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JUNE 2012

Mutation

2012

MAY

TUESDAY

172-244 • Wk 18

Theory of De Vries

01

Hugo de Vries book "Die Mutationen

theorie" was published in 1901. In

this book, de Vries proposed the

mutation theory in order to explain the mechanism of evolution.

According to de Vries, ~~the~~ ~~propo~~

the new species arises not by the

accumulation of minor and

continuous variation through

natural selection, but by the

sudden, appearing saltatory

variations for which he coined

the term mutation and an

2012

MAY

FRIDAY

Wk 18 • 125-241

04

are two new

2	3	4	5	6	7	8
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APRIL 2012

9 am

species and named *O. brevisstylis*

10 am

and *O. laevifolia*. In his openi-

11 am

on mutation is the only

12 noon

source of the origine of new

1 pm

species and natural selection

2 pm

has nothing to do with species

3 pm

formation, hence, mutation

4 pm

is the only causative factor

5 pm

in speciation.

6 pm

Characteristics of Mutation

Theory:-

① Mutation appears from

time to time among the

JUNE 2012

organism of

05

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① a naturally breeding species.

The organisms with mutation are called mutants. These mutants are clearly distinct from their parent.

② Mutations are heritable and form new species. They do not disappear by crossing.

③ Mutations arise suddenly in one step i.e. new species arise suddenly in one step and not gradually.

SUNDAY 06

④ Mutations occur in all possible directions.

⑤ Unsuitable mutants are

destroyed by natural selection

⑥ The fluctuating variation

have nothing to do with the

mutation; the latter are quite

independent of the farmer.

⑦ Mutations are not a gradual

process but is instead a

jerky and discontinuous

process.

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JUNE 2012

2012
MAY
TUESDAY
179-237 • Wk 19

Objection

08

① How actually the mutation occurs that was unknown to de vries.

② Natural mutations are not common as de vries thought them to occur.

③ *Oenothera lamarckiana* of vries is an abnormal plant and a complex heterozygous form with chromosome aberration.

④ The mutation theory was unable to explain the presence of flightless birds on oceanic islands.

2012

MAY

WEDNESDAY

WK 19 • 130-236

09

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APRIL 2012

⑥ It could not explain the

9 am

existence of discontinuity in

10 am

distribution among individuals.

11 am

⑦ Mutation theory alone could

12 noon

not explain evolution. It,

1 pm

however provided raw material

2 pm

for other forces to act upon it

3 pm

and bring about evolutionary

4 pm

changes.

5 pm

⑧ Mutation alone is unable to

6 pm

give rise to a new species.

⑨ Mutation theory does not

explain the importance of
nature.

		1	2	3
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10 THURSDAY
131-235 • Wk 19

① Mutation Theory fail to explain certain adaptation like symbiosis, the development of mimicry.

Advantage

The mutation Theory describe the importance of mutation in selective value of organism.

② M.T explain the occurrence of evolutionary changes within short period in contrast to natural selection.

M. Theory explain the absence of

connecting links as no

9 am criteria against evolution but

10 am its possibility exist.

11 am

(a) Mutation is of great service

12 noon

to breeders in developing new

1 pm

useful varieties.

2 pm

3 pm (b) Occurrence of Mutation in large

4 pm

and divergent direction

5 pm

removes the possibility of

6 pm

sp's disappearance by

~~cross~~ crossing.

(b)