ABSTRACTS

The following abstracts and title references represent material published from the Yale University School of Medicine during the second quarter of 1948.

Bunting, H.: Cytochemical properties of apocrine sweat glands normally present in the human mammary gland. Anat. Rec., 1948, 101, 5-12.

The tubular structures in the normal human breast resembling apocrine sweat glands are shown to possess iron-containing granules and lipid droplets identical with those found in apocrine sweat glands. There is no evidence to support claims that these glands are degenerative forms or represent inflammatory changes. It is concluded that true apocrine sweat glands are normal constituents of the mammary gland.

Danowski, T. S., and M. Tager: Thiourea and the inhibition of growth of fungi. J. Infect. Dis., 1948, 82, 119-25.

Thiourea suppresses in varying degree the growth of pathogenic fungi in vitro. However, the effect of thiourea is inhibited, at the levels studied, by the addition of blood or blood serum to the medium. Thiourea exerts no protective or therapeutic influence on the course of experimental torulosis and blastomycosis in mice.

Dekker, C. A., and J. S. Fruton: Preparation of D- and L-methionine from DL-methionine by enzymatic resolution. J. Biol. Chem., 1948, 173, 471-77.

The known stereochemical specificity of papain was used to synthesize carbenzoxyl-D-glutamic acid and carbenzoxyl-L-glutamic acid anilide, which separated in crystalline form, from a mixture of carbenzoxyl-DL-glutamic acid and aniline.

Greene, H. S. N., and B. L. Newton: Evolution of cancer of the uterine fundus in the rabbit. Cancer, 1948, 1, 82-99.

Studies of uterine adenocarcinomas in rabbits, extended over a period of years, indicate that the changes in histological and biological properties of tumorous tissue are a graded, not a sudden phenomenon. Biopsies and autologous and homologous transplants demonstrate that the process of anaplasia and autonomy is progressive. Further, it is indicated that the factors initiating neoplasia and those producing progressive change to cancer are not the same, and that the second need not be co-existent with the first. The apparent disagreement of these results with those of the mouse tumor transplant experiments stems only from differences in methods and definitions.

Fruton, J. S., V. A. Smith, and P. E. Driscoll: On the proteolytic enzymes of animal tissues. III. A peptidase of calf thymus. J. Biol. Chem., 1948, 173, 457.

An enzyme classified as an aminoxotripeptidase, and named lymphopeptidase, was extracted from calf thymus and purified. Studies of its specificity of action
on peptides and peptide derivatives related to its substrates are described, and its action is correlated with similar enzyme action of the sera and extracts of various animal tissues. This action is thought to reside in the lymphoid cells present in such sera and extracts.

Harvey, S. C.: A report to the New England Surgical Society concerning the American Board of Surgery. New England J. Med., 1948, 239, 159-64.

As reads the title, this is a report to the New England Surgical Society concerning the purpose and plans of the American Board of Surgery.

Kaplan, H. S., H. M. Wilson, and A. H. Morse: Results and causes of failure of radiation therapy in carcinoma of the cervix. Surg., Gynec., & Obst., 1948, 86, 332-40.

In a series of 88 patients with carcinoma of the cervix treated by combined roentgen and radium therapy at the New Haven Hospital, the net 5-year survival rate for the group was 38 per cent. Most of the 5-year survivals were noted in stage I and stage II cases. It is concluded that the interval between roentgen and radium therapy should be shortened from 6 weeks to at least 2 weeks and that radium dosage should be increased in advanced cases. Extraperitoneal iliac lymph node dissection should also be performed after irradiation in stages I, II, and III.

Klatskin, G., and H. Friedman: Emetine toxicity in man: Studies on the nature of early toxic manifestations, their relation to the dose level, and their significance in determining safe dosage. Ann. Int. Med., 1948, 28, 5.

The ways in which emetine may manifest its toxicity fall into the following groups: (a) local; (b) gastro-intestinal; (c) cardiovascular, and (d) neuromuscular. An elaboration on these various forms of emetine toxicity is presented along with their relation to the dose level and their significance in determining safe dosage.

Krehl, W. A., and J. S. Fruton: The utilization of peptides by lactic acid bacteria.

The growth promoting activity of peptides of L-leucine on lactic acid bacteria and Streptococcus faecalis was found to depend on the position of leucine residue with respect to the other amino acid residues, the nature of the other amino acids, and the time of incubation.

Maculla, E. S.: The immunochemistry of mouse tissue components. III. A comparison of the antigenic composition of embryonic mouse organs with that of adult mouse organs and with mouse tumors. Yale J. Biol. & Med., 1948, 20, 465-72.

Maculla, E. S., and P. B. Cowles: The use of glycine in the disruption of bacterial cells. Science, 1948, 107, 376-77.

The lysis of living bacteria by solutions of glycine releases, under optimal conditions, as much as 85 per cent of the intracellular proteins. The conditions studied are concentration of glycine, age of the culture, relative proportions of cell volume to solution volume, and the length of time required for lysis.
Attempts to isolate highly polymerized desoxyribonucleic acid from the released proteins were only partially successful. 

W. P. MCN.

Mayer, J., and W. A. Krehl: The relation of diet composition and vitamin C to vitamin A deficiency. J. Nutrition, 1948, 35, 523-37.

High levels of dietary protein in vitamin A deficient rats resulted in decreased protein utilization, shorter survival time, and increased severity of A deficiency symptoms, whereas high levels of dietary fat lessened the severity of symptoms. First evidence of vitamin A deficiency was vitamin C depletion. Vitamin A deficient rats could be maintained longer if C were supplemented.

M. A. B.

Melnick, J. L., E. C. Curnen, and A. B. Sabin: Accidental laboratory infection with human dengue virus. Proc. Soc. Exper. Biol. & Med., 1948, 68, 198-200.

In the course of experiments with chimpanzees, human dengue virus accidentally came into contact with the conjunctival surface of the eye of a laboratory technician. Nine days later a febrile illness developed which was compatible clinically with dengue. The diagnosis was corroborated by the detection of neutralizing antibodies in the patient’s serum.

J. B. LeR.

Mylon, E., and P. Goldstein: Influence of nephrectomy and renal pedicle ligation on the activity of liver arginase in rats. Proc. Soc. Exper. Biol. & Med., 1948, 68, 157-59.

Liver arginase activity in the rat is significantly decreased following either bilateral nephrectomy or ligation of the renal pedicles. This effect may be a compensatory mechanism for a deficiency in renal arginine formation.

W. P. MCN.

Mylon, E., E. R. Smith, and P. Goldstein: The kidney and nitrogen metabolism. Am. J. Physiol., 1948, 153, 55-63.

Dogs whose kidney function has been, by various means, reduced to 17 to 24 per cent of normal will maintain good health on kennel food, despite a constant elevation in blood non-protein nitrogen. Ingestion of protein-rich diet results in urea nitrogen formation 30 to 55 per cent below the nitrogen intake. Marked signs of toxicity ensue. The reduction in urea formation may represent incomplete nitrogen catabolism and accumulation of toxic intermediates, resulting from extensive loss of kidney tissue.

The survival time of nephrectomized dogs is significantly decreased by high protein diet or intrajejunal injection of amigen or glycine. 

W. P. MCN.

Paul, J. R., J. L. Melnick, and A. B. Sabin: Experimental attempts to transmit phlebotomus (Sandfly, Pappataci) and dengue fevers to chimpanzees. Proc. Soc. Exper. Biol. & Med., 1948, 68, 193-98.

No clinical signs of infection were apparent following the inoculation of six chimpanzees with human serum believed to contain phlebotomus fever virus, whereas, with the nine chimpanzees inoculated with human dengue virus, although no clinical signs of infection were apparent, evidence of inapparent infection was obtained by neutralization tests with the homologous mouse-adapted virus.

J. B. LeR.
Salter, W. T., F. D. Humm, and M. J. Oesterling: Analogies between urinary 17-ketosteroids and urinary "estroids" as determined microchemically. J. Clin. Endocrinol., 1948, 8, 295-314.

The authors describe a microchemical procedure for determining urinary "estroids" with the application of this technique to selected clinical instances. Many obstacles exist against absolute accuracy for "estroid excretion," but there are similar obstacles existing for the estimation of 17-ketosteroids. W. F. S.

Sciarini, L. J., E. M. Ackerman, and W. T. Salter: The response of isolated hypodynamic myocardium to inotropic drugs. J. Pharmacol. & Exper. Therap., 1948, 92, 432-42.

After production of a hypodynamic state in the isolated papillary muscle of the cat's right ventricle, the inotropic response was determined in relation to increasing concentration of "cardiac glycoside." By calibration with an ouabain standard each papillary muscle can be assigned its own muscle constant. W. F. S.

Shumacker, H. B., Jr.: Coarctation and aneurysm of the aorta—Report of a case treated by excision and end-to-end suture of aorta. Ann. Surg., 1948, 127, 4.

This is a case presentation of coarctation of the aorta complicated by a saccular aneurysm and by bacteremia. Repair was accomplished by excision of the coarctation and aneurysm followed by end-to-end anastomosis of the aorta.

J. B. LeR.

Shumacker, H. B., Jr., I. J. Speigel, and R. H. Upjohn: Causalgia. II. The signs and symptoms, with particular reference to vasomotor disturbances. Surg., Gynec., & Obst., 1948, 86, 452-60.

In a series of 90 cases, the signs and symptoms of causalgia were analyzed. The following features were concluded to be an essential part of the clinical picture of major causalgia: (a) Constant spontaneous pain following injury of a peripheral nerve or nerves; usually of a burning nature. (b) The pain is most intense in, and is usually limited to, the distal portions of the extremity and particularly to the peripheral sensory distribution of the affected nerves. (c) The pain is exacerbated by certain stimuli, and is relieved completely or nearly so during adequate sympathetic procaine anesthesia. (d) The vasomotor status of the affected hand or foot, more often if at all, shows varying degrees of vasodilatation than of vasoconstriction.

J. B. LeR.

Simmonds, S., and J. S. Fruton: The utilization of proline derivatives by mutant strains of *Escherichia coli*. J. Biol. Chem., 1948, 174, 705-15.

Derivatives of the amino acid, proline, were found to enhance growth of a certain mutant strain more efficiently than did the amino acid itself. In another strain, however, proline and glutamic acid were found to be more effective than were their respective peptides.

M. A. B.

Strong, L. C.: Conversion of a cancer-resistant to a cancer-susceptible strain of mice by chemical means. Cancer, 1948, 1, 120-24.

Two sublines of the NH strain are compared in respect to their susceptibility to spontaneous tumors. The NH subline are descendants of F_1 to F_8 generations
of the NH strain. Of the first 500 mice 0.60 per cent gave rise to spontaneous tumors. The NHO subline are descendants of the F4 to F18 generations of the NH strain which received methylcholanthrene. The F14 to F25 generations received no carcinogen. The incidence of spontaneous tumors in this subline was 66.2 per cent of 797 mice.

M. A. B.

Taffel, M.: The utilization of a University Cancer Clinic for teaching purposes. Connecticut Med. J., 1948, 12, 532.

This is a discussion of the advantages of utilizing a cancer clinic for teaching purposes.

J. B. LeR.

Tager, M.: Concentration, partial purification, properties, and nature of staphylocoagulase. Yale J. Biol. & Med., 1948, 20, 487-501.

Tager, M., and T. S. Danowski: Inhibition of the growth of fungi by thiourea derivatives, particularly hydrazine dithiocarbamyl. J. Infect. Dis., 1948, 82, 126-30.

Thiocarbamyl hydrazine and dithiocarbamyl hydrazine markedly suppress the growth of many pathogenic fungi in concentrations as low as 10 mg. per cent, both in the presence and absence of blood serum. Thiocarbamyl hydrazine is highly toxic to mice; dithiocarbamyl, while only mildly toxic, does not favorably affect the course of experimental torulosis and blastomycosis in mice.

W. P. McN.

White, W. F., J. Belford, and W. T. Salter: Isodynamic equivalents of digitoxin congeners as tested on hypodynamic myocardium. J. Pharmacol. & Exper. Therap., 1948, 92, 443-46.

Experiments were performed upon isolated hypodynamic heart muscle to determine the inotropic effects of 12 pure "cardiac glycosides." The results show close correlation with those reported for mean lethal doses in the intact cat.

W. F. S.

Wilhelmi, A. E., and C. N. H. Long: Metabolic changes associated with hemorrhage. Ann. New York Acad. Sci., 1948, 49, 605-21.

As hemorrhage progresses from non-fatal to fatal the following changes were observed; release of adrenocorticotropic hormone, marked decrease in adrenal cholesterol and ascorbic acid, and increase in blood sugar and blood amino acids. As shock develops blood sugar decreases and acidosis develops.

Tissue anoxia, particularly of the liver, is thought to be responsible for the inevitability of fatal shock.

M. A. B.