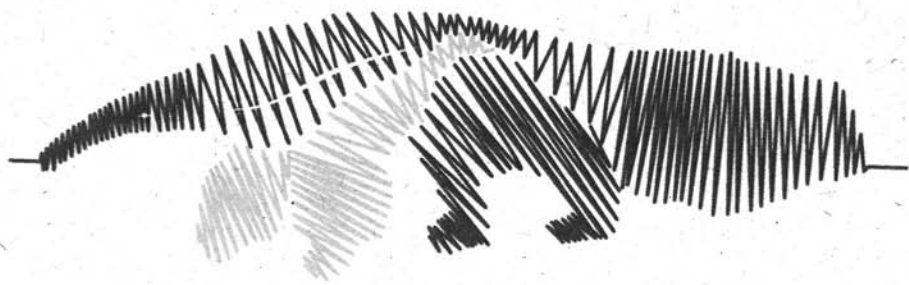


IBAC Brazil 2013



XXIV

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females. They also show the possible influence of environmental conditions, sex and morphological parameters on different parts of the stridulatory syllable. Furthermore, a certain geographic variation of sound emission was appreciated, allowing speculating on the existence of intraspecific dialects. Recordings are deposited in the Artrofono webpage (<http://escalera.bio.ucm.es/usuarios/artrofono/>), the bank of Arthropod sound emissions of the Complutense

University. Financial Support: This study is carried out in the framework of the RECABISCAL project (CGL2010-16944, Reconocimiento de Caracteres Bioacústicos en Scarabaeoidea Laparosticti Ibéricos y Aplicaciones; Ministerio de Economía y Competitividad de España), aimed to the study of bioacoustic signals in dung beetles, and it has been also supported by a post-doctoral PICATA grant (International Programme for Attracting Talent; CEI Campus Moncloa) to V. Amore.

11:15AM - 12:30PM

Room A

Non-thematic presentation 3

Chair: Matija Gogala

Nasal and oral calls in mother and young saiga antelope (*Saiga tatarica*): effects of a big nose

Elena Volodina, *Scientific Research Department, Moscow Zoo, Russia*; Roland Frey, *Institute for Zoo and Wildlife Research (IZW), Germany*; Ilya Volodin, *Lomonosov Moscow State University, Russia*.

Abstract. The saiga antelope *Saiga tatarica* (Bovidae) has a strongly enlarged nasal vestibulum, reminding of a short trunk. The trunk-like nose, assumed to having evolved as a dust filter for inspired air, is also used for vocalization by all sex and age-classes of saiga. This study applies the source-filter theory to the acoustics of calls that were recorded from a captive herd of 24 mother and 32 neonate saigas within the first ten days postpartum. The calls were recorded in May 2002 in the Center for Wild Animals of Kalmykia (Russia). Analysis of video clips revealed that both adult females and their offspring vocalized through the nose and through the mouth. They also produced nasal-and-oral calls, starting nasally and continuing orally allowing to compare the fundamental frequency within calls switching from nasal to oral production. Anatomical measurements of the nasal and oral vocal tracts of two specimens (one per age class) served for establishing the settings for the analysis of formants. In both mother and young, the lower formants of nasal calls/call parts were in agreement with the source-filter theory, which suggests lower formants for the longer nasal vocal tract compared to the shorter oral vocal tract. Closely matching fundamental frequencies of the nasal and oral parts of nasal-and-oral calls were also in agreement with the source-filter theory, which postulates the independence of source and filter. Unlike nasal-and-oral calls, in oral calls, the fundamental frequency was higher than in nasal calls, probably resulting from higher emotional arousal during the production of oral calls. We discuss production mechanisms and the ontogeny of formant patterns of oral and nasal calls among bovid species with and without a trunk-like nose.

Immune challenge mediates song structure and corticosterone level in Passerines

Irina Beme, *Lomonosov Moscow State University, Russia*.

Abstract. Bird song is an honest signal of mate quality. It reflects physiological (hormonal level) and psychological (stress level) condition of the male. We studied relationships between testosterone level, song performance, and song structure in experimental (8) and control (6) Canary (*Serinus canaria* var *domestica*) males, experimentally challenging their immune system with a novel antigen sheep red blood cells (100 μ l of 10 % SRBCs in PBS) in 2008-2010. Control males got intraperitoneal placebo injection (100 μ l sterile phosphate-buffered saline PBS). The level of corticosterone and testosterone were measured in faeces (enzymeimmunoassay). Three basis categories of phrases were identified in the canary songs: whistles, fast trills, and biphonal trills. Duration of phrases, maximum and minimum frequencies were measured. In experimental group, duration of biphonal trills significantly decreased ($p < 0.001$), whereas their frequency characteristics did not change. Duration of fast trills did not change. In the experimental group, the maximum and minimum frequencies decreased; in the control group, maximum frequency increased ($p < 0.001$). Duration of whistles increased in both groups, and the frequency range narrowed in the experimental group ($p < 0.001$). Injection of SRBCs changed the ratio of phrases in canary songs. In the experimental group, the proportion of whistles increased ($p < 0.001$), that of biphonal phrases decreased ($p < 0.001$); the share of fast trills increased in both groups. Injection of non-specific antigen resulted in significant (compared to the control group) uprise of corticosterone level ($p < 0.001$). The level of testosterone decreased in the course of the experiment both in the control and test groups. Injection of antigen caused changes in the characteristics of songs and corticosterone level in the Russian Canaries. The number of complex biphonal trills and their duration reduced; they