Mammalia, three of Aves, one Isopoda and one Coleoptera have been identified from all the pellets which were analysed.

Table 1
No. of specimens found in pellets

Species	Sultana (1971) 20 pellets	Schembri & Cachia-Zammit (1979) 16 pellets	Borg & Cachia-Zammit (1988) 31 pellets	Since 1986 57 pellets
Crocidura sp.	5	17	38	53
Rattus sp.	5	6	7	15
Mus domesticus	32	26	29	63
Apodemus sylvaticus	4	4	-	12
Myotis sp.	-	-	2	-
Passer hispaniolensis	5	-	4	4
Sylvia melanocephala	-	-	5	4
Delichon urbica	-	-	1	-
Coleoptera sp.	-	-	1	-
Isopoda sp.	-	-	1	-

Mus domesticus was found to be the most common prey species with a total of 150 specimens, followed by *Crocidura sp.* (113 specimens). The presence of 20 specimens of *Apodemus sylvaticus* is very interesting. This species has always been regarded as rare (Lanfranco 1969, Savona-Ventura, 1981). *Rattus sp.* was present with 33 specimens. Those collected since 1986 belonged to juvenile specimens. Three avian species were identified; *Passer hispaniolensis* (13 specimens), *Sylvia melanocephala* (9 specimens) and one *Delichon urbica*. *P. hispaniolensis* and *S. melanocephala* are common breeding residents. *P. hispaniolensis* is preyed upon throughout the year, replacing mammals during cold winter nights. Four of the specimens of *S. melanocephala* were first year birds (having skulls not being completely ossified).

It is known that Barn Owls in the Mediterranean take less prey weight (average 19.57g) per prey item than those found in temperate zones, an average of 23.60g (Herrera 1974). In all the samples collected birds constituted only 6.7 % of the Barn Owl's prey from the study area, while 92.7 % consisted of small mammals. This may be due to the high number of small mammals in the area.

The authors are grateful to Joe Sultana, Bruno Zava, Luigi Migliore and Carlo Violani for their assistance.

References

Borg, J. & Cachia-Zammit, R. 1988. Avian, Chiropteran and other remains in Barn Owl *Tyto alba* Pellets from Gozo. *Il Merill* 25: 12.
Despott, G. 1916. The Breeding Birds of Malta. *Zoologist* (4)20: 161-181.
Fenech, N & Balzan, S. 1988. Last known pair of Barn Owls *Tyto alba* shot. Il-Merill 25 : 13-14.
Herrera, C.M. 1974. Trophic Diversity of the Barn Owl *Tyto alba* in Continental Western Europe. *Ornis Scand.* 5: 181-191.
Schembri, S.P. & Cachia-Zammit., R. 1979. Mammalian contents of Barn Owl Pellets from Gozo. *Il-Merill* 20: 20-21.
Sultana, J. 1971. Barn Owl pellets in Malta. *The Maltese Naturalist* 2: 29.
Sultana, J. & Gauci, C. 1982. A New Guide to the Birds of Malta. The Ornithological Society : Valletta.

John Borg & Richard Cachia-Zammit

***JB** - Block C 2, Flat 5 Princess Margaret Str., Ta' Xbiex MSD 14, Malta.*
***RC-Z** - "Ċiefa", School Str., Fgura PLA13, Malta.*

Birds drinking nectar from Almond *Prunus dulcis* blossoms

Almond trees bear flowers of two kinds: male flowers and hermaphrodite flowers. Male flowers lack gynaecium (female part of the flower) and contain more nectar. Both types of flowers are perigynous; the receptacle forms a cup around the gynaecium. The nectar is contained within the cup (calyx) but the quantity present is very variable. In most years, examination of the inner surface of the calyx reveals only a few droplets of nectar on the

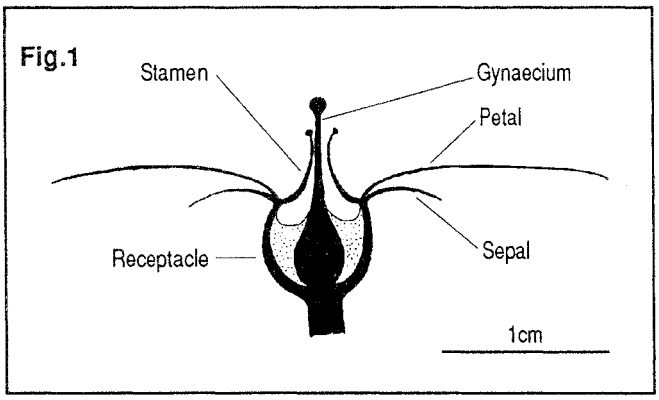

Fig. 1 A cross section of a hermaphrodite flower of *Prunus dulcis* is depicted. The quantity of nectar present on 8 Feb 1992 is represented approximately by the stipling. Male flowers contained even more nectar and the nectar was easier to reach because the calyx was wider.

nectaries. In early Feb 1992, many Almond trees bore flowers in which the calyx was almost full of nectar (see Fig. 1).

Observations were mostly limited to the weekends. Nectar feeding from Almond blossoms was only observed between the 1st and 3rd weeks of February. The frequency of nectar feeding had clearly declined by 15 Feb. Observations of nectar feeding in 1992 are summarised in Table 1.

Detailed observations were made only in 1987 and 1992. Nectar feeding from Almond blossoms was observed only once in 1987 but was common in early Feb 1992. Examination of the pattern of rainfall during Jan and Feb 1992 suggests a possible cause. Rainfall in January was higher than average (see Table 2) and rain was concentrated in the latter third of the month. It so happens that most Almond trees blossom in February. Thus the soil was at field capacity (carrying as much water as it could hold under gravity) as most blossoms started to open. Conditions of availability of water for nectar formation were thus optimal during early Feb 1992. Further studies will be necessary to elucidate the causes of the variability in production of nectar by Almond blossoms. The present study merely provides a clue that one of the factors involved might be the quantity of rain falling at a critical time.

Table 1
Observations of birds taking nectar from Almond blossoms during 1992

Date	Locality	Observations
7 Feb	Mdina	1 Chiffchaff and 1 Sardinian Warbler
8 Feb	Station Gardens, B'kara	At least 5 Spanish Sparrows, 1 Chiffchaff and 1 Sardinian Warbler
9 Feb	Station Gardens, B'kara	3-4 Spanish Sparrows and 1 Chiffchaff
9 Feb	Burmarrad	3 Chiffchaffs and 1 Sardinian Warbler
10 Feb	Station Gardens, B'kara	30 visits by ca.5 Spanish Sparrows, 3 visits by 1Chiffchaff and 1 visit by 1 Sardinian Warbler during a 20min watch at a single almond tree
10 Feb	Nr. St. Aloysius College, B'kara	2 Sardinian Warblers and 1 Chiffchaff
15 Feb	Station Gardens, B'kara	1 Chiffchaff
15 Feb	Nr. St. Aloysius College, B'kara	1 Sardinian Warbler

Table 2
Rainfall in Malta during January

Average total for January (1854 - 1953)	85mm
Average total for January (1928 - 1942)	112mm
Total for wettest January	225.6mm
Total for driest January	8.5mm
Total for January 1992	155.2mm

Data from Lamb (1972) and Malta Union of Teachers (1992) diary, quoting Meteorological Office records

Birds were observed taking nectar in three different ways:

(a) A bird would fly into the tree, move about the canopy until it found a suitably placed flower, and then it would probe the flower using its bill. Often, the bird would have to crane its neck sideways in order to probe the flower. The bird would then move on to another flower and drink nectar, spending about one to two seconds at each flower (longer in the case of sparrows). A bird would sometimes spend as long as five minutes moving about the tree in this way, but about half a minute was more typical. This method was employed by Sardinian Warblers *Sylvia melanocephala*, Chiffchaffs *Phylloscopus collybita* and Spanish Sparrows *Passer hispaniolensis*.

(b) Sometimes, Spanish Sparrows tore open the receptacle using their bill in order to get at the nectar. The other species never did this.

(c) Chiffchaffs at two localities (at least 3 different birds) were sometimes seen hovering for about 0.4 - 2.0 seconds in front of a flower, probing it with their bill. The behaviour was strikingly similar to that employed by Hummingbirds *Trochillidae* but the behaviour was so distant that it could not be determined whether the Chiffchaffs were probing far enough to be able to drink nectar.

No fighting over access to nectar was observed, although one male Sardinian Warbler was seen displacing a Chiffchaff to another part of an almond tree. This particular tree was not being used by Spanish Sparrows. If it had been, it might not have been practical for the Sardinian Warbler to defend its nectar resources.

The genus *Prunus* is found throughout the temperate Holarctic (Hora 1986). It appears to be one of the few European plants which produce sufficient nectar to allow birds to drink nectar from its flowers. Nectar feeding has only been observed rarely in Europe (see Ford 1985 for review). When flowers with abundant accessible nectar are available, nectar feeding is observed regularly (see Thake 1991). It is not known why European flowers produce such small quantities of nectar, nor why *Prunus* is an exception to this rule.

References

Ford, H.A. 1985. Nectarivory and pollination by birds in southern Australia and Europe. *Oikos* 44: 127-131.
Hora, B. 1986. The Oxford Encyclopedia of trees of the world. Peerage books, London.
Lamb, H.H. 1972. Climate; Present, Past and Future. Methuen, London and New York.
Malta Union of Teachers. 1992. Diary (1992). Teachers' Institute : Valletta, Malta.
Thake, M.A. 1990-91. A summary of my observations of nectar feeding in Malta. *Il-Merill* 27: 20-21.

Martin A. Thake

MAT *- 169 Fleur de lys Rd., Birkirkara BKR 02, Malta.*

Black Redstart *Phoenicurus ochruros* feeding on berries of Japanese Honeysuckle *Lonicera japonica*

The Black Redstart feeds principally on invertebrates but also takes fruit, particularly in late summer and autumn. Honeysuckle (*Lonicera*) figures among the plant genera whose fruit is taken (Cramp 1988).

The Japanese Honeysuckle is widely cultivated, a perennial climber which produces small black berries in early winter. The berries measure from 5-7mm in diameter. They have a sweet grapelike taste initially, but after being masticated for a second or two, a distinctly bitter taste develops. This taste might induce birds to swallow the berries whole rather than masticate them to crack the seeds, or peck at them in situ. The crushed berries release an intense deep purple pigment. The berries are not conspicuous on the bush and are probably not intended to attract bird species which feed by local enhancement (e.g. Starling), but rather they seem to be designed for use by small passerines which are familiar with the bush and its fruits.

On 17 Jan 1992, a male Black Redstart was observed in the centre of its territory, being the roof of Vilhena Palace and the adjoining bastions at Mdina. This bird was frequently observed there. It was seen flying out of a Japanese Honeysuckle bush in the inner courtyard of Vilhena Palace, and flying up to the roof. This behaviour was observed frequently, and the only bird which entered the inner courtyard was this male Black Redstart. Thus, all the droppings on the balustrade of the courtyard probably belonged to this individual. Fresh faeces deposited on the same day were examined. They were found to be watery and stained deep purple by the fruits of the Japanese Honeysuckle. Barring a most unlikely coincidence, this male Black Redstart was feeding on the fruits of the Japanese Honeysuckle at about 09.00hrs.

Given the unusual location of Japanese Honeysuckle (almost all specimens are found in private gardens), it seems unlikely that Black Redstarts feed on its fruits at all frequently, and this record is probably exceptional.

Reference

Cramp,S. (Ed.) 1988. The birds of the Western Palearctic. Vol. 5 (Tyrant flycatchers to Thrushes). *Oxford University Press* : Oxford.

Martin A. Thake

MAT *- 169 Fleur de Lys Rd., Birkirkara BKR 02, Malta.*
