

Ekaterina M. ANDREEVA

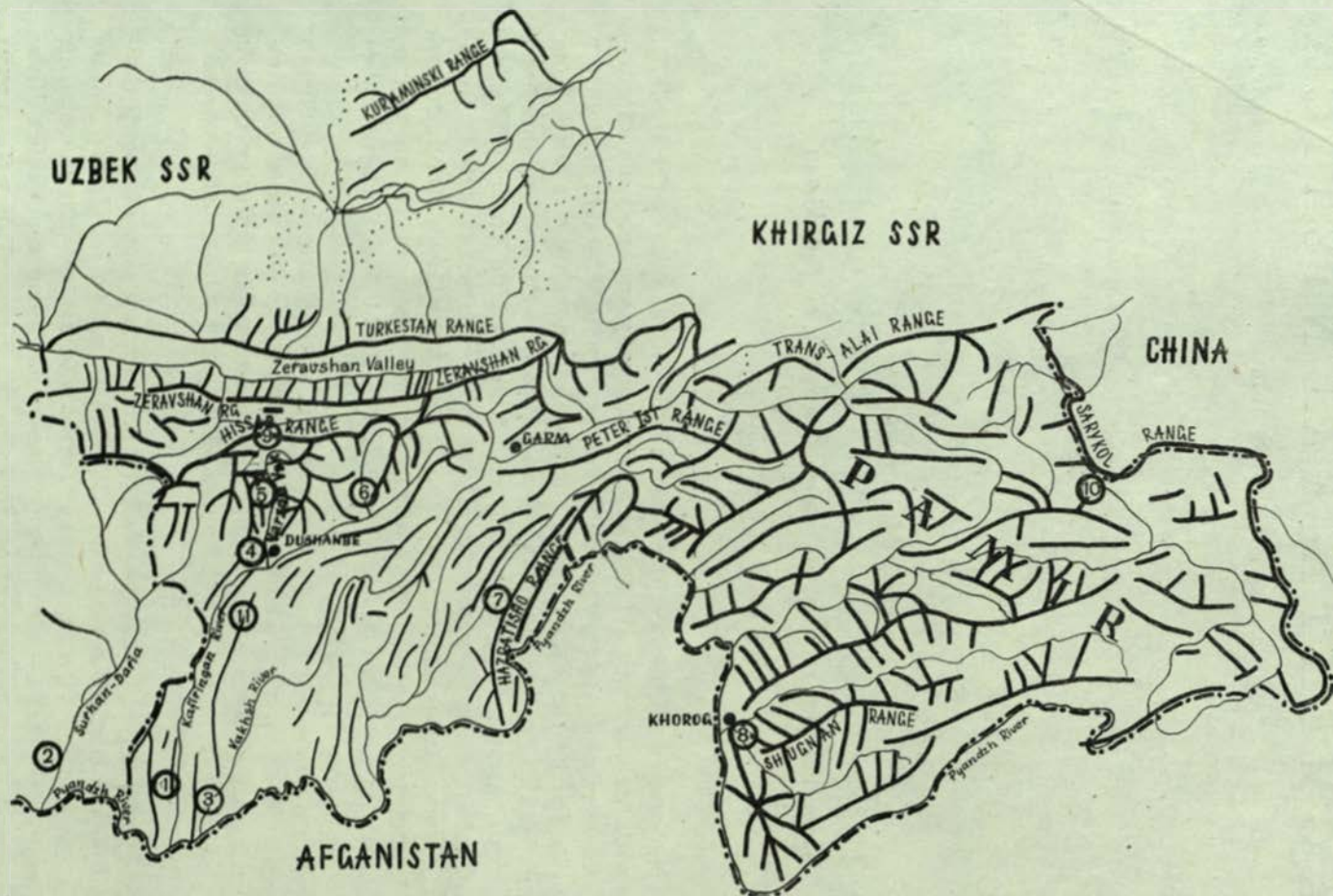
Distribution and ecology of spiders (*Aranei*) in Tadjikistan

[With one map in the text]

The spider fauna of Tadjikistan, a Central Asian Republic of the U.S.S.R. bordering with Afghanistan and China is unsatisfactorily known. Some informations on spiders of Tadjikistan were published by KRONEBERG (1875) from the material collected by the FEDTCHENKO's expedition, some other spiders from East Pamir Mts. from between Sarykol and Pyandzh River were described by O. PICKARD-CAMBRIDGE (1885) on materials from the IInd Yarkand Expedition. Other informations were given in short papers of SPASSKY (1941), SPASSKY and LUPPOVA (1945), CHARITONOV (1951), ANDREEVA (1968, 1969), ANDREEVA and TYSHCHENKO (1968, 1969, 1970). General remarks on zoogeography of the Turanian province, with some spiders from Tadjikistan mentioned, were also given by SPASSKY (1952).

The present paper is based on my research in various areas of Tadjikistan in the years 1965–1970. The relief of the Republic is very diversified and contains several vertical zones and a number of environments, differing in their humidity, vegetation and physical factors. The principal studied areas and collecting points are listed below.

1. Lowlands. Beshkentzkaya Valley (Бешкентская долина) near Chiluchor-Chashma spring (Чилучор-чашма) 300–400 m above sea level; Nature Protection Reservation Tigrovaya Balka (Тигровая балка) 300–400 m, including so called "tugays" (турай) — rich riverine vegetation along the Vakhsh River (Вахш) and sand desert areas; cotton fields in the Hissar Valley (Гиссарская



Diagrammatic map of main mountain ranges and valleys of Tadzhikistan. Principal studied areas marked with circles and numbers: 1 - Beshkent'skaya Valley, 2 - Dzar-Kurgan, 3 - Tigrovaya Balka, 4 - Hissar Valley, 5 - Kondara and Kvak, 6 - Ramit, 7 - Obi-Surkh, 8 - Shugnan Range above Khorog, 9 - Anzob Pass, 10 - Akbaital Pass, 11 - Fakhrabad Pass. Thin lines - ranges below 2000 m, medium thick lines - ranges between 2000 and 4000 m, thick lines - ranges above 4000 m.

долина) — 822 m, near Dushanbe. Apart from that I studied sand desert near Dzhar-Kurgan (Джар-Курган) in the Uzbek S.S.R., which presents similar environmental conditions to nearby desert areas in Tadzhikistan.

2. Hills (предгорья). Western slopes of the Aruktau Range (Аруктау хр.) near Gandjino (Ганджино) — 700–800 m, Karatau Range (хр. Каратау) 1100–1200 m, Fakhrabad Pass (Фахрабадский перевал) 1200 m, Nurek (Нурек) area and hilly places near Dushanbe (Душанбе).

3. Mountains. The zone contains mountains from about 1200 to 3000 m above sea level in various parts of Tadzhikistan; the higher passes and peaks with different vegetation and ecological conditions are considered a separate zone. The main ranges studied are as follows:

a) Hissar Range (Гиссарский хр.) with large Varzob Valley (Варзобское ущелье) and its side valleys — Kondara (Кондара) with Квак (Квак) Botanical Field Station above it and Takob Valley (Такобское ущелье); another large valley is Ramit Valley (Рамитское ущелье) in the upper course of the Kafiringan River (Кафиринган).

b) Hazratisho Range (хр. Хазратишо) with Obi-Surkh Valley (Оби-Сурх), the highest studied place being called Elibuz (Элибуз) — 2700 m.

c) West Pamir — Shugnan Range (Шугнанский хр.) above the Khorog (Хорог) Botanical Garden. A number of specimens was also collected from various places in Zeravshan Range (Зеравшанский хр.), Turkestan Range (Туркестанский хр.), Peter Ist Range and numerous other places.

4. High mountains — from about 3000 m up to 5500 m. Main collecting points were: Anzob Pass (Анзобский перевал) in the Hissar Range — 3400 m (apart from my own I used collections of V. I. SHIKATUNOV, V. KRISTOV and E. SEREDINA) and Akbaytal Pass (перевал Ахбайтал) — 4600 m and up to 5500 m on the nearby mountain, in the East Pamir. I studied also a number of specimens from other high altitude points.

I have used the following collecting methods: direct observations and collecting, entomological hand sampler, beating of vegetation. I have also made quantitative collecting from the plots of land 10 × 1 m: it included careful checking of all vegetation, surface of the ground, under stones and digging out all soil to the depth of 30 cm to get all burrowing spiders. That tiresome method appeared the best in the desert conditions.

Collecting in all places was repeated 2 or 3 times during the spring–summer period as to ensure getting of adult forms; only in Obi-Surkh Valley I was able to collect once.

The number of collected specimens is quite high and there are approximately 300 species, 210 of which are identified, the remaining left for further studies. I quote also 50 species mentioned in the literature, which I was not able to find. So the total number of forms known from Tadzhikistan is 260 now, 180 of which are new for Tadzhikistan. Among these there are 29 forms (species

and subspecies, described as new by myself or by myself and TYSHCHENKO in the papers quoted in references.

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AN ANNOTATED LIST OF SPIDERS OF TADJIKISTAN

Subordo *Mygalomorphae*

Otenizidae

1. *Pachylomerus ganjinoi* ANDREJEVA, 1968. Hills: Gandjino, Hazratisho — under stone, Chormazak Pass — in burrowing with a typical trap-door.

Dipluridae

2. *Phyxioschaema raddei* SIMON, 1889. Central Asian endemite, occurs in deserts, hills and penetrates through stone strewn river beds into mountains. Found in lowlands: Beshkentskaya Valley, Tigrovaya Balka, hills: Gandjino, Karatau Range, mountains: Obi-Surkh, Varzob Valley.

3. *Brachythele karatauvi* ANDREJEVA, 1968. Lowlands: Tigrovaya Balka, Beshkentskaya Valley; hills: Obi-Surkh, Gandjino, Fakhrabad Pass.

Subordo *Araneomorphae*

Oonopidae

4. *Ischnothyreus* sp. Immature specimen found in the upper part of the Kondara Valley. The representative of this family has not been reported yet from the Soviet Union.

Dysderidae

5. *Dysdera aculeata* KRONEBERG, 1875. Lowlands: Ayvadj near Termez, Beshkentskaya Valley, Dushanbe; hills: Gandjino, Fakhrabad Pass.

6. *Dysdera afghana* DENIS, 1958. Mountains: Obi-Surkh, Duchandon — under rotting timber.

7. *Dysdera subcylindrica* CHARITONOV, 1956. Described from Kirghiz SSR, in Tadjikistan found in mountains: Varzob Valley, Kondara, Kvak, Margusar Lakes, Zeravshan Range.

8. *Dysdera tartarica* KRONEBERG, 1875. Mountains: Hissar Range — southern slopes in the Varzob Valley, Kondara, Kvak.

9. *Segestria bavarica* (C.L. KOCH, 1843). Immature specimen found in Kvak.

Sicariidae

10. *Scytodes strandi* SPASSKY, 1945. Lowlands: Dushanbe — in building; hills: Gandjino — under stones; mountains: southern slopes in the Kondara Valley — under bark of tree.

Filistatidae

11. *Filistata beschkentic* ANDREJEVA et TYSTSCHENKO, 1969. The single specimen found under stone in the Beshkentskaya Valley.

12. *Filistata crosbyi* SPASSKY, 1938. Reported by SPASSKY and LUPPOVA (1945) from Varzob Valley and Ura-Tube.

13. *Filistata martynovae* ANDREJEVA et TYSTSCHENKO, 1969. Hills: Nurek area, Gandjino; mountains: Kondara — under bark of tree.

14. *Filistata monticola* SPASSKY, 1945. Reported by SPASSKY from various places in West Pamir.

Oecobiidae

15. *Oecobius tadzhikus* ANDREJEVA et TYSTSCHENKO, 1969. Lowlands: Beshkentskaya Valley — under stone; hills: Gandjino.

16. *Oecobius nadiae* (SPASSKY, 1936), comb. n. Described as *Uroctea* and reported in the literature from Leninabad; found in a big number of specimens in buildings of Dushanbe; single specimens found also in Beshkentskaya Valley and in the altitude of 3500 m in the Shugnan Range.

Eresidae

17. *Eresus niger rotundiceps* SIMON, 1873. Lowlands: Beshkentskaya Valley; mountains: Obi-Surkh, Ramit.

18. *Stegodyphus arenarius* (KRONEBERG, 1875). Lowlands: Tigrovaya Balka.
 19. *Stegodyphus lineatus* (LATREILLE, 1817). Hills: Gandjino.

Dictynidae

20. *Dictyna arundinacca* (LINNAEUS, 1758). Hills: Gandjino.
 21. *Dictyna laeta* SPASSKY, 1952. Lowlands: Tigrovaya Balka, Dushanbe; mountains: Obi-Surkh.
 22. *Dictyna latens* (FABRICIUS, 1775). Mountains: Obi-Surkh.
 23. *Dictyna major* MENGE, 1869. Lowlands: Shakhkun, Tigrovaya Balka, also Dzhar-Kurgan (Uzbek S.S.R.).
 24. *Dictyna pygmaea* THORELL, 1875. Reported from Kondara by CHARITONOV (1951).
 25. *Dictyna tristis* SPASSKY, 1952. Reported from Muminabad by SPASSKY (1952).
 26. *Dictyna varians* SPASSKY, 1952. Mountains: Obi-Surkh.
 27. *Dictyna* sp. Presumably new, found in hills: Fakhrabad Pass; high mountains: Shugnan Range above Khorog Botanical Garden (about 3500 m).
 28. *Lathys humilis* (BLACKWALL, 1855). Mountains: Obi-Surkh.
 29. *Lathys spasskyi* ANDREJEVA et TYSTSCHENKO, 1969. Hills: Gandjino — under stone; mountains: upper Obi-Surkh near snow fields.
 30. *Lathys subviridis* DENIS, 1937. Hills: Fakhrabad Pass — under stones; high mountains: Bardabo in the Trans-Alai Range.

Amaurobiidae

31. *Titanoeca albomaculata* (LUCAS, 1846). Lowlands: Beshkentskaya Valley, Tigrovaya Balka; mountains: Obi-Surkh.
 32. *Titanoeca* sp. Hills: Fakhrabad Pass.
 33. *Titanoeca schineri* L. KOCH, 1872. Hills: Fakhrabad Pass; mountains: Kondara.
 34. *Momius hispidus* ANDREJEVA et TYSTSCHENKO, 1969. Mountains: Obi-Surkh.

Uloboridae

35. *Uloborus walckenaerius* LATREILLE, 1806. Lowlands: Dushanbe; mountains: Obi-Surkh.

Pholcidae

36. *Hoplopholcus forskali* (THORELL, 1871). Reported by KRONEBERG (1875), without exact collecting locality.
 37. *Pholcus alticeps* SPASSKY, 1932. Lowlands: Tigrovaya Balka.

38. *Pholcus nenjukovi* SPASSKY, 1936. Described by SPASSKY from Kalai-Khumb, reported also by SPASSKY and LUPPOVA (1945) from Dushanbe and West Pamir.

39. *Ceratopholcus maculipes* SPASSKY, 1934. Lowlands: Tigrovaya Balka; hills: Hissar Valley, Nurek area; mountains: West Pamir — Darai-Abkhary Valley 2500 m.

40. *Artema transcaspica* SPASSKY, 1934. Lowlands: Tigrovaya Balka; reported also by SPASSKY and LUPPOVA (1945) from Dushanbe.

Palpimanidae

41. *Palpimanus sogdianus* CHARITONOV, 1946. Hills: Fakhrabad Pass, Gandjino, Khochiler; mountains: Obi-Surkh, Kondara.

Hersilliidae

42. *Hersiliola pallida* KRONEBERG, 1875. Lowlands: Beshkentskaya Valley — under stone; mountains: Obi-Surkh.

Oxyopidae

43. *Oxyopes lineatus* LATREILLE, 1806. Lowlands: Dushanbe; mountains: Kondara, Obi-Surkh, Ramit.

44. *Oxyopes maracandensis* CHARITONOV, 1946. Mountains: Kondara (CHARITONOV 1946), Obi-Surkh.

45. *Oxyopes takobius* ANDREJEVA et TYSTSCHENKO, 1969. Mountains: Obi-Surkh, Takob.

Urocteidae

46. *Uroctea* sp. Lowlands: Beshkentskaya Valley, Tigrovaya Balka, immature specimens only.

Agelenidae

47. *Agelena labyrinthica* (CLERCK, 1758). Mountains: Kondara, Kvak, Obi-Surkh.

48. *Agelena* sp. n. Lowlands: Beshkentskaya Valley, Tigrovaya Balka.

49. *Tegenaria domestica* (CLERCK, 1758). Lowlands: Dushanbe, in buildings.

50. *Coelotes charitonovi* SPASSKY, 1939. Hills: Fakhrabad Pass.

51. *Coelotes major* KRONEBERG, 1875. Mountains: Takob, Kondara, Zeravshan Range, lake Khurdak, also Uzbek S.S.R. — Teshik-Tash cave; high mountains: Anzob Pass — southern slopes.

52. *Cedicus pavlovskiyi* SPASSKY, 1945. Described from Khovaling.

Hahniidae

53. *Hahnia nava* (BLACKWALL, 1841). Mountains: Shugnan Range above Khorog.

Zodariidae

54. *Zodarion asiaticum* TYSTSCHENKO, 1970. Mountains: Shugnan Range, Shakh dara Valley.

55. *Zodarion bactrianum* KRONEBERG, 1875. Lowlands: Beshkentskaya Valley, Dzhar-Kurgan (Uzbek S.S.R); hills: Gandjino, Fakhrabad Pass; mountains: Kondara.

56. *Zodarion denisi* SPASSKY, 1938. Hills: Fakhrabad Pass; mountains: Kondara, Obi-Surkh.

57. *Zodarion martynovae* ANDREJEVA et TYSTSCHENKO, 1968. Lowlands: Beshkentskaya Valley, also Dzhar-Kurgan in the Uzbek S.S.R.

58. *Zodarion tadjikum* ANDREJEVA et TYSTSCHENKO, 1968. Lowlands: Dushanbe; hills: Gandjino.

59. *Zodarion testaceofasciatum* SPASSKY, 1945. Reported by SPASSKY and LUPPOVA (1945) from Ura-Tube and Kalininabad.

60. *Zodarion continentale* ANDREJEVA et TYSTSCHENKO, 1968. Lowlands: Dzhar-Kurgan in the Uzbek SSR; mountains: Kuraminski Range.

61. *Zodariellum surprisum* ANDREJEVA et TYSTSCHENKO, 1968. Mountains: Obi-Surkh.

62. *Laches blackwalli* (O. P.-CAMBRIDGE, 1872). Hills: Fakhrabad Pass, Gandjino. Reported by CHARITONOV (1948) from deserts.

Pisauridae

63. *Pisaura mirabilis* (CLERCK, 1758). Lowlands: Tigrovaya Balka; mountains: Ramit, Obi-Surkh.

64. *Dolomedes tadjikistanicus* ANDREJEVA (in print). Lowlands: Tigrovaya Balka.

Lycosidae

65. *Arctosa cinerea* (FABRICIUS, 1777). Mountains: Peter Ist Range — Obi-Hingou. In Central Asia reported also from Samarkand and Issyk-kul. According to ZLOTIN (1966) it occurs in the Tian-Shan Mts. above 3800 m only, and is replaced lower by *Pardosa ferruginea*.

66. *Arctosa leopardus* (SUNDEVALL, 1832). Mountains: Varzob Valley — Hodja-Obi-Garm, Obi-Surkh.

67. *Lycosa alticeps* (KRONEBERG, 1875). Hills: Gandjino; mountains: Kondara, Ramit.

68. *Lycosa inimica* (O. P.-CAMBRIDGE, 1885). Described from East Pamir — from Sarykol to Pyandzh River.

69. *Lycosa kulagini* SPASSKY, 1941. Reported from Dushanbe (SPASSKY 1941, SPASSKY and LUPPOVA 1945).

70. *Lycosa laetabunda* SPASSKY, 1941. Described from southern Tadjikistan, I studied specimens found in mountains: Varzob Valley.

71. *Tarentula cursor* (HAHN, 1831). Lowlands: Dushanbe; hills: Gandjino, Fakhrabad Pass; mountains: Obi-Surkh. E. LUPPOVA found it also in Chili-say in southern Tadjikistan.

72. *Tarentula fedotovi* (CHARITONOV, 1946). Widely distributed in mountains: Turkestan Range — Kusavli-Say, Zeravshan Range — Marguzar Lakes, Varzob Valley — Takob, Kondara, Peter Ist Range — Obi-Hingou, Obi-Surkh — Elibuz near snow field; high mountains: Anzob Pass.

73. *Tarentula kronebergi* ANDREJEVA (in print). Lowlands: Tigrovaya Balka, also Dzhar-Kurgan in the Uzbek S.S.R; mountains: West Pamir — Daray-Abharv Valley 2500 m.

74. *Tarentula latifasciata* KRONEBERG, 1875. Mountains: Kondara, Obi-Surkh, Ramit, Varzob Valley. Reported also from Leninabad by SPASSKY and LUPPOVA (1945).

75. *Tarentula nenjukovi* (SPASSKY, 1952). Hills: Sarsarak Range 680–800 m; mountains: Elibuz near snow field. Described by SPASSKY (1952) from Dashti-Djium.

76. *Tarentula raddei* (SIMON, 1889). Lowlands: Tigrovaya Balka; hills: Gandjino; mountains: Varzob Valley, Kondara, Kuraminski Range, Alai Range 108 km East from Osh.

77. *Trochosa lugubris* O. P.-CAMBRIDGE, 1885. Described from East Pamir between Sarykol and Pyandzh.

78. *Trochosa ruricola* (DE GEER, 1778). Lowlands: Dushanbe; mountains: Ramit.

79. *Trochosa ruricola rustica* THORELL, 1875. Reported by CHARITONOV (1951) from Kondara.

80. *Trochosa sabulosa* O. P.-CAMBRIDGE, 1885. Described from East Pamir between Sarykol and Pyandzh.

81. *Trochosa terricola* THORELL, 1856. Mountains: Zeravshan Range — Lake Khurdak, Obi-Surkh.

82. *Evippa* sp. 1. Presumably new species. Lowlands: Tigrovaya Balka, Dzhar-Kurgan (Uzbek S.S.R.).

83. *Evippa* sp. 2. Presumably new species. Lowlands: Tigrovaya Balka.

84. *Pardosa agrestis* (WESTRING, 1861). Reported by SPASSKY and LUPPOVA (1945) from West Pamir, Shakhristan Pass and from Dushanbe. Collecting in the same places I was unable to find single specimen of this species, finding instead large number of very similar *Pardosa monticola*. I suspect that identification by SPASSKY and LUPPOVA was wrong, but I was not able to check their specimens.

85. *Pardosa bifasciata* (C. L. KOCH, 1834). High mountains: Anzob Pass.

86. *Pardosa concolor* (KRONEBERG, 1875). Described on single specimen from Yagnob Pass.

87. *Pardosa condolens* (O. P.-CAMBRIDGE, 1885). Reported from East Pamir between Sarykol and Pyandzh.

88. *Pardosa fortunata* (O. P.-CAMBRIDGE, 1885). Described from East Pamir between Sarykol and Pyandzh.

89. *Pardosa humeli* SCHENKEL, 1936. High mountains: Pamir — Kyzyl-Rabat — 3800 m.

90. *Pardosa monticola* (CLERCK, 1758). Lowlands: Beshkentskaya Valley, Dushanbe, Dzhhar-Kurgan on the shore of the Surhan-Daria River (Uzbek S.S.R.); hills: Fahrabad Pass, Nurek; mountains: Ramit, Varzob Valley, Peter Ist Range — Obi-Hingou, Zeravshan Range, West Pamir — Shugnan Range and Ishkashim.

91. *Pardosa orientalis* (KRONEBERG, 1875). Lowlands: Tigrovaya Balka; mountains: Varzob Valley — Takob, Kondara, Kvak, Ramit, Obi-Surkh.

92. *Pardosa prativaga* (L. KOCH, 1870). Mountains: Obi-Surkh.

93. *Pardosa pullata* (CLERCK, 1758). Lowlands: shore of Surhan-Daria in Dzhhar-Kurgan (Uzbek S.S.R.); mountains: Obi-Surkh.

94. *Pardosa velox* KRONEBERG, 1875. Hills: Khochiler; mountains: Varzob Valley, Kondara, Kvak, Ramit, Takob, Obi-Surkh, Elibuz, Zeravshan Range, Peter Ist Range — Obi-Hingou; high mountains: Anzob Pass.

95. *Hippasa partita* (O. P.-CAMBRIDGE, 1876)? Lowlands: Beshkentskaya Valley, Tigrovaya Balka, Dzhhar-Kurgan (Uzbek S.S.R.).

Theridiidae

96. *Enoplognatha mandibularis* (LUCAS, 1846). Lowlands: Dzhhar-Kurgan (Uzbek S.S.R.).

97. *Enoplognatha schaufussi* (L. KOCH, 1882). Lowlands: Beshkentskaya Valley; hills: Dushanbe, Gandjino; mountains: Kondara, Kvak.

98. *Enoplognatha turkestanica* CHARITONOV, 1946. Hills: Fakhrabad Pass, Gandjino; mountains: Varzob Valley, Kvak, Ramit, West Pamir — Khorog.

99. *Lithyphantes albomaculatus* (DE GEER, 1778). Widely distributed all over Tadzhikistan, from deserts up to high mountains.

100. *Lithyphantes paykullianus* (WALCKENAER, 1806). Lowlands: Beshkentskaya Valley; hills: Dushanbe, Gandjino; mountains: Peter Ist Range, Baisunski Range (Uzbek S.S.R.).

101. *Teutana castanea* (CLERCK, 1758). Mountains: Kondara, Kvak, West Pamir — Vanch River Valley.

102. *Teutana grossa* (C. L. KOCH, 1838). Dushanbe — in houses.

103. *Teutana triangulosa* (WALCKENAER, 1802). Dushanbe — in houses.

104. *Dipoena tristis hissariensis* CHARITONOV, 1951. Described from Kondara.

105. *Latrodectus mactans tredecimguttatus* (ROSSI, 1790). Hills: Fakhrabad Pass, Gandjino; mountains: Kondara. In the literature quoted also from nearby of Kurgan-Tube and Khovaling.

106. *Euryopis laeta* (WESTRING, 1861). Mountains: Kondara, Kvak.

107. *Theridion impressum* L. KOCH, 1881. Mountains: Varzob Valley — Takob, Kondara, Kvak, Obi-Surkh, Peter Ist Range — Obi-Hingou.

108. *Theridion ovatum* (CLERCK, 1758). Mountains: Varzob Valley — Takob, Kvak, Kondara, Ramit, Obi-Surkh and Elibuz, Peter Ist Range — Luliharvi Pass.

109. *Theridion reinhardti* CHARITONOV, 1946? Mountains: Ramit.

110. *Theridion simile* C. L. KOCH, 1836. Hills: Dushanbe; high mountains: Anzob Pass.

111. *Theridion sisyprium* (CLERCK, 1758). Lowlands: Tigrovaya Balka; hills: Dushanbe; mountains: Kvak. KRONEBERG (1875) quotes it also from Iskanderkul and Zeravshan Valley.

112. *Theridion tuberculatum* (KRONEBERG, 1875). Mountains: Varzob Valley — Takob, Kvak, Ramit, Marguzar Lakes, Zeravshan Range, West Pamir — Darai-Abharv Valley 2600 m.

113. *Robertus arundineti* (O. P-CAMBRIDGE, 1871). Reported from Kalanak near Garm by SPASSKY and LUPPOVA (1945).

Araneidae

114. *Argiope ahngeri* SPASSKY, 1932. Lowlands: Tigrovaya Balka.

115. *Argiope bruennichi* (SCOPOLI, 1772). Hills: Nurek area; mountains: Obi-Surkh.

116. *Argiope lobata* (PALLAS, 1772). Lowlands: Dushanbe; mountains: West Pamir — Zhak River and Viskharv Valleys (up to 1900 m). Quoted by SPASSKY and LUPPOVA (1945) from Ura-Tube.

117. *Araneus adiantus* (WALCKENAER, 1802). Hills: Gandjino; mountains: Kvak, Obi-Surkh, Ramit. KRONEBERG (1875) quotes it from Iskanderkul.

118. *Araneus cruciferoides* SPASSKY, 1952. Lowlands: Dushanbe, Tigrovaya Balka; mountains: Ramit. SPASSKY (1952) quotes it also from Muminabad.

119. *Araneus opisthographus* KULCZYŃSKI, 1905. Mountains: Varzob Valley, Kvak, Obi-Surkh, Peter Ist Range — Sabziharv and Luliharvi, West Pamir — Viskharv Valley. KRONEBERG (1875) quotes presumably this species from the Zeravshan Valley.

120. *Araneus patagiatus* CLERCK, 1758. Quoted by KRONEBERG (1875) from Iskanderkul.

121. *Araneus redii* (SCOPOLI, 1763). Hills: Gandjino; mountains: Ramit, Kondara (CHARITONOV 1951), Zeravshan Range — Kamarou Valley, Peter Ist Range — Obi-Hingou and Luliharvi, West Pamir — Khorog Botanical Garden.

122. *Araneus strandiellus* CHARITONOV, 1951. Lowlands: Tigrovaya Balka; hills: Gandjino; mountains: Kondara (quoted by CHARITONOV 1951).

123. *Araneus tartaricus* (KRONEBERG, 1875)? Mountains: Kvak, Obi-Surkh, Peter Ist Range — Obi-Hingou.

124. *Araneus ullrichi* (HAHN, 1834). Lowlands: Tigrovaya Balka; mountains: Peter Ist Range — Obi-Hingou and Luliharvi.

125. *Araneus victoria* (THORELL, 1870). Hills: Gandjino; mountains: Ramit, Peter Ist Range — Obi-Hingou, KRONEBERG (1875) quotes it also from the Zeravshan Valley.

126. *Mangora acalypha* (WALCKENAER, 1802). Hills: Gandjino; mountains: Kvak, Ramit, Obi-Surkh, Marguzar Lakes, Kamarou Valley, Peter Ist Range — Obi-Hingou and Luliharvi.

127. *Hypsosinga albovittata* (WESTRING, 1851). Lowlands: Beshkentskaya Valley; hills: Gandjino; mountains: Varzob Valley, Kvak, Takob, Ramit, Obi-Surkh, Kamarou Valley.

128. *Meta dentipalpis* KRONEBERG, 1875. Mountains: Varzob Valley, Takob, Kvak, Ramit, Obi-Surkh. SPASSKY and LUPPOVA (1945) reported it from Derushon in West Pamir.

129. *Zygiella kochi* (THORELL, 1870). Quoted from Kondara by CHARITONOV (1951).

Tetragnathidae

130. *Tetragnatha extensa maracandica* CHARITONOV, 1951. Hills: Nurek area; mountains: Ramit, West Pamir — Khorog Botanical Garden.

Linyphiidae

131. *Meioneta fuscipalpis* (C. L. KOCH, 1836). Lowlands: Beshkentskaya Valley, cotton fields near Dushanbe; hills: Fakhrabad Pass; mountains: Kvak, Obi-Surkh; mountains: Anzob Pass.

132. *Meioneta gulosa* (L. KOCH, 1869). Mountains: Varzob Valley.

133. *Meioneta* sp. High mountains: West Pamir — Shugnan Range above Khorog — 3500 m.

134. *Theonina cornix* (SIMON, 1881). High mountains: Anzob Pass.

135. *Lepthyphantes nebulosus* (SUNDEVALL, 1829). Mountains: Kvak, Hodja-Obi-Garm.

136. *Lepthyphantes tenebricola* (WIDER, 1834). Lowlands: Dushanbe — in house.

137. *Lepthyphantes vittatus* SPASSKY, 1945. Described from Dushanbe.

138. *Lepthyphantes* sp. 1. Lowlands: Dushanbe.

139. *Lepthyphantes* sp. 2. Lowlands: Dushanbe; mountains: Ramit.

140. *Lepthyphantes* sp. 3. High mountains: Anzob Pass.

141. *Lepthyphantes* sp. 4. High mountains: Anzob Pass.

142. *Linyphia* sp. 1. Lowlands: Dushanbe.
 143. *Linyphia* sp. 2. Mountains: Hissar Range — Payron Lake, Obi-Surkh.
 144. *Linyphia hortensis* SUNDEVALL, 1829. Reported by KRONEBERG (1875) from Iskanderkul.
 145. *Linyphia montana* (CLERCK, 1758). Mountains: Kvak.
 146. *Linyphia pusilla* SUNDEVALL, 1829. Reported from Khovaling by SPASSKY and LUPPOVA (1945).

Erigonidae

147. *Dismodicus elevatus* (C. L. KOCH, 1838). Reported by KRONEBERG (1875) from Turkestan Range — Aluchinski Pass.
 148. *Oedothorax retusus* (WESTRING, 1851). Mountains: Ramit.
 149. *Micrargus herbigradus* (BLACKWALL, 1845). Cotton field near Dushanbe.
 150. *Alioranus avanturus* ANDREJEVA et TYSTSCHENKO, 1970. Lowlands: Tigrovaya Balka; mountains: Takob.
 151. *Diplocephalus cristatus* (BLACKWALL, 1833). High mountains: Anzob Pass.
 152. *Thyreosthenius? asiaticus* ANDREJEVA et TYSTSCHENKO, 1970. Mountains: Kvak; high mountains: Anzob Pass.
 153. *Erigone atra* BLACKWALL, 1833. High mountains: Anzob Pass; also reported from near Djirgital by SPASSKY and LUPPOVA (1945).
 154. *Erigone charitonovi* ANDREJEVA et TYSTSCHENKO, 1970. Lowlands: Beshkentskaya Valley, Tigrovaya Balka.
 155. *Erigone dentipalpis* (WIDER, 1834). Dushanbe — houses and on the cotton field, also reported from Karategin Range by SPASSKY and LUPPOVA (1945).
 156. *Erigone vagans* SAVIGNY et AUDOUIN, 1825. Lowlands: Beshkentskaya Valley, Dushanbe — numerous on cotton fields, found also in houses and in Botanical Garden; hills: Fakhrabad Pass, Khochiler; mountains: Ramit, Obi-Surkh. The species is also numerous on cotton fields in Afghanistan (materials collected by E. SUGONYAYEV).
 157. *Erigonella* sp. Cotton field near Dushanbe.
 158. *Monocephalus* sp. High mountains: Shugnan Range above Khorog — 3500 m.
 159. *Diplocentria bidentata* (EMERTON, 1882). Cotton field near Dushanbe.

Mimetidae

160. *Mimetus laevigatus* (KEYSERLING, 1863). Reported from Khovaling by SPASSKY and LUPPOVA (1945).
 161. *Ero* sp. Mountains: Ramit.

Gnaphosidae

Remark. Part of specimens of this family remains unidentified and is therefore not quoted in the following list.

162. *Pterotricha conigera* SPASSKY, 1945. Described from hills in the Hissar Valley.

163. *Pterotricha pavlovskyi* SPASSKY, 1952. Described from Shurobad.

164. *Nomisia exornata* (C. L. KOCH, 1839). Hills: Fakhrabad Pass.

165. *Berlandina afghana* DENIS, 1958. Mountains: West Pamir — Darai-Abharv Valley 2500 m.

166. *Drassodes breviceps* (KRONEBERG, 1875). Described from Turkestan Range — Obburdon.

167. *Drassodes dispulsus* (O. P.-CAMBRIDGE, 1885). Reported from East Pamir between Sarykol and Pyandzh.

168. *Drassodes fugax* (SIMON, 1878). Quoted by KRONEBERG (1875) as *Drassus lutescens* from upper Zeravshan Valley.

169. *Drassodes interpolator* (O. P.-CAMBRIDGE, 1885). Quoted from East Pamir between Sarykol and Pyandzh.

170. *Drassodes monticola* (KRONEBERG, 1875). Described from Turkestan Range — Aluchinski Pass and Obburdon.

171. *Scotophaeus rufescens* (KRONEBERG, 1875). Lowlands: Tigrovaya Balka; described from Khodjent.

172. *Haplodrassus dalmatensis* (L. KOCH, 1866). Hills: Fakhrabad Pass.

173. *Haplodrassus signifer* (C. L. KOCH, 1839). Mountains: West Pamir — nearby Khorog Botanical Garden.

174. *Zelotes buharensis* CHARITONOV, 1946. Lowlands: Beshkentetskaya Valley.

175. *Zelotes cingarus* (O. P.-CAMBRIDGE, 1885). Reported from East Pamir between Sarykol and Pyandzh.

176. *Zelotes gussakovskiyi* CHARITONOV, 1951. Described from Kondara.

177. *Zelotes javardensis* (KRONEBERG, 1875). Hills: Gandjino; described from Samarkand (Uzbek S.S.R.).

178. *Talanites fagei* SPASSKY, 1938. Described from Shakhristan and Khovaling.

Sparassidae

179. *Sparassus oculatus* (KRONEBERG, 1875). Hills: Gandjino. Reported by SPASSKY and LUPPOVA (1945) from Karatag and Fayzabad.

180. *Olios sericeus* (KRONEBERG, 1875). Lowlands: Tigrovaya Balka, nearby Dushanbe, Ordzhonikidzeabad; mountains: Ramit, Kamarou Valley.

Thomisidae

181. *Philodromus aureolus* (CLERCK, 1758). Mountains: Kvak, Obi-Surkh, Peter Ist Range — Obi-Hingou.

182. *Philodromus emarginatus* (SCHRANK, 1803). Mountains: Ramit.
183. *Philodromus histrio* (LATREILLE, 1819). Reported by KRONEBERG (1875) from upper course of Zeravshan River — Varzaminor.
184. *Philodromus humilis* KRONEBERG, 1875. Lowlands: Dushanbe.
185. *Philodromus pictus* KRONEBERG, 1875. Mountains: Kondara, Kvak, Ramit, Obi-Surkh, Elibuz. KRONEBERG described the species from the upper Zeravshan — Varzaminor as well as from Khirgiz and Uzbek S.S.R.
186. *Thanatus formicinus* (CLERCK, 1758)? Lowlands: Beshkentskaya Valley, Tigrovaya Balka, also Dzhar-Kurgan (Uzbek S.S.R.).
187. *Thanatus imbecillus* (L. KOCH, 1878). Quoted from Turkestan Range — Obburdon as *T. arenarius* by KRONEBERG (1875).
188. *Thanatus kitabensis* CHARITONOV, 1946. Mountains: Kvak, Takob, Maykhura Valley up to 2400 m, Lake Payron.
189. *Thanatus striatus* C. L. KOCH, 1845? High mountains: Anzob Pass.
190. *Tibellus oblongus* (WALCKENAER, 1802). Lowlands: Tigrovaya Balka; hills: Dushanbe; mountains: Peter Ist Range — Obi-Hingou; high mountains: West Pamir — Shugnan Range above Khorog — 3000 m.
191. *Paratibellus oblongiusculus* (LUCAS, 1846). Lowlands: Tigrovaya Balka; hills: Gandjino; mountains: Ramit, Obi-Surkh.
192. *Stiphropus strandi* SPASSKY, 1938. Lowlands: Tigrovaya Balka; mountains: Ramit.
193. *Coriarachne depressa* (C. L. KOCH, 1837). Mountains: Peter Ist Range — Obi-Hingou.
194. *Diaea dorsata* (FABRICIUS, 1777). Reported by CHARITONOV (1951) from Kondara.
195. *Heriaeus* sp. Lowlands: Beshkentskaya Valley, Tigrovaya Balka.
196. *Misumenops armatus* SPASSKY, 1952. Mountains: Kvak, Obi-Surkh, Peter Ist Range — Obi-Hingou. SPASSKY reported it also from Dashti-Djium.
197. *Misumenops tricuspидatus* (FABRICIUS, 1775). Quoted from Hissar Valley — Sumbula by SPASSKY and LUPPOVA (1945).
198. *Misumena vatia* (CLERCK, 1758). Reported by CHARITONOV (1951) from Kondara.
199. *Monaeses caudicula* SIMON, 1884. Hills: Fakhrabad Pass.
200. *Oxyptila* sp. Lowlands: Beshkentskaya Valley.
201. *Synaema globosum* (FABRICIUS, 1775). Reported from Turkestan Range — Obburdon by KRONEBERG (1875).
202. *Synaema plorator* (O. P-CAMBRIDGE, 1872). Mountains: Kuramiski Range — above Pangoz.
203. *Synaema tadzhikistanicum* UTOTSCHKIN, 1960. Mountains: West Pamir — nearby Khorog Botanical Garden on *Ferula gigantea*. Holotype from Anzob Pass.
204. *Thomisus onustus* WALCKENAER, 1805. Lowlands: Beshkentskaya Val-

ley, Tigrovaya Balka; mountains: Varzob Valley, Ramit, Obi-Surkh, West Pamir — Shugnan Range. KRONEBERG (1875) quoted it also from Iskanderkul.

205. *Xysticus acerbus* THORELL, 1872. Reported by CHARITONOV (1951) from Kondara.

206. *Xysticus concinnus* KRONEBERG, 1875. Widely distributed in Tadzhikistan and quite numerous.

207. *Xysticus cristatus* (CLERCK, 1758). Lowlands: Beshkentskaya Valley; hills: Fakhrabad Pass, Gandjino; mountains: Obi-Surkh, Marguzar Lakes, Peter Ist Range — Obi-Hingou, West Pamir — Khorog Botanical Garden. In the literature quoted also from Obburdon, Iskanderkul and East Pamir between Sarykol and Pyandzh.

208. *Xysticus (Proxysticus) cribratus* SIMON, 1885. Mountains: Obi-Surkh.

209. *Xysticus lapidarius* UTOTSCHKIN, 1968. Lowlands: Tigrovaya Balka.

210. *Xysticus luctuosus* (BLACKWALL, 1836). Hills: Khochiler, Gulbast near Dushanbe.

211. *Xysticus (Proxysticus) lalandei* (SAVIGNY et AUDOUIN, 1825). Lowlands: Dushanbe.

212. *Xysticus obesus* THORELL, 1875. Kondara — reported by CHARITONOV (1951).

Clubionidae

213. *Cheiracanthium brevidens* KRONEBERG, 1875. Lowlands: Dushanbe; mountains: Varzob Valley.

214. *Cheiracanthium punctorium* (VILLERS, 1789). Reported from Khodjent by KRONEBERG (1875).

215. *Cheiracanthium seidlitzii turanicum* KRONEBERG, 1875. Lowlands: Tigrovaya Balka, Dushanbe; hills: Gandjino; mountains: Obi-Surkh, Elibuz, Kvak, Kamarou Valley, West Pamir — Khorog Botanical Garden.

216. *Clubiona vegeta* L. KOCH, 1874. Mountains: Obi-Surkh.

217. *Castianeira arnoldii* CHARITONOV, 1946. Lowlands: Dzhar-Kurgan in the Uzbek S.S.R., apparently may be expected in the nearby Tadzhikistan areas.

218. *Liocranum* sp. Mountains: Kvak.

219. *Phrurolithus luppovae* SPASSKY, 1945. Described from Obi-Garm.

220. *Orthobula simoni* ANDREJEVA (in print). Lowlands: Dzhar-Kurgan (Uzbek S.S.R.); mountains: Ramit, Kondara — under stones.

221. *Orthobula choroga* ANDREJEVA (in print). Mountains: West Pamir — Shugnan Range above Khorog.

Salticidae

222. *Ballus chalybeius* (WALCKENAER, 1802). Hills: Khochiler; mountains: Varzob Valley.

223. *Ballus chalybeius* f. *sequipes* (SIMON, 1868). Mountains: Obi-Surkh.

224. *Cyrba algerina* (LUCAS, 1846). Hills: Ordzhonikidzeabad; mountains: Varzob Valley, Ramit. Also Baisunski Range near Sairob in the Uzbek S.S.R.

225. *Cyrba tadzika* ANDREJEVA, 1969. Lowlands: Beshkent-skaya Valley, Tigrovaya Balka; hills: Gandjino; mountains: Ramit.
226. *Synageles charitonovi* ANDREJEVA (in print). Lowlands: Beshkent-skaya Valley, Tigrovaya Balka, nearby Dushanbe; mountains: Kvak.
227. *Synageles ramitus* ANDREJEVA (in print). Mountains: Ramit.
228. *Mogrus* sp. Lowlands: Beshkent-skaya Valley, Tigrovaya Balka.
229. *Philaeus chrysops* (PODA, 1761). Widely distributed and numerous in Tadzhikistan. Lowlands: Tigrovaya Balka; hills: Hissar Valley; mountains: Alai, Hissar, Peter Ist and Zeravshan Ranges.
230. *Aelurillus ater* (KRONEBERG, 1875). Mountains: Obi-Surkh and Elibuz.
231. *Aelurillus latebricola* SPASSKY, 1945. Described from burrowings of vertebrates in Hissar Valley, Leninabad, Kalininabad, Ura-Tube.
232. *Aelurillus v-insignitus* (CLERCK, 1758). Mountains: Kondara.
233. *Aelurillus variegatus* (KRONEBERG, 1875). Lowlands: Beshkent-skaya Valley, Tigrovaya Balka; hills: Fakhrabad Pass, Gandjino; mountains: Karatag, Kondara.
234. *Aelurillus tartaricus* (CHARITONOV, 1946), comb. n. Lowlands: Tigrovaya Balka, Dzharkurgan (Uzbek S.S.R.), Dushanbe.
235. *Pellenes denisi* SCHENKEL, 1963. Mountains: Kondara.
236. *Pellenes kulabicus* ANDREJEVA (in print). Mountains: Elibuz, Baisunski Range — near Sairob.
237. *Pellenes nigrociliatus* (L. KOCH, 1875). Hills: Gandjino.
238. *Pellenes* sp. Apparently new. Lowlands: Dushanbe; hills: Fakhrabad Pass.
239. *Pellenes limbatus* KULCZYŃSKI, 1895. Mountains: Kvak, Kondara.
240. *Pellenes tripunctatus* (WALCKENAER, 1802). Mountains: Peter Ist Range — Luliharvi. The specimen differs from European forms by strong development of the second lateral protuberance on the palpal cymbium, changed into robust fold.
241. *Phlegra sogdiana* CHARITONOV, 1946. Hills: Gandjino, Kuybishevski rayon; mountains: Ramit, Zeravshan Range — Khshtut, Aman-Kutan, Sudkasho, Aktau.
242. *Plexippus strandi strandi* SPASSKY, 1939. Lowlands: Tigrovaya Balka; mountains: Hissar Range — Rohati.
243. *Plexippus strandi dushanbinus* ANDREJEVA (in print). Dushanbe.
244. *Plexippus kondarensis* (CHARITONOV, 1951), comb. n. Mountains: Hissar Range — Kondara, Kvak, Varzob Valley, Ramit.
245. *Euophrys aequipes* (O. P.-CAMBRIDGE, 1871). Lowlands: nearby Dushanbe.
246. *Euophrys thorelli asiatica* CHARITONOV, 1951. Described from Kondara.
247. *Bianor albobimaculatus* (LUCAS, 1846). Lowlands: Tigrovaya Balka.

248. *Pseudicius rufovittatus* SPASSKY, 1952. Lowlands: Beshkentskaya Valley, Tigrovaya Balka, Dushanbe; mountains: Kvak, West Pamir — Khorog Botanical Garden.
249. *Chalcoscirtus orientalis* ANDREJEVA (in print). Lowlands: Beshkentskaya Valley; hills: Gandjino.
250. *Chalcoscirtus ansobicus* ANDREJEVA (in print). High mountains: Anzob Pass.
251. *Chalcoscirtus infimus* (SIMON, 1868)? Lowlands: Dzharkurgan (Uzbek S.S.R.).
252. *Neon pictus* KULCZYŃSKI, 1891. Mountains: Kondara, Ramit.
253. *Sitticus clavator ansobicus* ANDREJEVA (in print). Very characteristic for the high mountains: apparently all mountains in the Central Asia, I have studied specimens from Hissar Range (type-locality — Anzob Pass), Turkestan Range, Hissaro-Darvaz Ranges, West and East Pamir, Alai Range.
254. *Yllenus albocinctus* (KRONEBERG, 1875). Lowlands: Tigrovaya Balka; mountains: Peter Ist Range — Obi-Hingou.
255. *Menemerus kronebergi* CHARITONOV, 1946. Lowlands: Beshkentskaya Valley, Tigrovaya Balka, Dushanbe; mountains: Varzob Valley.
256. *Menemerus marginatus* (KRONEBERG, 1875). Reported from Ura-Tube by SPASSKY and LUPPOVA (1945).
257. *Salticus tricinctus* (C. L. KOCH, 1846). Lowlands: Tigrovaya Balka, Beshkentskaya Valley, also Dzharkurgan (Uzbek S.S.R.); mountains: Kondara, Ramit.
258. *Thyene imperialis* (ROSSI, 1846). Lowlands: on desert plants, cotton fields and orchards in various localities in southern Tadzhikistan, including Tigrovaya Balka. Also in similar environment in several localities in Afghanistan: Kunduz, Balgan, Djelalabad, Kabul (materials collected by E. SUGONYAYEV).
259. *Heliophanus aeneus* (HAHN, 1831). Reported from Turkestan Range and Zeravshan Valley by KRONEBERG (1875).
260. *Heliophanus patagiatus* THORELL, 1875. Hills: Fakhrabad Pass; mountains: Takob, Obi-Surkh.

ECOLOGY OF SPIDERS IN TADJIKISTAN

The diversification of the environment, natural and artificial, is quite big in Tadzhikistan and each type of environment harbours different type of fauna of spiders. These types are discussed below.

1. ZONE OF LOWLANDS. Selected areas in the Tigrovaya Balka, Beshkentskaya Valley, Dzharkurgan and cotton fields near Dushanbe, as well as Dushanbe itself and its near surroundings were studied. These areas differ greatly

in their ecological conditions and contents of the fauna. There are 64 species of spiders known from lowlands, predominantly xerophilous.

A. Tigrovaya Balka (300–400 m) — Nature Protection Reserve located in the lower course of the Vakhsh River, close to the southern border of the Republic. It contains two main types of landscape: sand desert, with sand dunes and salines, of the other hand there are rich riverine vegetation, with trees, shrubs and tall grasses along the Vakhsh River course and around old river beds and lakes.

Sand areas are covered by sparse vegetation consisting of *Caligonum griseum*, *C. molle*, *Salsola subaphylla*, *S. Richteri*, more rarely *Haloxylon persicum*. Sparse grasses consist of *Carex physodes*, *Bromus tectorum*, *B. Danthoniae*, *Eremorum Buonapartis*, *Malcolmia turkestanica*, *Arnebia* sp., *Aristida plumosa* and other.

High temperatures of the sand surface during the day and extreme aridity force spiders to search for various hidings. One of such hidings is provided by burrowings of rodents and hidings of turtles, where the humidity of about 98 % is retained permanently (VLASOV 1932) and where also hide various *Diptera* (*Phlebotomus*, *Sciaridae*, *Psychodidae*, *Phoridae* and other; GHILAROV 1964) which are eaten by spiders. Among spiders using such hidings I can mention some specimens of *Phyxioschaema raddei* (other dig out burrowings for themselves), *Lithyphantes paykullianus*, *L. albomaculatus*, *Artema transcaspica*, *Pholcus nenjukovi*, *Ceratopholcus maculipes* and other.

Some spiders are able to dig out burrowings for themselves, usually vertical, reaching in some cases the depth of 30–40 cm. I can mention as such specimens of *Phyxioschaema raddei*, and also *Brachythele karatauvi*, *Eresus* sp. and bigger *Lycosidae*.

Under stones and dry sheep dung one can find *Lithyphantes albomaculatus* and *Titanoeca albomaculata*.

On sparse shrubs on sand and salines can be found *Theridion sisyphium*, *Araneus strandiellus*, *Hypsosinga albobittata*, *Thomisus onustus*, *Dictyna major*. Here are also webs of *Argiope lobata*. In low grasses occur *Thomisidae* — including *Heriaeus* sp. and *Monaeses caudicula*.

More salined areas are sparsely covered with *Tamarix ramsissima*, *Lycium ruthenicum*, *Holostachys caspica* and sparse grasses of *Aeluropus littoralis*, *Statice ololepis*, *Zygophyllum fabogo*. There are also *Salsola crassa* and *S. lanata*. There are funnel-shaped webs of *Agelena* sp. near the roots of shrubs and large nids of dense web of *Stegodyphus lineatus* and *S. arenarius* among the branches of shrubs.

Riverine "tugays" bushes consist of trees, shrubs and tall grasses — mainly *Erianthus purpurascens*, with *Phragmites communis* and *Typha angustifolia* on the shores of water bodies. There live numerous pale coloured *Lycosidae* — *Hippasa* sp. and *Evippa* sp. Webs of *Araneus cruciferoides* and *A. ullrichi* can be found on trees and shrubs and there is *Tetragnatha extensa mara-*

candica close to water, also several species of *Singa* and *Hypsosinga*, as well as, according to CHARITONOV (1948), *Araneus suspicax*. On the shores of water bodies there live *Dolomedes tadjikistanicus*, *Pisaura mirabilis* and various *Lycosidae*. In the litter of *Erianthus* live *Xysticus lapidarius*, *Stiphropus strandi*, *Cyrrba tadjika*, *Pseudicius rufovittatus* and *Hahnina nava*.

Apart from the above mentioned I have found in Tigrovaya Balka the following species: *Tarentula latifasciata*, *T. raddei*, *Pardosa orientalis*, *P. velox*, *Araneus strandiellus*, *Erigone charitonovi*, *Alioranus avanturus*, *Olios sericeus*, *Thanatus formicinus*, *Paratibellus oblongiusculus*, *Cheiracanthium* sp., *Synageles* sp., *Aelurillus variegatus*, *Plexippus strandi*, *Bianor albomaculatus*, *Yllenus albocinctus*, *Menemerus kronebergi*, *Salticus tricinctus*.

B. Beshkentskaya Valley. Studied area near spring Chuluchor-Chashma (300–400 m) differs from Tigrovaya Balka by lack of both sand dunes and "tugays" riverine bushes. The vegetation is similar to sands of Tigrovaya Balka, but differs in presence of *Hammada leptoclada* and much smaller and more sparse patches of *Tamarix hispida*. Some places are covered by *Alchagi canescens* and part of the Valley nearby Tiun-Tau Range is covered by *Artemisia tenuisecta* and *A. Kochii*. There are often burrowings of *Phyxioschaema raddei* near the roots of *Artemisia*, and web nids of *Mogrus* sp. on its branches.

Spider fauna of Beshkentskaya Valley resembles that of sandy areas of Tigrovaya Balka, differing in presence of *Oxyopes maracandensis*, *Araneus tuberculatus*, *Xysticus cristatus* and also various species of *Cheiracanthium*, *Philodromus*, *Thanatus*, *Misumena*, *Latrodectus* and *Dictyna*. Lack of larger *Araneidae* is presumably due to the lack of trees in the Valley.

On the surface of ground one can find *Hippasa partita*, which according to CHARITONOV (1948) is the only of the *Lycosidae* family spinning a large web — lying on the surface of the earth. There are also ant mimicking spiders — small *Synageles* sp. and bigger *Micaria* sp. On the stone strewn slopes above the spring there live in hidings: *Oecobius nadiae*, *Oe. tadjikus*, *Filistata beschkentica*, *Lithyphantes paykullianus*, *Hersiliola pallida*, *Oxyptila* sp. and various *Gnaphosidae*.

The quantitative collecting on five plots 10 × 1 m with different vegetation gave 84 specimens belonging to 26 species; the richest collection — 30 specimens of 13 species came from the plot *Alchagi canescens*, the poorest from the plot with sparse *Artemisia scotina* — 4 species and 4 specimens, increase of density of *Artemisia scotina* on the 5th plot gave distinct increase of a number of spiders. The most numerous species on the studied plots were: *Berlandina* sp. — 22 specimens, *Argiope* sp. — 11, *Erigone vagans* — 8, *Hippasa* sp. 7 and *Oxyopes maracandensis* — 5 specimens.

C. Dzhar-Kurgan. Typical sand desert with weakly fixed dunes and sparse vegetation. Although located in the Uzbek S.S.R. it can fairly well represent nearby sandy areas of Ayvadijan and Shah-Kun in the Tadjikistan. As

the collecting here was less intense the material is rather small, in spite of that, however, quite interesting. Six species were found only in this area — these are: *Zodarion martynovae*, *Z. continentale*, *Pardosa wagleri*, *Enoplognatha mandibularis*, *Misumena* sp., *Chalcoscirtus infimus*. Two other species: *Tarentula kronebergi* and *Erigone charitonovi* were found also in Tigrovaya Balka, the third, *Dictyna major* was found in Tigrovaya Balka and in Obi-Surkh Valley in mountains.

Widely distributed forms from Dzhar-Kurgan were found either under stones on the railway tracks: *Erigone dentipalpis*, *E. vagans*, *Orthobula simoni*; on the shore of Surkhan-Daria: *Tarentula cursor*, *Pardosa monticola*, *P. pullata*; on the vegetation: *Thomisus onustus*, *Thanatus formicinus*, or under dung — *Lithyphantes albomaculatus*.

D. Cotton fields in the Hissar Valley (near Dushanbe). All suitable for irrigation valleys are turned now into fields, mainly cotton fields, and their spider fauna is new and relatively poor. There are 15 species known from cotton fields in Tadzhikistan, mainly widely distributed ones. According to my quantitative research the dominating species are *Meioneta fuscipalpis* and *Erigone vagans*, outnumbering by far all remaining. The number of spiders on the fields changes distinctly during the year. The domination of small forms *Linyphiidae* and *Erigonidae* during spring is due presumably to cultivation processes, which make less harm to the forms stretching their nets between the pieces of earth and feeding mainly on *Collembola* and other small insects. The temporary irrigation canals are drawn during the summer from the main permanent canals and this facilitate possibly penetration of *Lycosidae* during that season. *Dictynidae* spin their webs on the lower surface of leaves. Accidental species: *Titanoeca albomaculata*, *Thyene imperialis*, *Eresus niger rotundiceps* and some other penetrate to the fields presumably from other, uncultivated grounds. My research has shown that the quantity of spiders increases in the central parts of the fields, this is unusual and maybe due to influence of cultivation procedure (chemicals, irrigation).

E. Synanthropic environments. The spider fauna of houses and other buildings is quite rich. Apart from normal synanthropic species as: *Tegenaria domestica*, *Teutana grossa*, *Lepthyphantes* sp., the synanthropes are all species of *Pholcidae* — *Artema transcaspica*, *Ceratopholcus maculipes*, *Pholcus nenjukovi*. Other frequent and numerous inhabitants of houses are *Filistata crosbyi*, *Scytodes strandi*, *Loxosceles rufescens*, *Lithyphantes paykullianus*; I have found also in houses *Cedicus pavlovskiyi*, *Talanites fagei*, *Olios sericeus*, *Sparassus ocellatus*, *Oecobius nadiae* and *Oe. tadjikus*.

2. HILLS. Spider fauna of hills contains 60 species, differs from that of lowlands in higher density, although a number of species occurs both in lowlands and hills. I have studied two areas in the southern part of Tadzhikistan

and had some additional material from certain other localities. It may be expected that more intense research will lead to discovery of more species. The main studied areas are as follows.

A. Gandjino. Western slopes of the Aruktau Range, 700–800 m, near village Gandjino, covered with grassland consisting mainly of *Carex pachystylis*, *Poa bulbosa*, *Phoemus bucharica*, *Psoralea drupacea*, and also *Vulpia ciliata*, *Aegilops squarrosa*, *Astragalus rutilobus*, *Taeniatherum asperum*, *T. crinitum*, *Bromus oxyodon*, *B. tectorum*. There are also *Pistacieta* sp., *Lygophyllum atriplicodes*, *Amygdalus spinosissima*, *Otostegia Olgae* and other.

The spider fauna of the Gandjino area consist of some species common in various zones of Tadzhikistan, such as *Tarentula raddei*, *Enoplognatha turkestanica*, *Lithyphantes albomaculatus*, *Araneus adiantus*, *Hypsosinga albovittata*, *Xysticus cristatus*, *Philaeus chrysops*, *Aelurillus variegatus*. There are also some species typical for the lowlands, such as: *Phyxioschaema raddei*, *Brachythele karatauvi*, *Oecobius tadjhikus*, *Enoplognatha schaufussi*, *Lithyphantes paykullianus*, *Latrodectus mactans tredecimguttatus*, *Thanatus formicinus*, *Chalcoscirtus* sp.

There are plenty of hidings under stones and in the burrowings of rodents, where the temperature does not change and the humidity is high, which permits such species as *Phyxioschaema raddei* and *Brachythele karatauvi* to give up digging burrowings of their own. In such hidings was found *Pachylomerus ganjinoi*, and also *Dysdera aculeata*, *Scytodes strandi*, *Filistata martynovae*, *Lathys spasskyi*, *Oecobius tadjhikus*, *Palpimanus sogdianus*, *Eusparassus aculeatus*, *Tarentula alticeps* and *T. nenjukovi*, also *Zodarion bactrianum* and *Z. tadjhikum*. There are numerous holes of larger *Lycosidae* and *Laches blackwalli* lives also in holes. On the plants can be found: *Dictyna arundinacea*, *Uloborus walckenaerius*, *Araneus adiantus*, *A. redii*, *A. strandiellus*, *A. victoria*, *Hypsosinga albovittata*, *Thanatus formicinus*, *Paratibellus oblongiusculus*, *Cyrba tadjika*.

B. Fakhrabad Pass in the Aktau Range, 1200 m. Covered with grassland vegetation consisting of *Hordeum bulbosum*, *Vulva myurus*, *V. ciliata*, *Taeniatherum asperum*, *Phleum paniculatum*, *Lophohcloa phleoides*, *Bromus oxyodon*, *B. Danthoniae*, *Linum corymbulosum*, *Aegilops truncialis*, *Ae. squarrosa*, *Cousinia microcarpa*, *C. polycephala*, *Psoralea drupacea*, *Eremurus Olgae*, *Phlomis bucharica*.

The quantitative research gave 218 specimens belonging to 38 species, the dominating were: *Nomisia exornata*, *Meioneta fuscipalpis*, *Zelotes* sp., *Hypsosinga albomaculata*, *Thanatus* sp. The species common with Gandjino were: *Phyxioschaema raddei*, *Brachythele karatauvi*, *Palpimanus sogdianus*, *Zodarion bactrianum*, *Laches blackwalli*, *Enoplognatha turkestanica*, *Latrodectus mactans tredecimguttatus*, *Monaeses caudicula*, *Philaeus chrysops*, *Aelurillus variegatus*. The species limited to this environment were: *Titanoeca* sp. *Zodarion denisi*, *Haplodrassus minusculus* and various *Gnaphosidae*.

All together I have found 60 species of spiders in the hills zone; the most interesting and limited to this zone only are *Palpimanus sogdianus*, *Laches blackwalli* and *Pachylomerus ganjinoi*.

3. MOUNTAINS. The zone contains valleys, slopes of high mountains, but without their peaks and high passes, it contains also lower summits. It stretches from about 1200–1500 m up to about 3000–3500 m, these bordering altitudes of the zone changing in various parts of the country in correlation with various climatic factors. The main recognition character of the zone is its vegetation, differing sharply from that of high mountain flora and forming the "tree and shrub belt", divided into lower and upper parts according to GONCHAROV (1937) and OVCHINNIKOV (1957).

The spider fauna of the mountains is the richest from all vertical zones and consist of 171 forms, mainly mesophilous but with some addition of xerophilous spiders in some valleys and in more arid places.

A. Obi-Surkh Valley (1300–2700 m) in the Hazratisho Range. The vegetation of this area can be classified as lower shrubs and trees belt, with exception for subalpine vegetation of Elibuz (2700 m). The most characteristic element here are maple trees — *Acer turkestanicum*, *A. pubescens*, *A. Fedtschenkoanum*, as well as *Celtis caucasica*, *Prunus ulmifolia*, *P. divaricata*, *P. Mahaleb*, *Exochorda Alberti*, *Cotoneaster multiflora*, *C. racemiflora*, *Crataegus azarohes*, *C. monogyna*. In more humid side valleys there are *Juglans fallax*.

The main part of spider collection was made in the river valley of Obi-Surkh, whose bed makes good living conditions for various desert plants, it is therefore understandable that some typically xerophilous spider do also live there. These are *Dictyna major*, *Titanoeca albomaculata*, *Hersiliola pallida* and *Misumena* sp., which I have found, apart from Obi-Surkh, only in arid places in Beshkent-skaya Valley, Dzhar-Kurgan and Tigrovaya Balka. Other species found usually in deserts or in dry hills, or in both, are: *Phyxioschaema raddei*, *Brachythele karatauvi*, *Lathys spasskyi*, *Uloborus walckenaerius*, *Palpimanus sogdianus*, *Oxyopes lineatus*, *O. maracandensis*, *Zodarion denisi*, *Tarentula cursor*, *Araneus adiantus*, *A. cruciferoides*, *A. opisthographus*, *Hyposinga albovittata*, *Meioneta fuscipalpis*, *Erigone vagans*, *Paratibellus oblongiusculus*. Among more widely distributed in all vertical zones I can mention *Thomisus onustus*, *Xysticus cristatus*, *Philaeus chrysops*.

Agelena labyrinthica is quite common in more humid side valleys, where also occur *Zodariellum surprisum*, *Momius hispidus*, *Lathys humilis* — the three latter species are known from Obi-Surkh only. SPASSKY's *Dictyna laeta* and *D. tristis* are also described from that area (Muminabad). In wet places under rotten timber were found *Dysdera afghana* and *Tarentula latifasciata*.

In subalpine meadows at Elibuz, with remnants of snow fields still preserved in June, I have found *Arctosa leopardus*, *Tarentula latifasciata*, *T. fedotovi*,

Lycosa fulviventris, *Trochosa terricola*, *Lithyphantes albomaculatus*, *Aelurillus ater* and *Ae. variegatus*.

Other interesting species found in Obi-Surkh are: *Eresus niger rotundiceps*, *Oxyopes takobius*, *Pardosa orientalis*, *P. prativaga*, *P. velox*, *Theridion ovatum*, *Argiope bruennichi*, *Linyphia* sp., *Xysticus cribratus*, *Ballus chalybeius f. se-guipes* and various species of unidentified *Gnaphosidae*.

B. Kondara and Kvak. Botanical Field Station Kvak (1800 m), located above Kondara Valley, is surrounded by vegetation of the upper shrubs and trees belt, containing more mesophilous plants and some alpine forms. Typical trees and shrubs of this belt — are: *Acer turkestanicum*, *Juniperus serauwsch-nica*, *Rosa lutea*, *Lonicera persica*, more rarely *Cotoneaster multiflora*. Southern slopes are covered in spring by following herbs: *Polygonum bucharicum*, *Nepeta grandiflora*, *Silene commutata*, *Tanaceum Newesskyanum*, *Ligula macrophylla*, *Eremurus robustus*, *Senecio songoricus* and other. These herbs are replaced on northern slopes by *Ferula Jaeschkeana*, *Hipericum scabrum*, *Prangoa pabularia*, *Poa bulbosa*, *Bromus Danthoniae*, *Gentiana Olivieri*, *Carex turkestanica*, *Althea nudiflora*, *Cousinia Raddeana* and other.

The ecological conditions in Kondara and Kvak, as well as in the whole mountain zone, are quite variable and so the fauna of this zone is quite rich. The richest spider fauna is connected with plant communities with *Juglans fallax* and various *Acer* trees; in the herb and litter layer I have found numerous *Coelotes major*, *Liocranum* sp., *Lepthyphantes nebulosus*, *Lepthyphantes* sp., *Linyphia montana*, *Dysdera subcylindrica*, *Theridion ovatum*, *T. tuberculatum* and other. Under bark of trees live *Teutana castanea*, *Filistata martynovae*, *Scytodes strandi*. On somewhat more dry slopes are common *Agelena laby-rinthica*.

Sand-stone slopes with more sparse vegetation are much poorer in spiders. Under scarce hidings one can found here: *Tarentula fedotovi*, several *Zelotes* and some other *Gnaphosidae*, on plants — *Thanatus kitabensis* and *Xysticus concinnus*.

The poorest places are covered by grasses and herbs only — I have found there *Titanoeca schineri*, *Zodarion denisi*, *Theridion ovatum*, *T. tuberculatum*, *Meioneta fuscipalpis*, *Xysticus concinnus*.

Stone strewn slopes are inhabited by *Philaeus chrysops*, *Plexippus konda-rensis* and various *Aelurillus*, there are also *Lithyphantes albomaculatus*.

According to my quantitative research the dominating forms in this area are: *Dictyna* sp., *Coelotes major*, *Theridion ovatum*, *Liocranum* sp. and various *Gnaphosidae*.

C. West Pamir — Khorog. Slopes of the Shugnan Range above Kho-rog Botanical Garden, from 1800 up to 4000 m were studied. The slopes between 2000–3000 m are mainly covered with communities consisting of *Artemisia maritima* and *A. cina*, with *Kochia prostrata*, *Stipa* sp., *Crysopsis sogdiana*,

Achillea trichophylla, *Trichodesma incarum*, *Dianthus crinitus*, *Poa bulbosa* and various other.

The spider fauna of these mainly dry slopes is rather poor and I have found only 41 species, essentially collected during quantitative research. The richest material came from the highest collecting plot (altitude 3500 m) with somewhat different vegetation and less dry because of melting snow. The dominating species were found in all four plots, these are: *Thanatus kitabensis* and *Berlandina* sp., also *Lithyphantes albomaculatus* was quite rich. Other numerous species, but limited to lower plots (2300–2350 m) were *Drassodes* sp., *Nomisia* sp. and two *Zelotes* spp.

4. HIGH MOUNTAINS. The spider fauna of the zone consists of limited number of species — I know at the moment only 29. Their density in some biotopes is, however, quite high. The most typical species is apparently *Sitticus clavator ansobicus*, widely distributed in the Central Asia high mountains. Above 4500–5000 m it makes the biggest part of the spider biomass, together with various *Erigonidae*.

The ecological importance of spiders in higher altitudes is relatively great as they form the biggest component of the arthropodean biomass. That importance increases with altitude and on the barren rock above snow line the spiders are, together with *Collembola*, the only inhabitants and feed on insects (mainly *Diptera*) brought by winds (MANI 1962, 1968, VTOROV 1966, ZLOTIN 1966, CHIKATUNOV 1968). According to VTOROV spiders become dominant in Tian-Shan Mts. on altitude 3700–3800 m, where are more humid environments, on lower altitudes in xerophilous environments the percentage of spider biomass in total biomass of arthropods decreases. The change of that percentage is shown on table I (from VTOROV 1966, modified).

Table I. Percentage of spider biomass in the total biomass of *Arthropoda*

| Altitude in m | Dry biotopes | Humid biotopes |
|---------------|--------------|----------------|
| 3700–3800 | — | 32–62 |
| 3400–3600 | 3.3 | 26 |
| 3200–3300 | 8 | 33.9 |
| 3000–3200 | 0.3–2.46 | 11.4 |

In high mountains of Tadjikistan spiders become dominants from an altitude of 3000 m and according to CHIKATUNOV (1968) may reach quantity of even 20,000–30,000 specimens per 1 hectare.

A. Anzob Pass (3400 m). Ecological research at Anzob Pass were carried out by V. CHIKATUNOV, who has studied general biomass of *Arthropoda* and

to whom I have identified spiders, originally to the family level. Afterwards I have carried out my own research on Anzob Pass.

There are four types of plant communities on Anzob Pass according to KALETKINA (1966), and these differ somewhat on southern and northern slopes, forming 6 different biotopes for spiders (CHIKATUNOV 1968) and harbouring somewhat different faunas. There are on southern slopes: alpine meadows community, *Cousinia-Onobrychis* community, and cryophytous community. On northern slopes there are: community of turfy grassland and community of cryophytous plants. Other type of environment are water soaked grasslands near springs, which can be found on both slopes.

Cousinia-Onobrychis community is characterized by aridity and sparse vegetation consisting of micro- and eurythermic plants. On Anzob Pass that community consists mainly of *Cousinia Franchetti*, *C. verticillaris*, *Onobrychis cornuta* and *O. echidna*. The low rounded thorny bushes, keeping better thermic and humidity conditions, are spots of concentration of insects. The general aridity of soil and air of this biotope, together with sharp differences of soil temperature during day and night make quite special living conditions, explaining presence of xerophilous forms. The dominating group are detritophagous arthropods making 60% of arthropodean biomass, the spiders making about 24.5% or 1060 specimens per hectare.

Subalpine meadows consist of *Ligularia Thomsonii* and scattered groupings of *Poa bucharica*, *Euphorbia saravshanica*, *Geranium saxatile*, *Polygonum coriarium*, *Delphinium oreophilum*. The melting of snow fields increases humidity of this environment during the summer, they become more dry in autumn. The temperature and humidity make this environment more favourable for arthropods and these are more numerous and contains more species. The detritophagous species make 80% of biomass here and spiders only 11.67% or 980 specimens per hectare. The dominating spiders are *Theridiidae* and *Gnaphosidae*, the number of xerophilous *Salticidae* and *Thomisidae* decreases, mesophilous *Lycosidae* are more numerous. The list of species from this environment is quite similar to that of the previous one, with addition of *Lepthyphantes* sp., *Thyreostenius asiaticus* and *Xysticus cristatus*.

Cryophytous plants communities occur at bottoms of the glacier made cirques and consist of *Puccinellia subspicata*, *Allium Fedtschenkoanum*, *Polygonum hissaricum*, *Oxytropis savellanica*, *O. immersa*. This environment is characterised by higher humidity of the soil and air and by lower temperatures. Its spider fauna is richer than in the previous environment and makes 16.1% of biomass (1540 specimens per hectare).

Turfy grassland on northern slope is characterized by low temperatures, humidity is high in summer and very low in autumn, there are little hidings as there are very few stones and the area is intensely grazed by herds of sheeps. The spiders are dominant here and make 75.12% of biomass (2060 specimens per hectare), the main components are *Theridiidae* and *Gnaphosidae*.

Cryophytous environments of the northern slopes. These are densely covered by vegetation and stretch near permanently wet places. There is plenty of hidings here, made by stones, tufts of denser vegetation and burrowings of rodents. The temperatures are lower here and snow melts later, in spite of that the spider fauna is quite rich (1920 specimens per hectare), and spiders make 92.9% of the total biomass. The dominants are *Sitticus clavator ansobicus*, *Coelotes major* and *Gnaphosidae*.

Water soaked grasslands near the springs form small and narrow areas in various parts of slopes. The temperatures are low and fauna is very poor. The spiders form 30.87% of biomass and countings gave 980 specimens of spiders per hectare. The dominants are *Lycosidae*.

The dominating species in various biotopes of the Anzob Pass are listed on table II.

Table II. Dominating species in various biotopes of the Anzob Pass

| Species | No. of spiders per 1 hectare of various biotopes of Anzob Pass | | | | | | Total |
|------------------------------------|--|-----|-----|-----------------|-----|------------------------|-------|
| | Southern slopes | | | Northern slopes | | Water soaked grassland | |
| | 1 | 2 | 3 | 4 | 5 | 6 | |
| <i>Lityphantes albomaculatus</i> | 360 | 350 | 430 | 850 | 150 | 190 | 2330 |
| <i>Sitticus clavator ansobicus</i> | 340 | 140 | 260 | 180 | 570 | 70 | 1560 |
| <i>Coelotes major</i> | 110 | 70 | 130 | 280 | 540 | 30 | 1160 |
| <i>Gnaphosidae</i> gen. sp. | 40 | 220 | 340 | 570 | 500 | 80 | 1750 |
| <i>Pardosa velox</i> | | | | | | 520 | 520 |
| <i>Pardosa bifasciata</i> | | | | 130 | 40 | | 170 |
| <i>Tarentula fedotovi</i> | 40 | 140 | 240 | — | 40 | | 460 |

Explanation of biotopes: 1 — *Cousinia* grassland, 2 — subalpine meadows, 3 — cryophytous communities of the southern slopes, 4 — turfy grassland, 5 — cryophytous biotopes of the northern slopes, 6 — water soaked grasslands.

B. Pamir. I have collected widely in the West and East Pamir but the materials are not fully identified yet. Therefore I limit myself only to preliminary remarks now. I have searched the slopes of high East Pamir mountains up to 5600 m near Akbaital Pass and have found that the spiders occur up to altitude 5200–5300 m there. The absence of spiders in the 5300–5500 m belt is presumably due to the unfavourable climatic conditions near the peak crest of mountain (5600 m), because in the Himalayas spiders were found up to 7200 m

(MANI 1962, 1968). Unfortunately I had no possibility to search so high mountains in the Trans-Alai and Academy of Sciences Ranges.

The distribution of spiders in the high mountain zone is uneven. The stones and rocks are inhabited by *Sitticus clavator ansobicus*. The shores of temporary streams coming from melting snow fields are inhabited by *Pardosa bifasciata*. *Acantholycosa* sp. hunts the wind brought insects on the surface of glaciers and snow fields. Below 5000 m level one can find some *Xysticus* and *Gnaphosidae*. Sometimes webs of *Araneus* sp. can be found between the large stones, and there are various *Erigonidae* under the stones.

The most unexpected finding was *Brachythele* sp. found on the Sagirdasht Pass (3400 m) and in the upper parts of the Viskharv Valley (3500–3700 m), spiders of that group are found usually in the lowland dessert.

Zakład Biologii WSP
Prusa 12, 08–100 Siedlce

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STRESZCZENIE

[Tytuł: Rozmieszczenie i ekologia pajaków (*Aranei*) Tadżykistanu]

Autorka przedstawia wyniki badań terenowych nad pajakami Tadżyckiej SRR, prowadzonych w latach 1965-1970. Praca podaje dane o rozmieszczeniu 260 gatunków, w tym 180 znalezionych po raz pierwszy w Tadżykistanie, dane biologiczne oraz charakterystykę ekologiczną typowych środowisk różnych stref wysokościowych wraz z uwagami o ich faunie pajaków.

Badania objęły: pas nizin — z uwzględnieniem pustyni, półpustyni, skupisk roślinności nad brzegami wód oraz pól uprawnych; strefę przedgórzy — do wysokości około 1200 m; strefę górską do około 3000 m; wreszcie strefę wysokogórską do wysokości 5500 m. Stwierdzono występowanie pajaków do wysokości 5300 m, co prawdopodobnie nie jest górną granicą ich zasięgu, gdyż w Himalajach podawano je nawet z wysokości 7200 m.

Każda z badanych stref wysokościowych charakteryzuje się odmiennym kładem fauny pajaków, chociaż obserwuje się penetrację niektórych gatunków

do sąsiednich stref oraz gatunki występujące w kilku strefach. Najbogatsza fauna pajaków występuje w strefie górskiej. Fauna pajaków wysokich gór jest znacznie uboższa, jednakże w niektórych środowiskach tej strefy pająki odgrywają znacznie większą rolę ekologiczną, dominując ilościowo wśród innych grup stawonogów.

РЕЗЮМЕ

[Заглавие: Распространение и экология пауков (*Aranei*) Таджикистана]

В работе приводится список пауков Таджикистана включающий 260 видов и подвидов пауков, собранных в пунктах, характеризующих основные ландшафты республики: равнины, предгорья, среднегорья и высокогорья от 300–400 м до 5500 м над уровнем моря. Обладая высокой экологической пластичностью, пауки заселяют все пояса от пустынного до высокогорного, при этом количество видов уменьшается с высотой и одни виды замещаются другими, хотя в интерзональных биотопах (берега рек, ручьев и озер) численность пауков везде значительна.

Для фауны равнин и предгорий характерно большое количество ксерофильных форм и высокий эндемизм. Здесь зарегистрировано 115 форм пауков, из них для пустынных районов республики, включая тугаи, отмечено 64 вида, а для предгорий 60 видов пауков. Фауна пауков среднегорий характеризуется большим содержанием мезофильных форм, хотя и ксерофильные формы по долинам рек и пустынным участкам гор поднимаются достаточно высоко. Всего в этом поясе зарегистрирован 171 вид. Фауна пауков высокогорий отличается крайней бедностью видового состава при сравнительно высокой плотности в отдельных биотопах. Автором были обследованы высоты до 5500 м, при этом пауки были обнаружены до высоты 5200–5300 м. Всего в этом поясе было зарегистрировано 29 видов пауков.

Redaktor pracy — dr W. Starega

