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CRAB LOUSE, PTHIRUS PUBIS (ANOPLURA: PEDICULIDAE), ITS DETECTION AND CONTROL[1/]

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SYNONYMY:

1758. Pediculus pubis Linnaeus, Systema Naturae, Edition 10:611.
1815. Pthirus inguinalis Leach, Edinburgh Encyclopaedia 9:77.
1816. Pediculus ferus von Olfers, De vegetativis et animatis corporibus in corporibus animatis reperiundis commentatius, p. 83. (Definitely a synonym of Pthirus pubis (Linnaeus)).
1904. Pthirus pubis (Linnaeus), Enderlein, Zoologischer Anzeiger 28:136, fig. 10, 11.
1918. Phthirus pubis (Linnaeus), Nuttall, Parasitology 10:383; fig. 1, 3-5, 7-9.
1935. Phthirus pubis (Linnaeus), Ferris, Contributions toward a monograph of the sucking lice, part 8:603, fig. 335-7.
1935. Pthirus chavesi Escomel and Velando, Cronicas de Medicina (Lima, Peru) 52:335.
1936. Phthirus pubis (Linnaeus), Bedford, Onderstepoort Journal of Veterinary Science and Animal Medicine 7:105.
1939. Phthirus pubis (Linnaeus), Buxton, The Louse, p. 93, fig. 25.

INTRODUCTION: Sucking lice are small wingless external parasites that feed on blood. Three types of sucking lice infest humans: the body louse (Pediculus humanus humanus Linnaeus, (fig. 1) also known as Pediculus humanus corporis), the head louse (Pediculus humanus capitis De Geer), and the crab louse or pubic louse (Pthirus pubis (Linnaeus)) (fig. 2). The head louse and the body louse are morphologically indistinguishable but are easily distinguished from the crab louse. The crab louse usually infests the hairs of the pubic and perineal regions but may move to the armpits, beard, or mustache. It occurs rarely on the eyelids and in a few instances has been found in all stages on the scalp of unusually hairy individuals. It is relatively immobile when on the host, remaining attached and feeding for hours or days on one spot without removing its mouth parts from the skin. Although they are irritating pests, crab lice are not known to be vectors of human diseases, whereas body lice and head lice are known to be vectors of at least 3 human diseases: epidemic or louse-borne typhus, caused by Rickettsia prowazeki de Rocha-Lima; trench fever, caused by Rochalimaea quintana (Schmincke) Krieg (long known as Rickettsia quintana); and louse-borne relapsing fever, caused by Borrellia recurrentis (Lebert) Bergy et al. (PAHO, 1973). Crab lice most commonly inhabit adults and are not found on children prior to puberty. Infestation with crab lice is said to result most often from contact during coitus. As with body lice and head lice, but less so with crab lice, transmission may occur from crowding of infested clothing with uninfested clothing in locker rooms and gymnasiums, by sleeping in infested beds, or from contact with badly infested persons in a crowd. Pubic lice tend to remain on their hosts throughout their lives unless dislodged, taken off with clothing, or controlled.

Little is known about the incidence of infestation with Pthirus in a human community, but generally it seems to be much lower than with Pediculus. Humans differ in their

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sensitivity to the bite of Pthirus. To most it causes less irritation than that of Pediculus humanus, but some experience severe pruritus. The consequent scratching produces a localized eczematous condition of the pubic or axillary regions. "Blue spots" which may result from the bite of the crab louse are 0.2-3.0 cm in diameter, with an irregular outline, are painless, do not disappear on pressure, and appear to be in the deeper tissues. They appear some hours after the crab louse has bitten and last for several days (Buxton, 1947). This bluish-gray discoloration of the skin is due to a poisonous saliva injected by the crab louse, similar to the melanoderma caused by the body louse (Riley and Johannsen, 1938).

HOSTS AND DISTRIBUTION: The crab louse occurs on man in many parts of the world and is almost exclusively a parasite of man. Ferris (1951) noted that it had been recorded from a chimpanzee from the French Congo.

BIOLOGY AND MORPHOLOGY: Most of what is known of the biology of Pthirus is due to 2 authors (Nuttall, 1918, and Payot, 1920) who confined small numbers beneath a stocking or in a small enclosure on the skin and observed them daily. From these studies the complete life history was obtained. A quantitative knowledge of the biology of Pthirus is still unavailable. In general the biology of Pthirus and Pediculus are similar. Buxton (1947) gave a brief account of the biology of Pthirus. He indicated that the egg (fig. 3a) resembles that of Pediculus, (fig. 3b) but is smaller. The mass of cement which secures the egg to the hair is larger in Pthirus, and its shape is somewhat different. The number of eggs laid in nature is unknown but is less than in Pediculus. A single female confined in a stocking laid 26 eggs, an average of 3 per day (Nuttall, 1918). On the skin the egg hatches in 7-8 days. The percentage of eggs which hatch varies considerably. There are 3 larval stages, and the total duration of larval life is 13-17 days. The larva is even less active than the adult, except that it moves about slowly after moulting. The adult grasps a hair, inserts its mouth parts into the skin of the host, and takes blood intermittently for many hours. Neither larvae nor adults can survive more than 2 days without feeding. Nymphs resemble adults, and metamorphosis is incomplete.

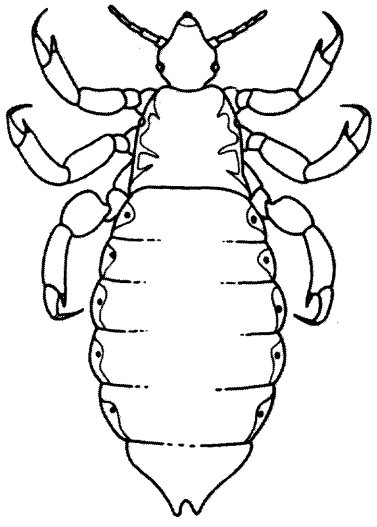

Fig. 1. Pediculus humanus capitis, ♀ . (After Hase.)

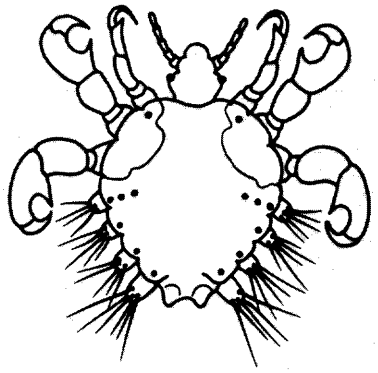

Fig. 2. Pthirus pubis, ♀ . (After Hase.)

Fig. 3a. Egg (nit) of Piduculus humanus. (After Borror et al.)

Fig. 3b. Egg (nit) of Pthirus pubis. (After Borror et al.)

The crab louse may be distingushed readily from the body louse or head louse by the following: forelegs delicate, with long, slender claws; other legs very stout, with short, stout claws: thumblike process of tibia short and stout; abdomen very short and broad; segments 1-5 closely crowded, thus the stigmata of segments 3-5 apparently lying in 1 segment; segments 5-8 with lateral processes. All legs of the body louse or head louse are stout; thumblike process of tibia very long and slender, bearing strong spines, forelegs stouter than the others; abdomen elongate, segments without lateral processes.

CONTROL: Delousing methods practiced for many years prior to and during the early part of World War II were cumbersome and usually expensive. Methyl bromide, a fumigant which would destroy all stages of the louse but which is dangerous to use, was developed in the interval between the 2 World Wars. It may be used for mass decontamination of clothing and bedding. Usually treatments effective against head lice can be used also against crab lice. The liquid or powder must be applied to the pubic and anal regions of the body, underarms, and wherever the body is hairy. In particularly hairy persons the lousicide should be applied from neck to foot, perhaps also to eyebrows and beard. The material should be well distributed and should reach the skin. Herms and James (1961) stated that DDT, MYL, and NBIN, as well as 5 percent rotenone in 10 parts petrolatum, are effective if used as directed. Insecticides currently accepted by the Environmental Protection Agency (EPA) for use against all types of human lice are lindane, malathion, isobornyl thiocyanate (Thanite), carbaryl, and pyrethrins synergized with piperonyl butoxide. Only specific formulations containing these compounds are accepted for registration; a publication by the U. S. Public Health Service (Slonka et al., 1975) listed 23 registered formulations and the addresses of the suppliers. Some of the lindane formulations in this list are available only on prescription, and other available products are not listed. Adequate sanitation, including frequent changes of clothing, and laundering of clothing and bedding in hot water, or dry cleaning, may be effective for decontamination of these articles, but lousicides must be used to control lice on human hosts because lice are not killed by ordinary shampoos or bathing.

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