ziehende Kraft der Carboxylgruppen in den Aminosäureketten, wobei die Nachbarschaft hydrophober Gruppen verstärkend wirkt[5]. Das oben beschriebene reguläre Verhalten der Anionen wäre sinngemäss mit deren Möglichkeit erklärbar, sich den weniger hydratisierten positiven Ladungsstellen (Ammoniumgruppen) genügend zu nähern, um sie elektrostatisch abschirmen zu können.

Summary. Taking the effect of NaCl as a basis, isomolar NaJ leads either to swelling or shrinking of elastic tissue dependent on salt concentration and pH of the aqueous medium. Close to the isoelectric point, the effect turns in the opposite direction. Corresponding to Hofmeister's lyotropic series, the same inversion also applies to the other monovalent anions measured at pH 7 and 2.

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Relationship Between the Ion-Equilibrium Constants and the Sulphur and Magnesium Contents of Plants

According to our analytical investigations, a mathematic relationship was found between the different anion and cation equilibrium constants of plants. After HOLST's[1] equation for the calculation of ion-equilibrium constants (i), the ion-equivalents of 4 macro anions and of 4 macro cations was enough:

$$i = \frac{\Sigma^- - \Sigma^+}{2/\Sigma^- + \Sigma^+/}$$

$$\Sigma^- = NO_3^- + H_2PO_4^- + 1/2\ SO_4^{2-} + Cl^-$$

$$\Sigma^+ = K^+ + 1/2\ Ca^{2+} + 1/2\ Mg^{2+} + Na^+$$

The magnesium requirement of plants was better characterized with the aid of magnesium coefficients (z) than the percentage of their content. The coefficient is a quotient between the magnesium content and total cations.

$$z = \frac{Mg}{\Sigma^+}$$

The relationship between magnesium coefficients and the ion-equilibrium constants varied with the sulphur content, or to be more exact with the quotient of sulphur and magnesium content. It follows as a consequence that there is a possibility of establishing 3 equations in accordance with the 3 groups of the plants:

$$z = i^2 + 0.1 \quad \text{when} \quad S/Mg > 1$$

$$z = 4.i^2 + 0.1 \quad \text{when} \quad S/Mg = 0.7 - 1.0$$

$$z = 17.i^2 + 0.1 \quad \text{when} \quad S/Mg < 0.7$$

According to our results the culture plants can be distributed into the following 3 groups: sulphophil, normal and magnesiophil respectively.

Zusammenfassung. Unter der Ionengleichgewichtsberechnung von HOLST wurde eine annähernd mathematische Beziehung zwischen dem Magnesiumbedarf einer Pflanze und dem Quotientien aus Schwefel- und Magnesiumgehalt des Pflanzenmaterials ermittelt.

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Borsodi Vegyi Kombinát, Kazincbarcika (Hungary), 6 March 1972.

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Intestinal Monosaccharide Transport in Experimental Protein Deprivation

Disturbances of intestinal sugar absorption are common in protein-calorie malnutrition, particularly in childhood[1], and it has been suggested that protein depletion per se damages the absorptive mechanisms of the gut[2]. The present study investigates whether intestinal monosaccharide absorption in protein depleted rats differs from that of normal rats.

Weanling, female Wistar rats weighing 80–90 g were selected randomly for feeding ad libitum with a normal diet or a low-protein diet[3] for up to 40 days. The protein content of the normal diet was 8% (NDp Cal%) and of the deficient diet was 5%[4].

Solutions used were based on KREBS-HENSELEIT[5] bicarbonate buffer and contained the following substrates: 4.3% D-glucose, 5.05% D-fructose or 4.63% 3-*O*-methyl glucose. Intestinal transport was measured by disappearance of substrate from the lumen of the gut using an in vivo closed loop technique[6]. Polyethylene glycol was used as a non-absorbable marker[7]. D-glucose was measured by a glucose oxidase method[8], D-fructose by ROE's method[9] and 3-*O*-methyl glucose according to HSIA and INOWYE[10]. Results are expressed as µmoles of substrate/mg intestinal mucosa /h.

D-glucose transport was significantly increased in the protein-depleted animals at 10, 20, 30 and 40 days after commencement of the feeding experiments but no significant alteration of D-fructose transport occurred. (Table I). There was no significant alteration in intestinal transport of 3-*O*-methyl glucose when measured at 30 days (normal = 7.2 ± 2.0, protein depleted = 7.7 ± 3.4, $p > 0.8$).

As in previous studies[11,12], protein deprivation caused structural changes in the epithelium of the small bowel. The wall of the small intestine was consistently thinner in protein-depleted animals and the mucosal wet weight was significantly reduced (Table II).

These results indicate that experimental dietary protein deprivation causes increased intestinal transport of D-glucose. This is probably because of alteration of intracellular metabolism since there was no effect on the absorption of the non-metabolized sugar, 3-*O*-methyl glucose. The lack of effect on D-fructose may be due to