

Hippobosca longipennis

Dog Fly,
Louse Fly,
Blind-fly

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IOWA STATE UNIVERSITY
College of Veterinary Medicine



OIE Collaborating Centre for
• Diagnosis of Animal Disease and
Vaccine Evaluation in the Americas
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Importance

Hippobosca longipennis, the dog fly, is a blood-sucking parasite found mainly on carnivores. Its bites can be painful and irritating, although not all animals appear to be bothered. Heavy parasite burdens can occur on some animals: in one case, 180 specimens were found on a single captive cheetah. Extensive blood loss might be possible. *H. longipennis* is an intermediate host for *Dipetalonema dracunculoides*, a filarial parasite of dogs and hyenas. It may also be a vector or transport host for other pathogens.

Species Affected

Carnivores are the preferred hosts, as well as the only effective breeding hosts. *H. longipennis* has been found on a wide variety of carnivores including cheetahs, lions, leopards, lynx, servals, African wild cats (*Felis silvestris libyca*), African civets (*Civettictis civetta*), hyenas, dholes (*Canis adjustus*), jackals, African wild dogs (*Lycaeon pictus*), foxes, badgers, mongooses and domesticated dogs and cats. There have been occasional reports of infestations on other species including roe deer (*Capreolus capreolus*), antelopes, livestock, humans and a bird; it is uncertain whether all of these parasites were correctly identified.

Geographic Distribution

H. longipennis seems to be adapted best to warmer areas, and its distribution seems to be limited by low temperatures and high humidity. This fly appears to have originated in Africa, where it is widespread in all but the more humid western and central regions. It can also be found in suitable habitats in much of the European and Asian Palearctic Region south of about 45° north latitude. *H. longipennis* is occasionally reported from countries on the fringes of this range (e.g., Ireland, Germany, Poland, Taiwan and Japan).

H. longipennis has probably entered the Americas many times without becoming established. The most serious incursion was in 1970, when infested cheetahs were imported from East Africa to the San Diego Zoo in California. The fly was not identified until 1972 and not fully eradicated until 1975. In the interim, other infested cheetahs were discovered in zoos in Georgia, Oregon and Texas. They were also treated successfully. In 1983, *H. longipennis* flies were found in North Carolina on a shipment of bat-eared foxes from Africa. Outbreaks also occurred in Ireland in 1982 and Japan around 1990, both times on cheetahs imported from Namibia.

Life Cycle

Female *H. longipennis* bear full-grown, mature larvae, one at a time. Shortly after larviposition, the larva pupariates. Populations may be able to survive adverse environmental conditions as diapausing puparia. The adult flies usually emerge in the morning, from 19 to 142 days after pupariation, depending on the climate and time of the year. The winged adults seek out suitable hosts and feed several times a day. On dogs, they prefer the ventral neck and front axillary regions. After approximately seven days, the flies mate on the host. The larvae develop internally for three to eight days, then the female deposits the larva on the soil, in cracks or crevices, under plants, or on debris. After larviposition, she returns to the host to feed and begin another larval maturation cycle. Individual females may live for four or five months, but about half that is more typical. Each female usually bears 10 to 15 offspring over a lifetime.

Identification

H. longipennis is a member of the family Hippoboscidae and order Diptera (suborder Cyclorrhapha). This fly is related to sheep keds. Hippoboscid flies have a sleek, dorsoventrally flattened head and body, powerful piercing-sucking mouthparts, and robust legs tipped with large, strong, tarsal claws. The veins on their wings are crowded into the leading half of the wing.

Hippobosca longipennis

Recommended actions if *Hippobosca longipennis* is suspected

Notification of authorities

H. longipennis infestations should be reported immediately to state or federal authorities. For identification, specimens should be sent to the USDA APHIS National Veterinary Services Laboratories in Ames, Iowa. The USDA APHIS VS Emergency Programs in Riverdale, Maryland can also be contacted.

Federal Area Veterinarians in Charge (AVIC):

<https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/contact-us>

State Animal Health Officials (SAHOs):

<http://www.usaha.org/federal-and-state-animal-health>

Control Measures

In zoos, *H longipennis* has been successfully eradicated from cheetahs and bat eared foxes by repeated insecticidal treatments. A carbaryl-sulfur dust formulation applied to the animals and their surroundings seems to be effective. In some cases, full eradication has taken several years.

Public Health

Humans are occasionally bitten; the bites have been described as either painless or as painful as a wasp or bee sting.

Internet Resources

United States Animal Health Association.

Foreign Animal Diseases

http://www.aphis.usda.gov/emergency_response/downloads/nahems/fad.pdf

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