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DENSITY OF LIZARDS IN MADEIRA

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SUMARIO. De uma forma subjectiva, a lagartixa da Madeira parece ser muito abundante. É porém difícil avaliar densidades com precisão. No presente trabalho, dão-se estimativas das quantidades presentes debaixo das pedras, em localidades escolhidas ao acaso com respeito à probabilidade de serem encontradas lagartixas. O número médio por $\frac{1}{2}$ hora de procura foi aproximadamente 2. Este é o limite inferior e é comparado com dados colhidos anteriormente com conjuntos de 4 a 8 armadilhas deixadas armadas durante $\frac{1}{2}$ hora. O número médio de lagartixas capturadas com estas armadilhas, em localidades abaixo de 300 m foi de 33, o limite superior. *Lacerta dugesii* não tem competidores naturais e tem uma alimentação muito variada. Estes factores contribuem para o seu evidente sucesso numa grande variedade de habitats nas ilhas.

The lizard *Lacerta dugesii* is very abundant on the Madeiran islands. It may be caught in large numbers using baited drop traps. In 1970 we collected many samples in this way, using four to eight traps at a time, which were left in place for about half an hour. The results indicated that sample size varies with altitude (table 1). This variation is probably partly due to climatic differences (Sjögren, 1972), and partly to the fact that the human population is denser at the lower altitudes. Lizards are particularly abundant around houses, refuse tips, picnic areas etc.

In 1981 we made a series of samples of molluscs at a low altitude between Ponta do Garajau and the end of the Ponta de São Lourenço, and also on Ilheu Chão and Deserta Grande. Each site was searched by one person for $\frac{1}{2}$ hr or by two people for $\frac{1}{4}$ hr each. This involved turning over stones to look for the snails. The number of lizards disturbed was scored at 91 sites on the transect. The results are shown in table 2.

There is a mean of two lizards per collecting site. This indicates the average density of resting lizards in the drier coastal parts of

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Madeira at sites picked at random with respect to their likelihood of supporting lizards. It is a minimum estimate, since active animals which were away from the sites at the time are not included. The distribution

Table 1. — Average size of lizard samples at different altitudes in Madeira. From Cook, 1979

| Height above sea level (m) | Number of samples | Average sample size |
|-------------------------------|----------------------|------------------------|
| 0-25 | 13 | 47.7 |
| 25-100 | 12 | 23.8 |
| 100-200 | 5 | 20.0 |
| 200-300 | 6 | 28.2 |
| 300-400 | 6 | 33.7 |
| 400-500 | 12 | 19.8 |
| 500-600 | 3 | 7.3 |
| 600-700 | 4 | 8.3 |
| 800-1000 | 9 | 6.4 |
| 1000+ | 4 | 6.5 |

Table 2. — Number of lizards found under stones in ½hr searches at coastal sites in Madeira and on the Deserta Islands

| Number of individuals | Number of sites |
|--------------------------|--------------------|
| 0 | 27 |
| 1 | 13 |
| 2 | 18 |
| 3 | 11 |
| 4 | 14 |
| 5 | 4 |
| 6 | 2 |
| 7 | 2 |

is significantly different from the Poisson distribution for the same mean, but that is probably because the density varies from place to

place. There were few individuals at sites in the vicinity of Machico and in the sandy area to the north of the Prainha. Higher densities occurred on the peninsula, especially near the Baía da Abra.

The present figures give a better idea of average density than records from traps which attract the lizards. One factor contributing to the relatively high density may be the absence of competitors. *L. dugesii* is not noticeably less common, however, on the Salvage islands, where it shares refuges with the gecko *Tarentola delalandii* and feral house mice (Cook, 1979). Another factor is the comparative absence of predators. Kestrels, which are common, eat them, and so do buzzards, which stalk them while walking on the ground (G. le Grand, personal communication). The cat has also become a predator since its introduction to the islands by man (Cook and Yalden, 1980). The hoopoe is a specialist on lizards in continental Europe; it has been established at various times on Porto Santo (Zino, 1969). A third factor which may be involved is that the species is herbivorous to quite a large extent, and so does not rely entirely on small arthropods for food (Elvers, 1977, 1978, Sadek, 1981). It may therefore occupy a broader niche than most species in the genus.

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