

Description of the male sex of the bat-flea *Nycteridopsylla dictena* (Kolenati)

by

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Ceratopsyllus dictenus (now known as *Nycteridopsylla dictena*) was described by KOLENATI in 1856; the characters given in the description are non-sexual and KOLENATI did not indicate whether he had specimens of both sexes of this bat-flea. In 1863 KOLENATI figured (Pl. IV, Fig. 13) a whole female of *N. dictena*, but again did not mention how many specimens he had nor to which sex they belonged. Not until ROTHSCCHILD (1911a: 216; 1911b: 55) published a list of fleas in the Natural History Museum of Paris and notes on KOLENATI's bat-fleas, was the existence of a male specimen in KOLENATI's type series known. Since this specimen has never been figured or described and apparently no further male of *N. dictena* has ever been collected, I became increasingly anxious to see KOLENATI's male because of the desirability of finding out what the genitalia of this rather unusual *Nycteridopsylla* are like. It was, therefore, exciting news when Dr. E. SÉGUY, Sous-Directeur au Muséum National d'Histoire Naturelle, Paris, informed me that the original KOLENATI male is still in the collection under his charge, and I am deeply indebted to Dr. SÉGUY for making this specimen available to me for study. When I first looked at the specimen through the microscope I raised my arms in despair: the appearance of the specimen, which is mounted on a slide, could be that of a modern impressionistic painting of a flea. The appalling condition of the specimen is doubtless due largely to its great age (it must be about 100 years old) and to the fact that KOLENATI preserved his specimens in alcohol, which may have dried up at some period; the fact that ROTHSCCHILD refrained from describing or figuring the specimen when he examined the collection in 1911, suggests strongly that it was then already in bad condition. Dr. SÉGUY informed me that he mounted both the male and female in 1940, in order to prevent further deterioration of these delicate bat-fleas. The head, thorax, legs and first seven abdominal segments of the mounted male are all badly shrivelled, crinkled and very transparent, while the internal visceral mass appears as a dark clot. Most fortunately, however, the genitalia are in better shape, though superficial examination would suggest the contrary. When I studied the specimen carefully, using a high-power magnification, I found to my very pleasant surprise that it would not be impossible to draw the male organs, and with some strain and toil I was able to do so. As a result I can now give the following short description of the hitherto undescribed male of *Nycteridopsylla dictena* (Kolenati), 1856.

Data: No locality, host or date are known, and the specimen is labelled: *Ischnopsyllus* [*sic*] *dictenus* Kol. ♂, cotype, KOLENATI leg., N. C. ROTHSCCHILD vid., Coll. KOLENATI.

Description: No details could be observed of the structure and chaetotaxy of the head (apart from the shape of the maxillary palps, which agree with KOLENATI's description of 1863), the thorax (apart from the much distorted pronotal comb), legs and abdominal terga and sterna. The pronotal comb consists

of 31 spines: KOLENATI gives the number as 24, but this must be based on a miscount (in the female this comb contains 32—36 spines). The number of spiniform antesensilial setae is six on one side, five on the other (though the sixth may be broken away). KOLENATI stated in 1856 that the lower three of the six on each side were separated from the most dorsal three by an interspace, but in 1863 he stated that the gap is between the upper two and the lower four. In the male studied, the alveoli of the upper three setae touch each other, but there are interspaces of nearly the width of an alveolus between each of the third to sixth setae from above (this may be an abnormal arrangement; in the female, where there are 7 or 8 antesensilial setae on each side, they are all closely set, as is normal in this genus).

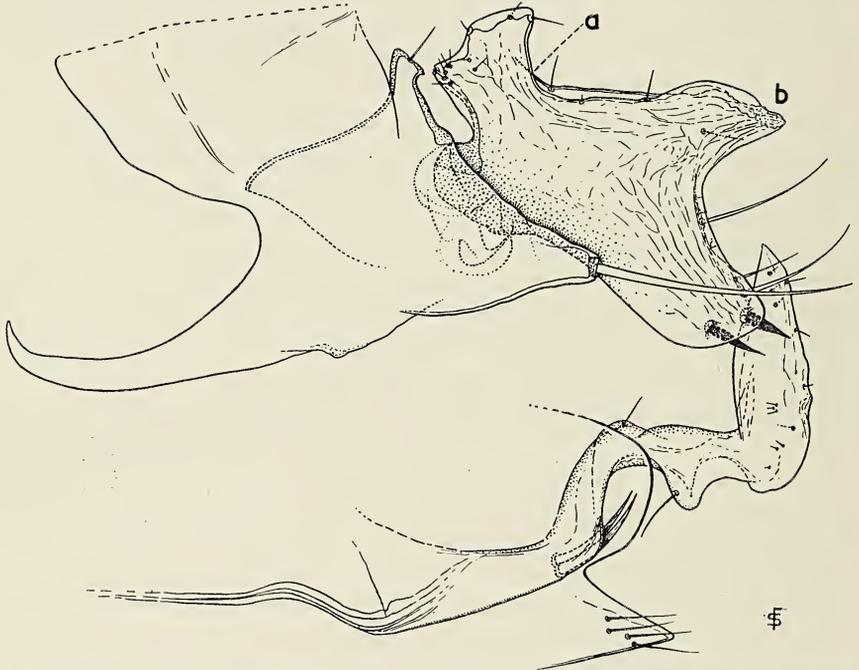


Fig. 1. *Nycteridopsylla dictena* (Kol.). Clasper, sternum VIII and sternum IX of lectotype.

Modified abdominal segments (Fig. 1): Sternum VIII with a lateral, fairly deep and wide sinus, the resulting upper lobe broad. Clasper large and grotesque; manubrium long and narrow, fixed process of clasper short, with an obliquely truncate apex; movable process of clasper of a shape which is difficult to describe (see Fig. 1), with two short and thick spiniform setae on the inner side of its large lower lobe-like portion. The angle marked *a* in Fig. 1 is less marked in the movable process of the other side; the portion marked *b* seems to be distorted in both movable processes. Curious is the double-walled part of the dorsal margin of the movable process. Distal arm of sternum IX with a sugarloaf-shaped apical part which forms a right angle with the rest of the arm; conspicuous are two dark, slightly curved and flattened setae on the inner side near the ventral margin of the basal part of the distal arm. All I could make out of the aedeagus is shown in

Fig. 2. *Nycteridopsylla dictena* (Kol.). Aedeagus of lectotype.

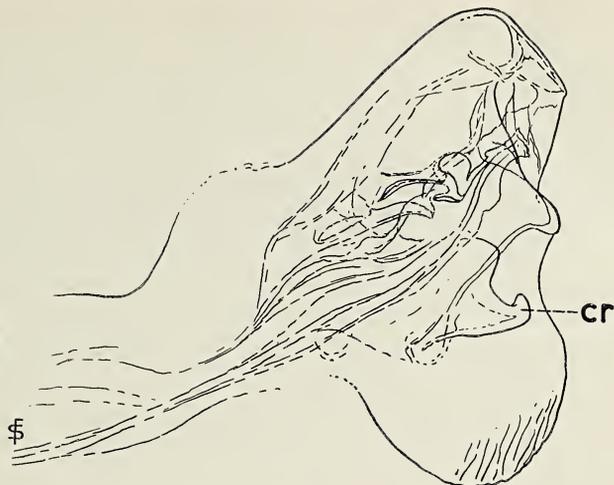


Fig. 2; note the large ventral lateral lobe and the relatively small crochet (*cr*). Most of the aedeagal apodeme is invisible, but the small size of its base suggests that it is fairly narrow; the penis-rods make about half a convolution.

Length of the mounted male: $2\frac{1}{4}$ mm (females measure $2\frac{1}{2}$ —3 mm).

I have selected the above described and figured male as the lecto-type of *Ceratopsyllus dictenus* Kolenati, 1856; it is in the Muséum National d'Histoire Naturelle, Paris.

The following records of *N. dictena* (Kol.) are known to me :

- 2 ♀, Tharandt (Saxony), Germany — off *Vespertilio murinus* (in the ROTHSCHILD collection at Tring).
 - 1 ♀, Forli (Emilia), Northern Italy — off *Pipistrellus pipistrellus* (CONCI 1946: 35).*)
 - 1 ♀, Wien, Austria — off *V. murinus* (SMIT 1955: 5).
 - 1 ♀, Rapplitzberg nr. Neustadt (= Nové Mesto) a.d. Tafelfichte (Bohemia), Czechoslovakia — off *Barbastella barbastellus*, 22 February 1927 (SEIDEL 1928: p. ?; 1933: 111—112; this specimen is in the ROTHSCHILD collection).
 - 3 ♀, Brno (Moravia), Czechoslovakia — off *P. pipistrellus* (2 ♀) and *Plecotus auritus* (1 ♀) (ROSICKÝ 1950: 146).
 - 1 ♀, 'Zetebor' (? = Ratibor, Czechoslovakia) — off *P. pipistrellus* (in the ROTHSCHILD collection).
 - 1 ♀, Brasov (Transylvania), Rumania — off *V. murinus* (in the ROTHSCHILD Collection).
 - 1 ♀, Hungary — off *Nyctalus noctula* (KOHOUT 1903: 66).
- Moravia, Czechoslovakia, and Russia — off *V. murinus* (KOLENATI 1856: 32; 1857: 66; 1860: 58; 1863: 44 — number and sex of specimens not given, but at least 1 ♂ 1 ♀ which KOLENATI deposited in the Paris Museum).

*) Recently Dr. CONCI kindly informed me that this record is incorrect, the flea having been misdetermined.

3 ♀, Przheval'sk (Tien Shan), Kirgizia — off *N. noctula* (IOFF *et al.* 1946: 94; IOFF 1949: 103).

Most records of this bat-flea are thus from Central Europe and the determination of the Kirgizian specimens needs confirmation, as already advocated by IOFF (1946: 94) who remarked that "in view of the inadequacy of the published description, comparison with the type will be necessary". Preferred hosts seem to be *Vespertilio murinus*, *Pipistrellus pipistrellus* and *Nyctalus noctula*; occurrence on *Barbastella barbastellus* and *Plecotus auritus* may be accidental. *Nycteridopsylla dictena* appears to be a very rare flea and it is curious that all records refer to females only, the male dealt with in this paper being apparently the only one that has ever been collected. I should stress that new figures of the male genitalia ought probably be published when further males come to hand, for my figures may then turn out to be incorrect in some points, owing to the unsatisfactory state of preservation of the unique specimen. For figures of the diagnostic structures of the female (metanotum, terga I and II, and sternum VII and spermatheca) see SMIT 1954, Figs. 103 and 108.

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