

Review of species of the genus *Mesopolobus* Westwood (Hymenoptera, Chalcidoidea, Pteromalidae) from Kazakhstan

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The *Mesopolobus* is an important group of entomophagous insects. It is known their ability to utilize a vast range of hosts from orders Coleoptera, Hymenoptera, Lepidoptera, Diptera and Homoptera. They perform a natural control of many agricultural and forest pests. Hosts utilized by species of genus *Mesopolobus* often include economically significant species that feed on cereal and forage grasses as well on wood plants. That is why we need to expand our knowledge in systematics of these pteromalids to get a possibility of making identification trustworthy.

This genus is one of the largest genera of the family Pteromalidae. It has worldwide distribution, with numerous species within Palaearctic region and in particular Kazakhstan. According to Bouček and Rasplus (1991) there are over 40 species in West Palaearctic region. Above 30 species were found in Kazakhstan. As a matter of fact a real number of *Mesopolobus* species is much more. I suspect that only about two third of the species of genus *Mesopolobus* in Palaearctic have been described. The taxonomic composition of the genus *Mesopolobus* of different regions of the world has been very unevenly elucidated. The West Europe fauna has been investigated to a greater extent, though up to now the notions on the genus *Mesopolobus* are rather scanty.

The first members of this genus were discovered in the Eighteenth century (Förster, 1770; Geoffroy in Fourcroy, 1785). In the Nineteenth century many West Palaearctic species of the genus had already been described (Westwood, 1833; Walker, 1834-1848; Ratzeburg, 1848, 1852; Thomson, 1878). The works of the Swedish chalcidologist H. von Rosen (1958-1969) were very important for the investigation of the genus. A new impulse to the taxonomic study of this genus was given by Graham's fundamental work "The Pteromalidae of North-Western Europe (Hymenoptera: Chalcidoidea) published in 1969. In this monography the taxonomic composition of genus *Mesopolobus* in this region of Europe and a key to its species are given. In the seventies-nineties of the Twentieth century some species of this genus from Kazakhstan and Mongolia were described (Bouček, 1974; Джанокмен, 1974-1995). Nevertheless, in spite of the above mentioned publications with descriptions of new species, the work of investigating the systematics of the genus is far from its completion. Moreover, many species were described by different workers and at different time with varying degree of detail. Such a situation makes very difficult the identification of species and their comparison.

Most species of genus *Mesopolobus* was described from humid habitats Northern and Central Europe and this will be the first time that the genus has been studied in detail in an arid area. The choice of the group to be investigated was conditioned by its role in arid landscapes. Kazakhstan is located in the center of Palaearctic arid belt. The arid zone occupies more than a half of the territory of this country. The desert zone extends from west to east, from the shores of the Caspian Sea to the foothills of the Tarbagatay Mountain Ridge and Zaysan basin. Moreover Kazakhstan occupies a huge territory which includes four landscape zones (forest-steppe, steppe, semidesert and desert) and a wide range of altitudes (from desert to alpine meadows).

The types of the *Mesopolobus* species are conserved in many foreign museums, but most of them are deposited in Britain (The Natural History Museum in London, The Hope Museum at Oxford University) and in Sweden (Universitetets Zoologiska Institutionen, Lund; Statens Växtskyddsanstalt, Solna, Stockholm). Most of Graham's collection is now housed at The Natural History Museum, London. Therefore present study was undertaken at this institution where, in addition to Graham's collection, the types of most described Palaearctic species are also conserved. A comparative study of Kazakhstan species with those known from other regions is necessary in order to understand their taxonomy better. In absence of types and comparative material serious difficulties arise in case of identification of species and describing of new taxa.

This study is to create an inventory of the *Mesopolobus* species which occur in Kazakhstan and to add all available new information on taxonomy and biology.

The faunistical and ecological review of species from genus *Mesopolobus* includes synonyms, zonal and statial extension, trophic lines and geographic distribution.

Types and The Natural History Museum's general collection materials have been examined and compared with specimens from Kazakhstan. The species revealed in this geographic range are listed below. Abbreviations used are: K.D. = K.A. Dzhanokmen; Z.F. = Z.A. Fedotova.

Mesopolobus Westwood, 1833 (= *Platymesopus* Westwood, 1833; *Platyterma* Walker, 1834; *Amblymerus* Walker, 1834; *Eutelus* Walker, 1834; *Xenocrepis* Förster, 1856; *Asemantus* Förster, 1878; *Syntomocera* Förster, 1878; *Disema* Förster, 1878; *Zacalochlora* Crawford, 1913; *Baeoponerus* Masi, 1924; *Ahlbergiella* von Rosen, 1955; *Sturovia* Bouček, 1961; *Isoptrynea* Szélnyi, 1982)

M. aequus (Walker), 1834 (= *Pteromalus purpureus* Walker, 1835; *Pteromalus contractus* Walker, 1836; *Pteromalus leogoras* Walker, 1839; *Pteromalus odites* Walker, 1845; *Pteromalus temesa* Walker, 1848; *Metastenus purus* Walker, 1872; *Eutelus (Platytermus) decipiens* Thomson, 1878; *Mormoniella oviphaga* Ahlberg, 1925; *Amblymerus graminum* Hårdh, 1950).

Found in plane and mountain habitats. When in steppes it inhabits grass and gramineous meadows, and if we are dealing with the forest-steppe zone this species prefers glades of a mixed meadow and steppe character in birch forest. In the mountains it lives on grass and gramineous slopes on steppe belts, and when in forest belts it may be found in meadow stations. May be met in June and August.

It predated on eggs and larvae of different insects in internodes of grasses, mainly Gramineae. It predated particularly on eggs of *Javesella pellucida* (Fabr.) (Homoptera, Cicadinea, Fulgoroidea, Delphacidae) (Graham, 1969; Bouček, 1977).

-Distribution: Northern, Central, Eastern and South-Eastern Kazakhstan (Kazakh Small Mountains Plateau, Semipalatinsk sector of the Irtysh valley, Trans-Ili Alatau Mountain Ridge); Holarctic.

M. agropyricola von Rosen, 1960.

It was caught on gramineal meadows both on plane and mountain habitats (Trans-Ili Alatau Mountain Ridge: Kegen' Plateau, 2000 m above sea level; Middle Ili R. valley: 16 km to the North-East of Ayakkalkan, not far from the Singing Dune) in June and July (K.D.). In Sweden it was reared from stems of *Agropyron repens* (L.) P.B. (von Rosen, 1960).

-Distribution: South-Eastern Kazakhstan (Trans-Ili Alatau Mountain Ridge, Middle Ili R. valley); North-Western Europe.

M. aspilus (Walker), 1835 (= *Eutelus elongatus* Thomson, 1878).

Caught on the foothills of the Trans-Ili Alatau Mountain Ridge on *Atraphaxis* spp. in September. In Sweden it was reared from galls of *Oligotrophus juniperinus* (L.) (Cecidomyiidae) on *Juniperus*, as well as from *Euura amerinae* (L.) (Tenthredinidae) (von Rosen, 1959), in Finland from galls *Oligotrophus* sp. (Vikberg, 1982) on *Juniperus* and in England from galls of *Taxomyia taxi* (Inchb.) on *Taxus baccata* L. (Graham, 1969).

-Distribution: South-Eastern Kazakhstan (Trans-Ili Alatau Mountain Ridge); Northern and Central Europe.

M. brachyneurus Dzhanokmen, 1994

It is known only according to the holotype (Джанокмен, 1994). Reared from bud-galls of *Psectrosema diversicornis* B. Mamaev et Becknazarova (Cecidomyiidae) on *Tamarix ramosissima* Ldb. (Semirechye: 9 VI 1986, mouth of Karatal R. near Kopbirlik village, 9 VI 1986, Z.F.).

-Distribution: South-Eastern Kazakhstan (Southern part of the Balkhash L. basin: northern border of the Lyukkum Sands).

M. contarinomyiae Dzhanokmen, 1995

It is known only from type material (Джанокмен, 1995). Reared from flower-galls of *Contarinomyia reaumuriae* Fedotova (Cecidomyiidae) on *Reaumuria fruticosa* Bge., 20-X-1988 (South-Western Kazakhstan: 60 km to the South-East of Novyi Uzen').

-Distribution: South-Western Kazakhstan (Mangyshlak Plateau).

M. deserti Dzhanokmen, 1994

It has been noted in all types of deserts from the Mangyshlak Peninsula to the Southern half of the Balkhash L. basin and the Middle Ili R. valley, but it prefers saltmarsh deserts. Adults are observed from May till September.

It develops on Cecidomyiids. Reared from galls of *Halodiplosis vernalis* (Marikovskij), *Halodiplosis saxauli* Kaplin and *Baldratia kozlovi* Marikovskij on *Haloxylon persicum* Bge.; from bud-galls of *Halodiplosis meridianus* (Marikovskij), *Halodiplosis noxia* (Marikovskij), *Halodiplosis consociata* (Marikovskij), from stem-galls of *Stefaniola deformans* (Marikovskij) and from galls *Baldratia tubulata* Mamaev on *Haloxylon aphyllum* (Minkw.) Iljin; from bud-galls of *Halodiplosis salsolicola* (Marikovskij) on *Salsola richteri* Karel.; from galls of *Halodiplosis aestivas* (Marikovskij) on *Salsola arbusculaeformis* Drob.; from bud-galls of *Halodiplosis propria* (Marikovskij) on *Salsola orientalis* S.G. Gmel. (Джанокмен, 1994, 1995).

Data not developed earlier: from *Halodiplosis orientalis* Fedotova in fruit of *Salsola orientalis* S.G. Gmel. (South-Western part of the Balkhash L. basin: 40 km to the South-East of Aksuyok, 15-IX-1992, Z.F.); from bud-galls of *Stefaniola asiatica* (Marikovskij) on *S. orientalis* (South-Eastern Kazakhstan, not far from the Singing Dune, 15-X-1989, K.D.); from *Asphondylia mitroshinae* Fedotova in fruit of *Salsola richteri* Karel. (Southern Kazakhstan: 35 km to the South-West of Bairkum village, 24-V-1992, K.D.); from bud-galls of *Halodiplosis stackelbergi* (Marikovskij) on *Haloxylon aphyllum* (Minkw.) (Southern half of the Balkhash L. basin: 20 km to the North-West of Karoy village, 13-IX-1992; 40 km to the South-East of Koktal, 4-IX-1992, Z.F.); from bud-galls of *Halodiplosis panderiae* Fedotova on *Pandera turkestanica* Iljin (Southern half of the Balkhash L. basin: lower Ili R., 75 km to the North of Bakanas, 14-VII-1988, K.D.); from bud-galls of *Halodiplosis saxauli* Kaplin on *H. aphyllum* (left side of Ili R., 33 km to the North-East of Chilik, 19-V-1989, Z.F.).

-Distribution: Kazakhstan (Mangystau, Kyzylkum Sands, Chardara Steppe, Northern foothills of Karatau Mountain Ridge, Zhusandala Desert, Saryesik-Atyrau Sands, Middle Ili R. valley, desertic and dry steppe foothills of the Trans-Ili Alatau and the Dzungarian Alatau Mountain Ridges).

M. dichrocerus Dzhankmen, 1974.

It is found in argillaceous and salinized meadows in deserts and semideserts of various types, on desertified and dry steppe foothills of Southern and South-Eastern Kazakhstan Mountain Ranges. It may be found from April till June. It parasitizes, mainly on Cecidomyiidae related with Chenopodiaceae and Tamaricaceae (Джанокмен, 1995). Adults are more commonly met with blooming *Tamarix* spp.

Reared from bud-galls of *Halodiplosis propria* (Marikovskij) on *Salsola orientalis* S.G. Gmel. (Southern Kazakhstan: 30 km to the West of Bairkum village, 16-V-1992, K.D.; South-Eastern Kazakhstan: 20 km to the North-West of Bakanas, 20-V-1984, Z.F.); from bud-galls *Halodiplosis fedtschencovi* (Marikovskij) on *Anabasis salsa* (C.A. Mey) Benth. (20 km to the North-West of Bakanas, 23-V-1984, Z.F.); from bud-galls of *Halodiplosis primoveris* (Marikovskij) on *Salsola arbusculaeformis* Drob. (South-Eastern Kazakhstan: 32 km to the South-East of Chilik, 20-V-1984, Z.F.).

-Distribution: Kazakhstan (Mangystau, Kyzylkum Sands, foothills of Trans-Ili Alatau and Karatau Ranges, the Northern and Southern parts of the Balkhash L. basin, Middle Ili R. valley); Mongolia (Edringiyn-Nuru Mts.: Bayan-Khongor Aymak).

M. diffinis (Walker), 1834 (= *Amblymerus latus* Walker, 1834; *Amblymerus pusillus* Walker, 1834; *Amblymerus linearis* Walker, 1834; *Amblymerus stenomerus* Walker, 1834; *Eutelus pygmeus* Walker, 1834; *Eutelus vagans* Walker, 1834; *Pteromalus exilis* Walker, 1836; *Pteromalus leuce* Walker, 1848).

More recently I began to suspect that the Kazakhstan specimens belonging to this species have been described under two different names: *M. diffinis* (Walker) and *M. auditor* Dzhankmen, the latter of which is placed in synonymy with *M. diffinis* (Dzhankmen, in press). Examination of numerous specimens from various hosts of Cecidomyiids convince me that *M. auditor* is a form of *M. diffinis* the male of which with wholly yellow flagellum. This form might prove to be more frequent in the southern regions of Kazakhstan.

A widely spread species. The typical form of this species was reared from galls of *Seriphidomyia botryosa* Fedotova on the root neck of *Artemisia juncea* Kar. et Kir. (South-Eastern Kazakhstan: near Khantau railway station, Chu-Ili Mts., 2-V-1982, Z.F.) (Джанокмен, 1995). This form prefers multiterbaceous and wormwood meadows on planes, ravines of the small hills and on mountain slopes in forest-steppe and steppe zones.

The *auditor* form is found predominantly on saltmarsh stations of clay and sand deserts, in dry steppe and desertic stations on the slopes of arid belt mountains. It may be found from the end of April to September. It develops on Cecidomyiidae larvae (Джанокмен, 1995). It has been reared from leaf-galls

of *Dracunculomyia ehstragoni* Fedotova on *Artemisia dracunculus* L. in the Trans-Ili Alatau Mountain Ridge (Bel'-Bulak gorge, 9 km to the East of Alma-Ata, 19-22-V-1982, Z.F.); from bud-galls of *Dichelonyx terraealbae* Fedotova on *Artemisia terrae-albae* Krasch. (Southern part of the Balkhash Lake basin: 10 km to the South-East of Bakanas, 2-8-V-1984, Z.F.) and from root bud-galls of *Seriphidomyia juncea* Fedotova on *Artemisia juncea* Kar. et Kir. (Southern Kazakhstan: on the slopes of Karatau Range, 6 km to the North-East of Ashchisay village, 23-V-1992, 1-6-VI-1992, K.D.). Adults were caught on blooming *Tamarix* and *Atraphaxis*.

M. diffinis develops mainly in Cecidomyiidae galls (Graham, 1969; Askew, 1970; Джанокмен, 1995). It has been also reared from *Argyresthia fundella* F. (Argyresthiidae) on *Juniperus communis* L. (Bouček, 1977) and from seeds of *Medicago sativa* L. (Джанокмен, 1984).

-Distribution: Kazakhstan (environs of Dzhanymbek, Mangystau, Karatau Range, Kazakh Small Mts., Chu-Ili Mts., Trans-Ili Alatau Range, Southern part of the Balkhash L. basin, Middle Ili River valley, Altay (Ivanovskiy and Listvyaga Ranges); Holarctic.

M. elymi (Dzhanokmen), 1984 (= *Platneptis elymi* Dzhanokmen, 1984).

Platneptis elymi Dzhanokmen (Джанокмен, 1984) have been transferred to *Mesopolobus* by Dzhanokmen and Grissell (2003). Known only from type material (Eastern Kazakhstan: environs of Semipalatinsk, from *Elymus* sp. stems, 1-31-VIII-1981, K.D.). Found in the steppe on sand dunes on the border of a pine forest.

-Distribution: Eastern Kazakhstan (Semipalatinsk section of the Irtysh R. valley).

M. etsuhoae Dzhanokmen, 1989.

Known only from type material (Eastern Kazakhstan: Semipalatinsk region, 55 km to the North-West of Urdzhar, from galls of *Etsuhoa* sp. (Cecidomyiidae) on *Juniperus pseudosabina* Fisch. et Mey, 15-VI-1985, Z.F.). In Kazakhstan in buds of *J. pseudosabina* two species of Cecidomyiid midges from *Etsuhoa* genus develop, namely, *Etsuhoa renifolia* Fedotova and *E. tarbagataica* Fedotova (Федотова, 2000). In the type series the host of *M. etsuhoae* is evidently the last of the above mentioned species. This opinion is supported the Tarbagatay range of this species.

-Distribution: Eastern Kazakhstan (Tarbagatay Mountain Ridge).

M. fedotovae Dzhanokmen, 1990.

Known only from type material: Semipalatinsk region, 30 km to the North of Ayaguz, from *Tavolgomya karelini* (Fedotova) (= *Wachtliella karelini* Fedotova) (Cecidomyiidae) on *Spiraea hypericifolia* L., 13-VI-1986, Z.F. (Джанокмен, 1990).

-Distribution: Kazakhstan (Kazakh Small Mountains Plateau).

M. flaviclavatus (Ferrière), 1952.

Three males were reared from bud-galls of *Etsuhoa* sp. (Cecidomyiidae) on *Juniperus pseudosabina* Fisch. et Mey (Eastern Kazakhstan: Tarbagatay Mountain Ridge, 80 km to the South of Aksuat, 12-VII-1986).

-Distribution: Eastern Kazakhstan (Tarbagatay Mountain Ridge); Southern Europe.

M. graminum (Hårdh), 1950.

One female and one male were caught on multiherbaceous and gramineous meadow on the flood land of Irtysh R. (Eastern Kazakhstan: environs of Pavlodar, 10-VII-1978, K.D.).

There are some indications that in Europe this species develops in gramineal grass culms, parasitising on larvae of Eurytomidae, Eulophidae and Pteromalidae or behaving as a predator on eggs of *Javesella* (= *Calligypona*) *pellucida* (Fabr.) (Delphacidae) (v. Rosen, 1960). It was also reared from galls of the Cynipidae *Trigonaspis synaspis* (Hartig) on an oak-seedling (Graham, 1969).

-Distribution: Northern Kazakhstan; Europe.

M. juniperinus v. Rosen, 1958.

It inhabits the forest-meadow and subalpine belts of the Trans-Ili Alatau Mts. Adults were caught in July and August. It was reared in Sweden from galls of *Oligotrophus juniperinus* (L.) (Cecidomyiidae) on *Juniperus* (v. Rosen, 1958, 1960a).

-Distribution: South-Eastern Kazakhstan (Trans-Ili Alatau Range); Europe.

M. minutus Dzhankokmen, 1982.

Earlier it was known only from type material (Eastern Kazakhstan region: environs of Berel' village, South-Eastern foothills of Listvyaga Mts., multiherbaceous and gramineous vegetation in a ravine, 12-VIII-1979, K.D.) (Джанокмен, 1982a). Recently a specimen from the Trans-Ili Alatau Range (25 km to the South of Turgen village, 24-VII-1971, K.D.) has been discovered in the collections of the Institute of Zoology, Kazakhstan.

-Distribution: South-Eastern and Eastern Kazakhstan (Trans-Ili Alatau Range; South Altay).

M. morys (Walker), 1848 (= *Disema pallipes* Förster, 1878; *Xenocrepis pura* Mayr, 1904)

It is rather common in mountain valleys and on almost all belts of the mountain ridges of Southern and South-Eastern Kazakhstan. Adults were caught on mixed herbaceous plants as well as on *Tamarix* spp. and *Atraphaxis* spp. May be caught from May till July.

Reared from *Ceutorhynchus assimilis* (Payk.) (Curculionidae) and *Dasyneura brassicae* (Winn.) (Cecidomyiidae) (Graham, 1969; Bouček, 1977; Burks, 1979).

-Distribution: Kazakhstan (Karatau Range; Trans-Ili Alatau Mountain Ridge; Middle Ili R. valley; Dzungarian Alatau, namely Sholak Mts.); Kyrgyzstan (Kungey Alatau); Holarctic.

M. nikolskayae Dzhankokmen, 1989.

It inhabits *Tamarix* growth on solonchak meadows and on salinized sands of interdunal depressions in deserts and semideserts (Western Kazakhstan: Caspian depression, 30 km to the West of Ganyushkino railway station, swept from *Tamarix* sp., 25-VI-1985, K.D.; Mangyshlak Plateau, Shevchenko town, botanical garden, swept from *Tamarix* sp., 19-VI-1989, K.D.; Southern Kazakhstan: near Karatau town, on *Tamarix* sp., 28-V-2000, K.D.; Northern part of the Balkhash L. basin: 35 km to the South West of Sayak, on *Tamarix* sp. 5-VI-1978, K.D.; Southern part of Balkhash L. basin: Middle Ili R. valley, flood land of Chilik R., near Masak, swept from *Tamarix* sp., 25-V-2004, K.D.; 16 km to the East of Ayakkalkan (not far from the Singing Dune), on *Tamarix* sp., 12-16-VI-1971, K.D.). It has been found on this plant in May and June.

-Distribution: South-Western, Southern and South-Eastern Kazakhstan (Caspian depression (Ryn-Sands); arid foothills of Karatau Mountain Ridge; the Northern and Southern parts of the Balkhash L. basin).

M. nobilis (Walker), 1834.

Some specimens were caught on the pre-mountain plane along the northern slopes of the Trans-Ili Alatau Range (near Kaynazarka village, on a multiherbaceous and gramineous meadow, 1-VI-2000, K.D.).

It develops on gramineal grasses. In Sweden it was reared from seeds of *Avena elatior* L. and *Bromus inermis* Leyss. (v. Rosen, 1962). I identified material reared from seeds of *B. inermis* in Belorussia (Brest Region: Polesye' Paludine Experimental Station, 16-VII-1975, Trepashko).

-Distribution: South-Eastern Kazakhstan; Northern & Central Europe.

M. petrosimoniae Dzhankokmen, 1994.

Described from Eastern Kazakhstan (70 km to the South-East of Ayaguz, solonchak meadow, from bud-galls of *Halodiplosis petrosimoniae* Fedotova (Cecidomyiidae) on *Petrosimonia sibirica* (Pall.) Bge., 28-VI-1986, Z.F.) (Джанокмен, 1994).

Morphologically the specimens reared by Fedotova from leaf-galls of *Harmandia cavernosa* (Rübsaamen) and *H. globulii* Rübsaamen on *Populus tremula* L., 24-VI-1986 (5 km to the South-East of Ayaguz, a hollow in the Kazakh Small Mountains Plateau) are very close to this species.

-Distribution: Eastern Kazakhstan (North-Western spurs of Tarbagatay Mts.).

M. prasinus (Walker), 1834 (= *Asemantus amphibolus* Förster, 1878).

It inhabits gramineal meadows with predominance of *Agropyron repens* (L.) P. B. (both on planes and on the slopes of foothills and relatively low mountains. It may be found in July and August. In Sweden it was reared from *A. repens* infected with frit-fly (v. Rosen, 1966; Graham, 1969).

-Distribution: Kazakhstan (Caspian depression, Trans-Ili Alatau Mountain Ridge); Europe.

M. quadrimaculatus Dzhanokmen, 1975.

It inhabits arenaceous, salinized and petrous deserts and semideserts. Parasite of Cecidomyiidae (Джанокмен, 1995). Reared from Cecidomyiid galls on *Haloxylon persicum* Bge. (Southern Kazakhstan: near Chardara, left bank of Syrdarya R., 12-V-1982; environs of Chu town, 11-V-1982, Z.F.); from stem-galls of *Stefaniola fragosa* Mamaev on *Haloxylon aphyllum* (Minkw.) Iljin (Southern part of Balkhash L. basin: 8 km to the North-East of Akkol' village (near Bakanas), 22-V-1984, Z.F.); from stem-galls of *Stefaniola iliensis* Fedotova on *H. persicum* (8 km to the North-East of Akkol' village, 7-V-1984, Z.F.); from stem-galls of *Stefaniola gigas* (Marikovskij) on *H. aphyllum* (15 km to the North-West of Bakanas, 9-V-1989; left bank of Ili R. near Masak, 9-V-1984, Z.F.); from Cecidomyiid galls on *H. persicum* (South-Eastern Kazakhstan: 70 km to the North-West of Kapchagay [former Iliysk], flood land of Ili R., 9-VI-1969, Mosolov); from bud-galls of *Halodiplosis meridianus* (Marikovskij) on *H. aphyllum* (left bank of Ili R., 20 km to the North-East of Chilik town, 3-V-1984, Z.F.); from *Halodiplosis nanophytonis* Fedotova on *Nanophyton erinaceum* (Pall.) Bge. (Charyn Canyon., 25 km to the South-West of Chundzha, 6-VI-1984, Z.F.). I also caught adults on blooming *Tamarix spp.* (Southern Kazakhstan: the environs of Karatau town, 28-29-V-2000 and 23-V-2002, K.D.; near Biylkol' Lake, 30-V-2002, K.D.; South-Eastern Kazakhstan: 85 km to the North-East of Balkhash town, 12-VI-1978, K.D.; Masak, the Chilik R. flood lands, on *T. ramosissima* in gallery forests, 3-VI-2005; 30 km to the South-East of Chilik, the Zhingilsu R. flood lands, on *T. ramosissima*, 4-VI-2005; 20 km to the North-East of Ayakkalkan, 4-VI-1971, K.D.) and on *Elaeagnus oxycarpa* Schlecht. in bloom (the environs of Karatau town, 29-V-2002, K.D.).

-Distribution: Southern and South-Eastern Kazakhstan (Kyzylkum, Muyunkum and Taukum Sands; Middle Ili R. valley: near Bol'shoi Kalkan and Malii Kalkan Ranges; Northern part of Balkhash L. basin).

M. rhabdophagae (Graham), 1957.

Known from galls of *Rhabdophaga* (Cecidomyiidae) on *Salix* (Graham, 1969; Askew, 1970; Vikberg, 1982).

In Kazakhstan has been reared from leaf-galls of *Rhabdophaga nervorum* (Kieffer) on *Salix caspica* Pall. (western ridges of Karatau Range: Baraldai Mts., Baraldai R. valley, 17-VI-1983) and from leaf-galls of *R. nervorum* на *Salix songarica* Anderss. (north-western ridges of Karatau Mts., Abai R. valley, 15 km to the North-West of Babaykurgan, 22-VI-1983, Z.F.).

-Distribution: Southern Kazakhstan; Northern and Central Europe.

M. roseni Graham, 1984.

It inhabits multiherbaceous and gramineous meadows on planes and mountain slopes. Adults were swept from blooming *Tamarix sp.* in the Southern part of the Balkhash L. basin: lower Ili R., 17 km to the North-West of Bakanas, 17-VII-1970; Ili R. valley, near Karaagash village, 5-VI-2004, 12-VIII-2003, K.D. The species was found in grassy situation in Trans-Ili Alatau Range: 15 km to the South of Talgar town, 2500 m above sea level, 17 VIII 1993, K.D.

-Distribution: South-Eastern Kazakhstan (Semirechye); Europe.

M. saxauli Dzhanokmen, 1995.

Known from type specimens (Джанокмен, 1995). Reared from stem-galls of *Stefaniola fragosa* Mamaev (Southern part of the Balkhash L. basin: Ili R. delta, near Zheltoranga, 5-V-1989) and *Baldratia tubulata* Mamaev (Ili R. delta, 7 km to the North of Topar, 13-V-1989, Z.F.) on *Haloxylon aphyllum* (Minkw.) Iljin. Initially Fedotova communicated me that the fodder plant of the above mentioned species of Cecidomyiids is *H. persicum*.

-Distribution: South-Eastern Kazakhstan (Southern part of the Balkhash L. basin).

M. sericeus (Förster), 1770 (= *Cynips foliaceus* Geoffroy, 1785; *Cynips minutus* Geoffroy, 1785; *Eutelus jucundus* Walker, 1834; *Cinips fuscicornis* Fonscolombe, 1840; *Eutelus (Platytermus) simplex* Thomson, 1878).

In Europe the species have been reared from Cynipid galls on *Quercus* (Askew, 1961; Graham, 1969; Bouček, 1977). According to Askew (1961) it shows a preference for the larger leaf-galls, and bud-galls. Morphologically the specimens reared from galls on *Rosa sp.* (South-Eastern Kazakhstan: Chundzha, 18-VIII-1978) are very close to this species (Джанокмен, 1984a).

-Distribution: Kazakhstan; Europe, Israel.

M. szelenyii Bouček, 1974

It inhabits planes and lower mountainous regions in salinized argillaceous and arenaceous deserts and semideserts from the Caspian depression and the Mangyshlak Plateau to the Balkhash-Alakol' depression and the Middle Ili R. valley. It is abundant in the flood lands of desertic rivers and along the banks of desert lakes. It always prefers solonchak stations. It develops mainly in Cecidomyiid galls (Джанокмен, 1984a, 1995). Reared from stem-galls of *Stefaniella kazenasaе* Fedotova on *Halimione verrucifera* (Bieb.) (= *Atriplex verrucifera* Bieb.) (South-Eastern Kazakhstan: the Alakol' hollow, a salinized argillaceous desert, 16 km to the North of Ucharal, 9-VIII-1985, Z.F.); from leaf-galls of *Careopalpis suaedae* Fedotova and *C. suaedicola* Fedotova on *Suaeda physophora* Pall. (South-Eastern Kazakhstan: the left shore of the Kapchagay Dam Basin, 10 km to the North of Chilik, 11-VII-1982, Z.F.); from bud-galls of *Stefaniola climacopterae* Fedotova on *Climacoptera crassa* (M.B.) Botsch. (South-Western Kazakhstan: Caspian Karakum Sands, 38 km to the North-East of Sarykamys, 24-IX-1989, Z.F.); from stem-galls of *Stefaniola fragosa* Mamaev on *Haloxylon aphyllum* (Minkw.) Iljin (Southern part of the Balkhash L. basin: lower Ili R., 8 km to the South-East of Akkol', 10-V-1984, Z.F.); from leaf Cecidomyiid *Stefaniola foliosae* Fedotova on *Salsola foliosa* (L.) Schrad. (South-Western Kazakhstan: 45 km to the South-East of Oporny railway station, 5-8-IX-1989, Z.F.); from fruit Cecidomyiid *Stefaniola fructua* Möhn on *Halothamnus subaphyllus* (C.A. Mey.) (South Kazakhstan: 5 km to the North-West of Baikadam, Intoly L. bank, 7-VIII-1988, Z.F.); from stem-galls of *Stefaniola furtiva* (Marikovskij) on *Haloxylon aphyllum* (Southern part of the Balkhash L. basin: 35 km to the North of Aksuyok, 14-XI-1992, Z.F.); from bud-galls of *Halodiplosis mutabilis* (Marikovskij) on *Anabasis aphylla* L. (Western Kazakhstan: 45 km to the West of Ganyushkino railway station, 14-VII-1985, K.D.); from bud-galls of *Halodiplosis vernalis* (Marikovskij) on *Haloxylon persicum* Bge. (Southern Kazakhstan: Chardara basin, near Chardara, 15-V-1992, K.D.); from-bud galls of *Halodiplosis indurentis* Fedotova on *Salsola arbuscula* Pall. (Southern Kazakhstan: 35 km to the South-West of Bairkum village, Baimakhan well, 30-V-1992, K.D.); from a white bud villous gall of *Halodiplosis anabasisdigemmae* Fedotova on *Anabasis salsa* (C.A. Mey.) Benth. (Southern part of the Balkhash L. basin: 16 km to the South-East of Burylbaital village, 27-V-1984, Z.F.); from a bud-gall of *Halodiplosis fedtschencovi* (Marikovskij) on *Anabasis salsa* (Southern part of the Balkhash L. basin: 20 km to the North-West of Bakanas, 23-IV-1984, Z.F.); from bud-galls of *Seriphidomyia juncea* Fedotova on *Artemisia juncea* Kar. et Kir. (Southern Kazakhstan: gorges of Karatau Range, 6 km to the North-East of Ashchisay, 6-11-VI-1992, K.D.); from stem-galls of *Harrisiana mamaevi* Fedotova on *Tamarix* sp. (Southern Kazakhstan: Chu R. valley, 40 km to the West of Chu town, 20-IV-1982, K.D.); from bud-galls of *Kochiomyia vicina* (Marikovskij) on *Kochia prostrata* (L.) Schrad. (Northern bank of Balkhash L., Karakum village, 9-VII-1981, Taranov); from foliar marginal galls of *Jaapiella kovalevi* Fedotova on *Berberis oblonga* (Bunge) Schneid. (Eastern Kazakhstan: foothills of Saur Mountain Ridge, 1500-1800 m above sea level, 20 km to the South of Zaisan town (near Zhanaturmys village), 6-15-VIII-1986, Z.F.); from galls of *Apion (Onychapion) lopatini* Ter-Minassian (Curculionidae) on *Tamarix ramosissima* Ledeb. (Southern Kazakhstan: environs of Dzhetyysai town, 27-V-1980, K.D.). I usually caught adults at the end of May and the beginning of June on *Tamarix*, *Euphorbia* and *Crataegus* in bloom. It has been collected in Turkmenistan by V.V. Kostyukov on August 26th, 1980 in Repetek and on August 28th, 1980 in the environs of Chardzhou.

-Distribution: Kazakhstan (Caspian depression, Mangystau Range, Cisustiurtia, fringes of Kyzylkum, Muyunkum and Taukum Sands, Karatau Mountain Ridge, Balkhash L. basin, Balkhash-Alakol' depression, Middle Ili R. valley), Turkmenistan; Azerbaidzhan, Eastern Europe.

M. tamaricis Dzhankmen, 1994.

It prefers salinized stations in deserts and semideserts. It develops on Cecidomyiid larvae (Джанокмен, 1995). Reared from stem-galls of *Psectrosema noxium* (Marikovskij) on *Tamarix ramosissima* Ledeb. (South-Western Kazakhstan: 16 km to the West of Novyi Uzen', 28-IV-1987; 125 km to the West of Novyi Uzen', 13-X-1989, Z.F.); from stem-galls of *Psectrosema barbatum* (Marikovskij) on *T. ramosissima* (South-Western Kazakhstan: 27 km to the North-West of Novyi Uzen', near Karabas well, 23-X-1988, Z.F.); Southern Kazakhstan: 30 km to the West of Bairkum village, not far from Karaktau Mt., 16-V-1992, K.D.); from-stem galls of *Psectrosema grummgrzhimajloi* (Fedotova) on *T. ramosissima* (South-Eastern Kazakhstan: 40 km to the North-East of Chilik, 18-V-1989, Z.F.); from stem-galls of *Marikovskiana dentipes* (Marikovskij) on *T. ramosissima* (Southern Kazakhstan: 30 km to the West of Bairkum village, not far from Karaktau Mt., 16-V-1992, K.D.); from bud-galls of *Amblardiella (Mamaeviana) diversicornis* Mamaev et Becknazarova on *Tamarix* sp. (30 km to the West

of Bairkum village, not far from Karaktau Mt., 16-V-1992, K.D.); from bud-galls of *Amblardiella (Debskiana) turkmenica* B. Mamaev et Becknazarova. on *T. ramosissima*, from stem-galls of *Harrisiana mamaevi* Fedotova on *T. ramosissima* (Southern Kazakhstan: 30 km to the West of Bairkum village, not far from Karaktau Mt., 16-V-1992, K.D.; South-Eastern Kazakhstan: 20 km to the North-West of Chilik, 17-V-1983, Z.F.); from stem-galls of *Stefaniola furtiva* (Marikovskij) on *Haloxylon persicum* Bge. and *Baldratia przewalskii* Marikovskij on *Haloxylon aphyllum* (Minkw.) Iljin (South-Western Kazakhstan: 65 km to the North-East of Novyi Uzen', 19-X-1988, Z.F.). I have collected adults on *Tamarix* in deserts and semideserts as well as in ravines of arid mountains from the end of April till July.

-Distribution: Kazakhstan (Caspian depression, Mangyshlak Plateau, Kyzylkum and Muyunkum Sands, Karatau Mountain Ridge and Middle Ili R. valley).

M. teliformis (Walker), 1834 (= *Platyterma cincticorne* Walker, 1834; *Pteromalus placidus* Förster, 1841; *Eutelus brevicornis* Thomson, 1878).

I have collected adults from June till August in the foothills and low mountains belts of the Trans-Ili Alatau Mountain Ridge on multiherbaceous and gramineous meadows with predominance of *Agropyron repens* (L.)P.B. and in the Ili R. flood lands near Bakanas on gramineal glades in gallery forests. It develops on *Agropyron* seeds (v. Rosen, 1960; Graham, 1969).

-Distribution: South-Eastern Kazakhstan (Southern part of the Balkhash L. basin and Trans-Ili Alatau Mountain Range); Northern and Central Europe.

M. trimeromelas Dzhanokmen, 1982.

It has been described from South-Eastern Kazakhstan (Джанокмен, 1982) (Northern part of Balkhash L. basin, 138 km to the South-West of Madeniet village, a meadow with solonetz-solonchak soils, on *Tamarix* in bloom, 2-VI-1978, K.D.). Later reared from galls of *Halodiplosis fedtschencovi* (Marikovskij) on *Anabasis salsa* (C.A. Mey.) Benth. (Southern part of the Balkhash L. basin, 20 km to the North-West of Bakanas, 17-V-2002, K.D.).

-Distribution: South-Eastern Kazakhstan.

M. trjapitzini Dzhanokmen, 1982.

It has been described from the desertic and semidesertic zones of the Northern part of Balkhash L. basin (Джанокмен, 1982). It inhabits slightly salinized soils and solonetz soils and solonchak soils on *Tamarix*, *Haloxylon* and *Salsola*. Reared from galls of *Halodiplosis* sp. on *Anabasis salsa* (C.A. Mey.) Benth. (South-Western part of Balkhash L. basin: 40 km to the South-East of Aksuyok village, 20-IX-1992, Z.F.). It may be found on planes and in lowerings or bottom lands surrounded by mountains, from the Mangyshlak Peninsula to the Dzungarian Alatau Range. I have caught adults in May and June.

-Distribution: Kazakhstan (Mangystau, Karatau Mountain Ridge, the Northern and Southern parts of the Balkhash L. basin, Middle Ili R. valley).

M. tsherkesi Dzhanokmen, 1995.

Known only from the type series (Джанокмен, 1995). Type specimens were reared from stem spheroidal galls of *Stefaniola vexillata* Mamaev et Pak on *Salsola richteri* Karel. (Southern Kazakhstan: arenaceous desert, 35 km to the South-West of Bairkum village, Baimakhan well, 10-XI-1992, K.D.).

-Distribution: Southern Kazakhstan (Kyzylkum Sands).

M. sp.n.

South-Eastern Kazakhstan, lower Ili R., 75 km to the North of Bakanas, reared from galls of *Halodiplosis panderiae* Fedotova (Cecidomyiidae) on *Pandera turkestanica* Iljin, 14-VII-1988, K.D.

Conclusion

The genus *Mesopolobus* Westwood occurs worldwide, but particularly species riches take place in the Palaearctic region. Species of this genus can be found in all climatic zones and altitudes having assimilated both humid and arid habitats.

The biological wealth is a result of the habitat diversity. They are related to herbaceous, arborescent and arbustive vegetation. The majority of species are parasitoids of gall-forming insects on a wide variety of plants including Chenopodiaceae, Salicaceae, Tamaricaceae and Gramineae. It was

established that in Kazakhstan the Cecidomyiidae is one of the better adopted group of hosts for species of this genus. It was found out 65 hosts for species of this genus.

A particular feature of the specific composition of the genus in this region is the predominance of species from arid habitats. A significant part of the species were collected in the limits of desertic and semidesert foothills and planes of this country. It is essential that many species are associated with pests of economically or ecologically valuable sand fixing desert plants or arboreal, bush, pasture and river gallery forest plants.

The faunistical and ecological review of species from genus *Mesopolobus* includes synonyms, zonal and statial extension, trophic links and geographic distribution.

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Резюме

Джанокмен К.А. Обзор видов рода *Mesopolobus* Westwood (Hymenoptera, Chalcidoidea, Pteromalidae) из Казахстана.

В обзоре приведён 31 вид рода *Mesopolobus* Westwood из Казахстана. Обобщены сведения по синонимии, трофическим связям, зональному и стациальному распределению и географическому распространению.

Тұжырым

Джанокмен К.А. Қазақстанның *Mesopolobus* Westwood (Hymenoptera, Chalcidoidea, Pteromalidae) туысы түрлеріне шолу.

Шолуда Қазақстандағы *Mesopolobus* Westwood туысының 31 түрі берілген. Қоректік, синонимдері, аймақтық, стациялық және географиялық таралуы жайлы мәліметтер берілген.