Budnik, M., and L. Cifuentes. Departamento de Biología Celular y Genética, Facultad de Medicina - Universidad de Chile, Casilla 70061 - Correo 7 - Santiago - Chile, Fax: 56-2-7373158. Larval viability of *D. subobscura* competing with *D. pavani* and *D. simulans* at different initial frequencies of eggs.

Introduction: Since *Drosophila subobscura* was first detected in Chile (Brncic and Budnik, 1980), several experimental studies have been performed in order to investigate preadult competition between this species and the most common species found in the same collecting sites. All investigations showed *D. subscura* was a bad competitor (Budnik *et. al.* 1983, 1995).

In this note the authors wish to report the results of interspecific larval competition of *D. subobscura* with *D. simulans* and *D. pavani* in bispecific combination; but with different initial frequencies of eggs. The aim is to contribute further to the understanding of the colonization success of *D. subobscura* in Chile.

Materials and Methods: The following stocks were used: a) Chilean stock of *D. subobscura*, b) a stock of *D. pavani* an endemic Chilean species of the *mesophragmatica* group (Brncic and Koref-Santibañez, 1957) and c) a stock of *D. simulans*. All three strains came from La Florida, Santiago, Chile (in the southeastern zone of Santiago) and had been maintained in mass culture for several months before the experiments were started.

The methodology used to study the effect of preadult competition on the survival was similar to that reported by Budnik *et al.* (1983, 1995). Ten vials per group were used. Each vial contained 10 cc of basic cornmeal-yeast agar medium, into which either 10, 50 or 90 eggs of *D. subobscura* were put together with 90, 50 or 10 fertilized eggs of *D. pavani* or *D. simulans* (a total of 100 eggs per vial). As a control 10 vials were established with the same amount of medium, each sown with 100 fertilized eggs of either *D. subobscura*, *D. simulans* or *D. pavani*. The eggs represented a random sample of those laid by 150 inseminated females from each stock.

Table 1. Preadult viability of *D. subobscura*, under conditions of interspecific competition with *D. pavani* and *D. simulans* with different initial frequencies of eggs. In parenthesis, competitor (10 vials/group).

No. of eggs x vial		% of adults emerged	
D. subobscura	*D. pavani*	*D. subobscura*	*D. pavani*
10	90	7.00	59.70
50	50	33.80	57.20
90	10	51.60	72.00
100	—	53.10	—
—	100	—	48.70
		$\chi^2_3 = 101.70$	$\chi^2_3 = 36.60$
D. subobscura	*D. simulans*	*D. subobscura*	*D. simulans*
10	90	35.00	60.20
50	50	26.20	50.20
90	10	45.30	60.00
100	—	53.10	—
—	100	—	63.40
		$\chi^2_3 = 101.70$	$\chi^2_3 = 24.50$

For $\chi^2_3 = 7.81$ with DF = 3. $p = 0 < 0.05$

The eggs were allowed to hatch and to develop at 18°C; emerging adults were then counted and discarded.

Results and Discussion: Table 1 shows that the viability of the three species varies according to the initial frequencies of eggs of the competitor species; the differences are statistically significant. These findings should be taken into account when studying preadult competition. Regarding *D. subobscura*, these results once more show that this species is a bad competitor.

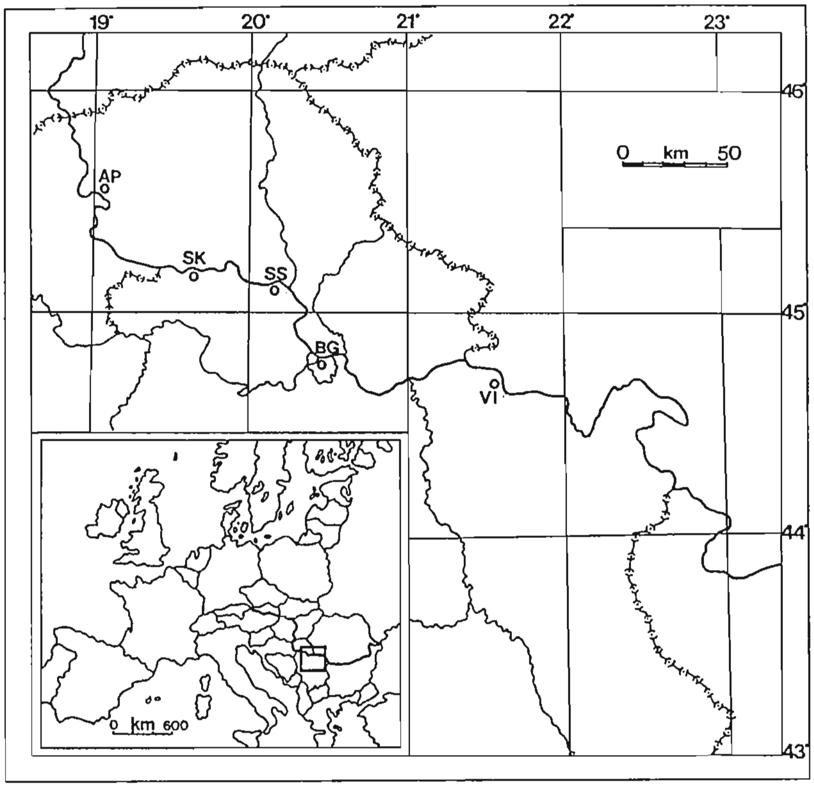
In face of the successful colonization of *D. subobscura* in Chile it is difficult to believe that the species could be subjected to competitive interaction such as those described above.

References: Brncic, D., and S. Koref-Santibañez 1957, Evolution 11:300-310; Brncic, D., and M. Budnik 1980, Dros. Inf. Serv. 55:20; Budnik, M., and D. Brncic 1983, Oecología, Berlin 58: 137-140; Budnik, M., and L. Cifuentes 1995, Evolución Biológica VIII and IX:37-47.

Kekic, V. Institute of Zoology, Faculty of Biology, University of Belgrade, Studentski trg 16, 11000 Belgrade, Yugoslavia. *Drosophila* fauna in habitats on the Danube bank in Yugoslavia.

Theoretical population geneticists, and laboratory experimentalists as well, who use *Drosophila* species as a model organism lament on their lack of knowledge on different life aspects of *Drosophila* in wild habitats.

I have started faunistical researches of *Drosophila* along the Danube course with the belief that these results would improve our comprehension of the species



migration, provide some innovative consideration of their ecology, and offer more data on ecological conditions in certain habitats.

Danube river (2,857 km long) connects the North Sea with the Black Sea through the system of channels Rhine - Main, and Pannonian Plain on the north with the south part of Balkan peninsula through its tributaries (Tisa and Morava rivers) - it connects various biogeographic regions and habitats many of which are being altered by human activities, mostly negatively. Nevertheless, there are still numerous wild habitats (large forests along both banks, numerous islands and wetlands) where human impacts have mostly been indirect.

On each of five localities under the study (Figure 1) flies have been captured by fruit bait and net in two ecologically different habitats: in immediate vicinity of the Danube river, in the green belt along the river and in a nearby settlement (about 0.2 to 4 km far from the river, in orchards, vineyards and parks).

Table 1 presents *Drosophila* species collected only in habitats near the river. I believe that the richness of *Drosophila* fauna (26 found species) and the difference in species composition between localities suggest a possible sequel to this study along the Danube river. This is an invitation to all colleagues from the Danube countries to join this study.

Elaborate presentation of studies in question, with the detailed description of habitats, periods of collection, and the inclusion of other Drosophilidae species will be published in separate papers - results from the locality Stari Slankamen have been published already (Kekic *et al.*, 1996).

Table 1. *Drosophila* species captured in Apatin (AP), Sremska Kamenica (SK), Stari Slankamen (SS), Belgrade (BG) and Vinci (VI).

	Localities					
Species	AP	SK	SS	BG	VI	Total
Drosophila						
D. acuminata	1	—	—	—	—	1
D. ambigua	1	10	187	53	16	267
D. andalusiaca	—	—	—	—	2	2
D. bifasciata	12	1	66	321	1	401
D. busckii	4	1	—	—	—	5
D. confusa	2	—	—	1	1	4
D. cameraria	—	—	—	—	1	1
D. deflexa	—	2	—	—	—	2
D. fenestrarum	1	—	—	1	—	2
D. funebris	—	7	2	65	5	79
D. helvetica	5	1	—	2	24	32
D. hydei	—	5	7	1	2	15
D. immigrans	236	614	169	33	58	1110
D. kuntzei	367	7	18	7	4	403
D. limbata	17	—	—	4	1	22
D. littoralis	7	—	114	—	—	121
D. melanogaster	201	983	783	57	2621	4645
D. obscura	187	7	44	23	—	261
D. phalerata	250	284	165	505	392	1596
D. repleta	—	—	1	—	—	1
D. rufifrons	—	—	37	33	—	70
D. simulans	3	—	—	—	—	3
D. subobscura	1848	2598	604	767	817	6634
D. testacea	5	59	12	327	35	438
D. transversa	5	29	2	13	82	131
D. tristis	12	1	3	19	—	35
Total	3164	4609	2214	2232	4062	16281
Number of species	19	16	16	18	16	26

References: Kekic, V., M. Andelkovic, D. Marinkovic, and N.J. Milosevic 1996, Arch. Biol. Sci., Belgrade 48(1-2):55-58.

White, R.J., J.C. Eissenberg and W.S. Stark. Saint Louis University, St. Louis, MO USA. Eye color mosaicism in ocelli in variegating lines of *Drosophila melanogaster*.

The fly compound eye has been an important system to study structure, function and development. By contrast, the simple eyes (ocelli) have received considerably less attention. Papers on ocelli, few and far between, address electrophysiology (Hu *et al.*, 1978), input into phototaxis (Miller *et al.*, 1981), visual pigment (Feiler *et al.*, 1988; Pollock and Benzer, 1988) and ultrastructure (Stark *et al.*, 1989). The purpose of this study is to take advantage of newly-generated strains of *Drosophila* which exhibit position effect variegation in the compound