

Bächli, G. and H. Burla. University of Zürich, Switzerland. Breeding *Drosophila* from mushrooms.

During the summers of 1963 and 1964, 1246 mushrooms were collected in forests on the outskirts of Zürich, Switzerland, and brought to the lab, where the pre-adult insects they contained were allowed to develop. The mushrooms belonged to 121 different

species of fungi. In total, 7118 insects hatched, 6960 of which were Diptera belonging to 12 different families. Of these, Mycetophilidae were most abundant with 3564 specimens. Drosophilidae came second with 2454, Phoridae third with 491 and Limnobiidae fourth with 168 specimens. The Drosophilidae, harvested from 34 species of mushrooms, were all members of the genus *Drosophila*, as follows:

<i>Drosophila</i> species	No. of specimens	No. of host mushroom species	Flies predominantly in
phalerata	971	30	- - -
busckii	709	9	3 species of <i>Russula</i>
testacea	477	13	3 species of <i>Lactarius</i>
histrion	113	4	<i>Lactarius</i>
kuntzei	96	12	- - -
funnebris	58	3	<i>Russula alutacea</i>
pallida	29	4	<i>Clitopilus prunulus</i>
limbata	1	1	- - -

Mushrooms of *Russula linnaei* yielded on the average not less than 28.7 specimens of *Drosophila*, *Russula alutacea* 17.1, and *Oudemansiella platyphylla* 10. Whereas 1084 mushrooms contained no member of *Drosophila*, 84 yielded 1 specimen each, 51 were occupied by 2, 21 by 3, 5 by 4, and 1 by 5 different *Drosophila* species. These frequencies do not conform to expectations based on a Poisson distribution, the mushrooms in which 2, 3 or 4 different *Drosophila* species developed side by side being more frequent than expected. This seems to indicate that competition for food played a minor role. The food supplied by a mushroom may nourish many more specimens of *Drosophila* than emerge commonly. In one case, 298 specimens of *D. busckii* and 56 specimens of *D. funnebris* were taken from one single mushroom of moderate size. On the other hand, Drosophilidae and Mycetophilidae seem to interfere with each other. Both families develop in a variety of common host species, but they do not hatch as frequently from the same mushroom specimen as could be expected on a random basis.

Jungen, H. University of Zürich; Switzerland. Evidence of spontaneous inversion in *D. subobscura*.

From a mating of a Tunisian male of *D. subobscura* with a homokaryotypic female of stock c 6 (see stock list of the University of Zürich, Zoological Museum), one out of 16 larvae showed a hitherto unde-

scribed inversion, E₍₁₅₎. Its breaking points are at 54 C and 67 A/B, respectively (map by Kunze-Muehl and Sperlich, Chromosoma 9, 1958), the latter point being probably identical to the distal break of E₍₁₂₎. The inversion must have occurred spontaneously in the analyzed larva, as can be inferred from the following: (1) as mentioned above, 15 sibs of the larva did not carry E₍₁₅₎; (2) the inversion was not found in the offspring of 200 males collected at the same locality, nor in 340 males from other collecting sites in Tunisia; (3) E₍₁₅₎ was present in only a part of the salivary gland nuclei, the larva being a mosaic in this respect.

To understand why in *D. subobscura*, several different inversions have breaking points in common, one may assume a mechanical pre-disposition of certain chromosome regions for breaking and healing. The observation of E₍₁₅₎ supports such a view. The incident shows, in addition, that somatic inversions do occur. They have a chance of becoming established in a population, provided that cells descending from the nucleus in which the inversion took place, will form part of the gonads.

The inversion altered the sequence E₁₊₂₊₉₊₄, abundant in Tunisia, to E₁₊₂₊₉₊₄₊₁₅. Inversion E₍₁₂₎, which shares its distal breaking point with E₍₁₅₎, is present in the sequence E₁₊₂₊₉₊₁₂, which is distributed over the whole Tunisian coast at low frequencies.