

The Amino Acid Constituents of the Protein of Hevea Latex

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The method of paper chromatographic analysis has been used to identify the constituent amino acids of the proteins in the latices of the three clones Glenshiel 1, R.R.I.501 and Prang Besar 186. Each latex gave an identical chromatogram comprising fourteen amino acids—alanine, arginine, aspartic acid, glutamic acid, glycine, histidine, leucines, lysine, ornithine, phenyl alanine, proline, serine, tyrosine and valine, the relative amounts of which were approximately the same for each latex. No evidence of the presence of cysteine was found, although this acid has been shown by Tristram to be present in the protein of crepe.

Chromatographic analysis of the dialysate from latex serum indicated the presence in fresh latex of free amino acids, alanine, aspartic acid, glutamic acid, glycine, serine and the leucines, all of which were also identified in the protein.

The movement of the amino acids on the paper was found to be the same at 30° as that recorded by Dent at 20° when phenol-ammonia was the solvent, but to be not as great at 30° as at 20° when collidine-lutidine was the solvent.

Discussion

It was noted that the materials for the synthesis of protein were already present in the serum.

It was clear that the method would prove of value in the identification not only of amino acids but also of sugars and other non-rubber constituents.