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SOME NOTES ON CHAETECHELYNE VESUVIANA (NEWPORT)

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The large, distinctive species Chaetechelyne vesuviana (Newport) has been recorded from much of central Europe, the Iberian Peninsular, the Mediterranean and North Africa. The northern limit of its range appears to be Hungary to Normandy although there is a single record by Jeekel from Domburg in coastal Holland.

In Britain, C. vesuviana seems to be restricted to the south of the country, generally being found in coastal sites (less than 15 km from the sea). There are however a few inland synanthropic sites in the south-eastern counties. There are no known coastal sites for this species in the south-east, the first coastal V.C. records being for Hampshire (Stoke) and the Isle of Wight then continuing along coastal Dorset to Devon. There are not yet any records from Cornwall, North Devon or Somerset but recently C. vesuviana was recorded from the Avon Gorge in Bristol (V.C. 34.).

It is probable that this species will eventually be recorded from coastal sites throughout the south-western peninsular.

In the Isle of Wight C. vesuviana is widespread on the heavy clays in the north of the Island and is also found on the adjacent slope of the chalk ridge, which effectively divides the Island on an east-west axis. No specimens have yet been found on the top of the chalk ridge or, indeed, to the south of this ridge with the exception of a single female found on clayey substrate on the shore at Ventnor. Several specimens have been found in or on the sandy soils overlaying the clays to the east of the Island.

The climate of the Isle of Wight is extensively modified by the influence of the sea and this may, in part, help to explain the widespread distribution there.

ECOLOGY

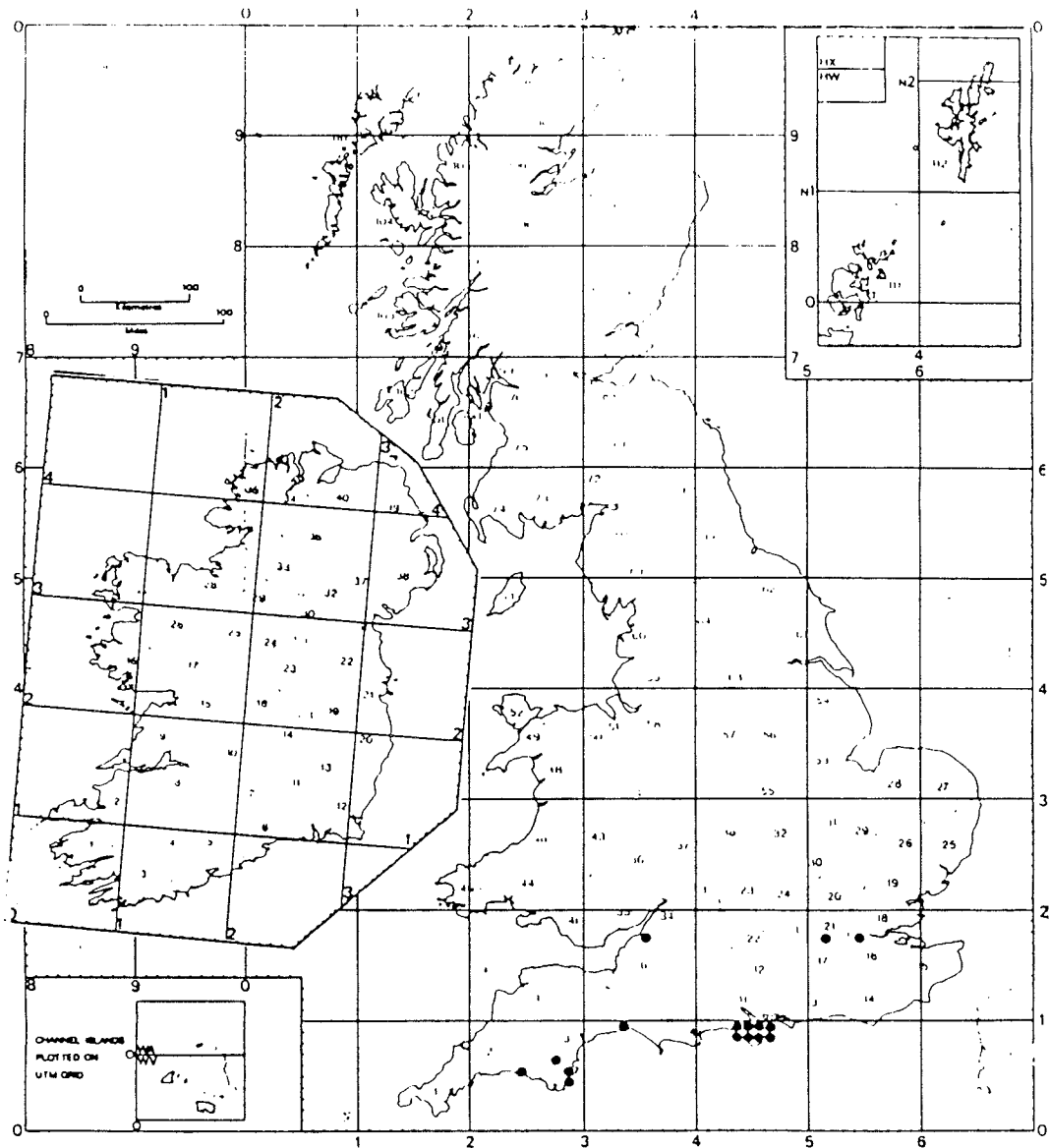
a) Habitat

The habitat data accumulated from recent records of the species are given in some detail below. Of the 50 sites for which data is available 48 are coastal (less than 15 km from the sea) and 2 are inland synanthropic ones.

Only two sites have been reported from urban areas; 15 are from suburban sites. This paucity of records from urban sites probably does not reflect the true distribution of C. vesuviana, rather the difficulty in sampling suitable urban/suburban sites. Thirty-three sites have been reported from rural areas, many of these sites being synanthropic rather than natural habitats. Waste ground with a covering of vegetation accounts for 30% of the reported sites and such sites usually have a relatively high population of C. vesuviana. Waste ground sites with in excess of 25% vegetation cover are marginally preferred to those sites with less than 25% cover.

Grassland and woodland each account for 16% of the total sites, closely followed by domestic gardens at 12%. Aquatic and marsh type habitats totalled together account for a further 12% of the sites.

Other habitats account for only 14% of the total number of sites. Table 1 below sets out in detail the number of sites per habitat type so far recorded.



Chaetechelyne vesuviana (Newport)

10 km distribution map

Table 1

<u>Habitat Type</u>	<u>No. of sites</u>
Lakeside	1
Sea shore	3
Fen	1
Carr	1
Garden, domestic	6
Waste ground 25% veg. cover	6
Waste ground 25% veg. cover	9
Arable, cereal crop	1
Arable, root crop	1
Arable, market garden	1
Grassland, ungrazed	3
Grassland, lightly grazed	3
Grassland, mown	2
Scrubland, dense	1
Scrubland, open with herbs/grass	1
Woodland, dense	2
Woodland, open with scrub	3
Woodland, open with herbs/grass	3
Sand dune, tussocky	1
Other	1
Total	50

b) Microsites

The microsite data for C. vesuviana probably reveals a bias on the collector's part for examining the obvious and easily accessible microsites rather than spending a great deal of time in one particular habitat examining all the available microsites. However, having stated that, C. vesuviana does seem to inhabit very superficial microsites. 28% of the present records indicate that specimens were located under stones and, from personal experience these stones are often recent additions to the site. If the microsites categorised under stones, rock, shingle and

and stone/brickwork are totalled together as being similar they then account for 52% of records. Dead wood is the second most preferred microsite accounting for 22% of the records. Again, it is often found that the dead wood site is very superficial in nature with specimens being found under (often small) dumped pieces of timber rather than under large logs.

The specimens found in litter (from 14% of sites) represent the first large group from a truly "natural" site.

Microsite data from all available records are set out below followed by data concerning the soil/litter in or on which the specimens were found.

Table 2

<u>Microsite Type</u>	<u>No. of sites</u>
Stones	14
Shingle	2
Soil/sand	2
Litter	7
Tussocks	2
Dead wood	11
Rock	7
Brickwork	4
Human rubbish	1
Total	50

Table 3

<u>Soil/litter type</u>	<u>No. of sites</u>
Mixed deciduous	7
Mixed decid/conifer	1
Grass-sp. unknown	11
Mixed grass/herbs	15
Reeds	1
Other	6
No information supplied	9

Table 4

<u>Litter age</u>	<u>No. of sites</u>
Fresh	1
Old	22
Both	9
No information supplied	18

Table 5

<u>Soil type</u>	<u>No. of sites</u>
Heavy clay	3
Clayey	18
Peat	3
Loam	16
Sandy	2
Pure sand	3
No information supplied	5

MORPHOLOGY

Analyses were made for (a) numbers of pediferous segments and (b) body length. In both cases it was possible to compare results with data obtained from Italy.

a) Pediferous segments

Brolemann gives a range of 61-85 pediferous segments in males and 63-87 in females for C. vesuviana from France. British specimens have a much smaller range in variation with between 63-67 segments in males and 69-75 segments in females. Italian specimens have a range of variation of 57-75 in males and 59-87 in females (Minelli, pers. comm. 1984).

Male segmentation - British specimens

<u>No. of segments</u>	<u>No. of specimens</u>
63	2
65	15
67	7
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Total	24

Female segmentation - British specimens

<u>No. of segments</u>	<u>No. of specimens</u>
69	1
71	5
73	12
75	27
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Total	45

When data from Britain is compared with data from Italy it is noticeable that the British optimum occurs at 65 segments for males and 75 segments for females whereas the Italian optimum for males occurs at 67 segments and there is no clearly defined optimum for females, rather a spread between 67-75 segments. (See Tables 1 and 2 below)

Table 1

Male segmentation

<u>No. of segments</u>	57	59	61	63	65	67	69	71	73	75	
No. of specimens											
BRITISH	-	-	-	2	15	7	-	-	-	-	Total 24 specimens
ITALIAN	2	-	-	5	4	17	12	5	3	5	Total 53 specimens

Table 2

Female segmentation

<u>No. of segments</u>	59	61	63	65	67	69	71	73	75	77	79	81	83	85	87
No. of specimens															
BRITISH	-	-	-	-	-	1	5	12	27	-	-	-	-	-	-
ITALIAN	1	5	9	7	12	14	10	14	15	7	2	2	1	-	1

The British range in segmentation is 3 degrees (1 degree = 2 segments) in males and 4 degrees in females. The Italian data shows a range of 10 degrees of difference in males and 15 degrees of difference in females.

b) Body length

A small amount of data is available on the body length of British specimens and is here compared with a larger amount of data from Italian specimens. The range in body length in British males is as follows. The results are based on data from 16 specimens.

British specimens - Male body length

Minimum length - 26 mm
Maximum length - 53 mm
Average length - 37.4 mm

The range in body length in Italian males is as follows. The results are based on data from 53 specimens.

Italian specimens - Male body length

Minimum length - 15 mm
Maximum length - 52 mm
Average length - 34.1 mm

When the Italian data is ammended to include only males with 63-67 pediferous segments (the same range as in Britain) the average length for these specimens drops to 32.4 mm from a total of 26 specimens.

The range in body length in British females is as follows. The results are based on data from 34 specimens.

British specimens - Female body length

Minimum length - 21 mm
 Maximum length - 63 mm
 Average length - 40.8 mm

The range in body length in Italian females is as follows. The results are based on data from 101 specimens.

Italian specimens - Female body length

Minimum length - 11 mm
 Maximum length - 82 mm
 Average length - 30.6 mm

When the Italian data is ammended to include only females with 69-75 pediferous segments (the same range as in Britain) the average length for these specimens increases to 36.4 mm from a total of 53 specimens.

It is therefore noticeable that British specimens of C. vesuviana are generally larger than those from Italy. This may well indicate that only the more robust specimens can survive the British climate, however, further study is clearly required.

Body length comparison between British and Italian specimens of C. vesuviana

For male specimens

<u>Length mm</u>	<u>No. of British specimens</u>	<u>No. of Italian specimens</u>
11 - 15	-	1
16 - 20	-	3
21 - 25	1	6
26 - 30	6	5
31 - 35	1	15
36 - 40	1	11
41 - 45	2	4
46 - 50	3	7
51 - 55	2	1
Total	16	53

For female specimens

<u>Length mm</u>	<u>No. of British specimens</u>	<u>No. of Italian specimens</u>
11 - 15	-	29
16 - 20	-	13
21 - 25	3	7
26 - 30	5	5
31 - 35	5	9
36 - 40	6	8
41 - 45	4	10
46 - 50	2	7
51 - 55	3	4
56 - 60	1	4
61 - 65	5	-
66 - 70	-	2
71 - 75	-	2
76 - 80	-	-
81 - 85	-	1
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	Total 34	Total 101

Acknowledgements

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