al., 1986). Thus, we wondered whether disabling a putative regulator of filopodia (*Cdc42*) might disrupt bristle spacing. The most orderly longitudinal row on the legs is row 8 on the 2nd-leg basitarsus. Its bristles exhibit a military precision in their intervals.

As shown in Figure 3, we did indeed find spacing irregularities in Row 8 in the earlier cohorts. However, the affected legs also display other anomalies (*e.g*., stunted growth and/or evagination, zigzag bristles, and missing sockets) that confound the analysis. A cleaner test of this hypothesis would be to use a bristle-specific driver (*e.g*., *scabrous*- or *neuralized-Gal4*) with *UAS-Cdc42*^{N17} instead of *Dll-Gal4* (N. Malagon, pers. comm.)—an approach which is now under way.

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Adult sex ratio in *Drosophila melanogaster* developed in different nutritive conditions.

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In most of the animal species, there is approximately equal proportion of females and males (Hamilton, 1967). Sometimes, when one sex is in excess, sex ratio is disturbed. Biased sex ratio is well known for many *Drosophila* species (James and Jaenike, 1990; Montchamp-Moreau and Joly, 1997; Jaenike, 2001; Long and Pischedda, 2005; Price *et al*., 2010; Dyer, 2012). It was investigated in relation to inbreeding (Robinson *et al*., 2014), "selfish" genetic elements (Székely *et al*., 2014), irradiation and mutagenesis (Ivanov, 2002), addition of antidepressant drug into the food (Fakoorziba *et al.*, 2012), larval density (Santos *et al*., 1994) and population size (Grechanў and Pogodaeva, 1996), female age (Hu *et al.*, 2012) and age of their mates (Long and Pischedda, 2005), sex-differential maturation time, and sex-biased mortality (Székely *et al.*, 2014).

In this note, we examined sex ratio in *Drosophila melanogaster* exposed to different nutritive conditions during development. Flies were collected in their natural habitat and maintained over 13 years on five substrates: standard cornmeal-sugar-agar-yeast substrate (ST), apple (A), banana (B), carrot (C), and tomato (T) (Kekić and Pavković-Lučić, 2003). Flies were kept in optimal laboratory conditions (12 h:12 h light: dark cycle, temperature of ~25°C, relative humidity of 60%, 300 lux of illumination). Thirty to fifty pairs, 4-5 days old, were crossed and laid eggs on their own substrate.

Three experimental groups were formed. In the first experimental group, eggs were transferred and developed on their own substrate. In the second experimental group, eggs from each particular strain were transferred to ST substrate, usually used in laboratory conditions. In the third experimental group, eggs of flies maintained on carrot substrate were transferred to apple substrate, and *vice versa*, since flies reared on "carrot" and "apple" evinced significant difference in developmental time (Filipović *et al*., 2014). There were 5-7 replicates with 60 eggs *per* substrate and *per* experimental group. The emerged males and females were counted. Sex ratio, as the proportion of males and females, was analyzed using *Z-test*.

Proportions of eclosed males and females in three experimental groups are presented in Figure 1. In most combinations, approximately equal proportions of males and females were observed. Significant difference in sex ratio was recorded only for C-ST flies (Z = -5.282, P < 0.01), where males were more numerous (58.51%), and for C-A flies (Z = 2.190, P< 0.05), where females were more numerous (53.53%) (Figure 1).

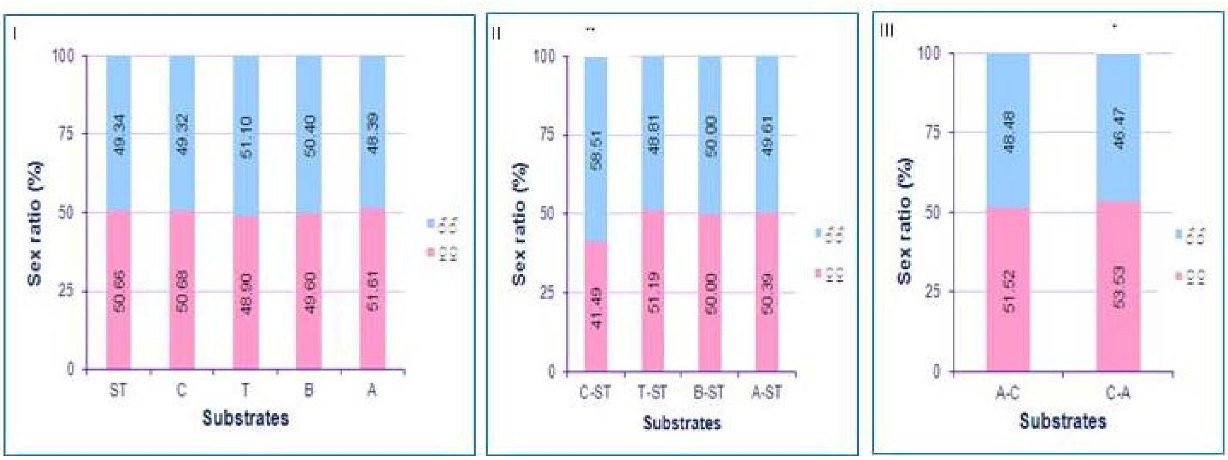

Figure 1. Sex ratio of eclosed flies in the first experimental group (I), second experimental group (II), and third experimental group (III). Abbreviations: ST, cornmeal-sugar-agar-yeast substrate; C, carrot substrate; T, tomato substrate; B, banana substrate; A, apple substrate; C-ST, flies transferred from "carrot" to standard substrate; T-ST, flies transferred from "tomato" to standard substrate; B-ST, flies transferred from "banana" to standard substrate; A-ST, flies transferred from "apple" to standard substrate; A-C, flies "originated" from apple substrate and transferred to carrot substrate; C-A, flies "originated" from carrot substrate and transferred to apple substrate.

It was previously reported that dietary restriction may disturb sex ratio (och Felix Zajitschek, 2012), as well as diet of females (Hu *et al*., 2012). Deviation from 1:1 sex ratio observed in our experiment was recorded only for flies maintained on carrot substrate after transferring to the new nutritional environments. Such sex ratio distortion may arise at least partially as a consequence of different sex-specific mortality in earlier developmental stages in flies maintained on carrot, *i.e*., one sex may be more sensitive to different nutritive conditions during development. This assumption should be further tested in the context of sex-specific nutritional requirements during development and adaptations to new nutritive environments.

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Reanalysis of polytene chromosomes in *Drosophila mojavensis* populations from Santa Catalina Island, California, USA.

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One of the four major geographical and host plant associated population groups comprising *Drosophila mojavensis* resides on Santa Catalina Island, California (Heed, 1982; Ruiz *et al*., 1990; Wasserman, 1992; Etges *et al*., 1999). Host cacti used include *Opuntia littoralis*, *O. oricola*, and *O. demissa* (*O. oricola* × *O. ficus-indica hybrids*) (Barbour *et al*., 2007; Beckenbach *et al*., 2008) as other mainland hosts are absent on Santa Catalina Island. Based on initial observations of polytene chromosomes from larvae of a moderate (n = 30) number of wild-caught females in 1981, these flies were reported to be homokaryotypic for second chromosome 2abcfghqrs (ST) and third chromosome 3abd (ST) similar to mainland California populations in the Mojave Desert (Ruiz *et al*., 1990).

In recent analyses of chromosomal evolution using the sequenced genome of Santa Catalina Island *D. mojavensis* (Drosophila 12 Genomes Consortium, 2007) and the recently sequenced *D. buzzatii* genome (Guillén, 2014; Guillén *et al*., submitted), inversion breakpoint analyses of the third chromosome suggested that these Santa Catalina Island flies were actually homozygous for an alternate gene arrangement $3f^2$ (MU = Mulege). Here we analyzed the karyotypes of the sequenced strain from Santa Catalina Island provided by the UC San Diego Drosophila Species Stock Center, stock number 15081-1352.00 and another stock collected from Santa Catalina Island in 2004 by Brian Counterman (SC05) derived from 113 wild-caught adults, including 63 adults reared from *Opuntia* cactus rots. We also made a series of crosses with other populations and conclude that the third chromosome in Santa Catalina Island populations of *D. mojavensis* is uniformly homozygous for gene arrangement $3f^2$ (MU).