

## Notes on Phaoniini (Diptera: Muscidae) from Bali Island

## Заметки о Phaoniini (Diptera: Muscidae) острова Бали

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КЛЮЧЕВЫЕ СЛОВА: *Phaonia*, *Pictia*, Muscidae, Diptera, Бали.

ABSTRACT. Three species of Phaoniini were newly recorded for Bali Island, Indonesia. Distribution of *Phaonia crassipalpis* and related *Ph. palpata* is discussed. *Ph. cilitibia*, hitherto known only from Myanmar, is here renamed as *Ph. emdeni* **nom.n.** Hitherto unknown female of *Pictia xanthocera* is described.

РЕЗЮМЕ. Впервые для о-ва Бали (Индонезия) отмечено 3 вида Phaoniini. Обсуждается распространение *Phaonia crassipalpis* и близкородственного *Ph. palpata*. Ранее известная только из Мьянмы *Ph. cilitibia* переименована в *Ph. emdeni* **nom.n.** Описана неизвестная до настоящего времени самка *Pictia xanthocera*.

## Introduction

Tribe Phaoniini is better represented in the temperate zone whereas in tropical localities it is uncommon. During our short trip on Bali Isl. we collected 3 species which belong to genera *Phaonia* Robineau-Desvoidy, 1830 and *Pictia* Malloch, 1926. These findings are worth to be reported even as such, but it turned that each finding also helped to clarify some taxonomic problem. That is why we decided to publish these short notes right away after sorting the Balinese material.

## Material and methods

The specimens listed are in the Zoological Museum of Moscow University (ZMUM) or Zoological Institute Russian Academy of Sciences, St-Petersburg (ZIN). Localities are given as follows: country, region, geographical coordinates in the decimal degrees format.

The following generally accepted abbreviations for morphological structures are used: *fl*, *t1*, *f2*, *t2*, *f3*, *t3* = fore-, mid-, hind- femur or tibia respectively; *ac* — acrostichal setae; *dc* — dorsocentral setae; *a*, *p*, *d*, *v* = anterior, posterior, dorsal, ventral seta(e); *prst* — presutural, *post* — postsutural. YPT — yellow pan trap.

*Phaonia crassipalpis* Shinonaga et Kano, 1971

*Phaonia crassipalpis* Shinonaga et Kano, 1971. Type locality: Japan, Tokyo env., Mt. Takao (35.625°N 139.245°E).

*Phaonia crassipalpis* Shinonaga et Kano, 1971: Zinoviev, 1980.

MATERIAL. INDONESIA, Bali prov., Handara Golf Resort, 8.245°S 115.160°E, 1300 m asl, 17–22.12.2016, N. Vikhrev, 1♂; Bedugul, 8.272°S 115.158°E, 1300 m asl, 23–27.12.2016, N. Vikhrev, 1♂; D. Gavryushin, 1♀ (ZMUM).

## OTHER EXAMINED MATERIAL

MALAYSIA, Pahang state, Fraser's Hill, 3.71°N 101.74°E, 1250 m asl, 8–12.02.2014, N. Vikhrev, 1♀ (ZMUM).

RUSSIA: Khabarovsk reg., Khabarovsk, 48.6°N 135.1°E, 13.06.2014, N. Vikhrev, 1♂ (ZMUM); Primorsky reg., Anisimovka env., 43.17°N 132.79°E, A. Zinoviev, 17–24.06.1979, 2♂♂, 6♀♀ (ZIN); Vladivostok, Lesnaya Zaimka, 43.28°N 132.10°E, A. Zinoviev, 26.06.1982, 1♂ (ZIN); Vladivostok, Okeanskaya, 43.26°N 132.04°E, 29.08.1978, A. Zinoviev, 29.08.1978, 1♀ (ZIN); Suputinsky [=Usuriysky] Nat. Res., 43.65°N 132.35°E, 26.05.1969, A. Zinoviev, 1♂ (ZIN); Kedrovaya Pad Nat. Reserve, 43.1°N 131.5°E, 22.09.1978, A. Zinoviev, 1♀ (ZIN); 40 km E of Chuguevka, 44.2°N 134.4°E, D. Kasparyan, 24.08.1978, 1♀ (ZIN); Sakhalin reg.: Kunashir Isl., Tretyakovo env., 43.99°N 145.66°E, YPT, I. Melnik, 13–22.09.2009, 4♀♀; 18–24.08.2008, 3♀♀; Kunashir Isl., cape Alekhinsky, 43.918°N 145.527°E, 19–21.09.2009, I. Melnik, 1♀; Kunashir Isl., kordon Saratovskiy, river valley, 44.265°N 146.105°E, 6–7.07.2011, I. Melnik, 1♂; Kunashir Isl., volcano Golovnina env. (43.85°N 145.48°E), YPT, 25–29.08.2009, I. Melnik, 1♂; Kunashir Isl., Kurilsky NR, Andreevskiy cordon, (H<sup>2</sup>43.9°N 145.6°E), 6–8.07.2014, A. Gomyranov, 1♂ (all ZMUM); Kunashir Isl., cape Alekhinsky, 43.918°N 145.527°E, 6.06.1968, V. Rikhter, 1♂ (ZIN); Sakhalin Isl., Yuzhno-Kurilsk (44.0°N 145.8°E) env., A. Zinoviev, 5–12.07.1979, 2♂♂, 2♀♀ (ZIN); Shikotan Isl., cape Kray Sveta env. 43.84°N 146.91°E, 22.09.1968, K. Gorodkov, 1♀ (ZIN).

DISCUSSION. We identified our Balinese specimens as *Ph. crassipalpis* Shinonaga et Kano, 1971. The species is known from Japan: Hokkaido and Honshu Islands; S Korea and Russia: Khabarovsk (a new record), Primorsky and Sakhalin regions. All SE Asian specimens (from Bali and peninsular Malaysia) were collected at elevation of about 1300 m asl. The SE Asian specimens entirely fit Far Eastern *Ph. crassipalpis* in females, while in males differ by narrower fronto-orbital plates (as narrow as in *Ph. palpata* Stein, 1897).

*Ph. crassipalpis* is a closely related sister-species to *Ph. palpata* Stein, 1897 which is widely distributed in Western and Central Europe. The range of *Ph. palpata* is worth of a more detailed discussion.

First, our material gives several new records for European countries: SERBIA: Crni Vrh env., 43.407°N 22.587°E,

800 m, N. Vihrev, 16–22.09.2014, 1♀; 1–8.05.2015, 1♂; 1–7.07.2015, 1♀; Babin Zub, 43.375°N 22.625°E, 1550m, N. Vihrev, 1–7.07.2015, 1♂ (all ZMUM); SPAIN, *Sturias* reg., Playa de la Griega, 43.5°N 5.26°W, P. Alvarez, 1.11.2015, 1♀ (ZMUM); UKRAINE, *Zakarpattia* reg., 40 km NE of Uzhgorod, Lumshory env. 48.8°N 22.7°E, K. Gorodkov, 27.07.1964, 1♀ (ZIN).

Second, the eastern limit of the distribution of *Ph. palpata* is especially interesting. From European Russia *Ph. palpata* was known only from the vicinity of St-Peterburg [Hennig, 1963], but freshly collected ZMUM's material extended the known range substantially:

RUSSIA: *Crimea* reg., Bolshoi Canyon, 44.519°N 33.996°E, 540m, 26.09.2015, N. Vihrev, 1♀; *Krasnodar* reg.: Gelendzhik, Krinita env., Pshada R., 44.3956°N 38.3415°E, YPT, 7–10.09.2009, K. Tomkovich, 2♂♂; Sochi distr., Khosta, 43.52°N 39.87°E, 3–9.05.2011, N. Vihrev, 1♂; *Kursk* reg., Streletskaya steppe, oak wood (51.565°N 36.085°E), N. Vihrev, 7.09.2007, 1♀; 20.06.2008, 1♀; *Moscow* reg.: Dmitrov distr., Kostino env. (56.31°N 37.75°E), 25.06.2009, N. Vihrev, 1♂; Moskovskiy env. 55.590°N 37.331°E, YPT, K. Tomkovich, 20–24.08.2015, 1♂; 30–31.07.2015, 1♀; Tsaritsyno Park (55.61°N 37.68°E), 11.08.2009, K. Tomkovich, 1♀; Podolsk env., 55.448°N 37.563°E, 2–5.09.2011, K. Tomkovich, 1♀; Ruza env., 55.66°N 36.05°E, E. Erofeeva, 21–30.07.2015, 1♀; 20–31.08.

2015, 1♀; 11–20.06.2016, 1♀; 21–30.06.2016, 1♀; 1–11.09.2016, 1♀; 21–30.06.2017, 2♀♀; 1–11.07.2017, 12♂♂, 3♀♀; 21–30.07.2017, 1♀; *Ryazan* reg., Kasimov env., Zalesnoe vill., 54.969°N 41.327°E, 21–26.07.2013, N. Vihrev, 1♀ (all ZMUM).

Thus, *Ph. palpata* is newly found in several localities in Central and Southern parts of European Russia eastwards till about 40°E. Of course, the absence of records of *Ph. palpata* from East part of European Russia well may be because of the lack of material from this region. On the other hand, Altai Mts and Novosibirsk region are dipterologically well explored, so the absence of *Ph. palpata* in West Siberia is rather reliably confirmed.

We offer to distinguish two species as follows:

- Femora dark. Elongated *prst ac* setae normally present. Europe. ♂: fronto-orbital plate hardly wider than anterior ocellus. ... *palpata* Stein
- Femora yellow. Elongated *prst ac* setae normally absent. E Asia. ♂: each fronto-orbital plate more than 1.5x as wide as anterior ocellus (except for Balinese males). ... *crassipalpis* Shinonaga et Kano

According to a very interesting analysis of the history of the Palearctic insect fauna given by Dubatolov and Kosterin [2000] the most probable time of divergence of these related species of *Phaonia* is 100 000 years when after Kazantseva Interglacial the trans-Palaeartic belt of broad-leaf forests



Figs 1–3. *Pictia xanthocera*, ♀: 1 — lateral view; 2 — frontal view; 3 — dorsal view.

Рис. 1–3. *Pictia xanthocera*, ♀: 1 — сбоку; 2 — спереди; 3 — сверху.

disappeared during Zyryanka Glacial. However the Holocene Climatic Optimum which took place only 5000–10 000 years ago also could not be excluded as a possible period of the contact between *Ph. palpata* and *Ph. crassipalpis*.

The large distributional gap between European *Ph. palpata* and Far Eastern *Ph. crassipalpis* makes Stein's [1915] record of *Ph. palpata* from Taiwan (Formosa) enigmatic. The simplest explanation is that Stein's female belonged to *Ph. crassipalpis*, but according to Stein, Taiwanese female differs from typical *Ph. palpata* only by details of thoracic and abdominal pattern, so it should have dark femora.

*Phaonia emdeni* Vikhrev et Erofeeva **nom. n.**

*Phaonia cilitibia* Emden, 1965. Type locality: Burma (Myanmar), Kambaiti, 2000 m asl.

A junior primary homonym of *Phaonia cilitibia* Albuquerque, 1955: 375 (presently *Micropotamia cilitibia* (Albuquerque, 1955)) renamed here as *Phaonia emdeni* **nom. n.**

**MATERIAL.** *Phaonia cilitibia* Emden, 1965, paratype, 1♂: N. E. BURMA (Myanmar), Kambaiti, 7000 ft (= 2100 m asl), (25.53°N 98.14°E), 11.05.1934 R. Malaise; *Phaonia cilitibia*, sp.n., Van Emden det., 1953, "Pres by, Com.Inst.Ent., B.M. 1957–401" (ZIN). INDONESIA, Bali prov., Handara Golf Resort, 8.245°S 115.160°E, 1300 m asl, 17–22.12.2016, N. Vikhrev, 1♂ (ZMUM).

**REMARKS.** Our male fits the examined paratype and Emden's [1965] detailed description of *Ph. cilitibia*. The only character worth mentioning is completely brown colour of femora and tibiae contrasting with yellow leg colour in the ZIN's paratype. However Emden wrote in the original description that «legs pale-testaceous, often considerably browned», so we regard it as intraspecific variability.

*Pictia xanthocera* Walker, 1859

Figs 1–3.

*Pictia xanthocera* Walker, 1859. Type locality: Macassar, Celebes (Sulawesi).

**MATERIAL.** INDONESIA, Bali prov., Handara Golf Resort, 8.245°S 115.160°E, 1300 m asl, 17–22.12.2016, N. Vikhrev, 2♀♀ (ZMUM).

**REMARKS.** The monotypic genus *Pictia* was established due to a combination of several characters: thoracic *Anthomyia*-pattern; setulose prosternum; weak *pd* seta on *t3*. Separately these characters could be found among species of *Phaonia* as well. We prefer to leave this species in *Pictia* unless future molecular phylogeny refutes this point of view.

**DESCRIPTION OF FEMALE.** Body length about 6.5 mm. *Head.* Eyes bare. Frons broad, 1/3 head width; dark;

without interfrontal setae. Fronto-orbital plates, parafacials and face whitish; gena with triangular black mark; occiput dark. Fronto-orbital plates with 4–5 inclinate and 2 reclinate setae, almost without additional short hairs. Pedicel dark: postpedicel contrasting whitish-yellow; arista long plumose, hairs 2–2.5x as long as postpedicel width. Mouthedge not protruding. Palpi black, dilated, slightly wider than postpedicel width. *Thorax.* Scutum with *Anthomyia*-pattern: background grey; presutural area with a pair of triangular black marks around *prst dc*; postsutural area with wide black band from suture to level of second *dc*. Thoracic spiracles dark brown. Prosternum with 4 rather strong setae at sides; *dc* 2+3, all strong; *ac* 0+1, *prst ac* hairs in 5 rows; prealar seta strong; notopleuron and katepimeron bare; meron with 3–4 setulae between spiracle and hind coxa. Wings with strong yellow tint; veins bare; calypters yellowish-white; halter with brown knob. *Legs* dark, tibiae brownish-red. *t1* without seta. *t2* with 2 *p* setae. *f3* with a complete row of 9–10 *av*. *t3* with 2(3) short *av*, 1 strong *ad* and 1 *pd* setae. *Abdomen* yellow with whitish dusting and not very distinct undusted median vitta. Sternite 1 setulose. Tergite 4 with strong marginal setae.

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