Summary of the analyses of variance of activity and preening, based on the sum of 10 observations per fly (total $N = 864$), after an angular transformation

Item	d.f.	Activity Mean square	Significance level (P)	Preening Mean square	Significance level (P)
Time of day	3	3639.6	0.1%	697.9	0.1%
Strain	5	3580.4	0.1%	690.3	0.1%
Day of testing	2	127.7	NS	1088.7	0.1%
Sex	1	188.6	NS	380.0	5%
Time × day	6	802.1	1%	150.5	NS
Time × sex	3	634.8	5%	189.8	NS
Error[a]	720	245.1		104.5	

[a] Only items significant in at least one analysis are included; the error terms comprise the bottle interactions pooled with the within-bottle variances.

the corpus cardiacum controlling the rhythm of spontaneous activity and whose own secretions show a rhythm of output[12]. This rhythmicity would increase when the gland develops (the 2nd and 3rd days after eclosion), affecting the activity rhythm of females, and possibly even that of males, since mating behaviour is co-ordinated between the sexes and the presence of flies of the opposite sex can influence the activity rhythm of *Drosophila*[13].

On the other hand, the periodicity of preening was constant over the 3 days, but preening declined significantly between the 2nd and 3rd days, when the first females would be reaching sexual maturity (the means, in angles, on the 3 successive days were 20.81, 19.53 and 16.92 with $S.E._{diff} = \pm 0.85$). When in groups, preening keeps flies a certain minimum distance apart,[7,14,15] and also impedes the male courtship display, so that both this decrease at maturity and the lower level of preening in males (the 'sex' item of the Table) may contribute to mating success.

Further studies are needed to separate the effects of endogenous rhythms, which only become evident some time after emergence, from such population periodicities as the rhythm of eclosion which is influenced by increasing group density[16]. It may then be possible to explain some of the inconsistencies between the existing field and laboratory reports of activity rhythms in *Drosophila*[17].

Zusammenfassung. Die lokomotorische Aktivität von adulten *Drosophila melanogaster* zeigt einen Tagesrhythmus, der während der dreitägigen Reifungsperiode zunimmt und in Weibchen ausgeprägter ist als in Männchen. Die Periodizität der Putzhandlungen ist weniger ausgeprägt und ändert sich nicht, doch nimmt die Frequenz der Putzhandlungen bei den reifen Fliegen ab. Es wird ein reziproker Zusammenhang zwischen Putzfrequenz und sexueller Aktivität festgestellt.

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Tetraethyl Lead Dose Response Curve for Mortality in Laboratory Rats

In view of the extensive use of leaded gasoline throughout the world and the rather recent inception of psychopharmacological investigations of such compounds, it was deemed important to extend the work of previous investigators in a more thorough toxicologic study of tetraethyl lead. As a first step, the LD_{50} value of the toxin was determined from a small sample and presented earlier[1]. This communication represents an assessment of the dose response curve for single dose, oral administration.

Method. 96 Sprague-Dawley male albino rats were employed for these tests. 4 replications of 6 dosage levels were performed using 24 new subjects each time. The animals, which ranged in weight from 350 to 450 g, were randomly assigned to the different dosage groups. As in the previous study, stringent sanitary measures were enforced to prevent Salmonellosis and chronic respiratory disease; 2 diseases to which lead-treated rats appear particularly susceptible. The simplified method of Litchfield and Wilcoxon[2] was the procedure chosen for approximation of the dose response curve.

Procedure. Tetraethyl lead, obtained from the Ventor Corporation, Beverly, Massachusetts, was dissolved in 100% pure peanut oil to produce a solution with a concentration of 7.32 mg/ml. The animals were dosed according to the procedure set forth by Schroeder, Avery and Cross[1].

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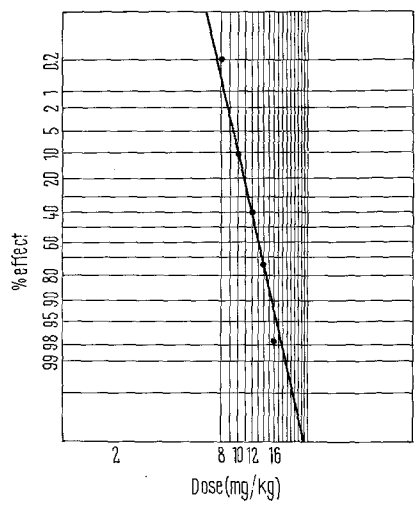
The animals were placed in 6 dosage levels from 2.0 mg/kg to 16.0 mg/kg. After intragastric intubation of the lead/oil solution, the subjects were observed, without handling, for a standard 14-day-period.

Results. The Table indicates the mortalities which resulted from the experiments. When plotted on logarithmic probability paper, the curve shown in the Figure was obtained. From the Figure it is possible to obtain the LD_{50} value (12.3). The 95% confidence limits, calculated according to the method of LITCHFIELD and WILCOXON[2], are 11.50 to 13.16. The slope function, S, is 1.2 (1.029 to 1.134).



Tetraethyl lead dose response curve.

Mortality data for all subjects

Experiment	Dosage (mg/kg) 2	8	10	12	14	16
1	0/1	0/3	1/5	3/7	5/5	2/2
2	0/1	0/3	0/5	4/6	4/5	2/2
3	0/1	0/3	1/4	2/7	2/5	2/2
4	0/2	0/5	0/4	2/7	4/5	2/2
Total	0/5	0/14	2/18	11/27	15/20	8/8
Percent	0	0	11	41	75	100

Conclusions. As in the previous research, 3 stages in the progress of the toxicity were noted: Stage 1: lethargy; Stage II: aggression and thrashing, and Stage III: convulsions and, in higher dosages, death. An interesting phenomenon observed in the third stage of the disease was that 14 of the animals exhibited self-cannibalization of the feet and tail. An additional 5 subjects rubbed the skin and hair completely off their snouts. Auditory seizures were particularly manifest during the second stage of the toxicity in virtually all the animals.

In an earlier experiment[1], the LD_{50} value was calculated to be 14.18 (12.62 to 15.93). The discrepancy between that value and the present one is most likely attributable to the small sample size which was previously utilized (16 subjects). There were 2 subjects in the first experiment which perished on the 15th day, 1 day after the end of the standard observation period. These 2 subjects, representing $12^1/_2$% of the population, could have had considerable impact on lowering the LD_{50} value since they were in group II which received 12.67 mg/kg.

Résumé. On a donné à 96 rats mâles albinos six doses différentes de plomb tétra-éthyle par intubation intragastrique. Une courbe dose-réaction a été établie à partir des résultats obtenus et les calculs ont donné une valeur LD_{50} de 12,3 mg/kg (11,50 à 13,15). Cette valeur diffère de celle qui a été obtenue précédemment. On croit que cette différence résulte du fait qu'un nombre plus grand d'échantillons a été utilisé dans cette série d'observations.

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Antagonism of 2-Br-α-Ergokryptine-Methanesulfonate (CB 154) to Certain Endocrine Actions of Centrally Active Drugs

It is known that in man several centrally acting drugs may induce galactorrhoea and amenorrhoea. WINNIK and TENNENBAUM[1] were the first to observe mammary enlargement and galactorrhoea with chlorpromazine. AUDIBERT et al.[2] soon showed that rabbits behaved similarly. A number of tranquillizers, but also psychomotor stimulants, antihistaminics and antihypertensives[3] have been found to increase prolactin secretion and by this mechanism to exert mammotropic actions. On the other hand several ergot alkaloids are known to inhibit prolactin secretion[4–6] and it was therefore interesting to test one of them whether it also inhibits a pharmacologically induced state of prolactin secretion in rats.

Methods. 2-Br-α-ergokryptine-methanesulfonate (CB 154) was chosen as the inhibitor[5,6], reserpine (R) chlorpromazine (CPZ) and α-methyl-*p*-tyrosine (AMT) were used as stimulators of prolactin secretion[7]. Virgin female rats with regular vaginal cycles of 4 days were used. 5 animals each received one of the following treatments: 1 mg/kg R s.c. on day P_1 (= metoestrus), or 50 mg/kg CPZ s.c. on day P_1, or 100 mg/kg AMT i.p. on 4 consecutive days, beginning on P_1. These animals formed the controls to the second set. Another set of animals (experimental) received the same treatment but in addition they were injected on day P_2 with 3 mg/kg CB 154 s.c. Vaginal cycles were followed for 14 days. The animals were kept in a room with controlled

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