

Williamson (1976) wrote that the call-note of *abietinus* is "said to differ from *collybita*, resembling the *cheep* of a chicken in distress". This seems to resemble more the call-note which is here described for the *tristis*.

## References

- Sultana, J. & Gauci, C. 1982. A New Guide to the Birds of Malta. The Ornithological Society - Valletta.  
 Svensson, L. 1984. Identification Guide to European Passerines (Third revised and enlarged edition). Stockholm.  
 Williamson, K. 1967. Identification for Ringers. The Genus *Phylloscopus* (Revised). British Trust for Ornithology.

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## Diurnal duck migration over the Maltese Islands

Since the postulation of the 'combination' approach to bird migration, ornithological literature has witnessed an influx of evidence for leading lines. The new approach combined the two conflicting lines of thought that upheld broad and narrow fronts. It was suggested that there was indeed a broad directional trend to migration, the birds flying in a 'standard direction' typical of their particular population while over uniform terrain or the sea; but in addition there were 'leading lines', delineated by the boundaries between favourable and unfavourable terrain or particular topographical features. When migrants encounter such a factor they tend to fly along it, forming a narrow and concentrated stream. Once the obstacle or feature is surpassed the stream widens out into the broad front again (Matthews 1968). It is now ascertained that (especially) diurnal migrants respond to topographical features and often follow water courses, coastlines and ridges, more so when these are oriented in the direction of their movement (Gauthreaux 1980, & Gill 1990). These features provide a line that is easy both to perceive and follow, making it easier for a bird to compensate for any tendency of a crosswind to displace it sideways from its track. The disadvantage in using a leading line is that many birds following the same route increase the competition for potential staging areas (Baker 1984).

This preliminary note identifies a leading line effect in the sea channel that separates the two main islands of the Maltese archipelago, Malta and Gozo. It is evident from late February to early April and concerns *Anas* species mainly *A. querquedula*, *A. acuta* and *A. crecca*. Observations have been carried out by the present author mainly from Qammieh point but also from Ċirkewwa and Ras l-Irqiqa on Comino and cover the period 1988-1995.

The Malta-Gozo channel is a 4.5km-wide (at its minimum) stretch of water. It is basically funnel-shaped with the mouth of the funnel facing west-southwest. Significantly, the mouth of the funnel consists of high ground; Ta'

Ċenċ cliffs on the Gozo side and the Marfa Ridge on the Malta side. The island of Comino lies in this channel (see Fig.1). This is surely very striking topography that could be easily monitored by migrating flocks of Duck, especially so because of their laterally placed eyes. Indeed *A. platyrhynchos*, for instance, has been shown to achieve total panoramic vision without eye movements. Thus while a bird with laterally placed eyes flies towards a topographical feature, its position can be constantly monitored with respect to other features both to the sides and behind, and also to the complete celestial hemisphere above (Martin 1990).

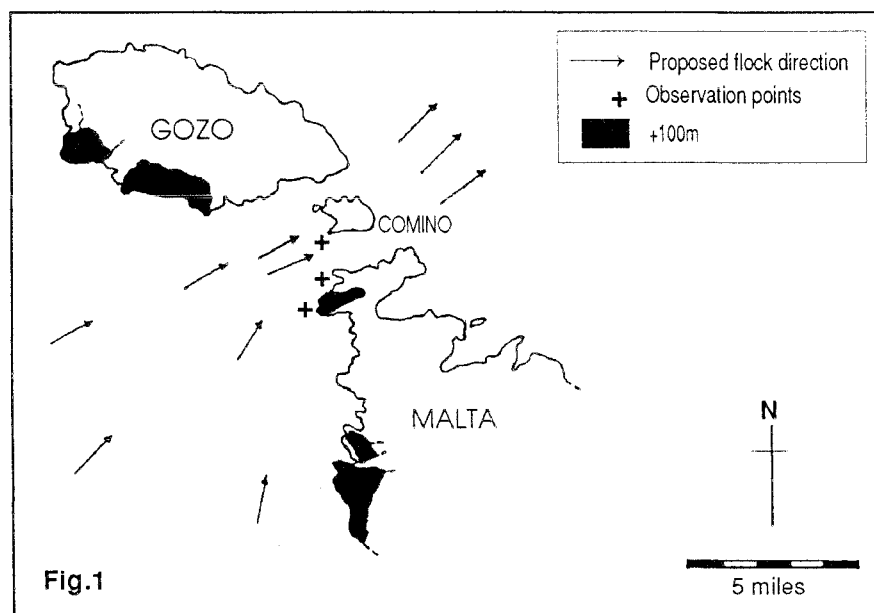


Fig.1

Evidently flocks of ducks on their spring migration approach Malta from the southwest. On encountering the mouth of the channel, they move inshore and fly between Malta and Gozo in a northeasterly direction. Often they lose height and fly close to the sea. Once in the funnel, they tend to regain height in the vicinity of Comino and reach the open sea to the northeast of Malta and Gozo once past this islet. The map shows this suggested movement. The stretch of sea is also frequently used as a partial (it offers no opportunities for feeding) staging post and flocks of ducks are frequently visible resting on the surface. On 22 Mar 1994, 4 out of 15 flocks numbering in all about 600 individuals were observed resting in the channel from 07.15hrs to 08.45hrs. At present the numbers involved surpass the one thousand mark each spring, yet this is most certainly a gross underestimation.

It is fairly safe to postulate that the Malta-Gozo channel offers an opportunity for migrating ducks to realign their direction, which seems to be northeasterly. Particularly in windy conditions, this realignment serves as a countermeasure to sideways drift that would be probable in the absence of landmarks. Indeed from February to April crosswinds, namely northwesterlies, greatly prevail over the Maltese Islands (Chetcuti *et al.* 1992). Within this framework a note by Sultana & Gauci (1982) is worth quoting, "Large passages of the commoner duck species occur on a few days in most years...On such days flocks can be seen passing offshore, sometimes near land points of the coastline...Large passages of ducks have been noted to occur mainly during north-northwesterly moderate winds".

This leading line effect presents numerous opportunities for study. Observations to date have been far from systematic and even less exhaustive. Correlations with weather variables such as wind or cloud cover are probably worthwhile investigating. In addition, other species of diurnal migrants could also be responding to the topography of the channel as could nocturnal species, utilising for instance Doppler Shift mechanisms. Surprisingly, leading lines over the Maltese Islands have received scant attention, the only notable example being Thake (1978, 1980 & 1983).

#### References

- Chetcuti, D., Buhagiar, A., Schembri, P.J. & Ventura, F. 1992. The Climate of the Maltese Islands : A Review. Malta University Press : (Msida) Malta.
- Gauthreaux, S.A. (ed.) 1980. Animal Migration, Orientation and Navigation. Academic Press : London.
- Martin, G.R. 1990. The Visual Problems of Nocturnal Migration, in Gwinner, E. (ed.) Bird Migration, Physiology and Ecophysiology. Springer-Verlag : Berlin.
- Matthews, G.V.T. 1968. Bird Navigation. Cambridge University Press : Cambridge.
- Sultana, J. & Gauci, C. 1982. A New Guide to the Birds of Malta. The Ornithological Society : Valletta.
- Thake, M.A. 1977-78. Some aspects of Hobby *Falco subbuteo* migration over Buskett. *II-Merill* 19 : 1-4.
- Thake, M.A. 1980. Autumn Migration of the Honey Buzzard through Malta in relation to Weather. *II-Merill* 21 : 13-17.
- Thake, M.A. 1981-83. Marsh Harrier Migration through Malta in Autumn in relation to Weather. *II-Merill* 22 : 1-6.

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