

## Contribution à l'étude de la faune d'Afghanistan 26 Siphonaptera — Fleas

by

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From what is known about the flea-fauna of the neighbouring Soviet Republics, that of Afghanistan can be assumed to be very rich and varied; up to about a hundred species and subspecies may well be expected to occur there. Yet only a dozen species (six of which were new at the time) have so far been reported from that country (JORDAN, 1944; PEUS, 1957). The receipt of some new material from

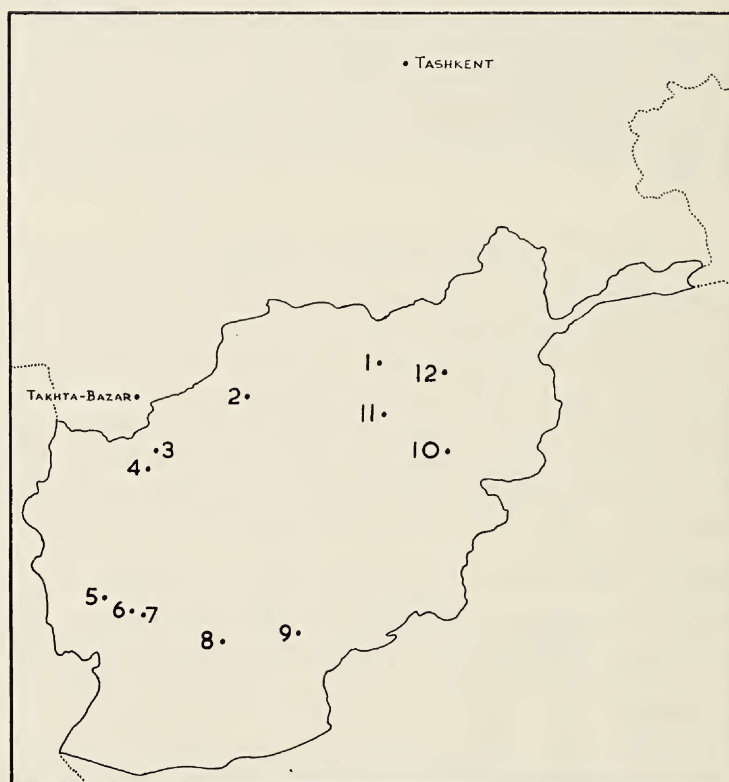


Fig. 1. Outline map of Afghanistan, showing collecting localities mentioned in the text. 1. Kaftar Khaneh cave, near Aibak (or Haibak), Mazar-Cherif Province; 2. Darreh Zang, south-west of Beltchiragh (or Belchirag), Maïmaneh Gouvernement; 3. Qades, south-east of Qal'eh Naou (or Kala Nau), Herat Province; 4. Col de Sabzzak (or Zarmast), 70 km north-east of Herat, Herat Province; 5. Moumlai cave, Kouh-Pir, Farah Gouvernement; 6. Siaou cave, Kouh-Siah Ab, Farah Gouvernement; 7. Kouh-Dozd cave, near Dilaram, Farah Gouvernement; 8. Qal'eh Bost (or Kala Bist), Qandahar (or Kandahar) Province; 9. Chamchir ghar, near Qandahar (or Kandahar), Qandahar Province; 10. Kabul (or Kaboul), Kabul Province; 11. Doab, Parvan Gouvernement; 12. Danaghori Plain (between the villages of Dahana and Ghorî, about 15 km west of Pol-Khomri), Qataghan Province.

Dr. K. LINDBERG was therefore extremely welcome. Although his material contains no hitherto undescribed species, it adds another five forms to those recorded from the country, while the records of two subspecies of *Rhinolophopsylla unipectinata* are of zoogeographical interest.

I am most grateful to Dr. LINDBERG for having preserved the fleas which he encountered during his collecting activities in Afghanistan, and for having presented a number of duplicate specimens to the British Museum collection of fleas at Tring; the other material is in the Zoological Institute of the University at Lund, Sweden.

Some years ago Dr. Theresa CLAY presented us with specimens of *Ceratophyllus hirundinis* from Afghanistan; the particulars of this record are also given below.

The localities mentioned under the species listed are shown in Fig. 1.

A concise survey of the faunal exploration of Afghanistan is given in the introduction of the paper by AELLEN (1959: 353—354).

#### *Pulex irritans* L., 1758

- 1 ♂, large cave of Moumlaï, Kouh-Pir, 26.IV.1958.
- 1 ♀, Kabul, 10.VI.1959, *Canis familiaris* (domesticated).
- 2 ♂, between Qades and Qal'eh Naou, 30.VI.1959, under a stone.

The so-called human flea had already been recorded from Afghanistan by PEUS (1957: 604), the specimens having been obtained at various localities in the tent of the collector and in farmsteads at altitudes varying from 900 m to 3600 m.

#### *Ctenocephalides felis felis* (Bouché, 1835)

- 1 ♂ 5 ♀, Kabul, 10.VI.1959, *Canis familiaris* (domesticated).
- 1 ♀, Col de Sabzzak, 17.VI.1959, under a stone.
- 1 ♀, Doab, 31.VII.1959, under a stone.
- 9 ♂ 203 ♀, Kabul, 5.VIII.1959, *Felis catus* (domesticated).
- 7 ♂ 7 ♀, Kabul, 16.VIII.1959, *Homo sapiens*.

The sex-ratio of 9 ♂ to 203 ♀ in one batch from a cat in Kabul is quite remarkable and suggests that in Afghanistan the cat-flea's period of egg-laying (which requires fairly constant feeding) occurs around August.

#### *Ceratophyllus fringillae* (Walker, 1856)

- 2 ♀, Darreh Zang, 22.V.1959, sieved from earth and dead leaves.
- 2 ♂ 3 ♀, Qades, 30.VI.1959, from a bird's nest.

A common bird-flea in Europe, occurring especially in the nests of *Passer domesticus* and *Sturnus vulgaris*; known also from Israel, and in the U.S.S.R. from Ciscaucasia, near the Aral Sea, Ustyurt and Tadzhikistan.

#### *Ceratophyllus hirundinis* (Curtis, 1826)

- 5 ♂ 8 ♀, Danaghori Plain, V.1937, *Delichon urbica meridionalis*, T. CLAY don. Already recorded by SMIT (1957: 73) but without particulars. A common

monoxenous parasite of the house-martin (*Delichon urbica*) throughout Europe, western U.S.S.R., Kashmir and northern Africa.

***Chiropteropsylla brockmani* Rothschild, 1915**

1 ♂, 2 ♀, Kouh-Dozd cave, 21.IV.1958, *Asellia tridens murraiana*.  
2 ♂ 1 ♀, Siaou cave, 23.IV.1958, *Asellia tridens murraiana*; 1 ♀, *ibid.*, but without host-data.



Fig. 2. *Rbinolophopsylla unipectinata unipectinata* (Taschenberg) (from Cadenazzo, Ticino, Switzerland). Sternum VIII, segment IX and aedeagal hamulus.

So far I had only seen the following few specimens of this species in the Tring collection: 1 ♂ 3 ♀ from British Somaliland, 1 ♀ from Egypt, 1 ♂ from Kenya and the female holotype of *C. brockmani johnsoni* Hubbard, 1956, from Iraq. The females are all very much alike, but there are some slight differences, perhaps at most of a subspecific nature, between the males from Somaliland, Kenya and Afghanistan. It is most unfortunate that we do not know the male of *C. b. johnsoni* (this subspecies should not have been described from only a single female), for it cannot be ascertained whether or not the material from Afghanistan belongs to this subspecies.

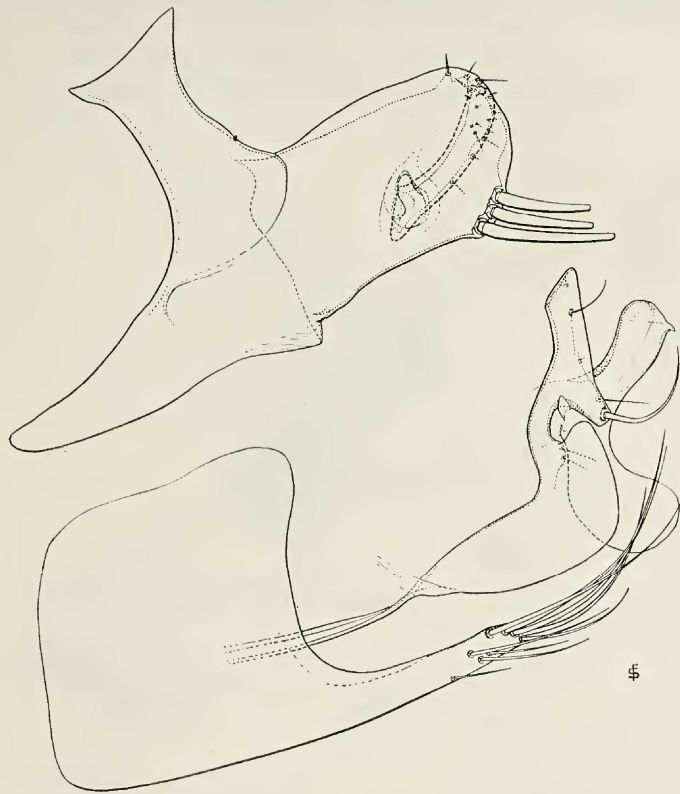


Fig. 3. *Rhinolophopsylla unipectinata turkestanica* Ioff (from Kaftar Khaneh cave, Afghanistan). Sternum VIII, segment IX and aedeagal hamulus.

***Rhinolophopsylla unipectinata unipectinata* (Taschenberg, 1880)**  
(Figs. 2, 4)

2 ♂ 1 ♀, Qal'eh Bost, 6.XII.1957, *Rhinolophus ferrumequinum irani* (caught in an underground room of a fortress).

1 ♂ 1 ♀, Chamchir ghar, 14.IV.1958, *Miniopterus schreibersi pallidus*.

This specific parasite of *Rhinolophus* was hitherto known from Switzerland, France, Belgium, Netherlands, Roumania, Czechoslovakia, Yugoslavia, Hungary, Spain, Italy, Greece, Bulgaria, Iraq, Crimea, Transcaucasia and Turkmenia (as far south-east as Takhta-Bazar, see Fig. 1). Dr. LINDBERG also collected, on September 26, 1956, one female of this subspecies from *Rhinolophus euryale* in the cave of Soultan, Séit, near Ahlat, in Turkey.

***Rhinolophopsylla unipectinata turkestanica* Ioff, 1953**  
(Figs. 3, 5)

1 ♂ 2 ♀, Kaftar Khaneh cave, 17.V.1959, from *Rhinolophus* sp.

This subspecies has been recorded from Tashkent (eastern Uzbekistan, see

Fig. 1) and west of it from the southern Kyzylkum sandy region (South Kazakhstan oblast) (IOFF & BONDAR', 1956: 110—112). The original description of *R. u. turkestanica* is very brief, but was supplemented by IOFF & BONDAR' (1956), who also give figures of the male modified abdominal segments of this and the

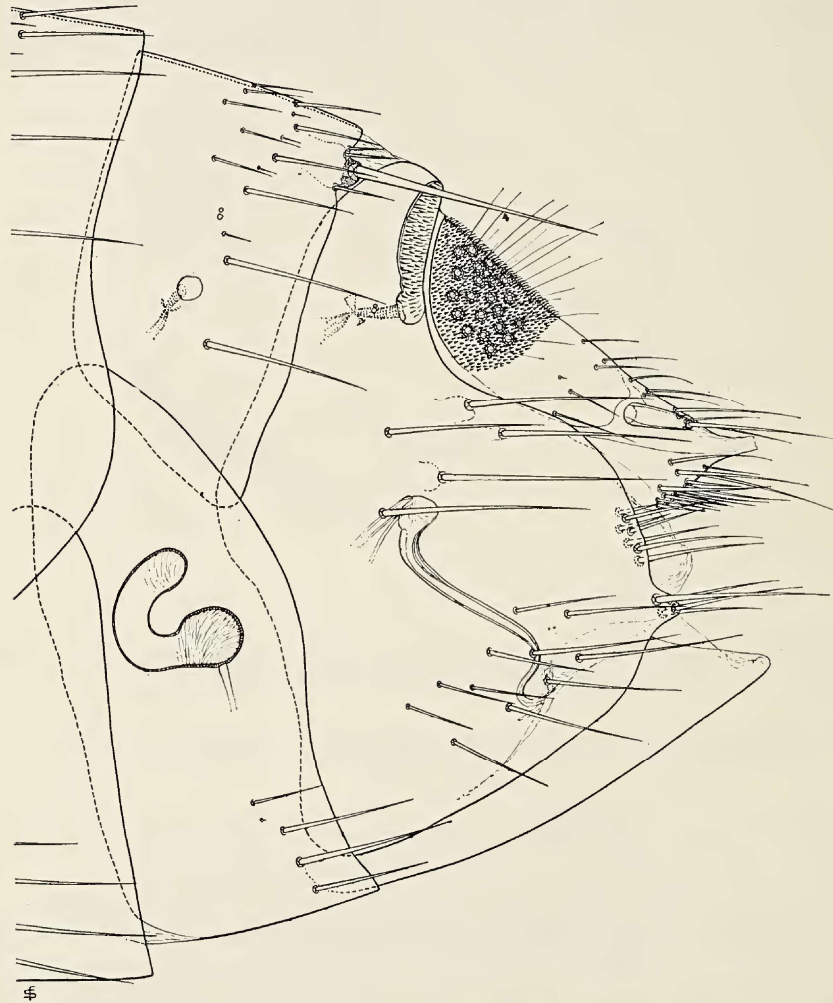


Fig. 4. *Rbinolophopsylla unipectinata unipectinata* (Taschenberg). Terminalia of female from Cadenazzo, Ticino, Switzerland.

nominate subspecies. Good as these drawings are, they do not show full details of the various structures, so I take this opportunity to give new figures of the male terminal segments of both subspecies and to figure and compare also the female terminalia of both subspecies.

*R. u. turkestanica* (Figs. 3, 5) differs from the nominate subspecies (Figs. 2, 4)

mainly by details of the modified abdominal segments, as shown by comparison below.

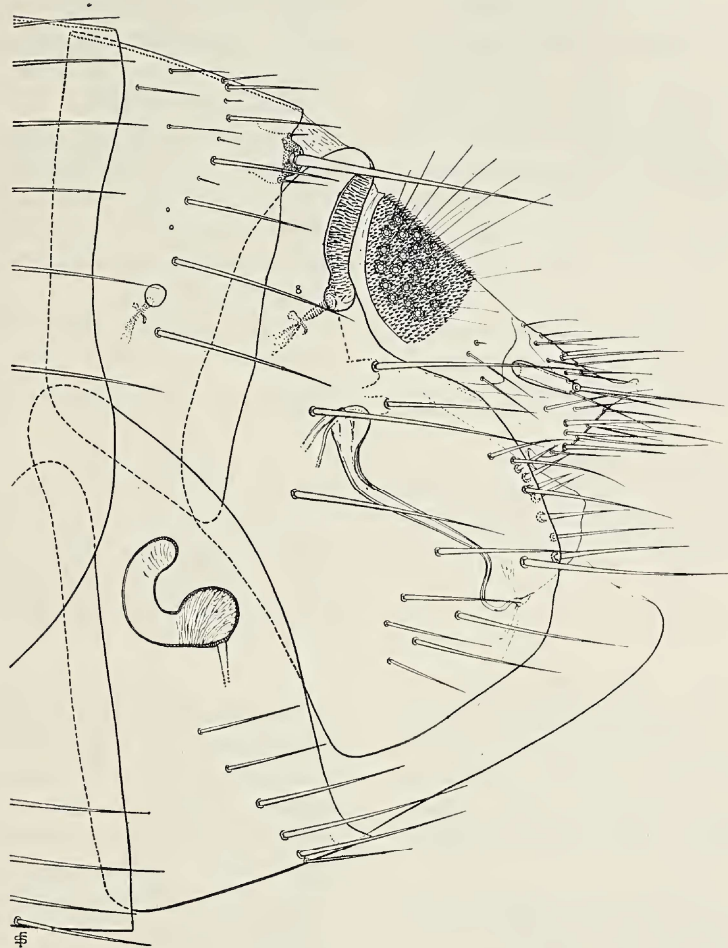


Fig. 5. *Rhinolophopsylla unipunctinata turkestanica* Ioff. Terminalia of female from Kaftar Khaneh cave, Afghanistan.

*R. u. unipunctinata*  
Male (Fig. 2)

*Sternum VIII*: Ventro-posterior projection rather short, with 2 or 3 long apical setae and a few shorter setae preapically.

*R. u. turkestanica*  
Male (Fig. 3)

*Sternum VIII*: Ventro-posterior projection very long, almost half the length of the ventral margin of this sternum; with 4 long apical setae and several shorter ones preapically.

*Clasper*: Corpus of clasper long (sometimes even longer than that shown in Fig. 2), distinctly projecting beyond the group of three acetabular setae; these setae have fairly blunt tips. Movable process short, about four times as long as broad in the middle. *Sternum IX*: Basal part of distal arm (the proximal arm is membranous in this species) markedly bent, not very broad; apical part broad. The bay between these two parts wide and open.

*Aedeagal hamulus*: Dorsal portion rather broad, the hyaline lower loboid extension shorter than the dorsal portion.

Female (Fig. 4)

*Sternum VII*: On each side a row of 4—5 setae; ventro-apical angle not much drawn out.

*Tergum VIII*: The lower group of setae on the posterior margin often placed on a short projection and separated by a gap from the other marginal and submarginal setae; below the projection the margin is concave.

*Sternum VIII*: Ventro-posterior angle rather sharp, though variable.

*Anal tergum*: Anal stylet placed at nearly twice its length from the sensillum.

*Anal sternum*: Ventrally with a dense group of setae.

*Clasper*: Corpus of clasper short, about one and a half times as long as high, hardly projecting beyond the group of three markedly obtuse acetabular setae. Movable process long and slender, about six times as long as broad in the middle.

*Sternum IX*: Basal part of distal arm bent at almost a right angle and much broader than in any of the other subspecies; apical part very narrow. The bay between these two parts very small and almost closed.

*Aedeagal hamulus*: Dorsal portion narrower, the hyaline lower loboid extension as long as the dorsal portion.

Female (Fig. 5)

*Sternum VII*: On each side a row of 5—6 setae which are a little farther removed from the posterior margin than in the nominate subspecies; ventro-posterior angle distinctly drawn out.

*Tergum VIII*: The lower of the setae on the posterior margin not placed on a projection, nor widely separated from the others; below these setae the posterior margin is directed downwards rather than forwards as is the case in the nominate subspecies.

*Sternum VIII*: Ventro-posterior angle broadly rounded.

*Anal tergum*: Distance of anal stylet from sensillum only a little greater than length of stylet.

*Anal sternum*: With fewer ventral setae than in nominate subspecies.

There are apparently no constant differences in the genital ducts or spermatheca.

The records of both subspecies from Afghanistan indicate that the nominate subspecies reaches its most south-eastern point in the southern half of this country, whereas *R. u. turkestanica*, which has a much more restricted range of distribution, probably does not go much farther south than about 35° N.

The other species already recorded from Afghanistan are:

- Xenopsylla astia* Rothschild — (PEUS, 1957 : 604)  
*Xenopsylla conformis conformis* Wagner — (JORDAN, 1944 : 360)  
*Ischnopsyllus octactenus* (Kolenati) — (PEUS, 1957 : 605)  
*Oropsylla silantiewi silantiewi* (Wagner) — (PEUS, 1957 : 605, fig. 1)  
*Nosopsyllus afghanus* Peus — (PEUS, 1957 : 605, figs. 2—5)  
*Monopsyllus sciurorum asiaticus* Ioff — (JORDAN, 1944 : 360, fig. 1, as *M. s. cophinus* Jordan; for synonymy see IOFF & ROSTIGAYEV, 1950: 169)  
*Callopsylla alticola* Jordan — JORDAN, 1944 : 360, fig. 2, as *Citellophilus alticola*; referred to *Callopsylla* by IOFF & ROSTIGAYEV, 1950 : 170)  
*Frontopsylla mutata* Jordan — (JORDAN, 1944 : 362, figs. 3, 4)  
*Phaenopsylla mustersi* Jordan — (JORDAN, 1944 : 363, figs. 5—8)  
*Amphipsylla montium* Jordan — (JORDAN, 1944 : 365, fig. 9 A, B)  
*Mesopsylla eucta afghana* Jordan — (JORDAN, 1944 : 366, fig. 10 A).

#### Literature

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Voedselplanten van enkele rupesoorten. Wat in de handboeken staat over de voedselplanten der rupsen, is soms erg vaag of voor ons gebied zelfs onjuist. Op de hieronder genoemde planten heb ik de rupsen zelf gevonden of ik heb ze er mee gekweekt.

*Lasiocampa quercus* L. Struikhei, stekelbrem (*Genista anglica*), kruipbrem (*Genista pilosa*), alle wilgesoorten, alle bosbessoorten, eik, berk, lijsterbes, braam, framboos, alle rozesoorten, gagel, liguster, klimop, laurierskers, alle *Prunus*-soorten, meidoorn, hazelaar, appel, peer, kers, aardbei, aalbes, andijvie, aardappelschillen, sla, havikskruid.

*Rhyparia purpurata* L. Struikhei, brem, stekelbrem, kruipbrem, alle wilgesoorten, blauwe bosbes, duizendblad, weegbree (breed- en smalbladige), dovenetel, brandnetel, zuring, sneeuwbes, rozen (*canina* en bastaarden), hennepnetel, vlasleeuwebek, havikskruid, walstro.

*Macrothylacia rubi* L. Struikhei, wilgesoorten, framboos, roos, berk, eik, Amerikaanse vogelkers, alle *Prunus*-soorten, appel, meidoorn, sla, andijvie, duizendblad, spiraea, gagel, havikskruid, viooltjes, riet, grassen (o.a. *Poa annua*).

*Stauropus fagi* L. Beuk, eik, berk, linde, hazelaar, els, esdoorn.

*Saturnia pavonia* L. Struikhei, brem, alle bosbessoorten, berk, beuk, eik, hazelaar, els, rozen, bramen, framboos, wilg, moerasspiraea, *Prunus*-soorten, appel, peer, kers, es, liguster, meidoorn, kamperfoelie.

W. J. BOER LEFFER, Korteweg 53, Apeldoorn (Med. R. I. V. O. N.).

Te koop. ROEPKE, De vlinders van Java (Dunlopalbum), f. 15; OUDEMANS, Nederl. Insecten, f. 20; WILDE, Die Pflanzen und Raupen Deutschlands I en II, 1860, f. 2,50; VERHUELL, Handboek voor liefhebbers en verzamelaars van vlinders, 1842, f. 1,50; THIJSSE, De bloemen en haar vrienden, f. 2,50. Te bevragen bij de Bibliotheek, Zeeburgerdijk 21, Amsterdam-O. Binnen een week geen antwoord, dan verkocht.