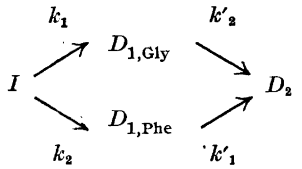
with that obtained from D_1. The possibility that D_2 is a mixture of di-derivatives must not be overlooked. It seems reasonable to suppose, however, that the derivative substituted on both N-terminal amino-groups is the major component.

The course of the substitution may be presented as follows:



where k_1 (k'_1) and k_2 (k'_2) represent the (second order) rate constants for substitution at the N-terminal glycine and phenylalanine residue, respectively. Examination of Fig. 1 shows that the amount of each component is approximately $I = D_1 = 3 \cdot D_2$ and from Table 1 is obtained $D_{1,Gly} >> D_{1,Phe}$. These facts cannot be reconciled unless it is assumed that $k'_2 > k_2$, that is: the amino group of the N-terminal phenylalanine must react faster in the mono-derivative $D_{1,Gly}$ than in insulin itself. The supposition that this »unmasking» is an intermolecular effect caused by a higher degree of dissociation of the mono-derivative into subunits as compared with insulin, is not substantiated by ultracentrifuge experiments. The possibility remains that the effect is of intramolecular origin. This would seem to require the distance between the groups involved to be rather short, or in different terms: The A and B chains of the insulin molecule would appear to be parallel rather than anti-parallel. This last conclusion is in agreement with the allocation of the cystine bridges recently published by Sanger [6]. Further details will be published in *Compt. rend. trav. lab. Carlsberg, Sér. chim.*

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Additional Note on α-Aminopimelic Acid in Green Plants

ANN-MARIE BERG and ARTTURI I. VIRTANEN

Laboratory of the Foundation for Chemical Research, Biochemical Institute, Helsinki, Finland

In an earlier paper [1] we reported the detection of α-aminopimelic acid in *Asplenium septentrionale* by the paper chromatographic method. We have now been able to isolate α-aminopimelic acid from the same plant by cutting out the spot in question from some paper chromatograms before the treatment with ninhydrin (thick Munktell 20 paper was used). The pieces of paper were extracted with water, the extract evaporated to dryness, and the solid rest extracted with a mixture of abs. alcohol and ether in order to remove browncoloured impurities. The white microcrystalline substance (2 mg from 280 g fresh *Asplenium*) which on the paper chromatogram gave only one spot identical with the spot of α-aminopimelic acid, had a melting point of 204° C. Synthetic α-aminopimelic acid had a melting point of 203° C and the mixture of both 204° C. 1.4 mg of the isolated substance used 0.76 ml 0.01 *N* NaOH (0.304 mg NaOH), calculated for α-aminopimelic acid 0.80 ml (0.320 mg NaOH).

The isolated α-aminodicarboxylic acid is thus α-aminopimelic acid. Its R_F-value in phenol + NH_3 is 0.40 using Whatman 4 paper; in butanolacetic acid the R_F-value corresponds to that of γ-aminobutyric acid.

We have found free α-aminopimelic acid by the paper chromatographic method also in the seeds of a legume tree, *Ceratonia siliqua.*

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