1917), Moniliformis moniliformis (Bremser 1811); CESTODA - Diuterinotaenia spasskyi Gvozdev 1961, Echinococcus multilocularis larval Leuckart 1917, Hydatigena sp. larval, Mesocostoides lineatus larval (Goeze 1782), Schizorchis altaica Gvozdev 1951; NEMATA - Cephaluris andrejevi Schulz 1948, Graphidiella olsoni Gvozdev 1966, Heligmosomum polygyrum (Dujardin 1845), Murielus tjanschaniensis Gvozdev 1962, Ohbayashinema abeae Durette-Desset et al. 2000, Syphacia obvelata (Rudolphi 1802), Travassospirura sp.

Comments.—This species is colonial as opposed to many of the northern species and may reach high densities during peak years.

Literature.—Schulz 1948; Machulsky 1958; Gvozdev et al. 1970; Meszaros 1974; Sulimov and Obukhov 1974; Danzan 1978; Ganzorig et al. 1996; Ganzorig et al. 1998b; Durette-Desset et al. 2000; Yun et al. 2000; Tinnin et al. 2002; Ganzorig et al. 2007; Tinnin et al. 2008; Batsaikhan et al. 2010.

Ochotona hoffmanni (Formozov et al. 1996) Hoffmann’s Pika

Distribution.—As is currently known, Hoffmann’s pika is narrowly distributed across the mountains of northern Mongolia and Transbaikalia. In Mongolia they are found in the northern Khentey Mountains.

Parasites.—In Mongolia: None currently known. Across range: None currently known.

Comments.—This species has not been studied aside from the original descriptions and as such is not recognized by some authors.

Ochotona hyperborea (Pallas 1811) Northern Pika

Distribution.—The northern pika is distributed from the Urals through Siberia to Sakhalin Island and Japan, and south to Mongolia, China, and Korea. In Mongolia it is found in the Lake Hovsgol region and the Khentey and Khangay Mountains.

Parasites.—In Mongolia: CESTODA - Schizorchis altaica Gvozdev 1951. Across range: CESTODA - Schizorchis ryzhikovi Rausch 1984, Schizorchis yamashiti Rausch 1963; NEMATA - Cephaluris andrejevi Schulz 1948, Dermatoxys schumakovitschi (Schulz 1948), Murielus harpespiculus Dikmans 1939, Ohbayashinema abeae Fukometric et al. 1986.

Literature.—Machulsky 1958; Rausch 1963; Mustafayev 1968; Ganzorig et al. 1998b; Durette-Desset et al. 2000; Tinnin et al. 2002; Tinnin et al. 2008.

Ochotona pallasi (Gray 1867) Pallas’ Pika

Distribution.—Pallas’ pika has a disjunct distribution in areas of arid mountains and high elevation steppe in Kazakhstan, the Altai Mountains, Tuva, Mongolia, and northern China. In Mongolia they are restricted to the southern Khangai Mountains and the Mongolian and Gobi Altai.

Parasites.—In Mongolia: CESTODA - Schizorchis ryzhikovi Rausch 1984. Across range: ACANTHOCEPHALA - Moniliformis clarki (Ward 1917); CESTODA - Diuterinotaenia spasskyi Gvozdev 1961, Echinococcus multilocularis larval Leuckart 1963, Schizorchis altaica Gvozdev 1951; NEMATA - Capillaria murissylvatici (Diesling 1851), Cephaluris andrejevi Schulz 1948, Dermatoxys schumakovitschi (Schulz 1948), Graphidiella olsoni Gvozdev 1966, Labiostomum vesicularis Gvozdev 1956, Murielus tjanschaniensis Gvozdev 1962, Nematodirus aspinosus Schulz 1931, Trichuris sp., Trichostrongylus protolurus (Railliet 1896).
Comments.—Similarly to *O. dauurica*, Pallas’ pika forms extensive colonies and reaches immense population densities during peak years. It is widely viewed as a pest species, which competes with livestock for fodder.

*Literature.*—Gvozdev et al. 1970; Sulimov et al. 1974; Ganzorig 1998; Tinnin et al. 2002; Tinnin et al. 2008; Batsaikhan et al. 2010.

**Leporidae**

*Lepus tibetanus* Waterhouse 1841

**Desert Hare**

*Distribution.*—The desert hare ranges from Afghanistan east through Pakistan, north into the Altai Mountains, and across southern Mongolia and northern China. In Mongolia this species is found from the Mongolian and Gobi Altai south through the western part of the country.

*Parasites.*—In Mongolia: *NEMATA* - *Trichurus leporis* (Froelich 1789). Across range: *CESTODA* - *Andrya cuniculi* (Blanchard 1891), *Ctenocephalidae* *granulosus* larval (Batsch 1786), *Mosgovoyia pectinata* (Goeze 1782), *Pterygodermatophora* *omeronek* larval (Gervais 1847), *Paranoplocephala omphalodes* incidental (Hermann 1783), *Taenia macrocystis* larval (Diesing 1850), *Taenia pisiformis* larval (Bloch 1780); *NEMATA* - *Dirofilaria immitis* (Gubanov & Fedorov 1966), *Graphidium strigosum* (Dujardin 1845), *Heligmonella leporis* (Rudolfi 1819), *Protostrongylus kamenskii* Schulz 1931, *Nematodirus aspinosus* Schulz 1931, *Obeliscoides leporis* Schulz 1931, *Passalurus ambiguus* and *Trichostrongylus colubriformis* (Giles 1892), *Trichostrongylus retortaeformis* (Zeder 1809), *Trichostrongylus triramosus* Schulz 1931, *Trichuris leporis* (Froelich 1789), *Trichuris sylvilagi* Tiner 1950; *TREMATODA* - *Dicrocoelium dendriticum* (Rudolfi 1819), *Dicrocoelium lanceatum* Stiles and Hassall 1896, *Dicrocoelium orientalis* Sugadikov and Ryzhikov 1951, *Fasciola hepatica* Linnaeus 1758, *Plagiorchis vespertilionis* (Müller 1780).

*Literature.*—Spassky, Ryzhikov and Sudarikov 1952; Ivashkin 1954; Gubanov and Fedorov 1956; Machulsky 1958; Kontrimavichus and Popov 1960; Gubanov and Fedorov 1966; Gvozdev et al. 1970; Meszaros 1974; Eltyshev 1975; Durette-Desset 1978; Soveri and Valtonen 1983; Burzyantsev 1981; Belkin et al. 1982; Fukumoto et al. 1986; Tinnin et al. 2002.

*Lepus tolai* Pallas 1778

**Tolai Hare**

*Distribution.*—The tolai ranges from the Caspian Sea, south to Iran, east across Afghanistan and Kazakhstan, as well as into southern Siberia, Mongolia and China. In Mongolia this species is found across most of the country north and east of the Mongolian and Gobi Altai Mountains.

*Parasites.*—In Mongolia: None currently known. Across range: *CESTODA* - *Andrya cuniculi* (Blanchard 1891), *Andrya rhopalocephala* (Riehm 1860), *Obeliscoides leporis* Schulz 1931, *Passalurus ambiguus* and *Trichostrongylus colubriformis* (Giles 1892), *Trichostrongylus retortaeformis* (Zeder 1809), *Trichostrongylus triramosus* Schulz 1931, *Trichuris leporis* (Froelich 1789), *Trichuris sylvilagi* Tiner 1950; *TREMATODA* - *Dicrocoelium dendriticum* (Rudolfi 1819), *Dicrocoelium lanceatum* Stiles and Hassall 1896, *Dicrocoelium orientalis* Sugadikov and Ryzhikov 1951, *Fasciola hepatica* Linnaeus 1758, *Plagiorchis vespertilionis* (Müller 1780).

*Literature.*—Spassky, Ryzhikov and Sudarikov 1952; Ivashkin 1954; Gubanov and Fedorov 1956; Machulsky 1958; Kontrimavichus and Popov 1960; Gubanov and Fedorov 1966; Gvozdev et al. 1970; Meszaros 1974; Eltyshev 1975; Durette-Desset 1978; Soveri and Valtonen 1983; Burzyantsev 1981; Belkin et al. 1982; Fukumoto et al. 1986; Tinnin et al. 2002.

*Lepus timidus* Linnaeus 1758

**Mountain Hare**

*Distribution.*—The mountain hare is widely distributed across Eurasia. This hare is widely distributed across northern Mongolia; in the Khentey, Khangay, and Khingan Mountains as well as the Lake Hovsgol region.
1891), Echinococcus granulosus larval (Batsch 1786), Gvosdevilepsis fragmentata (Gvozdev 1948), Mesocestoides lineatus larval (Goeze 1782), Mesocestoides sp., Mesocestoides lineatus larval (Gervais 1847), Taenia pisiformis larval (Bloch 1780); NEMaTa - Dermatoyxys veligera (Seurat 1917), Micipsella numidica (Schulz 1931), Nematodirus aspinosus Schult 1931, Nematodirus petrovi Ivashkin 1954, Mosgovoyia pectinata (Goeze 1782), Multiceps serialis larval (Gervais 1847), Trichuris leporis (Froelich 1789), Trichostrongylus retortaeformis (Zeder 1809); TREMaToDa - Fasciola hepatica Linnaeus 1758.

Comments.—See comments under Lepus tibetanus.

Literature.—Machulsky 1958; Gvozdev et al. 1970; Tokobaev 1976; Tinnin et al. 2002; Hoffmann and Smith 2005.
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