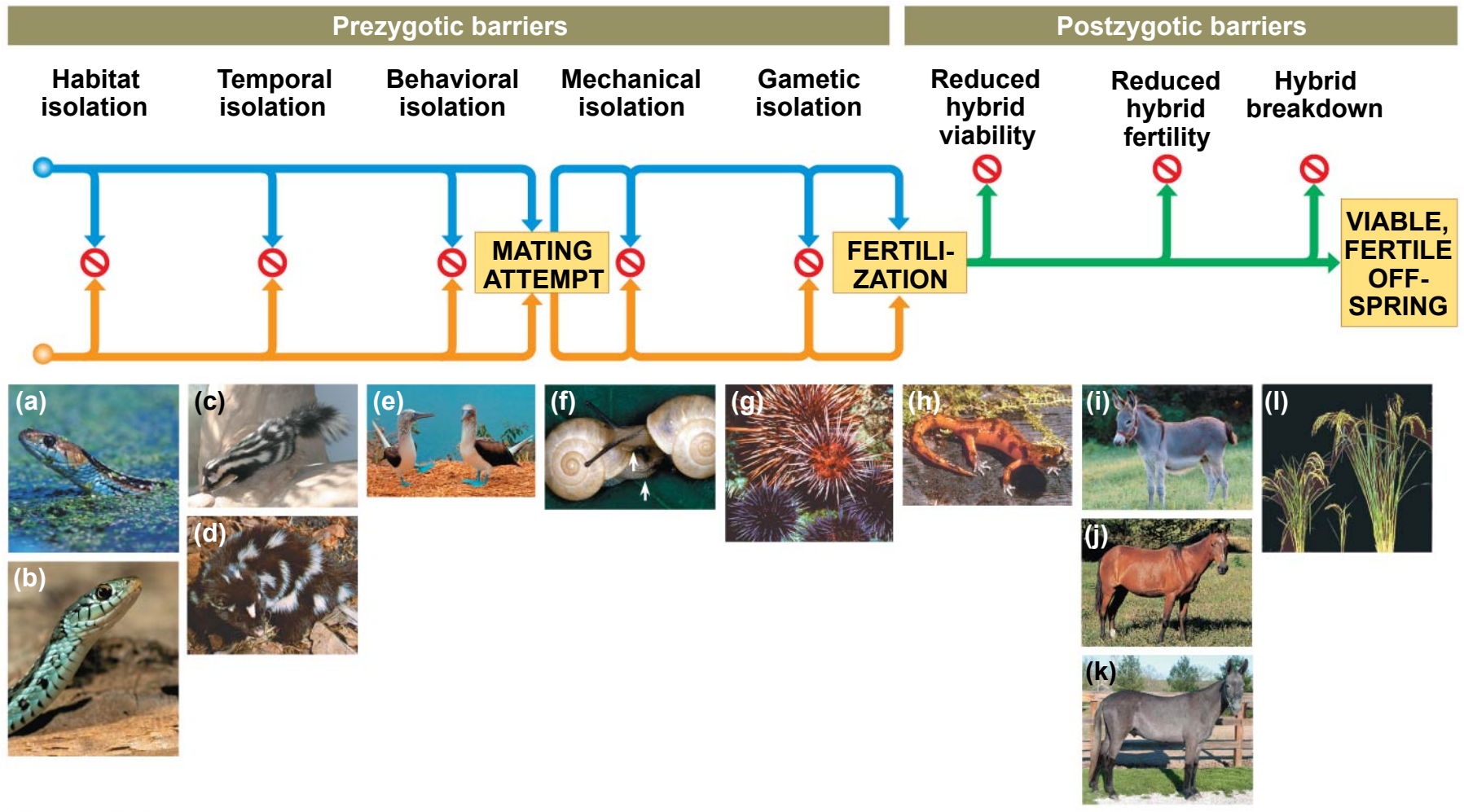




**(a) Similarity between different species**



**(b) Diversity within a species**





**Grizzly bear (*U. arctos*)**

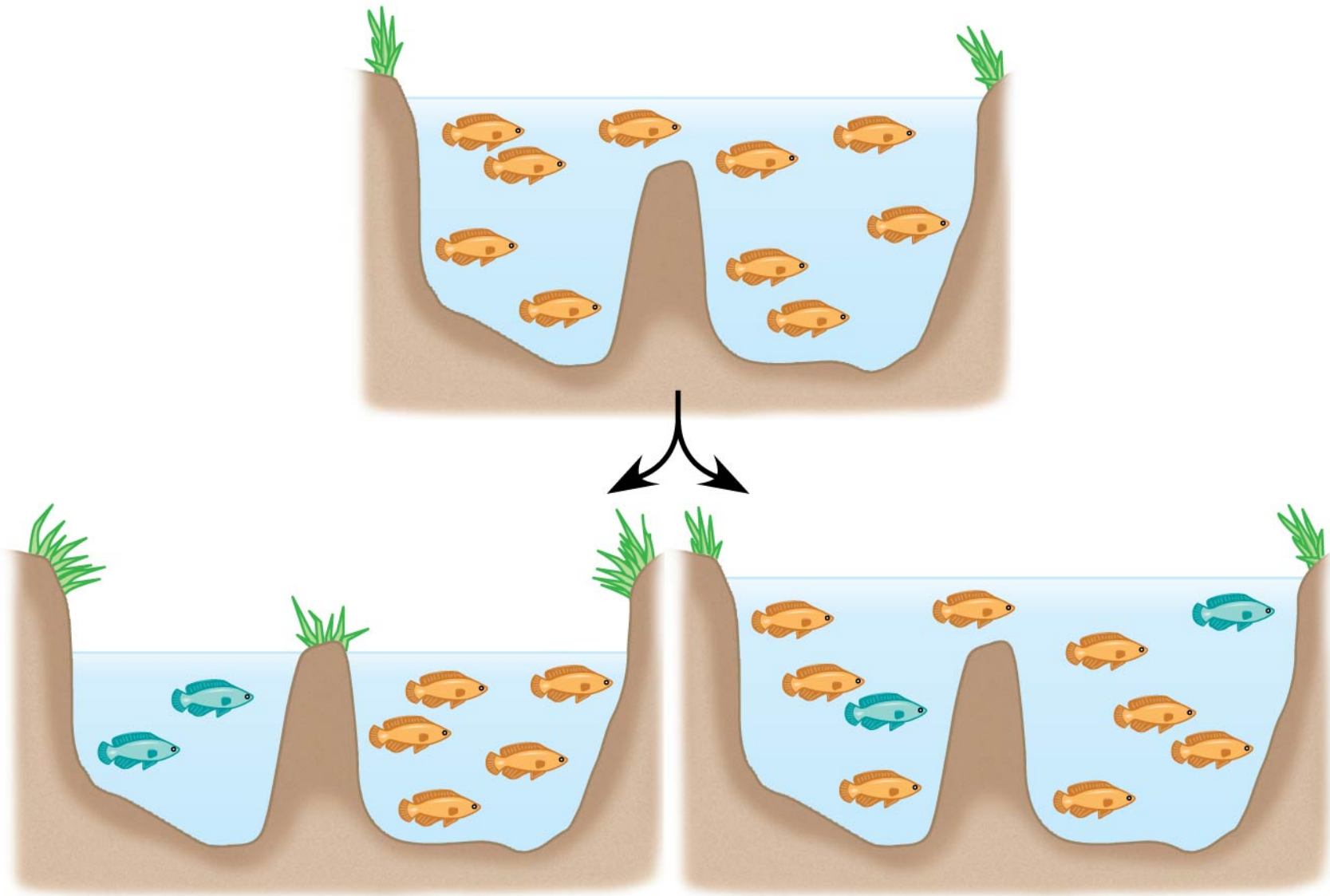


**Polar bear (*U. maritimus*)**



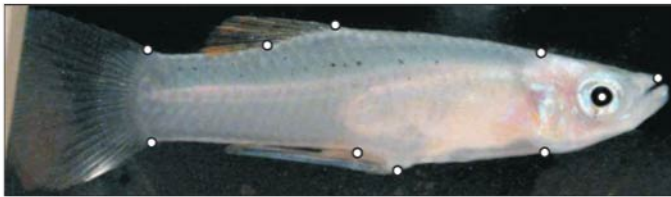
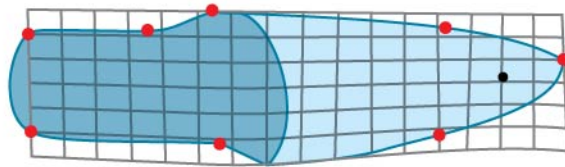
**Hybrid "grolar bear"**



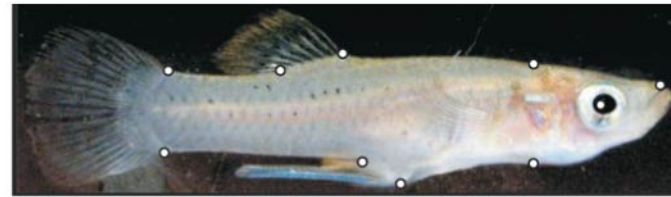
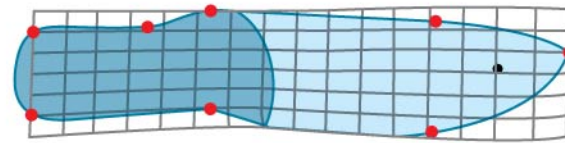


**(a) Allopatric speciation: forms a new species while geographically isolated.**

**(b) Sympatric speciation: a subset forms a new species without geographic separation.**



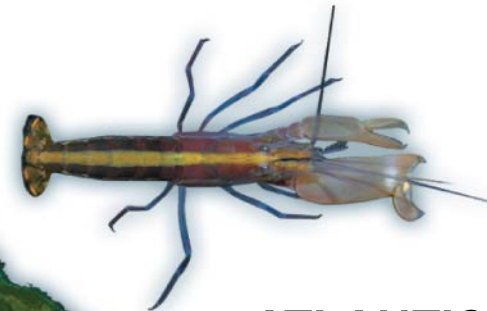
**(a) Under high predation:  
body shape that enables  
rapid bursts of speed**



**(b) Under low predation:  
body shape that favors  
long, steady swimming**



*A. formosus*



*A. nuttingi*



ATLANTIC OCEAN

Isthmus of Panama

PACIFIC OCEAN

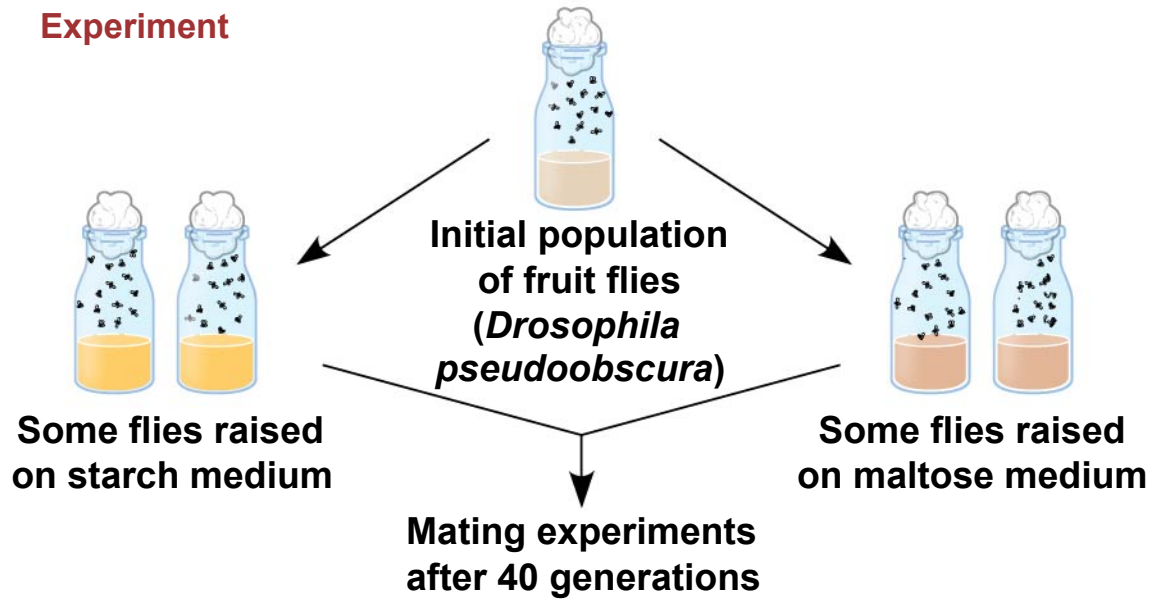


*A. panamensis*



*A. millsae*

## Experiment



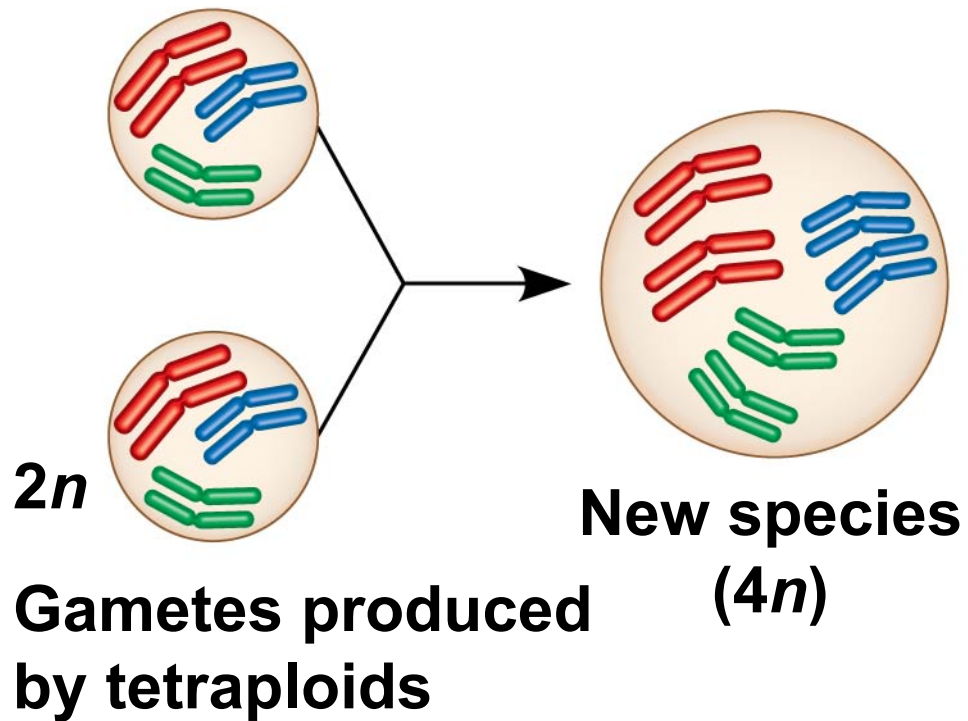
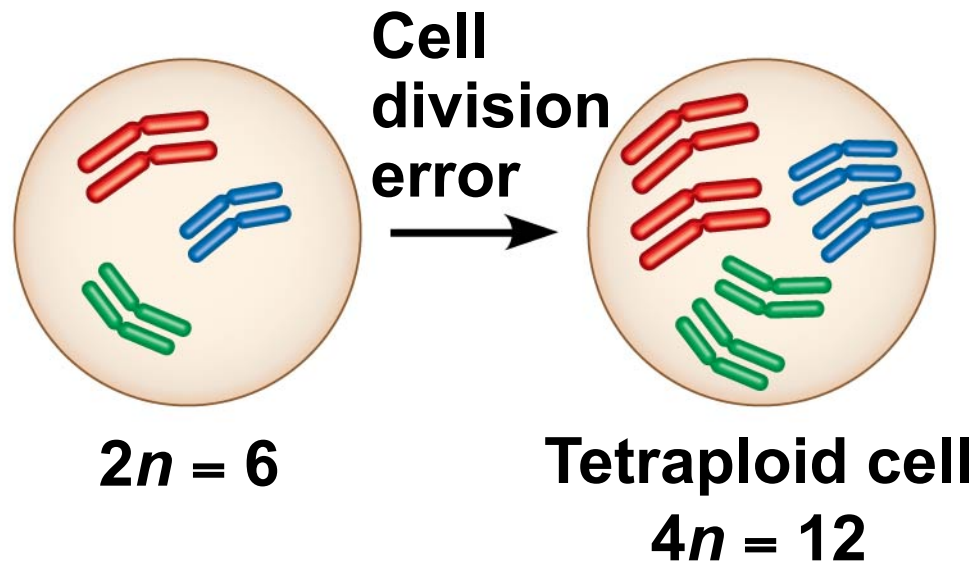
## Results

		Female	
		Starch	Maltose
Male	Starch	22	9
	Maltose	8	20

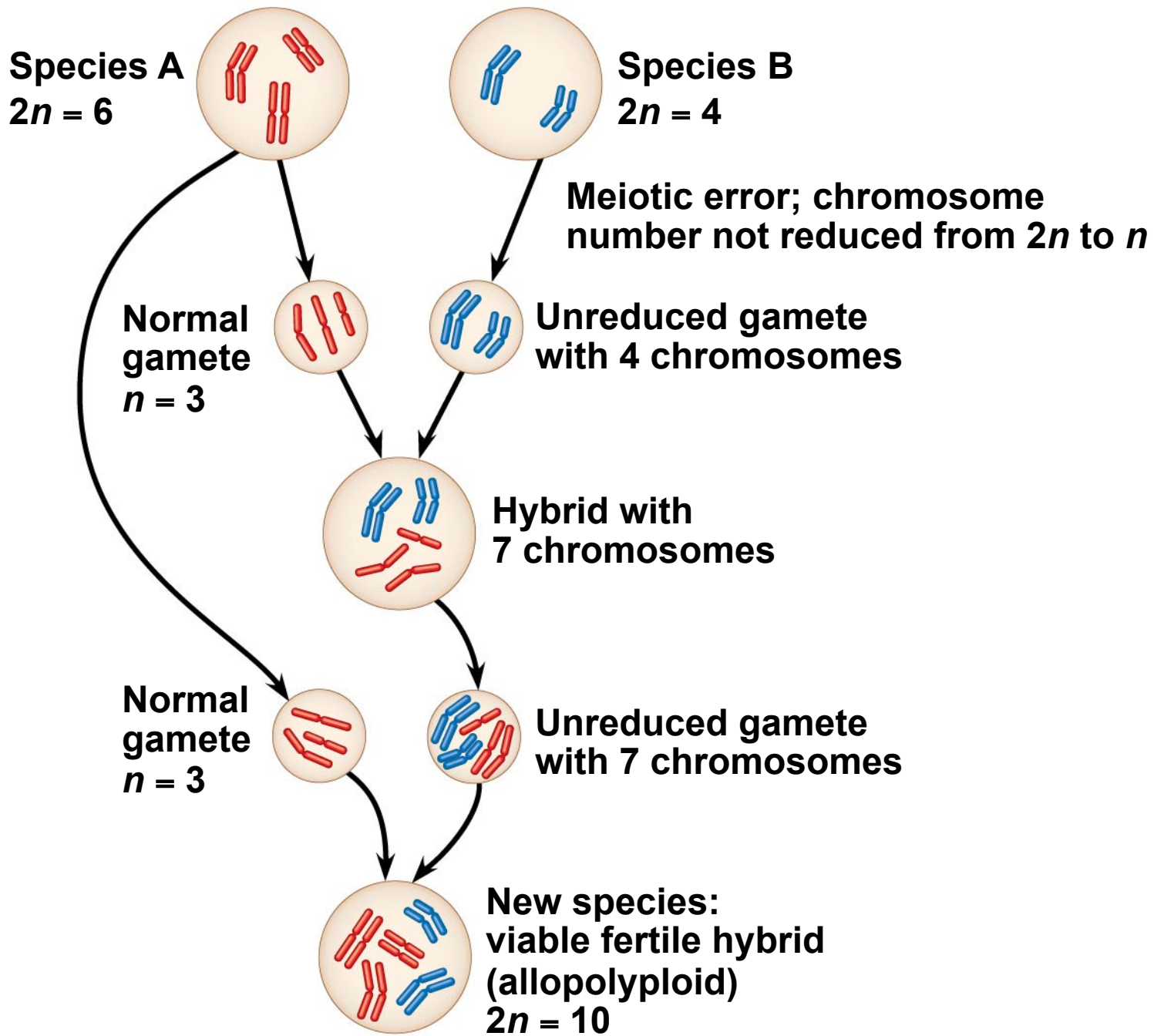
Number of matings in experimental group

		Female	
		Starch population 1	Starch population 2
Male	Starch population 1	18	15
	Starch population 2	12	15

Number of matings in control group





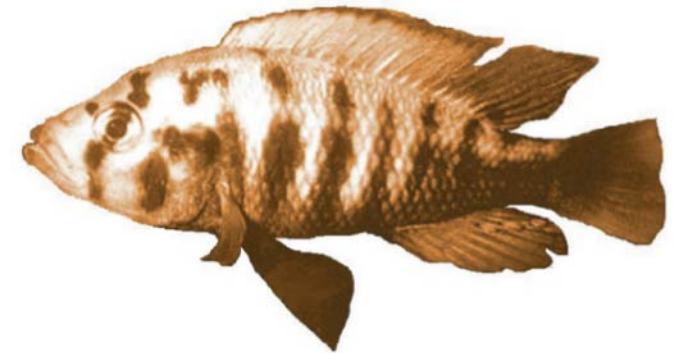


# Experiment

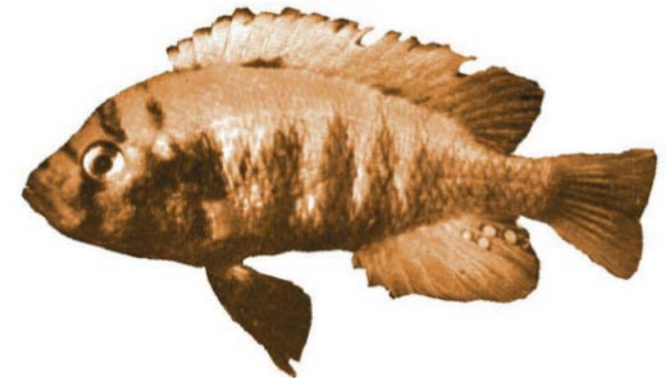
Normal light

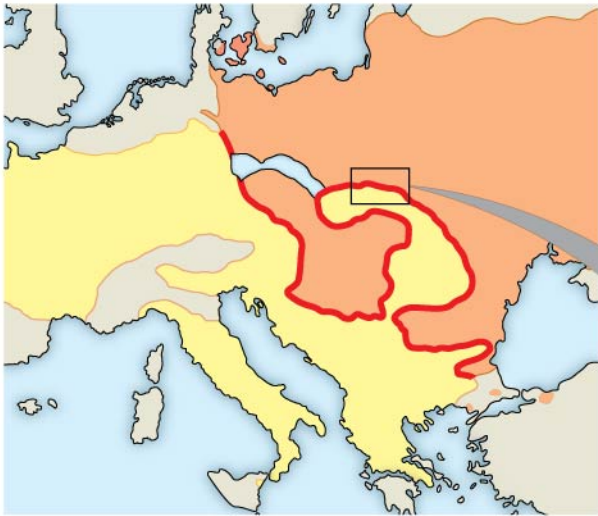
Monochromatic orange light

*P. pundamilia*

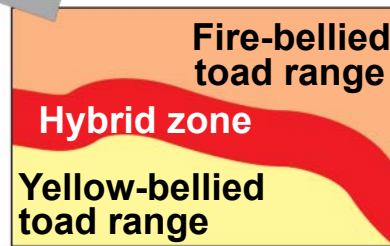


*P. nyererei*

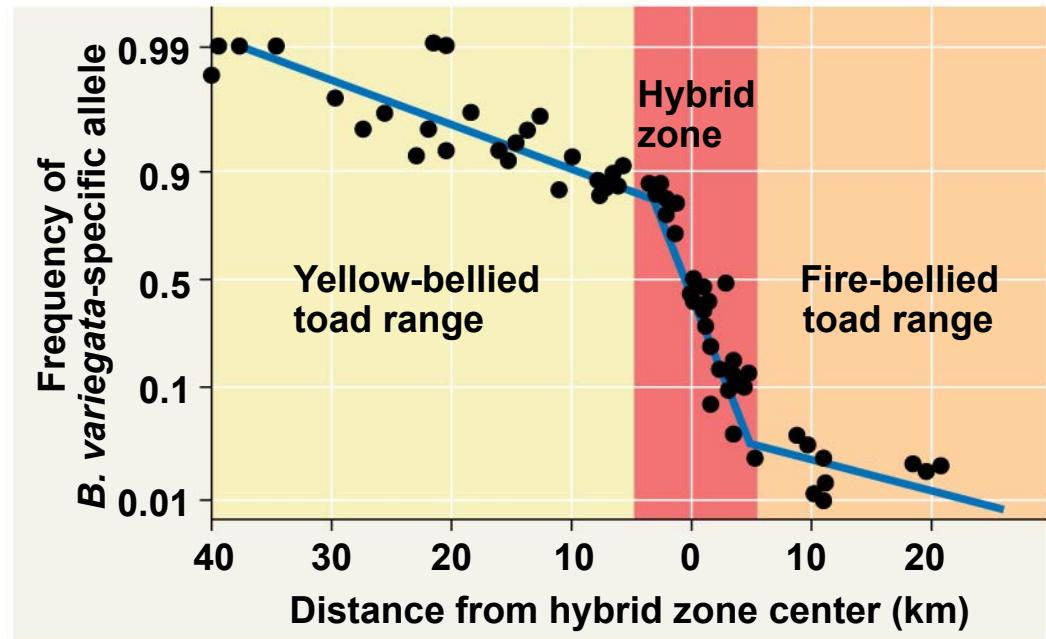


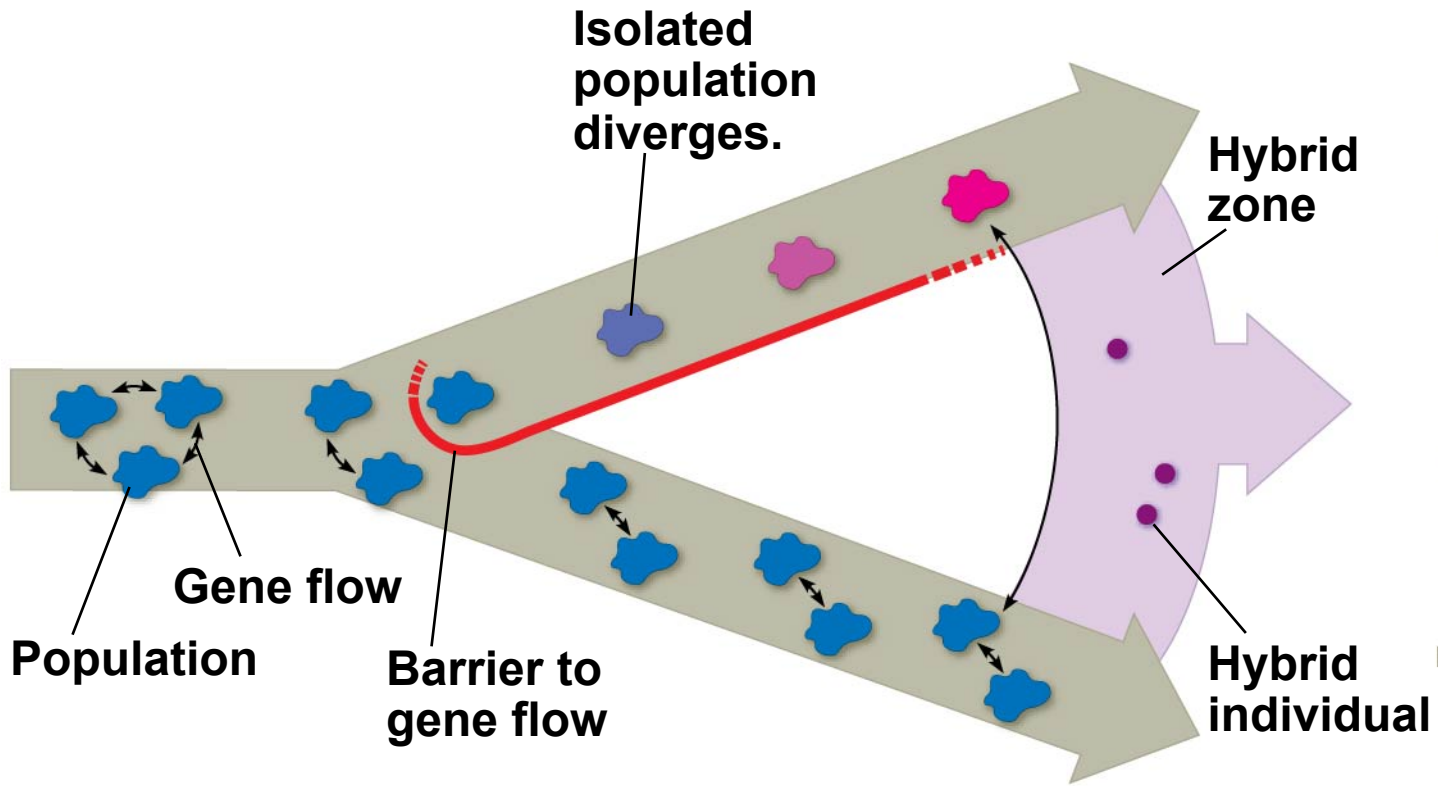


Fire-bellied toad, *Bombina orientalis*

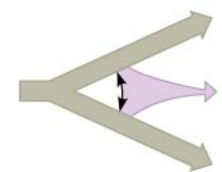


Yellow-bellied toad, *Bombina variegata*

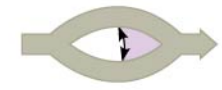




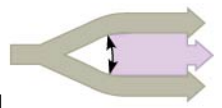
Possible outcomes:



Reinforcement



Fusion



Stability

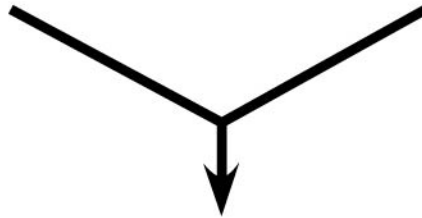




*Pundamilia nyererei*



*Pundamilia pundamilia*

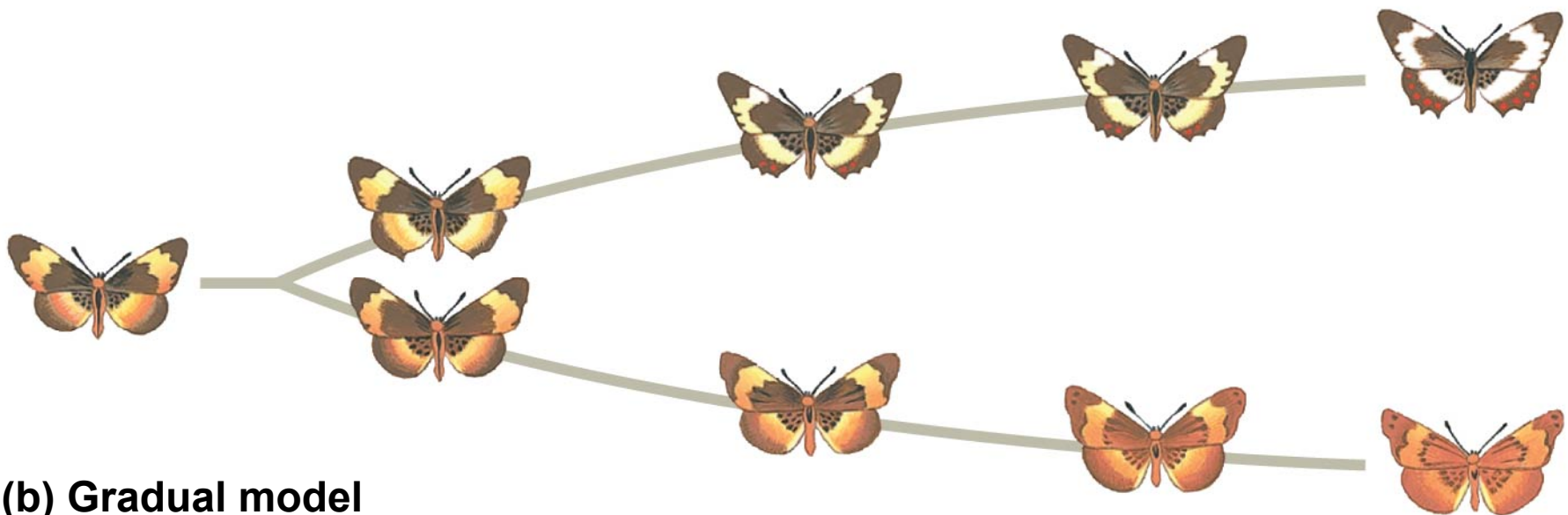


*Pundamilia* “turbid water,”  
hybrid offspring from a  
location with turbid water

**(a) Punctuated model**



**(b) Gradual model**





(a) *Mimulus lewisii*



(b) *M. lewisii* with  
*M. cardinalis* allele



(c) *Mimulus cardinalis*



(d) *M. cardinalis* with  
*M. lewisii* allele