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A case of ophthalmomyiasis in man by **Oestrus ovis** Linneaeus in Tehran (Insecta: Diptera, Oestridae)

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Introduction

Various species of files are able to provoke opthalmomyiasis which is due to deposition of their larvae in the human eye. The infection may involve conjunctivae of the eyelids or of the eyeball. Files causing external ophthalmomyiasis are mostly known from families Tachinidae, Sarcophagidae, Calliphoridae, Phoridae and Noestridae. The member of the family Oestridae are known to cause both external and internal myiasis of the eye (Jurko, 1957).

Oestrus ovis or the well known sheep nasal bot fly is a major cosmopolitan parasite of sheep. James (1947) mentioned its widespread distribution from India, Turkestan, Iran, Iraq, Palestine, Syria, Cyprus, Turkey, Greece, Egypt and many other parts of the world. Literature and reports on the biology, and many other scientific aspects of this fly and the degree of its infestation in sheep is numerous. Portchinsky (1913) gave the most complete account of this parasite in relation to man. James (1947) and Zumpt (1965) summarized the informations on the morphology, biology and pathoganesis of this fly.

Specific papers and reports on ocular myiasis by O. ovis are also as

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numerous as on general biology in relation to sheep. Dupuy d'Uby (1931) gave some complete case-histories, symptomology, and diagnosis. It was followed by a basic papers of Sergent (1952) and Zumpt (1963), Benitez et al. (1971), Maretic et al. (1973).

In Iran, Perian (1937) gave the earliest scientific report on the occurrence of **Oestrus** in sheep and goat. Chams and Mohsenine (1959) reported the first case of opthalmomyiasis in Iran but due to **Rhinoestrus purpureus**, that in turn its true identity is in doubt according to Zumpt (1965), Alam (1959) mentioned two cases of ocular myiasis caused by **O. ovis** but did not give any account on their morphology and true idendity.

Clinical observations, method and procedure.

Our patient was a 38 years old housewife who referred to eye-clinic at Farabi Hospital on May 23, 1974. She complained of pain and intense itching in the eye. Diagnosis of myiasis was made (by Pirouz) by inspection of the external parts of the eye. Both palpebras of the left eye were swollen with conjunctival irritation and continuous lacrimation was observed.

According to her, she was hit in the eye by a fly in the day before at 9 o'clock on the sunny-side of her house when she was accompanying her son to school. Her home was located in the south of Tehran and she did not know of any connection with sheep or goat at her vicinity. Within an hour after the stroke she felt the presen ce of externally movir:g and itching in her left eye. She referred to two private clinics before going to Farabi Hospital for treatment. Five minute, witish larvae (Z alive and 3 dead) were taken out of her eye by sharp pointed blotting-papers. They were mounted on microscopic slides and photographs were taken and diagram was made for more accurate and detail study.

Morphology

Larva of **O. ovis** has three stages of development but since it can

never progress beyond the first stage in human (Zumpt 1965), therefore the description of the later stage is only given.

First instar larvae of O. ovis is spindle-shaped and about 1.3 mm. long when deposited (figure 1). The cephaloskeleton is relatively large and provided with strongly bent sclerites (figure 2). The dorsal side bears only a weak spinulosity, consisting of complete raw dentioles on the third segment and a broadly interrupted one on each of the following two segments. There are 22 to 25 terminal hooks arranged in two scallops.

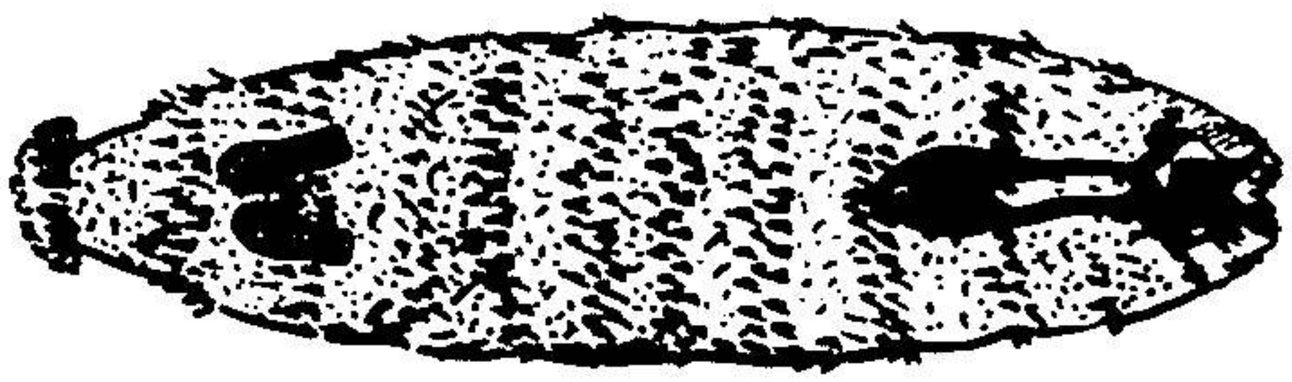

Figure 1- First stage larva of Oestrus ovis (1.3 mm).

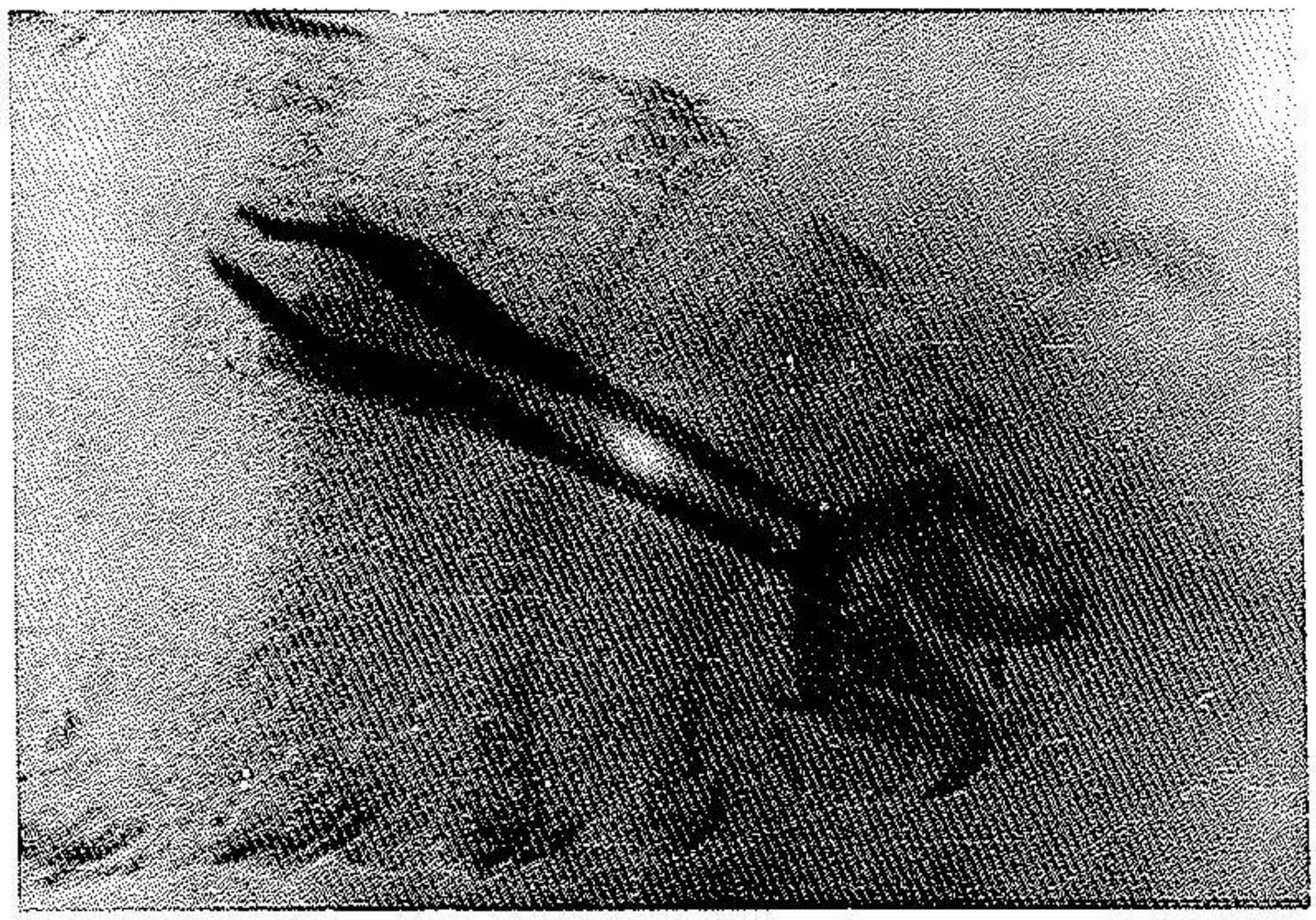

Figure 2- Head of the first stage larva of O ovis showing cephaloskelton, and anterior segments. Photo is teken from the origina 1 specimen.

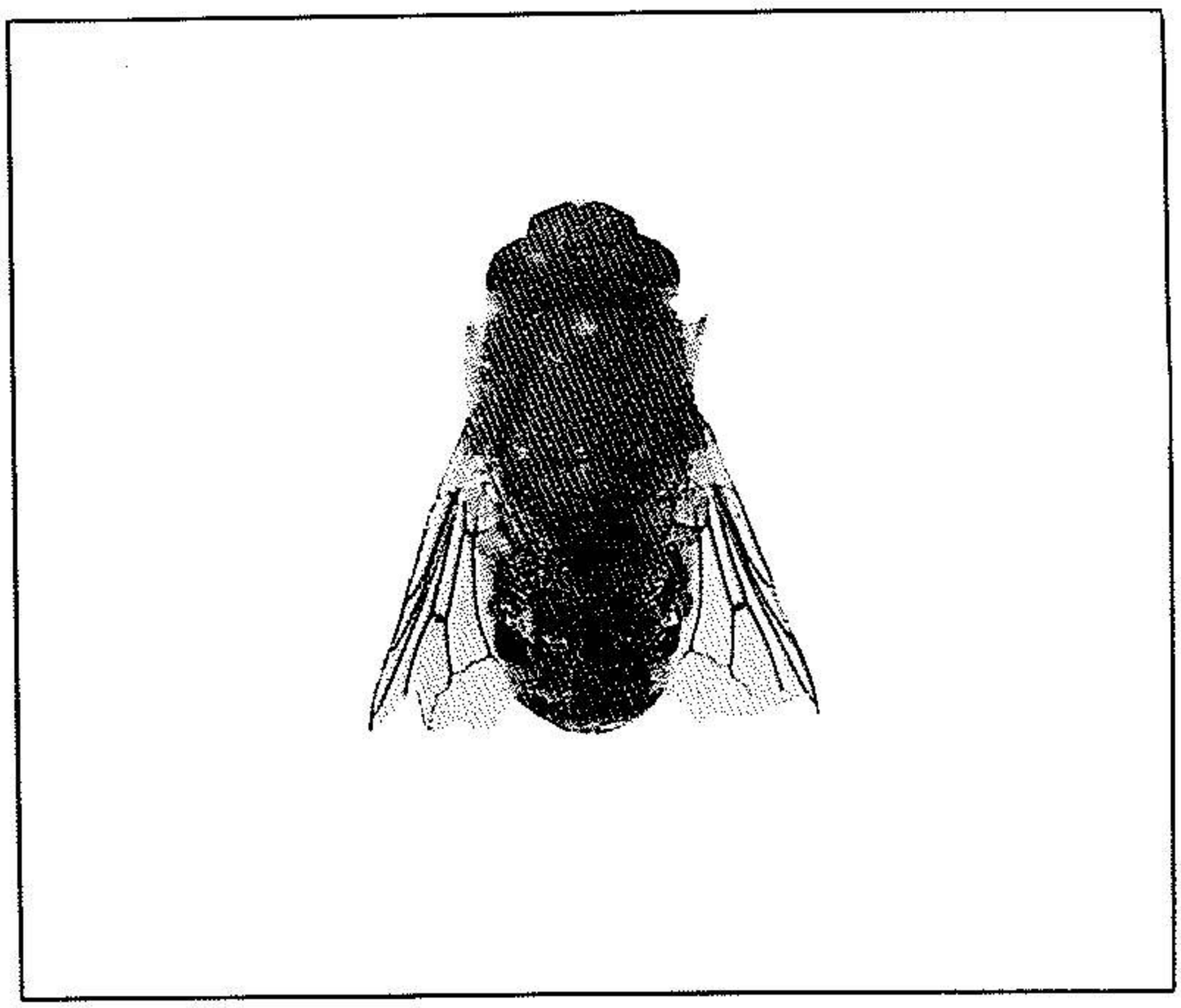

Figure 3- Aduit fly of oestrus ovis l.

Life history and pathonenesis

The adult files (figure 3) do not feed, and while in flight, they will deposit their larvas usually near the nostril of sheep or goat. The larvae then pass through the nasal cavity into the ethmoidal, the frontal, or the maxillary sinus, where they transform into the second instar. There the larval stages are completed, and mature larvae drop to the ground to pupate. The life spin of 26 out of 35 flies emerged in laboratory and supplied with water in cage at 22° to 25°c. were 11 to 26 days. The fully grown larvae had been obtained from the slaughter. house of Tehran.

Although man is not normal host of O. ovis, but he is often infected, especially when he is closely associated with sheep or goat. Apparently he may be infected at any time during late spring, summer and early fall. As many as 50 larvae have been removed from the conjunctival sac of single patient in other countries (Zumpt 1965), although the usual number is much less. Cases of ocular myiasis caused by this parasite resemble cases of accute catarrhal conjunctivitis and may be diagnosed as such. Since the parasite cannot develop, the trouble usually last for few days only.

Prevention and treatment

Inspite of multiple case-reports on opthalmomylasis in literature; however, there has been very little information on the treatment of this kind of myiasis. Maretic et al. (1973) removed the larvae by the aid of gauze on holder. Ac boriccum 3% instilled and Ung. Chlorocorten was put. The following methods are used in Iran for prevention and treatment of opthahlmoyiasis:

1. Schepherds in the eastern part of Iran practically cover their nose and mouth with cloth and hang a weil in front of their eyes in the field at the time of outbreak and attack of O. ovis in the spring.

2. The same people, when they are infested with larvae in their eyes and do not have access to any physician, they lay a piece of fresh or boild meat on the eye, while holding it wide open overnight. During this time most of the larvae crawl inside the meat, mostly due to their

preference, and they are removed in the next morning. Apparently this simple and primitive method is quite satisfactory to the farmers in the remote villages.

3. In clinics, washing the eye by 0.4% solution of Mercury oxid cyanide is practiced. In this method some of the larvae that may have penetrated deep beneath the eyelid will also be removed.

4. To anaesthetize the extremely mobile larvae of **O. ovis** by several drops of 2% tetracaine and to remove the larvae by fine forceps or pointed blotting-paper through the light of slit-lamp. The use of several drops of fluorescein-solution before anaesthesia make the larvae orange in color, which facilitate their finding and removal.

Discussion

Although this is the first published report, to the best of our knowledge, on ophthalmomyiasis due to **O. ovis** in Iran; but it seems that the actual cases are by far greater and not enough attention has been paid to them so far.

The existing records at Farabi Hospital and the inverview made with phýsician in charge at Firouz Abadi Hospital at the City of Rey, indicate frequent cases of ophthalmomyiasis every year in the vicinity of Tehran itself. Adult specimens of O. ovis and report received from Borazjan in the south of Iran indicate that yearly outbreak of ophthalmomyiasis occurs every spring. We also interviewed 15 sheperds in Fars province, twelve of them said that they had opthalmomyiasis at least once and all of them had been infected in the throat. The files, which are well known as "Sespou or Mish", spray their larvae in the eyes, nose and ears of man.

Other reports from several medical doctors serving in military corps in different parts of the country in 1973, revealed further occurrences of opthalmomyiasis among women who do milk their domestic animals in the villages of Khorassan, Guillan and Kermanshah province.

Acknowledgement

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Summary

Five first-stage-larvae were removed by soft and pointed blotting-paper from the left eye of a woman and they were identified as Oestrus ovis. She was infected in Tehran and this is the first true case of ophthalmomyiasis due to sheep nasal bot fly in Iran. Reports indicate that case of ophthalmomyiasis are more frequent in Iranian villages with different degree of severity. Methods for prevention and treatments are also discussed.

Résumé

Cinq larves minuscules de Oestrus ovis ont été retiré, moyen de papier buvard, de l'oeil gauche d'une femme infestée par une mouche à Téhéran, et c'est le premier cas véritable de myiase ophthaimique par O. ovis observé en Iran. D'ailleurs, selon des raports nombreux, nous renseignent que les cas de myiases opthalmiques, en Iran, sont plus fréquentes dans les villages, avec différents degrée de gravité.

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