M.R.C. Unit
CAVENDISH LABORATORY
FREE SCHOOL LANE
CAMBRIDGE

TELEPHONE
CAMBRIDGE 54481

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Dear Josh,

The point Tamm raised – in as far as I understand it from your letter – is a valid one, but not a new one.   It is usually expressed by saying that the triplet code only works for one chain of the DNA.   It runs into difficulties if you do not know, by some other means, which chain to read (of course you must read one chain up and the other one down).

It is possible to write down a code so that all the reverse triplets on the other chain are nonsense.   An example is:

$$A \; B \; \genfrac{}{}{0pt}{}{A}{B} \qquad\qquad \genfrac{}{}{0pt}{}{A}{B} \; C \; \genfrac{}{}{0pt}{}{A}{\genfrac{}{}{0pt}{}{B}{C}} \qquad\qquad \genfrac{}{}{0pt}{}{A}{\genfrac{}{}{0pt}{}{B}{C}} \; D \; \genfrac{}{}{0pt}{}{A}{\genfrac{}{}{0pt}{}{B}{\genfrac{}{}{0pt}{}{C}{D}}}$$

with the pairing rule   A with D
                        B with C

for example the sense triplet BCA
has on the other chain   CBD

but this must be read backwards, namely as DBC; which, as you can see, is not in the original set of triplets.   This is true for all of them.   Unfortunately, however, you can get a sense triplet on the reverse chain where two of these nonsense triplets overlap.

There are various ways round this but none is convincing.
Perhaps we might discuss them in July.

Yours ever,

Francis

Dr J. Lederberg,
Department of Genetics,
Stanford University,
Stanford, California,
U.S.A.