

papyrogram itself absorbs the ultra-violet radiation.

Of the peptides and amino acid derivatives which have been studied, the chloracetyl derivatives of leucine, tryptophane and tyrosine do not react with ninhydrin, since they have no free amino group. The location of two of the "aromatic" amino acid derivatives on the papyrogram was carried out by the U.V.P. method while the location of the leucine derivative is not possible. The spots of the aromatic amino acid derivatives and peptides could also be detected by reacting the papyrogram with dimethyl *p*-aminobenzaldehyde for the characterisation of the tryptophane peptide which yields a violet spot while the tyrosine derivative could be located by the brick-red colour developed with Millon's reagent.

The peptide spots were individually excised from the papyrogram, extracted with hot water by means of a microfilter, and the extracted peptide concentrated to a small volume in vacuum over silica gel. The solution was then hydrolysed in a sealed tube with 5N hydrochloric acid for 2.5 hours at 100° C. The hydrolysate was freed of its HCl and concentrated by evaporating the solution in vacuum over caustic potash and sulphuric acid placed separately in a desiccator. The hydrolysate, when spotted and developed, gives the constituent amino acids of the peptide.

It will be seen from the preceding discussion that papyrographic methods when coupled with U.V.P. and micro-hydrolysis techniques, are useful for a separation and characterisation of the peptides and amino acids when they occur

in mixtures as they do in enzymatic digests of proteins, plant saps, body fluids and tissue extracts. These methods, together with two-dimensional papyrographic methods, are being extended to a study of the haemolymph and the silk gland of the silkworm.

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THE problem of popularizing scientific knowledge, that is to say, its dissemination amongst non-specialists, has to-day become a very important and very delicate problem: very important because it is essential that public opinion at all levels should be able to understand the scope of scientific progress, its intellectual value, and the tremendous repercussions which

it can have on the future life of all peoples and on the evolution of their civilisation; very delicate because scientific knowledge is becoming more extensive and more complex each day, so that it is very difficult to make it comprehensible for the general public without an unfortunate distortion of some of its aspects.

PROF. LOUIS DE BROGLIE.

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or for its construction, for consumables, stores, books, etc. Applications are to be addressed to the Secretary, Ministry of Education (Technical Education Division), giving full particulars concerning the lines of research on which they are engaged, the type of assistance required and any other relevant information useful for consideration of the cases.