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Research Note

A new record for *Lispe orientalis* Wiedemann, 1824 (Diptera: Muscidae) from peninsular Malaysia

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Abstract. *Lispe orientalis* Wiedemann, 1824 is recorded for the first time in peninsular Malaysia. Specimens were collected from a mushroom cultivation farm in Genting Highlands, Pahang (3°25'18"N 101°47'48"E). Previously, this species had been recorded from Azerbaijin, India, Russia, Tajikistan, Thailand, Turkey and South Korea. The male of *Lispe orientalis* can be determined by the following characteristics: body non-metallic, ashy gray, third antennal segment black, R_5 cell not narrow apically, hind metatarsus normal, legs entirely black, femora with long bristle-like hairs on av and pv surfaces, hind tibia without av and pv seta and the palpi orangish in colour.

The *Lispe* species belongs to the family Muscidae and the subfamily Coenosiinae. Muscidae is a large family of calyptrate dipterans which is widely distributed around the world and some of them are synanthropic in nature (Hogue, 1993). Coenosiinae is divided into two tribes namely Coenosiini and Limnophorini. The Coenosiini adults are predators (Werner & Pont, 2006a).

Lispe orientalis has not been recorded from Malaysia although it was documented in neighbouring countries such as Thailand. It was also previously recorded in Azerbaijin (Lenkoran), India (Rajastan, Jaipur), Russia (Krasnodarsky Kray, Primorsky Kray), Tajikistan (Khatlon), Thailand (Mae Hong Son, Chiang Mai, Kanchana Buri, Sa Kaeo, and Bangkok), Turkey (Izmir, Hatay) and South Korea (Seoul) (Shinonaga & Afzal, 1989; Vikhrev, 2011a). In Malaysia, *Lispe pacifica* was collected at Ulu Gombak road and *Lispe assimilis* was found in Bukit Mandul, Kuala Lumpur (Shinonaga & Pont, 1992). *Lispe pectinipes* Becker was recorded from Putrajaya by Nazni *et al.*, 2007 (as *Lispe leucospila* which is misidentification according Vikhrev, 2011b). Kurahashi & Shinonaga (2009) also described a new species of *Lispe forticata* in Sarawak, East Malaysia. Since then, little has been documented regarding the distribution and bionomics of *Lispe* in this country.

A fly survey was conducted on 19 March 2011 at a mushroom cultivation farm in Genting Highlands (3°25'18"N 101°47'48"E), which is about 1500 m above sea level with temperature ranging from 15 – 25pC. We collected four adult *Lispe orientalis* Wiedemann, 1824 and two adults, from the study site. In a dumping site near Chin Swee Temple in Genting Highlands (3°24'47"N 101°47'10"E), which is about 1400 m above

sea level, the specimens collected consisted of six adults of *Lucilia porphyrina* Walker, 1838, two adults each of *Chrysomya megacephala* (Fabricius, 1794), *Lucilia cuprina* (Wiedemann, 1830), *Hydrotaea chalcogaster* (Wiedemann, 1824), three adults each of Anthomyiidae, *Isomyia borneensis* (Peris, 1951), a species of Tachiniidae, *Fannia* sp., a species of Asilidae, *Trigona* sp., wasps, Blattaria and other unidentified insects. At Gotong Jaya town (3°23'57"N 101°46'14"E) which is about 1000 m above sea level, specimens collected consisted of *L. porphyrina*, *Parasarcophaga* sp., *I. borneensis*, *Atherigona* sp., and *Physiphora* sp. The specimens were killed, pinned, labelled and kept in the taxonomy room, Medical Entomology Unit, Institute for Medical Research. The specimens were then sent to the second author and subsequently identified as *Lispe orientalis* Wiedemann, 1824.

The eyes of both sexes of *Lispe* sp. are dichoptic. Palpi strongly dilated at apex and spoon-shaped (Fig. 1a). Arista with long plumose on basal half but occasionally reaching apex (Fig. 1b). Presuture bristles ac absent (Fig. 1c). Prosternum bare, hypopleuron with several hairs above hind coxa (Fig. 1d). Pteropleuron hairy (Fig. 1e). Lower squamae tongue-shaped. Fore tibia without or with 1 pv (Tumrasvin & Shinonaga, 1982). *Lispe orientalis* can be differentiated from other *Lispe* species by the following characteristics: Body colour is non-metallic with ashy gray. Third antennal segment black. Wing venation of R_5 cell not narrows apically. The legs entirely black, femora with long bristle-like hairs on av and pv surfaces (Fig. 2f), hind tibia without av and pv seta. Palpi orangish in colour (Tumrasvin & Shinonaga, 1982).

The adult of *L. orientalis* can be found near watersides (lake, pond, mountain stream, dumping site or sewage), forests and highlands (Skidmore, 1985; Vikhrev, 2011a). Shinonaga & Kano (1989) pointed out that *Lispe* sp. are shore-living muscids and their larvae are aquatic in the environment. In Malaysia, Nazni *et al.* (2007) collected only one adult of *L. pectinipes* in Botanical Garden, Putrajaya during night time. This study indicated that less significant population of *Lispe* was found as compared to other dipterans caught at the same locality. The results also showed that *L. pectinipes* might be a nocturnally active insect and was seldom attracted to salt fish, sugar, yeast, fermented shrimp paste or fresh ox liver. Sulaiman *et al.* (1988) described the role of cyclorrhaphan flies as parasites carriers and he concluded that *L. pectinipes* was not associated with human helminths in urban slum area of Kuala Lumpur. Thus, *Lispe* is yet to be incriminated as a mechanical vector for pathogens. In this study, *L. orientalis* was collected from a highland with lower temperature where it was first sighted in the mushroom cultivation farm. The mushroom garden consists of many variety of fungi for public exhibition including the Ling zhi mushroom (*Ganoderma lucidum*), button mushroom (*Agaricus bisporus*), oyster mushroom (*Pleurotus ostreaus*) and wood ear mushroom (*Auricularia polytricha*). Together with *L. orientalis*, we also collected the adults of *Fannia prisca*, which is also a highland inhabitant as reported by Tumarasvin and Shinonaga (1982) in Chiang Mai and in Cameron Highlands by Heo *et al.* (2008). This finding suggests that both species are distributed at the same ecological habitat and survive within the similar environment. Genting Highlands is thus a new locality for *F. prisca*.

According to Skidmore (1985), the adult *Lispe* appears to be bivoltine in temperate regions and the larval stage is overwintering. Yet, the complete life cycle of *Lispe* sp. and its behaviour is not well studied. Werner & Pont (2006b) identified *Lispe consanguinea* Loew, 1858 as an abundant species along the Oder River in Germany. They studied its predatory relationship with the simuliid populations and also documented the mating behaviour, oviposition and immature stages of *Lispe*.

Note on specimen, localities and collectors:

Specimens examined. MALAYSIA (Peninsular): 2 male, 2 female, Pahang, Genting Highlands 3°24'47"N 101°47'10"E, 1500m. 19. iii.2011. Chew WK.

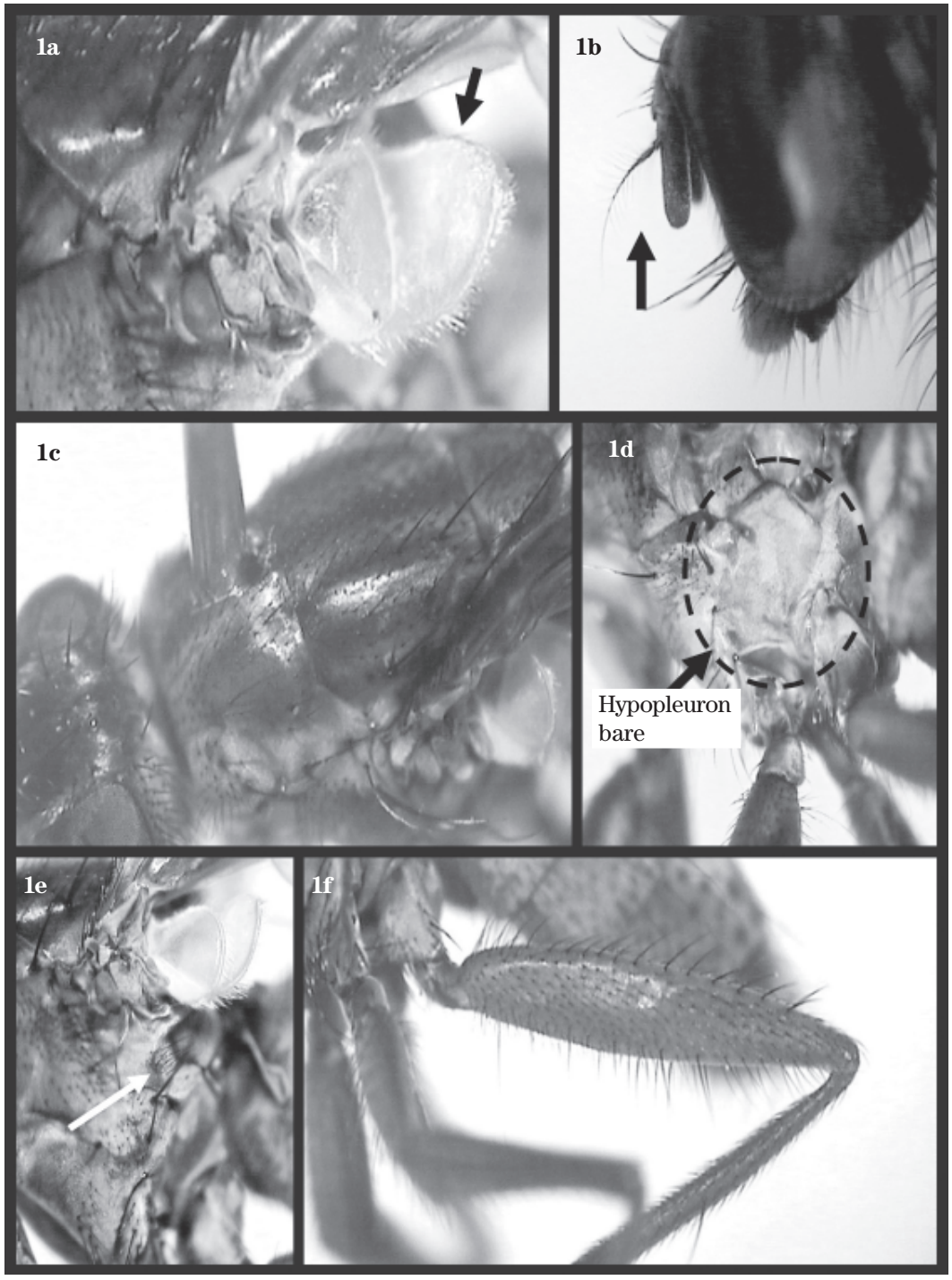

Figure 1. Adult male of *L. orientalis*. **a**. Lower squama spoon-shaped **b**. Arista long plumose **c**. Presuture ac absent **d**. Hypopleuron is bare **e**. Pteropleuron hairy **f**. Legs entirely black, femora with long bristle-like hairs on av and pv surfaces.

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