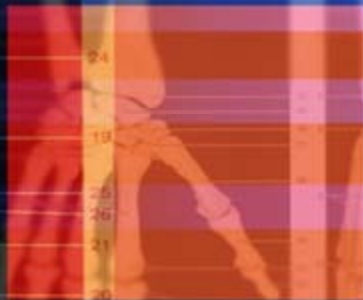


Mutations Prove Creation



Part 1



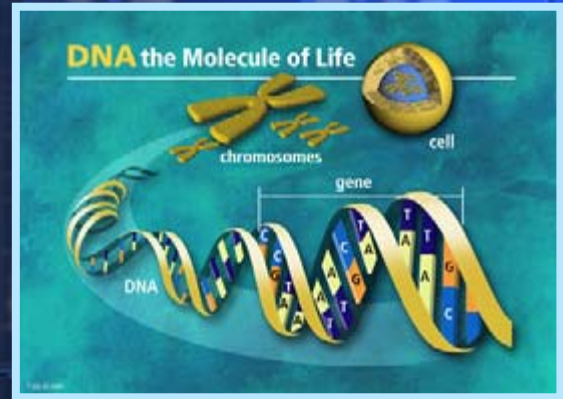
I would like to personally thank you for watching the Origins program. Origins was a special program, near to the heart of my late husband, Russell Bixler.

I trust that the information in this presentation will be helpful in your study of creation science. Thank you for your prayerful and financial support of Origins... you're making the television production of this program possible.

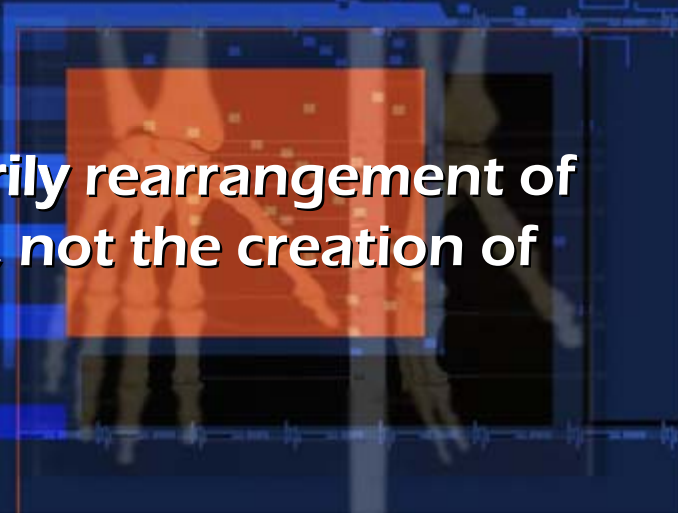
-Norma Bixler



- **The primary basis of macroevolution is mutations.**
- **They produce variations that can be selected.**
- **They change protein coding DNA that affects phenotype.**



- **Other sources of variation are sexual reproduction, crossing over, and transposition.**
- **This produces primarily rearrangement of existing information, not the creation of new information.**



- Ernst Mayr: “*Ultimately, all variation is due to mutation.*”



- Theodosius Dobzhansky:
“the process of mutation is the *only* source of the raw materials ... and hence, of evolution.”

Goal: METHINKS IT IS LIKE A WEASEL

Dawkins provides the following computer simulation

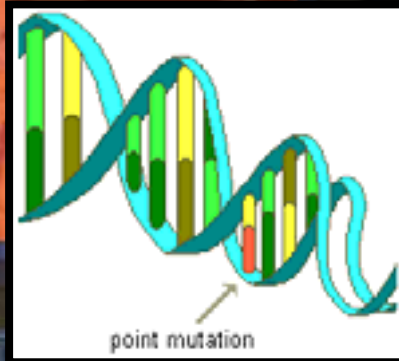
Result

Trial

WDL?MNL T?DTJBKWIRZREZLMQCO?P	(2)
WDLTMNL T?DTJBSWIRZREZLMQCO?P	... (10)
MDLDMNLS?ITJISWHRZREZ?MECS?P	... (20)
MELDINLS?IT?ISWPRKE?Z?WECSEL	... (30)
METHINGS?IT?ISWLIKE?B?WECSEL	... (40)
METHINKS?IT?IS?LIKE?I?WEASEL	... (43)
METHINKS?IT?IS?LIKE?A?WEASEL	

Problems

- Many major problems exist with the mutations as a source of variation idea.
- Assume that mutations are random.
- The problem is:



- **When random mutations occur, certain amino acids are also *far more likely* to be produced than others.**
- **Random combinations are more apt to produce certain amino acids.**
- **Note the following table:**

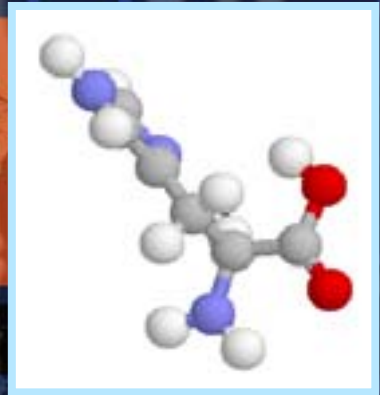


Table I DNA Mutation Probabilities

Serine	N	Percent
TCT		
TCC		
TCA	6	9.4
TCG		
AGT		
AGC		

Table I DNA Mutation Probabilities

<u>Tryptophan</u>	<u>N</u>	<u>Percent</u>
TGG	1	1.6

- Another problem is, depending on the cause of the mutation, the rate of mutations from one base to another base is *not* equal.
- One study found (totals refers to all base pair conversions):



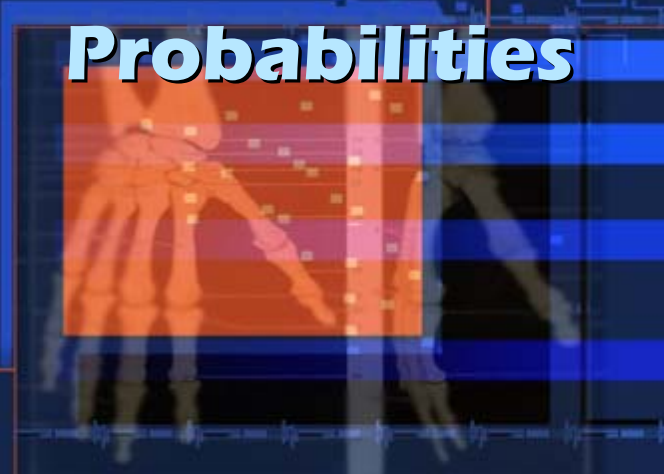
Conversion to Thymine

<u>TYPE</u>	<u>N</u>	<u>%</u>
G to T	87	16
C to T	206	42
<u>A to T</u>	<u>4</u>	<u>.7</u>
TOTAL	297	58

Conversion to Guanine

A to G	5	.9
T to G	25	5
<u>C to G</u>	<u>40</u>	<u>8</u>
TOTAL	70	14

Empirical Mutation Probabilities



Conversion to Cytosine

<u>TYPE</u>	<u>N</u>	<u>%</u>
A to C	1	.2
T to C	55	11
<u>G to C</u>	<u>64</u>	<u>12</u>
TOTAL	120	23

Conversion to Adenine

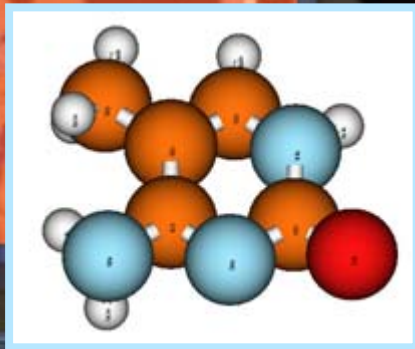
C to A	0	0
T to A	4	.8
<u>G to A</u>	<u>2</u>	<u>24</u>
TOTAL	26	5

Mutation Probabilities Cont.



Thus

- **Conversion to Thymine is fully 10 times more common than conversion to Adenine!**
- **Thus, using Dawkin's model, the following will result:**



Result of tendency to go from C and G to T

The goal is

Methinks it is like a weasel

Trial

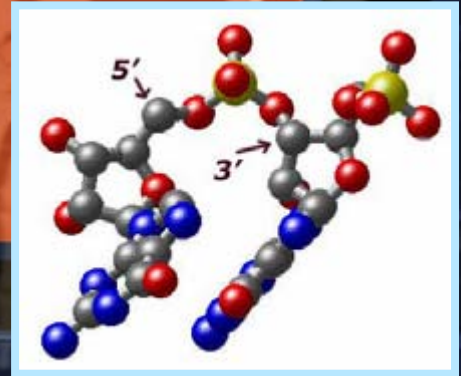
1	wdltnlnlt?dtjbkwirzrezlmqco
2	wdltnlnlt/dtjbkwirzrezlmqco
40	wdltnlnlt?dtjbkwirzrezlmtco
400	wdltnlnltdtjbkwirtrezlmtco
40,000	ttltnlnltudtjbtwirtrezlittco
40,000,000	ttltnlnlttttjbtirtretlittco
40,000,000,000	ttltnlnltttttttttitttetlittct
40,000,000,000,000	tttttttttttttttttttttttttttt

Hot Spots

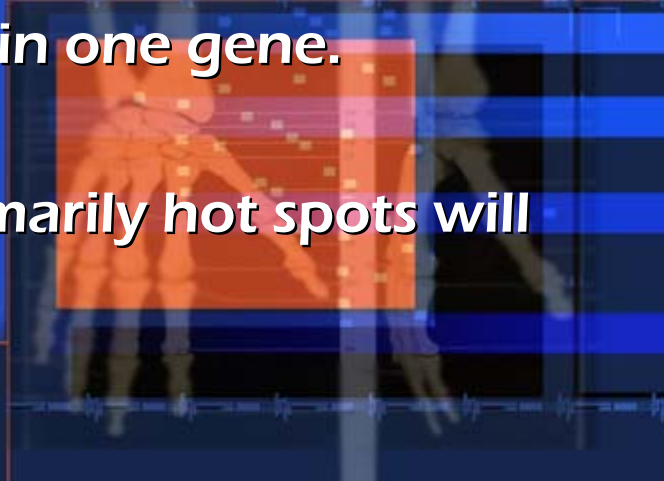
- Mutations are also much more common in areas termed hot spots.
- And rarely occur in other areas termed cold spots.



- One of the most common mutational hot spots is the CG dinucleotide.
- They are involved in mutations about 12 times more often than other dinucleotide sequences.



- In one study, only *two* mutations accounted for 94.4% of all mutations out of the 319 identified in one gene.
- The result will be primarily hot spots will keep changing.



The result of hot spot & back mutation changes

Trial

Methinks it is like a weasel

1 wdltnmlt dtjbkwirzrezlmqco

2 wdltnmly dtjbkwirzrezlmqco

40 wdltnmly dtjbkwirzrezlmrco

400 wdltnmly dtjbkwirwrezlmqco

40,000 wdltnmlt dtjbkwirwrezlmqco

40,000,000 wdltnmlk dtjbkwiryrezlmqco

40,000,000,000 wdltnmlm dtjbkwirlrezlmkco

40,000,000,000,000 wdltnmlw dtjbkwirzrezlmaco

- **When we combine both the tendency to produce thymines and the tendency to produce hot spots, the result is as follows:**



Result of both hot spot and back mutations plus the tendency to go from C and G to T

Trial:

Methinks it is like a weasel

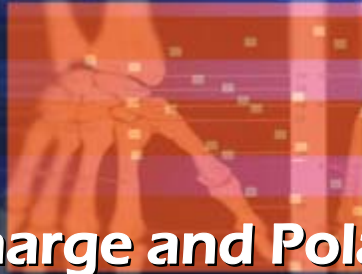
1	wdltnl t dtjbkwirzrezlm q co
2	wdltnl y dtjbkwir z rezlm q co
40	wdltnl t dtjbkwir z rezlm r co
400	wdltnl t dtjbkwir w rezl m tco
40,000	wdltnl t dt t bkwir t rez t m q co
40,000,000	wdltnl t dtjbkwir t rez t m t co
40,000,000,000	wdl t tnl t dt t bkwir t rez t m t co
40,000,000,000,000	wdltnl t dt t bkwi

Also

- The effect of base pairs on polarity must be evaluated.

For example:

- When grouped into Charge and Polarity families, the following results:



Charge and Polarity Families

Nonpolar Uncharged		Polar Uncharged		Borderline Polar/Nonpolar		Polar Positively Charged		Polar Negatively Charged	
Alanine	6.3%	Asparagine	3.1%	Cysteine	3.1%	Arginine	9.4%	Aspartate	3.1%
Isoleucine	4.7%	Glutamine	3.1%	Glycine	3.1%	Lysine	3.1%	Glutamic Acid	3.1%
Leucine	6.3%	Histidine	1.6%	Tryptophan	3.1%				
Methionine	1.6%	Serine	9.4%						
Phenylalanine	3.1%	Threonine	6.3%						
Proline	6.3%	Tyrosine	3.1%						
Valine	6.3%								
Total	34.6%	28.1%		11.0%		12.6%		6.2%	

*Adopted from Ritter, 1996, p. 69

Are Beneficial Mutations Common?

- A literature search found very few examples of beneficial mutations, confirming the results of this study.



Tadpole to Toad *Self-Destruct DNA!*

Biologists have found that certain living cells come with a built-in self-destruct mechanism.

For example, as a tadpole turns into a toad, it no longer needs its tail. When the special gene gives the order, the tail cells begin to die.

In other words, some living cells contain a gene that signals the death of the cell at an appointed time. Why would evolution develop genes that order their own death? By definition, such a gene would not aid survival.



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PROFESSOR**

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