

from W. PAULI

to G. GAMOV

FROM : W. Pauli 0100,52 ✓
TO : G. Gamov
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CONTENTS : Reply to a letter of 24-2.
Tells about his work with Heisenberg in
general and criticizes emphatically Hei-
senberg's radio advertisement.
Remarks on biology and neo-darwinism.

UNIVERSITY OF CALIFORNIA

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DEPARTMENT OF PHYSICS
BERKELEY 4, CALIFORNIA

March 1st, 1952

Dear Janes,

Thanks for your letter of Feb. 24th. The stuff of Heisenberg and me is, as I believe, only so complicated for the reason, that we both have not yet understood it sufficiently. (There is no 'paper' yet; but some other preprint, not yet determined for the publication, may be sent to physicist rooms, to satisfy their curiosity and to prevent wild rumors.) In this sense you find enclosed my comment on Heisenberg's radio advertisement. (Please don't publish it in the press, but please do show it to other physicists and maybe it ~~will~~ ^{will be in the best of use} ~~be~~ ^{in a new} ~~be~~ ^{be} among them).

But today - it is Saturday afternoon - I want to talk a little bit on biology. Following your advice I saw Dr. Williams, who was very kind, and showed me many photos. gave me 3 reprints and talked with me on icosahedrons and also on the basis assumptions of biology in general.

With the latter I have some difficulties. The orthodox "neo-darwinists" (like, for instance, Huxley)

use the word "chance", by applying it to single events without connection with probability. calculus, in a way which is entirely synonymous with "miracle". [What else, means it. To say "life has been favoured by a chance-combination" than: nobody knows the causes for this single event?].

The more general problem behind it is the problem of time-scale in the evolution. The "orthodox view" is "random mutation" + "natural selection"
(= chance) = chance

as sufficient to explain the whole evolution. [Sp. the favourable population - statistics always remains within one species.]

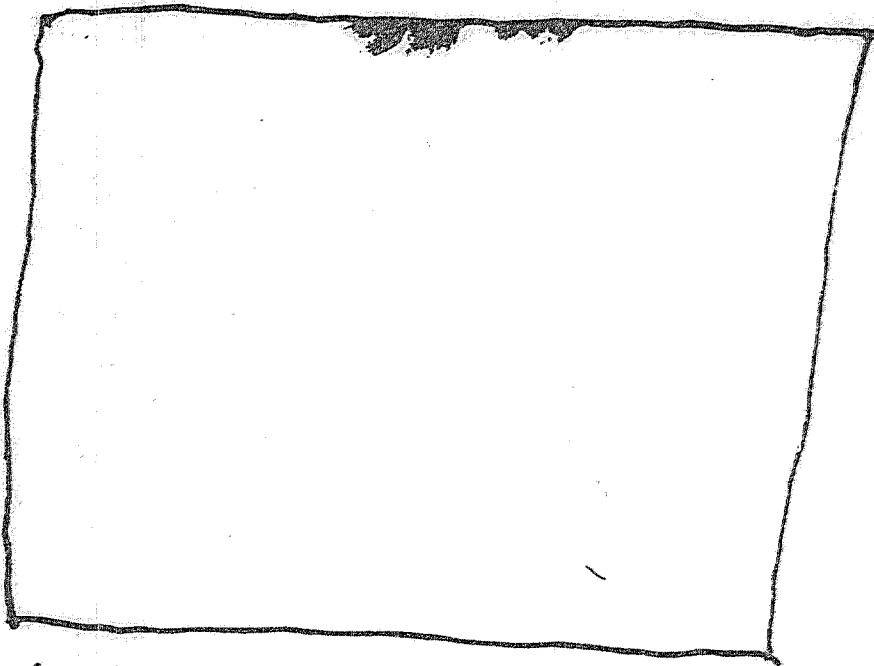
This "philosophy" seems to me as going very far beyond what, which is empirically known. And nobody gives any estimation to for the occurrence within a given time of any event, which is important in evolution (as for instance, that a reptile gets feathers).

Now I heard from Williams that Digner also has some trouble with the time-scale of evolution. Do you know something about it?

Williams himself is in so way "orthodox" in this question (the neo-darwinistic "philosophy" involved here, considered historically, very different roots), he is merely an empiricist. (So is our geneticist Haldane in Finland, who tells the students:

Comment on Heisenberg's radio advertisement

This is to show the world, that I can paint
like Titian:



Only technical details are missing.

V. Pauli