

egg albumin > edestin.

The gelatin hydrolysis (pH 7.5) was neither stimulated nor inhibited by cysteine (0.01–0.002 mol), but was inhibited by metal salts (0.01 mol) in the following order:  $\text{AgNO}_3 > \text{CuSO}_4 > \text{Hg}_2\text{Cl}_2 > \text{NiSO}_4 > \text{FeSO}_4$ .  $\text{CO}(\text{NO}_3)_2$  and  $\text{MnSO}_4$  seemed to give no influence. The casein or gelatin hydrolysis was not activated particularly by  $\text{FeSO}_4$ ,  $\text{COCl}_2$  and  $\text{MnCl}_2$  (0.02–0.0002 mol).

Bac. Natto shows di- and tripeptidase activity (hydrolysis of diglycine, glycyl-L-leucine, triglycine, leucyldiglycine at pH 6.0 and 7.5). Benzoylglycine, benzoyl-DL-methionine, benzoyl-DL-phenylalanine, benzoyl-DL-leucylglycine, Cl-acetyl-L-leucine and Cl-acetyl-L-phenylalanine were remarkably hydrolyzed, while acetylglycine and acetyl-DL-methionine were not and acetyl-L-phenylalanine slightly at pH 6. The acetone powder also attacked diglycine (pH 7.5–8.0), benzoylglycine (pH 7.5–8.0) and benzoyldiglycine (pH 7.0–7.5). The splitting of diglycine was markedly accelerated by  $\text{FeSO}_4$  (0.001 mol),  $\text{MnCl}_2$  or  $\text{COCl}_2$ , but was inhibited by cysteine (0.0005 mol).

The broth of 2 day culture hydrolyzed proteins, peptone, diglycine and benzoylglycine, but not benzoyldiglycine.

The autolysate and the acetone powder could attack asparagin (pH 7), glutamine and acetamide (pH 7.5–8.0), but benzamide very slightly. L-glutamic acid was deaminated by these enzyme preparations, while L-aspartic acid only by the autolysate.

### 35. On the Action of Papain Enzyme. (III)

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It has been found that papain enzyme was activated by sodium formaldehyde sulphonylate (rongalite,  $(\text{CH}_2\text{OH}\cdot\text{OSONa}\cdot 2\text{H}_2\text{O})$ ) and a salt of similar sulphur oxyde, (Japan. Pat. 172230) whose activities were conspicuously developed as compared with cystein. (Yoshioka, the Reports of the Institute for Chemical Research, Kyoto Univ. 17, 59 (1949)). This report concerns in the mechanism of the activation by rongalite.

Rongalite has been treated previously with dilute solution of various metallic salt and their influences on digestability of gelatin with papain has been examined respectively by the formoltitration and amino-nitrogen determination.

Further experiment is continued and will be interpreted later.