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TRANSLATION FROM RUSSIAN. FILIPPOVA, N. A. (1964)*. On several species complexes among ixodid ticks. (Proceedings of the 5th conference on natural nidality of diseases and problems of parasitology of the Republic of Central Asia and Kazakhstan, Sept. 24-28, 1962). Prirod. Ochag. Bolezn. Vop. Parasitol., Izd. Akad. Nauk Kirgiz SSR, Frunze, (4):246-248.

Among the superfamilies of Ixodoidea (as well as among Argasidae and also Ixodidae) in Central Asia, Kazakhstan, in territories adjacent to them and in countries beyond the border of the Soviet Union there are several groups of species for which a precise diagnosis is difficult. Such groups are "reflexus" (genus Argas Lats.), "coniceps" (genus Ornithodorus Koch.), and "crenulatus" (genus Ixodes Latr.). Owing to this situation, ecological and epidemiological data which are available in literature in relation to these or other species complex lose their valuc

Before the fifties of our century it was generally acknowledgedthat on wild birds there is only one parasite, A. reflexus Fabr., 1794, which is widely distributed on all the continents. Species described close to it were acknowledged either as synonyms, or doubtful. From 1952, the series of investigations by Hoogstraal and colleagues, which still continue to appear, consecutively showed that in countries of the Near East, Northern and Central Africa, and in Central and Southern America there exist independent species which were earlier diagnosed as A. reflexus. The name "reflexus" of the old literature became a species complex, and the "reflexus" group began to be talked about. In territories adjacent to the Soviet Union, it was established that, apart from A. reflexus Fabr. (in the narrow sense), there is A. hermanni Aud., 1827, which earlier was synonymized under the first species. Hoogstraal and Theodor showed that A. hermanni is widely distributed in Africa and Near East, while A. reflexus is indigenous to Europe, and only single collections are known from Egypt and Israel.

According to our data, A. hermanni is widely distributed in the Soviet Union - in the south of Ukrain, Crimea, Nakhichevan Azer. SSR, in all areas of Turkmen, in many localities of Tadzhikistan, Kirgiz SSR, and in several points of Kazakhstan. Within the species, a few ecologo-geographical variants were noted. It is very probable that in our literature, A. hermanni was described in most of the cases under the name A. reflexus Fabr. The latter species should be acknowledged, after A. persicus Oken., 1818, to be the most numerous representative of its genus. It inhabits nests of various wild birds in the soil and

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in garrets of buildings. Its disease relationships have not been studied.

We do not have at our disposal other species of the group "reflexus" from beyond the borders of Central Asia and Kazakhstan, although their presence in these territories is possible. As a matter of fact, A. reflexus Fabr. for the moment we have in our collection only from Crimea. In Crimea and beyond the boundary of Caucasus, another species of this group A. tridentatus Fil., 1961 has been found. The species of the group "reflexus" differ from each other in all the active phases of the life cycle.

The group "coniceps". In works of some foreign authors, this is called the talaje group. Pocock referred O. talaje Guier.-Men. to the subgenus Alectorobius. During subsequent period almost no work was done on superspecies grouping of the genus Ornithodoros. O. coniceps, 1390, and O. capensis Neum., 1909, described from various continents were considered by Nuttall and colleagues to be a single doubtful species and the other species they referred into subspecies of the South American O. talaje. Contemporary foreign authors acknowledge independence of all the three species, O. coniceps is known in Eurasia, and O. capensis, is also known in Africa and Australia. We encounter all three species names in Russian literature.

Analysis of ticks of this group showed that within the boundary of the Soviet Union there are two species: O. coniceps and O. capensis. The first species in our literature is mentioned under its name, and the second species under the name of O. coniceps, O. talaje, and O. capensis. According to our collections, it is known that O. coniceps exists in Crimea and beyond the border of Caucasus. We have every reason to believe that a portion of literature data on Kazakhstan refers to this species. O. capensis has been found in Crimea, Kazakhstan, and Tadzhikistan.

The first species O. capensis, is associated with humid nests of rock doves, and wells; beyond the border it is known from inhabited dwellings.

The second species O. capensis inhabits nests of large marine birds, chiefly cormorants. While there is rather great resemblance between larval stages, nymphs and adult ticks have distinct specific differences.

The group "crenulatus". This group is still called "autumnalis" in the west. Schulze transferred this group within the limits of the genus Ixodes into the subgenus Pholeoixodes P. Sch. To the group "crenulatus" usually belong species which are close to the nominal form and as a rule parasitize mammals, in contrast to bird parasites. But sometimes this group is treated more widely, referring to it (owing to difficulty of diagnosis) all species that constitute subgenus Pholeoixodes. About twenty species of this group have been described, but a considerable number of the species remain doubtful because they

have been described by western zoologists from single findings, with very scanty and insufficient diagnosis.

In the Asiatic part of the USSR there are five species which yield to diagnosis (I. crenulatus Koch., 1841; I. plumbeus Leach., 1815; I. subterranus Fil., 1961; I. lagodechiensis Djap., 1950; and I. arboricola bogatschevi Kirsch., 1936). Apart from the first, apparently all the species are specific parasites of birds, while the last two species are known only from beyond the boundary of Caucausus. I. plumbeus is widely distributed, this species has been noted in western Kazakhstan, Kustany, Kokcheta, Tselinograd, and Pavlodar Oblasts (Pomerantsev, Davidova, Ushakova, et al.). I. crenulatus is a parasite of marmots, predatory mammals, and small rodents, less of frequently birds that have contact with burrows of these animals. It is also a widely distributed species and is known from beyond the boundary of Caucasus, in flat land and mountain areas of Kazakhstan, Kirgiz SSR, Tadzhikistan, Turkmen SSR, and spreads eastwards with intervals beyond the boundary of Baikal (Dzhaparidze, Afanas'yeva, Ushakova, Galuzo, Grebenyuk, Emel'yanova, et al.). I. subterranus has been found in Turkmen and Kazakhstan (Filippova, Ushakova). I. plumbeus is widely distributed in all European part of the USSR from the Baltic and Transcarpathian Oblast up to the left bank of the Volga river. I. crenulatus is encountered in the steppe zone, and I. hexagonus Leach., 1815 in the southwest of our country. Nevertheless, it is quite obvious that the enumerated species do not exhaust the species composition of the "crenulatus" group in the broad sense. In the systematic relationships of this insufficiently studied group, a great degree of interspecific variation in comparison to other species is characteristic.

Presented data on systematics and distribution of species was obtained while working on the collection of Zoological Institute of Academy of Science of USSR, to the foundation and accumulation of which many Soviet and foreign parasitologists have contributed.