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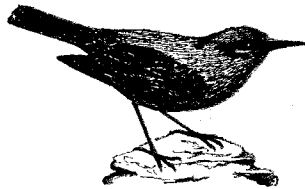
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# THE ORNITHOLOGICAL SOCIETY

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The Editor welcomes contributions treating any aspect of the Ornithology of the Maltese Islands and the Mediterranean for publication in this Bulletin.

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The Ornithological Society was founded in 1962 to promote the scientific study of ornithology and bird conservation in the Maltese Islands. It organises a variety of scientific and social activities. It has its own ringing scheme, its own publications and a young members section.

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SOME ASPECTS OF HOBBY (*FALCO SUBBUTEO*) MIGRATION  
OVER BUSKETT

Martin A. Thake

The Hobby *Falco subbuteo* is a long distance migrant, the western palaeartic population of which winters south of the Sahara. As there is little evidence of major concentrations at either end of the Mediterranean, it is generally held that in this species migration takes place on a broad front (Moreau 1972).

Although a very few birds have been recorded in Malta during the breeding season, breeding has never been proved to occur nor is it likely to occur at the present time. The species' status in the Maltese islands has recently been reviewed (Galea 1971, Beaman and Galea 1974, Sultana, Gauci and Beaman 1975, Bannerman and Vella-Gaffero 1976). This paper deals with some aspects of the species' migration over Buskett.

*Observations*

Most Hobbys seen at Buskett in autumn show no obvious directional tendency and may spend an hour or more in the vicinity of Buskett. Generally sightings involved single birds, but on a few occasions Hobbys approached Buskett in parties of 2 — 5 birds.

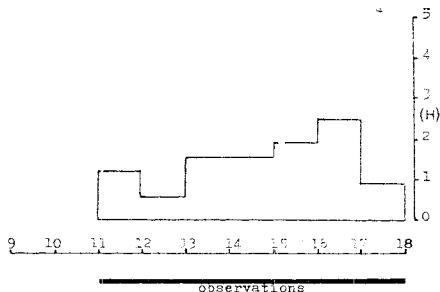
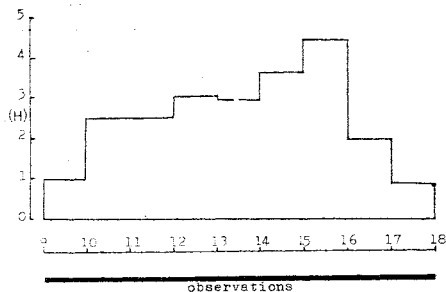
At Buskett the Hobby is the most difficult raptor species to count. There are several reasons for this. The birds are relatively small and fast, hence easily overlooked, especially if flying high. Many indulge in slope or thermal soaring and spend long periods in the vicinity of Buskett, disappearing and reappearing frequently. The daily totals of this species are probably less accurate than those of other raptors. In view of the above difficulties it is surprising that annual variation of totals is as small as it is (e.g. Beaman and Galea 1974).

The majority of Hobbys sighted at Buskett were flying low (below 300m) but individual birds changed height repeatedly. In view of the difficulty of sighting high flying members of this species, it seems likely that observations are more biased in favour of low flying birds than is the case with Honey Buzzard *Pernis apivorus*. When cloud base was high (low relative humidity and high air temperature at ground level) Hobbys sometimes soared too high to be seen with the naked eye. The extent to which normal migration of this species takes place above naked eye range is unknown.

*Time of day*

There is a regular influx of Hobbys throughout the day from ca 10.00 to ca 17.00 CET, suggesting that the birds are leaving from an extensive area to the north of the Maltese Islands. An alternative explanation is that birds depart continuously throughout the day from a smaller area. Hybrid interpretations are also conceivable.

The histograms show a peak one to two hours before sunset, followed by a steep drop. This suggests that migration of this species across the Sicilian channel declines considerably in mid-afternoon. The peak at around 16.00 CET could be due to convergence on Buskett for roosting purposes. However this peak occurs somewhat earlier than would be expected on the basis of this assumption and only a few birds are still in the vicinity of Buskett at sunset. These birds are either shot or forced by disturbance to leave the vicinity of Buskett.



Variation of mean number of Hobbys sighted per hour (H) with time of day, Autumn 1976. Observations were made between 9.00 and 18.00 CET. Sample size = 169 birds.

Variation of mean number of Hobbys sighted per hour (H) with time of day, Autumn 1977. Observations were made between 11.00 and 18.00 CET. Sample size = 140 birds.

#### *Correlations with weather variables*

Data obtained in visual watches from 1/9/76 to 12/10/76 were analysed in conjunction with meteorological data obtained from the records of Meteorological Office, Luqa and RAF Qrendi. Similar calculations dealing with Honey Buzzard have already been published (Thake 1977) and these results are compared in Table 1. The various correlations are strikingly similar in the two species. Such results are consistent with the hypothesis that these raptors migrate over Malta chiefly during anticyclonic weather conditions and that they regard low wind strength below 1500m as an indication of favourable weather (Thake 1977).

On the other hand whereas Honey Buzzard numbers observed in 1976 were significantly correlated with intensity of the southerly vector of wind strength at 12.00 CET, Hobby numbers were not (Table 1). Any correlation which might exist in the latter case is very small and not detectable by the methods currently in use or is very variable between years. These results do not support the hypothesis that Hobbys converge on Malta chiefly during headwinds or that headwinds force Hobbys migrating above naked eye range to fly at lower levels where they can be seen.

### Discussion

None of the above correlations can account for the high concentration of Hobbys at Buskett in Autumn. Numbers sighted at Buskett generally exceed those sighted at the Bosphorus and at Gibraltar, although the numbers breeding due North of Malta are probably smaller than those breeding due north of the watch points mentioned. Migration of Hobbys under anticyclonic conditions explains the distribution of migration over an entire season, but not the magnitude of the seasonal total. Channelling by leading lines or convergence on the islands or on Buskett must be invoked in order to explain the high numbers seen.

A small tendency to follow the coast during bad weather might result in more birds being channelled along peninsulas which have a general North-South trend. It is difficult to envisage the effect the configuration of the Italian peninsula has on Hobby migration, in the absence of quantitative data from points north of Malta.

The high concentration of Hobbys at Buskett may also be explained as due to concentration on the islands or on Buskett. Although concentration on the islands is likely to occur in unfavourable weather, the available data do not support the view that sightings of Hobbys at Buskett occur chiefly under such conditions. On the contrary the numbers of Hobbys sighted were greatest under anticyclonic (i.e. settled) conditions.

There is no evidence that large numbers of Hobbys are passing through other places in the islands but few systematic watches have been maintained elsewhere. The few Hobbys which have been sighted during systematic watches elsewhere in the islands were all flying between SSE and SW and there was no tendency to linger in the vicinity of the watch point. It would appear that Hobbys are converging on Buskett alone rather than converging on the entire Maltese archipelago.

Recent observations made at Buskett suggest that at least a minority of Hobbys are hunting successfully (Thake 1978, this issue). Several definite attacks failed and behaviour which could be interpreted as hunting was frequently observed. Thus Hobbys might be converging on Buskett for feeding purposes, i.e. using it as a refuelling stop in autumn. This interpretation accounts for the high seasonal totals as well as the lack of any definite directional tendency in the flight of Hobbys seen over Buskett.

### Summary

The number of Hobbys *Falco subbuteo* seen per day at Buskett (Malta) in autumn was positively correlated with atmospheric pressure and negatively correlated with wind strength below 1500m. This suggests that migration occurs under anticyclonic conditions. Numbers sighted were not greater in headwinds. The seasonal totals are too large to be due to normal broad front migration. The birds must be converging on the islands or on Buskett or being channelled by leading lines.

### Acknowledgements

Many of the 1977 observations were made by E. Curmi who also supplemented my observations in 1976. N. Bonavia and C. Galea also helped with the observations. Thanks are also due to Messrs Wright and Pace for allowing me to examine meteorological records.

Table 1

Correlation of sightings with weather variables

Simple Correlation coefficients	<i>Pernis apivorus</i> 30/8/76-10/10/76	<i>Falco subbuteo</i> 1/9/76-12/10/76
With Atmospheric pressure (Qrendi 12.00)	$r = .2697$ .01 < P < .05	$r = .2944$ .01 < P < .05
With Atmospheric pressure (Luqa 19.00)	$r = .357$ P < .01	$r = .289$ .01 < P < .05
With ground wind strength (Qrendi 12.00)	$r = -.1934$ .05 < P < .10	$r = -.1909$ .05 < P < .10
With mean scalar wind strength below 1500m (Qrendi 6.00)	$r = -.4969$ P < .01	$r = -.4662$ P < .01
With strength of Southerly vector (Qrendi 12.00)	$r = .3270$ .01 < P < .05	$r = .05620$ .10 < P

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