

*Dear Friends,*

*In only a short while, forests will be waking up after the winter frosts and so will the Ixodid ticks. In recent decades, these blood-sucking arthropods have been expanding their range not only in Russia but also in Europe, the United States, Canada, China, and in other countries. The ticks bring along a large pool of the so-called tick-borne infections; i. e., these parasites serve as carriers of pathogens of many viral and bacterial diseases, one of them being spirochaete-caused tick-borne borreliosis, or Lyme disease. No vaccine exists for this disease, which may lead to severe articular, cardiovascular and neurological pathologies.*

*Medical scientists and practitioners argue about the nature of the chronic form of this disease. Their debate continues unabated, revealing a need for new knowledge about the pathways by which the pathogen spreads and for improved diagnosis. The article by Academician Valentin Vlasov and Dr. Nina Tikunova “Chronic Lyme disease: nonexistent illness or wrong diagnosis?” in the new journal issue uses materials from a new book that will be dedicated to Ixodid ticks and tick-borne diseases.*

*While tick-borne infections are a concern for many people, aging affects everyone. A long and healthy life is everybody’s dream, so scientists vigorously search for and find new natural models of both delayed and accelerated aging. It turns out that in nature, the lifespans of individual organisms of different species can vary by orders of magnitude, and long-livers occur in most diverse, often very distant, systematic groups. The further these organisms stand from the laboratory animals we are accustomed to, the more amazing devices they use to address the issue of aging. The authors of the article “To be born a Baobab,” who do research at the Institute of Molecular and Cellular Biology SB RAS (Novosibirsk), know this firsthand. They have gathered and studied an outstanding collection of cell cultures of various vertebrates, including rare and endangered species, many of which (naked mole-rat, gray whale, Siberian sturgeon, Brandt’s bat, etc.) possess unique mechanisms of longevity.*

*Novosibirsk geneticists present an article about a creature that shows far more loyalty to man—the cat, which became domesticated about 10,000 years ago. Exactly four decades have passed since Dr. Pavel Borodin published his first work on feline genetics, followed with decade-long intervals by a series of articles for general readers, including in our journal, and by a book, which had several reissues. This article acquaints the reader not only with new data on feline genogeography but also with new discoveries in genetics, shown by the authors through the prism of the feline genome. Borodin wrote this article together with a young geneticist*



*Lyubov Malinovskaya, and this collaboration gives hope that the tradition will continue into the future, and even a century from now, the reader will be getting, once in a decade, a new article about cats and their genes.*

*Genome programs lie at the core of all the known biological systems. One cannot overestimate the importance of modern molecular genetic approaches—they serve to create organisms with new properties, establish evolutionary kinship and trace the pathways of development of new species, study migrations of peoples and ethnic perturbations in the different periods of human history. However, unless we step beyond the framework of molecular interactions, we could not understand and describe such systemic events as the aging phenomenon or embryo morphogenesis.*

*The total incidence of gene and chromosomal diseases in man does not exceed 2–4 % whereas the overwhelming majority of chronic illnesses (cardiovascular, oncological, endocrinal, etc.) are in fact multifactorial diseases. Not too long ago, medicine believed autism to be a “gene breakage,” but today it associates this condition with changes in the mother’s body and attempts to treat it by changing the diet and adjusting the child’s microflora. The core problems of modern biomedicine, which bump into obstacles of a supramolecular level and defy solution within the currently popular approaches, are the subject of the article by an immunology expert Prof. Alexander Poletaev.*

*Academician Nikolay L. Dobretsov,  
Editor-in-Chief*