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# Metaleptea

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## The Behaviour of Chromosomes of the Different Acridid Species During the First Meiotic Prophase: Taxonomic Diversity and Evolutionary Diversification. Poster 21

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We studied 22 Palaearctic acridid species with an XO/XX sex determining mechanism. These species represent three widely distributed subfamilies (Catantopinae s.l. - 4, Acridinae s.l. - 10, and Oedipodinae - 8).

Five types of the synapsis and synaptonemal complex (SC) formation in the autosomal bivalents have been discovered. The chromosome pairing can start from the proximal or (and) distal chromosome regions. The SC can spread to entire or partial length of a chromosome. Locations of chiasmata usually coincide with the positions of synaptic initiation.

In the Acridinae subfamily, each studied tribe shows the specific pattern of the synapsis. All studied catantopine grasshoppers have the uniform pattern of the synapsis. In the Oedipodinae subfamily, this pattern varies on the species level.

The axial element of the male sex chromosome is always found in the Acridinae and Catantopinae subfamilies. It looks like the lateral elements of the synaptonemal complex.

In the Oedipodinae subfamily, the chromosome behaviour is evidently different. The axis of the male sex univalent is revealed only in the species with the complete synapsis of autosomes. The species with the partial synapsis does not show the axial element of the X chromosome. The sex bivalent of females of these species does not distinguish from the autosomal bivalents that form the SC over the entire length of bivalents.

Thus, the behaviour of chromosomes during the first meiotic prophase can be used as an evolutionary trait that allows us to evaluate difference between some taxa. Another interesting result is specificity of Oedipodinae supporting an old idea about its independent status.

Key words: X-univalent, bivalent, synaptonemal complex.