

Research Note

CANINE MINIMA MYIASIS IN PUERTO RICO—A CASE REPORT^{1,2}

Myiasis is the infestation of living humans and animals by larvae of various species of flies, which feed during varying periods of time on the hosts' dead and living tissue, liquid body substances or ingested food³.

Cochliomyia homnivorax (Coquerel) has caused the majority of cases of human⁴ and bovine⁵ myiasis reported in Puerto Rico.

Puerto Rico and the U. S. Virgin Islands were declared officially free of *C. homnivorax* by the Veterinary Service, APHIS, USDA, on July 1, 1975, after an eradication campaign during which millions of irradiation-sterilized male flies were released over the islands⁶.

However, all species of *Cochliomyia* have not been eradicated from Puerto Rico as *C. macellaria* (Fabricius) and *C. minima* Shannon are still present here. The larvae of these flies are facultative parasites, that is, they are free-living and develop in decaying organic matter but may be able to develop in a living human or animal body⁷.

C. macellaria myiasis in humans was first reported in Puerto Rico in 1972 by Fox and Rodríguez-Torrens⁸. The case involved an 87-year-old man with myiasis of the rectum and the peri-anal region.

No report of *C. minima* myiasis in human or animal subjects exists in the available literature.

This is the first case of myiasis caused by *C. minima* in a dog in Puerto Rico.

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² Thanks are expressed to Dr. J. D. Rivera-Anaya, former Director, Department of Animal Husbandry, Agri. Exp. Stn., Univ. Puerto Rico, Mayagüez Campus, for reviewing the manuscript; to Dr. S. Medina-Gaud, Associate Entomologist; and Mr. R. Inglés-Casanova, Research Assistant, Department of Crop Protection, Agri. Exp. Stn., Univ. P. R., Mayagüez Campus, for helping identify the fly and for taking the photograph, respectively. Special thanks to Dr. R. J. Gagné, Systematic Entomology Laboratory, USDA, U.S. Nat. Mus., Washington D. C., for identifying the fly.

³ Zumpt, F., *Myiasis in Man and Animals in the Old World*. 267 pp., Butterworths, London, 1965.

⁴ Fox, I., Hurtado de Mendoza, A., Ortiz, A., Belihar, R. P., and Fox, R. I., Human hominivorax myiasis in Puerto Rico, *Bol. Asoc. Méd. P. R.* 57: 409-416, 1965.

⁵ Van Volkenberg, H. L., An annotated check list of the parasites of animals in Puerto Rico, *Cir. No. 22, P. R. Exp. Stn., USDA, Mayagüez, P. R., Washington, D. C.* Jan. 1939.

⁶ Chaloux, P. A., Veterinary Services Policy on Screw-worm Reinfestations in Puerto Rico and the Virgin Islands, Memorandum Aug. 5, 1975. APHIS, USDA.

⁷ Drummond, R. O., *Brams Surveillance and Collection of Arthropods of Veterinary Importance*, Agriculture Handbook No. 518, 1978. USDA, Washington, D. C.

⁸ Fox, I. and Rodríguez-Torrens, R., Human macellaria myiasis in Puerto Rico, *Bol. Asoc. Méd. P. R.*, 64: 53-55. 1972.

In September, 1978, a person from Carolina, Puerto Rico, brought an 18-month-old female mongrel, weighing 13 kg, to a veterinarian because of maggot infestation of the anus and vulva of the animal. A week earlier, the bitch apparently hid to whelp under an abandoned car in a vacant lot behind the owner's backyard. The bitch and her brood were located through the yapping (yelping) of the puppies.

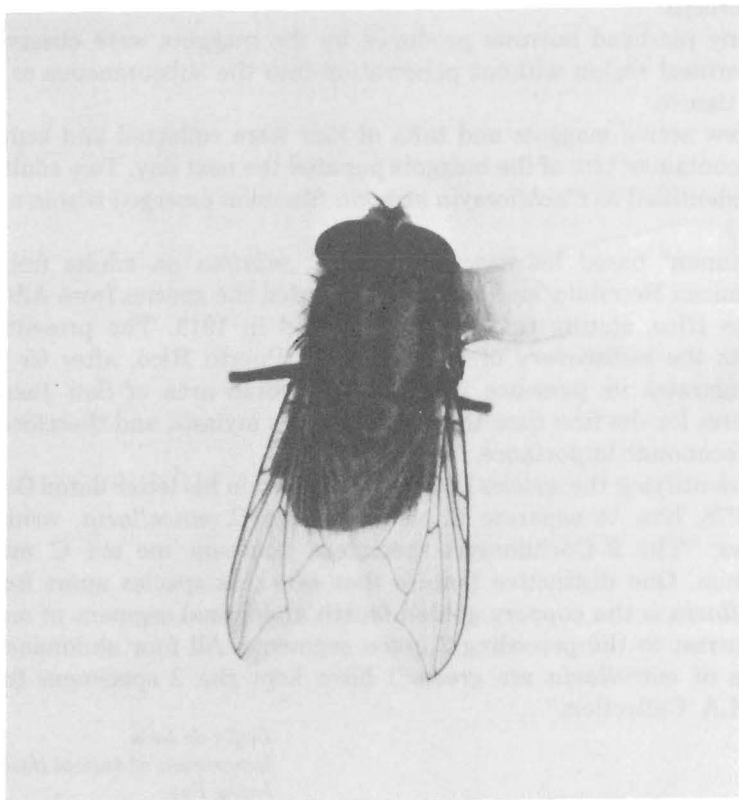


FIG. 1.—*Cochliomyia minima* Shannon adult fly reared from a larva infesting a dog in Carolina, Puerto Rico.

The bitch was very weak, dehydrated, had pale mucosa and anorexia. Her mammary glands were empty and cold, and the rectal temperature was subnormal (36.5° C). The hair-coat was dull and dry, and the skin was covered with dust. The hair of the perineal area was matted with gelatinous brown feces, and fetid, slimy secretions from the vulva. Many active larvae were observed in the anus, the vulva, and around the perineal region. Also, a few larvae were noted in one eye and in the

lacerations inflicted by the owner as he clipped the bitch's haircoat previous to whelping.

This entire haircoat was clipped, and the hindquarters washed with Betadine scrub, rinsed and dried. The maggots were easily removed from the anus and the vulva with dry non-sterile gauze sponges after they were killed by insertion for several minutes of ether-soaked gauze sponges. The larvae in the eye and wound were collected individually with a pair of fine forceps.

Many pin-head burrows produced by the maggots were observed at the perineal region without penetration into the subcutaneous or muscular tissues.

A few active maggots and tufts of hair were collected and kept in a glass container; two of the maggots pupated the next day. Two adult flies, later identified as *Cochliomyia minima* Shannon emerged within a week (fig. 1).

Shannon⁹ based his description of *C. minima* on adults from the Dominican Republic, and Wolcott¹⁰ recorded the species from Aibonito, Puerto Rico, stating that it was collected in 1913. The present note reports the rediscovery of *C. minima* in Puerto Rico, after 65 years, demonstrates its presence in the metropolitan area of San Juan and indicates for the first time the species causes myiasis, and therefore may be of economic importance.

In identifying the species Dr. Gagné showed in his letter dated October 31, 1978, how to separate *C. minima* from *C. macellaria*, writing as follows: "The 2 *Cochliomyia* specimens you sent me are *C. minima* Shannon. One distinctive feature that sets this species apart from *C. macellaria* is the coppery golden fourth abdominal segment of *minima* in contrast to the preceding 3 green segments. All four abdominal segments of *macellaria* are green. I have kept the 2 specimens for the U.S.N.A. Collection."

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⁹ Shannon, R. C., Synopsis of the American Calliphoridae (Diptera) Proc. Entomol. Soc., Washington, 28: 115-139, 1926.

¹⁰ Wolcott, G. N., The Insects of Puerto Rico. J. Agri. Univ. P. R., 32: 490. 1948.