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(argv) Albak (or Halbak), Mazar-Cherif Province; 2. Darreh Zang, south-west of Belchiragh (or Belchirag), Maamarneh Gouvernement; 3. Ques, south-east of Qal'eh Naou (or Kala Nau), Herat Province; 4. Col de Sabzak (or Zarmat), 70 km north-east of Herat, Herat Province; 5. Moumnlai 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), Kandahar (or Kandahar) Province; 9. Chambahgahr, near Qandahar (or Kandahar), Kandahar Province; 10. Kabul (or Kaboul), Kabul Province; 11. Doab, Farvan Gouvernement; 12. Dandohi Plain (between the villages of Dahana and Ghori, 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 unipunctata* 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 Moumlai, Kough-Pir, 26.IV.1958.
2 ♂, Kabul, 10.VI.1959, *Canis familiaris* (domesticated).

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 ♂, Kabul, 10.VI.1959, *Canis familiaris* (domesticated).
2 ♂, Col de Sabzak, 17.VI.1959, under a stone.
4 ♂, Doab, 31.VII.1959, under a stone.

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.
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)


Already recorded by Smit (1957: 73) but without particulars. A common

**Chiropteropsylla brockmani** Rothschild, 1915

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

Fig. 2. *Rhinolophopsylla unipegicata unipegicata* (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* loff (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, Sefī, near Ahlat, in Turkey.

**Rhinolophopsylla unipectinata turkestanica** loff, 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

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. Rhinolophorylla unipectinata turkestanica** Hoff. Terminalia of female from Kafir Khaneh cave, Afghanistan.

**R. u. unipectinata**

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. Movably 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*: Vento-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. Movably 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 forewards as is the case in the nominate subspecies.

*Sternum VIII*: Vento-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-easterly point in the southern half of this country, whereas *R. u. turkestanaica*, 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 attica Rothschild — (Peus, 1957 : 604)
Xenopsylla conformis conformis Wagner — (Jordan, 1944 : 360)
Ischnopsyllus octacenus (Kolenati) — (Peus, 1957 : 605)
Oropsylla silantiwii silantiwii (Wagner) — (Peus, 1957 : 605, fig. 1)
Nosopsyllus afghanus Peus — (Peus, 1957 : 605, figs. 2—5)
Monopsyllus scirrorum asiaticus Ioff — (Jordan, 1944 : 360, fig. 1, as Al. s. cophilus 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 minutata Jordan — (Jordan, 1944 : 362, figs. 3, 4)
Phaenopsylla musitersi Jordan — (Jordan, 1944 : 363, figs. 5—8)
Amblypsylla montium Jordan — (Jordan, 1944 : 365, fig. 9 A, B)
Mesopsylla encta afghanica Jordan — (Jordan, 1944 : 366, fig. 10 A).

Literature


Voedselplanten van enkele rupsesoorten. 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.

Lonicera quercetorum L. Struikhei, stekelbrem (Genista vulgaris), kruijbrem (Genista pilosa), alle wilgessoorten, alle bosbossen, eik, berk, lijsterbes, braam, framboos, alle rozesoorten, gegal, liguster, klimop, laurierskers, alle Prunus-soorten, meidoorn, hazelaar, appel, peer, kers, aardbei, aalbes, andijvie, aardappelschillen, sla, havikskruid.

Rhyphia purpureata L. Struikhei, brem, stekelbrem, kruijbrem, alle wilgessoorten, blauwe bosbes, duizendblad, weegbree (breed- en smalbladige), dovenetel, brandnetel, zuring, sneeuwbes, rozen (canina en bastarda), hempenetel, vlasleeuwwebek, havikskruid, walstro.

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

Sauropus fagi L. Beuk, eik, berk, linde, hazelaar, els, esdoorn.

Sauraria parvonia L. Struikhei, brem, alle bosbossen, berk, beuk, eik, hazelaar, els, rozen, bramen, framboos, wilg, moerasspiraea, Prunus-soorten, appel, peer, kers, es, liguster, meidoorn, kamperfoelie.
