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ABSTRACT BOOKLET
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**Postnatal ontogeny of ultrasonic calls and body size in yellow steppe lemming (Eolagurus luteus)**

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Arvicolinae species vocalise in ultrasonic (USV) range, but pathway of vocal ontogeny in this taxonomic group remains unknown. We recorded USV calls of 120 yellow steppe lemmings in Moscow Zoo (Russia) during February -June 2018. Subjects were recorded at one of 12 post-natal-day (PND) age-classes: PND 1 - 4, 5 - 8, 9 - 12, 13 - 16, 17 - 20, 21 - 24, 28 - 32, 33 - 36, 37 - 40 (pups), PND 41 - 60 (adolescents); PND 60 and older (breeding adults). We recorded 10 individuals per age-class, 120 in total, each isolated for 2 min at 22°C on an unfamiliar territory using Pettersson D1000X (384 kHz, 16 bit). Then, we measured body mass, body length and head length. In total 1176 USV calls (up to 10 per individual) were analysed spectrographically. USV duration decreased from 70 ± 21 ms at PND 1 - 4 to 37 ± 7 ms at PND 9 - 12 (r = -0.53, p < 0.001), and then remained unchanged (29 ± 3 ms) to adulthood. The maximum f0 decreased from 49.1 - 52.9 kHz at PND 1 - 12 to 39.4 ± 4.0 in adults (r = -0.47, p < 0.001). The beginning and minimum f0 did not change with age. The end f0 and peak frequency reached maxima at PND 9 - 12 (42.9 ± 5.5 kHz and 41.2 ± 4.7 kHz respectively) coinciding with eye opening. We detected USV contours ascending (61.3%), flat (21.3%), chevron (11.4%), descending (2.1%) and wave (3.8%). Nonlinear phenomena were presented in 33.1% USV calls at any age; 3.3% USV calls contained two nonlinear phenomena. We detected frequency jumps (31.6%), biphonation (3.7%) and subharmonics (1.1%). This USV ontogenetic pathway (decreasing f0 and call shortening) is similar with those of domestic mice. This research was supported by RSF (grant 19-14-00037).