

Appendix. Data on number of species of small mammals and fleas from the 33 regions used in the analyses.

Region	Number of species		Source
	Hosts	Fleas	
Southeastern Brazil	16	10	de Moraes et al. 2003
Idaho	15	29	Allred 1968
Central California	19	22	Linsdale and Davis 1956
Southwestern California	9	17	Davis et al. 2002
Northern New Mexico	29	34	Morlan 1955
Slovakia	19	22	Stanko et al. 2002
Volga-Kama region, Russia	30	35	Nazarova 1981
Novosibirsk region, southern Siberia	28	34	Violovich 1969
Western Sayan ridge, southern Siberia	15	29	Emelyanova and Shtilmark 1967
Tuva, Russia	13	28	Letov et al. 1966
Selenga region, central Siberia	10	13	Pauller et al. 1966
Barguzin depression, Baikal rift zone	17	29	Vershinina et al. 1967
Central Yakutia, Russia	9	18	Elshanskaya and Popov 1972
Amur river valley, southern Russian Far East	9	22	Koshkin 1966
Ussury river valley, southern Russian Far East	9	21	Kozlovskaya 1958
Khasan lake region, southernmost Russian Far East	9	12	Leonov 1958
Magadan and Tchukotka region, northern Russian Asian Far East	15	16	Yudin et al. 1976
Kamchatka region	4	8	Paramonov et al. 1966
Kabarda, northern Caucasus	13	21	Syrvacheva 1964
Adzharia, southern Caucasus	15	20	Alania et al. 1964
Southwestern Azerbaijan	14	23	Kunitsky and Kunitskaya 1962
Turkmenistan	18	42	Zagniborodova 1960
Kustanai region, northwestern Kazakhstan	17	19	Reshetnikova 1959
Akmolinsk region, northern Kazakhstan	19	26	Mikulin 1959a
Pavlodar region, eastern Kazakhstan	16	14	Sineltschikov 1956
Moyynkum desert, southern Kazakhstan	18	31	Popova 1968
East Balkhash desert, Kazakhstan	22	37	Mikulin 1959b
Dzhungarsky Alatau ridge, Kazakhstan	15	23	Burdelova 1996
Tarbagatai ridge, eastern Kazakhstan	23	35	Mikulin 1958
Kyrgyz ridge, northern Kyrgyzstan	16	35	Shwartz et al. 1958
Gissar ridge, Tajikistan	8	25	Morozkina et al. 1971
Northwestern Khangay region, Mongolia	21	44	Labunets 1967
Central Khangay region, Mongolia	10	20	Vasiliev 1966
Negev desert, Israel	13	11	Krasnov et al. 1997 and unpublished data

## References

- Alania, I. I. et al. 1964. Data on the flea fauna of Adzharia. – Proc. Armenian Anti-Plague Station 3: 407–435, in Russian.
- Allred, D. M. 1968. Fleas of the National Reactor Testing Station. – Great Basin Nat. 28: 73–87.
- Burdelova, N. V. 1996. Flea fauna of some small mammals in Dzhungarsky Alatau. – In: Burdelov, L. A. (ed.), Proceeding of the conference “Ecological aspects of epidemiology and epizootiology of plague and other dangerous diseases” Middle Asian Sci Anti-Plague Inst, Almaty, Kazakhstan, pp. 119–120, in Russian.
- Davis, R. M. et al. 2002. Flea, rodent and plague ecology at Chichupate Campground, Ventura County, California. – J. Vector Ecol. 27: 107–127.
- de Moraes, L. B. et al. 2003. Siphonaptera parasites of wild rodents and marsupials trapped in three mountain ranges of the Atlantic forest in southeastern Brazil. – Mem. Inst. Oswaldo Cruz 98: 1071–1076.
- Elshanskaya, N. I. and Popov, M. N. 1972. Zooligico-parasitological characteristics of the river Kenkeme valley (central Yakutia). – In: Kolosova, L. D. and Lukyanova, I. V. (eds), Theriology, Volume 1. Nauka Publ. House Siberian Branch, Novosibirsk, USSR, pp. 368–372, in Russian.
- Emelyanova, N. D. and Shtilmark, F. R. 1967. Fleas of insectivores, rodents and lagomorphs of the central part of Western Sayan. – Proc. Irkutsk State Sci. Anti-Plague Inst. Siberia Far East 27: 241–253, in Russian.
- Koshkin, S. M. 1966. Data on the flea fauna in the Sovetskaya Gavan. – Proc. Irkutsk State Sci. Anti-Plague Inst. Siberia Far East 26: 242–248, in Russian.
- Kozlovskaya, O. L. 1958. Flea (Aphaniptera) fauna of rodents from of the river Ussury valley in the Khabarovks region. – Proc. Irkutsk State Sci. Anti-Plague Inst. Siberia Far East 17: 109–116, in Russian.
- Krasnov, B. R. et al. 1997. Host-habitat relation as an important determinant of spatial distribution of flea assemblages (Siphonaptera) on rodents in the Negev Desert. – Parasitology 114: 159–173.
- Kunitsky, V. N. and Kunitskaya, N. T. 1962. Fleas of the southwestern Azerbaijan. – Proc. Azerbaijani Anti-Plague Station 3: 156–169, in Russian.
- Labunets, N. F. 1967. Zoogeographic characteristics of the western Khan-gay. – Proc. Irkutsk State Sci. Anti-Plague Inst. Siberia Far East 27: 231–240, in Russian.
- Leonov, Y. A. 1958. Fleas parasitic on rodents of the southern part of Primorye (Far East). – Proc. Irkutsk State Sci. Anti-Plague Inst. Siberia Far East 17: 147–152, in Russian.
- Letov, G. S. et al. 1966. Rodents and their ectoparasites in the settlements of Tuva. – Proc. Irkutsk State Sci. Anti-Plague Inst. Siberia Far East 26: 270–276, in Russian.
- Linsdale, J. M. and Davis, B. S. 1956. Taxonomic appraisal and occurrence of fleas at the Hastings Reservation in Central California. – Univ. California Publ. Zool. 54: 293–370.
- Mikulin, M. A. 1958. Data on fleas of the Middle Asia and Kazakhstan. 5. Fleas of the Tarbagatai. – Proc. Middle Asian Sci. Anti-Plague Inst. 4: 227–240, in Russian.
- Mikulin, M. A. 1959a. Data on fleas of the Middle Asia and Kazakhstan. 10. Fleas of the eastern Balkhash desert, Trans-Alakul desert and Sun-gorian Gates. – Proc. Middle Asian Sci. Anti-Plague Inst. 6: 205–220, in Russian.
- Mikulin, M. A. 1959b. Data on fleas of the Middle Asia and Kazakhstan. 8. Fleas of the Akmolinsk region. – Proc. Middle Asian Sci. Anti-Plague Inst. 5: 237–245, in Russian.
- Moran, H. B. 1955. Mammal fleas of Santa Fe County, New Mexico. – Texas Rep. Biol. Med. 13: 93–125.
- Morozkina, E. A. et al. 1971. Fleas of the red marmot (*Marmota caudata*) and other animals inhabiting the Gissar ridge. – Problems of Particularly Dangerous Infections (The Works of Anti-Plague Establishments) 1: 38–44.
- Nazarova, I. V. 1981. Fleas of the Volga-Kama region. – Nauka Publ. House, Moscow, USSR, in Russian.
- Paramonov, B. B. et al. 1966. Materials for the study of ectoparasites of rodents and shrews of the Kamchatka peninsula. – Proc. Irkutsk State Sci. Anti-Plague Inst. Siberia Far East 26: 333–341, in Russian.
- Pauller, O. F. et al. 1966. Ecological and faunistical review of mammalian and bird ectoparasites in the tularemia focus of the Selenga river delta. – Proc. Irkutsk State Sci. Anti-Plague Inst. Siberia Far East 26: 322–332, in Russian.
- Popova, A. S. 1968. Flea fauna of the Moyynkum desert. – In: Fenyuk, B. K. (ed.), Rodents and their ectoparasites. Saratov Univ Press, Saratov, USSR, pp. 402–406, in Russian.
- Reshetnikova, P. I. 1959. Flea fauna of the Kustanai region. – Proc. Middle Asian Sci. Anti-Plague Inst. 6: 261–265.
- Shwartz, E. A. et al. 1958. Fleas of rodents of the Frunze region. – Proc. Middle Asian Sci. Anti-Plague Inst. 4: 255–261, in Russian.
- Sineltschikov, V. A. 1956. Study of flea fauna of the Pavlodar region. – Proc. Middle Asian Sci. Anti-Plague Inst. 2: 147–153, in Russian.
- Stanko, M. et al. 2002. Mammal density and patterns of ectoparasite species richness and abundance. – Oecologia 131: 289–295.
- Syrvacheva, N. G. 1964. Data on the flea fauna of Kabardino-Balkarian ASSR. – Proc. Armenian Anti-Plague Station 3: 389–405, in Russian.
- Vasiliev, G. I. 1966. On ectoparasites and their hosts in relation to the plague epizootic in Bajan-Khongor aimak (Mongolian People Republic). – Proc. Irkutsk State Sci. Anti-Plague Inst. Siberia Far East 26: 277–281, in Russian.
- Vershinina, T. A. et al. 1967. Fleas of small mammals in the Barguzin depression and their landscape distribution. – Proc. Irkutsk State Sci. Anti-Plague Inst. Siberia Far East 27: 265–278, in Russian.
- Violovich, N. A. 1969. Landscape and geographic distribution of fleas. – In: Maximov, A. A. (ed.), Biological regionalization of the Novosibirsk region. Nauka Publ. House Siberian Branch, Novosibirsk, USSR, pp. 211–221, in Russian.
- Yudin, B. S. et al. 1976. Small mammals of the northern Far East. – Nauka Publ. House Siberian Branch, Novosibirsk, USSR, in Russian.
- Zagniborodova, E. N. 1960. Fauna and ecology of fleas on the western Turmenistan. – In: Fenyuk, B. K. (ed.), Problems of natural nidi and epizootiology of plague in Turkmenistan. Turkmenian Anti-Plague Station, All-Union Sci Anti-Plague Inst. “Microb”, Saratov, USSR, pp. 320–334, in Russian.