

**Taxonomic status of the form *Lupaster* \*SPASSOV, Nikolai (1986)\* 21.04.2013**

On the mid April, we noted in GOJAGE [www.goldenjackal.eu](http://www.goldenjackal.eu) that genetics was used recently to investigate the phylogeny of *Canis* genus, that according to Rueness et al, 2011, "Until now, the Egyptian jackal - *Canis aureus lupaster* - had been considered a rare sub-species of the golden jackal". It was reproduced also "The new evidence shows it is not a jackal at all, but a type of grey wolf."(Rueness et al, 2011).

The last words "a type of grey wolf" deserve new consideration after we had admitted Spassov remarks (17.04.2013) and revised Spassov, 1989. Prof Dr. Nikolai Spassov stated that the form *Lupaster* demonstrates specific morphology features and this should contribute to maintain *Lupaster* as different species.

More commonly in phylogroups with 5% genetic distance in the *cytochrome-b* gene, various combinations of genetic isolation will be apparent. As a result, when phylogroups are sympatric, there will often be hybridization, and data documenting the genetic basis for any level of isolation will be difficult to organize into well-defined stages. Genetically defined hybrid zones will be common (Backer & Bradley, 2006).

The Himalayan wolf and the Indian wolf diverge from the Holarctic grey wolf by 1.2% and 2.5% (332 bp) respectively [13]. The divergence between *C. a. lupaster* and *C. lupus* is **4.0%** for the equivalent sequence fragment, while it is 2.4% between *C. a. lupaster* and the Himalayan wolf. Rueness et al. admitted, based on sequence divergence, that it is reasonable to consider *C. a. lupaster* as a distinct taxon within the grey wolf species complex.

We think it is more adequate to enhance sample collection in the extended *C. lupaster* home range, to be sure that hybrids do not influence analysis in sympatric *aureus/lupaster* populations and when speciation is incriminated within Genus, take into consideration all Biological, Morphological, Phylogenetic, and Genetic Species Concepts. Maintain the hypothesis that *lupaster* is another species, as Prof. Dr. Spassov suggested in 1989, it is now more suitable.

Nikolai Spassov, 17.04.2013

I have seen also your interest and your comment on "*Canis lupus*" *lupaster* in GOJAGE site. I would like to note (and one of the authors of the paper ( Cl. Sillero-Zubiri knows this) that in my jackal paper (Spassov, 1989) that you have, I discuss the "*lupaster*" case: I think it is a **separate species**. It is possible that it is closer to wolves than to jackal, but its morphology demonstrates specific features, and I still believe that it is a separate species. (Personal letters O.Banea).

Nikolai Spassov, 1986 (published 1989)

This form has been considered the largest jackal subspecies – *C. aureus lupaster* Hemprich & Ehrenberg (Ellerman, Morrison-Scott, 1951) for a long time. Included in this species, it has also

been examined in the recent check-lists of mammals of the world (Honacki et al., 1982). Kurten (1965) considers it a separate species while, according to a more recent study by Ferguson (1981), it is a small subspecies of *C. lupus*. Regardless of some morphological similarities with the wolf (the profile of the skull, the shape of the nasal bones, the shortening of the talonid of M1, the larger size, etc.), the principal morphological dental features are of the jackal type (height of P4, the vertical front edge of the paraconid of M1 (which might also be inclined), the relatively large metaconid of M1, the structure and size of the talonid, the disposition and size of the front cusps of M2, the shape of M1 and the position of P3-P4).

The European golden jackal (*C. a. moreoticus* I. GEOFFROY SAINT HILAIRE, 1835) is surely the largest subspecies within this taxon, since the former Egyptian form (*C. a. lupaster* HEMPRICH & EHRENBERG, 1833) is now regarded as a cryptic lineage of African wolf (FERGUSON, 1981; RUENESS et al., 2011). Further more recent studies (GAUBERT et al., 2012) confirm both these data and the existence of four distinct genetic lineages within the grey wolf, including *Canis lupus/familiaris* (holarctic wolves and dogs), *C. lupus pallipes* (Indian wolf), *C. lupus chanco* (Himalayan wolf) and *C. lupus lupaster* (African wolf). This last taxon has the higher level of genetic diversity within *C. lupus*, occupying a wider range than previously stated by RUENESS et al. (2011). The distribution of the species, indeed, encompasses a great part of Northern and Western Africa, at least from Algeria and Egypt up to Mali and Senegal. In this enormous range the species seems to be quite common, with an effective population size of about 80.000 females (GAUBERT et al., 2012). In Luca Lapini & Ovidiu Banea, 2013 ([Review on European Jackal](#))

Regarding the recent DNA analysis (Rueness et al., 2011), Nikolai Spassov, believes that ***Canis lupaster*** species could have a common ancestor with the wolf but retains some plesiomorphic features.

## References

Robert J. Baker & Robert D. Bradley (2006) Speciation in mammals and the genetic Species Concept *Journal of Mammalogy*, 87(4):643–662

Luca Lapini & Ovidiu Banea, (2013) Life-history traits, anthropogenic expansion and conservation problems of the golden jackal in Europe *Storia naturale, espansione antropogena e problemi di conservazione dello sciacallo dorato in Europa (Mammalia: Canidae: Canis aureus moreoticus I. Geoffroy Saint Hilaire, 1835)* *Submitted* to publication in *Boll. Mus. civ. St. Nat. Venezia* (Dic 2012)

Rueness EK, Asmyhr MG, Sillero-Zubiri C, Macdonald DW, Bekele A, et al. (2011). The Cryptic African Wolf: *Canis aureus lupaster* Is Not a Golden Jackal and Is Not Endemic to Egypt. *PLoS ONE* 6(1): e16385. doi:10.1371/journal.pone.0016385

Spassov N, (1989) The position of jackals in the *Canis* Genus and life-history of the golden jackal (*Canis aureus* L.) in Bulgaria and on the Balkans” *Historia naturalis bulgarica*. Sofia :Bulgarska akademiia na naukite,c1989-<http://www.biodiversitylibrary.org/bibliography/44837>

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