*Turczaninowia* 29, 1: 20–26 (2026)
*https://www.doi.org/10.14258/turczaninowia.29.1.4*
http://turczaninowia.asu.ru

ISSN 1560–7259 (print edition)
**TURCZANINOWIA**
ISSN 1560–7267 (online edition)

УДК 582.949.2:581.96(575.2)

# *Lagochilus ketmentubensis* (Lamiaceae) – a new species from Kyrgyzstan

G. A. Lazkov[1, 2]

[1] *Research Center for Ecology and Environment of Central Asia (Bishkek), Erkindic Pr., 30, Bishkek, 720040, Kyrgyz Republic*

[2] *Institute for Biology, National Academy of Sciences, Chui Pr., 265, Bishkek, 720071, Kyrgyz Republic*

*E-mail: glazkov1963@mail.ru; ORCID iD: https://orcid.org/0000-0002-3531-8524*

***Keywords***: Ketmen-Tube depression, *Lagochilus platyacanthus*, section *Lagochilus* subsection *Triangulolobi*, Western Tian Shan.

***Summary.*** The paper provides a description of a new species of *Lagochilus* subsect. *Triangulolobi* Zuckerw. (Lamiaceae) from Kyrgyzstan. *Lagochilus ketmentubensis* sp. nov. belongs to the affinity of *L. platyacanthus* Rupr. Last one species has distribution area from the northern-west China and Kazakhstan to northern Pamir-Alai (Alai Mt. Ridge and Alai valley), while *L. ketmentubensis* is distributed in the foothills around Ketmen-Tube depression (Western Tian Shan). A new species differs from morphological similar *L. platyacanthus* primarily by ovate or broadly ovate (vs. subulate) bracts. This character is firstly recorded in the genus *Lagochilus* but it was previously used for interspecies differentiation in other genera of the Labiatae family. The discovery of one more local endemic, closely related to a fairly widespread species, along with the previously described species *Scutellaria botbaevae* Lazkov and *Salvia vvedenskii* Nikitina, confirms the status of this territory as a distinct floristic district.

# *Lagochilus ketmentubensis* (Lamiaceae) – новый вид из Кыргызстана

Г. А. Лазьков[1, 2]

[1] *Научно-исследовательский центр экологии и среды Центральной Азии (НИЦЭСЦА) (Бишкек), пр. Эркиндик, д. 30, г. Бишкек, 720040, Кыргызская Республика*

[2] *Институт биологии НАН, пр. Чуй, д. 265, г. Бишкек, 720071, Кыргызская Республика*

***Ключевые слова:*** Западный Тянь-Шань, Кетмень-Тюбинская котловина, секция *Lagochilus* подсекция *Triangulolobi*, *Lagochilus platyacanthus*.

***Аннотация.*** Статья содержит описание нового вида рода *Lagochilus* из секции *Lagochilus* подсекции *Triangulolobi* Zuckerw. из Кыргызстана. *Lagochilus ketmentubensis* sp. nov. относится к родству *L. platyacanthus* Rupr. Последний вид распространён от северо-западного Китая и Казахстана до северного Памиро-Алая (Алайский хребет и Алайская долина), тогда как *Lagochilus ketmentubensis* – в предгорьях вокруг Кетмень-Тюбинской котловины (Западный Тян-Шань). Новый для науки вид морфологически сходен с близким *L. platyacanthus* и отличается прежде всего яйцевидными или широко-яйцевидными (а не шиловидными) прицветниками. Этот признак, который впервые обнаружен в роде *Lagochilus*, но ранее использовался для разграничения видов в других родах семейства Labiatae. Находка ещё одного локального эндемика, близкого к достаточно широко распространённому виду, наряду с ранее описанными видами *Scutellaria botbaevae* Lazkov и *Salvia vvedenskii* Nikitina подтверждает статус данной территории как особого флористического района.

*Поступило в редакцию 05.06.2025*
*Принято к публикации 12.01.2026*

*Submitted 05.06.2025*
*Accepted 12.01.2026*

## Introduction

The genus *Lagochilus* Bunge ex Benth. is a relatively small group of Labiatae family represented by usually spiny subshrubs and perennial herbs grows in stony and sandy habitats, including deserts and variegated stations from plains to the upper mountain belt. The genus is distributed from Iraq and Transcaucasus to East Europa (Russia), Western Sibiria, Northern and Central China, Mongolia, Republic of Central (Middle) Asia and West Himalaya (POWO, 2026). The complicated taxonomy causes controversy opinion about total number of species in this genus. Different authors recognized from more than 20 (Lazkov, 2016) up to 44 (Tsukervanik, 1985) and about 60 (Jamzad, 1988) species worldwide. This genus is especially rich in the arid regions of the Asian subcontinent (Mamadalieva et al., 2021). In the Central (Middle) Asian countries, approximately 34 species have been reported to date, whereas our calculations indicate the 31 species and largest number 16 each, grows in Kazakhstan and Uzbekistan (Tsukervanik, 1987). It can be said that Central (Middle) Asia is the center of diversity of this genus. There are 8 polymorphic species in Kyrgyzstan (Lazkov, 2016). The distribution areas of the species are varied from wide, covering several countries and mountain systems to narrow endemic confined to a single mountain ridge or even part of it or small stony remains in the sand desert. Most species of the genus contain physiologically active substances and are used in medical practice (Mamadalieva et al., 2021; Muhammadjonova et al., 2022), therefore, distinguishing of species in this group is important. Sect. *Lagochilus* subsect. *Triangulolobi* Zuckerw. is a difficult taxonomic group which included up to 4 species and is characterized by the following features: calyx campanulate, tubular-campanulate or anguste-campanulate with teeth late-ovate, ovate or late-triangular, equal to or shorter than the tube (Tsukervanik, 1985). Although genus *Lagochilus* in Central (Middle) Asia has been studied repeatedly (Knorring, 1954; Ikramov, 1976; Tsukervanik, 1985, 1987), the diversity of it obviously remains incompletely inventoried. In our opinion, the subsect. *Triangulolobi* is represented by only two species, one of which is the polymorphic *Lagochilus platyacanthus* that includes the previously number of described species such *L. kaschharicus* Rupr. and *L. pulcher* Knorring. Two last taxa, which are different by changeable character of pubescens of the calyx and do not possess a separate distribution area, we consider to be varieties of a single polymorphic species *Lagochilus platyacanthus* Rupr. (Lazkov, 2016). Despite this, it was interesting to discover a taxon from subsect. *Triangulolobi* that is clearly distinct at the species level. This new species was discovered during field investigations carried out in the April and May 2025 in Ketmen-Tube Depression, on the southern macroslope of Susamyr Range, near Torkent village. Endemic taxa of Labiatae related to other, fairly widespread taxa have already been described from the Ketmen-Tube depression, for example, *Scutellaria botbaevae* Lazkov (Lazkov, 2008) from relationship of *S. przewalskii* Juz. or *Salvia vvedenskii* Nikitina (Nikitina, 1962) related to the rather numerous Western Tian Shan and Pamir-Alai species.

## Materials and methods

During floristic surveys of the southern macroslope of Sussamyr Range (Western Tian Shan, Kyrgyzstan) material of the unknown *Lagochilus* was collected in April and May of 2025. Herbarium specimens were prepared using standard methods (Skvortsov, 1976). Photos of the species were taken by a camera SONY Cyber-shot DSC-H9, coordinates with GPS navigator Garmin GPSmap64s. To study morphological characters a binocular microscope MBS-2 was used. The dimensions were measured using type specimens of the new species. After examination of morphology, consulting with relevant literature and herbarium materials for the genus, including type materials stored in the herbaria FRU, LE, we concluded that it was necessary to describe a new taxon. When identifying a new species, the classical morphologic-geographical method was used, based on the study of morphology superimposed on the distribution of taxa. The terminology for the morphological description we are follows (Lazkov, 2016). An approximate distribution map of the of species was compiled in the Adobe Photoshop CC 2015, based on specimens kept in the above-mentioned herbaria. The acronyms of herbarium are given from Index Herbariorum (2026).

## Results and discussion

### Taxonomic treatment

***Lagochilus ketmentubensis*** Lazkov, **sp. nov.** (sect. *Lagochilus* subsect. *Triangulolobi*) (Fig. 1–3).

**Description**

Subshrub. Radix thick, fibrous, caudex branches shortened, covered with stem remnants. Annual

stems numerous, 25–45 cm tall, rounded-tetrahedral in cross-section, upright, simple, whitish, pubescent with short patent, usually mixed with long, multicellular hairs. Stipules subulate, 3–5 mm long. Leaves green, more or less pubescent with short hairs and covered with submerged glands; lower cauline leaves bipinnatisected, 20–50 mm long, triangular or triangular-ovate (with lobes at apex acuminate, without spine on the top), on petioles narrow winged, 5–30 mm long. Inflorescences with 3–5 interrupted verticillasters. Verticillasters 4–8-flowered. Bracts adnated to calyx, lanceolate, ovate or wide-ovate 3–5 mm long, abruptly transitioning in spine up to 3 mm long. Calyx 2–3 cm long (with teeth), pubescent with short hairs, campanulate; teeth 5, triangular-ovate or ovate, 8–12 mm long, at apex with short spine near 1.0 mm long; tube 10–15 mm long, pubescent with dense multicellular, patent hairs. Corolla white or cream usually with pink spots and veins, 28–45 mm long, pubescent outside with long hairs; tube 10–15 mm long; upper lip oblong, 15–20 mm long, not deep divided into dentate lobes; lower lip 12–15 mm long, trilobate, with middle lobe reniform, lateral – triangular-lanceolate. Filaments pubescent with long hairs. Style with nearly equal stigmas, glabrous. Ovary glabrous at apex, with sessile glands.

**Type**: "Kyrgyzstan, Jalal-Abad region, Toktogul district, southern slope of Sussamyr Mt. R., Zagyra mountains, near pass, clayey gypsum slopes, inter *Otostegia* communities, N41.82502°, E73.17574°, altitude 1071 m. 21 V 2025. G. A. Lazkov" (LE11309128, iso – AA, FRU, LE, MW, TASH) (Fig. 4).

**Affinities**. *Lagochilus ketmentubensis* differs from *L. platyacanthus* by lanceolate, ovate or wide-ovate (vs. subulate) bracts.

**Paratypes**: "Kyrgyzstan, Jalal-Abad region, Toktogul district, southern slope of Sussamyr Mt. R., Zagyra mountains, near pass, clayey gypsum slopes, inter wormwood communities, N41.82161°, E73.18577°, altitude 1100 m. 10 V 2025. G. A. Lazkov" (FRU).

**Distribution**. The species is distributed in gypsum foothills surrounding of Ketmen-Tube depression.

**Etymology**. The species was named after place of its growth – Ketmen-Tube depression.

*Lagochilus ketmentubensis* is apparently a recent formed endemic of the region surrounding of Ketmen-Tube depression (Western Tian Shan), as a result of separation from the more widespread species *L. platyacanthus*.

**Habitat.** The new species grows in a different kinds of habitats, including variegated outcrops and wormwood-grass communities (Fig. 4).

**Discussion**

The new species belongs to the sect. *Lagochilus* subsect. *Triangulolobi*, to the representatives of which it is closely related. Until now, this subsection contained two species: *L. platyacanthus* in wide sense and *L. taucumensis* Zuckerw. The distribution of the subsection species accepted by us shows that they are strictly allopatric (Fig. 5). A first species has distribution area from the northern-west China and Kazakhstan to northern Pamir-Alai (Alai Mt. Ridge and Alai valley). The second one is a narrow endemic of the Taukum sands in Kazakhstan and our newly described species is endemic to the southern macroslope of the Susamyr Ridge (although it is possible to find it on the northern spurs of the Fergana Ridge), which surround the Ketmen-Tyube depression from the south. The characters in the genus *Lagochilus* that distinguish species within a subsection and even a section are quite subtle, usually the feature of pubescence of various parts of the plant, the presence or absence of spines on the leaf or calyx lobes, and the shape of the leaves or calyx. Comparative morphological characters for the three species of subsection *Triangulolobi* are given in Table 1.

**Table 1.** The comparative morphological (taxonomical) characters of species from subsect. *Triangulolobi*

| Characters | *L. platyacanthus* | *L. taucumensis* | *L. ketmentubensis* |
|---|---|---|---|
| Shape of lower stem leaves | bipinnatisected | three-lobed | bipinnatisected |
| Leaves lobi | with short spine on the top | with short spine on the top | without spine on the top |
| Leaves surface | with clearly visible submerged glands | unknown | covered with poorly visible sessile glands |
| Bracts | subulate | lanceolate, ovate or wide-ovate | subulate |

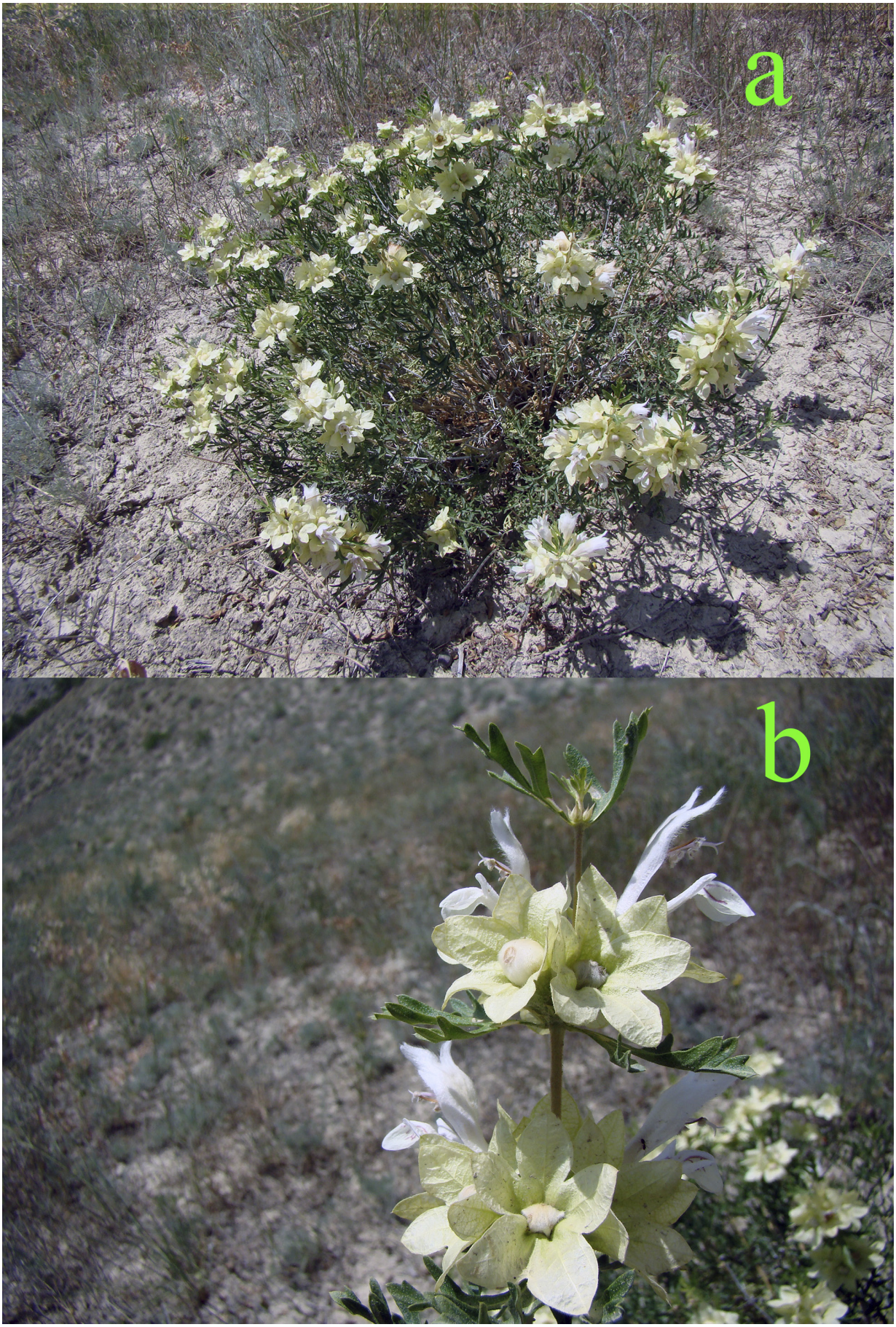


**Fig. 1.** *Lagochilus ketmentubensis* (plant in blossom from type location): a – general view; b – part of inflorescence.

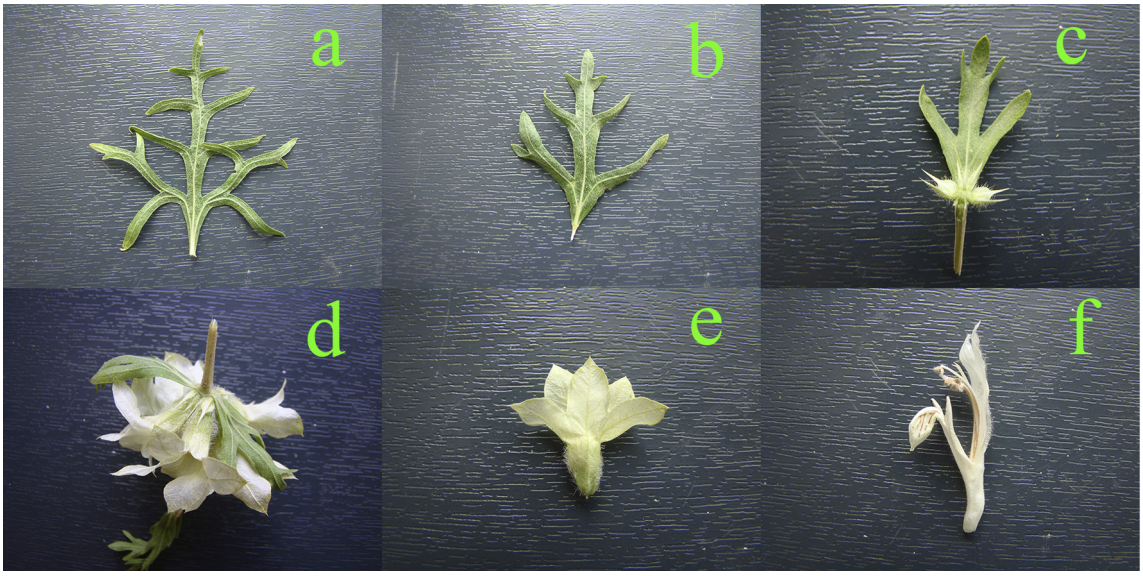


**Fig. 2**. *Lagochilus ketmentubensis* (parts of plant): a – basal leaf; b – middle leaf; c – bracteal leaf with bracts; d – verticillaster; e – calyx; f – corolla.


**Fig. 3**. *Lagochilus ketmentubensis* (type specimen).

As can be seen from Table 1, the new species is mostly similar to *L. platyacanthus*, from which it differs in the bracts structure and other minor characters, the significance of which need to be confirmed.

**Nature conservation status**

The species is a relatively narrow-range endemic, confined to the foothills of the southern macroslope of the Susamyr Mt. Ridge. There no calculation has been taken in entire distribution area of the species, but at least 300 individuals were encountered within a 1 km of the field route. The species habitat is used as spring and summer pastures. However, no significant threats to the species have been noted, because the plant is quite spiny and, as other members of the genus, is likely poisonous, making it inedible. A possible potential threat to this species is mining, as well as any large-scale construction. Estimated conservation status according to terms and criteria of IUCN Red List (IUCN, 2024) – LC.

**Concluding Remarks**

New species described differs from morphologically similar *L. platyacanthus* primarily by ovate or broadly ovate bracts. This character is firstly recorded in the genus *Lagochilus* but it was previously used for interspecies differentiation in other genera of the Labiatae family. The discovery of one more local endemic, closely related to a fairly widespread species, along with the previously described species *Scutellaria botbaevae* Lazkov and *Salvia vvedenskii* Nikitina, confirms the

**Fig. 4**. *Lagochilus ketmentubensis* (type of habitat).

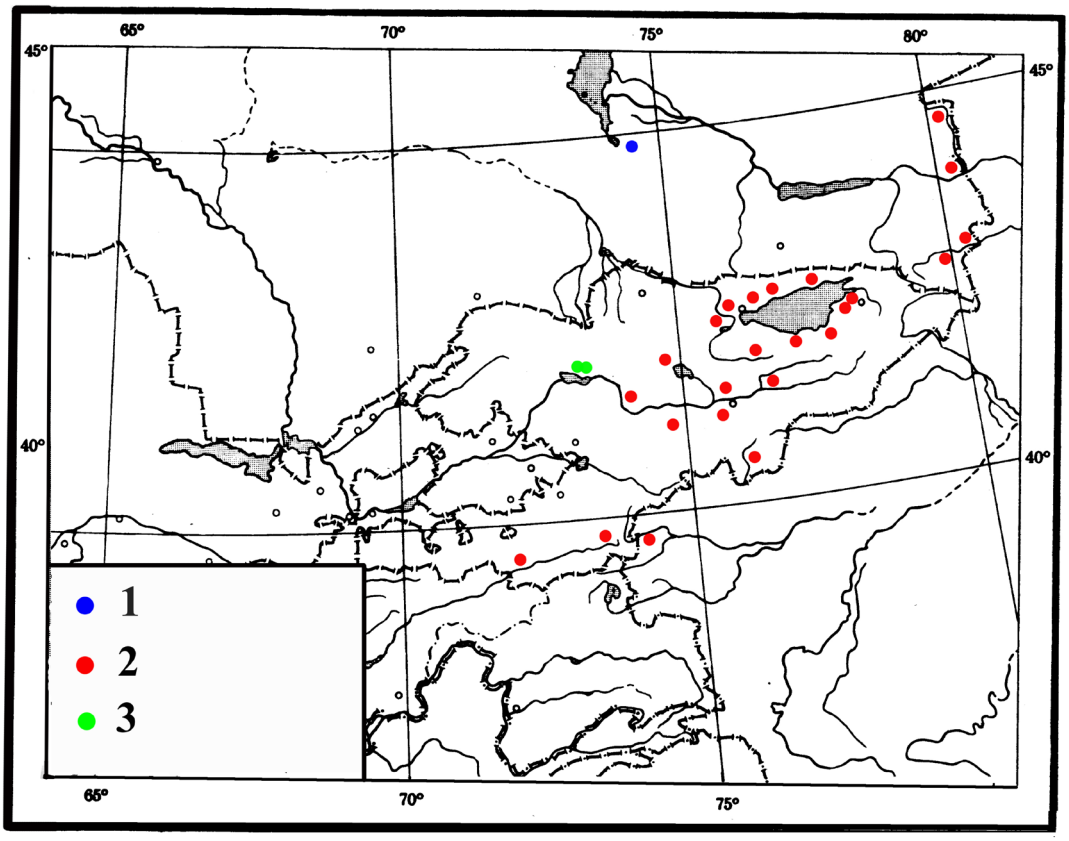


**Fig. 5.** Distribution of the species from subsect. *Triangulolobi*: 1 – *Lagochilus taucumensis*; 2 – *Lagochilus platyacanthus*; 3 – *Lagochilus ketmentubensis*.

status of this territory as a distinct floristic district and nominantion of it for selection as Important Plant Area in Kyrgyzstan. The genus *Lagochilus* is deserving for further study to reveal local endemics and identify taxonomic characters that will allow to know the actual number of species in the genus. Molecular methods may be used in the future. The southern macroslope of the Susamyr Range requires more research to identify the full diversity of its flora, including narrow-area endemics, to contribute to the flora of the Middle Asia as a whole.

**Acknowledgements**

This study, as part of Central Asia Green Road Project III., was supported by the Korea National Arboretum (Project No. KNA1-2-49-25-2).

**ЛИТЕРАТУРА / REFERENCES**

***Ikramov M. I.*** 1976. *Rod Lagochilus Sredney Azii* [*Genus Lagochilus of Middle Asia*]. Tashkent: FAN. 184 pp. [In Russian] (***Икрамов М. И.*** Род Лагохилус Средней Азии. Ташкент: ФАН, 1976. 184 с.).

*Index Herbariorum* [2026]. *A Global Directory of Herbaria* & *Associated Staff.* The William & Lynda Steere Herbarium, New York Botanical Garden. URL: https://sweetgum.nybg.org/science/ih/ (Accessed 16 January 2026).

*IUCN Standards and Petitions Committee* [2024]. Guidelines for Using the IUCN Red List Categories and Criteria. Version 16. Standards and Petitions Committee. URL: https://nc.iucnredlist.org/redlist/content/attachment_files/RedListGuidelines.pdf (Accessed 16 January 2026).

***Jamzad*** Z. 1988.The genus *Lagochlus* (Labiatae) in Iran. *Iran J. Bot.* 4: 91–103.

***Knorring O. E.*** 1954. *Lagochilus* Bge. In: B. K. Shishkin (ed.) *Flora URSS* [*Flora of USSR*]. Vol. 21. Mosqua; Leningrad: Editio Academiae Scientiarum URSS. Pp. 160–181. [In Russian] (***Кнорринг О. Э.*** *Lagochilus* Bge // Флора СССР. Т. 10. Под ред. Б. К. Шишкина. М., Л.: Изд-во АН СССР, 1954. С. 160–181).

***Lazkov G. A.*** 2008. A new species of Lamiaceae from Middle Asia. *Bot. Zhurn.* 93(10): 1596–1601. [In Russian] (***Лазьков Г. А.*** Новые виды Lamiaceae из Средней Азии // Бот. журн., 2008. Т. 93, № 10. С. 1596–1601).

***Lazkov G. A.*** 2016. Labiatae (Family Labiatae Juss.) in flora of Kyrgyzstan. *KH Bot. Monograph et Revisions* Ser. 1: 1–384.

***Mamadalieva N. Z., Akramov D. K., Wessjohann L. A., Hussain H., Long C., Tojibaev K. S., Alshammari E., Ashour M. L., Wink M.*** 2021. The genus *Lagochilus* (Lamiaceae): A review of its diversity, ethnobotany, phytochemistry, and pharmacology. *Plants* 10(132): 1–21. https://doi.org/10.3390/plants10010132

***Muhammadjonova D. B., Toshmuhammedov M. S., Matchanov A. D.*** 2022. *Lagochilus* species and diterpenes isolated from them. *Tex. J. Agriculture and Biological Sci.* 6: 55–62.

***Nikitina E. V.*** 1962. *Salvia vvedenskii* Nikitina. In: A. I. Vvedensky (ed.) *Flora Kirgizskoy SSR* [*Flora of Kirgiz SSR*]. Vol. 10. Frunze: Izdatelstvo Akademii nauk Kirgizskoy SSR. P. 377. [In Russian] (***Никитина Е. В.*** *Salvia vvedenskii* Nikitina // Флора Киргизской ССР. Т. 10. Под ред. А. И. Введенского. Фрунзе: Изд-во АН Кирг. ССР, 1962. С. 377).

*POWO* [2026]. *Plants of the World Online*. Kew: The Royal Botanic Gardens. URL: https://powo.science.kew.org/ (Accessed 16 January 2026).

***Skvortsov A. K.*** 1977. Gerbariy. Posobie po metodike i technike [Herbarium. Manual on methodology and techniques]. Moscow: Nauka. 199 pp. [In Russian] (***Скворцов А. К.*** Гербарий. Пособие по методике и технике. М.: Наука, 1977. 199 с.).

***Tsukervanik T. I.*** 1985. A system of *Lagochilus* (Lamiaceae). *Bot. Zhurn.* 70(9): 1186–1190. [In Russian] (***Цукерваник Т. И.*** Система рода *Lagochilus* (Lamiaceae) // Бот. журн., 1985. Т. 70, № 9. С. 1186–1190).

***Tsukervanik T. I.*** 1987. *Lagochilus* Bge. In: T. A. Adylov (ed.) *Opredelitel rasteniy Sredney Azii* [*Conspectus Florae Asiae Mediae*]. Vol. 9. Tashkent: FAN Publishers. Pp. 119–131. [In Russian] (***Цукерваник Т. И.*** *Lagochilus* Bge. // Определитель растений Средней Азии. Под ред. Т. А. Адылова. Т. 9. Ташкент: ФАН 1981. С. 119–131).