Tropical Biomedicine 23(1): 131–132 (2006)

Research Note

Notes on some ectoparasites received by the Medical Entomology Unit, Institute for Medical Research

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Abstract. There were a spate of recent complaints of insect bites and the entomological specimens received from various sources were identified to be those of cat flea (*Ctenocephalides felis*) and rat flea (*Xenopsylla cheopis*), the tropical bed-bug (*Cimex hemipterus*) and the dog louse (*Heterodoxus spiniger*). Only the fleas and the bed-bug are known to attack humans.

From time to time, the Medical Entomology Unit, Institute for Medical Research receives ectoparasites as fleas, bed-bugs and lice for identification. Attacks by fleas and bed-bugs have been reported to be frequent and since very little published information is available, it is felt expedient to publish on these arthropods of potential.

Specimens were received from various sources including a hotel, an industrial plant, departments at the IMR, a maternity ward, off humans and dog. Generally, specimens were received in 70% alcohol. Prior to identification they were processed as follows: cleared in 10% potassium hydroxide solution for a few hours or overnight, washed in distilled water and then transferred to 10% acetic acid, washed again in distilled water and dehydrated through increasing strengths of alcohol to absolute, then kept in clove oil overnight, thence mounted in Canada balsam and dried in a hot oven.

Using standard keys prepared by the Medical Entomology Unit, IMR, the fleas were identified as *Ctenocephalides felis* and *Xenopsylla cheopis*, the bed-bugs as *Cimex hemipterus* and lice that originated from dog as *Heterodoxus spiniger* (Table 1).

Fleas have played a significant role in the transmission of diseases in humans. *X.cheopis* is considered to be the primary species involved in the transmission of plague to humans in Myanmar (Brooks *et al.*, 1977). Plague is endemic in several Southeast Asian countries (Inder Singh, 1995). Peninsular Malaysia has experienced plague in the past and the last episode was in Perak in 1928 (Cheong, 1976). Inder Singh (1995) found the rodents, *Rattus rattus diardii* and *Rattus norvegicus* collected from the city of Kuala Lumpur commonly infested by *X. cheopis*. *C. felis*, the cat flea, a cosmopolitan species, is a pest in the urban environment and is the cause of much complain from the public for the considerable irritation and annoyance it causes by its bite (Noor Hayati *et al.*, 2002). It is an intermediate host of the dog

tapeworm *Diphylidium caninum*, that has been recovered from a 6-month old baby (Bartsocas *et al*., 1983).

The bed-bug, *Cimex hemipterus* is an important human pest. It has been found naturally infected with several disease-causing organisms such as those causing anthrax, plague, hepatitis and typhus. However, it has never been implicated in biologically transmitting pathogenic agents to humans (Goddard, 2003). From known records, only *C. hemipterus* the tropical bed-bug is known from Malaysia. The dog-lice have not been reported to attack humans.

This limited collection indicates that the cat-flea, *C. felis* is commonly encountered attacking human. The rat-fleas, *X. cheopis*, so far, have not been reported biting humans here. The bed-bug, is believed to be frequently encountered in hotels, probably due to increased tourism activity.

Table 1. Ectoparasites received by the Medical Entomology Unit, IMR

Species	**Source**
C. felis	Biting man, on floor
X. cheopis	Off rodent
H. spiniger	Off dog
C. hemipterus	Biting man, hotel, industrial plant

Acknowledgement. The authors thank Dr. Ng Kok Han, Director, Institute for Medical Research, Kuala Lumpur for permission to publish. Thanks are also due to Mr. Lee Woon Kai for assistance in the preparation of the manuscript

REFERENCES

Bartsocas, C.S., von Graevenitz, A. & Blodgett, F. (1966). *Diphylidium* infection in a 6 month old infant. *Journal of Pediatrics* **69**: 814-815.

Brooks, J.E., Naing, U.H., Walton, D.W., Myint, D.S., Tun, U.M.M., Thaung & U. Kyi, D.O. (1977). Plague in small mammals and humans in Rangoon, Burma. *Southeast Asian Journal of Tropical Medicine and Public Health* **8:** 335-344.

Cheong, W.H. (1976). Plague and typhus vector studies. In 75 Years of Medical Research in Malaysia, 1901 – 1976 (Editors, Ramanathan, K., Cheah, W.C & Dondero, T.J. Jr). *IMR studies No. 32*.

Goddard, J. (2003). *Physician's Guide to arthropods of medical importance*. CRC Press LLC, Florida, pp 444.

Inder Singh, K., Ambu, S., Krishnasamy, M., Rosli, R. & Jeffery, J. (1995). Surveillance of fleas from small mammals from Kuala Lumpur. *Tropical Biomedicine* **12:** 17-21.

Noor Hayati, M.I., Jeffery, J., Nordin, A. & Suboh, Y. (2002). Maculopapular rashes caused by cat flea *Ctenocephalides felis* (Siphonaptera : Pulicidae) bites in a university student. *Tropical Biomedicine* **19:** (1&2): 131-134.