

- Relatively long, narrow bill
- Matt smoky-grey underparts, without any trace of iridescence and without any white tips/blotching, excepting the undertail coverts (all Internet pictures of 1st winter Black Drongos viewed, and the Indian fieldguide (Grimmett *et al* 2002), show messy white blotching on the lower belly)
- Lack of white rictal spot
- Crown either flattish with a very shallowly sloping forehead or 'tufted' rather like a monarch sp, never showing the more smoothly rounded 'Alpine Chough' *Pyrrhocorax graculus* crown of Black Drongo.
- Many flycatching sallies made from *within* the crown of trees, especially during the midday observations on 16th December. This is consistent with the forest habitat preference & feeding behaviour observed in Ashy Drongo, and contra the open country preference of Black (though the bird did use exposed tree-top perches later in the day)
- No white fringes to any upperpart feathers – 1st winter Black Drongo should show such fringing.

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Are migration pathways of European Honey Buzzards *Pernis apivorus* passing over Cyprus age-related?

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The European Honey Buzzard *Pernis apivorus* is a summer resident in Europe that winters in west-central Equatorial Africa (Cramp & Simmons 1980). In a recent paper, Roth & Corso (2007) reported observations made on the autumn migration of raptors over Cyprus from 3 September to 26 October 2005 along its southeast peninsula (terminating at Cape Greco - Fig 1). The authors counted 3302 European Honey Buzzards, nearly all at the beginning of September (2250 on 4 September). In their survey they probably missed many migrants since observations were interrupted in the hottest part of the day (from 11:00 until 15:00) between 3 and 18 September. Unfortunately, Roth & Corso did not report data concerning the age of European Honey Buzzards but, according to unpublished data, they supposed they were mostly juveniles: "In case of the Eurasian Honey Buzzard in this study, it was also the case that juveniles appeared to exceed adults in number, but unfortunately because too many of the huge flocks were too distant for us to separate age-classes, our age-class counts applied only to a small proportion of the total numbers recorded." However, in this species, juveniles migrate about two weeks later than adults; in particular, adults cross the Mediterranean peaking between the end of August and early September while juveniles cross the sea mostly during the second half of the month (Agostini & Logozzo 1995, Schmid 2000).

Previous observations made over Cyprus, at the Akrotiri peninsula, located along the southwest coast (Fig 1), showed a passage of hundreds of European Honey Buzzards during the second half of September (Frost 1994). Considering the period of the passage, Schmid (2000) supposed that birds recorded by Frost were juveniles. Since nearly all European Honey Buzzards detected by Roth and Corso along the southeast peninsula migrated in early September, it is unlikely that they were mostly juveniles. In agreement with this conclusion, over the island of Malta, where a concentration of juvenile European Honey Buzzards occurs each autumn, the passage of this species is virtually non-existent in early September (Beaman & Galea



Figure 1. Predicted age-related paths used by adult (solid arrow) and juvenile (dashed arrow) European Honey Buzzards during autumn migration across the Eastern Mediterranean via Cyprus.

1974, Agostini *et al* 2004a, Sammut & Bonavia 2004). Visual observations, ringing recoveries and satellite-tracking showed different pathways used by adult and juvenile European Honey Buzzards during autumn migration (Agostini & Logozzo 1997, Agostini *et al* 1999, 2002, 2004a, 2004b, Schmid 2000, Hake *et al* 2003). In particular, adults on passage concentrate at the Mediterranean at the shorter crossing points in a demonstration of a true navigational ability.

Unlike adults, juveniles fly over open water, apparently moving along an innate NE-SW axis. Because they migrate later in the season, they cannot learn the shortest routes to cross the sea by following experienced individuals. Moreover, recent studies made in the Central Mediterranean region showed that pathways used by adult European Honey Buzzards are affected by the interaction of several factors such as geography, prevailing winds, time of the day and navigational abilities (Agostini *et al* 2005a, 2005b, 2007). Leshem and Yom-Tov (1996 quoted by Shirihai *et al* 2000) calculated that European Honey Buzzards migrating on the east Mediterranean flyway are likely to extend their route by 57.2% due to circumvention of sea crossings and use of thermals. In this scenario, it is not unexpected that at least a proportion of adults using this flyway chooses a more direct path en route to wintering areas. Referring generally to raptors migrating through Cyprus, Roth & Corso (2007) suggested that during weather conditions with good visibility some adults could reach Israel from Turkey *via* Cyprus concentrating at Cape Greco: "In conditions of good visibility, adults to save energy might take the option on outward migration to cut the corner by flying from Turkey to Cyprus and then from southeast Cyprus towards Israel, because in both cases the destinations can be seen". However, the authors did not consider this as a principal route in the case of European Honey Buzzards since, as mentioned above, they supposed that these raptors were mostly juveniles.

Unlike Roth and Corso, we suggest that the passage at the two watchsites (Akrotiri and Cape Greco) of Cyprus could be the result of separate age-related paths through the eastern Mediterranean region. Juvenile European Honey Buzzards, moving along a NE-SW innate axis, should be expected to concentrate at the southwest (Akrotiri) rather than southeast peninsula of

Cyprus (Cape Greco), undertaking the longer sea crossing towards Egypt (Fig 1). Conversely, adult birds reaching the Mediterranean coast in southern Turkey could choose the more direct route via Cyprus avoiding the longer detour along the coast (heading ENE), flying SE and concentrating at Cape Greco en route to Lebanon and Israel (c170 and c230km from Cyprus, respectively). In doing so, they would apply true navigational abilities showing a different orientation behaviour from juvenile birds (heading SE rather than SW). In agreement with studies made in the Central Mediterranean (Agostini *et al* 2005a, 2005b, 2007), adults passing through Cyprus should be expected to use this path mostly during northerly winds to make a faster flight over water, expending less energy. In addition, during a NNE wind, which did occur in the eastern Mediterranean region on the migration peak day in 2005 (4 September; Roth & Corso 2007), adult European Honey Buzzards could save both time and energy, allowing themselves to drift SE toward Israel. The existence of age-related routes via Cyprus would agree with the peak passage recorded at Cape Greco (early September) and with the path reported by Shirihai *et al* (2000) along the coasts of north Israel. In conclusion, we suggest that future surveys at the southeast peninsula of Cyprus should report a concentration of adult rather than juvenile European Honey Buzzards. Conversely, juveniles should concentrate at the Akrotiri watchsite later in the season such as happens over the island of Malta.

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