SOME MYIASIS PRODUCERS
IN CAIRO AND GIZA ABATTOIRS

By

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ABSTRACT

The most important insects from medical point of view, are the
blood suckers or the insect-borne diseases. Still others, almost non-
blood suckers, but may attack man and animal to deposit their eggs
or larvae causing pathogenic condition known as myiasis. In the pre-
sent paper, a total of nine myiasis producing dipterous flies were
collected from Cairo and Giza abattoirs. They were: Musca d. vicina,
Calliphora vicina, Chrysomyia albiceps, C. marginalis, Lucilia sericata,
L. cuprina, Sarcophaga haemorrhoidalis, Wohlfahrtia magnifica and
Oestrus ovis. Their role as myiasis producers in man and animal was
discussed.

INTRODUCTION

Myiasis is "the infestation of live human and vertebrate animals
with dipterous larvae which at least for a certain period, feed on the
host's dead or living tissue, liquid body substances of ingested food" (Zumpt, 1965). Myiasis producing flies have been classified by Patton
(1920) in three categories (1) specific or obligatory tissue parasites,
(ii) semi-specific, which usually deposit their eggs or larvae in decaying flesh or vegetable matter, but also at times on morbid tissues and (iii) accidental which usually deposit their eggs or larvae in excrement or decaying organic matter, but at times lay them in food stuffs. On the other hand, the various types of myiasis are classified anatomically (Bishopp' and Leake, 1926) by the locations of infected tissues. Generally speaking, myiasis is a subject of medical and veterinary importance adversely affects the health of man and animal. In Egypt, many cases of human and animal myiasis have been reported.

The present study aimed to throw some light on the myiasis producing dipterous flies in the abattoirs in Cairo and Giza Governorates, and to brief their importance.

MATERIAL and METHODS

Several visits were paid to the abattoirs in Cairo and Giza Governorates. Slaughtered animals (sheep, camels, cows and buffaloes) were carefully examined for myiasis producing dipterous larvae. If any, they were collected in labelled wide mouth bottles which were covered by muslin. Small larvae were placed in 10% aqueous potassium hydroxide solution over a night. Large larvae were punctured with a fine needle or even heated for few minutes in 10% potassium hydroxide solution. After thorough washing, the larvae were dehydrated in an ascending series of ethanol, cleared in xylol and mounted in canada balsam. Adult flies were collected from the abattoirs and the outside areas with hand nets. Both the larvae and the adults were systematically identified by the use of standard keys (James, 1947, Zumpt, 1965 and Smith, 1973).

RESULTS

A total of nine species of myiasis producers were identified. They belong to different families. They were:

I — Family : Muscidae

1. Musca domestica vicina Linne, 1758.

II — Family Calliphoridae
2. Calliphora vicina, Robineau — Desvoidy, 1830.
3. Chrysomyia albiceps, Wiedemann, 1819.
4. Chrysomyia marginalis, Wiedemann, 1830.
5. Lucilia sericata Meigen, 1826.
6. Lucilia cuprina Wiedemann, 1830.

III — Family Sarcophagidae
7. Sarcophaga haemorrhoidalis Fallen, 1810
8. Wohljahtria magnifica Schiner, 1862

IV — Family : Oestridae

DISCUSSION

Myiasis is a problem of medical and veterinary importance, particularly in the tropical and subtropical countries. In the present study, a total of nine species of myiasis producing dipterous flies were detected and systematically identified. At least not less than fifty species of myiasis producers of man and animals are encountered in Egypt.

Musca d. vicina (common house fly) has a cosmopolitan distribution and is important as a mechanical carrier of various infectious agents such as bacteria, viruses, worms’ eggs and protozoal cysts. Females deposit batches of eggs (100-150) in dung of animals, human faeces, garbage and other decaying animal and vegetable matter and at times food prepared for human consumption. So, it mainly causes intestinal myiasis. Also, man may accidentally ingest gravid females (Salem 1935 and Nagaty et al., 1960).

Calliphora vicina (syn. C. erythrocephala, blue bottle fly) is a large, stoutly-built fly which buzzes loudly when it flies. The larvae have been found in human wounds, feeding primarily on moribund flesh and bones (Onorato, 1922). They also cause aural myiasis (El-
Deeb et al, 1988). However, *C. vicina* mainly causes intestinal myiasis (James, 1947). In Egypt, Soliman et al (1963) and Shaumber et al (1989) reported the presence of *C. vicina* in several governorates particularly Cairo, Giza, Ismailia and Alexandria as well as El Baharia oasis.

Chrysomyia albiceps, (sheep blow fly) one of the important sheep blow flies in south Africa, is widely distributed in Egypt, particularly the Nile Delta (Shaumar et al, 1989). On the other hand, *C. marginalis* is less abundant in the Nile Delta, but being common in Helwan, Heliopolis and Sinai. Both are bluish-green flies, with dark thoracic stripes and dark transverse abdominal bands. However, the anterior border of the wings is deeply infuscated in *marginalis* but not so and being entirely hyaline in *albiceps* (Shaumar et al, 1989). Females of *C. albiceps* lay their eggs as one batch in a cutaneous lesion or cut on any exposed part of the body or on the gums, in the nares, nasal sinuses, conjunctiva, ear or even vagina. The larvae hatch and burrow into the tissues and usually leave the hosts for pupation. The succession of the secondary and tertiary flies is further influenced by the competition between them for food. Human cases of myiasis caused by *C. albiceps* have been reported in India (Fain et al, 1959) and in Egypt (Morsy et al, submitted). On the other hand, *C. marginalis* never strikes live sheep or man but breeds in carcasses only and plays a very important role as a competitor in carcasses, as they feed on the larvae of other species.

Lucilia sericata (blow fly) is the chief cause of blow fly strike of sheep in England and *L. cuprina* is the chief cause in Australia and south Africa. They are metallic green or have a bronze colour in some kinds of lighting. They are called green bottle or copper bottle flies. It is difficult to distinguish between them. However, the legs are black but in *L. cuprina* the femora of the first pairs of legs are bright green (Shaumar et al., 1989). Larvae of *L. sericata* have been found in man in America (Ryckman and Halstead, 1952), in Yugoslavia (Nikolio, 1952), in Saudi Arabia (El Deeb et al, 1988) and in Egypt (Morsy et al., submitted).

Sarcophaga haemorrhoidalis (flesh fly) is a large grayish flesh fly, with chess-board like abdominal pattern. They are larviparous,
...and larviposit on decaying flesh, wounds and human excreta. At times they larviposit on food prepared for human consumption and cause intestinal myiasis. It is interesting to mention that according to Zumpt (1965) female S. carnaria can drop its larvae from a height of about 26 inch through wire-gauze covers put over meat. Human myiasis due to Sarcophaga species have been reported in Panama (Calero, 1948), in India (Atal and Dubey, 1963), in Saudi Arabia (Soliman and Morsy, 1976 and El Deeb et al, 1988) and in Egypt (Salem, 1935, Wadia, 1971 and Morsy et al submitted).

Wohlfahrtia magnifica (Old World flesh fly) is a large grayish fly, with large black spots on the dorsum of the abdomen. It occurs in the Mediterranean countries, Arabia, Turkey and Russia. It is larviparous and has similar habits as those of genus Sarcophaga. It larviposits in skin lesions in nasal sinuses, on the papillae of the tongue, in the external auditory meatus, in sore eyes and even in the vagina of man and other animals. They cause severe disfigurements and pain to man particularly children. Human cases of myiasis due to W. magnifica have been reported in Spain (Najera, 1943), in Saudi Arabia (Soliman and Morsy, 1976) and in Egypt (Barsoum, 1917, Salem, 1938, Wahba, 1939 and Ghawaby and Morsy, 1976).

Oestrus ovis (sheep nasal fly) has a dark grey colour with small black spots which are especially prominent on the thorax and it is covered with light brown hairs. The adults hide in corners or crevices and in the early morning they are seen standing against the walls. The females are larviparous and deposit their larvae into the conjunctiva, the outer nares, onto the lips or into the buccal cavity. The larvac by their oral hooks and spines rapidly bore into the mucous membrane (Faust et al., 1976). The larvae in the conjunctival sac or lacrimal duct may lead to optic atrophy, in the nares they may reach the nasopharynx causing pathological damages. Human myiasis due to O. ovis have been reported in Uruguay (Isola and Osimani, 1944), in Algeria (Sergent, 1952) in Yugoslavia (Nikolio, 1952), in India (Basu et al, 1953), in Tunisia (Vermeil, 1954) in Italy (Pampiglione, 1957), in China (Liu et al, 1964), in Spain (Cuevara et al, 1971) in Nigeria (Ogunrinade, 1977) and in Egypt (Attiah et al, 1940).

Generally speaking, these nine species of myiasis producing dip-
terous flies are not all the species involved in myiasis in Egypt. But this group represents the species found and identified during the Autumn season in these abattoirs. Nevertheless, it is important to mention that the disease commonly called "strike" or myiasis of sheep may be caused by the larvae of various species of the genera Lucilia, Calliphora, and Chrysomyia. Such a condition should be distinguished from the dangerous form of myiasis caused by the larvae of the screw-worm flies of the genus Callitroga (Syn. Cochliomyia). This greenish-blue calliphorine flies of tropical and sub-tropical regions of the Western Hemisphere is an obligatory parasite of warm-blooded animals including man. The females deposit (150-500/female) eggs in wounds resulting from accidents, castration, dehorning, scalding by dips, tick bites and so forth as well as around the vulva of cows when there is a bloody discharge or on the navel of young calves (Soulsby, 1978). The larvae penetrate into the tissues, which they liquefy. The wound develops an evil odour and foul smelling liquid oozes out. Several persons in U.S.A. (farmers) have become infested and some have died as a result of the lesions. In the year 1989, the senior author in collaboration with the Public Health Authorities, Mersa Matrouh Governorate, surveyed the Libyan (S.P.A.L.J.) Egyptian borders for the screw-worm flies. Neither exogenous nor endogenous cases have been seen. That is to say, till now, Egypt is free from the screw-worm of man, cattle and other animals of the genus Callitroga.

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