not stabilize a triple-stranded DNA structure, as this plasmid has been shown to form a triple-stranded structure consisting of one purine strand and two pyrimidine strands, with the free single-strand being the purine strand[2].

This error does not diminish the value of the observation[1], as the finding of a heteroduplex and altered conformation of the DNA in the transcribed plasmid suggests a hypothesis for how transcripts from unrearranged heavy-chain constant-region genes could direct switch recombination.

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REABAN AND GRIFFIN REPLY — Further DNA sequence analysis of the plasmid pBS-αS2.3 confirms Stavnezer's observation that transcription by T7 RNA polymerase would produce a transcript containing the polypurine sequence $(AGGAG)_{28}$, rather than the polypyrimidine transcript reported in our manuscript[1]. We regret this error in our data.

But the fact that the T7 transcript is purine-rich would not exclude it from stabilizing an intramolecular DNA triplex. Under our transcription conditions (8 mM $MgCl_2$ and pH 8.0) a purine–purine–pyrimidine intramolecular DNA triplex is likely to form. This triplex would be stabilized by base-pairing with the purine-rich T7 transcript via its excluded pyrimidine strand. A poly (dG)–poly(dC) sequence has been shown to form either a poly(dG)–poly(dG)–poly(dC) or a poly(dC)–poly(dG)–poly(dC) triple helix in a supercoiled plasmid, depending on the presence or absence of Mg^{2+}, respectively [3]. The $+Mg^{2+}$ triplex forms stably in neutral or slightly basic buffers, whereas formation of the $-Mg^{2+}$ triplex is enhanced by low pH. The formation of dG-dG-dC (ref. 4), A–A–U (ref. 5) and 5′-TGGGGA-GGGGTGGGGAGGGGTGGGGAA-GG-3′ purine–purine–pyrimidine (ref. 6) colinear triplexes under similar buffer conditions have also been reported. The base triplets predicted to occur with these triplexes have been observed in yeast transfer RNA[7]. Therefore our error does not alter our interpretation that the T7 transcript stabilizes an intramolecular DNA triplex.

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Whales and the military

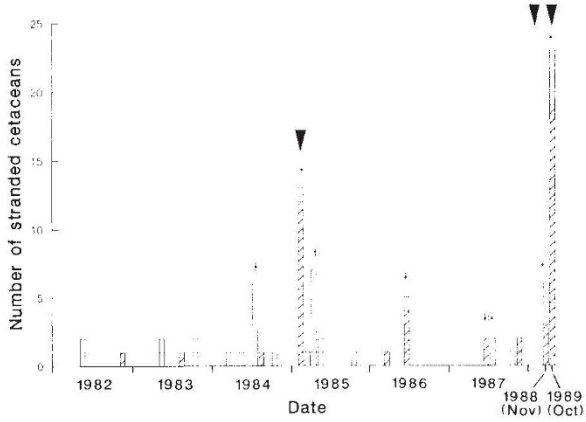
SIR — Several live mass strandings of Goose-beaked whales (*Ziphius cavirostris*) have recently been reported[1] on the coasts of Fuerteventura, Canary Islands. In February 1985, 12 were stranded in the southern coast accompanied by a Gervais' beaked whale (*Mesoplodon europaeus*); in June 1986, four more were stranded alive on the northern coast, again with a single *M. europaeus*; in November 1988, three *Ziphius* and a single northern bottle-nosed whale (*Hyperoodon ampullatus*) were stranded on the southeast side (on the same date two pygmy sperm whales (*Kogia breviceps*) were stranded on the neighbouring island of Lanzarote). Military manoeuvres were observed at sea close to the stranding sites in February 1985 and November 1988 (ref. 1).

A further hitherto unreported mixed-species live mass stranding occurred on Fuerteventura in October 1989; three *M. europaeus* came ashore with two *M. densirostris* (de Blainville's dense-beaked whale) and many *Ziphius*. In total, about 24 animals are estimated to have stranded by M. Pizarro, R. Vonk and V. Martin. Again, the stranding occurred when naval vessels were clearly visible out to sea. Local people have only been aware of such military manoeuvres three times since 1985; on each occasion mass live strandings have occurred. No pathological examinations were conducted on any of the stranded animals but there were no apparent abnormalities or wounds. All the stranded animals soon died.

Strandings of *M. europaeus* on the east side of the Atlantic are very rare. Before the strandings in the Canaries only two others had been reported[2]. There are also only a few reports of multiple deaths of *Ziphius* outside the Canaries[1]; first, off Venezuela, when four decomposed bodies washed ashore on an island (the recorder considered that an underwater explosion, related to naval manoeuvres, might be responsible; second, when the bodies of three *Ziphius* and a striped dolphin (*Stenella coeruleoalba*) came ashore on the coast of Corsica with bullet holes in them; and third, a mass stranding, about which no further details are known, that occurred on the east coast of the United States. Two further small strandings are also known from the Galapagos and Puerto Rico.

Details of the general pattern of strandings in the Canaries from 1981 to 1987 have been noted by Vonk and Martin, and are presented with the mass strandings of 1988 and 1989 in the figure. The island of Fuerteventura is the closest of the Canary Islands to the African mainland. It is also the main island from which local people fish (off the east side) for squid. The sea between Africa and the island may, therefore, be an important feeding ground for toothed whales. (*Mesoplodon* stomachs have been found to contain hundreds of squid beaks.)

Reports of military interactions with cetaceans are rare, although sperm whales in the southeast Caribbean became atypically



Cetacean strandings in the Canaries, 1982–89. (The data were obtained by Vonk and Martin.) Shaded bars, *Ziphius*; open bars, other species; asterisks, live strandings; black arrowheads, military activity.

silent and then scattered when exposed to intense underwater, local, military sonar signalling, apparently from submarines[3].

Naval manoeuvres off Fuerteventura may have stimulated an invasion of the island by ships coming towards the east coast through the whales' feeding grounds. This could have driven the whales shorewards and caused them to strand. Very little is known about the biology of *Ziphius*, so the reason for the unusual strandings can only be the subject of speculation.

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