The Mucopolysaccharides of *Nucleus Pulposus*

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From sulphate and monosaccharide analysis it has been concluded that the mucopolysaccharides of human *nucleus pulposus* is chondrotinsulphuric acid and keratosulphate [1].

These two polysaccharides have now been isolated and identified. A dried preparation of *nucleus pulposus* was heat-coagulated and digested with glycerol extracts of pancreas and of intestinal mucosa [2] followed by precipitation with alcohol. The precipitate was extracted with phenol and the digestion and extraction procedure repeated once [1].

In this way a polysaccharide fraction with a ratio nitrogen/aminosugar of 1.5 was obtained. Glucosamine and galactosamine were both present [3] in a ratio of 0.8.

The fractionation of the purified material was most easily accomplished by precipitation with ethanol on top of a cellulose column followed by elution with ethanol in decreasing concentrations.

Two peaks were obtained, when the effluent was analysed with Dische's carbazol method. In the first peak appearing at about 35 % ethanol the aminosugar component was made up to 90 to 95 per cent of glucosamine. The second peak appeared at an alcohol concentration of 10—15 %, and 95 to 100 % of the aminosugar was galactosamine. Galactose was found only in the first peak.

Details of the fractionation procedure together with analysis and properties of the fractions are given.

1. Gardell, S. and Rastgeldi, S. *Acta Chem. Scand.* **8** (1954) 362.
2. Gardell, S. *Arkiv Kemi* **4** (1952) 499.
3. Gardell, S. *Acta Chem. Scand.* **7** (1953) 207.

The Effect of pH on the Balance between Oxidation of Ascorbic Acid and Reduction of Dehydroascorbic Acid in Plant Tissue

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A rapid oxidation of ascorbic acid in raw cabbage leaves when sprinkled with diluted acetic acid has been demonstrated [1]. We were able to show that this oxidation is brought about by the ascorbic acid oxidase of cabbage [2]. The same effect of acetic acid is obtained in a large number of fruits and vegetables containing strongly active ascorbic acid oxidizing enzymes [3].

Further experiments have shown that in raw cabbage reduction of dehydroascorbic acid (DHA) by reduced glutathione under anaerobic conditions is much more sensitive to lowering of pH than aerobic oxidation of ascorbic acid (AA). Thus, the effect of acetic acid may be explained by a stronger inhibition of reduction of DHA in an acidified cell as compared to oxidation of AA.

1. Clayton, M. M. and Goos, C. *Food Research* **12** (1947) 27.
2. Alm, F. *Intern. Z. Vitaminforsch.* **23** (1952) 459.
3. Alm, F. *Ibid.* **24** (1952) 81.

A New Abnormal Fe-Hemochromogen as a Cause of Hereditary Cyanosis

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The authors have investigated the blood from a family with hereditary non cardiac cyanosis affecting 5 of 7 members representing three generations.

The maximal oxygen combining power was 20 % less than for a normal blood with the same iron content. Absorption spectral curves of oxygenated blood as compared with oxyhemoglobin from normal blood with the same iron content showed neither differences within the ultraviolet range (240 mμ—400 mμ) nor within the infrared (750 mμ—1 000 mμ). In the visible range there was found increased absorption from 480 mμ—520 mμ and between 590 mμ—670 mμ with a maximum at 600, and decreased absorption between 530 mμ—585 mμ indicating the presence of an abnormal hemochromogen. The non-identity with methemoglobin (MHb) and sulfhemoglobin was evident from different absorption spectral curves and further differing from MHb by the absence of reaction with cyanide and fluoride,