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Knowledge of phylogeny is of fundamental importance in evolutionary studies, from the reconstruction of the Tree of Life to revealing and understanding the laws of body plan formation (the evo-devo realm), to describing the patterns and processes of microevolution. The discipline of phylogenetics has evolved radically in the capitalizing on theoretical and methodological breakthroughs in analyses and algorithms, on the exponential increase in molecular data, and on the availability of vast computing power to enter the phylogenomic era. A solid methodological framework for phylogenomic analysis is emerging, applying data derived from whole genomes to problems in deep phylogeny, functional genomics, speciation and divergence, and phylogeography. The 3rd Moscow International Conference “Molecular Phylogenetics” (MolPhy-3) provided a stimulating platform for the exchange of ideas and experiences, cross-disciplinary interactions, and long-term national and international collaborations. Its major focus was to discuss the modern state of molecular phylogenetics and systematics, the interfaces between molecular and phenosystematics, molecular phylogenetics of different organisms, and the development of natural classification systems.

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