of excited formaldehyde. Towards the yellow boundary the bands of HCO and OH appear. The spectrum of the yellow region gives a carbon continuum, despite the extreme weakness of the mixture. A full account of the spectroscopic work is in preparation.

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Influence of Cation-Exchange Resins on Adenosine Triphosphate

Cation-exchange resins provide a convenient means of obtaining free acids from their salts, and the use of resins for obtaining adenosine triphosphate (ATP) from its barium salt has been described[1-3].

We have found that ATP which has undergone treatment by a cation-exchange resin behaves unexpectedly when chromatographed on paper. ATP was prepared from $Ba_2ATP.4H_2O$ (Schwarz : New York) by shaking it in aqueous suspension with 'Amberlite *IR*-120(H)'. When chromatographed according to the method of Burrows, Grylls and Harrison[4] (solvents 2, 4 and 7), the ATP was located in the position normally occupied by adenosine diphosphate (ADP). Similar anomalous R_F values were obtained when a barium salt prepared from ATP (free acid supplied by Light of Colnbrook) was shaken with 'Amberlite *IR*-120(Na)' or '*IR*-100(H)'; or dissolved in acetic or formic acid and passed through a column of '*IR*-120(Na)'.

In order to confirm that the resin was responsible for the increase of R_F value, aqueous solutions of ATP (Light) were shaken with '*IR*-100(H)' or '*IR*-120(Na)'. Increased R_F values were again found. Similar effects were obtained whether the treated ATP was applied to the paper directly or after evaporation (either as the free acid or in neutral solution) to small bulk at 0° C. under reduced pressure. Under the same conditions the R_F values of ADP and adenosine monophosphate were unchanged. Treated and untreated samples of ATP were normally run side by side on the same paper.

Solutions of ATP were prepared from the barium salt (Schwarz) by treatment with sulphuric acid and divided into two parts, one of which was shaken with '*IR*-120(H)'. Electrometric titrations showed small significant differences between resin-treated and untreated solutions. Measurement at five-minute intervals of orthophosphate liberated by *N* acetic acid at 100° C. during two hours showed no difference in the hydrolysis-rates of resin-treated and untreated solutions.

A sample of ATP (Light), when chromatographed on paper, gave two well-separated bands, which on elution and analysis were found to have the appropriate total-to-hydrolysable phosphate ratios for ATP and ADP respectively. The presence of both ATP and ADP in the sample had been previously confirmed by separation on an anion-exchange column according to the procedure of Cohn and Carter[5]. After treatment with 'Amberlite *IR*-120(H)' resin, paper chromatography of the same sample gave one band only, in the ADP position. When the material from this band was eluted, concentrated by evaporation at 0° C. under reduced pressure and rechromatographed, two bands appeared corresponding to ATP and ADP.

Analogous treatment of the ADP band from an untreated sample of ATP also produced a chromatogram with some material in the ATP position. It is suggested that some samples of ATP may therefore contain two forms of the compound having different characteristics.

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Deoxypentose Nucleic Acid in the Expressible Fluid of Cod Fillets

When fillets of fish are allowed to stand for some time under humid conditions, there is invariably an exudation of a cloudy fluid or 'drip'. If submitted to pressure, the fillets lose fluid ('expressible fluid') at a much faster rate. It has been observed by numerous workers that when the tissue is frozen there is an increase in both the 'drip' and the 'expressible fluid'. A method has been worked out in this laboratory for measuring the amount of 'expressible fluid' that can be obtained from whole fillets cut from fresh and frozen fish. The conditions that are employed are such that it is believed that no appreciable rupture of cells occurs during the time that the fillets are submitted to pressure, and that the exudate consists, therefore, almost entirely of intercellular fluid.

Since deoxypentose nucleic acid (DNA) is found only in cell nuclei, it seemed likely that if any were found in the 'expressible fluid' it would be indicative of cell rupture, with liberation of nuclear material into the interstices. Accordingly, DNA was determined in a large number of samples of 'expressible fluid' obtained from fish treated in different ways. The separation was accomplished with a modified Schmidt–Thannhauser[1] procedure, and the DNA phosphorus was determined by the method of Berenblum and Chain[2].

It was found that the 'expressible fluid' from fresh undamaged fillets always contained some DNA (*c.* 0·12 mgm. DNA phosphorus per 100 ml.) which probably had its origin in nuclear material exuding from the severed cells at the cut surface of the fillets. This view was supported when a large number of fillets was allowed to drain on sloping trays for 24 hours in a saturated atmosphere, without applying pressure. More DNA (*c.* 0·4 mgm. DNA phosphorus