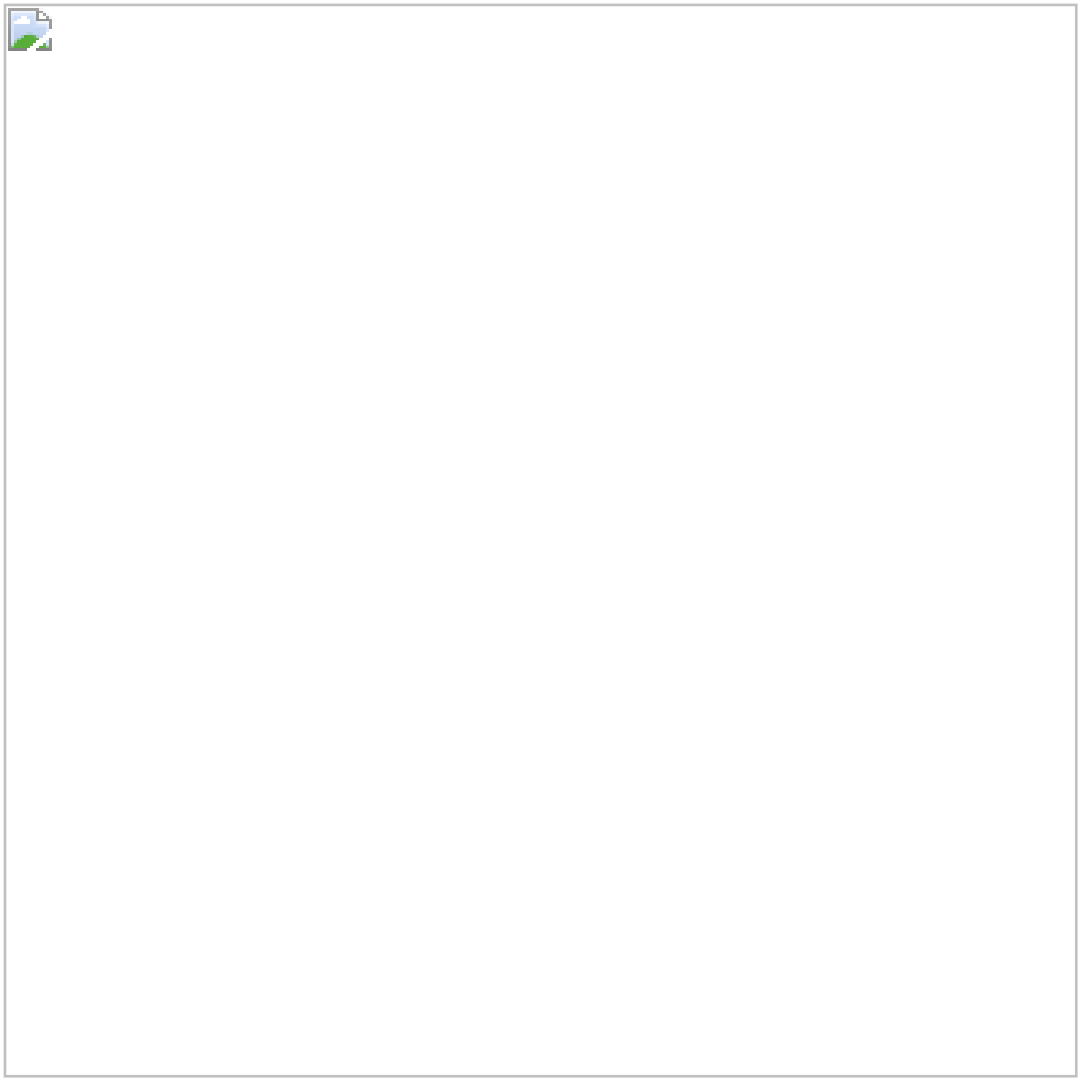

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TRICHOMONIASIS IN THE HAWAIIAN BARRED DOVE

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Abstract: Two barred doves found in the South Kona district of the island of Hawaii were diagnosed as having trichomoniasis on the basis of gross and microscopic lesions. This brings the confirmed list of columbid species susceptible to natural trichomoniasis to four and is the first report of the disease from columbids in the Hawaiian Islands.

Trichomonas gallinae occurs in every geographic area where pigeons or doves exist. However, the disease (trichomoniasis) caused by this organism has been found to occur naturally in only three species of columbids: feral pigeon (*Columba livia*), mourning dove (*Zenaidura macroura*) and the inca dove (*Scardafella inca*).[6] Recently Kocan and Sprunt[5] reported trichomoniasis in wild caught, laboratory-reared white-crowned pigeons (*C. leucocephala*), but it has not been reported in free-living individuals.

In March 1973 two barred doves (*Geopelia striata*) which were unable to fly were picked up on a cattle ranch in the South Kona District of Hawaii. The birds had large caseous masses in their throats and were in poor flesh. Both specimens were frozen and sent to the Patuxent Wildlife Research Center for further laboratory examination.

METHODS AND RESULTS

Necropsy revealed that the lesions extended through the esophagus into the musculature of the head and neck. In both cases the lesions were sufficiently large to occlude the esophagus, thereby causing the emaciated condition of the birds. This was verified by the absence of food in the gizzard and intestines.

Histologic examination of hematoxylin-eosin and giesma stained sections of the affected area revealed a typical response to *T. gallinae* invasion. A central necrotic area was bordered by an area of inflammation characterized by lymphocytic infiltration. On the border between these two areas the parasite could occasionally be found. The histologic lesions were the same as described in the domestic pigeon by Mesa et al.[7]

All attempts to incriminate other organisms failed. Although *Candida albicans* was isolated in Sabouraud's liquid medium from the throats of both doves, it could not be seen associated with lesions in periodic acid-Schiff stained sections. A diagnosis of pox also was eliminated, based on the absence of cytoplasmic inclusion bodies.

DISCUSSION

The microscopic presence of what appeared to be *T. gallinae*, the typical gross lesions, and similar pathogenesis warrant the diagnosis of trichomoniasis. If correct, this brings the confirmed list of columbid species susceptible to natural trichomoniasis to four and it is the first confirmed case of the disease from wild Hawaiian columbids. Since the specimens had to be frozen in order to ship them to a laboratory, confirmation of the causative organism by infection of susceptible hosts was impossible.

Trichomoniasis has been reported from Hawaii[5] but only from homing pigeons belonging to the Army Signal Corps. Alicata[1] lists the parasites of several species of Hawaiian columbids but makes no mention of *T. gallinae* from barred doves. Whether a pathogenic strain of *T. gallinae* was introduced to the Islands with the original wild columbids or whether the Signal Corps flock was the source can only be speculated. Whichever the case, it would appear that the small area and geographic isolation of the island could result in a catastrophic effect on the columbid population if an epizootic of trichomoniasis occurred on the same scale as is frequently seen in North America.[3,4] Even if the population were not totally eliminated, the drastic reduction in the gene pool could lead to reproductive failure and ultimate extinction. Such a catastrophe would surely bolster the Island's reputation for having the largest number of extinct species in the world.[2]

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