

A WORM IN THE EYE

A FAMILIAR PARASITE IN AN UNUSUAL SITUATION

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The presence of a worm in the orbit or its contents is an alarming presentation, but is not as uncommon as people in temperate zones believe. In Central Africa it is not uncommon for the wandering filaria, *Loa loa*, to migrate through the orbit or even the eyeball in the course of its migrations through the subcutaneous tissue. This worm is the cause of Calabar and fugitive swellings and is transmitted by the mango fly, *Chrysops*. The adult *Loa loa* does not as a rule do a great deal of damage but, on the other hand, another filarial worm *Onchocerca volvulus* is sometimes known as the blinding filaria because the migrations of its microfilariae frequently damage the eyeball beyond repair. In endemic zones such as the South Kavirondo district of Kenya it is by far the commonest cause of blindness. It is transmitted by the bite of the buffalo gnats, *Simulium damnosum* and *S. neavei*. Other filarial worms have also been found in the eyeball. One reported from Durban by de Meillon and Gillespie (1943) was considered to be possibly *Filaria conjunctivae*, Addario, 1855. The oriental eye-worm, *Thelazia callipaeda*, Railliet and Henry, 1910, commonly parasitizes the conjunctival sac of the dog, and its American counterpart *Thelazia californiensis* has been found in the cat, sheep, deer, and black bear. Human infections have been reported. These worms are up to 17 mm. long by 0.85 mm. in diameter.

The larval forms of some of the tapeworms may be found in the orbit. In the Cyclophyllidean tapeworms such as *Taenia solium*, the pork tapeworm, or *Echinococcus granulosus*, the cause of hydatid disease, the larval form is cyst-like, in the first case being a cysticercus and in the second being a hydatid. In the Pseudophyllidean cestodes (of which the most familiar is the broad fish-tapeworm, *Diphyllobothrium latum*) larval forms may occasionally enter the orbit. In the East the custom of applying a freshly opened frog to a sore eye may transmit the larval form, known as a Sparganum, of *Diphyllobothrium mansoni*. The definitive host of this worm is a carnivore, such as a tiger, cat or

dog, the first intermediate host is a *Cyclops*, and the second intermediate host is usually a frog or a water-snake. This Sparganum may be transmitted mechanically from the second intermediate host to man. Myiasis of the conjunctival sac, due to the larval stages of 'filth flies' is more common in animals than in man, but cases are reported of eye invasion by *Hypoderma bovis* and *H. lineata* (the warble flies), *Oestrus ovis* (the sheep nasal fly) and others.

All these possibilities had to be considered in the present case.

CASE HISTORY

A female African child, aged about 18 months, was seen in the Casualty Department of King Edward VIII Hospital, Durban, on 15 February 1956. The mother stated that the child had 'a worm in her eye'. On examination it was seen that there was 'about half an inch of worm' protruding from the upper punctum of the right eye. The visible portion of the worm was in active motion, but showed no actual progressive movement. The worm was grasped with forceps and gently extracted. Examination of the eye showed there had been no damage to the eyeball or lacrimal canaliculus and there was, in fact, neither swelling nor other reaction in the area.

As no preservatives had been applied, the worm was rather dried out when it reached the laboratory some 20 hours after it had been extracted. After clearing in lactophenol and mounting, the worm was found to be round, unsegmented, fawn in colour, just under 5 cm. long, and about 1 mm. at its greatest diameter (Fig. 1). On microscopy, the anterior end and a further short section were found to have been damaged. This interfered with identification. The oesophagus had been everted and the oral labia were completely distorted. A further area, approximately at the junction of the anterior and middle third was damaged, just at the point where one might expect to find some sexual rudiments. The posterior end of the worm was not recurved, but showed a subterminal anus and a single pair of papillae, but no spicules (Fig. 2). The integument appeared cuticular and transversely striated. The size and general characteristics of the worm eliminated several possibilities. Firstly, the worm being round and unsegmented eliminated the possibility of either a dipterous larva or a Sparganum. Of the nema-

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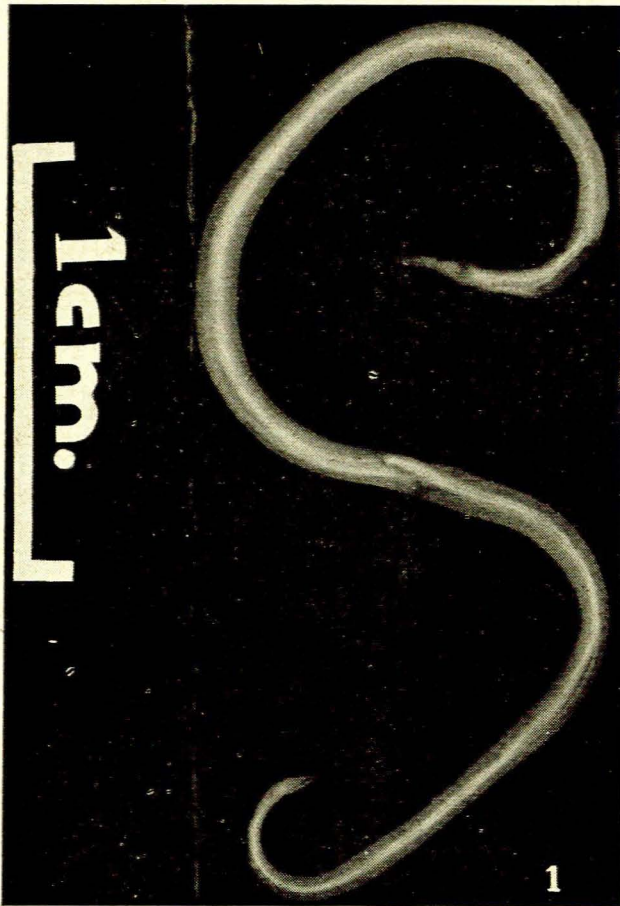


Fig. 1. Photograph of the worm after removal from the eye.

todes the only ones of appropriate size were either *Loa loa* or a small *Ascaris*, though the worm was rather too large for the former. Comparison of the specimen with *Ascaris* obtained from the autopsy room confirmed the diagnosis as an immature female *Ascaris*. The integument and its markings and the post-anal papillae were the distinctive points of agreement.

Though in the course of its life cycle, the larval forms of *Ascaris* do pass through a tissue migration and have been reported from the anterior chamber of the eye (Faust 1955), it is unlikely that an *Ascaris* could have developed from the larval stages in the present position. It is far more likely that this particular specimen migrated from the intestine. The wandering habits of *Ascaris* are well known and are particularly likely to occur when the worms have been irritated by the administration of some anthelmintic such as carbon tetrachloride. In this case, the worm had obviously been regurgitated through the stomach and oesophagus to the region of the nasopharynx, whereafter it entered the opening of the naso-lacrimal duct and moved into the lacrimal sac. From there it entered the upper lacrimal canaliculus and was emerging from the upper punctum when it was removed. According to Gradwohl

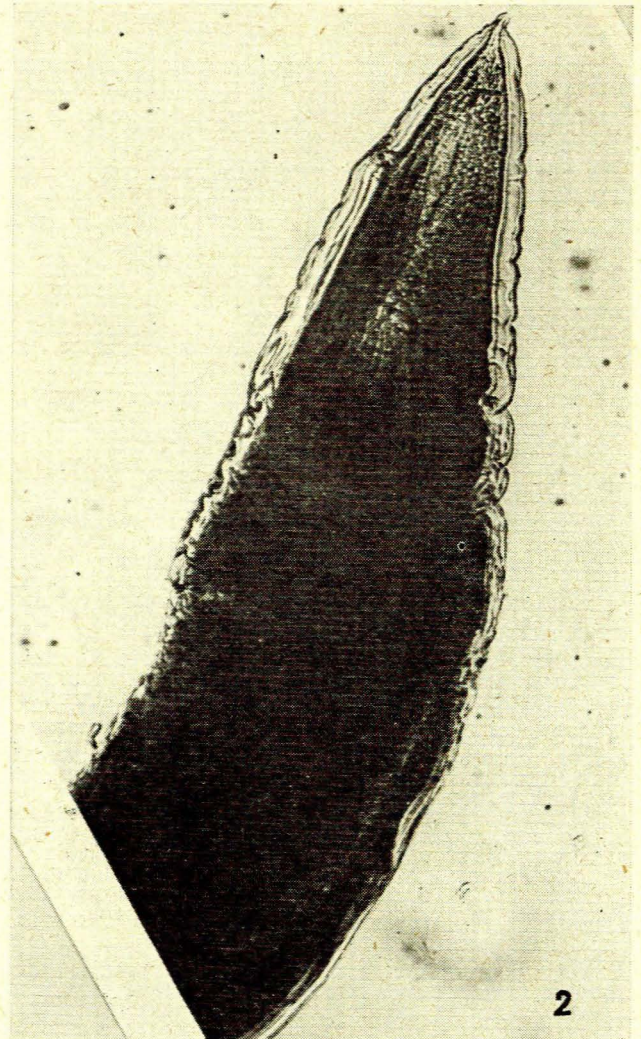


Fig. 2. Posterior portion of worm, showing a papilla.

and Kouri (1948) *Ascaris* has not only been reported from the lacrimal duct as in this case, but also from the eustachian tube.

SUMMARY

A case is reported in which an immature *Ascaris* appeared through the lacrimal canaliculus.

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