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COMMUNICATION AMONG MAMMALS

Mammals are a diverse group of homeothermic vertebrates. The ability to maintain a constant body temperature regardless of weather conditions and various morphological, physiological, and behavioural adaptations enable mammals to inhabit a very diverse environment. The need to adapt to specific ecosystems is reflected in the most important life activities: foraging, reproduction, excretion, and the ability to respond to stimuli coming from the external environment. However, each of these processes is accompanied by one more skill, without which animals would not be able to function properly in the ecosystem. It is the ability to communicate. In recent years, the interest in communication of mammals other than humans has markedly increased because, as proven by many studies, they have much more diverse communication systems than humans. Moreover, the development of research techniques and methods made it possible to study seismic, infrasound and ultrasonic communication in various environments of mammals in greater detail, and to demonstrate that some of them have the ability to see in ultraviolet and use the phenomenon of biofluorescence to communicate. Careful observations and insightful analyses revealed that there is such a specific form of visual communication as following the gaze of another individual, that among New World monkeys (Platyrrhini) only heterozygous females have the ability to trichromatic vision (the remaining individuals are dichromatic), that even mice transmit signals through facial expressions, that individual populations of some mammal species have different "odour dialects", that knee clicks are an important signal for some antelope communication, and that rodents use their mandibles and

elephants their front feet to pick up seismic signals. All this progress was an impulse for us to prepare this monograph.

We review here the recent studies focused on social interaction and communication among mammals from different orders and environments and relate them to previous works to identify the progress of our knowledge and to present new discoveries and ideas. In the following chapters, we define the concept of communication, state its functions, the influence of various factors and the role of the sense organs, and then we present broadly the four main ways of mammal communication: visual, auditory, olfactory, and tactile, focusing on functions and behavioral contexts. We also describe some anatomical and behavioral adaptations of mammals to overcome signal interference and masking by environmental factors and distinguish between targeted and non-targeted animal communication.

The current issue of KOSMOS is addressed to the students of biological faculties who want to deepen their knowledge in the fields related to behavioural ecology and mammalogy, as well as to all readers interested in the latest trends in the research of communication between animals, especially mammals.

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