

## Taxonomic notes on the *Lispe leucospila* species-group (Diptera: Muscidae)

## К таксономии *Lispe leucospila* и родственных видов (Diptera: Muscidae)

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КЛЮЧЕВЫЕ СЛОВА: *Lispe leucospila*, *Lispe sinica*, *Lispe pectinipes*, Muscidae, Diptera, ключ, Палеарктика, Ориентальный регион, новый синоним.

ABSTRACT. Synonymy of the *Lispe leucospila* species-group is considered. In the Palaearctic and the Oriental region this group is represented by two species: *Lispe leucospila* (Wiedemann, 1830) (= *Lispe sinica* Hennig, 1960 **syn.n.**) and *Lispe pectinipes* Becker, 1903 (= *Lispe leucospila* (Wiedemann) sensu Hennig [misidentification]). An identification key for these species and notes on ecology are given. At least one more related species is present in the Afrotropical region.

РЕЗЮМЕ. Рассмотрена группа видов родственных *Lispe leucospila* (Wiedemann, 1830). В Палеарктике и Ориентальном регионе это группа представлена двумя видами: *Lispe leucospila* (Wiedemann, 1830) (= *Lispe sinica* Hennig, 1960 **syn.n.**) and *Lispe pectinipes* Becker, 1903 (= *Lispe leucospila* (Wiedemann) sensu Hennig [misidentification]). Дан ключ для определения видов и приведены данные по их биологии. Показано, что, по крайней мере, еще один родственный вид представлен в Афротропической области.

### Introduction

Hennig [1960] mentioned *L. leucospila* (Wiedemann, 1830) among *Lispe* species not placed in any of the six species-groups he proposed. In this paper I consider a complex of at least 3 related species which I propose to name as *Lispe leucospila* species-group. The members of this group may be recognized by the following set of characters: palpi moderately dilated; *t1* with strong *p*-seta; *t2* with 1 *pd* and 1 *ad*; *t3* with 1 *ad*, 1–2 *av* and in male with several long *pv* setulae in apical part; *prst dc*: posterior pair remarkably strong,

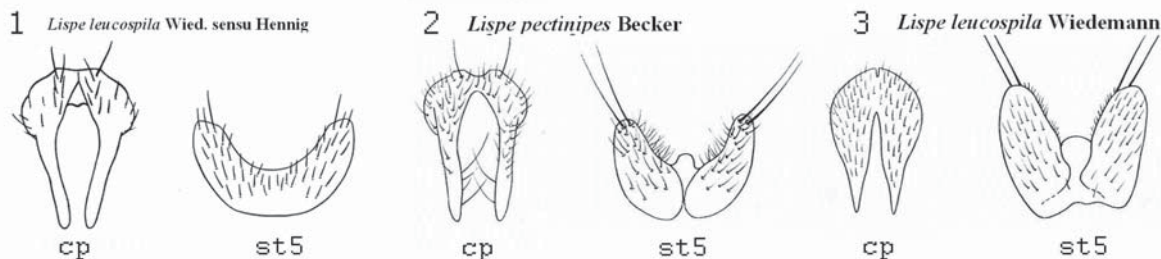
anterior pair absent; *post dc*: 2 posterior pairs strong, 1–2 anterior pairs weak.

Based on Stein's examination of the type of *L. leucospila* (Wiedemann) Hennig [1960: 439] came to a conclusion that the vast majority of the available material (from Canary Islands to the Oriental region) belongs to the same widespread species hereinafter referred to as *Lispe leucospila* sensu Hennig. Hennig examined the type material of *Lispe pectinipes* Becker, 1903, *Lispe cochlearia* Becker, 1904 and *Lispe mixticcia* Seguy, 1941 and found them conspecific with *Lispe leucospila* sensu Hennig. He also revealed 3 female specimens from S-E China differing from others and described them as the new subspecies *Lispe leucospila sinica* Hennig, 1960.

Later Pont [1986] raised the status of *L. leucospila sinica* Hennig to the valid species *Lispe sinica* Hennig.

Lyneborg [1970: 43] examined the type material of *L. pectinipes* and *L. leucospila* and found that the male terminalia of the lectotype (designated by Lyneborg [1970: 43] of *L. pectinipes* (Fig. 2) were similar to the Hennig's drawing given for *L. leucospila* sensu Hennig (Fig. 1) [Hennig, 1960: plate XX, Fig. 399 and Textfig. 154], but the male terminalia of the lectotype (designated by Lyneborg [1970: 44]) of *L. leucospila* were different (Fig. 3). So, Lyneborg restored *L. pectinipes* Becker as a valid species. Lyneborg identified his material belonging to the *Lispe leucospila* species-group from Spain and Algeria as *L. pectinipes*.

Pont [1991] examined the *Lispe leucospila* species-group material from Arabian Peninsula. Again, no specimen with male terminalia fitting the lectotype of *L. leucospila* was recorded at all and the majority of specimens were identified as *L. pectinipes*, but 1 ♂ and 2 ♀♀ from Yemen were identified as *Lispe* sp.



Figs 1–3. Male terminalia of *Lipse leucospila* (Wiedemann) sensu Hennig (1), *L. pectinipes* Becker (2) and *L. leucospila* (Wiedemann) (3): 1 — from [Hennig, 1960: plate XX, Fig. 399 and Textfig. 154]; 3 — from Lyneborg, 1970: 43. Abbreviations: cp — cercal plate in posterior view; st5 — sternite 5.

Рис. 1–3. Терминалии самцов *Lipse leucospila* (Wiedemann) sensu Hennig (1), *L. pectinipes* Becker (2) и *L. leucospila* (Wiedemann) (3): 1 — по Hennig, 1960: plate XX, Fig. 399 and Textfig. 154; 3 — по [Lyneborg, 1970: 43. Сокращения: ср — церки вид сзади; st5 — 5-й стернит.

Meanwhile Asian authors still use the name *L. leucospila* in the sense of *L. leucospila* sensu Hennig, see for example Shinonaga & Tewari [2008] or Xue & Zhang [2005], the other species from this group recorded by Asian authors is *L. sinica* Hennig.

So, the main question was: what is *L. leucospila* apart from Wiedemann's syntypes. I hope that in this paper I clarify the situation.

### Taxonomic part

The specimens studied are in the Zoological Museum of Moscow University (unless otherwise indicated in text).

#### *Lipse leucospila* (Wiedemann, 1830) (Figs 3, 4, 5)

*Coenosia leucospila* Wiedemann, 1830: 441. Type locality: "Ostindien"; lectotype ♂ and paralectotypes 2 ♀♀, Universitetets Zoologisk Museum, Copenhagen, designated by Lyneborg, 1970: 44.

*Lipse leucospila sinica* Hennig, 1960: 440, **syn.n.**

*Lipse sinica*: Pont, 1986.



Fig. 4. *Lipse leucospila* Wiedemann, male.

Рис. 4. *Lipse leucospila* Wiedemann, самец.

*Lipse leucospila* (Wiedemann, 1830): Lyneborg, 1970: 43, Figs. 23, 24, 25.

MATERIAL EXAMINED. China: (Laoning prov.), Mukden (Shenyang), 12.VII.1952, I.Rubtsov, 2 ♀♀ — Zoological Institute S-Petersburg, paratypes *Lipse leucospila sinica* Hennig, 1960: 440; Cambodia: Kampot prov, Bokor, 1000m asl., 10.627°N 104.026°E, 08-10.XII.2010, N.Vikhrev, 1 ♂; Koh Kong prov, a wet grassland, 11.660°N 103.097°E, 29.XI.2010, N.Vikhrev, 4 ♂♂, 7 ♀♀; Thailand: Chonburi prov., Jomtien env., X. 2007-2009, N.Vikhrev, 3 ♂♂, 6 ♀♀; Phang Nga prov., Khao Lak env., 8.65°N 98.25°E, 20.XII.2010, N.Vikhrev, 1 ♀; India: Goa state, 15.II.2009, K.Tomkovich, 1 ♀; Rajasthan state (27.46°N 76.54°E), 02.III.2011, N.Vikhrev, 1 ♀.

#### *Lipse pectinipes* Becker, 1903 Figs 1, 2, 5.

*Lipse pectinipes* Becker, 1903: 113. Type locality: Egypt, Cairo; lectotype ♂ and paralectotypes 2 ♀♀, Zoologisches Museum der Humboldt-Universität, Berlin, designated by Lyneborg, 1970: 43.

*Lipse cochlearia* Becker, 1904: 32.

*Lipse mixticcia* Seguy, 1941: 1.

*Lipse leucospila* (Wiedemann, 1830) sensu Hennig [1960: 440, plate XX, Fig. 399 and Textfig. 154], misidentification.

*Lipse pectinipes* Becker, 1903, Lyneborg, 1970: 43, Figs. 20, 21, 22.

MATERIAL EXAMINED. Over 80 specimens from: Morocco (Essaouira), Greece (Crete), Egypt (Luxor), Turkey (Izmir, Antalya,



Fig. 5. *Lipse pectinipes* Becker. Female with prey — insect larva, Turkey.

Рис. 5. *Lipse pectinipes* Becker. Самка с добычей — личинкой насекомого, Турция.



Fig. 6. Fresh (left) and aged (right) females of *Lispe leucospila* Wiedemann.

Рис. 6. Молодая (слева) и старая (справа) самки *Lispe leucospila* Wiedemann.

Konya, Hatay), Azerbaijan (Lenkoran), India (Goa, Rajasthan), Thailand (Chonburi, Chantaburi, Mae Hong Son, Phang Nga).

#### *Lispe* sp.

*Lispe* sp. of *leucospila*-group. Pont, 1990: 354, Figs. 18, 19.

MATERIAL EXAMINED. Ethiopia: Oromia reg., 8.057N 38.007E, savannah, 01.XI.2009, L.Rybalov, 1 ♂; Yemen: Taiz, banana plantation, 24.I.1975, Sakharova, 1 ♀.

#### IDENTIFICATION KEY FOR THE *LISPE LEUCOSPILA* SPECIES-GROUP (FOR PALAEARCTIC AND ORIENTAL REGIONS)

- ♂: Abdomen with a lateral uninterrupted grey stripe on tergites 1+2 to 5; ♀: Abdomen densely grey dusted, only dorsally with black spots. ♂♀: Disc of scutum densely dusted, with rather narrow brown median vitta from neck to tip of scutellum, submedian vittae hardly distinct. Two proepisternal setae (the second one half as long as the first one). Wing hyaline. ♂: frontal triangle dusted, *t3* with 8-11 longer *pv* setae. S-W and S-E Palaearctic, Oriental, (Afrotropical?)..... *pectinipes* Becker
- ♂♀: Abdomen entirely glossy black, only small paired white dorso-lateral spots present (spots on tergites 4 and 5 always widely separated by glossy area in males, in females these spots sometimes are reduced up to a single pair on tergite 5 only). Disc of scutum dusted only in lateral part, with rather wide, glossy black, distinct median and submedian vittae, disc of scutellum entirely glossy black. Only one proepisternal seta (if the second one present it is usually hardly longer than scutal ground setulae). Wing darkened as in Fig. 4 and 6. (sometimes hardly visible). ♂: Frontal triangle undusted black in central part. *t3* with 5-6 shorter *pv* setae. Oriental, S-E Palaearctic ..... *leucospila* Wiedemann

#### Discussion

1. I propose the synonymy of *L. leucospila* sensu Hennig with *L. pectinipes* which follows from the results published by Lyneborg [1970], but was never formally proposed. Hennig regarded *L. pectinipes* and *L. leucospila* sensu Hennig as synonyms; the male terminalia of *L. pectinipes* given by Lyneborg (Fig. 2) are similar to Hennig's drawing for *L. leucospila* sensu Hennig (Fig. 1) and to the male terminalia of *L. pectinipes* from Morocco, Egypt, Turkey and Thailand examined by me; other characters of my specimens of *L. pectinipes* also completely fit Hennig's description of *L. leucospila* sensu Hennig. *L. leucospila* sensu Shinonaga et sensu Xue actually is *L. pectinipes* too.

2. The female specimens listed above as *L. leucospila* completely fit Hennig's description of *Lispe leucospila sinica* and are similar to the female paratype of *L. leucospila sinica* in ZIN. On the other hand, the male specimens listed above as *L. leucospila* have the terminalia similar to those given for the lectotype of *L. leucospila* by Lyneborg [1970]. Lyneborg has also mentioned that the lectotype of *L. leucospila* has the abdominal pattern on tergites 4 and 5 differing from that of *L. pectinipes*. At the same time the abdominal pattern on tergites 4 and 5 of the lectotype of *L. leucospila* and of my specimens fits that of *L. sinica*.

The question arises why Lyneborg did not mention the scutal pattern and wing darkening? The scutum is often damaged by a pin and besides this character requires a good condition of specimens which is a rare

case for flies collected almost two hundred years ago. Wing darkening in *L. leucospila* seems to be non-persistent (probably light-sensitive), Fig. 5 shows that the wing pattern is hardly visible in an aged specimen in comparison with a fresh one. I suppose that the instability of wing pattern leads to similar effects in aged specimens and in those collected long ago. What is more, Fig. 6 illustrates that scutal pattern becomes poorly visible in aged specimens too, so that the abdominal pattern is the most reliable character and it is placed as the main one in the identification key.

Thus, both in the Palaearctic and the Oriental regions the *Lispe leucospila* species-group is represented by two easily recognizable species: the more common and widespread *L. pectinipes* and the less common although earlier described *L. leucospila*.

The male from Ethiopia completely fits Pont's [1991] description of *Lispe* sp. from Yemen, but the correct naming of this species requires examination of additional Afrotropical material.

### Ecology

Both *L. leucospila* and *L. pectinipes* differ ecologically from most of other *Lispe*: their typical habitats are grassy lawns being artificially watered or similar natural habitats, usually secondary sites with short grass

and moderately wet soil. In the southern Palaearctic these conditions are usually present in the cold season from late autumn to early spring and in the Oriental region after the end of rainy season. The best way of collecting is by sweeping in the evening when flies sit on grass and are not too active. The typical prey items are insect larvae (Fig. 5).

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