

THE DRAGON TREE

DRACAENA DRACO (L.) L.

NATURALISED IN GIBRALTAR.

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INTRODUCTION

The Dragon Tree *Dracaena draco* is a native of the Canary Islands, Madeira and Cape Verde. The fossil record indicates a former presence elsewhere in the Old World, and the species may have been known to ancient travellers. Thus, in *TARTESSOS*, Malaquer de Motes (1975) describes how Geryon is alleged to have been killed by Heracles by means of an arrow that pierced his three bodies and how from the blood sprang a tree which had red fruit similar to cherries. This may well have referred to the Dragon Tree. However there is no evidence that wild dragon trees survived in Europe in historical times. Indeed the species has been threatened in its existing natural range and is currently the subject of conservation efforts in Macaronesia.

The species has been grown in cultivation for hundreds of years, although relatively few large specimens are to be found in southern Iberia. Within Cadiz Province, there are notable large specimens in Cadiz and several in the Campo de Gibraltar (San Roque).

By far the largest concentration of planted Dragon Trees in the region, however, is on Gibraltar. There are forty specimens (not all planted) within the Gibraltar Botanic Gardens at the Alameda, which dates from 1816. These include two specimens about 13 m tall and several over 8m.

The most notable is in the garden of The Convent. This has a height of about 15m. A recently dead Dragon Tree in a private residence at Willis' Road has a height of 12m, while large specimens also exist in the garden of the Mount

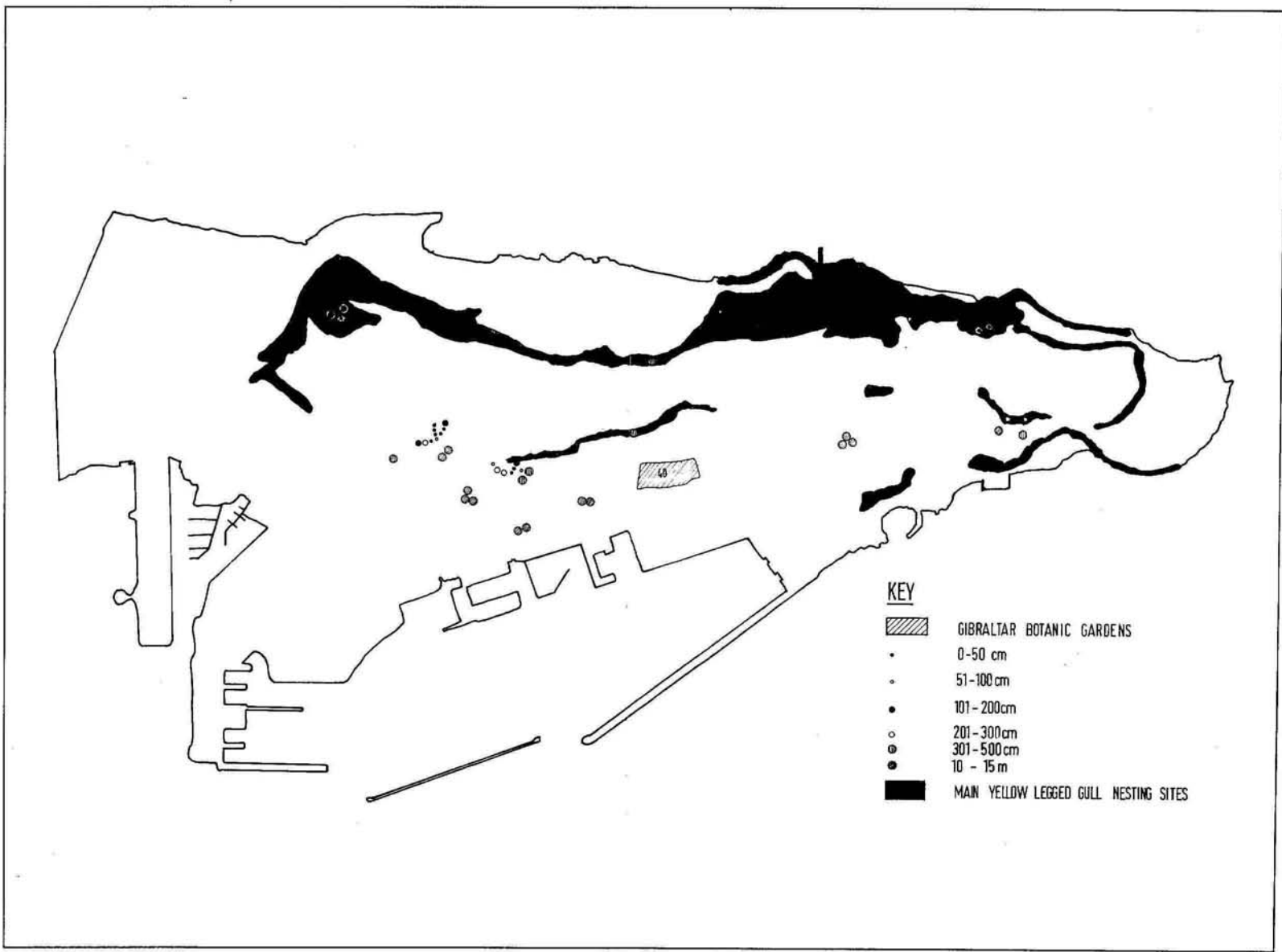
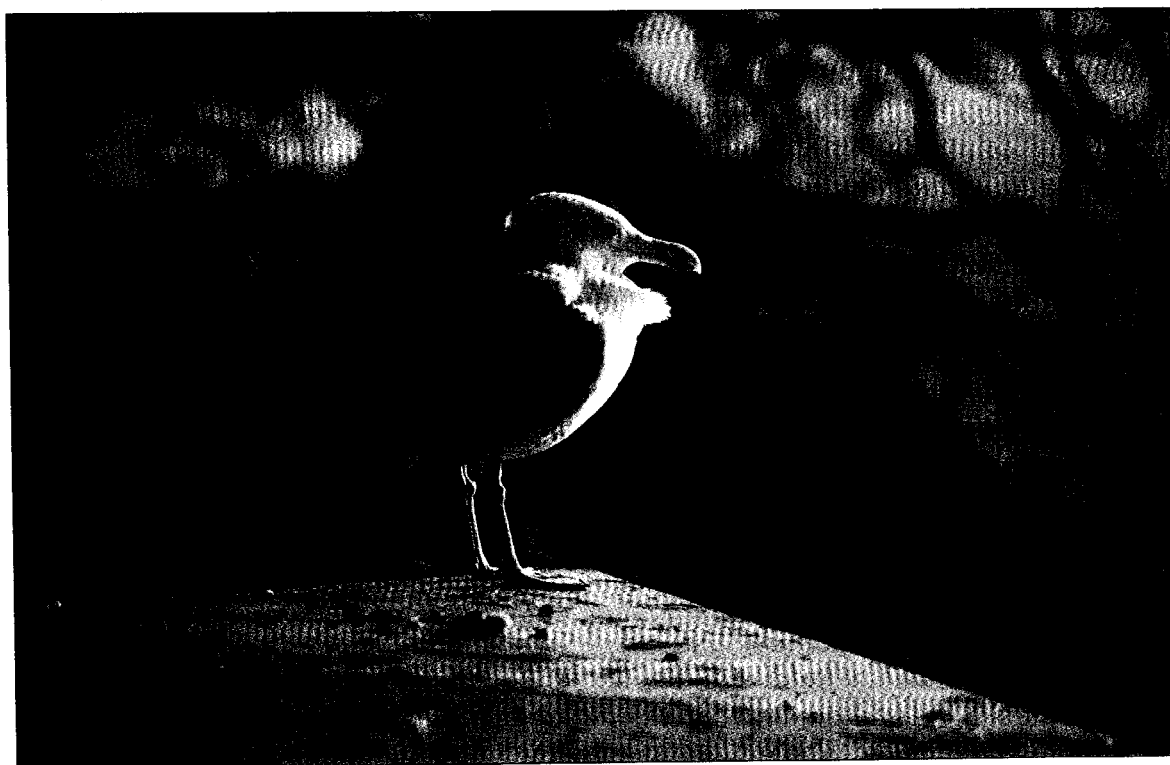


Figure 1. Distribution of Dragon Tree *Dracanea Draco* in Gibraltar 1993

(two of 8m and one of 10m), of the Gibraltar Garrison Library (one each of 10m, 12m and 13 m plus an unbranched one of about 15m), and one at Europa Pass of 13m. Conclusive aging of the species is not easy. The climatic conditions in Gibraltar differ from those in the tree's native islands. In addition, in the Alameda Gardens the trees have been subject to a considerable amount of shading from other species, notably Stone Pine *Pinus pinea* and Olive *Olea europaea*. This may have made the trees taller for their age and with thinner trunks than in more exposed sites. Dragon trees tend to grow taller in wet conditions before branching and so height in itself is no direct indication of age. Indeed watering in the past may be one reason why the dragon trees in the Alameda tend to be tall.

In a natural state in the native Canary Islands Dragon Trees are believed to flower and branch every fifteen years, allowing an approximate age to be arrived at from the number of times the tree has branched. In Gibraltar, especially in gardens, where there has been watering in the past, this method would suggest a minimum age. Such an assessment on the tallest trees in the Botanic Gardens, Garrison Library Gardens and the Convent suggest ages of just over 100 years minimum. It is possible (but not definite) therefore that they have ages of several hundred years.

There are however younger Dragon Trees growing elsewhere in Gibraltar where they have not been planted. Sites for these trees include the top of the eastern cliff and the disused water catchment at Rock Gun. A total of 29 such trees have so far been found. Figure 1 plots the distribution of these trees and Figure 2 shows the number according to broad size classes.



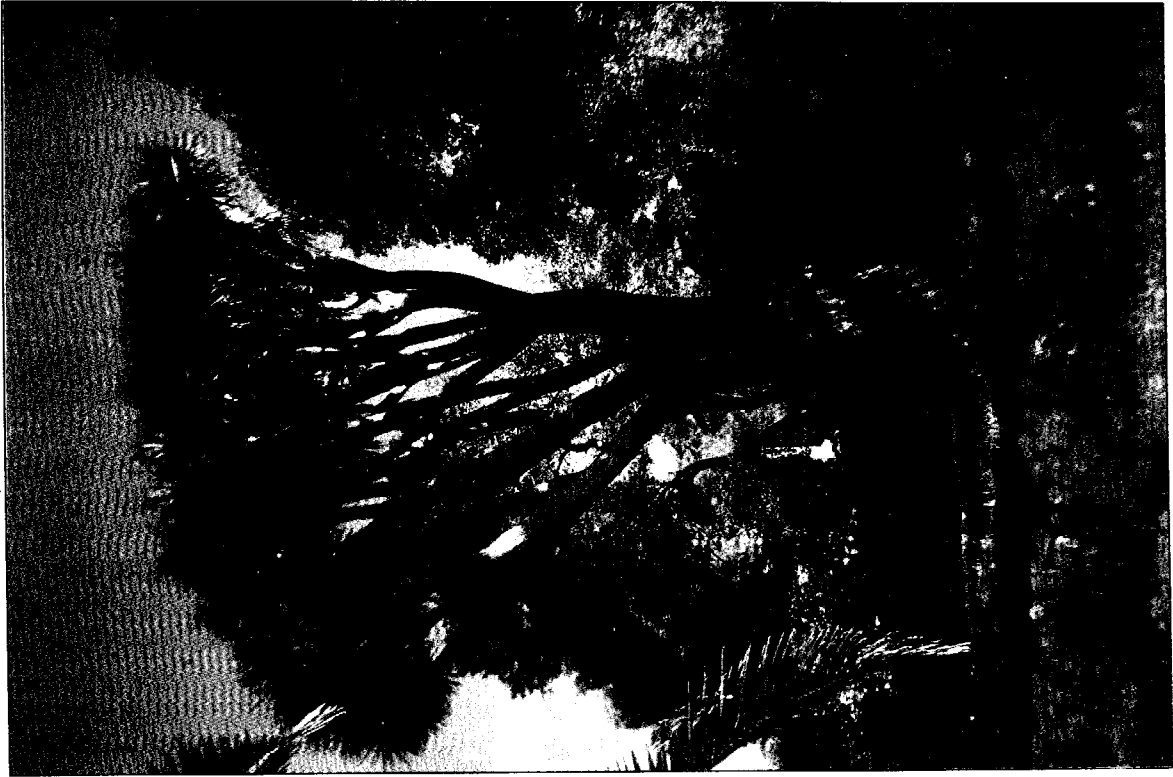
Yellow-legged Gull. *Larus cachinnaus*.



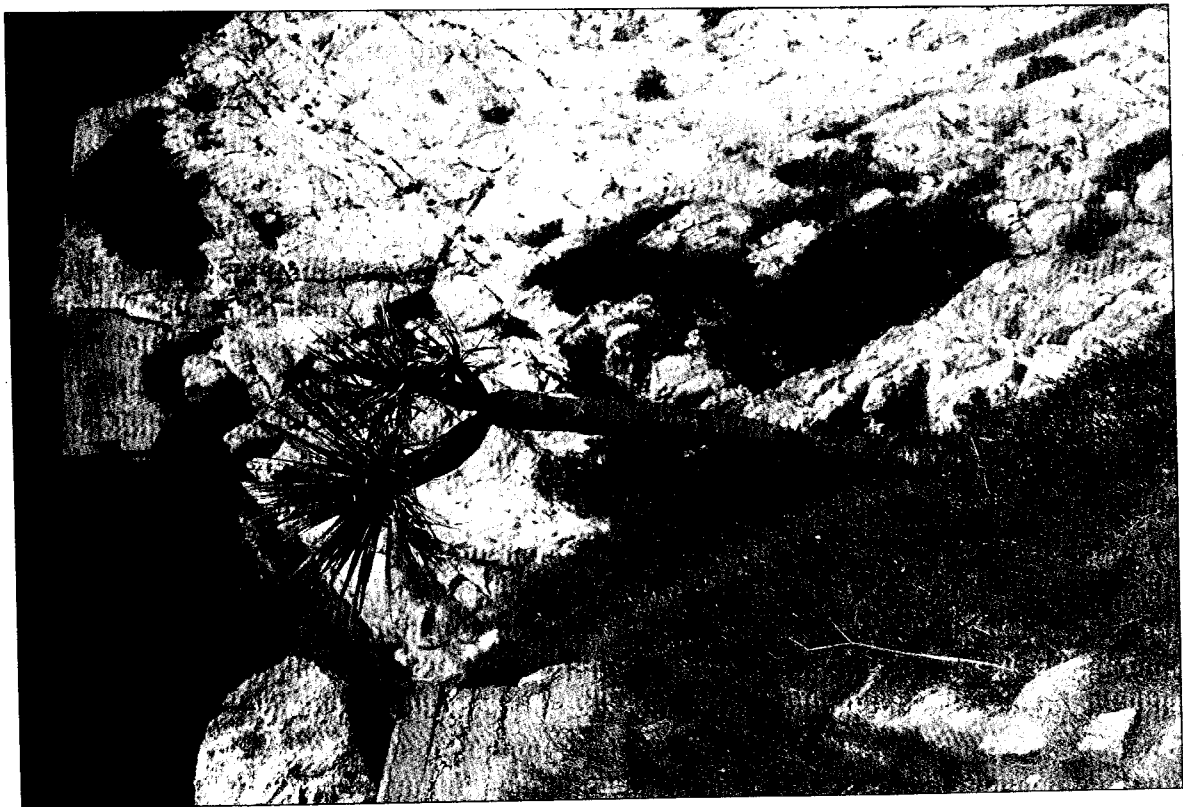
Fruiting Dragon Tree in the Gibraltar Botanic Gardens (1991).

Some of these trees outside gardens (those above 3m) have flowered, suggesting a minimum of about 20 years. Those within the gardens flower and set fruit readily. The most recent flowering age of most of the trees within the Gibraltar Botanic Gardens occurred in 1991. Only a few flowered in 1992 and no flowering was noted in 1993. Large scale germination of fallen seeds occurred in late 1993. In 1991 the dragon trees in the Botanic Gardens flowered in July and August and set seed in autumn, with ripe orange fruit on the trees through to January. At this time Yellow-legged Gulls *Larus cachinnans* were attracted by the fruit and regularly fed on them. Adult, subadult and juvenile gulls were all seen feeding on the fruit, sometimes aggressively defending their tree or driving away feeding gulls in order to take their turn on the resource.

Related gulls have been known to feed on fruiting trees and bushes, notably Olive *Olea* (Witt *et al.* 1981) and crowberry *Empetrum nigrum* (Belopol'ski & Shuntov 1980), and in Gibraltar Yellow-legged Gulls are also seen regularly taking the (also orange) berries of *Osyris quadripartita*. No other bird species has been seen feeding on Dragon tree fruit in Gibraltar, even though Spotless Starlings *Sturnus unicolor* and Blackbirds *Turdus merula* occur within the grounds of the botanic garden and feed on olives *Olea europaea*. Presumably the gulls would oust these smaller species from feeding sites on the trees. In the Canary Islands, blackbirds are known to feed on Dragon tree fruit, but there are no observations of gulls doing so (J. Rodrigo, pers. comm.).



Dragon Tree in the Gibraltar Botanic Gardens (1991)



Wild Dragon Tree at the summit or the Rock of Gibraltar.

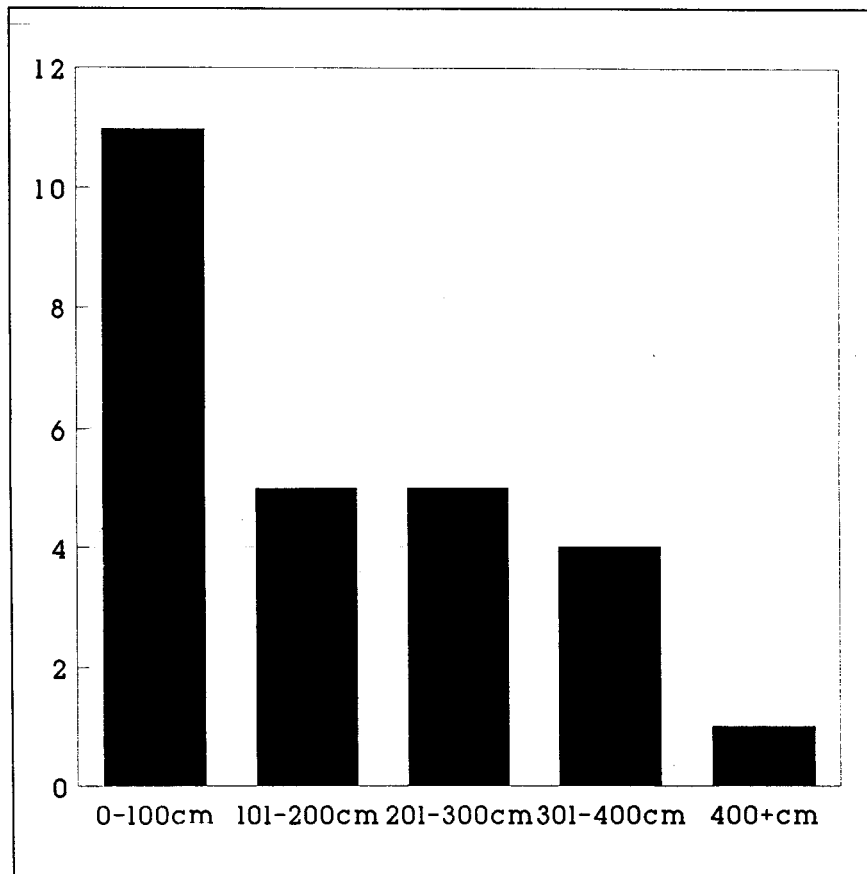


Figure2. *Dracanea draco* height classes. Heights of the plants in the wild.

The majority of locations where “wild” dragon trees are growing in Gibraltar are on or near cliffs, and in areas where Yellow-legged Gulls roost and nest, and it is likely that they are the chief agents for seed dispersal. The height distribution of “wild” dragon trees indicates a young population with over one third of the plants being under 1m in height. There is no evidence of dead dragon trees of one to three metres, so that it is not likely that the absence of dragon trees of a greater size is due to mortality above a critical size. The implication is that the spread of the species away from gardens did not occur earlier than perhaps 20 to 30 years ago. This would have coincided with a crop of dragon tree fruit about 30 years before 1991 for the taller trees, with the younger trees coming from fruit about 15 years later, with other trees resulting either from flowering between years of smaller numbers of trees or due to delayed germination of the seeds. Unfortunately no records of flowering and fruiting within the gardens exist before 1991.

It is documented that the Yellow-legged Gull population of Gibraltar started to expand in the early to late 1960s (Cortes *et al.* 1980). The cultural development of the species to exploit new food sources would in all probability have followed after this and would coincide therefore with the appearance of the majority of seedling Dragon Trees in the wild in Gibraltar.

It is proposed then that it is these large gulls, through their successful development of a relationship with Man, that have allowed this Macaronesian species to start to become established as part of the wild flora of a small part of the Iberian Peninsula.

Acknowledgements

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