

Present day characters of the honeybee *Apis mellifera ruttneri*, observations and implications

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The honeybee *Apis mellifera ruttneri* is an endemic sub-species of the Maltese Islands (Sheppard et al., 1997), closely resembling its counterparts from Sicily (*A.m. siciliana*) and North Africa (*A.m. intermissa*). As with other island populations, *A.m. ruttneri* is threatened by the anthropogenic expropriation of its natural habitats and unregulated importations of honeybees. This paper investigates the morphological and genetic characters of local managed colonies in Malta in an attempt to determine whether *A. m ruttneri* is still extant. A total of 332 bees from 35 colonies were subjected to morphometric analysis and examined for 33 of the original 42 parameters described by Ruttner et al. in 1978. Concurrently, mitochondrial DNA from the abdomen and legs of specimens from 52 colonies were also extracted and the region between the *tRNA^{Leu}* gene and the second subunit of the cytochrome oxidase (*COX-2*) gene were amplified. The calculated means and standard deviations for each character were compared and compared using Discriminant Analysis (DA) with data for honeybees from the closest neighbouring countries. DA confirmed that the present-day characters of *A.m. ruttneri*, which are described in the paper, share features with *A.m. siciliana* and *A.m. intermissa* but, more importantly, retain the features described by Sheppard et al. in 1997. The investigation of the mitochondrial DNA shows that there were six haplotypes (A4, A8, A9, C1, C2 and M7). The implications of these results are then discussed.