

labeled amino acid and the salivary glands were dissected after 8 or 12 hours of incubation. None of the puffs specific for puparium formation which arise during the period of incubation showed a preferential uptake of the labeled amino acid (see a). Similar results were obtained with proline, histidine, leucine and arginine. On account of these data it is clear that the regional increase in protein content during puffing is not caused by a synthesis in the puff itself, but is presumably due to an accumulation of pre-existent proteins from someplace in the cell. It is also conceivable that these proteins cannot be synthesized in the cell during the 15 minute temperature treatment since they appear as soon as swelling of the regions occurs. It might be suggested that the puff protein has a uniform composition in all puffs and has some bearing on the structural constitution of the puff and/or is involved in transport of the RNA produced.

A comparison of glands dissected from larvae 15 minutes after injection of either tryptophan or histidine with those dissected 5 hours after injection showed that in the first series of glands the cytoplasm and the chromosomes of the proximal cells was far stronger labeled than in the distal cells (see b and c). After an incubation period of 5 hours the difference in labeling intensity between the two types of cell was less obvious (see d). In most cells a positive correlation between the labeling density of the cytoplasm and of the chromosomes was observed. Furthermore, the possibility of a correlation between chromosomal protein synthesis and replication was studied. Larvae of 136 hours showed amino acid labeling in 100% of the salivary gland nuclei after 5 hours of incubation. After the same period of incubation with thymidine H^3 only 37 - 46% of the nuclei of similar glands were labeled. It therefore might be suggested that there is no apparent correlation between chromosomal protein synthesis or accumulation and chromosomal replication.

Duffy, John P. and John Stiles Jr.* St. John's University, Jamaica, New York. Esterase 6^S isozyme in alaful-1 and gluful-1 mutants of *D. melanogaster*.

Starch gel electrophoresis (per method of Beckman and Johnson 1964, Wright 1963) was performed on 3rd instar larval homogenates of alaful-1 and gluful-1 along with the 3rd larval homogenates of either Est 6^S or Est 6^F, in order to compare the esterase

isozymes present in these amino acid mutants. It was found that the esterase of the alaful-1 and gluful-1 mutants electrophoretically migrated to the same positions as the Est 6^S mutants. Using 3rd instar larval homogenates of the Est 6^I mutant (*D. simulans*) (Wright and Mac Intyre 1963), we compared the esterases of alaful-1 and gluful-1 with Est 6^I in the same manner as before. We found Est 6^I esterase migrated further than that of gluful-1 and alaful-1 but less than the esterase of Est 6^F. Thus, the alaful-1 and gluful-1 mutants appear to possess the Est 6^S isozyme rather than the Est 6^F or Est 6^I isozyme.

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Rezzonico Raimondi, G. and A. Gottardi. University of Milan, Italy. Growth behavior of embryonic cells of *Drosophila melanogaster* cultured in vitro.

The behavior of embryonic cells of *Drosophila* in vitro has been analyzed during 8-day experiments, comparing the growth curves of three different wild stocks. The three stocks (Aspra, Varese and S. Maria) can be considered genetically diversified, although phenotypically indis-

tinguishable, as a consequence of their distant geographical origin and the strict inbreeding to which they have been submitted for several years.

The technique used for growing the cells obtained from dechorionated eggs is that by

Horikawa and Fox (1964). Cell countings have been made at the beginning of the experiment and at 24, 48, 96, 144 and 192 hours, using the Bürker haemocytometer. Four independent repetitions have been run for every stock. In all experiments an increase of cell number was found up to 96 hours. Afterwards the cell number decreases, always remaining higher than the initial one, undoubtedly because of accumulation of catabolites and exhaustion of the medium (which has never been replaced).

Within each stock the behavior is similar; statistical analysis has nevertheless proved a certain heterogeneity. Among stocks the differences are statistically significant at 96 hours: Aspra shows the highest increase, while Varese and S. Maria grow less.

Cell viability at the end of the experiments is still good, as proved by active incorporation of H^3 -thymidine seen on autoradiographs.

The differences in growth among stocks is interpreted as an expression of genotypic differences.

Kaneko, A., E. Momma and T. Shima.
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Frequencies of abundance of robusta
species group in Hokkaido.

Collections were extensively made in many
localities of Hokkaido during the years
from 1958 to 1965. From 24 localities,
more than 50 specimens of robusta species
group were obtained in collection samples
as shown in the accompanying table.

Among the robusta group, *D. lacertosa* was very frequent in occurrence in all localities listed in the table, except two localities, Yamada-Onsen and Mt. Raus.

Table 1. Percentage frequency of six species of robusta group
in 24 localities of Hokkaido.

| Locality | No. of flies of robusta sp. group | Percentage frequency of each species | | | | | |
|----------------|---|--------------------------------------|------------------|---------------|-----------------|-----------------------------|------------------|
| | | <i>lacertosa</i> | <i>moriwakii</i> | <i>okadai</i> | <i>neokadai</i> | pseudo- <i>sordidula</i> | <i>sordidula</i> |
| Sapporo | 1326 | 73.36 | 2.49 | 0.75 | - | - | 19.38 |
| Nopporo | 10145 | 84.32 | 5.33 | 2.88 | 2.02 | 5.42 | 0.03 |
| Iwamizawa | 209 | 94.74 | - | - | - | - | 5.26 |
| Matsumae | 376 | 98.14 | 1.63 | 0.27 | - | - | - |
| Ohnuma | 242 | 33.47 | 2.89 | 0.83 | - | 5.37 | 57.44 |
| Taisei | 175 | 99.43 | - | 0.57 | - | - | - |
| Gunai | 382 | 67.80 | 12.83 | 17.80 | - | - | 1.57 |
| Utasutsu | 89 | 95.50 | - | 1.12 | 3.37 | - | - |
| Toya | 1443 | 83.09 | 15.94 | 0.14 | 0.35 | 0.42 | 0.07 |
| Jozankei | 301 | 43.52 | 48.84 | 6.64 | 0.33 | 0.66 | - |
| Hiroo | 232 | 99.14 | - | 0.86 | - | - | - |
| Fuyushima | 279 | 86.74 | 8.24 | 0.14 | - | - | 3.58 |
| Yamada-Onsen | 104 | 3.85 | 93.27 | 2.88 | - | - | - |
| Utoro | 257 | 61.87 | 0.39 | 34.63 | - | - | 3.11 |
| Okkope | 103 | 100.00 | - | - | - | - | - |
| Toikanbetsu | 2262 | 90.32 | 5.61 | 2.74 | 1.28 | 0.04 | - |
| Naebutoro | 874 | 72.88 | 1.14 | 25.97 | - | - | - |
| Mt. Toyoni | 71 | 87.32 | 12.68 | - | - | - | - |
| Mt. Raus | 75 | 28.00 | 61.33 | 10.67 | - | - | - |
| Shakotan | 90 | 72.22 | 17.78 | 7.78 | - | - | 2.22 |
| Rebun Isl. | 229 | 65.07 | 10.04 | 14.41 | 6.99 | 3.49 | - |
| Rishiri Isl. | 177 | 80.23 | 19.77 | - | - | - | - |
| Yagishiri Isl. | 194 | 96.91 | - | 1.03 | 2.06 | - | - |
| Okushiri Isl. | 273 | 98.90 | 0.73 | 0.37 | - | - | - |
| Total flies | 19908 | 16391 | 1402 | 835 | 263 | 580 | 437 |