## REGIONAL SECTION NEWS

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cott, Bernard E. Proctor, Cecil G. Dunn, Samuel G. Goldblith, Ernest E. Lockhart and Henry Sherman.

### ST. LOUIS SECTION

A Food Technology Short Course is to be given by the University of Missouri College of Agriculture on March 18 and 19 in cooperation with the Institute of Food Technologists, St. Louis Section. The program will be devoted to *Food Additives* and the schedule is as follows:

**FRIDAY, MARCH 18, 1955**

8:30–9:30 A.M. Registration—Memorial Student Union

9:30 A.M. Panel Discussion: "Problems and Purposes of Food Additives"

Moderator: Dr. Kenneth G. Weckel, University of Wisconsin

Dr. C. E. Gross, John Morrell & Co.

Mr. E. M. Deck, Mrs. Tucker's Foods

Dr. W. B. Bradley, American Institute of Baking

Mr. C. L. Smith, Continental Can Co.

1:45 P.M. Tour of Food Technology and Nutrition Laboratories, College of Agriculture

4:00–5:30 P.M. Social Hour, Daniel Boone Hotel

7:00 P.M. Banquet—Memorial Student Union

Dr. E. M. Nelson, Food & Drug Administration, Department of Health, Education on Welfare, "Legal Aspects of Food Additives"

**SATURDAY, MARCH 19, 1955**

8:30–9:30 A.M. Registration—Memorial Student Union

9:30 A.M. Panel Discussion: "Technology of Food Additives"

Moderator: Dr. H. K. Muer, General Foods Corp.

Mr. M. R. Johnston, University of Missouri

Mr. R. L. Henrickson, University of Missouri

(Two industry members not confirmed)

12:15 P.M. Luncheon—Memorial Student Union

1:30 P.M. Panel Discussion: "Nutritional Aspects of Food Additives"

Moderator: Dr. I. J. Hutchings, H. J. Heinz Co.

Dr. H. E. O. Heineman, Pet Milk Co.

Dr. Paul Logue, Monsanto Chemical Co.

Dr. G. K. Parman, Hoffman LaRoche, Inc.

Dr. B. L. O'Dell, University of Missouri

Advanced information can be obtained from

Mr. C. M. Harold,
Anheuser-Busch and Company,
721 Pestalozzi Street,
St. Louis 18, Missouri.

### PERSONNEL

Dr. L. E. Clifcorn, Director, Fundamental Research Division, Continental Can Co., was recently elected Vice President of the Agricultural Research Institute.

Dr. Lawrence Rosner of the Laboratory of Vitamin Technology, Inc., Chicago, has been reelected Chairman of the Animal Nutrition Research Council.

Dr. William McKinley Martin, well known in the food industry for his contributions in the aseptic canning field, has resigned his position as Director of Research with the Rheem Manufacturing Company to join G. F. Heublein & Bros., Inc., as Executive Vice President and Director of Andersen's Foods, Inc., their subsidiary at Santa Barbara, California.

The Societa Generale delle Conserve Alimentari Cirio, Naples, Italy, has invited Mr. Edward F. Kohman, Consultant, to spend six months at their canning plant, the largest in Italy, studying their products. The company manufactures baby foods in addition to other products.

# Selected Abstracts*

## ANALYTICAL METHODS

**Separation of iron from other cations by ion exchange on alginic acid.**

Specker, H., and Hartkamp, H. *Naturwissenschaften*, 40, 410-11 (1953).

Alginic acid (polymannuronic acid) will retain $Fe^{+++}$ from mixts. with other ions like $Cu^{++}$, $Mg^{++}$, $Ni^{++}$, $Al^{+++}$, and $UO_2^{++}$ almost quantitatively; the eluate (HCl, $H_2SO_4$, and AcOH) contains only traces of Fe. A column ht. of 30 cm. was used, diam 0.8 cm., 3-3.5 g. dry acid of screen size Din 20. Fe is also quantitatively removed from sulfate solns. prior to gravimetric assay.

## BIOLOGICAL SCIENCES

### BIOCHEMISTRY

**Studies on the origin of pectinolytic and cellulolytic enzymes in commercial cucumber fermentations.**

Etchells, J. L., Bell, T. A., and Jones, I. D. Paper presented at Institute of Food Technologists Annual Meeting, Los Angeles, 1954.

Previous work has demonstrated that brines from stock undergoing softening-type spoilage contain considerable activity of a pectinolytic enzyme similar in behavior to polygalacturonase. The development of control procedures to avoid or minimize softening of brined cucumbers depends, to a large extent, on knowledge of the origin of the softening enzymes in curing brines. The results of the investigations appear to implicate molds (higher fungi) as a potent source of the softening enzymes in brines. Further, it now appears that the actual mode of enzyme introduction into the brine is chiefly by way of the partially dried, heavily mold-laden, cucumber flowers that remain attached to the cucumber fruit. For example, brine samples from vats filled with small cucumbers that had a high percentage of flowers, either retained by the cucumber or added experimentally, were shown to contain high enzyme activity and, in general, the salt-stock was either soft or inferior in firmness. However, when the retained flowers were removed by hand and the cucumbers thoroughly washed, the brine samples were very low in enzyme activity and the cured stock was exceptionally firm. Also, firm stock was obtained from brining procedures designed to reduce the softening enzyme content by draining off the original brine after 36 hrs. and replacing it with new brine. The addn. of flowers or washing of the cucumbers did not influence the lactic acid fermentation as judged by development of acidity and drop in brine pH. Addnl. support for the view that softening enzymes in brines are usually of mold origin has been obtained from investigations on the populations, identity, and certain biochem. properties of the predominating molds occurring on the growing cucumber plant. Identification studies to date have revealed species belonging to about 40 different genera and families of molds. The 10 most frequently obtained were:

* These Selected Abstracts are made available to Food Technology through the cooperation of Assistant Editor H. A. Campbell and the General Foods Corporation of New York, N. Y. The abbreviations found in these abstracts are similar to those used by Chemical Abstracts.

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## SELECTED ABSTRACTS

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*Fusarium*, 264 isolates; *Penicillium*, 228; *Phomaceae*, 166; *Cladosporium*, 104; *Alternaria*, 87; *Dematiaceae*, 28; *Mucor*, 21; *Trichoderma*, 17; *Myrothecium*, 15; and *Aspergillus*, 14. These fungi represented 92 percent of the total isolations and practically all of the representative cultures tested have the ability to destroy pectin in cultural media. Also, the predominating genera obtained contain species with previous known history for the production of the cellulose-decomposing-enzyme, cellulase.

**The terminal free carboxyl groups of pepsin.**

WILLIAMSON, M. B., AND PASSMANN, J. M. *Biochim. et Biophys. Acta, 15*, 246-50 (1954).

The application of 3 methods to the detn. of the terminal free carboxyl groups in pepsin is described. It was detd. that pepsin has *2* terminal free carboxyl groups both of which are alanine.

**The liberation of aspartic acid during the acid hydrolysis of proteins.**

BLACKBURN, S., AND LEE, G. R. *Biochem. J., 58*, 227-31 (1954).

Aspartic acid is preferentially liberated during hydrolysis of proteins with hot dil. acids but not with concd. HCl at 37°. The specificity of the reaction and its mechanism are discussed.

### NUTRITION

**Effect of dietary amino acid balance on fat deposition in the livers of rats fed low protein diets.**

WINJE, M. E., HARPER, A. E., BENTON, D. A., BOLDT, R. E., AND ELVEHJEM, C. A. *J. Nutrition, 54*, 155-66 (1954).

Fat which accumulates in the livers of rats fed low protein diets contg. pork, beef, or egg albumin is reduced when the level of the dietary protein is increased. Supplementation of these diets with gelatin or fibrin or with threonine and glycine lowered the amt. of liver fat. Lysine in the presence of addnl. histidine and threonine further decreased the amt. of fat in the livers of rats fed low protein diets contg. egg albumin. Excessive deposition of liver fat was not observed when low protein diets contg. fibrin were fed. It is suggested that the maintenance of normal fat deposition in the livers of rats fed low protein diets contg. choline depends upon the presence of a specific ratio of amino acids in the diets.

**Protein metabolism in the pregnant rat.**

BEATON, G. H., BEARE, J., RYU, M. H., AND MCHENRY, E. W. *J. Nutrition, 54*, 291-304 (1954).

During the first 2 wks. of pregnancy in the rat, marked storage of fat and $H_2O$ occurs in the maternal carcass while there is little fetal growth. At about the 15th day of gestation, a definite decrease in fat stores occurs and the retention of protein increases. Accompanying protein retention there are decreases in blood amino N, in hepatic alanine-glutamic transaminase and in the rate of urea formation in liver slices.

**Protein supplementation. Relative nutritive values of proteins in whole wheat and whole rye and effect of amino acid supplements.**

SURE, B. *J. Agr. Food Chem., 2*, 1108-10 (1954).

Whole rye flour was superior in the nutritive value of its proteins to whole wheat flour. Amino acid supplementation of whole wheat flour gave markedly increased growth responses over those obtained with amino acid-supplemented whole rye flour.

**Cereals in nutrition. Nutritive value of rice germ.**

KIK, M. C. *J. Agr. Food Chem., 2*, 1179-81 (1954).

Data are given on the protein efficiency of rice germ in comparison with milled rice, the value of the proteins of rice germ supplementing those of milled rice, and the amino acid, vitamin, and mineral content of rice germ.

**Improving the nutritive value of flour. VI. A comparison of the use of soya flour and wheat germ.**

WESTERMAN, B. D., OLIVER, B., AND MAY, A. *J. Nutrition, 54*, 225-36 (1954).

Results indicated that both were significantly beneficial in promoting growth in rats when added to non-enriched flour but neither supported as good growth as the stock diet. When added to enriched flour these materials supported as good growth as the stock diet. No significant differences were found in rats receiving enriched flour plus wheat germ as against those receiving enriched flour plus soya flour in either the first or second generation. Soya flour when added to non-enriched flour seemed to aid in promoting better growth in the second generation than did wheat germ.

**Dental caries in the albino rat on high sucrose diets containing different amounts of aluminum.**

WYNN, W., AND HALDI, J. *J. Nutrition, 54*, 285-90 (1954).

These expts. were undertaken to det. whether Al, like F, when added to the diet in small amts. may offer some protection against dental caries. No significant differences were found in the no. of carious molars or in the caries scores as a result of the addn. of Al in the amts. used in this study, either in non-desalivated or desalivated animals. The addn. of Al up to 20 p.p.m. had no effect on appetite or growth of the animals.

**Effects of dietary calcium and phosphorus levels upon the physiological behavior of calcium and phosphorus in the rat.**

HANSARD, S. L., AND PLUMLEE, M. P. *J. Nutrition, 54*, 17-31 (1954).

With the use of radiochem. procedures the behavior of labeled Ca and P was studied as a function of the dietary levels of these elements.

**The retention of calcium from gypsum and phytin by the albino rat in relation to life span. Part I.**

BHARUCHA, R. P., AND MCCAY, C. M. *J. Gerontol., 9*, 439-45 (1954).

The Ca of gypsum was more available than that of Ca phytate as observed both in balance studies and in investigations on bone calcification. Those animals given higher amts. of Ca tended to go into neg. balance earlier than those receiving less Ca.

**Sodium-restricted diets.**

COUNCIL ON FOODS AND NUTRITION. *J. Am. Med. Assoc., 156*, 1081-3 (1954).

A very good review including: an explanation of terms and a discussion of the normal physiology of Na metabolism.

**The effect of fat level of the diet on general nutrition. XII. The requirement of essential fatty acids for pregnancy and lactation.**

DEUEL, H. J., MARTIN, C. R., AND ALFIN-SLATER, R. B. *J. Nutrition, 54*, 193-9 (1954).

Dietary fat is not required by the female rat for conception or for the completion of pregnancy when the diets are otherwise complete. Fat is required in the diet of the mother to insure the survival of the pups after birth. The constituents of the fat responsible for the survival of the young and for satisfactory lactation appear to be the essential fatty acids.

**The effect of fat level of the diet on general nutrition. XIII. The effect of increasing dosages of x-irradiation on the protective action of fat on radiation injury.**

CHENG, A. L. S., ALFIN-SLATER, R. B., AND DEUEL, H. J. *J. Nutrition, 54*, 201-7 (1954).

The present tests confirmed the earlier expts. in demonstrating the protective effects of dietary fat against x-irradiation in a variety of doses and given at several time intervals.

**The effect of water restriction on the food intake and food efficiency of growing rats.**

CRAMPTON, E. W., AND LLOYD, L. E. *J. Nutrition, 54*, 221-24 (1954).

The immediate effect of restricting the $H_2O$ intake of growing rats was to reduce substantially the voluntary intake of food and consequently to inhibit gain in body wt.

**Food faddism and public health.**

SEBRELL, W. H. *Federation Proc., 13*, 780-4 (1954).

Most food fads may be classified as manifestations of pleasure seeking, fears relative to food, exaggeration of food virtues or doubts of a food's value. Misinformation is usually a factor, and this often stems from the mercenary efforts of food quacks.

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