Summary and Conclusions

Of the six cases described, four had ulcerative colitis and ankylosing spondylitis, one had Crohn's disease and ankylosing spondylitis, and one had ulcerative colitis, Crohn's disease, and ankylosing spondylitis.

It is believed that these associations are more than those of chance.

There seems to be a definite relationship between diseases of the intestines and spinal disorders.

Ankylosing spondylitis can be a non-specific reaction to diseases of the intestinal tract.

We thank Dr. W. S. Tegner for his advice and criticism, and Dr. A. Freedman for Case 2.

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MICROSPORUM CANIS—AN INTENSIVE OUTBREAK

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Cases of ringworm diagnosed at the Royal Victoria Hospital, Belfast, and the Royal Belfast Hospital for Sick Children are notified to the medical officer of health of the area in which the patient resides. On January 15, 1957, one such notification reported *Microsporum canis* infection in three adults, two dogs, and a Persian kitten—this comprising all the individuals living in one household. The diagnosis had been confirmed by examination of the animals under Wood's light (ultra-violet light screened with nickel oxide glass), when the typical bright pale-green fluorescence was obtained. The kitten was noted to be most heavily infected, and, as it had been acquired on December 17, 1956, it was believed to be the source of the infection. It had been obtained from a local breeder of Persian cats.

All 12 of the animals in the breeder's cattery were examined under Wood's light, and two tom-cats showed typical fluorescence. Confirmation of the diagnosis was obtained by sending affected hairs to the laboratory, where *M. canis* was cultured.

Two litters had been born in September, and the first two kittens were sold in October, but the breeder then

noticed bald patches on the face of the remaining kittens and deferred selling them until this condition improved. Further sales took place from November 25 to December 17, 1956, and, in all, 10 kittens had been sold in the period October 24 to December 17.

Summary of Contacts

Kitten	Date of Purchase	Human Contacts		Animal Contacts in Home	
		Infected	Not Infected	Infected	Not Infected
No. 1	24/10/56	2 children (1 M, 1 F), 1 adult (F)	1 adult (M)	0	0
„ 2	25/10/56	2 children (1 M, 1 F), 1 adult (F)	1 adult (M)	0	0
„ 3	11/12/56	2 children (2 F)	2 adults (1 M, 1 F)	0	0
„ 4	12/12/56	1 child (F), 1 adult (F)	1 adult (M)	0	0
„ 5	13/12/56	1 adult (F)	1 adult (M)	0	0
„ 6	13/12/56	4 children (4 F)	2 adults (1 F, 1 M)	0	0
„ 7*	13/12/56	3 adults (1 M, 2 F)		2 dogs	0
„ 8	17/12/56	1 adult (F)	1 child (F), 1 adult (M)	1 cat	0
„ 9†	17/12/56	3 children (2 M, 1 F)	10 adults (5 M, 5 F)	3 cats	3 cats
Total		22 (5 M, 17 F)	20 (12 M, 8 F)	6	3

* This kitten was responsible for the infections which started the investigation.

† This kitten had passed through four households before it was finally located.

The addresses to which the kittens had been sold were obtained and visited (see Table). We were, however, unable to complete the investigations in respect of a kitten sold on November 25.

Of persons exposed to infection from the kittens 14 of 15 children (93%) and 8 of 27 adults (30%) are known to have been infected.

The common sites for lesions were the face, neck, forearm, and backs of hands. In only two cases were the scalp and the hair affected. The most extensive infection was in a girl of 8, whose neck, face, trunk, and scalp were involved.

The sex distribution of the cases was predominantly female (17 F., 5 M.), perhaps because many of the kittens were bought as pets for girls. Only one adult male was affected.

Investigation in Retrospect

The breeder recalled that all kittens born after the purchase of a tom-cat from Leeds in February, 1955, had soon shown patchy alopecia of the face. The tom-cat itself had suffered from a skin condition on arrival, and, although the breeder and her two children developed ringworm within three weeks after its arrival, no one had thought of blaming the newly acquired tom-cat. Three kittens born on the breeder's premises before the arrival of the Leeds tom-cat were traced and no cases of ringworm were reported from these three households.

All the kittens born between February, 1955, and September, 1956, could not be traced, but visits to six households receiving kittens during this period revealed that three of these kittens had given rise to four cases of ringworm; the other three kittens produced no cases, but there were no children in these last households.

It was confirmed that *M. canis* infections have been endemic among cats in Leeds in recent years (La Touche, personal communication).

Examination under Wood's light of cats belonging to neighbours of the breeder and of several pedigree Persian cats elsewhere showed no infection. The case against the tom-cat was considered proved.

One other interesting point emerged from these investigations which had stimulated an animal-lover to report that she had visited the breeder's premises on one occasion and had fondled the cats. She then developed a patch of ringworm on her thigh 17 days later, and a second patch appeared near the original site in a further five days. This gives an incubation period of 17 to 22 days. The affected part of the thigh was that area where a finger-nail would rub when adjusting a stocking suspender.

Comment

The high infectivity rate is notable—93% of children and 30% of adults exposed being affected. It was considered that the degree of exposure was responsible, as the kittens would be frequently fondled by the children, while their mothers performed the daily combing of the long hairy coat.

The fact that scalp lesions due to *M. canis* regress at puberty (Kligman and Anderson, 1951), "albeit slowly," has given rise to the impression that adults are relatively resistant to this type of ringworm. The present outbreak does not lend support to this view, as both adult humans and cats were infected, and it would appear that the degree of exposure might be the factor responsible for the difference in age incidence. Most of the lesions occurred on the glabrous skin, whereas a high percentage of *M. canis* infections seen in hospital practice occur on the scalp. This would suggest that the real incidence of this infection is generally greatly underestimated, as the body lesions, being easily treated, never reach hospital clinics.

The circumstances of the outbreak produced an excess of females over males infected, in contrast to previous outbreaks described (Beare and Cheeseman, 1953), where boys were more commonly affected than girls (ratio 2 : 1). However, in these cases stray cats were usually traced as the source of the infection. The sex incidence of scalp infection shows a higher percentage of boys, because the long hair of girls protects the epidermis of the scalp.

All the cases occurred within a few weeks of the arrival of the kitten in the household, and were obvious kitten-to-child transmissions. No case of child-to-child transmission was noted, and no further cases occurred after the infected kittens and cats had been destroyed. This would suggest that child-to-child transfer may be an even less important factor in the spread of the infection than noted by Duncan (1945) and that the main source of infection is the infected kitten or dog. General practitioners, while generally adept at diagnosing the ringworm infection, were unwilling to point suspicion at the recently acquired expensive kitten—perhaps the name *M. canis* is misleading. Some of the new owners, however, suspected the kittens and brought them to experienced veterinary surgeons. As the kittens all appeared clinically free from any infection they were returned to their owners, who were reassured. This confirms the advice given by La Touche (1952) that all kittens and cats associated with human cases of *M. canis* should be examined under Wood's light, as generally there are no obvious clinical lesions. In dogs and puppies, and sometimes with short-haired cats, the condition is more apparent, as depilated or desquamated areas are frequently present.

The necessity for close co-operation between the health department and local veterinary surgeons when cases of *M. canis* infection arise is stressed so that no affected animals are missed. As frequent false types of fluorescence are seen, anybody using Wood's light should be familiar with the typical pale-green fluorescence which is given by hairs affected with the microsporum fungus.

We realize that the condition often undergoes a spontaneous cure, but are unaware of any proved treatment for the infection in cats and dogs. As the fungus can remain dormant in the spore stage for up to a year, special difficulties arise when the condition occurs in breeding catteries or pet shops, and it then becomes a special problem for the local health authorities.

Summary

An outbreak of ringworm due to *Microsporum canis*, giving a high infectivity rate (93% children and 30% adults affected) and unusual sex distribution (M./F. 1/3.4), is described.

Epidemiological investigations revealed the source of the outbreak.

An opportunity to confirm the incubation period (17–22 days) is noted.

The necessity of ascertaining and dealing with the animal reservoir as the essential factor in controlling this infection is stressed.

The role of a cattery in spreading infection throughout a community is noted.

Our thanks are due to Dr. J. Martin Beare (who referred the original case) for his assistance in compiling this report; Dr. V. D. Allison and the staff of the Northern Ireland Public Health Laboratory for isolating and culturing the fungus; local general practitioners and veterinary surgeons for their close co-operation; and Dr. J. B. McKinney, Dr. W. G. Swann, and Dr. S. Hayes for permission to publish this report.

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Medical Memorandum

Traumatic Aneurysm Treated by Excision, and the Effect of Chlorpromazine

The following two cases are recorded in view of the increasing interest in the surgery of aneurysms. Both, moreover, were unusual in site. One followed a trivial commonplace injury, and the other presented interesting anastomotic features. The most satisfactory treatment for aneurysm is excision, preferably with arterial replacement, for which a prepared artery or plastic tube is required. If excision is impracticable then an obliterative operation may be attempted or the aneurysm ligated proximally or distally. Excision alone seemed to be indicated in our cases, neither stored arteries nor suitable plastic material being available for replacement.

In the treatment of subclavian aneurysms the record in the past has been a poor one and history has recently been summarized by Moloney (1955). The greatest dangers lay in operative blood loss and in the effects of sepsis. Proximal ligation alone resulted in considerable mortality. Excision was practised on occasion. Saigo (1906) was the first to excise an aneurysm of the subclavian artery successfully, and Herzen (1910) recorded a further case. Von Haberer (1915), Braithwaite (1920), and Moloney (1955) each excised an aneurysm at this site with recovery of the patient.

CASE I: ANEURYSM OF THE SECOND PART OF THE RIGHT SUBCLAVIAN ARTERY

On January 12, 1956, a 30-year-old married Chinese was involved in a fight during which a penknife was plunged into his neck above his right clavicle. He was admitted to hospital suffering from haemorrhage from this wound, where it was noted that the posterior triangle on the injured side of the neck was tense with blood clot. A little blood still oozed from the wound. The right radial pulse was palpable but feeble. He was transfused, a pressure dressing was applied above the right clavicle, and he made a steady recovery. The skin wound was not sutured.