THE ORCHID FAMILY IN GIBRALTAR.

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Abstract.

The orchid family is represented in Gibraltar today by a total of ten species. All species are rare and some very rare.

Orchids generally grow best in open grassy spaces which are not overgrown, fairly damp, and not too exposed. Habitats like these are few and far between in Gibraltar; so orchids are mainly restricted to roadsides, footpaths, firebreaks and clearings in the Maquis.

Old records from the 16th Century indicate that orchids were more frequent although the number of species was not that different. Old prints of Gibraltar show there was much less cover as trees were cut down for fuel, and goats roamed the Upper Rock. This meant that the habitat was more appropriate for orchids. Since then, suitable habitats have shrunk bringing about the decline in orchid numbers. The last remnants of the old orchid habitats can be found below the "unclimbable fence", an area which had goats roaming about for a longer period. Here, in the area known as The Lower Slopes, can be found the largest concentration of orchids in Gibraltar. This area is threatened by plans to build a road through it.

This paper will present the types of orchids found in Gibraltar, their distribution and abundance. The presentation will be illustrated with colour slides.

Resumen.

Las orquídeas están representadas en Gibraltar hoy por diez especies. Todas son raras y algunas muy raras.

Generalmente las orquídeas crecen mejor en localidades abiertas, algo húmedas y no demasiadas expuestas a los elementos. Habitats como éstos son muy pocos en Gibraltar, así que las orquídeas estan restringidas a los lados de las carreteras, senderos, corta-fuegos y claros en el matorral.

Textos del siglo XIX indican que las orquídeas fueron mas abundantes aunque existían aproximadamente el mismo número de especies. El matorral se cortaba y había cabras en el monte así que los habitats eran mas apropiados para las orquídeas. Desde entonces han disminuido los lugares mas idóneos para este grupo y así el número de orquídeas. Los últimos restos de los antiguos habitats se encuentran debajo del "unclimbable fence" ("la barrera insalvable"), la zona donde pastaban las cabras mas recientemente. Aquí, en la zona llamada "The Lower Slopes" (Las laderas bajas) se encuentran las concentraciones mas grandes de orquídeas en Gibraltar. Esta zona está en peligro puesto que hay un proyecto de construccion de una nueva carretera.

Esta presentación dará una descripción de la distribución y abundancia de las orquídeas de Gibraltar.

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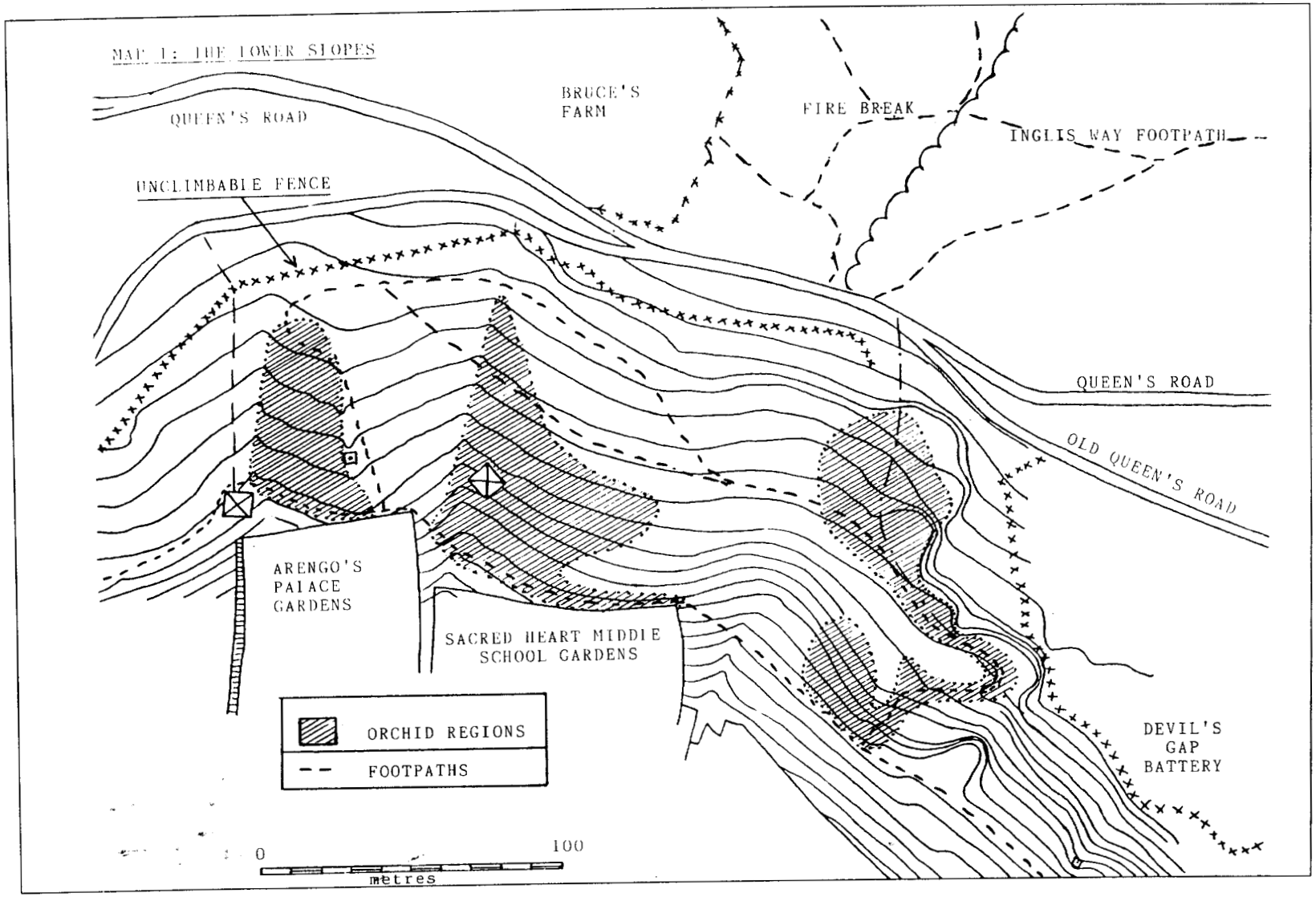
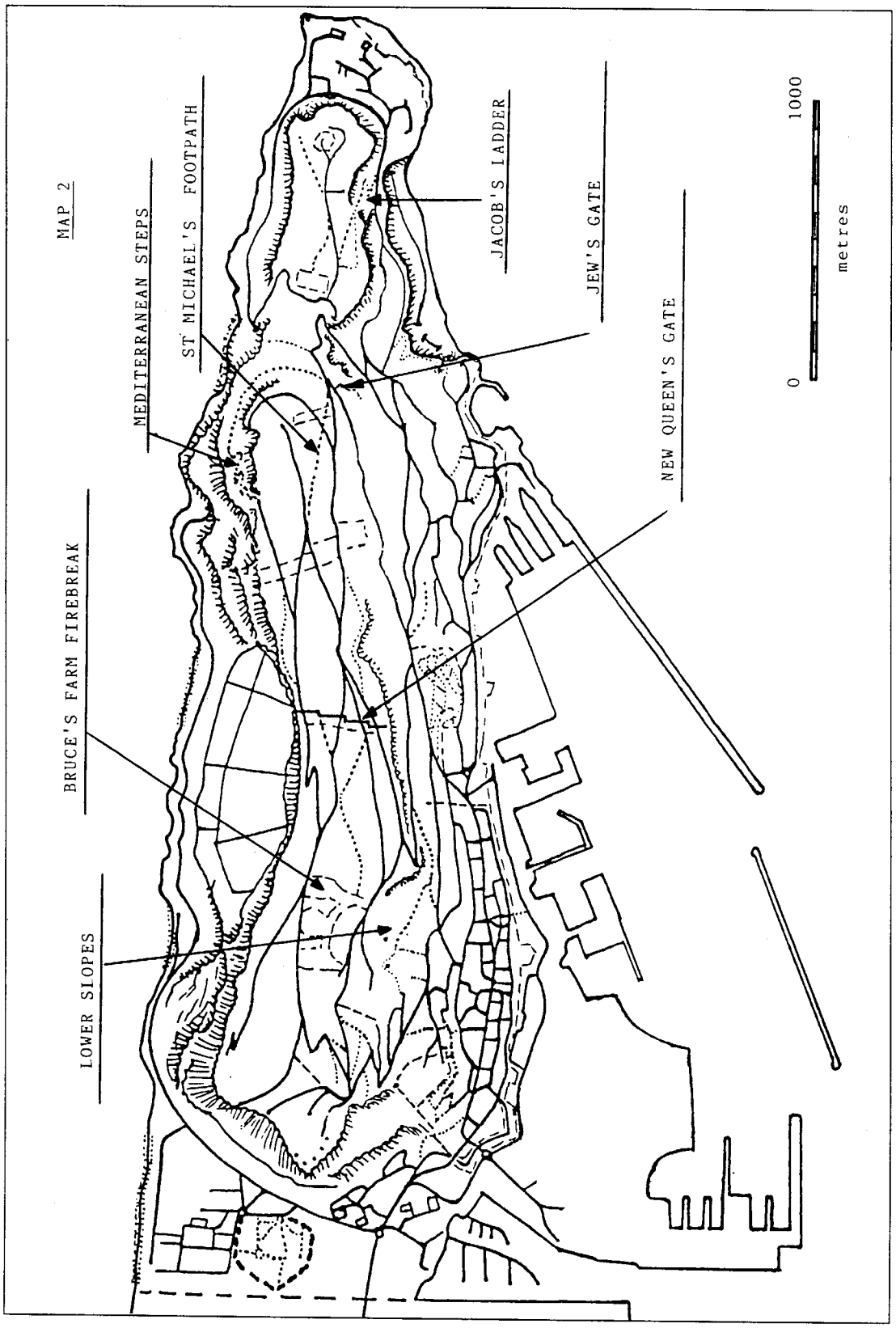
The Orchid family has always been of special interest to botanists. Their exotic shapes and colours, their fascinating manner of reproduction and their rarity have all contributed towards generating this interest. The European orchids, though less exotic than tropical ones, are none-the-less just as interesting and worthy of attention.

In Gibraltar today, this family is represented by 5 genera, with a total of 10 species. These are:

SPECIES	NUMBERS OBSERVED RECENTLY
Spiranthes spiralis (L.) Chevall	300 (Approx.)
Serapias parviflora Parl.	50 (Approx.)
Gennaria diphylla (Link) Parl.	400 (Approx.)
Anacamptis pyramidalis (L.) L.C.Richard	3
Ophrys apifera Hudson	2
Ophrys tenthredinifera Willd.	4
Ophrys lutea Cav.	40 (Approx.)
Ophrys bombyliflora Link	30 (Approx.)
Ophrys speculum Link	15
Ophrys fusca Link	40 (Approx.)


MAP 1: THE LOWER SLOPES
QUEEN'S ROAD
BRUCE'S FARM
FIRE BREAK
INGLIS WAY FOOTPATH
UNCLIMBABLE FENCE
QUEEN'S ROAD
OLD QUEEN'S ROAD
ARENGO'S PAIACE GARDENS
SACRED HEART MIDDLE SCHOOL GARDENS
ORCHID REGIONS
FOOTPATHS
DEVIL'S GAP BATTERY
0
100
metres

Mapa 1.


MAP 2
BRUCE'S FARM FIREBREAK
LOWER SLOPES
MEDITERRANEAN STEPS
ST MICHAEL'S FOOTPATH
JACOB'S LADDER
JEW'S GATE
NEW QUEEN'S GATE
0
1000
metres

Mapa 2.

As the numbers observed recently show, all of them are rare, and some very rare.

It is interesting to compare the present situation with some records from the 19th and early 20th centuries:

SPECIES	KELAART *(1846)*	DEBEAUX *(1889)*	FRERE *(1910)*	W-DOD *(1914)*	PRESENT *STATE*
Gennaria diphylla (Link) Parl	Y	Y	Y	Y	Y
Serapias cordigera L.	N	Y	Y	Y	N
Serapias lingua L.	N	Y	Y	Y	N
Serapias parviflora Parl.	N	N	N	N	Y
Orchislactea Poiret	N	Y	Y	Y	N
*Orchisitalica*Poiret	N	Y	Y	Y	N
Orchis variegata All.	Y	N	N	N	N
Spiranthes spiralis (L.) Chevall	Y	N	Y	Y	Y
Anacamptis pyramidalis (L.) L.C.Richard	N	N	N	N	Y
Ophrys aranifera Huds.	N	Y	Y	Y	N
Ophrys tenthredinifera Willd.	Y	N	N	Y	Y
Ophrys apifera Hudson	Y	Y	Y	Y	Y
Ophrys bombyliflora Link	N	N	N	N	Y
Ophrys speculum Link	N	Y	Y	Y	Y
Ophrys lutea Cav.	Y	N	Y	Y	Y
Ophrys fusca Link	N	N	Y	Y	Y

Y = Recorded
N = Not recorded

Old records indicate that orchids were more frequent than at present, and the reason for this most likely lies with the changes that have occurred in the vegetation of the Rock over the past two centuries. In the 18th century virtually all the trees in the Upper Rock were removed for use as fuel during times of siege. Subsequently, goats were introduced and allowed to roam the Upper Rock. This resulted in the Upper Rock presenting a rather barren appearance, as witnessed by old prints and photographs. This lack of tree cover provided excellent conditions for the spread of orchids, including species which are no longer found today.

In time, the Upper Rock was declared a military area, and fenced off from North to South by an "unclimbable fence", which still exists today. Goats still roamed the area below the fence. The result was that as the vegetation cover of the Upper Rock increased, so the number of orchids there declined, their habitats restricted to natural and man-made clearings, footpaths and roadsides. The exception, of course, was the area below the fence. This, till the removal of all

goats, remained cover-free. Today, much of this area has become overgrown, except for most of that between Calpe Road and Devil's Gap, and area known as the Lower Slopes (see Map 1).

The Lower Slopes serve as an important reservoir for the local orchids since all species, except three *(Ophrys apifera, Ophrys tenthredinifera* and *Anacamptis pyramidalis)* can be found there, including *Ophrys speculum* which is found no-where else on the Rock. The tree cover in this area, however, is gradually increasing and today, the number of orchids there is in decline. As an example, five years ago, a total of around 60 *Ophrys fusca* were noted there. In 1993 this had dwindled to around 20. Also, of the 40 or so *Ophrys speculum* observed then, today only around 15 remain. The bulk of all orchids in the area are found along the lower parts of the slopes, and in particular on the North-facing sides of the two gullies which cut across it (see Map 1). This is due to the fact that here they are less exposed, and the soil is richer and damper. I feel that it would be a worth-while project to manage the vegetation of this area such that much of the tree/shrub cover is reduced, providing the clearings necessary not only for the spread of orchids, but for the spread of other species which can only be found in this area.

However, the future of this habitat is rather bleak as there are plans to build a road through the area, linking Calpe Road with Europa Road. If this project goes ahead, then it will sound the death knell for the bulk of the orchid population on the Rock.

The other areas on the Rock where orchids can be found, (see Map 2), are rather scattered. As in the past, these include roadsides, footpaths, clearings and rocky outcrops within the Maquis, and man-made clearings such as the firebreaks. In all these areas, the habitats have a number of things in common. This means that the location of orchids in Gibraltar can be narrowed down to areas which have the following characteristics:

(a) They are reasonably clear of overgrowth, but not too exposed.
(b) They contain outcrops of limestone rock.
(c) The soil is rich and fairly damp.
(d) The vegetation is more-or-less grassy and not containing aggressive species such as *Oxalis pes-caprae,* the spread of which has been responsible for the demise of quite a number of plants.
(e) It has been observed that habitats which contains *Ranunculus bullatus* have an extremely high possibility of containing orchids.

Coming back to the firebreaks, of special note is the one around Bruce's Farm which, in the past, has been the home of quite a number of *O. fusca, 0. lutea, S. spiralis,* and S. *parviflora.* However, over the last few years the firebreaks have not been maintained, with the result that they are getting overgrown. At Bruce's Farm in particular, *Acanthus mollis* has taken hold and is spreading to such an extent that many species are being wiped out of the area, including the orchids. Though there are still a few *O. lutea* and *S. spiralis* to be found, sadly there are no longer any *0. fusca* or *S. parviflora.* Here again, then, there is a need for management of the habitat to improve conditions for the survival of the orchids, and also the survival of the many other species which can be found there.

The three rarest species have been declining in numbers over the past ten years. *Anacamptis pyramidalis* is only found along Mediterranean Steps. Ten years ago there were six plants observed. In time, one simply failed to re-appear, and two were destroyed when rubble was dumped over the site on an occasion when the footpath was being cleared. The

remaining three are in good condition.

Ophrys tenthredinifera has been spotted, in the past, in various places in clearings of the Maquis. The known sites have now become so overgrown that they have gradually failed to re-appear and only a small group remains along St. Michael's Path. It is quite possible that others may be growing unobserved, elsewhere.

The last *Ophrys apifera* to be observed on the Rock is growing at Jew's Gate. Though individual specimens have, in the past, been seen in places as scattered as Governor's Lookout, Jacob's Ladder, and above New Queen's Gate, these have failed to re-appear over the years. Again it is quite possible that undiscovered specimens may still be around.

In conclusion I would like to state that the prospects for the local orchid population are not very bright. If we wish to ensure their survival as part of our natural heritage then a concerted effort will have to be made to ensure the maintenance and protection of their habitat.

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