PORCUPINE MARINE NATURAL HISTORY SOCIETY

NEWSLETTER

Spring 2013 Number 33

ISSN 1466-0369

Drop the dead dolphin?

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When I saw the dolphin we must have been about a pool's length away. It was lying on it's side with it's back to us, it's tail fin drooped, deflated, and for a brief moment I thought it might be a child's lost toy, come to rest along with the other detritus thrown high on the shore. We had only just come onto the beach and had, as usual, been walking to the sea. But some shapes catch your attention before your attention understands it has been caught. There is that small span of time, that delicate bridge between seeing and looking. Perhaps it is written in our biology to notice incongruities in our surroundings, like the gentle rise of a dusk-dark curve against flat pockmarked sand and pumice shrapnel. I pushed against this unexpected hinge in our routine and in the time it takes to turn and look a question formed and an answer came which I trusted, almost fully, in it's harsh infancy. There was a dead dolphin on the beach (Figure 1).

We had the beach to ourselves. No people. No dogs. In northeast Sicily on a cold windy day in December this is entirely normal and as we approached I took out my camera and my wife took out our gps (every day's a field day, especially when they aren't).

The pictures don't give a clear sense of scale though perhaps my footprint in the first picture helps a little. In any case the dolphin was not much more than 1m in length and seemed remarkably intact. My eyes naturally searched out those of the animal and, as an undertow flickered across my chest, I noted, of course, that it no longer had an eye on the side visible to me. Perhaps its other eye was still there staring down into the sand. But I think probably not, I suspect that these soft parts did not take long to be found and taken.

Red marks carelessly tattooed its body ventrally and on the flanks and were associated with damage points on the skin. Shallow gouged lines and more discrete punctures. The eye socket was heavily criss-crossed by similar tracks. When they were first made I imagined they must have been quite livid. Even now rinsed-out and faded they had a horrid casual potency. I wondered if such marks could occur post-mortem.

The beaked mouth was open and towards the tip the lower jaw was broken and turned slightly upwards, with the cracked skin demarcating the fracture. The small area beyond this fissure was grey and dark. A door pushed opened in the skin had let the rot in and above this forlorn stage the strong teeth of the predator stood out in two long virgin-white rows. Salt frosted the surface of the upper beak, and other areas, in thin, lichenous patches.

A short section of the head was scratched on the dorsal surface from just anterior of the blow-hole. No other similar patches of abrasion were visible. It seemed possible that this might have happened as it was washed up on the shore, but if that was the case why wasn't the body more abraded?

So what were we looking at? Vertebrate charismatic mega-fauna are not my forte when it comes to species identification; give me a dish of charismatic macrofauna and I'm as happy as *Capitella* in organically enriched sediment. Luckily I had a local with me and her guess was *Stenella coeruleoalba*, the striped dolphin. Like anything once you know what to look for it's relatively easy, especially when your subject isn't firing past in the time it takes for you to blink. Perhaps unsurprisingly in the case of the striped dolphin it's, you guessed it, the stripes. They have a dark eye-to-anus band with a secondary subtending stripe and the so-called flipper stripe that are the give-away (Archer & Perrin 1999; Reid *et al.* 2003).

Striped dolphin's do have a more poetic 'common' name. They are also known as Euphrosyne dolphin. In Greek mythology Euphrosyne was the daughter of Eurynome and Zeus and one of the three Graces. She was the Grace of joy, mirth and merriment. A poignant association when, the first time you see one, it's lying dead on a beach. In fact one of the many synonyms of *Stenella coeruleoalba* (Meyen, 1833) is *Stenella euphrosyne* Oliver, 1922 (Perrin 2012).

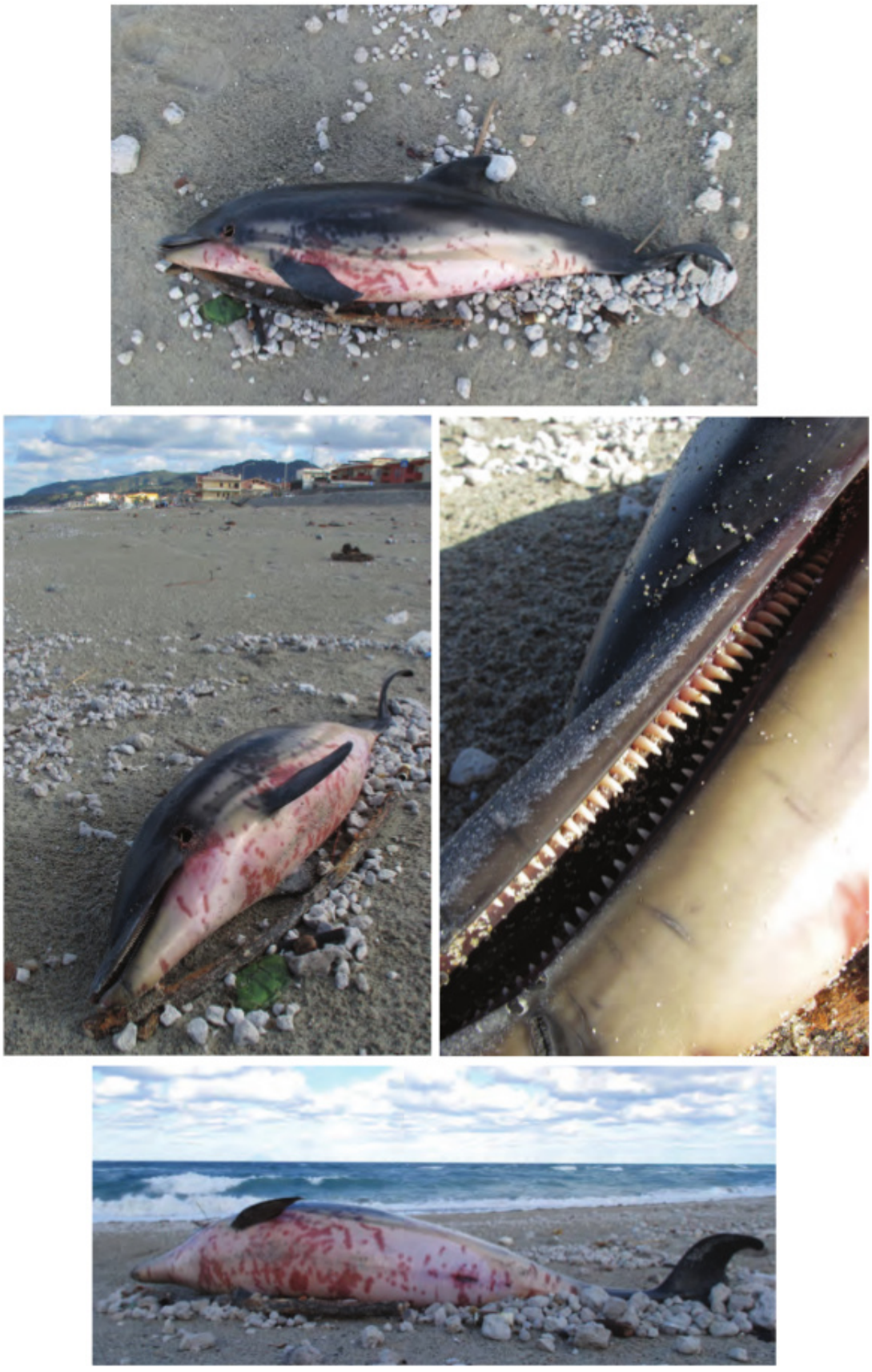

Figure 1: The dead striped dolphin, Stenella coeruloealba, *found on a beach in Sicily*

The name *Stenella* is the Latin diminutive of the genus *Stenos*. *Stenella* was originally thought to be a subgenus of *Stenos* (Archer & Perrin 1999). 'Stenos' is a Greek word meaning 'narrow' (Online Etymology Dictionary). The species name *coeruleoalba* is a compound of two Latin words, which unpicked, reveals its utility. Coerule comes from 'caeruleus' meaning 'azure' (Williams 2005). I vaguely remember the word cerulean from a crayon set I once had I think. Apparently caeruleus itself may derive from 'caelulum' the diminutive of 'caelum' meaning 'heaven, sky' (Online Etymology Dictionary). 'Alba' comes from 'albus', meaning white. So the name is a gracious signpost to what makes the species distinctive referring of course to the pattern of blue/dark-gray stripes and white blazes along the lateral sides of the body. The blue-white dolphin is another of its common names (Culik 2010). Who said Latin was a dead language.

Knowing the species also provides valuable incite to the age of our specimen. According to Klinowska (1991) the average length of striped dolphin at birth is 1m. However, in the western Mediterranean the length at birth is about 92.5cm (Di-Méglio *et al*. 1996). The length of a dolphin at 1 year is around 120cm for females and just over 130cm for males (Di-Méglio *et al*. 1996). I don't know whether our dolphin was a male or a female. But in the absence of a tape measure we estimated the length of just over 1m, as children might, with footsteps. So either way it seems likely from this information that this animal was less than a year old.

Striped dolphin is the most abundant cetacean in the Mediterranean (Fortuna *et al*. 2007; Notarbartolo di Sciara & Birkun 2010). The Tyrrhenian Sea has its southern border on the Sicilian coast and from where our dolphin was washed up we had a clear view of the Aeolian Islands. This small archipelago is an important habitat for the species with an estimated population size in May 2003 of 4,030 dolphins (Fortuna *et al*. 2007). Typically an oceanic species, striped dolphins show a preference for deep productive waters and have been observed in areas with a mean water depth of about 926 m around the Aeolian Islands (Notarbartolo di Sciara & Birkun 2010; Fortuna *et al*. 2007). In the Ligurian Sea, north of the Tyrrhenian, the species is thought to feed at night along the shelf edge at depths of between 500-1000 m whilst during the day it is found further offshore (Grannier 1999).

Euphyrosyne dolphins are opportunistic feeders (Wurtz & Marrale 1993). Using an Index of Relative Importance, Wurtz & Marrale (1993) showed that in the Ligurian Sea both cephalopods and bony fish are equally important in the diet, but that crustaceans were only occasionally taken. This is fairly consistent with other Mediterranean studies though in some 50-100% of stomachs contents analysed contained only squid (Archer & Perrin 1999). Culik (2010) also notes the dominance of cephalopods in stomach contents from dolphins stranded on the French, Spanish and Italian coasts. In the Ligurian study 13 species of squid from six families were identified with the European flying squid, *Todarodes sagittatus* (Lamarck, 1798) being by far the most prevalent (Wurtz & Marrale 1993). It is thought that Euphyrosyne dolphins may dive to depths of 200-700 m in search of suitable prey items (Archer & Perrin 1999). Fisheries exploit flying squid (Ommastrephidae) extensively (Wormuth 1976). In the Mediterranean, *T. sagittatus,* are caught by trawlers working the continental slope, with the trawls deployed to depths of between 200-800 m (Quetglas *et al*. 1998). The fishery is apparently more important in Italian and Greek waters than Spanish (Quetglas *et al*. 1998).

Food availability (depleted fishery resources) and pollutants have been mentioned as possible contributory factors that led to the striped dolphin morbillivirus epidemics seen in the Mediterranean in the previous two decades (Raga *et al*. 2008; Culik 2010; Aguilar & Gaspari 2012). Striped dolphins killed by the 1990 morbillivirus outbreak were shown to have high infestations of parasites and high levels of contaminants in their tissues. Most notable were organochlorines such as DDT and PCB, which could have reduced the dolphins natural resistance leaving them more open to both parasites and infection (Aguilar & Gaspari 2012).

Incidental catches are another significant threat. Although banned by European countries and with a UN moratorium against its use on the high seas, drift-net fisheries continue to operate illegally in the Mediterranean, including Italy. In the southern Tyrrhenian Sea Fortuna *et al.* (2007) estimated that roughly 36 striped dolphins had been killed through by-catch in one 12-day period.

Unlike the IUCN Red List status for this species globally (currently set at 'Least Concern'), the Mediterranean sub-population status is 'Vulnerable' (Hammond *et al.* 2008; Aguilar & Gaspari 2012).

The 'Arcipelago delle Eolie - area marina e terrestre' is a marine protected area. Bottlenose dolphin, *Tursiops truncatus* are listed as one of the Annex II species protected (Council directive 92/43/EEC, the Habitats Directive). Additionally, short-beaked common dolphin, *Delphinus delphis* are also noted as an 'important species' for another Natura 2000 site within the archipelago, the 'Fondali dell'isola di Salina'. Striped dolphin are not named. However, they are covered under ACCOBAMS (Agreement on the Conservation of Cetaceans in the Black Sea Mediterranean Sea and Contiguous Atlantic Area), which the Italian government ratified in 2005. The primary purpose of this agreement is to, 'take co-ordinated measures to achieve and maintain a favourable conservation status for cetaceans'.

What to do? This dead creature had a story to tell and useful data not only buried within it but from its final position too. The fact that it was on the beach may indicate that it died close to the shore and was brought to rest by local tides and currents (Di-Méglio *et al.* 1996). If it had died further offshore it is highly unlikely to have been seen by anyone. Who to call? In Italy you can call the Coastguard (Guardia Costiera) on a national number about such matters and if they do not deal with it themselves they will pass the information to the appropriate authority. This is what we did and later, from the wife of the local doctor, we learnt that for our area the local authority was responsible for dealing with it.

I don't know if any analysis was carried out on the dolphin we found, but its position was reported. After some searching online we found a local association involved in dolphin research and sent the photographs and position to them. They collate such information and send it off to be filed in a national database. This archive is maintained and run by the Centro Studi Cetacei (CSC), which has been collecting stranding data on a voluntary basis from the Italian coasts since 1985 (ACCOBAMS).

What killed this small cetacean? The weather had been stormy and the sea rough for several days. Perhaps it had not been able to find enough food (over-fishing?), become fatigued (burdened with pollutants?) and separated from its group.

We left the dolphin as we had found it but returned that same evening to see if it was still there. By that time it was gone. We presume the local council moved it but we do not know. The most likely end, if it was the council that came, is that the dolphin was taken to an incinerator for safe disposal.

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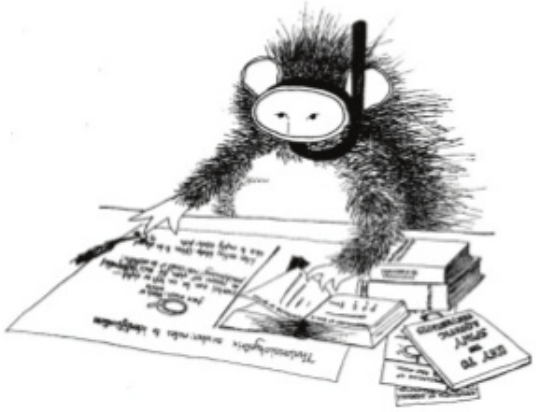
Strandings & Sightings

Please send us details of any unusual, noteworthy or interesting stories and pictures you have of marine life you see while at home or on your travels.

Any marine records should be submitted to Roni Robbins (Hon. Records Convenor) directly at Roni.Robbins@artoo.co.uk or through the *Porcupine* website at http://pmnhs.co.uk/found-something-unusual

Any suggestions for a caption for the above photo of a most unusual stranding event captured by Andy Rapson?



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