Memory of Vladimir Longinovich Kazenas

Izbasar I. Temreshev

LLP " Agro Consult", 010010, Astana, Almaty district, 21 Kanysh Satbaev st., Republic of Kazakhstan; LLP Kazakh Scientific Research Institute of Plant Protection and Quarantine named after Zh. Zhiembayev, Almaty, Republic of Kazakhstan

The article is dedicated to the memory of Vladimir Longinovich Kazenas (1941–2024), Doctor of Biological Sciences, entomologist, researcher of fauna, biology and systematics of insects of Central Asia, participant of many expeditions, major specialist in digger wasps, hymenopterologist, who discovered and described tens of insect species new to science, the author of about 200 scientific works, including 30 popular science and scientific books.

Acta Biologica Sibirica 10: 619-632 (2024) doi: 10.5281/zenodo.12592319

Corresponding author: Izbasar I. Temreshev (temreshev76@mail.ru)

Academic editor: R. Yakovlev | Received 26 May 2024 | Accepted 30 May 2024 | Published 30 June 2024

http://zoobank.org/787AA0F0-6D75-47C8-B03D-7230F88A88BA

Citation: Temreshev II (2024) Memory of Vladimir Longinovich Kazenas. Acta Biologica Sibirica 10: 619–632. https://doi.org/10.5281/zenodo.12592319



Figure 1. Vladimir Longinovich Kazenas (April 14, 1941 - May 25, 2024)

On May 25, 2024, after a serious illness, a senior colleague, a prominent scientist, Doctor of Biological Sciences, Professor Vladimir Longinovich Kazenas, left us.

Vladimir Longinovich Kazenas was born on April 14, 1941 in Almaty into a scientific and pedagogical family. His father Longin Damazievich Kazenas was a famous plant pathologist, candidate of agricultural sciences. Head of the Department of Phytopathology of the Kazakh Research Institute of Plant Protection. Mother Taisiya Grigorievna is an English teacher who gave private lessons. He developed an interest in wildlife during his school years. In 1958, Vladimir Longinovich graduated from high school in the village of Verkhnyaya Kamenka (Almaty oblast of the Republic of Kazakhstan) with a gold medal and entered the biological faculty of the Kazakh State University (now Al-Farabi Kazakh State National University). Under the guidance of the famous entomologist Professor P.I. Marikovsky, in 1963, he defended his thesis on digger wasps of the genus Ammophila of South-East Kazakhstan, for which he was awarded the All-Union Entomological Society Prize. In the same year he graduated from the Kazakh State University and for some time worked as a teacher of biology and chemistry in a secondary school in the village of Zhetysu (near the village of Chemolgan, Almaty oblast), but was soon called up to serve in the Soviet Army, According to his recollections, during his military service in the army he did not stop collecting insects, although he had to hide the collections in the nightstand by his bed from inspections.

In 1966, Vladimir Longinovich entered graduate school at the Institute of Zoology of the Academy of Sciences of the Kazakh SSR. In 1969, he defended his dissertation for the degree of Candidate of Biological Sciences on the topic "Digger wasps of South-East Kazakhstan." From 1969 to 1972 – junior researcher at the Institute of Zoology of the Kazakhstan National Academy of Sciences (Almaty, Kazakhstan), then senior researcher (1972–1986), leading researcher (1986–1992), chief researcher (1992–1995). In 1987, Vladimir Longinovich successfully defended his doctoral dissertation on the topic "Digger wasps (Hymenoptera, Sphecidae) of Kazakhstan and Central Asia, their morphology, biology, distribution, systematics and economic significance" at the dissertation council of the Zoological Institute of the USSR Academy of Sciences (now Russian Academy of Sciences) in Leningrad (now St. Petersburg). In January 2001, the Higher Attestation Committee of the Republic of Kazakhstan, at the request of the Academic Council of the Institute of Zoology of the Ministry of Education and Science of the Republic of Kazakhstan, decided to award V.L. Kazenas with the academic title of professor of biology. In 1992, he headed the Department of Invertebrate Zoology, and in 1995, the Laboratory of Entomology, which he headed for 12 years.

For a long time, Vladimir Longinovich was a member of the commission on the Red Book of Kazakhstan, a member of the presidium of the Kazakhstan-Central Asian Zoological Society, and the editorial boards of the journals "Selevinia" and "Tethys Entomological Research". For several years he was the scientific secretary of the expert council on biological sciences of the Higher Attestation Committee of the Republic of Kazakhstan, a member of the special council for the defense of dissertations of the Institute of Zoology of the Ministry of Education and Science of the Republic of Kazakhstan, the scientific secretary of the special council of the Institute of Zoology of the Ministry of Education and Science of the Republic of Kazakhstan, chairman of the Kazakhstan branch of the All-Union Entomological Society. Also, Vladimir Longinovich was a member of the dissertation council of the Kazakh Research Institute of Plant Protection and Quarantine. He was a member of the International Society of Hymenopterists. He collaborated closely with specialists from Russia, Kyrgyzstan, Ukraine, and entomologists from many Western European countries and the USA.



Figure 2. Speech at the International Scientific Conference "Zoological Research for 20 Years of Independence of the Republic of Kazakhstan", 2011.

Vladimir Longinovich has repeatedly participated in the preparation and implementation of scientific and scientific-applied programs related to the study, conservation and use of biodiversity of the Republic of Kazakhstan. Participated in the preparation of the National Program of the Republic of Kazakhstan "Conservation and Sustainable Use of Biodiversity of Kazakhstan" (1995), "Program of International Scientific and Technical Cooperation in the Field of Conservation and Sustainable Use of Biological Diversity" (1995), Republican Program "Scientific Basis for the Conservation of the Diversity of the Fauna of Kazakhstan and rational use of its resources" (1996), "Kazakh National Strategy for the Conservation and Sustainable Use of Biological Diversity" (1996), etc. Participated in the preparation of primary materials for the international project on the conservation and balanced use of biodiversity of the Western Tien Shan (1998). Repeatedly conducted examination of scientific projects in biology at competitions of the Ministry of Education and Science of the Republic of Kazakhstan (1999–2004). He was often the chairman of sections and a member of the editorial board at various conferences.

Under the leadership of Vladimir Longinovich, four graduate students prepared and successfully defended their candidate's dissertations, and two more young applicants were working on candidate's dissertations. He also taught at the biological school-lyceum No. 48 for 7 years.

Vladimir Longinovich studied the fauna, taxonomy, ecology, biology and distribution of several families of hymenopteran insects - solitary digger wasps (Sphecidae, Crabronidae, Ampulicidae and Pomplidae) in Kazakhstan and Central Asia. He quite fully identified the fauna of burrowing wasps in Kazakhstan and Central Asia (about 1000 species), moreover, more than 250 were discovered in this territory for the first time and over 300 species were discovered for the first time in Kazakhstan. About 160 species were described by him as new to science. He obtained new data on

the biology of more than 200 species. For the first time, all available data on the biology, ecology and geographic distribution of burrowing wasps in the region were summarized, and assumptions were made about the ways of formation of the fauna of the territory as a whole and in its individual zoogeographical regions. The identified fauna was assessed by him from the point of view of practical significance (Kazenas 1970, 1978, 1984, 1986, 1987a, b, 1998, 2000, 2001, 2011, 2012, 2014a etc). In addition, Vladimir Longinovich constantly painstakingly collected materials on other groups of insects during numerous expeditions to Kazakhstan and Central Asia. Subsequently transferred to other specialists for processing, they served as the basis for the description of a number of species new to science. The patronym *kazenasi* was assigned to 11 new species, for example, the robber fly *Ktyr kazenasi* Lehr, 1981, gall midge *Ephedromyia kazenasi* Fedotova, 1993, braconid wasp *Chelonus kazenasi* (Tobias, 2001), ground beetle *Leistus kazenasi* Kabak, 2015, digger wasp *Podalonia kazenasi* Danilov, 2017.

Vladimir Longinovich published a total of more than 300 scientific papers. He took part in the preparation of the Key to insects of the Russian Far East (Nemkov et al. 1995), the Book of the Genetic Fund of Kyrgyzstan (Kazenas, Zonshtein and Milko 1996), the Red Book of the Kazakh SSR (Kazenas 1991), the Red Book of the Republic of Kazakhstan (Kazenas 2006). In addition to digger wasps, Vladimir Longinovich, together with well-known specialists in these groups, studied other insects - velvet wasps (Mutillidae), mammoth wasps (Scoliidae), dragonflies (Odonata) (Milko and Kazenas 2005; Leley, Ovchinnikov and Kazenas 2009; Borisov and Kazenas 2017; Borisov, Kazenas and Borisov 2022; Borisov and Kazenas 2023). One of his works, which provided great assistance to other scientists, was a bibliography of the works of Kazakh entomologists, published by him in collaboration with his wife Nina Grigorievna Romanenko (Kazenas and Romanenko 2006a, b; 2007). Another of his works, which also turned out to be very popular, was an article on faunogenesis and geological history of Kazakhstan, co-authored with the famous kazakh paleontologist Bulat Uapovich Baishashov (Kazenas and Baishashov 1999).





Figure 3. Expedition to the Korgalzhyn Nature Reserve, Central Kazakhstan, 2012.

After retiring and leaving the Institute of Zoology of the Ministry of Education and Science of the Republic of Kazakhstan, Vladimir Longinovich participated in joint scientific projects with the Kazakh Research Institute of Plant Protection and Quarantine named Zh. Zhiembaev. The result was the release, with the active participation of Vladimir Longinovich, of several articles (Temreshev et al. 2016; Esenbekova et al. 2017; Slivinsky, Kazenas and Temreshev 2019), two books (Temreshev et al. 2015; 2016) and recommendations for monitoring ground and aquatic ecosystems of Southern Kazakhstan with the help of invertebrate animals (Slivinsky et al. 2017), as

well as obtaining a certificate of authorship on the paper wasp *Polistes gallicus* as an biological indicator of pollution of terrestrial ecosystems with organochlorine pesticides (Slivinsky et al. 2016).

In addition, he carried out joint work with other specialists on the study and monitoring of stem pests and their entomophages in the Ile-Alatau State National Natural Park. Subsequently, two manual books were published on the identification of stem pests and their entomophages (Temreshev, Kazenas and Esenbekova 2016; Temreshev and Kazenas 2017), several articles were identified as new for Kazakhstan, the families of hymenoptera Ibaliidae and Orussidae were clarified, and the distribution of some species of horntails Siricidae was clarified and Xiphidridae (Kazenas and Temreshev 2015; 2016a, b; Kazenas, Temreshev and Esenbekova 2016). Materials on entomopathogenic fungi collected during this work were then included in the microbiological collections of the Kazakh Institute of Plant Protection and Quarantine named Zh. Zhiembaev and the Research and Production Center for Microbiology and Virology of the Republic of Kazakhstan (Temreshev et al. 2016). Thanks to the discovery of Vladimir Longinovich, a dangerous quarantine pest was discovered on the territory of Kazakhstan – the leaf beetle *Callosobruchus phaseoli* (Gyllenhal, 1833) (Temreshev and Kazenas 2020).

In addition to insects, Vladimir Longinovich's scientific interests included ornithology. In coauthorship with the famous Kazakh ornithologist Nikolai Nikolaevich Berezovikov, he published several articles in the Russian Ornithological Journal devoted to new finds of birds in Kazakhstan, their nutrition and other features (Berezovikov and Kazenas 2019; 2022; Kazenas and Berezovikov 2022, etc.).



Figure 4. Expedition to the Syrdarya River, Southern Kazakhstan, 2015.



Figure 5. Forest pathological monitoring in the State National Natural Park Ile-Alatau, 2016.

7 / 16



Figure 6. Joint inspection of wood material for pests and phytopathogens with a leading researcher of the Scientific and Production Center for Microbiology and Virology of the Republic of Kazakhstan E.T. Ismalova, 2016.

Vladimir Longinovich was actively involved in the popularization of science, being the author of a series of books "Animals of Kazakhstan in photographs", as well as the author of other popular science books dedicated to various animals and the nature of Kazakhstan (Kazenas and Nikolaev 2004; Kazenas, Gromov and Timokhanov 2007; Kazenas and Baizhanov 2009; Childebaev and Kazenas 2013; Zhdanko and Kazenas 2014; Kazenas and Barkalov 2014; Kazenas 2014a, b, c, d; Kazenas, Malikova and Borisov 2014; Kazenas 2017; 2018; 2020; 2022 etc.). Many of them, at his request, were sent by me to the founder of the electronic library "Flora and Fauna" Alexey Borisovich Shipunov for placement in it. In addition to his own works, Vladimir Longinovich scanned a large number of scientific and popular science books, which were also then placed in the above-mentioned electronic library. In this way he was of great help to many scientists.

In addition, Vladimir Longinovich was very passionate about photographing wildlife. He provided his photographs absolutely disinterestedly. Many of his works were subsequently used to illustrate such important scientific and practical publications as books on Italian and Moroccan locusts published under the auspices of the Food and Agriculture Organization of the United Nations (Sergeev et al. 2016, 2022; Lachininsky et al. 2023).

In communication and work, Vladimir Longinovich always remained a very intelligent person, polite and friendly, always trying to help with advice and deeds if he was asked for it. He was also very modest and unpretentious both in everyday life and in the field. At the same time, Vladimir Longinovich had a wonderful sense of humor; he loved to joke, as well as both listen and tell various funny situations from his extensive field and laboratory experience. Another hobby of Vladimir Longinovich was gardening on his personal plot, the fruits of which he generously shared with friends and colleagues. At the same time, he was engaged in an important matter closely

related to this area - the breeding of useful Hymenoptera (entomophages and pollinators). To do this, sparing no time and labor, Vladimir Longinovich made artificial nests for single wasps and bees from scrap materials, which he placed in his garden. He then handed over some of them to the employees of the entomology laboratory of the Kazakh Research Institute of Plant Protection and Quarantine named after. Zh. Zhiembaev for placement in apple orchards, in which experiments were carried out on the biological protection of plants from pests.



Figure 7. Bird photography in the Korgalzhyn Nature Reserve, Central Kazakhstan, 2014.

Deep condolences regarding the departure of Vladimir Longinovich were expressed by many domestic and foreign colleagues – the leadership of the Kazakh Research Institute of Plant Protection and Quarantine named Zh. Zhiembaev represented by director B.A. Duisembekov and many of his employees, as well as Zh.D. Ismukhambetov (National Academy of Sciences of the Republic of Kazakhstan), V.G. Meka-Mechenko (Kazakh Scientific Center for Zoonotic and Quarantine Infections named after M. Aikimbaev), E.T. Ismailova (Research and Production Center for Microbiology and Virology of the Republic of Kazakhstan), R.V. Yakovlev (Altai State University, Russia), V.Yu. Kryukov (Novosibirsk Institute of Systematics and Animal Ecology SB RAS, Russia), A.V. Lachininsky (Food and Agriculture Organization of the United Nations), F.A. Gapparov (Uzbek Research Institute of Plant Protection, Uzbekistan), E.O. Kokanova (National Institute of Deserts, Flora and Fauna, Turkmenistan), and many others.



Figure 8. Garden care, Almaty, 2017.



Figure 9. Work with artificial nests for beneficial Hymenoptera (entomophages and pollinators), Almaty, 2017.

The bright memory of the outstanding scientist and wonderful person Vladimir Longinovich Kazenas will always live in the memory of his colleagues and friends.

References

Berezovikov NN, Kazenas VL (2019) The first meeting of the white-throated pleshanka *Oenanthe pleshanka* var. *vitatta* in Almaty. Russian Ornithological Journal 28 (1759): 1780–1781. [In Russian]

Berezovikov NN, Kazenas VL (2022) Diffuse knapweed *Centaurea diffusa* is a new introduced weed plant in the winter diet of the Eastern Goldfinch *Carduelis caniceps* in the northern foothills of the Tien Shan. Russian Ornithological Journal 31 (2163): 840–841. [In Russian]

Borisov SN, Kazenas VL (2017) First record of the dragonfly *Onychogomphus lefebvrii* (Rambur, 1842) (Odonata, Gomphidae) for the fauna of Kazakhstan. Euroasian Entomological Journal 16 (4): 320–324. [In Russian]

Borisov SN, Kazenas VL, Borisov AS (2022) Dragonflies (Odonata) of the Syrdarya Karatau and the Arys River valley (southern Kazakhstan) with notes on seasonal latitudinal and altitudinal migrations. Euroasian Entomological Journal 21 (2): 78–90. https://doi.org/10.15298/euroasentj.21.2.04

Borisov SN, Kazenas VL (2023) To the fauna of dragonflies (Odonata) of the Mangistauskaya Oblast, southwestern Kazakhstan. Euroasian Entomological Journal 22 (5): 227–234. https://doi.org/10.15298/euroasentj.22.05.01 Childebaev MK, Kazenas VL (2013) Orthoptera (phylum Arthropods, class Insects). Series Animals of Kazakhstan in photographs. Nur-Print, Almaty, 127 pp. [In Russian]

Esenbekova PA, Kazenas VL, Temreshev II, Slivinsky GG, Kozhabaeva GE (2017) Estimate in points of the number of scale indicator species of Bedbugs (Heteroptera) for determining the state of the main types of ecosystems habitat in Southern Kazakhstan. News of the National Academy of Sciences of the Republic of Kazakhstan. Biological and medical series 6 (324): 128–136. [In Russian]

Kazenas VL (1970) On the biology of *Ammophila* (*Eremochares*) dives Brülle (Hymenoptera, Sphecidae). Entomological Review 49 (2): 292–302. [In Russian]

Kazenas VL (1978) Digger wasps of Kazakhstan and Central Asia. Key. Science, Alma-Ata, 172 pp. [In Russian]

Kazenas VL (1984) Digger wasps *Cerceris* of Central Asia and Kazakhstan. Science, Alma- Ata, 232 pp. [In Russian]

Kazenas VL (1986) Digger wasps (Hymenoptera, Sphecidae) of Kazakhstan and Central Asia, their morphology, biology, distribution, taxonomy and economic importance: Dissertation for the degree of Doctor of Biological Sciences. Alma-Ata, 157 pp. [In Rus- sian]

Kazenas VL (1987a) Biology of Digger wasps (Hymenoptera, Sphecidae) of Kazakhstan and Central Asia. Alma-Ata, 143 pp. [In Russian]

Kazenas VL (1987b) Distribution of species of Digger wasps (Hymenoptera, Sphecidae) of Kazakhstan and Central Asia by biotopes, landscape zones and mountain belts. News of the Academy of Sciences of the KazSSR. Biological series 6: 23–25. [In Russian]

Kazenas VL (1991) *Sceliphron shestakovi* Gussakovskij, 1928. *Sphex flavipennis* Fabricius, 1793. *Prionyx haberhaueri* (Radoszkowski, 1871). *Prionyx macula* (Fabricius, 1804). In: Red Book of the Kazakh SSR. Vol. 1. Animals. Gylym, Alma-Ata, 418–425 pp. [In Russian]

Kazenas VL (1998) Digger wasps (Hymenoptera, Sphecidae). Vol. 1. General characteristics of the family. Subfamilies Ampulicinae, Sphecinae. Fauna of Kazakhstan 9: 377. [In Russian]

Kazenas VL (2000) Digger wasps (Hymenoptera, Sphecidae). Vol. 2. Subfamilies Pemphre-doninae and Astatinae. Almaty, 320 pp. [In Russian]

Kazenas VL (2001) Fauna and biology of burrowing wasps (Hymenoptera, Sphecidae) of Kazakhstan and Central Asia. KazgosINTI, Almaty, 334 pp. [In Russian]

Kazenas VL (2006) Megascolia maculata (Drury, 1773). Scolia hirta(Schrank, 1781). Sceliphron shestakovi Gussakovskij, 1928. Sphex flavipennis Fabricius, 1793. Prionyx haberhaueri (Radoszkowski, 1871). Prionyx macula (Fabricius, 1804). Lestiphorus oreophilus (Kuznetzov Ugamskij, 1927). Red Book of Kazakhstan. Vol. 1. Animals. Part 2. Invertebrates. Oner, Almaty, 148–161 pp. [In Russian]

Kazenas VL (2011) *Crossocerus rasnitsyni*, a new species of crabronid wasps from South-east Kazskhstan (Hymenoptera: Crabronidae). Russian Entomological Journal 20 (3): 291–293. [In Russian]

Kazenas VL (2012) A new species of Digger wasps Crabronidae of the genus *Lindenius* (Hymenoptera, Crabronidae) from Turkmenistan. Regional Bulletin of the East 2 (54): 42–45. [In Russian]

Kazenas VL (2014a) Previously unknown males of *Stizus histrio* F. Morawitz (Hymenoptera, Crabronidae). Euroasian Entomological Journal 13 (2): 161–162.

Kazenas VL (2014b) Insects of Kazakhstan (main orders). Series Animals of Kazakhstan in photographs. Nur-Print, Almaty, 147 pp. [In Russian]

Kazenas VL (2014c) Insects of the Karatau Nature Reserve (Southern Kazakhstan). Series Animals of Kazakhstan in photographs. Nur-Print, Almaty, 252 pp. [In Russian]

Kazenas VL (2014d) Insects of Charyn National Park. Series Animals of Kazakhstan in photographs. Nur-Print, Almaty, 160 pp. [In Russian]

Kazenas VL (2016) Wasps of Kazakhstan. Almanac, Almaty, 207 pp. [In Russian]

Kazenas VL (2017) My photos of the bird. Series Animals of Kazakhstan in photographs. Almanac, Almaty, 224 pp. [In Russian]

Kazenas VL (2018) National Park Altyn-Emel. Series Nature of Kazakhstan in photographs. Almanac, Almaty, 328 pp. [In Russian]

Kazenas VL (2020) My photos of spiders of Kazakhstan. Series Animals of Kazakhstan in photographs. Almanac, Almaty, 301 pp. [In Russian]

Kazenas VL (2022) Hymenoptera: wasps, bees, ants, sawflies, wasps, etc. (Phylum Arthropods, class Insects). Series Animals of Kazakhstan in photographs. Almanac, Almaty, 396 pp. [In Russian]

Kazenas VL, Barkalov AV (2014) Hoverflies (phylum Arthropods, class Insects). Series Animals of Kazakhstan in photographs. Nur-Print, Almaty, 81 pp. [In Russian]

Kazenas VL, Baizhanov MKh (2009) Insects of the Korgalzhyn Nature Reserve and adjacent territories. Almaty: Nur-Print, 270 pp. [In Russian]

Kazenas VL, Bayshashov BU (1999) Geological history and genesis of fauna of Kazakhstan and adjacent territories during epochs of development of mammals and anthophilous insects. Tethys Entomological Research I: 5–46. [In Russian]

Kazenas VL, Berezovikov NN (2020) Seeds of Annual ragweed *Ambrosia artemisifolia* are a new food for wintering Chaffinches *Fringilla coelebs*, Bramblings *Fringilla montifringilla* and Tree sparrows *Passer montanus* in Semirechye. Russian Ornithological Journal 29 (2003): 5588–5592. [In Russian]

Kazenas VL, Berezovikov NN (2022) Azure tit *Cyanistes cyanus tianschanicus* catches larvae of the fruit longhorned beetle from the genus *Tetrops* from under the bark of apple trees in the gardens of Almaty. Russian Ornithological Journal 31 (2156): 495–498. [In Russian]

Kazenas VL, Gromov AV, Timokhanov VA (2007) Dangerous arthropods of Kazakhstan. World of invertebrate animals. Kitap, Almaty, 128 pp. [In Russian]

Kazenas VL, Malikova EI, Borisov SN (2014) Dragonflies (phylum Arthropods, class Insects). Series Animals of Kazakhstan in photographs. Nur-Print, Almaty, 176 pp. [In Russian]

Kazenas VL, Nikolaev GV (2004) Arthropods dangerous to human health and life. Kazakh university, Almaty, 195 pp. [In Russian]

Kazenas VL, Romanenko NG (2006a) The main publications about insects of Kazakhstan and

adjoining territories (Part 1). Tethys Entomological Research XI: 5-220. [In Russian]

Kazenas VL, Romanenko NG (2006b) The main publications about insects of Kazakhstan and adjoining territories (Part 2). Tethys Entomological Research XII: 5–220. [In Russian]

Kazenas VL, Romanenko NG (2007) The main publications about insects of Kazakhstan and adjoining territories (Part 3). Tethys Entomological Research XIV: 5-164. [In Russian]

Kazenas VL, Temreshev II (2015) Gall wasp *Ibalia leucospoides* (Hymenoptera, Ibaliidae) – new for Kazakhstan speciesof entomophages of stem pests of conifers. Conceptual and applied aspects of invertebrate scientific research and biological education: Materials of the IV international conference (3–4 November 2015, Tomsk, Russia). Publishing House of Tomsk State University, Tomsk, 57–60 p. [In Russian]

Kazenas VL, Temreshev II (2016a) To the fauna of Hymenoptera natural enemies of stem pests in the coniferous forests of the Ile-Alatau State National Natural Park (South-Eastern Kazakhstan). Euroasian Entomological Journal 15. Supplement 1: 55–61. [In Russian]

Kazenas VL, Temreshev II (2016b) Horntails (Hymenoptera: Siricidae, Xiphydriidae) of Almatinskaya Oblast of Kazakhstan. Euroasian Entomological Journal 15 (5): 403-411. [In Russian]

Kazenas VL, Temreshev II, Esenbekova PA (2016) Review of the sanitary condition of coniferous forests windfall places in the Ile-Alatau national park (Kazakhstan) in 2011–2015. Nature Conservation Research. Zapovednaya nauka 1 (1): 23–37. http://dx.doi.org/10.24189/ncr.2016.003[In Russian]

Kazenas VL, Zonshtein SL, Milko DA (1996) Superfamily Sphecoidea – Sphecoid wasps. In: Cadastre of the genetic fund of Kyrgyzstan. Vol. III. Bishkek, 381–385. [In Russian]

Lachininsky AV, Sergeev MG, Fedotova AA, Childebaev MK, Temreshev II, Gapparov FA, Kokanova EO (2023) Moroccan locust *Dociostaurus maroccanus* (Thunberg, 1815). Morphology, distribution, ecology, population management. Food and Agriculture Organization of the United Nations, Rome, 561 pp. https://doi.org/10.4060/cc7159ru [In Russian]

Lelej AS, Ovtchinnikov SV, Kazenas VL (2009) The velvet ants (Hymenoptera, Mutillidae) of Kazakhstan with notes on their distribution in adjacent countries. Euroasian Entomological Journal 8 (1): 69-79. [In Russian]

Logunov DV, Kazenas VL (2015) Spiders (phylum Arthropods, class Arachnids). Series Animals of Kazakhstan in photographs. Almaty, 114 pp. [In Russian]

Milko DA, Kazenas VL (2005) Materials on the fauna of mammoth wasps (Hymenoptera, Scoliidae) of Kazakhstan. Tethys Entomological Research XI: 35-46. [In Russian]

Nemkov PG, Kazenas VL, Budris EG, Antropov AV (1995) 67. Family Sphecidae – Digger wasps. In the book Key to insects of the Russian Far East. T. 4. Part 1. Net-winged insects, Hangingflies, Hymenoptera. Science, St. Petersburg, 368-481. [In Russian]

Slivinsky GG, Kazenas VL, Temreshev II (2019) Insect biodiversity as indicators of environmental condition of territories of South Kazakhstan. Acta Biologica Sibirica 5 (1): 122–132. https://doi.org/10.14258/abs.v5.i1.5347 [In Russian]

Slivinsky GG, Kazenas VL, Temreshev II, Esenbekova PA, Isenova GZh, Kozhabaeva GE (2017) Recommendations for monitoring aquatic and terrestrial ecosystems in Southern Kazakhstan using indicator species of invertebrates. Nur-Print, Almaty, 61 pp. [In Russian]

Slivinsky GG, Kazenas VL, Temreshev II, Isenova GZh, Kozhabaeva GE (2016) French wasp (*Polistes gallicus*) as an effective biogeoindicator of pollution of terrestrial ecosystems with organochlorine pesticides (a work of science). Certificate of state registration for the object of copyright of the Republic of Kazakhstan No. 1286 dated June 28, 2016, IS 004970. [In Russian]

Sergeev MG, Childebaev MK, Vankova IA, Gapparov FA, Kambulin VE, Kokanova EO, Lachininsky AV, Pshenitsyna LB, Temreshev II, Chernyakhovsky ME, Sobolev NN, Molodtsov VV (2016) Italian locust [Calliptamus italicus (Linnaeus, 1758)]: morphology, distribution, ecology, population management. Food and Agriculture Organization of the United Nations, Rome, 330 pp. [In Russian]

Sergeev MG, Childebaev MK, Vankova IA, Gapparov FA, Kambulin VE, Kokanova EO, Lachininsky AV, Pshenitsyna LB, Temreshev II, Chernyakhovsky ME, Sobolev NN, Molodtsov VV (2022) Italian locust *Calliptamus italicus* (Linnaeus, 1758). Morphology, ecology, distribution, population management. Food and Agriculture Organization of the United Nations, Rome, 356 pp. https://doi.org/10.4060/cb7921ru [In Russian]

Temreshev II, Kazenas VL (2017) Natural enemies of stem pests in the mountain forests of the Ile-Alatau State National Natural Park (South-Eastern Kazakhstan). Nur-Print, Almaty, 150 pp. [In Russian]

Temreshev II, Kazenas VL (2020) *Callosobruchus phaseoli* (Gyllenhal, 1833) (Coleoptera, Chrysomelidae, Bruchinae): a new invasive species in Kazakhstan. Acta Biologica Sibirica 6: 87–92. https://doi.org/10.3897/abs.6.e53070

Temreshev II, Kazenas VL, Childebaev MK, Isenova GZh, Kozhabaeva GE (2015) Preliminary list of indicator species of insects of South Kazakhstan. Nur-Print, Almaty, 165 pp. [In Russian]

Temreshev II, Kazenas VL, Esenbekova PA (2016) Key to forest stem pests of the Ile-Alatau State National Natural Park and adjacent territories. Nur-Print, Almaty, 245 pp. [In Russian]

Temreshev II, Kazenas VL, Esenbekova PA, Isenova GZh, Kozhabaeva GE (2016) Addition to the list of indicator species of insects of South Kazakhstan. Nur-Print, Almaty, 180 pp. [In Russian]

Temreshev II, Kazenas VL, Esenbekova PA, Ismailova ET, Aitkeldieva SA, Shemshura ON, Seitbattalova AI (2016) To the study of the species composition of arthropods – hosts of pathogens of mycotic infections in Kazakhstan. Microbiology and virology 1 (12): 26–38. [In Russian]

Temreshev II, Kazenas VL, Esenbekova PA, Kozhabaeva GE (2016) Effect of insecticides Bonus 40/120 s.p. and Nomolt 15% s.p. on the non-target fauna of terrestrial arthropods-entomophages of harmful locusts fauna in Southern Kazakhstan. News of the National Academy of Sciences of the Republic of Kazakhstan. Biological and medical series 6 (318): 157–166. [In Russian]

Zhdanko AB, Kazenas VL (2014) Diurnal butterflies of Semirechye. Series Animals of Kazakhstan in photographs. Nur-Print, Almaty, 214 pp. [In Russian]