

Chromatogram of 'crude corticotropin' (ref. 7) on 'Amberlite IRC-50' (200-400 mesh) in 0.2 M sodium phosphate buffer pH 6.69 containing 0.2 per cent phenol and 0.5 per cent thiodiglycol. 475 mgm. of crude corticotropin was extracted with 9.5 ml. of the buffer and 8 ml. of the solution put on a 2 cm.  $\times$  29 cm. column. Weight of untreated adrenals, 9.0 mgm.

suggest that AW and AA activities can be separated by a process which does not involve hydrolysis.

We do not know if all the effects described above can legitimately be attributed to the presence of only two factors in the pituitary gland. It seems necessary, however, to assume the existence of at least two factors which may be described under the term adrenotropic hormone.

We are grateful to the Nuffield Foundation for generous support of this work and to Armour Laboratories, Ltd., for the gift of adrenotropic hormone preparations 84-85 H and 84-85 U. One of us (H. B. F. D.) wishes to express his thanks to the Medical Research Council of Ireland for a studentship held while much of this research was carried out.

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<sup>3</sup> We are grateful to Dr. E. Reid, Department of Biochemistry, University of Cambridge, for the supply of growth hormone, prepared by the method of Wilhelm, A. E., Fishman, J. B., and Russell, J. A., *J. Biol. Chem.*, **176**, 735 (1948).

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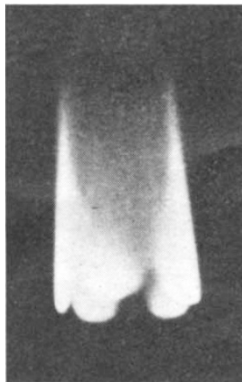
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## Polyhedral Diffusion Flames

BURNER flames of unusual structure may be obtained when certain hydrocarbon gases and vapours are burnt in admixture with air or oxygen. Thus, as first noted by Smithells and Ingle<sup>1</sup>, and later by Smith and Pickering<sup>2</sup>, the inner cones of the flames may assume the form of a polyhedron, the number of sides of which is dependent upon prevailing conditions, and which may or may not rotate about a central, vertical axis. More recently, Mann<sup>3</sup> and Behrens<sup>4</sup> have reported the occurrence of polyhedral flames using weak mixtures of hydrogen and air.

During the course of an investigation into the processes responsible for the formation of polyhedral flames, we have observed that the phenomenon is not confined solely to aerated flames, but may occur also with flames of the diffusion type provided that an inert gas be mixed with the inflammable gas prior to combustion.

The accompanying photograph is of a diffusion flame produced when a mixture of hydrogen and carbon dioxide, containing 19.35 per cent of the former, is burnt at atmospheric pressure upon a cylindrical tube of 1.1 cm. internal diameter. The flame, which will be seen to be composed of five bright segments separated by dark lines, could be made to rotate or to remain stationary by adjusting the rate of flow of the mixed gas.



Similar polyhedral diffusion flames have been obtained when nitrogen instead of carbon dioxide was used as the diluent gas.

An account of our investigation is to be published shortly.

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## The Lotmar-Picken X-Ray Diagram of Dried Muscle

THE publication by Lotmar and Picken<sup>1</sup> of an X-ray photograph of a certain dried muscle preparation produced considerable interest and controversy, since, in addition to indicating an unusual degree of crystallinity, the diagram showed no sign of the 5.15 Å meridional arc which hitherto had been regarded almost as a diagnostic feature of the X-ray photographs of  $\alpha$ -fibrous proteins. While we do not wish to enter the controversy as to whether or not Lotmar and Picken's photograph is indeed that of