

TROPICAL NEW WORLD SCREWORM IN THE UNITED KINGDOM

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The Transboundary animal diseases do not have a Christmas break. On 23rd December 1998, FAO's *Collaborating Centre on Myiasis Causing Insects and their Identification*, located in the Department of Entomology at the Natural History Museum in London, UK, received a sample of larvae from London's Hospital for Tropical Diseases. The larvae were removed from an infested lady who had just returned from a visit to Trinidad, and they were identified as New World Screwworm (NWS) *Chochliomyia hominivorax*. During the preparation of this note the epidemiological investigation was underway.

Apart from an outbreak in Libya (1988-1992), the NWS is confined to the tropical and subtropical Americas where it is an obligate parasite of many warm-blooded animals, including humans. Although the name "screwworm" is given to both the larval and adult stages of the insect, the adult fly is harmless. Its reputation as a deadly parasite comes instead from its larvae, which are totally dependent on the living tissues of host animals for their development. The adult female screwworm fly is attracted to skin abrasions and wounds, where she deposits eggs. Within 24 hours the eggs hatch into larvae that immediately start feeding on the living tissue, dramatically increasing the size of the wound and causing intense suffering. If left untreated, the infested animal often dies. Hence, the livestock industry can suffer severe economic losses.

Prior to eradication campaigns against it, this parasite lived year-round in tropical and subtropical regions of the United States, Mexico, Central America, Panama, Northern and Central South America, and in the Caribbean Islands. Its distribution is largely determined by its inability to survive persistently cold weather, therefore it is usually unable to overwinter in temperate regions.

The cutaneous myiasis caused by NWS has been eradicated, using the Sterile Insect Technique (SIT), from the *United States* (1981), *Puerto Rico* (1975), the *US Virgin Islands* (1972), the *British Virgin Islands* (1972) and *Curacao* (1954, 1976). *Mexico* was declared NWS-Free on 25 February 1991, with a programme cost of \$EE.UU.413.5 millions. In *Guatemala*, the last recorded case of NWS myiasis occurred on 22nd May 1994, as the result of an eradication campaign which began in 1988. *Belize*, implemented eradication in 1989 and NWS elimination was completed in 1994. *El Salvador* began a campaign against NWS in 1991, concluding its eradication in 1995. *Honduras* implemented a zoosanitary programme in 1991 and had eradicated NWS by 1996. *Nicaragua* is the most recent country to be declared NWS-Free in Central America, after a successful zoosanitary effort which began in 1992 and concluded on 28th November, 1998.

Eradication efforts are now progressing in *Costa Rica*, which is expecting NWS eradication in 1999, as well as in *Panama*, programmed to be NWS-Free in the year

2000. NWS presently occurs in all countries of South America, south of the eradication zone except for mainland Chile, where the last outbreak was recorded in 1959.

The smaller islands of the Caribbean are also apparently screwworm-free, even though their climates are generally favourable to screwworm reproduction. However, several of the larger Caribbean islands are infested, e.g., Cuba, Dominican Republic, Haiti, Jamaica, Trinidad and Tobago.

The discovery of NWS in the Libyan Arab Jamahiriya in 1988 focused worldwide attention on the potential for this destructive parasite to become established in countries outside its natural range. During 1997 and 1998 a total of four registered NWS introductions to NWS-Free countries occurred:-

April, 1997

NWS infested fresh goatskins from Haiti were introduced to Tampico port in Mexico. Emergency zoosanitary operations took place including the weekly release of 1.6 million NWS sterile flies and intensive field surveillance in the area. No NWS was reported and the Mexican Government stopped importation of fresh skins from NWS infested countries in the Caribbean. This NWS mode of transmission is the first recorded and scientists are working on simulation studies to learn how this incident arose.

November, 1997

A case occurred in a female Basset Hound imported from Central America to Bexar County, Texas, U.S.A.. Surveillance and monitoring actions were implemented. No additional cases were identified.

November, 1998

At Edwards County, Texas, U.S.A., a NWS was reported in a female goat. An intensive surveillance operation took place, resulting in eight larval samples from wounds in November and December of 1998. All samples were negative. The lack of positive samples and the cold temperatures have resulted in the termination of these intense surveillance procedures. In the spring, reminders for future surveillance will be issued throughout the county.

December, 1998

In the UK, an imported human case was diagnosed at the world FAO-NWS Collaborating Centre. Up to now no other NWS cases have been reported and due to adverse winter climatological conditions for the parasite, no additional cases are expected.

The threat of NWS Transboundary reinfestation into free areas is a constant and underestimated danger. Nowadays, an estimated US\$690 million has been spent eradicating NWS from U.S.A. and Mexico. Programme benefits to livestock producers and consumers are estimated to exceed US\$ three billion. Outbreak containment costs are estimated to range from US\$3 to US\$25 million in the Americas, and US\$75 million in North Africa (Libya). The threat of myiasis outbreaks in animals and people is a serious problem and will not decrease until NWS field infestations are eliminated from the Caribbean and South American Regions.