Table 4. Species % composition by community.

Species	Lowland forest	Upland forest	Sand Prairie
D.affinis	56.3	48.5	56.1
D.algonquin	0.7	0.0	7.0
D.athabasca	0.4	0.0	0.0
Undetermined aff.-alg.-ath.♀♀	13.3	0.0	7.5
D.falleni	9.7	26.6	14.4
D.tripunctata	9.4	0.0	0.0
D.robusta	5.0	17.8	1.1
D.putrida	3.5	6.6	11.8
D.buskii	0.5	0.0	0.5
D.quinaria	0.4	0.0	1.6
D.duncani	0.2	0.0	0.0
D.testeca	0.2	0.0	0.0
D.immigrans	0.1	0.0	0.0
D.victoria	0.1	0.0	0.0
D.melanogaster	0.1	0.5	0.0
Total collected	5657	608	187

allow a more accurate comparison of the species compositions of the two forest communities.

Few members of the species commonly associated with humans (D.buskii, D.immigrans and D.melanogaster) were collected. We conclude that our samples represent natural Drosophila populations and not human-associated ones.

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Reference: Heim,W.G. 1978, DIS 53:216.

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Partial inhibition of the effect of the mutant red malpighian tubules (red) by other eye colour mutations of Drosophila melanogaster.

A study of eye pigments and related metabolites in adult flies (9 days after emergence) of ten strains of double mutants of D.melanogaster has been carried out. All the strains carry two eye colour mutations, one of them being "red."

The separation of eye pigments and related metabolites in these strains was carried out by means of two-dimensional thin-layer chromatography (TLC) on cellulose plates, using as extraction solvent methanol-acetic acid-water (4:1:5 by vol) and as elution solvent isopropanol-2%-ammonium acetate (1:1, v/v) for first dimension (3 hr) and 3% aqueous ammonium chloride for the second one (50 min). Quantification was made by measuring the fluorescence directly on the plate with a fluorescence spectrophotometer (PERKIN ELMER MPF 44B). The results of the ten double mutants strains are compared with the patterns of the single mutants (Ferre et al. 1983) in Table 1.

Although the effect of mutant "red" consists in a strong reduction of pteridines (except biopterin), some double mutants such as cn red, rb red, and cm red and to a lesser extent ltd red, cl red and v red, present a significantly higher quantity of drosopterins, PDA and sepiapterin and a lower quantity of biopterin compared to the mutation red alone. This reduction may be interpreted as a partial inhibition of the effect of red mutant. Especially interesting is the case of cn red strain, since the gene cn^+ is known to be the structural gene of the enzyme Kynurenine hydroxylase and thus to affect only ommochrome synthesis.

The malpighian tubules of the wild type presents a light yellow colour produced by the accumulated 3-OH-kynurenine; however, the malpighian tubules of the mutant "red" are red-coloured (Oster 1954), due to the conversion of the accumulated 3-OH-kynurenine into ommochromes, of which a small quantity is xanthomatin and a larger quantity is ommin (Wessing & Bonse 1966). In addition this mutant, in the eyes, accumulates 31% of brown pigment (H_2-xanthomatin) and around 5% of drosopterins compared to the wild type (Ferre et al. 1983). Transport defects in malpighian tubules are the basis for the anomaly in some eye colour mutants of D.melanogaster that have reduced amounts of both pteridines and ommochrome (Sullivan et al. 1975; Howells et al. 1977; Sullivan et al. 1979). This fact strongly suggests that the gene red^+ is acting on the transport of pigments precursors, being unable to transport precursors of pteridines and ommochromes efficiently. For reasons not known it seems that certain mutations as cn, rb, cm, ltd, cl and v produce a partial inhibition of

Table I. Percentages of eye-pigments and related metabolites (Or-R has arbitrarily received the values of 100). NDP(Neodrosopterin), DP(Drosopterin),IDP(Isodrosopterin),ADP(Aurodrosopterin),PDA (2-amino-4-oxo-6-acetyl-7,8-dihydro-3H,9H-pyrimido[4,5-b][1-4]diazepine),SP(Sepiapterin), Spot 7(unidentified pteridine), AHP(Pterin), BP(Biopterin), IXP(Isoxanthopterin),XTC (Xanthurenic acid) and H_2-XTM (Dihydroxanthomatin). ND (not detected).

strain	NDP	DP	IDP	ADP	PDA	SP	Spot 7	AHP	BP	IXP	XTC	H_2-XTM
red	6±2	4±2	4±2	9±2	79±4	43±10	66±10	24±5	301±30	51±5	20±7	31±1
cn red	70±14	36±5	39±7	80±5	175±33	84±14	69±18	52±2	174±46	30±2	ND	--
rb red	41±10	16±2	9±1	32±5	145±26	128±30	101±9	22±2	323±42	26±3	37±4	--
cm red	49±10	25±2	21±1	59±3	255±4	161±7	98±9	35±1	232±15	24±1	ND	--
v red	12±1	6±2	7±2	35±2	169±27	47±5	61±8	29±3	122±3	23±2	ND	--
ltd red	13±2	9±1	9±1	40±6	160±14	89±12	76±5	23±4	153±3	17±2	ND	--
cl red	23±2	21±1	19±4	20±4	ND	1750±750	507±99	492±34	340±110	73±4	ND	--
pr red	7±2	5±0	2±1	7±2	20±2	19±5	30±5	22±1	128±15	38±2	16±3	--
pn red	5±2	3±0	2±1	4±2	TRACE	37±10	46±6	16±0	162±23	50±3	ND	--
dke red	4±1	5±1	6±1	12±1	104±1	14±4	71±2	21±1	215±20	22±1	24±5	--
cho red	TRACE	TRACE	TRACE	TRACE	33±4	39±1	61±3	25±2	308±28	35±1	ND	--
cn	91±4	86±8	89±2	91±4	84±16	101±14	80±7	95±13	82±6	63±5	ND	4±0
rb	34±2	25±3	36±3	55±3	94±12	162±7	50±5	37±4	149±14	29±2	7±2	38±1
cm	22±4	19±2	21±2	51±6	202±21	199±15	66±4	34±6	182±30	20±6	6±3	43±1
v	93±2	80±4	79±2	93±4	108±11	146±9	100±9	102±6	103±6	107±4	ND	3±0
ltd	32±1	26±3	25±4	58±2	203±8	140±23	114±6	26±7	165±31	30±8	ND	8±1
cl	19±1	54±1	47±1	8±3	ND	1442±46	474±35	526±40	261±19	117±5	59±3	160±2
pr	45±3	33±9	48±11	33±3	35±4	64±6	58±11	39±10	105±17	109±10	22±7	122±0
pn	22±4	22±2	32±4	18±2	87±17	161±14	95±6	34±2	140±5	88±5	43±6	81±2
dke	20±3	51±13	55±17	86±9	109±15	128±34	61±4	38±4	119±7	66±10	108±15	153±1
cho	4±1	4±1	4±1	11±2	47±3	108±9	125±2	47±11	268±43	58±9	TRACE	66±1

this effect, causing these flies to recover the ability to transport and accumulate this substances in the eyes.

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