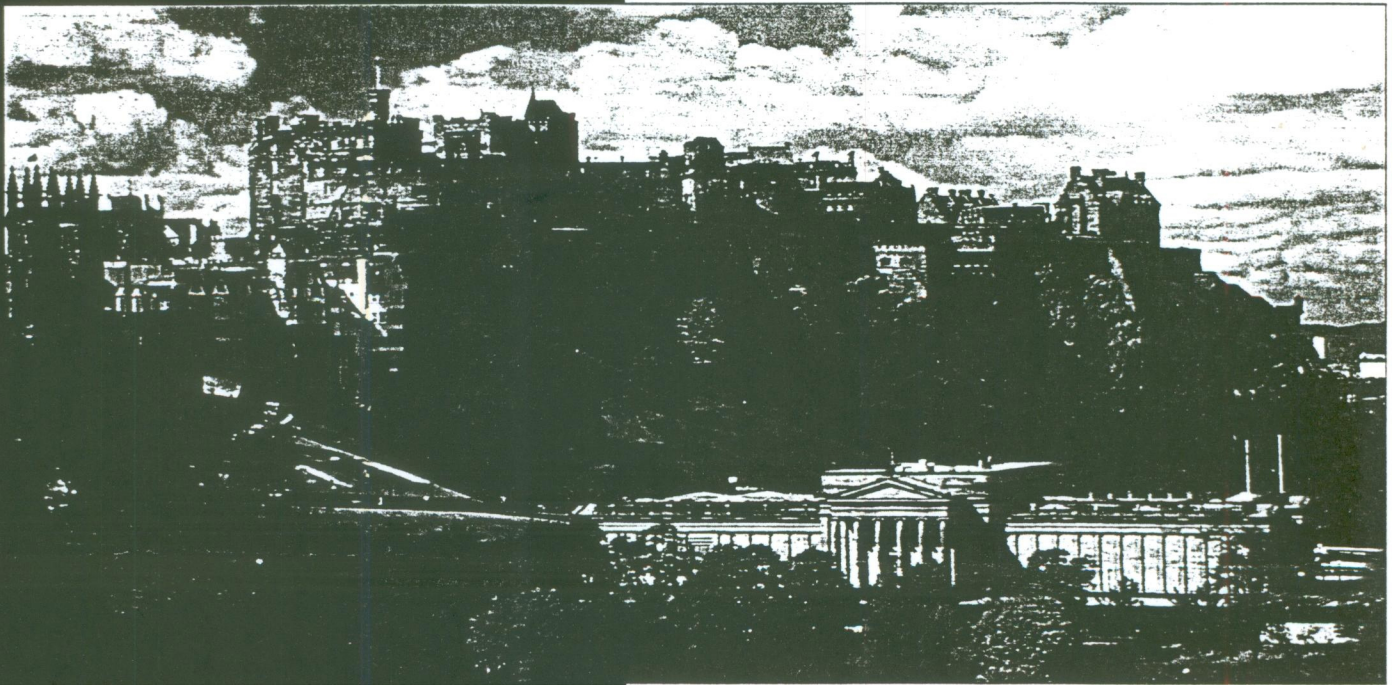


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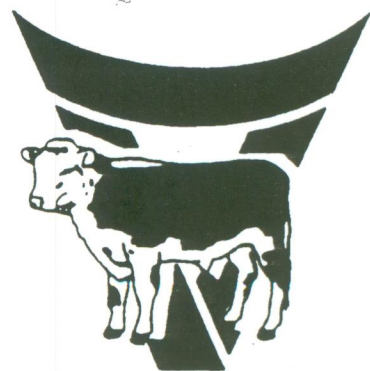
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## 53. Cattle Neoplasias On São Miguel Island - Azores

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### ABSTRACT

The authors present a retrospective study (1990-1995) of neoplasias observed on slaughtered cattle in São Miguel, and the results of 210 tumours samples that were submitted to histopathological studies.

### INTRODUCTION

The high number of cows with enzootic hematuria, third eyelid and eye tumours and photosensitization and skin tumours, observed in clinical practice and in meat inspection at the slaughterhouses of São Miguel, has stimulated the study of these diseases and the potential risk factors associated with them.

São Miguel is an island of the Azores archipelago, situated in the North Atlantic Ocean. About 75% of the total surface of the island (44503 ha) is used for permanent pasture, representing 85% of the usable agricultural land. The cattle population is about 90,000 animals, 44,000 of these are cows of Holstein-Friesian breed<sup>1</sup>. Dairy cattle production represents the greatest activity of the Azores' economy and is based on the best possible use of the grass produced in natural permanent pastures.

In these grazing lands there are several poisonous plants, some of them with carcinogenic, hepatogenic and photodynamic compounds<sup>2,3,4</sup>. The bracken fern (*Pteridium* spp.), lantana (*Lantana camara*), buttercup (*Ranunculus* spp.) and others are common, mainly at the base of hedgerows and fences, and wherever the ground was very steep with uncultivated land. The consumption of these potential hazardous agents (ptaquiloside, lantadene) by cattle may be one of the major causes of the neoplasias<sup>4,5</sup> and the pathological process associated with them.

The third eyelid and the skin tumours (usually a consequence of a photosensitization process) were suggested to be a result of the exposure of the eyelid, vulva and hairless and non-pigmented skin to high levels of solar radiation<sup>6</sup>, because there is no shade or cow-sheds and also to some infections such as papillomatosis<sup>7</sup>.

### METHODS

To obtain confirmation of the suspicion of high level of tumours, a retrospective study (1990-1994) was made, about the pathological conditions responsible for the rejection of whole carcasses in 24,086 adult cattle (females and males more than 2 years old) slaughtered in Ponta Delgada abattoir. The cattle population studied consisted almost totally by dairy cows at the end of their productive life. The data obtained was compared with that from 1995 since an official decree<sup>8</sup> came into force in February 1995, concerning the compulsory slaughter of animals with macroscopic neoplasias.

About 200 tumour samples were collected from slaughtered animals during the routine post mortem inspection and 19 third eyelid tumours were obtained from surgical excision. The material was fixed in 10% neutral buffered formaldehyde and proceeded by histopathological conventional techniques.

### RESULTS

The results obtained from the retrospective study showed that tumours were responsible for 30% of whole carcass rejections, and that 1% of all the slaughtered adult cattle showed tumoral lesions. The official decree has changed the number and the pattern of cattle tumour distribution. In 1995 the number of tumours found was nearly 7 times greater than the average of the last five years. It has become evident that the bladder tumours increased from 28.3 to 48.7% of all neoplasms identified. The urinary bladder, eye and skin tumours accounted for 2/3 of the neoplasms reported.

The results obtained from histopathological analysis of 210 tumour samples collected from different animals are presented on table 1.

TABLE 1: Distribution and anatomopathological classification of 210 tumour samples

SAMPLES	TOTAL/%	MAJOR NEOPLASM TYPES		
			TOTAL	%
Bladder	93 / 44,2	Transitional cell carcinoma	38	40,8
		Haemangioma	17	18,2
		Adenocarcinoma	9	9,6
		Hemangiosarcoma	9	9,6
		Others	20	21,5
Eyelid and Eye	67 / 31,9	Squamous cell carcinoma	59	88,1
		Others	8	11,9
Skin	30 / 14,2	Squamous cell carcinoma	22	73,3
		Others	8	26,6
Miscellaneous	20 / 9,5	Squamous cell carcinoma (tongue, rumen)	4	20
		Adenoma (thyroid)	3	15
		Others	13	65

## CONCLUSIONS

This work revealed the high prevalence of neoplasms in adult cattle. The data obtained from the retrospective study (1990-1994) are underestimated, because more animals were slaughtered with tumours in 1995 than in the last five years. This may be attributed to the fact that many animals with tumour lesions were not taken to the abattoir before this law.

Based on these facts, we consider that São Miguel island may be an ideal natural laboratory to study neoplasms and that this problem deserves more attention in order to find the carcinogenic agents, and further, if there is some connection between them and public health.

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