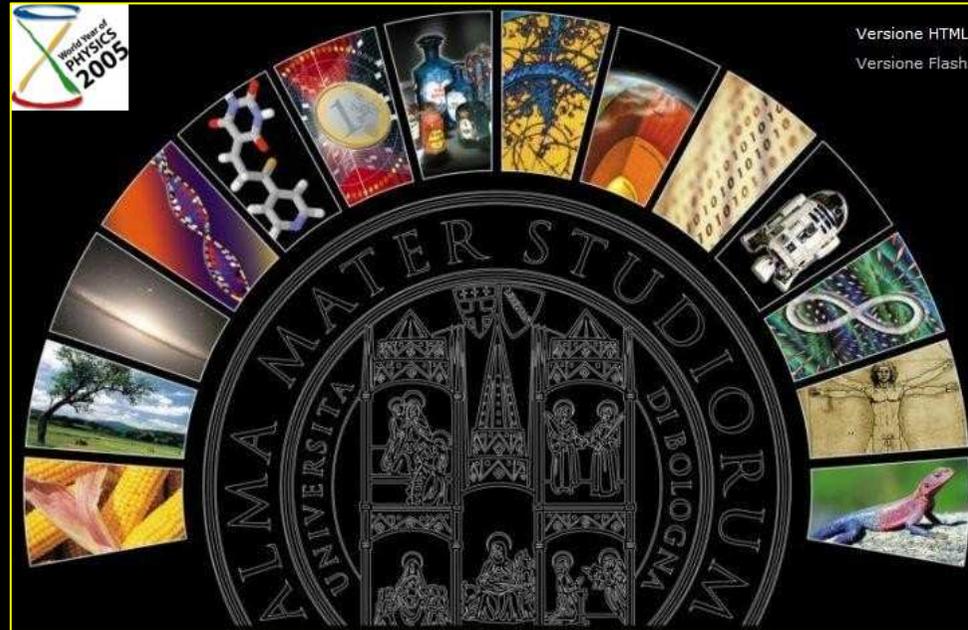
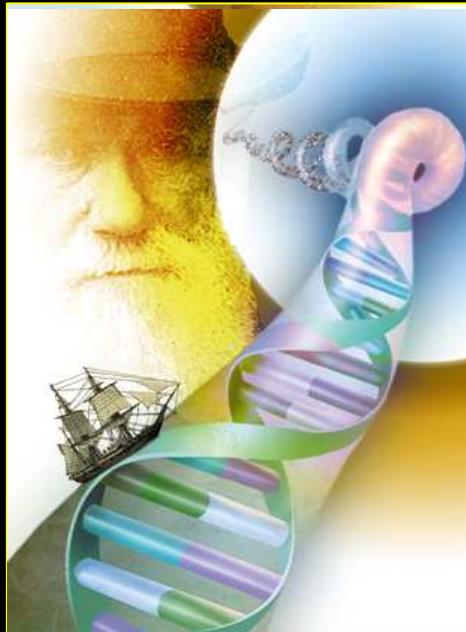


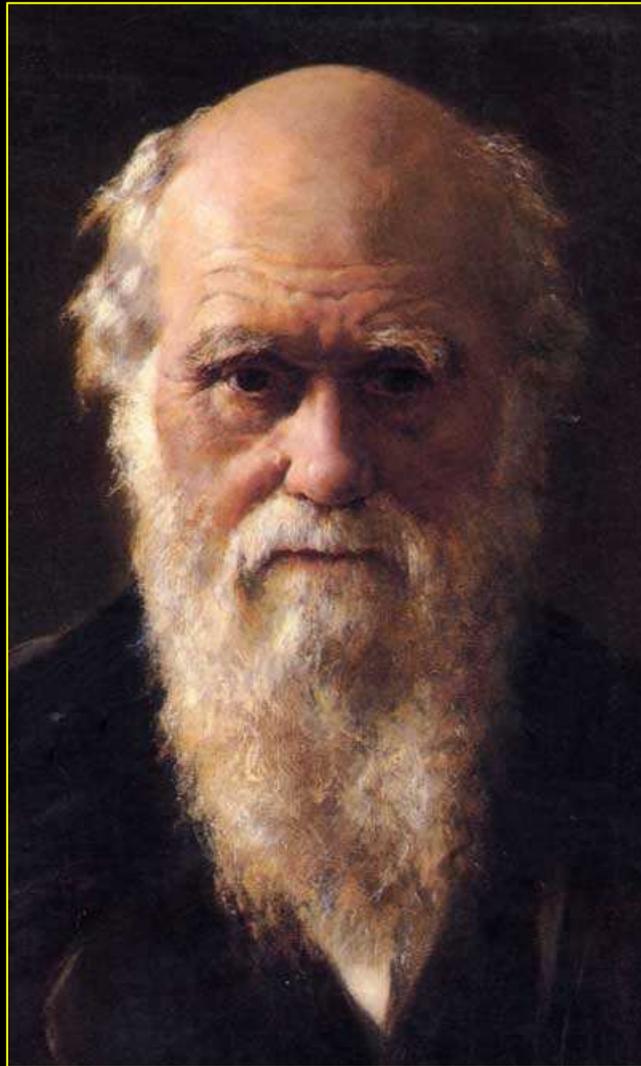
DNA: sulle tracce dell'evoluzione

Marco Passamonti
Università degli Studi di Bologna



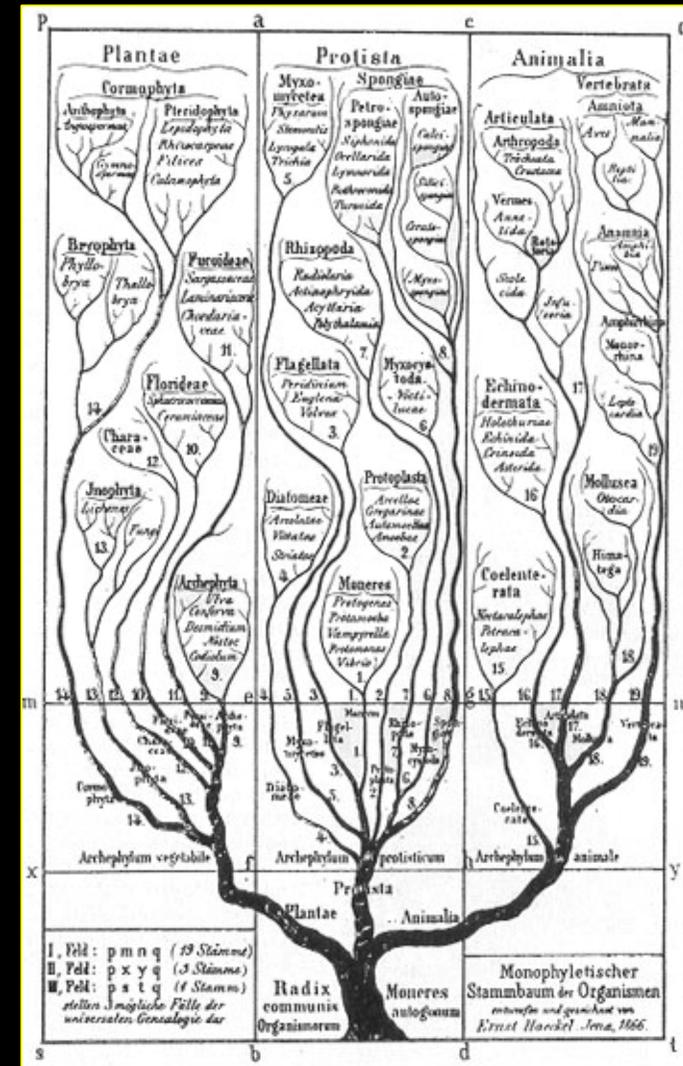
Versione HTML
Versione Flash

Scienza Giovane - Sulle tracce di Darwin - Sabato 29 Ottobre 2005

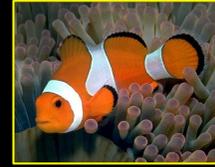


“The affinities of all the beings of the same class have sometimes been represented by a great tree. I believe this simile largely speaks the truth”...
 (Charles Darwin, *The Origin of Species*).

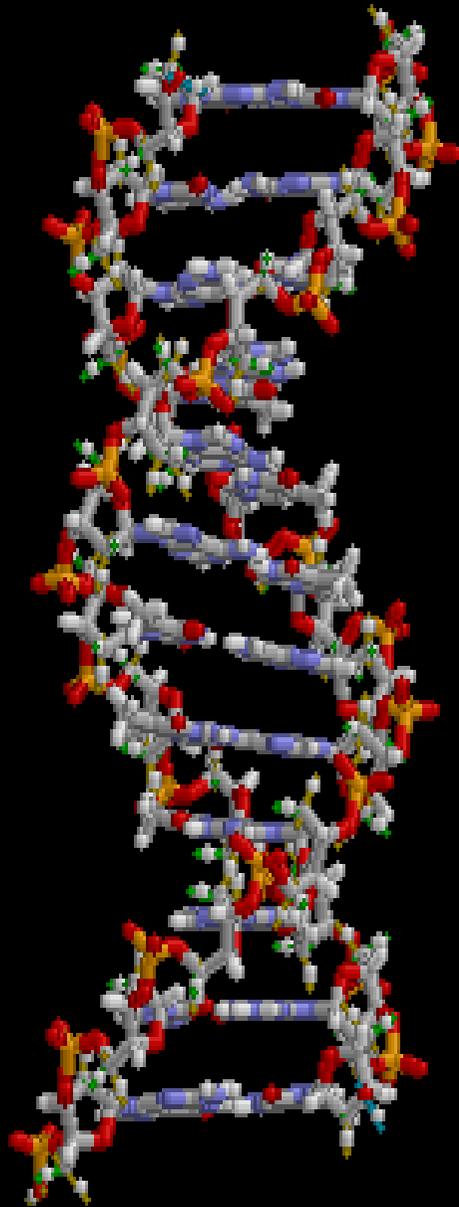
Primo albero filogenetico completo tracciato da Ernst Haeckel nel 1866.

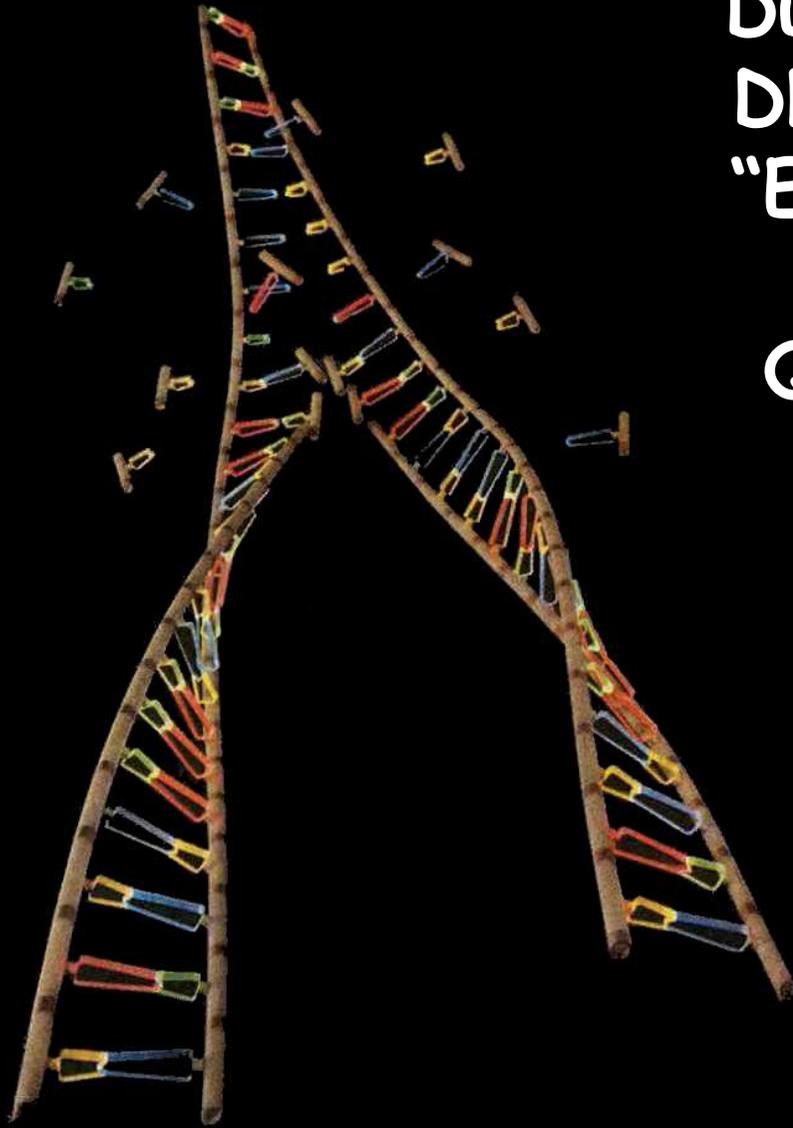


BIODIVERSITA'



Come possiamo usare il
DNA per ricostruire l'
"Albero della vita"?





Durante la duplicazione del
DNA AVVENGONO DEGLI
"ERRORI DI COPIATURA"

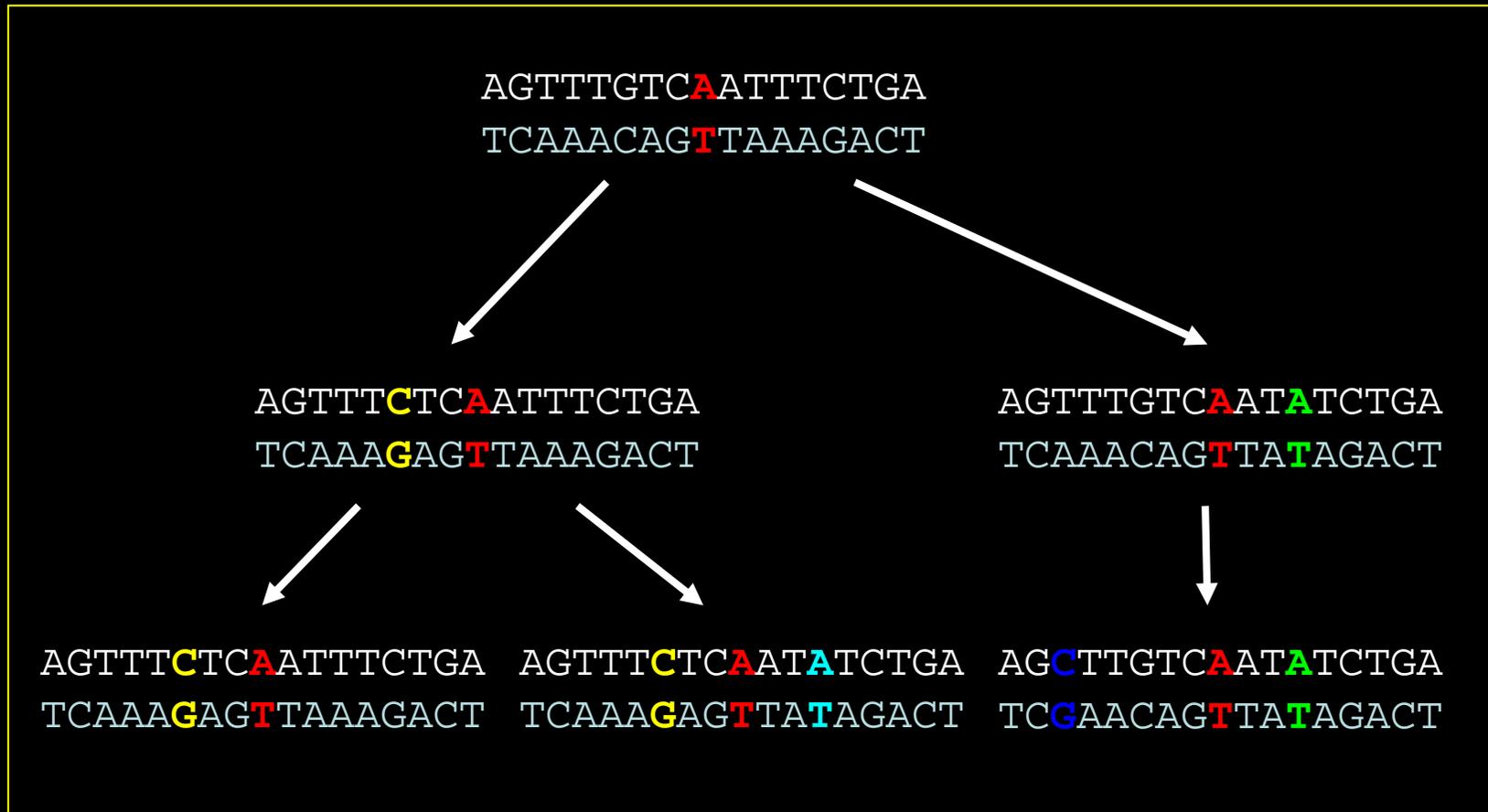
QUESTI ERRORI SONO
DETTI
MUTAZIONI

AGTTTGTCGATTTCTGA
TCAAACAGCTAAAGACT



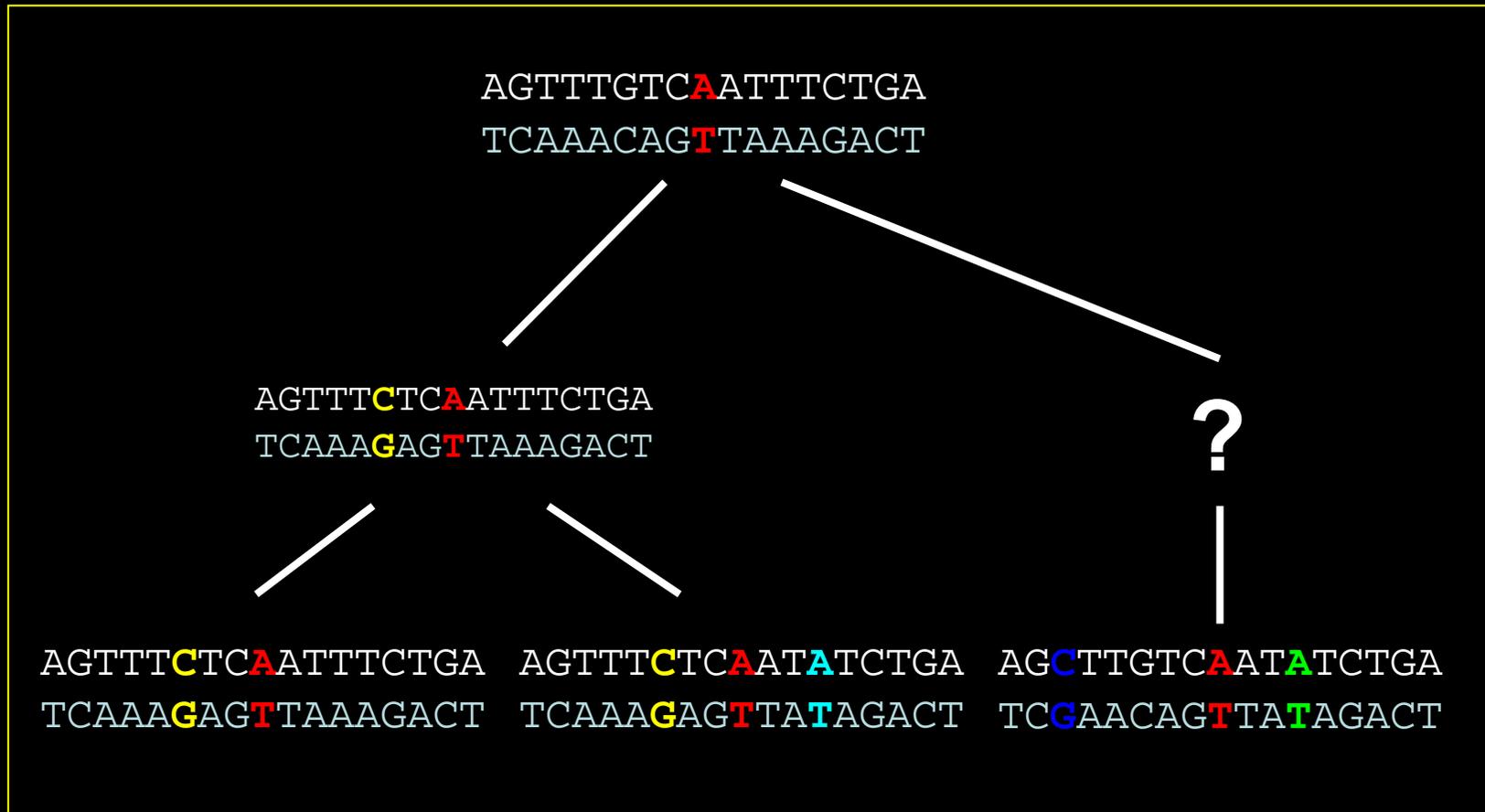
AGTTTGTC**A**ATTTCTGA
TCAAACAG**T**TAAAGACT

Le mutazioni avvengono ad ogni generazione



Le mutazioni portate dai genitori sono ereditate dai figli

Se ASSUMIAMO che le mutazioni comuni TRA figli sono STATE ereditate dai genitori....

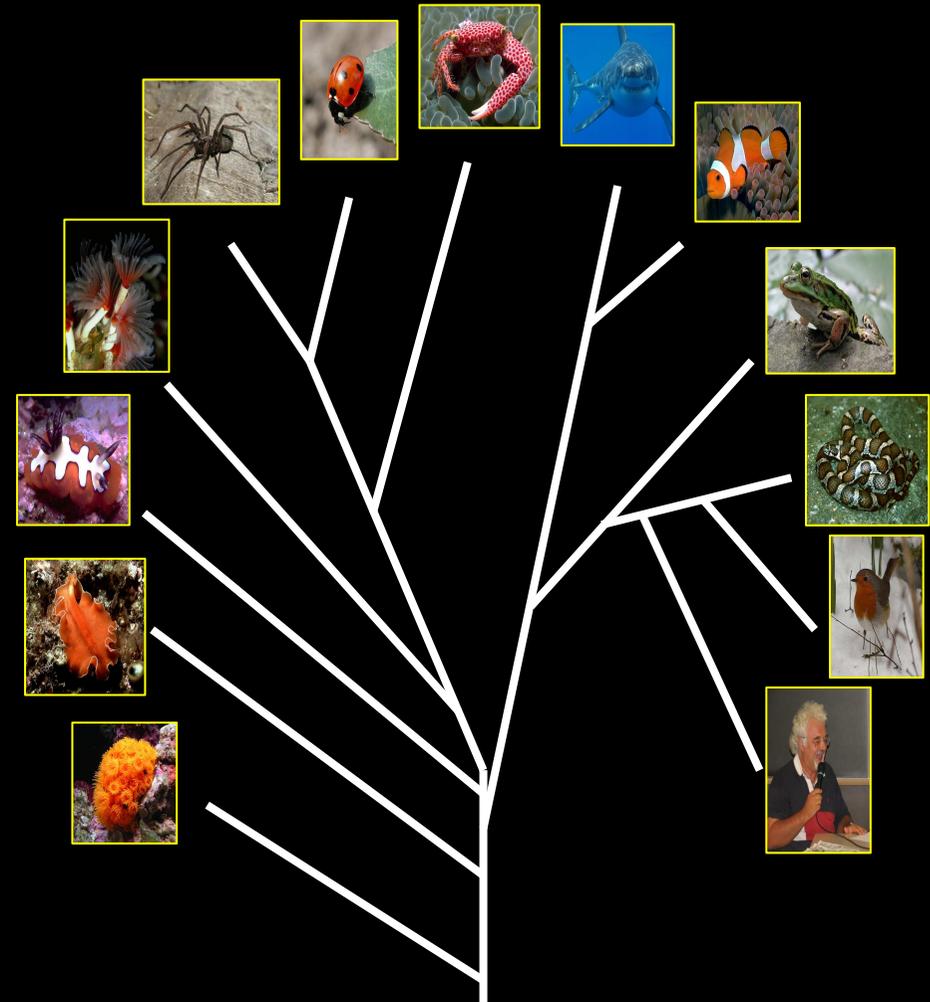


Possiamo ricostruire "a ritroso" la "storia" delle mutazioni e quindi l'ALBERO GENEALOGICO DEGLI ORGANISMI CHE ABBIAMO ANALIZZATO

Pensiamo in grande!!!!

Se trasferiamo lo stesso
semplice meccanismo a scala
più grande
(relazioni di "parentela" tra
gli organismi), possiamo
ricostruire la :

**Storia
dell'Evoluzione della
vita sulla terra**



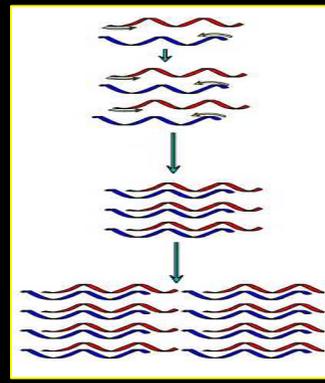
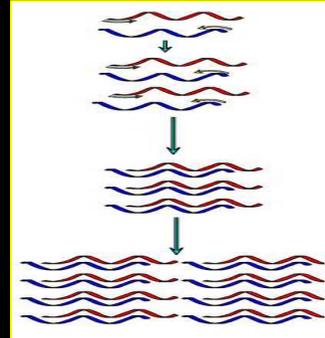
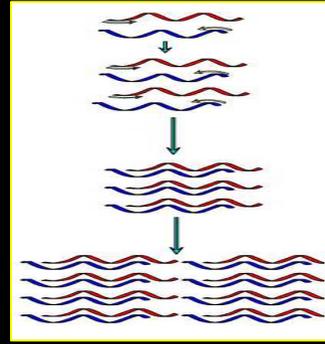
Le cose sono però un po' più complesse di come sembrano.....



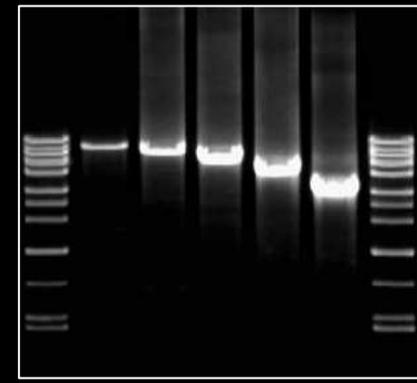
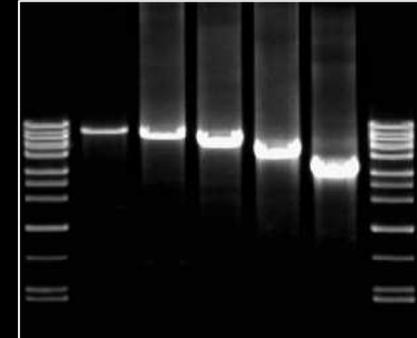
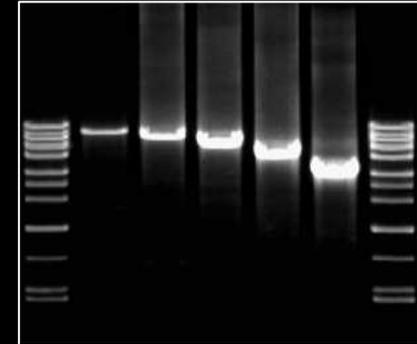
Animale....



Estrazione
DNA

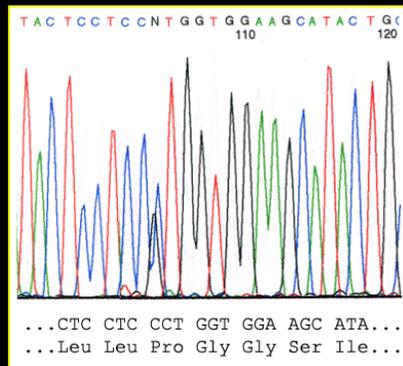
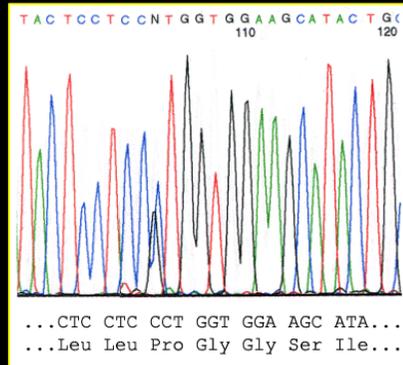
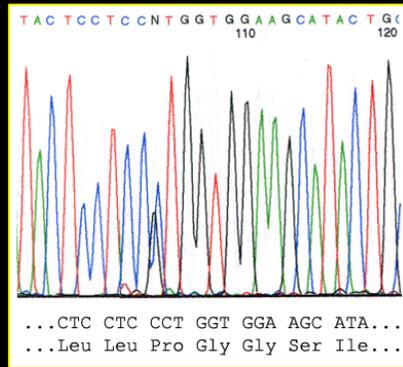


PCR



controllo

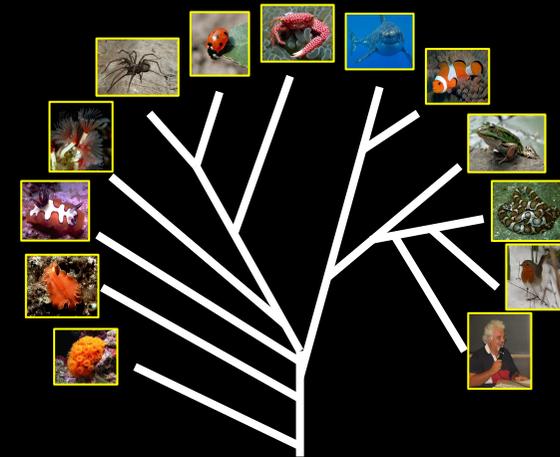
continua.....



Sequenziamento

	10	20	30	40
MseF1	TAGCTGGTGC	AAGTTTAAGT	CTTCTTATCC	GAGTTCATTT
MseF2	.....	.....	.....	.....
MseF3	.....	.....	.....	.....
MseF4	.....	.....	.....	.....
MseF5	.....	.....	.....	.....
MseF6	.....	.....	.....	.....
MseF7	.....G..	.....	.....	.....T..A
MseF8	.....	.....	.....	.....
MseF9	.....	.....	.....	.....
MseF10	.....	.....	.....	.....
MseM1	.....G..	T..GC.T..C	..CT.A..T	..C..G....
MseM2	.....G..	T..GC.T..C	..CT.A..T	..C..A....
MseM3	.....G..	T..GC.T..C	..CT.A..T	..C..G....
MseM4	.....G..	T..GC.T..C	..CT.A..T	..C..G....
MseM5	.....G..	T..GC.T..C	..CT.A..T	..C..G....
MseM6	.....G..	T..GC.T..C	..CT.A..T	..C..G....
MseM7	.....G..	T..GC.T..C	..CT.A..T	..C..G....
MseM8	.....G..	T..GC.T..C	..CT.A..T	..C..G....
MseM9	.....G..	T..GC.T..C	..CT.A..T	..C..G....
MseM10	.....G..	T..GC.T..C	..CT.A..T	..C..G....

allineamento



ALBERO FILOGENETICO

GRAZIE.....