measurements, showed significant differences at the 8 and 24 h sampling period, the control group exhibiting higher total metabolite plasma levels at these times (Table IB). Workup of the plasma samples indicated that this increase was associated with a significantly larger conjugated metabolite fraction (Table IC). Evaluation of the plasma unconjugated fractions showed the following significant differences compared to the control data (Tables 2A–D): A) larger amounts of the polyhydroxy (polar) metabolites at 2 and 4 h, B) lower amounts of the 3β-hydroxy metabolite at 8 and 12 h and C) lower amounts of norethindrone at 8, 12 and 24 h. The causal relationship of these changes is not clear. The absolute magnitude of the concentration differences discussed above was largest for the increase in unconjugated fraction polar metabolites and the decreases in total and conjugated metabolite levels.

Table II. Composition of plasma free fraction. Study group (7 subjects); control group (3 subjects)

A) Polyhydroxylated (polar) metabolites

Time (h)	Study (ng/ml ± SD)[a]	Control (ng/ml ± SD)
1	32.6 ± 7.7	13.2 ± 4.9
2	36.4 ± 6.7[b]	16.0 ± 4.2
4	41.1 ± 10.4[b]	19.5 ± 1.6
8	17.2 ± 6.6	21.2 ± 7.5
12	15.2 ± 9.0	17.2 ± 7.6
24	4.0 ± 2.4	9.2 ± 6.4

B) β-Hydroxy metabolite

Time (h)	Study (ng/ml ± SD)	Control (ng/ml ± SD)
1	7.2 ± 5.0	6.8 ± 7.0
2	7.1 ± 2.8	4.7 ± 1.9
4	5.6 ± 2.3	5.5 ± 2.7
8	1.9 ± 1.3[b]	4.2 ± 0.90
12	1.6 ± 0.92[b]	3.4 ± 0.40
24	0.44 ± 0.34	1.4 ± 1.4

C) α-Hydroxy metabolite

Time (h)	Study (ng/ml ± SD)	Control (ng/ml ± SD)
1	25.6 ± 16.4	17.9 ± 7.0
2	29.2 ± 13.7	15.1 ± 4.9
4	30.2 ± 11.5	19.3 ± 11.3
8	8.2 ± 3.2	11.2 ± 3.2
12	7.2 ± 5.3	6.9 ± 3.8
24	1.2 ± 1.1	3.2 ± 2.2

D) Norethindrone

Time (h)	Study (ng/ml ± SD)	Control (ng/ml ± SD)
1	5.8 ± 4.1	7.1 ± 4.7
2	7.1 ± 2.5	4.8 ± 1.6
4	8.2 ± 4.2	6.7 ± 2.5
8	3.1 ± 1.5[b]	6.9 ± 2.6
12	1.9 ± 0.84[b]	4.8 ± 0.69
24	1.0 ± 0.80[b]	3.0 ± 1.7

[a] ± SD, standard deviation of the mean. [b] Significantly different from corresponding control group ($p < 0.50$) using unpaired Student t-test.

The results obtained in this study indicate that there is no basic qualitative difference in the metabolism of norethynodrel in subjects with a history of thrombophlebitic-thromboembolic episodes and in normal healthy women. Although some statistically significant differences were noted, it seems more reasonable to ascribe them to nonspecific effects (e.g., conjugation, polyhydroxy metabolite formation) and not to factors specifically affecting norethynodrel metabolism[7].

Zusammenfassung. Der Metabolismus von Norethyndrol, der progestiven Komponente verschiedener derzeitig verwendeter oraler Kontraceptiva, wurde bei Frauen mit einer thrombophlebetischen-thromboembolischen Krankengeschichte sowie bei normalen gesunden Frauen einer Kontrollgruppe untersucht. Der Norethyndrolmetabolismus beider Gruppen zeigte keine wesentlichen Unterschiede.

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Zygotic Mortality in *Ellobius lutescens* (Rodentia: Microtinae)

Matthey[1,2] reported that two species of voles, *Microtus oregoni* and *Ellobius lutescens*, had $2n = 17$ and demonstrated that males and females of *E. lutescens* had the same odd number of chromosomes. White[3] suggested that *E. lutescens* had 16 autosomes and that the heterochromosome was formed by fusion of X and Y elements in males, and two X elements in females; it followed that combinations of gametes with chromosomal numbers of $8+8$ or $9+9$ were lethal. White's hypothesis included *M. oregoni*, but it was later found that *M. oregoni* was a gonosomic mosaic[4] and this species was not characterized by 50% mortality of all zygotes[5]. Similarity in structure of the unpaired element in both sexes of *E. lutescens* was shown autoradiographically[6], and a hypothesis was developed that the sex structure was $XAAY$ (A = autosome) in males and XAA in females. This hypothesis is similar to that of White, since it admits a possibility of 50% mortality of males.

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Table I. Number of corpora lutea and embryos in *E. lutescens*.

Number of embryos or corpora lutea per individium	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	lim	*n*
Number of animals with given number of corpora lutea	0	0	0	1	2	2	1	0	0	2	0	0	2	0	1	0	0	1	2	0	1	0	1	0	1	0	4–25	17
Number of animals with given number of embryos	0	1	5	4	9	2	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2–11	24

Materials and methods. In April-May, 1969 we obtained 105 specimens of *E. lutescens* from near the village of Vokhchabert, 15 km N. Erevan, Armenian U.S.S.R. Embryo numbers were counted in 24 females out of 38 adults captured, and the number of corpora lutea in ovaries of 17 pregnant females was also recorded. (Identification of corpora lutea was obtained by examination of histological sections of ovaries).

Results. Table I shows that great differences exist between the number of corpora lutea, indicating ovulation, and the number of embryos. Comparison of data from *E. lutescens* with data on *Microtus oregoni* (Table II) shows that there are great differences in embryonic mortality between these two species. Our data confirm the concept[2,3,7–11] of 50% zygotic mortality in *Ellobius*, due to death of individuals with even number of chromosomes.

The existence of the unpaired sex chromosome in *E. lutescens* is connected with a specific mechanism that reduces the size of litters. However, it is known that all species of *Ellobius* have smaller litters than temperate zone terrestrial microtines. It is not clear which mechanisms regulate the decreased fertility of *Ellobius fuscocapillus* ($2n = 36$)[12] and forms of *Ellobius talpinus* with $2n = 32$[13], $2n = 52$[12,14] and $2n = 54$[12,15]. It would be of interest to compare the embryonic mortality of *E. lutescens* with other species of *Ellobius*, and with other terrestrial microtines[16].

Table II. Embryonic mortality in 17-chromosome *Microtinae*

	Ellobius lutescens[9] (M ± m)	*Microtus oregoni*[5] (M ± m)
Number of corpora lutea	12.9 ± 1.67	3.9 ± 0.22
Number of embryos	4.8 ± 0.38	3.82 ± 0.25

ВЫВОДЫ. Сопоставление числа эмбрионов и желтых тело показало существование у Ellobius lutescens близкой к 50% эмбриональной смертности, что подтверждает гипотезу Уайта–Кастро–Сиерра и Вольфа.

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Selection at the Alcoholdehydrogenase Locus in *Drosophila melanogaster*

A major controversy in population genetics at the moment concerns the great amount of genetic variation at the molecular level revealed by protein electrophoresis in populations of *Drosophila* species and most other animal species thus far studied (review by LEWONTIN[1]). Contrary to the view that natural selection is the principal force maintaining this protein variation is the conception that the observed variation is mainly a product of mutation and genetic drift of selectively neutral variants[2,3]. Up to now most experimental data on this disputed matter came from studies on geographical variation in natural populations. These studies, however, failed to provide

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