

From these results we assume that carbonic anhydrase catalyses the absorption of carbon dioxide in the presence of chlorophyll b in the plant body. The combination of carbon dioxide with chlorophyll b seems to occur in the two -NH radicals of tetra-pyrrole forming carbamate.

68. Studies on Biocatalyses. (XII)

On the Trace Metals in Chloroplasts.

Kinsuke Kondo, Shigeki Mori and Morikazu Kajima.

The green leaves (Plant, Pepper, *Capsicum anuum* var *grossum*), previously soaked thoroughly in ice-cold water for one hour, were ground, pressed and filtered through thick cloth.

The filtered juice were kept for 10 hours in a refrigerator at 0~2°C. By centrifuge, the chloroplastic matter was separated at the bottom and cytoplasmic matter as well as water soluble substances on the upper side.

On the two fractions, the trace metals, that is, iron, copper, zinc and manganese were analysed, and as the result we found that the greater part of iron (60% of total Iron) was accumulated in chloroplastic matter and 11.7% Cu, 15.1% Zn and 12.6% Mn, each of their total amount, respectively were localized in this part. But it is uncertain, whether they are actually the essential constituents of chloroplasts or not.

69. Polarographic Studies of Serum Protein. (I)

On the Brdička Denaturation Test.

Tokio Sasai and Masao Egawa.

We have studied the digest reaction of polarographic cancer tests (Brdicka's), regarding its fundamental conditions of serum denaturation. Measuring the heights of protein double-wave obtained in cobaltous ammonium buffer solution, we called them H_1 and H_2 respectively. Since the H_1 and H_2 changed always correlatively and the change of H_2 was greater than that of H_1 , we adopted the change of H_2 as an indicator, and called the higher one "activated" and the lower one "inactivated". Although the change of the height was almost negligible when serum was left at room temperature for a week, the height in 60°C water-bath increased about 50% in 2 minutes and then decreased. In case of the alkaline denaturation ($\frac{1}{2}$ N. KOH) at room temperature, the height was at its maximum