

ANOMALIES IN WINGS OF *Apis Mellifera*

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Bees wings are made of double membrane stretched by veins. The system of the veins, as well as the spaces between them are specific to subspecies (races) of *Apis mellifera* and can be used for their racial discrimination (Gromisz 1981, Gerula et al. 2009). However, there are individuals that have some veins or their parts missing, or to the contrary have additional veins on the wings.

Goetze (1964) and Szalai-Matray et al. (2008) described 7 anomalies that most frequently occur in the area where the cubital index is measured.

When a new method of racial discrimination of bees was elaborated in 2007, some anomalies in wing venation were observed. In total, 988 samples of bees belonging to 3 races: *Apis mellifera carnica*, *A. m. caucasica* and *A. m. mellifera* were collected and measured. In particular bee samples up to 33.3% of wings had some anomalies. The highest percentage of bee samples with wing anomalies was detected in *A. m. mellifera* (Tab.1). Simultaneously the highest percentage of bee wings with anomalies in particular samples of the same bee race was observed (Tab. 2). There were 18 different irregular vein junctions or missing veins identified (Phot.1). There were also individuals with both anomalies on wing, additional veins and missing veins.

There are no clear explanations for that phenomenon. Presence of parasites in the hive and diseases of bees are frequently mentioned to cause these anomalies. Instead Soose (1954) believed that temperature of bee nest can affect the wings venation.

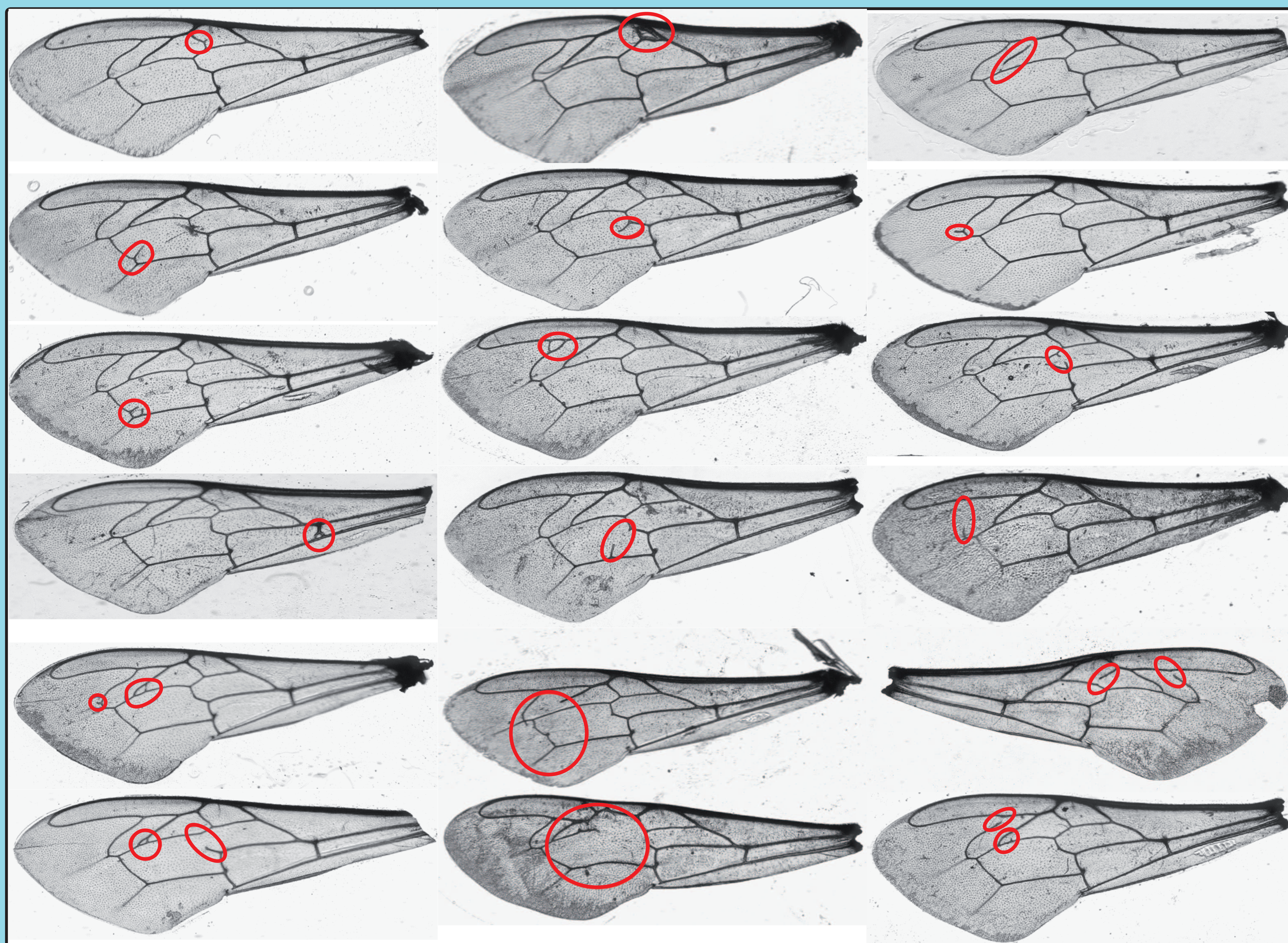
Table 1

Number of samples of bees with some anomalies in wing venation			
Bee race	N	anomalies	%
Car	761	213	28
Cau	111	40	36
Mell	116	46	39.7
total	988	299	30.3

Table 2

Number of wings with anomalies in analyzed bee races			
Bee race	N	wings with anomalies	%
Car	22830	373	1.6
Cau	3330	75	2.2
Mell	3480	79	2.3
total	29640	527	1.8

Phot. 1. Samples of wings of *Apis mellifera* with some anomalies



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