

## ISOLATION OF *MICROSPORUM AUDOUINII* FROM A DOG\*

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The dermatophyte, *Microsporum audouinii*, is the most common cause of epidemic tinea capitis of children in this country. Epidemics involving thousands of school children have been reported from all parts of the United States. This fungus is considered by most investigators to be anthropophilic. However, there are recorded in the literature three cases of lower animal infections. In two instances *M. audouinii* was isolated from dogs (1, 2) and in one case from a monkey (3). That lower animals may be parasitized by this dermatophyte is apparent; however, the paucity of reported cases would indicate that such infections are rare.

The present paper records the isolation of *M. audouinii* from a dog found to be spontaneously infected by this fungus.

### REPORT OF A CASE

In response to an advertisement in a local newspaper, a resident of Pittsburgh, Pennsylvania purchased a 10-week-old, female, boxer puppy from a local breeder on March 10, 1956. At the time of the purchase, the prospective owner carefully examined the dog for signs of visible abnormalities. The puppy appeared to be normal in every respect and the animal was brought home. There were no other pets in the household.

Approximately two weeks before this family acquired the dog, two of the owner's children, both males, 8 and 9 years of age respectively, were found by a local physician to have tinea capitis. The diagnosis was made on the basis of clinical appearance and fluorescence of hairs under the Wood's lamp. Cultures were not taken to determine the species of dermatophyte involved. The other members of the family, which included the man himself, his wife, age 36, and two daughters, 13 and 14 years of age respectively, were all normal.

On March 16, 1956, the man noticed the development of small erythematous patches of alopecia on various parts of the puppy's body. On March 19, 1956, the dog was taken to a local veterinarian for diagnosis and treatment of the dermatitis. The attending veterinarian examined the puppy and found multiple, circular, scaly, erythematous areas of alopecia, up to 3 cm. in diameter, on the ventral surface of the abdomen and chest and on the anterior surface of the left front leg. A clinical diagnosis of ringworm was made, and the attending veterinarian submitted, for mycologic examination, hair and skin scrapings collected from the lesions.

On the basis of the clinical diagnosis the veterinarian prescribed the application of tincture of iodine to the affected areas each morning and a medicated

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ointment each night. The infected puppy made a rapid and apparently complete recovery. On April 7, 1956, three weeks later, the dog appeared to be normal.

To date, the owner's sons are reported to be responding satisfactorily to the physician's prescribed medications. The other members of the family are still normal. The puppy has not shown signs of reinfection.

#### MYCOLOGIC IDENTIFICATION

At the laboratory the clinical materials collected from the puppy were examined under the Wood's light. A few hairs were observed to emit the bright, greenish fluorescence typical of *M. audouinii* infection. Microscopic examination of these hairs mounted in 10% KOH revealed an ectothrix mosaic of small spores (2-3 u). In addition, mycelium was observed in the skin scrapings. Multiple cultures were made from the hairs and skin scrapings by using the selective isolation medium developed by Georg *et al* (4, 5). In 14 days, growth typical of *M. audouinii* appeared. The colonies were white to tan in color, with a smooth velvety surface. The reverse side of the culture showed a pinkish-tan color. Microscopically, branching mycelium and chlamydo spores were noted. Conidia could not be found. Subcultures on wort and potato-dextrose agar failed to develop spores. Growth on rice medium (6) was meager. After three weeks, only a brownish discoloration of the rice was observed. No aerial mycelium or macroconidia developed on this medium. On the basis of these findings the organism was identified as *M. audouinii*.

#### COMMENTS

The common occurrence of *M. audouinii* infections in man and the rarity of cases involving lower animals would indicate that this fungus is essentially a human pathogen. It is believed by most investigators that infections are transmitted directly from man to man or indirectly by furniture or articles of clothing contaminated with infected hairs or fungal elements. No good evidence is available to indicate that animals play a role in the epidemiology of this disease. In the present report it would appear that the infection was transmitted by the owner's children to the young puppy. However, evidence that this occurred must be considered presumptive since cultures were not taken from the human cases. The fact that lower animals can become infected by this dermatophyte would suggest that they may on rare occasions be a source of human infections. It is possible that extensive cultural studies of animal contacts of human cases might revise our present concepts of the part played by animals in the epidemiology of *M. audouinii* infections in man.

#### SUMMARY

A case of ringworm in a 10-week-old boxer puppy caused by *Microsporum audouinii* is reported. The mycologic findings and a discussion of the significance of this case are presented.

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