morphogenic factors involved in the development of the fine structure of the cell wall.

A. B. Wardrop
H. E. Dadswell

Division of Forest Products,
Commonwealth Scientific and
Industrial Research Organization,
Melbourne.
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Spermatheca in Sucking Louse

The spermatheca is stated to be absent, by Patton and Cragg[1], in the Anoplura, *Pediculus humanus*, and also by Florence[2] in *Hæmatopinus suis*. But Keilin and Nuttall[3] indicate the existence of a spermatheca in their figure of the reproductive system of *P. humanus*. Qadri[4] disputes this finding and points out that a spermatheca is also absent in *Hæmatopinus tuberculatus*.

On reference to the literature, we find that Mjöberg[5] records the presence of a spermatheca, but only in two species of Anoplura, *Linognathus angulatus* and *Acanthopinus sciurinus*, and gives a brief description of the structure of an empty spermatheca. Ferris[6], in summing up the generic character of *Linognathus* End, mentions the presence of a spermatheca, the opening of which is marked by a sclerotic

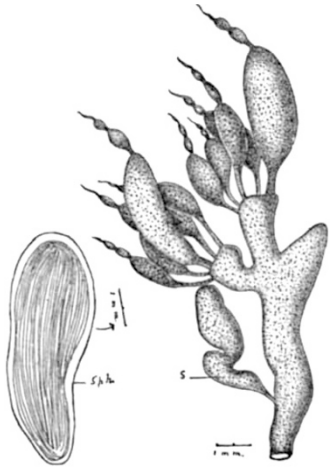

Fig. 1. Female genital system of the cow-louse showing the spermatheca (*s*). On the left, a spermatophore

Fig. 2. Photomicrograph of a spermatophore (*sph*) within the spermatheca

scar. In view of discrepancy regarding the existence of a spermatheca in sucking lice, we have examined a few related species. We find that the spermatheca exists in the cow-louse, which we provisionally identify as *Linognathus vituli* (Linn.). But the structure is quite different from that given by Mjöberg, in so far as there is no chitinous disk on the spermatheca near the origin of its duct, nor is there any sclerotic scar as mentioned by Ferris. The spermatheca in this species is a large club-shaped sac, bent in the middle and lying to the left of the median line. It opens dorsally into the vagina, by a short duct (Fig. 1). The spermatheca, in one out of ten specimens, contained oval-shaped spermatophores, varying in number from one to eight. In the photomicrograph (Fig. 2) a single spermatophore is shown within the spermatheca. In the majority of cases the spermatheca is empty. The shape of the spermatheca changes as it becomes distended with spermatophores. The occurrence of spermatophores within a spermatheca is of special interest, as it has not been reported by previous investigators, and Wigglesworth[7] remarks that spermatophores are never transferred to the receptaculum of the female. The disproportionate number of females to males, namely, 3 : 1 in the cow-louse, is noteworthy. We confirm that the male possesses a tubular seminal vesicle and accessory glands, as pointed out by Mjöberg and others.

We also wish to record the presence of a spermatheca in the elephant-louse *Hæmatomyzus elephantis* Piag., as there is no mention of it in the descriptions of previous authors.

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D. Mukerji
P. Sen Sarma

Entomology Laboratory,
Zoology Department,
University, Calcutta.
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