

The Stripped dolphin disease in Greece, 1990-1992

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The Stripped dolphin (*Stenella coeruleoalba*) is a cosmopolitan cetacean with a wide distribution range from tropical to temperate areas. It was considered until now as the most abundant dolphin in the Mediterranean (BOMPAN *et al.*, 1991). From the summer 1990 its situation has drastically changed. The species has been affected by an epizootic which has depleted its population in the Western basin and is actually striking it in the Eastern basin. The epizootic is caused by a morbillivirus named dolphin morbillivirus (DMV) (OSTERHAUS *et al.*, 1992).

Evolution of the mortality in Greece

First data available on stripped dolphins stranded in Greek waters are from Zakynthos and correspond to July 1991. Twelve dead dolphins had been found in this island up to February 1992. Several samples were sent in August to the Bilthoven laboratories (Holland) by the W.W.F. team working in Zakynthos on Monk seals (*Monachus monachus*). Some of the dolphins had been affected by dolphin morbillivirus with certainty, confirming the presence of the epizootic in Greece (VLACHOUTSIKOU, pers com).

No figure is known about the natural stranding of cetaceans before the epizootic, but a geographical progression of the strandings towards the East and North East of the country have been observed. The number of dead animals was still increasing in February and it was not known if a maximum had been already reached (fig. 1). A total of 83 cetaceans had been recorder up to 6 February 1992, from the beginning of the disease; 54 of them are Stripped dolphins and 16 are unknown dolphin species.

Special consideration must be given to the species found dead during this period. Although most of the individuals are Stripped dolphins, it is also significant that 5 Cuvier's beaked whales *Ziphius cavirostris* were present (see fig. 2), four of them stranded in a period and location with many records of *Stenella coeruleoalba* deaths. This toothed whale inhabits very deep waters, and their strandings are usually scarce because they live far away from the coasts. It is not known if the morbilliviruses have also affected this species or any other of the ones shown in fig. 2, but it can not be considered impossible. KENNEDY *et al.*, (1988) recorded morbillivirus infection in common porpoises (*Phocoena phocoena*) from Northern Ireland. Also OSTERHAUS *et al.*, (1992) found morbillivirus in two common porpoises stranded in Holland and named it porpoise morbillivirus (PMV). The epizootic which affect the Stripped dolphins is produced by DMV (OSTERHAUS *et al.*, 1992). The character teuthophage of both Stripped dolphins and Cuvier's beaked whales could have facilitated the physical proximity between individuals of these species and a consequent infection.

In addition, OSTERHAUS *et al.*, (1992) proved that Bottlenose dolphins (*Tursiops truncatus*) blood cells can be infected by dolphin morbillivirus in laboratory. Three individuals of this species have been stranded in the research period, all of them in areas known to be infected, but their vulnerability in the wild has not been demonstrated.

Origin of the epizootic

It has been hypothesized (BOMPAN *et al.*, 1991) that Phocine distemper virus (PDV) could have been transported by the Atlantic population of stripped dolphins to the Mediterranean, without been affected by the virus because of natural immunization. The stranding of Stripped dolphins also in the Spanish Atlantic could be against this argument. The same authors consider remote the possibility of infection by seals.

Nevertheless, two ill Hooded seals (*Cystophora cristata*) arrived at the coasts of southern Spain in June 1990, one at Huelva and the other at Tarifa (personal data). Both animals died within a few hours, the latter at least with symptoms of canine distemper virus (CDV), a disease very similar to PDV. The presence of three dead seals in the north of Morocco was also reported at this date. No data exists to confirm that these individuals were Monk seals (*Monachus monachus*) and not Hooded seals. An incursion of infected Hooded seals in the Mediterranean could explain the origin of the epizootic in Valencian waters about one month later. A similar incursion by Harp seals (*Pagophilus groenlandicus*) to the North Sea caused the mass mortality of Harbour seals (*Phoca vitulina*) and Grey seals (*Halichoerus grypus*) in 1988 (BOMPAN *et al.*, 1991).

Very recent data (OSTERHAUS *et al.*, 1992) confirmed the presence of morbillivirus antigen and nucleic acids in the Hooded seals from Spain.

On the other hand, the same authors demonstrated that the DMV is closely related to PMV and different from PDV-1 and PDV-2 and concluded that different clusters of morbilliviruses were responsible for the cetaceans.

Fig. 1.- Stranded cetaceans in Greece 1990-1992.

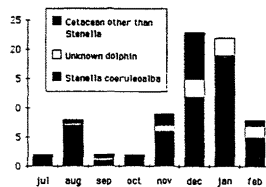
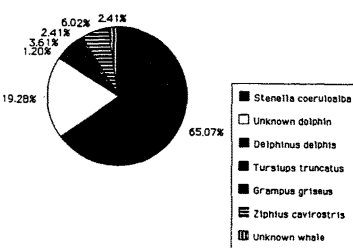


Fig. 2.- Cetacean species stranded in Greece from July 1991 to February 1992 (N=83).



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