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The horse-fly (Diptera: Tabanidae) of the Vis island (Croatia) with notes on the status of *Tabanus marianii* (LECLERCQ, 1956)

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Abstract. The horse fly fauna (Diptera, Tabanidae) of the island of Vis contains 3 species: *Tabanus bifarius* LOEW, *Tabanus marianii* LECLERCQ and *Philipomyia graeca* FABRICIUS. *T. marianii* is recorded from Croatia for the first time. Its separation from the very similar *T. bifarius* and its distribution are discussed.

Key words: *Tabanus marianii* (LECLERCQ), Diptera, Tabanidae, Croatia.

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I. INTRODUCTION

The Croatian coast of the Adriatic Sea includes 1200 islands, cliffs and reefs, which make it one of the most beautiful coasts in Europe (JELIĆ & KLARIĆ 1995). It has been shown (MATONIČKIN & ERBEN 1994) that these islands may contain a large proportion of endemic or noteworthy taxa. However, very little is known about their Diptera fauna (KRČMAR & DURBEŠIĆ, 2001). This unsatisfying fact was encouragement to start with a study project in order to achieve a better knowledge about diversity of Diptera on several outer Adriatic islands. In this contribution, the Tabanidae fauna of the island of Vis is presented.

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II. MATERIAL AND METHODS

The island of Vis is situated at 43° 00'-43° 05' N, 16° 00'-16° 15' E degree. The mediterranean, xerothermic evergreen vegetation belongs to the holm-oak forests (*Orno - Quercetum ilicis*) which are present in a degraded forms of maquis and garrigues, developed on thin rocky soil. Human ac-

tivities created the secondary biotopes like vineyards, pastures and ruderal areas. The flies were collected in July 2001 and June 2002 at 10 localities of which 8 were overgrown with maquis, and two were adjacent to vineyards. Horse flies were sampled using the sampling net on the donkey, by the hand in a car and by means of red and blue MALAIS traps with 1-octen 3-ol as attractant. The specimens were identified with CHVÁLA et al (1972) and PEUS (1980). They are deposited in the collection of the Faculty of Education, Osijek, Croatia.

III. RESULTS AND DISCUSSION

The species and number of collected specimens are presented in Table 1. The most abundant species is *Philipomyia graeca,* with more than 2/3 of all specimens, followed by *Tabanus bifarius* (about 1/3 of the total specimens). Surprising was the catch of 1 male and 2 females of *T. marianii*. They are found dead, under the windshield of the old, abandoned car, in the vineyard near ena Glava village 11 VII 2001 (UTM gird WH 96). *T. marianii* was known so far only from a few specimens collected in Sicily and Greece, on the localities Alcamo (Trapani) 3 VI 1956; B. Gallea (Agrigento) 15 VI 1956 and Aulis (Khalkis) 15-21 V 1957 (LECLERCQ 1956, 1967; CHVÁLA et al. 1972, 1988), (Fig. 1). According to CHVÁLA et al. (1972) this species is very similar to *T. bifarius*. These authors even doubt about its identity, taking into account a high variability of *T. bifarius,* and the small number of known specimens of *T. marianii,* which all lie within the range of the former. In order to clarify the status of *T. marianii*, the two species are here compared and illustrated:

Table I

The number of collected species of horse flies in the study area

Species	Collected specimens
Tabanus bifarius LOEW, 1858	182
Tabanus marianii (LECLERCQ, 1956)	3
Philipomyia graeca (FABRICIUS, 1794)	425
3	610

Tabanus marianii (LECLERCQ)

F e m a l e. Head. Eyes are covered with some fine and scattered pale hairs, with three narrow bands. Frons greyish, rather narrow, index about 1: 4-5, widened towards vertex. Lower callus dark yellowish to brownish, rectangular and narrowly separated from subcallus and eye margins. Median callus almost the same size, blackish and broadly separated from lower callus. Vertex with distinct blackish patch. Subcallus and upper parts of face yellowish brown, most of the face is covered with long whitish hairs. Postocular margin on vertex with indistinctly whitish yellow pubescence. Antennae almost unicolorous yellowish, terminal flagellar segments more brownish, plate of segment three not very broad. First and second antennal segments with short blackish hairs mixed up with some whitish hairs. Palpi longer, about four times as long as deep, covered with few short black hairs. *Thorax* greyish black, mesonotum with rather short, pleura with longer pale hairs. Notopleural lobes dark brown to blackish, mostly dark haired. *Legs*. Coxae and femora dark brownish, tibiae yellowish, but apical third of fore tibiae and fore tarsi chestnut in colour, posterior tarsi brownish. Wings clear, veins yellowish brown with very short appendix to vein R_4. Halteres yellowish brown, with a whitish yellow knob. Abdomen dark blackish grey, second tergite with a small orange yellowish patch at side, the rest of tergites black. Posterior margins of all tergites narrowly

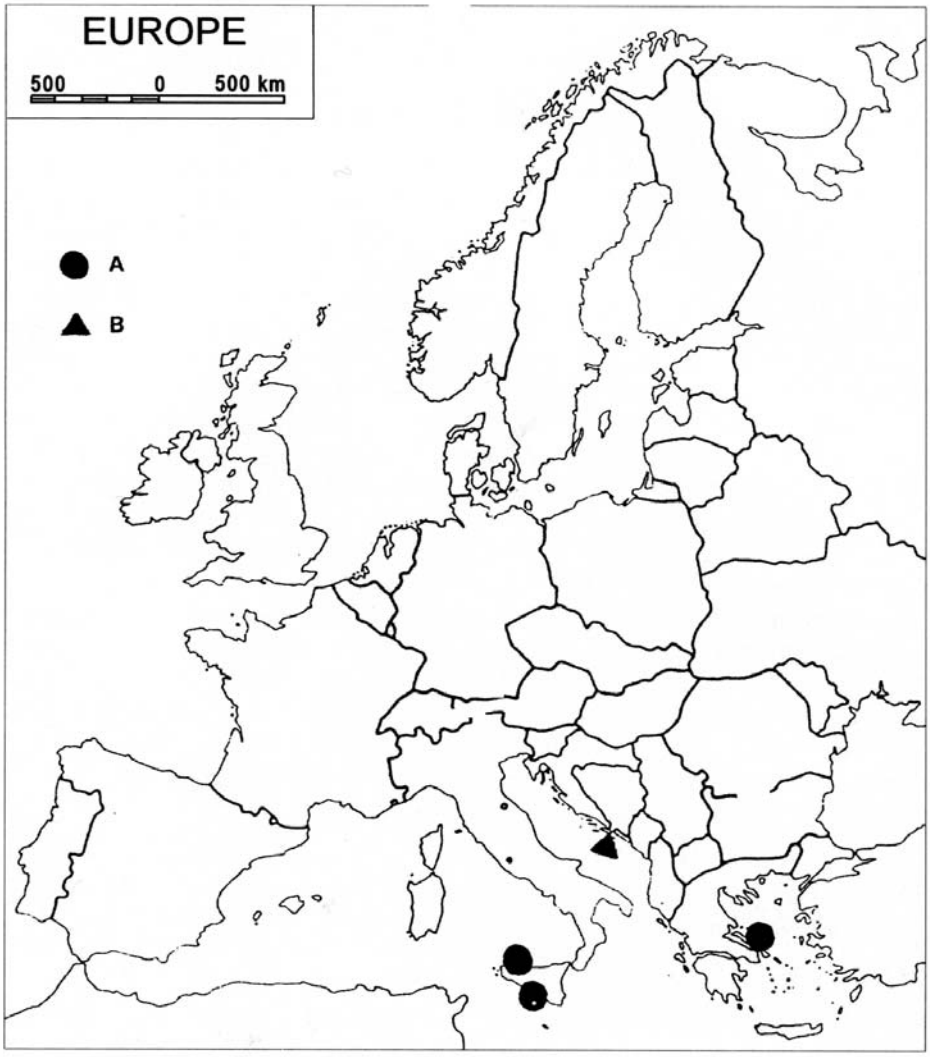

Fig. 1. The distribution area of *Tabanus marianii*. A – according to the literature (LECLERCQ 1956, 1967). B – ena Glava (WH 96) Vis, Croatia.

paler. A row of more or less distinct whitish grey median triangles present. Venter dark brownish (chestnut) to blackish, covered with whitish hairs, all posterior margins narrowly paler.

M a l e. Head distinctly wider than thorax. Eyes with two bands on lower third. Facets on upper 2/3 of eyes, three to four times larger than lower facets. Subcallus and upper parts of face greyish - brown. Antennae yellowish with terminal flagellar segments darkened. First and second antennal segments covered with long blackish hairs. Third segments with a distinct tooth dorsally. Postocular margin with long black hairs. Palpus whitish-yellow, egg shaped and pointed, with long whitish hairs mixed up with some black hairs. Thorax blackish-grey with indistinct longitudinal bands, covered with long black and whitish hairs. Notopleural lobes dark brownish to black. Legs and wings as in female. Abdomen greyish-black with three rows of spots. The median row composed of whitish indistinct triangles. The lateral rows composed of large orange-yellowish spots on anterior three ter-

gites and whitish smaller spots on the following tergites. Posterior margins of tergites yellowish. Venter as in female.

Length: 14-15 mm.

Tabanus bifarius LOEW

F e m a l e. Head. Eyes covered with sparse, fine pale hairs, with three bands. Frons narrow, index about 1: 5-5,5, greyish yellow, indistinctly widening above. Lower callus chestnut to brownish black, elongated and narrowly separated from the eye margins. Median callus black, long oval shaped. Subcallus and face greyish in colour. Face covered with long whitish hairs. Vertex with a row of short pale hairs. Antennae reddish brown to orange brown, with blackish terminal flagellar segments. Basal two segments with short black hairs, segment 3 rather broad, with slightly developed dorsal tooth near base. Palpi whitish yellow, long and slender, covered with short pale and black hairs. *Thorax* greyish black, mesonotum with indistinct paler longitudinal stripes, covered with short pale and black hairs. Notopleural lobes blackish grey, pleura with longer pale hairs. *Legs*. Coxae and femora greyish with pale hairs, tibiae brownish, apical half of fore tibiae and fore tarsi black, tibiae at tip and tarsi of posterior two pairs blackish brown. Wings clear, veins dark brown with a short appendix to vein R_4. Halteres dark brown, knob usually paler. *Abdomen* olive grey, the pale hairs form indistinct median triangles and more distinct small sublateral patches on each tergite. Venter whole coloured greyish black.

M a l e. Head. Eyes with two bands, covered with sparse fine hairs. Facets on the upper two thirds very large, more than four times larger and sharply separated from area of smaller facets below. Vertex with a row of longer dark brown to black hairs. Antennal segment 3 slender with small dorsal tooth near base, basal segments with longer black hairs. Antennae reddish brown to yellowish brown. Palpi long oval, yellowish, mostly pale haired with some black hairs towards tip. Thorax and legs on coxae and femora with longer hairs. The colours of legs, wings and abdomen as in the female.

Length: 12-17 mm.

The females of both species can be distinguished by the shape and colour of the lower frontal callus; colour of the subcallus, antennae, legs, second tergite of abdomen and the widening frons. The most significant differences between the males are the colour of the anterior three tergites of abdomen.

The results presented are of special importance since one new species is added to 76 species of horse flies listed so far in Croatia (KRČMAR et al. 1996). Only 20 species are known from the Adriatic islands (KRČMAR & DURBEŠIĆ 2001). Despite of collecting effort, only 3 species were found in Vis. They represent probably over 80% of the total horse flies fauna of the island. This result confirms that the islands usually have a poorer fauna than the comparative area on the continent, however they are often inhabited by rare species. Besides, the low diversity is also the consequence of insufficient collecting on many islands, especially on the larger islands which are closer to mainland.éè

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