

June 13-14, 2019  
Berlin, Germany

AJPSKY 2019, Volume 09

## Genomic Reshuffle Among Hybrids Offers Strategies for Survival of Segregates In Nature: *I. Ophioglossum L.* (Pteridophyta)

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**M**odern plant biology research is getting totally trapped in laboratories but on making field surveys and population enumeration over several years we have encountered too many variations and evolutionary mechanisms within the species and many species of the same genus. One of the major reasons which is becoming now popularly known and studied is the incidence of natural hybridizations. Population biology studies conducted (during 1970-2018) by one of us (HKG) have presented such unusual features exhibited by the genomes of the pteridophytic genera *Ophioglossum L* and *Isoetes L* that have become unknown and unique among the related genera and species. Lately, a similar attempt has been under operation in Gujarat, in search of intragenomic variations within the genus *Ophioglossum* in the Western part of India. We have not only discovered unique and hitherto unknown features in several species of *Ophioglossum* but also on the basis of morphological and phylogenetic studies conducted on DNA isolation-sequencing and comparative genomics have identified

new species. A few of them appear to be natural hybrids. While in Central India and Rajasthan, *Ophioglossum costatum* has been identified to be a one of the putative parents, in Gujrat populations, the genus indicates genetic involvement of *O. vulgatum*. Obviously, participation of species depends upon their closer occurrence within the ecological niche. Major but consistent variables are some of the attributes of biological evolution to ascertain the survival. Obviously, natural hybridizations abruptly disrupt meiotic selections of the species; male-gamete contribution remains unaffected; but female parent or the diploid (Zygote) faces partial threat, because, the product-hybrid undergoes survival tests at many stages. Briefly, evolution of certain designated “new genomes” tagged as new species, viz. *Ophioglossum malviae* Patel & Reddy; *O. eliminaum* Khandelwal & Goswami; *O. indicum* Yadav & Goswami; *O. chaloneriei* Goswami et al; *O. aletum* Patel, et al; and *O. hitkishorei* Patel & Reddy will be presented.