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THE GENETIC AND ACOUSTICAL SPECIFICITY OF THE RED-CHEEKED GROUND SQUIRREL FROM SOUTH-EAST KAZAKHSTAN

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The red-cheeked ground squirrel *Spermophilus erythrogenys* has a wide distribution area and includes many morphologically different groups with an unclear taxonomy. We investigated both the alarm call structure and the mtDNA full-size (1007-1009 bp) control region polymorphism in the same 30 individual red-cheeked ground squirrel from three population from South-East Kazakhstan. The alarm calls were recorded from individually labeled adult animals sitting singly in live-traps. We analyzed 282 alarm calls (5-10 per individual). It commonly comprised either the single modulated notes or the clusters of 2-6 notes separated by 132 ± 74 ms intervals. First notes in the clusters differed from other notes within calls but did not differ from those of the single-note alarms. The averaged per individual values of the first note acoustic variables were: duration 167 ± 25 ms, maximum fundamental frequency 8.46 ± 0.70 kHz; minimum fundamental frequency 4.49 ± 0.42 kHz. The alarm calls of the study animals differed from the calls of any closely related species as well as from the calls described for other populations of the *S. erythrogenys*, being very high-frequency. The control region was conservative with only 3% loci being variable. In the total sample set, 14 haplotypes were found; the nucleotide diversity was 0.001 ± 0.0052 , the haplotype diversity was 0.87 ± 0.04 . Prominent differences were found between the mtDNA samples in this study and those reported for a few closely related species and other populations of the red-cheeked ground squirrel. We identified the studied individuals from South-East Kazakhstan as *S. e. carruthersi*, however more detailed taxonomical investigation is desirable.

Key words: alarm call; control region; mitochondrial DNA; vocal communication.

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