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Male Mongolian gazelle: Displaying an oversized, retractable larynx

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Mongolian gazelle (*Procapra gutturosa*) is a sexually dimorphic bovid species of Asia. During the December rut, males defend harems of females against rival males. Male rutting behaviour involves the emission of rutting barks, herding and chasing females, and ferocious fights between males. We investigated Mongolian gazelle in the steppe area of the Daursky Nature Reserve, the only site in Russia, where Mongolian gazelles occur. The larynx of male Mongolian gazelles is large, permanently descended, imposingly bulges the ventral neck region and is further accented by colours of the winter coat. The larynx is visibly retracted for emission of the rutting barks. The anatomy of the male larynx involves several derived features. The hyoid-larynx connection is established by a resilient ligament. Pharynx and soft palate are elongated. Retrolingually, the soft palate expands ventrally into an unpaired palatinal pharyngeal pouch. The intra-pharyngeal ostium is large to accommodate the huge epiglottis, which is about half the length of the remaining larynx. The thyroid cartilage is ventrally folded into a broad keel. Novel paired, double-chambered ventricles open rostrally into the laryngeal vestibulum. Laterally, they subdivide the thyroarytenoid muscle into two portions. The ventral ends of the pharyngotympanic tubes expand to form paired tympanic pharyngeal pouches. The very large vocal folds lack any flexible part and are supported by a tough vocal pad. Apparently, the oversized, retractable larynx of male Mongolian gazelles evolved under sexual selection for displaying visual and acoustical traits of male quality. This research was supported by a grant (19-04-00133) from the Russian Foundation for Basic Research.