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Fishes as diet of a wolf (*Canis lupus arabs*) in Saudi Arabia

by S. BIQUAND¹, V. URIOS², A. BOUG¹, C. VILÀ², J. CASTROVIEJO² and I. NADER³

¹National Wildlife Research Center, P.O. Box 1086, Taif, Saudi Arabia

²Estación Biológica de Doñana-CSIC, Apdo. 1056, 41080 Sevilla, Spain

³National Commission for Wildlife Conservation and Development,
P.O. Box 61681, Riyadh, Saudi Arabia

The distribution of the Arabian wolf *Canis lupus arabs* Pocock, 1934 was formerly extensive, but human persecution has greatly reduced its numbers and range (Harrison and Bates 1991, Nader unpubl. data). Previous data on its food habits in Saudi Arabia show it preying upon flocks of sheep and goats (Harrison 1968, Nader and Büttiker 1980). Our preliminary data show feeding on goat and sheep in addition to carrion and sometimes garbage. In the semi-desert environments of Palestine and Iran the wolf *C.l. pallipes* Sykes 1831 is also known to kill gazelles, dogs, hares,

rodents and partridges but also eats from garbage dumps (Mendelssohn 1983, Joslin 1983).

This note describes the stomach contents of an adult male wolf *C. l. arabs* found dead on the 18th of December 1991 in Wadi Turabah (20° 33' N, 41° 17' E), in the Sarawat mountain range of southwestern Saudi Arabia. The wadi has a permanent stream, sparse vegetation and several temporary bedouin camps were installed. The animal was killed four to five days before our finding.

The bulk of the stomach contents was formed by 45 individuals of *Cyprinion mhalensis* Alkalem and Behnke, 1983 (size from four to six centimeters). *C. mhalensis* is an endemic fish of Arabia, family *Cyprinidae*. Other identified remains were a finger and hairs from a juvenile sacred baboon *Papio hamadryas* (Linnaeus, 1758), remains of a male European quail *C. coturnix coturnix* (Linnaeus, 1758), two water snails, residues of a plastic bag and manufactured textile fibers.

Young (1944) reports the presence of fish remains in only one of 549 wolf contents and describes some instances of wolves eating salmon. Out of 35 stomachs studied in Spain, Castroviejo *et al.* (1981) found marine fish remains in one stomach; they observed tracks of wolves searching for fishes along beaches in north-western Spain. Nevertheless, the presence of such small fishes as those *Cyprinion* (less than 6 cm) is exceptional, mostly considering the energy expenditure that their apprehension may represent. Their capture probably was facilitated by the high density encountered in small ponds during seasonal drying up. The water snails could have been ingested accidentally with the fishes.

This is also the first report on a primate consumed by a wolf, however we do not know if this results from actual predation or scavenging on a carcass. The predation upon rather small birds, such as the European quail is commoner in spite of not being usual (Young 1944, Mech 1970). The presence of residues of human origin (plastic bag and textile) attests the foraging of the wolf on man generated leftover, even in regions of low and irregular human density.

This data supports the high adaptability and variability of wolf diet. In areas of extreme climatology, where large preys are rare, wolves have to feed on small various prey.

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Pilot Whales Carrying Dead Sea Lions

by S.H. SHANE

250 Cottini Way, Santa Cruz, CA 95060, USA

There are numerous records of marine mammals carrying dead conspecifics. Supporting behavior (as it was called by Caldwell and Caldwell 1966) is clearly adaptive if it prevents kin or even other social group members from drowning. Carrying of dead conspecifics could be a carry-over response to the supporting of sick or injured group members. Additional explanations for the carrying of dead animals could be : 2) prey consumption ; 3) play ; 4) strong social bonds between the living and the deceased ; 5) aberrant mating behavior ; or 6) possible social status conveyed to an animal in possession of a carcass.

Cetaceans, including both Odontocetes and Mysticetes, carry dead young (Caldwell and Caldwell 1966). Odontocetes also carry dead adult conspecifics and even other species of cetaceans (for a review : Caldwell and Caldwell 1966 ; for recent observations : Cockcroft and Sauer 1990 ; Connor and Smolker 1990 ; Harzen and dos Santos 1992 ; Lodi 1992). Bottlenose dolphins (*Tursiops truncatus*) in the wild have been reported carrying the severed heads of dead young (Moore 1953, 1955). Harbor seals carry their own dead young for periods of time (Rosenfeld 1983). Sea otters carry dead young (Kenyon 1975), and male sea otters have killed females and carried their bodies (Staedler and Riedman 1993). The male otters often attempted to copulate with the deceased females. I have observed male manatees attempting to copulate with dead manatees.

Here I report on short-finned pilot whales (*Globicephala macrorhynchus*) persistently carrying dead California sea lions (*Zalophus californianus*) during the first winter (January-March 1983) of a nine-winter long study of pilot whales and other cetaceans at Santa Catalina Island, California (Shane 1994). Pilot whales and sea lions both feed on market squid (*Loligo opalescens*) which spawn at Catalina each winter (Norris and Prescott 1961, Dohl *et al.* 1981). At night sea lions swim through aggregations of squid attracted to lights hanging off the sides of commercial squid boats. Squid fishermen often shoot at the sea lions, sometimes killing them. The behavior described here was seen only in 1983 both because pilot whales were scarce after that year and because very few dead sea lions were seen in the study area after 1983.