FROM POPULATION GENETICS TO POPULATION GENOMICS: NEW PERSPECTIVES IN ECOLOGY AND EVOLUTIONARY BIOLOGY

Summary

Application of molecular methods in biology has revolutionized ecology, population genetics and evolutionary biology. For example, the molecular studies revealed complex mating systems and social structures. Analysis of molecular markers revealed the existence of cryptic boundaries such as secondary contact (hybrid zones) among previously isolated populations. Most recently, due to simultaneous study of numerous loci (the population genomics approach), the distribution of estimates of genetic differentiation (*F*st) from individual loci has allowed the identification of candidate loci to be under selection. Such analyses may help answer many important evolutionary questions and will also improve inferences in classical population genetics dealing with demography and evolutionary history. Several papers concerning interesting aspects of population genetics and molecular ecology revealed by Polish scientists are discussed and future perspective for population genomics approach are highlighted.