

Amino Acids in Rainwater

Organic nitrogen compounds in rainwater have been known to exist and have also been determined by Kjeldahl digestion in a few cases. They are referred to in literature as albuminoid nitrogen (see ERIKSSON 1952). No attempt, however, has been made to determine their nature.

In order to investigate whether this organic nitrogen fraction contained amino acids or not, large samples of water and of snow were collected and evaporated to dryness in vacuum. The residues, after removal of inorganic salts and some interfering organic substances were subjected to paper chromatography. The spots appearing on the papers in some preliminary runs were identified as most probably due to glycine and α -alanine present in the residues. Amino acids seems, thus, definitely to be present in rainwater, although in small quantities.

MILLER (1953) synthesized amino acids in a closed system containing methane, ammonia, water vapor, and nitrogen by electric discharges. He found aspartic acid, glycine, α -alanine, β -alanine, and α -aminobutyric acid to be synthesized under these conditions. Whether such a synthesis can occur in presence of oxygen is not known but it is interesting to note that glycine and α -alanine which seemed to be most abundant in Miller's experiment also seems to occur in rainwater.

The work will be continued and a full account given later.

REFERENCES:

- ERIKSSON, E., 1952: *Tellus* **4**, p. 225.
MILLER, S. S., 1953: *Science* **117**, p. 528.

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