

Abstracts of Current Literature

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CLINICAL MEDICINE

STOMACH

MEINERTZ, J.: *Gastritis, Ulcer, Carcinoma. Deutsch. med. Wochenschr.*, Vol. 68, p. 292, 1942.

Relations between gastritis, gastric ulcers and gastric carcinoma are discussed. A common underlying etiology exists in disturbance of function, i. e., gastritis is not an isolated pathologic condition. Theories of ulcer formation are noted, with emphasis on the neurogenic theory and psychic influences. Differences between gastric and duodenal ulcers are noted and the rarity of malignant changes in the latter is discussed. Therapy of ulcers is reviewed with emphasis on the need for thorough study with large series of patients, to reduce psychic factors. The ineffectiveness of larostidine (histidine) is noted in a controlled series of one hundred patients.—G. A. E.

GILL, A. M.: *Evaluation of Gastroscopy. An Analysis of 1,000 Examinations. Lancet*, Vol. 244, p. 333, 1943.

The value of gastroscopy in diagnosis is discussed and comparison with roentgenographic findings is made. Multiple gastric erosions can be demonstrated more clearly than by x-ray and acute gastritis differentiated from chronic. Mucosal atrophy, unexplained achlorhydria, gastric hemorrhage of unknown etiology and benign gastric tumors are some conditions which can be diagnosed with any degree of certainty only by use of the gastroscope.—I. M. Theone.

PEARL, E. L. AND BRUNN, H.: *Multiple Gastric Polyposis Supplementary Report of 41 Cases, Including 3 New Personal Cases. Surg. Gyn. Obs.*, Vol. 76, p. 257, March, 1943.

The authors collected from the literature since 1926 forty-one cases of gastric polyps and include three cases of their own. Multiple gastric polyposis are either neoplastic or inflammatory in type. In the neoplastic type the muscularis mucosae and the submucosa are involved, while in the inflammatory or hyperplastic type the submucosa is not involved. Diagnosis is difficult. Epigastric pain, tenderness and hematemesis are common symptoms. Polyps near the pylorus may result in obstruction. Both the roentgenogram and the gastroscope should be used to establish diagnosis. Free acid in the fasting gastric contents is nearly always absent.

Radical surgery of the malignant area is the procedure yielding best results.—G. Klenner.

HERNANDEZ MORALES, F.: *Gastroscopic and rectosigmoidoscopic observations in schistosomiasis mansoni. Preliminary report. Puerto Rico J. Publ. Health Trop. Med.*, Sept., 1942, Vol. 18.

This is the first instance in the literature of a report of the gastroscopic findings in patients with Schistosomiasis. The paper includes the results of such examinations made on 10 cases, together with a table showing the distribution as to race, age, sex and amount of free HCl following histamine stimulation.

The results may be summarized as follows: Gastroscopic findings:—

1. Atrophic gastritis was found in 1/3 of the patients, 2 of which also had sprue. Hypoacidity in 1, normal in the others.

2. Hypertrophic gastritis in 3, associated with gastrointestinal disturbances for a period of years.

3. Acute superficial gastritis with atrophy in 1.

4. Atrophy and hypertrophy combined in 1 case. Rectosigmoidoscopic findings showed (7 patients):

1. Atrophy in 2 patients, who also had gastric atrophy associated with sprue.

2. Atrophy with inflammation in 2.

3. Acute superficial inflammation in 2.

No definite conclusions may be reached from this report. Perhaps, the authors suggest, a sequence of the findings may obtain in large series of observations on Schistosomiasis.—Jose L. Garcia Oller.

BOWEL

SANES, S. AND AMBRUSKO, J.: *The Microscopic Diagnosis of Radiopaque Substance in the Vermiform Appendix. Surgery*, Vol. 13, p. 561, April, 1943.

The authors present a series of cases in which they found radiopaque substance in the lumina of appendices. Because of the implications it carries for the pathologist, roentgenologist, and surgeon, they report the microscopic appearance. A total of 1,395 appendices were examined and radiopaque substance, apparently barium sulfate, was found in seventeen. This observation was verified by a history of either a preoperative gastrointestinal series or a barium enema in all seven-

teen. The substance (accepted as being barium sulfate) varied in amount and was distributed free in the lumina, or else was mixed with feces, or incorporated in fecaloliths. When in great amounts it appeared as a white, opaque substance in the gross specimen as well as in embedded segments and in mounted sections. Under illumination of microscopic sections the substance was observed as glistening, green-gray and refractile. It appeared more or less as an amorphous material, being darker with subdued central illumination. It also appeared as a glistening substance under dark field examination and in the polarizing microscope presented no crystalline structure. Commenting upon the recognition of barium sulfate in the lumina of appendices, the authors suggest that this may be used as a method to check the frequency with which barium sulfate enters the lumen of the appendix without detection by the roentgenologist. The questions are also raised as to whether or not this may be a direct histopathologic sign indicative of disturbance in evacuation of the appendix and as to whether or not this sign can be correlated with the clinical and radiographic picture of "chronic appendicitis."—R. J. Revelii.

JORGE, J. M., FELDMAN, L., AND ITURRIOZ, T.: *Inguinoscrotal Hernia Containing the Stomach. Semana Medica, Vol. 50, p. 301, Feb., 1943.*

Within a large inguinoscrotal hernia of the right side there was found (by roentgenogram and confirmed by autopsy) a portion of the stomach and segments of intestine in a man aged 66. Published reports of 22 other such hernias were found. The authors state that the condition does not necessarily interfere with the patient's health.—G. Klenner.

SCHOEN, H.: *Appendostase? Deutsch. med. Wochenschr., Vol. 68, p. 222, 1942.*

Atony of the appendix was noted in a 34 year old female. Contrast media remained in the appendix for one month and pituitary extracts did not cause emptying. The condition is explained through destruction of the innervation in a previous attack of typhus.—Courtesy Biological Abstracts.

JACKMAN, R. J.: *Anal Abscess and Anal Fistula in Association with Regional Ileitis: Report of Case. Proc. Staff Meet. Mayo Clinic., Vol. 18, p. 154, May, 1943.*

There is a tendency for fistulas to form in association with regional ileitis. Originating in the involved ileum, the fistula may end in the abdominal wall or some viscus. Jackman calls attention to the frequency of this association. From the records of 114 cases of regional ileitis, Jackman found 31.6 per cent of them to have had anal abscesses or fistulas. Indeed, 7.0 per cent of the patients entered the Mayo Clinic primarily because of anal fistula. The author concludes: "The combination of anal abscess or fistula, plus any vague intestinal disturbance in a young adult should make the clinician suspect the possibility of regional ileitis."—F. X. Chockley.

BRADLEY, W. H.: *Epidemic Nausea and Vomiting. Brit. Med. J., p. 309, March 13, 1943.*

An epidemic of nausea and vomiting occurred in a community in England mainly among school children but also among the general population. For recognition of the true character of the disease, food-poisoning and dysentery must be ruled out. The epidemic of nausea and vomiting reported by Bradley is believed to have been due to an upper respiratory infection, probably of virus origin, which had an incubation period of two days to one week. The disease was communicable and the passage of entry was the upper respiratory tract. Vomiting was often projectile. Nausea without vomiting was common but was then associated with dizziness and fainting spells. Temperature was only slightly elevated. The abdomen was negative.—G. Klenner.

HALEY, J. C. AND PEDEN, J. K.: *Suspensory Muscle of the Duodenum. Am. J. Surgery, Vol. 546, p. 59, 1943.*

This study is based on 77 cadavers. Careful examination led to the conclusion that the suspensory ligament or muscle of the duodenum originates from the right crus of the diaphragm and the fibrous tissue about the coeliac artery. It is inserted into the duodenum after coming down behind the pancreas and in front of the left renal artery. The point of insertion was not found to be constant; in 61 per cent of the cadavers this was in the third and fourth parts of the duodenum. In 18 per cent of the cadavers the ligament and muscle were absent. The possibility that the fibers of the suspensory ligament may be the cause of partial obstruction when the attachment is solely to the duodenojejunal flexure is considered, but is not believed to be great.—I. M. Theone.

ACKERMANN, W.: *Diverticula and Variations of the Duodenum. Ann. Surg., Vol. 117, p. 403, 1943.*

Examination of 50 cadavers revealed that 22 per cent had diverticulae of the duodenum. No diverticula were found in the first portion of the duodenum, 5 were found in the second portion, 5 in the third, 1 between the second and third, and 3 in the fourth portion. Eight of the eleven cadavers had single diverticula and the remaining three had double diverticulae. All developed from the pancreatic border of the duodenum and most were in the substance of the pancreas. This study thus revealed that duodenal diverticula is more common than believed from data obtained by x-ray examination. Incidental to the subject proper, is the notation that the papilla of Vater is not constant in location and that the duodenum varies greatly in length and shape.—I. M. Theone.

LIVER AND GALL BLADDER

WALKER, WILLIAM J.: *Pathogenesis of Cholelithiasis. J. Amer. Inst. Homeopathy, Vol. 36, p. 13, 1943.*

Theories of formation of gallstones are reviewed. The three important etiologic factors are infection, bile stasis and faulty cholesterol metabolism.—Courtesy Biological Abstracts.

STEINER, PAUL E.: *The Incidence of a Carcinogenic Factor in the Livers of Cancer, Noncancer, Cirrhotic, and Negro Patients. (Cancer Research, Vol. 3, p. 385. June, 1943.)*

Subcutaneous injections of human liver extracts into mice demonstrated the presence of a carcinogenic factor in the livers of cancerous and noncancerous patients. The induction time was 6 months. Of the tested extracts, 21 per cent were active. The activity was not related to any special site or type of tumor; but it seemed to be especially prevalent in tumors of the endocrine system. There was no special relationship to any type of major disease, tumor or nontumor. There was no difference in age groups, in the two sexes, in whites and Negroes, or in cirrhotic as compared with noncirrhotic livers. The carcinogenic factor does not increase with age. Experimental factors, such as number of injections or stock of mice, didn't influence the number of induced sarcomas. Possibly the type of solvent may influence results; all induced sarcomas having occurred when sesame oil was used, and none being elicited in experiments with tricapyrlin. However, an insufficient series was run with the latter to be conclusive. Since only 12 per cent of livers were active, probably the carcinogenic factor is not formed from a normal constituent of the liver.—Ivan F. Bennett.

CORTEZ, M. B.: *Diagnosis of Pseudo-obstructions of the Bile Duct. Anais Paulistas Med. e. Cir., Vol. 44, p. 199, 1942.*

A discussion of the possible causes of apparent obstruction of the bile duct and resultant jaundice, together with suggested methods of determining the true conditions. Interpretations are based on case history studies.—Courtesy Biological Abstracts.

ROCH, M. AND FEHR, J. J.: *Cirrhosis in the Geneva Medical Clinic During 1931 to 1940. Rev. Med. Suisse Rom., Vol. 62, p. 81, 1942.*

During the period 1931-40, 230 cases of cirrhosis of the liver were observed. The diagnosis was checked by autopsy in 118 cases. Although there were 3.5 times as many male as female alcoholics, 31 per cent of the patients with cirrhosis were women. This suggests that the hepatic glands of the female are less resistant than are those of the male. Etiologically, alcoholism ranks first in the development of cirrhosis.

It was always present in the cases diagnosed as Laennec's cirrhosis (79% of the total) and often present in other types. Many years of drinking are necessary to produce cirrhosis. In one case the drinking of beer alone was responsible for the development of cirrhosis. Usually wine is the cause, alone or in association with the drinking of apertifs. Digestive disturbances appeared in the majority of cases after the development of cirrhosis. They must therefore be considered as secondary and cannot be the cause of the condition. Neither syphilis nor tuberculosis seems

to have any etiologic significance in the production of cirrhosis.—Courtesy Biological Abstracts.

ALLEN, J. G. AND JULIAN, O. C.: *Arch. Surg., v. 45, p. 691, 1942.*

Sixty-one patients with prothrombin deficiencies were studied. In group one (28 patients), consisting of cases with obstructive jaundice, oesophageal carcinoma, external biliary fistula, and gastric ulcer, the exclusion of bile salts from the intestine was responsible for the low vitamin K absorption. Treatment which insured good absorption resulted in immediate elevation of the prothrombin level. Group 2 (31 patients), consisting of cases with jaundice of intrahepatic origin, were very little relieved by treatment. The prothrombin level remained low. Group 3 patients had cirrhosis of the liver and ascites but did not have jaundice. Continued vitamin K therapy raised the prothrombin level in two cases but failed in another two cases. The authors do not believe that the degree of prothrombin deficiency is indicative of the extent of liver damage and consequently conclude that prothrombin levels are not accurate indices of liver function.—G. Klenner.

ULCER

BEIGBLOCK, W.: *Insulin shock therapy in ulcer. Deutsch. med. Wochenschr., v. 68, p. 17, 1942.*

The mechanism of action of hypoglycemic therapy in peptic ulcer is discussed. Insulin hypoglycemia causes hyperemia of the gastrointestinal tract, an increase in gastric secretion and bile, and peristalsis. Insulin also causes an outpouring of Na in the gastric juice with retention of K, while histamine has the opposite effect. Insulin corrects the acidotic tendency of ulcer patients. The role of the autonomic system in insulin hypoglycemia is mentioned and its effect on cholinesterase and acetylcholine content of organs is being studied. Adrenal hypertrophy following repeated insulin treatments may play a part in favoring healing of ulcers, especially those caused by allergies.—Courtesy Biologic Abstracts.

SURGERY

BURGOIS, B. G.: *The surgical treatment of gastroduodenal ulcer. L' Union Medicale du Canada, v. 72, p. 267, March 1943.*

This is a review of the late chief surgeon of the Notre Dame Hospital in Montreal which was presented in a symposium before the 17th Congress of French-speaking doctors of North America. Several of the more usual surgical procedures are discussed. Consideration is given to the most frequent complications of chronic ulcer: obstruction, perforation and hemorrhage. Immediate operation is necessary in perforation but surgery is not favored in hemorrhage.—M. H. F. Friedman.

TANNER, NORMAN C.: *Gastro-duodenal surgery in the aged. Brit. Med. J.*, p. 563, May 8, 1943.

Chronic and frequently relapsing peptic ulcers and carcinoma of the stomach, or complications from these, form indications for surgery in the aged. Tanner reports on the gastro-duodenal surgery he performed for gastro-intestinal perforation (total cases, 83), gastric carcinoma (total cases, 61), and chronic peptic ulceration (total cases, 266). Of the gastro-duodenal perforations, 18 patients were over the age of 60 and 6 over 75. Two of these were cases of perforated carcinoma of the stomach. Ten of the remaining 16 cases of simple perforation died. Included among these ten is the case of a woman of 91, the oldest case of duodenal perforation, and possibly of duodenal ulcer, on record.

Tanner performed radical partial or total gastrectomy for carcinoma on 21 patients over the age of 60; of these, 9 were over 70. Of those over 70 years, 6 recovered. One of these was a man, 80 years old, who had a radical retrocolic partial gastrectomy under local anesthesia. Another was a man age 72 who had a radical total gastrectomy performed under local anesthesia.

The author believes it is usually safe to perform short-circuitory operations in patients over 60 who have a benign non-perforated ulcer. While gastrectomy in end result may be superior, nutrition is better maintained after gastro-jejuno-stomy.

A series of 120 unselected cases of gastrectomies for gastritis, duodenal ulcer and gastrojejunal ulcer showed only one death when sul-fapyridine by mouth was used prophylactically. Of paramount importance is the anesthetic. A local anesthetic is favored rather than a high spinal. Of the general anesthetics, cyclopropane causes the aged least distress. Tanner recommends a local anesthetic by a combination of rectus-sheath block with anterior splanchnic anesthesia or else intercostal block with posterior splanchnic anesthesia.—M. H. F. Friedman.

EXPERIMENTAL MEDICINE

BUTLER, D. B., HANDS, A. P. AND IVY, A. C.: *Potency of liver extract in stimulating gastric secretion by intravenous injection and by direct lavage. Am. J. Physiol.*, v. 139, p. 325, July 1943.

Liver extract when applied directly to the stomach is a more potent stimulant of gastric secretion than when injected intravenously. Probably the secretagogues do not act by being absorbed into the blood stream in an unchanged form. Either the secretagogues are first altered by digestive processes and the altered substances stimulate gas-

tric secretion after being absorbed, or else the secretagogues excite the formation of a new substance (a hormone) which is a stimulant of gastric secretion.—M. H. F. Friedman.

LYNN, D., BERGH, G. S. AND SPINK, W. W.: *Failure to recover sulfonamides from gallbladder bile in dogs with cystic duct obstruction. Surgery*, v. 13, p. 447, March 1943.

In 12 dogs the cystic duct was aseptically isolated and ligated without injury to the blood supply. The next day one of the sulfonamide drugs was given by mouth



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either in single or divided doses. Later the animal was sacrificed and the concentration of sulfonamide in venous blood and gallbladder bile determined.

Conclusion: Sulfanilamide, sulfathiazole and sulfadiazine all enter the gall bladder only by way of the cystic duct and do not pass through the wall of the gall bladder even when the blood concentration of the sulfonamide is high.—I. M. Theone.

WILLIAMS, E. F., HOFFMAN, C. F., AND NASH, T. P.: *Stimulation of gastric secretion by neurine. Am. J. Physiol.*, v. 139, p. 364, July, 1943.

In an attempt to identify the active principle, which causes a yeast extract to stimulate gastric secretion when injected intravenously, choline, beta-alanine, glutathione and neurine bromide were injected. These substances are all present in yeast. Of them only neurine bromide caused an increase in the volume, in the free acid, and in the total acid of the secretion. The barely effective dose of neurine (1.5 mg. of neurine hydroxide per kilo. body weight) is about 150 times as large as that of the histamine base, but neurine gives a more prolonged effect. This prolonged action is not due to reabsorption from the gastric juice.—Carmela Foderaro.

MOTILITY

INGELFINGER, F. J. AND R. E. MOSS.: *The motility of the small intestine in sprue. J. Clin. Invest.*, 22:345, May, 1943.

Two patients were used, one presumably with tropical sprue well advanced and one with non-tropical sprue. It was found that the balloon could be inflated with 75cc. air under 5 to 9 cm. H₂O pressure in the first class and 45 cc. air under 10 to 15 cm. H₂O pressure in the second case in contrast with the normal of 10 to 30 cc. air under 20 cm. H₂O. It was further found that the large (L) waves were absent during 504 minutes of continuous recording in Case I and 57 minutes in Case II, but the small (S) waves were about normal. In both cases the balloon continued down

the intestine without the aid of L waves. It was found that when the balloon contained only 15 cc. air under 5 cm. H₂O pressure it would be compressed occasionally by intestinal activity. 10 mg. acetyl-beta-methyl-choline caused the appearance of L waves but posterior pituitary solution, 20 units, and prostigmin, 0.5 mg., did not. A hypothesis is drawn that prostigmin does not act because the intestinal autonomic nervous system is not able to produce acetylcholine in sprue. Changes towards normal were also recorded after treatment with vitamins and liver extract.

TAYLOR, E. L.: *Pseudorumination in the rabbit. Proc. Zool. Soc. London, Ser. A.*, v. 110, p. 159, 1940.

Pseudorumination was studied experimentally and the results indicate that freshly eaten food enters the fundus of the stomach, passes through the small intestine and is shunted by the large intestine into the blind end of the caecum. There it remains until early in the morning of the next day when by a rather sudden contraction of the caecum the material is quickly passed along the colon without permitting the absorption of water and as a result these feces are soft and moist. They are then passed from the anus to the mouth and into the cardiac portion of the stomach where they remain while freshly eaten food is permitted to pass into the fundus. As the volume of the stomach becomes less this fecal material is redigested in the stomach and small intestines and on reaching the large intestine by-passes the caecum, going directly into the colon and proceeding slowly to the rectum to form the commonly observed rabbit pellets. The evidence indicates that pseudorumination serves for more complete protein digestion. It is also suggested that the vitamin B complex intake may be thus increased. Cellulose digestion is not more complete.—Courtesy Biological Abstract.

WELLS, J. A., MERCER, T. H., GRAY, J. S., AND IVY, A. C.: *The motor innervation of the colon. (Amer. Jour. Physiol.*, v. 138, p. 83, 1942.)

Pelvic nerves to the colon are cholinergic (inhibited by atropine, potentiated by eserine, imitated by acetylcholine, unaffected by ergotamine). Differences between acetylcholine and nerve effects may be explained by an unequal distribution of nerves to circular and longitudinal muscle which are equally reached by injected acetylcholine. Atropine may be more effective against injected acetylcholine than against the cholinergic nerve since in the latter case the mediator is released in an intracellular situation and is inaccessible to atropine which acts at the cell surface.

Pelvic nerve does not reach the upper colon in the hypogastric nerve but rather in the wall of the colon. Stimulation of the vagus nerve does not affect the colon of the dog but may cause contractions of the cecum in pig and monkey.

Hypogastric nerves and the celiac root of the inferior mesenteric ganglion are adrenergic. Electrical stimulation causes inconstant circular contraction of the distal colon (hypogastric) or descending colon (celiac root).—M. J. Oppenheimer.

HESSER, F. H., LANGWORTHY, O. R., AND KOLB, L. C.: *Experimental study of gastric activity released from cortical control. (J. Neurophysiol.*, v. 4, p. 274, 1941.)

Using a balloon-tambour air-water system and introducing 20 cc. increments of air, graphic studies of stomach motility were made in six cats, before and after successive removal of cerebral motor cortices. Bulbocapnine, subcutaneously, was used as a sedative. In the normal stomach the steep rise in pressure following initial filling, leveled off while the volume gradually increased. It quickly rose again at the limit of distention. This point was preceded by drooling and terminated by vomiting. Findings were inconstant after removal of one cortex. But when the second cortex was removed, the evidence of release from a motor cortical regulating influence was demonstrated by greater persistency, consistency, and strength of contractions. Tone particularly was increased throughout filling, espe-

cially at the height of the wave activity. This was confirmed by the development of a marked stretch reflex with delayed relaxation of the stomach wall after sudden distention. Distinct and continuous responses to sudden stretch followed the addition of each increment of air. After removal of both cerebral motor cortices, there was less tendency to vomit at the limits of distention; the animals were restless and ate greedily.

Similar changes occurred in the lower portion of the esophagus. It had previously been shown that the relaxation of the sphincter of the bladder is related directly to the strength of vesicle muscle contraction. The tone and contraction of the smooth muscle of both bladder and stomach may depend upon afferent stretch stimulation from the muscle itself. Inasmuch as smooth muscle is represented functionally in the cortex, it is possible that organic lesions could produce functional disorders in the stomach.—Ivan F. Bennett.

GREENBERG, LEON A., GIORGIO, LOLLI, AND RUBIN, MIRIAM: *The influence of intravenously administered alcohol on the emptying time of the stomach.* (*Quart. J. Stud. Alcohol*, v. 3, p. 371, 1942.)

To 26 fasted rats 2 g. absolute alcohol per kilogram body weight were given intravenously in 45 per cent solution. After ½ hour, each rat was given 2.5 g. glucose per kilogram body weight by stomach tube. The animals were killed under anesthesia after one, two or three hours and the amount of glucose remaining in the stomach was determined. An average of 83 per cent of the glucose was recovered after one hour in 9 experimental animals, compared with 50 per cent in 9 control given saline intravenously. After two hours an average of 70 per cent was recovered in 6 experimental animals, but only 0.6 per cent in 6 controls. After three hours an average of 36 per cent of the glucose was still recovered from the stomachs of eleven remaining experimental animals. Seven additional fasted rats were given the same amount of alcohol

intravenously and one half hour later, 3.0 gr. absolute alcohol in 25 per cent solution by stomach tube. After one hour an average of 48 per cent of the alcohol given orally was recovered from the stomachs of the experimental animals compared with an average of 28 per cent in 9 controls who had received saline intravenously. The disappearance of orally administered glucose or alcohol from the stomach was markedly delayed when preceded by intravenous administration of alcohol. This is attributed to a central action of alcohol rather than to an effect of local irritation.—Courtesy Biological Abstracts.

ABSORPTION

HEMMELE, G.: *Hypochromic anemia following gastric resection.* *Schweiz. med. Wochenschr.*, v. 72, p. 670, 1942.

Ionization of alimentary iron is essential if the iron is to be absorbed. These investigations show that ionization is reduced in those cases where hypoacidity and anacidity develop after gastric resections. In gastrojejunostomy cases iron absorption is not interfered with; this is interpreted as indicating that the duodenum is not the sole site of iron absorption. Absorption of iron from the ileum is possible. In addition to adequate gastric acidity, the time food stays in the stomach is important. Rapid passage through the stomach may not permit the iron to become ionized.—D. A. Wochen.

MARTIN DU PAN, R.: *The effects of ingesting paraffine oil or olive oil on the absorption of alcohol.* *Rev. Med. Suisse Rom.*, v. 61, p. 537, 1941.

The subjects were 19 healthy young men, each weighing between 55 and 76 kg., all but two of whom were accustomed to drinking. Each subject received in the morning in a fasting state, one half liter of wine containing 48 gm. of absolute alcohol. The subjects were then kept at rest. Blood samples were taken after one half hour and three hours. Blood alcohol determinations were done by Nicloux's method as modified by Naville. The

next morning the same procedure was repeated but before the ingestion of the wine thirteen of the subjects were given two soup-spoonfuls of olive oil and six subjects were given the same quantity of paraffine oil. Half an hour after the ingestion of the olive oil and alcohol the average blood alcohol concentration was 17% less than when alcohol alone was drunk; in the case of paraffine oil the difference was only 2%, which is within the limits of experimental error. After 3 hours the average blood alcohol concentration was 16% higher with olive oil and 8% higher with paraffine oil than when alcohol alone was drunk. Although the subjects were supposed to report in a fasting state on both days, and not have drunk any alcohol during the intervening 24 hours, blood alcohol determinations done before the experiment on the second day showed that some of the subjects had some alcohol in the blood. These quantities were deducted from the figures obtained in the experimental determination. The difference between the effects of olive oil and paraffine oil is explained by the fact that olive oil is absorbed by the gastric mucosa while paraffine oil is not, and since the mucosa cannot absorb the oil and the alcohol at the same time "a sort of obstruction" of the cells occurs. A part of the unabsorbed alcohol passes with the alimentary bolus. The highest concentrations reached with or without oil were the same, so that the symptoms of intoxication could be retarded but not diminished. — Courtesy Biological Abstracts.

REKERS, P. E.; ABELS, J. C., AND RHOADS, C. P.: *Metabolic studies in patients with gastrointestinal cancer. IV Fat metabolism, a method of study.* (*J. of Clin. Invest.*, v. 22, p. 243, March, 1943.)

In the study of the ability to absorb at normal and high levels of fat ingestion, 7 individuals were used: two were normal; one with gastric cancer; one with complete gastrectomy for cancer; one with a marked generalized atrophic gastritis; and two with cirrhosis of the liver. A basal diet containing

1.5 gms. of fat per kilogram body weight was given for 6 to 9 days; then a fat load of 2 gms. was given as a supplement. The gasometric method of Van Slyke measured the absorption of fat, using the feces of 3 to 4 days, pooled in 24 hour lots.

The normal persons absorbed 96-97% of the ingested fat; the fat load didn't significantly affect this absorption ability. In the patient with gastric carcinoma, 93% of the ingested fat was absorbed; fat load didn't affect this significantly. With the gastrectomy case,

only 27% of the fat ingested was absorbed; and, with the fat load, only 10% could be absorbed. This shows that on a comparatively low fat diet, there is considerable steatorrhea with a significant increase in loss on fat load. The gastritis individual was between normal values and those for the gastrectomy case, 86% being absorbed and 73% absorbed after the fat load. There was no significant impairment in cirrhosis of the liver.

With an atrophic or absent stomach, fat absorption is impaired and accentuated loss is seen after

ingestion of the fat load. Hepatic dysfunction plays no constant significant role in the absorption of fat. Barium meal study has shown that increased gastrointestinal motility is not the causative factor for steatorrhea.—Ivan F. Bennett.

GOLDNER, M. G. AND HAEREM, A. T.: *Oral glucose tolerance tests in dogs with intestinal resection.* (Proc. Soc. Exp. Biol. Med., v. 52, p. 188, March, 1943.)

Six dogs operated 10 months previous to the experiments were used. Three were totally gastrectomized. In addition the major part of the jejunum or ileum was removed in two of these three dogs. The fourth dog had a jejunectomy and the remaining two ileectomy had been performed. After 12 to 15 hours fast a test meal was introduced by stomach tube, 1.5 gm. glucose being given per kilo body weight. Control intravenous tolerance tests with 10 cc. of 50 per cent glucose showed normal curves. When the sugar was given by stomach tube, the glucose tolerance test showed a high and delayed curve in dogs with stomach or jejunum removed. The curve was not altered by ileectomy. The experiments indicate the role of the stomach in maintaining normal glucose tolerance.—M. H. F. Friedman.



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Nutritional deficiencies, particularly in vitamins and minerals, are likely to become more prevalent as the war progresses. To fill certain gaps in the wartime diet arising from food rationing and shortages, more and more physicians now depend on . . .

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VITAMINS: A - B₁ - B₂ (G) - C - D - E - Niacinamide
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PATHOLOGY

BRUGER, M.: *Fractional cephalin-cholesterol flocculation in hepatic disease.* Science, v. 97, p. 585, 1943.

Hanger (J. Clin. Invest., v. 18, p. 261, 1939) showed that sera from patients with intrahepatic diseases will flocculate an emulsion of cephalin and cholesterol. Bruger reports that the addition of various concentrations of serum to a standard amount of lipid emulsion results in flocculation of varying degrees. By use of this fractional procedure, the extent of hepatocellular damage in patients with liver disease may be evaluated. The test is of value in differentiating between hepatogenous jaundice and obstructive jaundice before the hepatic cells have become damaged.—M. H. F. Friedman.

OPPENHEIMER, M. J. AND F. C. MANN.: *Intestinal capillary circulation during distention. Surgery, 13:548, April, 1943.*

A suitable loop of rat intestine which would not kink was extra-peritonealized. Two incisions were made; into one was inserted a pressure cannula and into the other a quartz rod light, each being tightly ligated in place so that the segment could be distended. Under magnification of 75 to 150 diameters it was seen that the rectangular pattern of the capillaries appeared at a distending pressure of 10 to 20

mm. Hg. At 30 mm. Hg the flow through the capillaries was at first slowed then again became faster when maintained two minutes. At 60 mm. Hg for two minutes the capillary flow ceased and at 80 mm. even the flow of the larger vessels ceased. When released, reactive hyperemia lasted less than one minute. At a distending pressure of 30 mm. Hg maintained continuously for five hours, the flow in the capillaries stopped at 3.5 hours but remained good in the larger vessels. Deflation showed most but not all capillaries returning to normal and

some new capillaries appearing, but some showed stationary erythrocytes 30 minutes after deflation. Scattered ecchymoses were also seen. At 50 to 60 mm. Hg for two hours, capillary flow was at first diminished in rate and then stopped for 1 to 2 hours; there were some plugged capillaries and ecchymoses one hour after deflation. Peristalsis was absent in the segment during distention but increased upon deflation.

MARSH, HOMER F.: *The influence of bile and diet on the intestinal flora of white rats. Ohio State Univ., Abst. of Doctoral Dissert., v. 63, p. 221, 1942.*

Gram negative proteolytic bacteria of the intestine are called "colon" type, and the lactobacilli, the "aciduric" type. The relative number of these is the C:A ratio. White rats were subjected to diets of grains and pellets with 27 per cent animal protein; ground lean beef; and whole milk, bread and lactose. Feces were examined for C and A bacteria types and clostridium Welchii. The rats fed grain for a month showed a C:A ratio of 83:17. When proteins or carbohydrates were substituted for grain it went to 98.2 or 2:98 respectively. Protein-fed rats also showed a high spirochaete content whereas a low one appeared in the carbohydrate-fed. Similar results prevailed for the clostridium. As the reaction of the feces approached pH 7.0 the C type increased; a shift to pH 6 caused an increase in the A type. The question arises whether the bacteria cause the pH shift or vice versa. The spirochaetes may have increased in number only because the bacteria did. The cultural rather than the stain method was more satisfactory in determining the ratio. After the determination of the normal ratio the bile ducts of the rats were ligated and the ratio again determined. In the protein-fed animals no change occurred, the carbohydrate fed groups, in 48 hours the ratio went from 2:98 to 95.5. Clostridium increased, and the pH rose to 6.4. No satisfactory explanation is offered although surface tension differences and the presence of fat are considered as possible reasons. —Courtesy Biological Abstracts.

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GRANA, A. AND V. P. VIZCA. *Effect of glycocoll ingestion on the elimination of hippuric acid (liver function test)*. *Arch. Uruguayos Med., Cir. Y. Espec.* v. 21, p. 48, 1942.

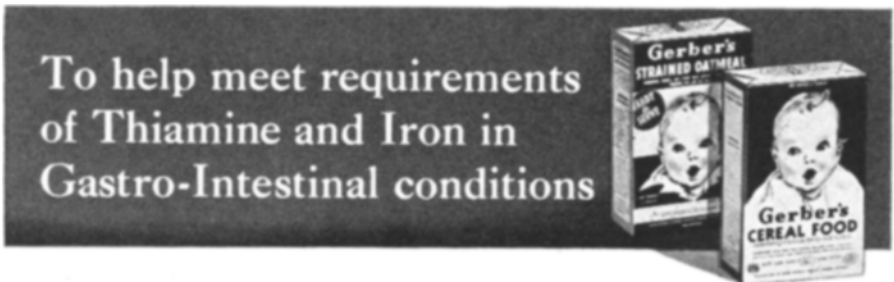
The authors report studies of hepatic function as determined by the Quick hippuric acid test. In normal individuals they found a 25% increase of hippuric acid after the administration of glycocoll. In 4 cases of icterus with normal hepatic function the increase was 36%; in

cases of neoplasm of the pancreas and cancer of the liver with hepatic insufficiency, the increase was 36%. In 2 individuals in the last stage of cirrhosis the hepatic function was low and hippuric acid increased only 2% and 5% after ingestion of glycocoll.—Ethel McNeil.

ANDREW, WARREN, BROWN, HARRY MARSHALL AND JOHNSON, JAMES BLUFORD.: *Senile changes in the liver of mouse and man with special reference to the similarity of the*

nuclear alterations. *Am. J. Anat.*, v. 72, p. 199, 1943.

A study was made of age changes in the liver of the mouse, using normal laboratory animals of pedigreed stock. This study was correlated with observations on 40 human livers. Definite histological differences occur when the livers of senile mice or of senile human beings are compared with those of younger specimens. In the younger specimens, both mouse and human, the nuclei are spheroidal, smooth in contour and of a fairly uniform size. In the senile livers, mouse or human, there are numerous giant nuclei, containing multiple nucleoli. Many of the nuclei are irregular in shape, elongated, angular, or lobulated. A peculiar type of intranuclear inclusion is found consistently in a small percentage of the nuclei in old age. It is suggested that these inclusions are the results of the process of senescence rather than indications of any virus infection. They are relatively large, homogeneous, poorly staining structures, usually solitary. Evidence is presented that they may be hypertrophied and altered nucleoli. Periportal infiltration by lymphocytes and macrophages is a conspicuous feature in the livers of the senile mice. In the human livers the pathologic condition of the tissue makes it difficult to draw conclusions on the effect of the age factor on the amount of infiltration. No change with age occurs either in regard to the amount or appearance of the connective tissue in the liver.—Courtesy Biological Abstract.



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KLIGLER, I. J., OLEINIK, E., AND CZAKES, I.: *Improved technic for isolation of dysentery bacteria from stools by formaldehyde*. *Am. J. Pub. Health*, v. 33, p. 628, June, 1943.

"Dysentery phage is probably responsible for the rapid death of dysentery bacteria in stools brought to the laboratory for diagnostic purposes . . . Of 63 dysenteric stools cultured almost immediately after they were voided, 47 yielded Flexner or Shiga bacteria; cultured 6 hours later only 14 were positive."

The authors advocate the addition of formalin (1 part in 10,000 to 1 part in 7,500) to the stools. This inactivates the phage but does not prove lethal for the bacteria which may be cultivated later.—M. H. F. Friedman.

CHAIKOFF, I. L., EICHORN, K. B., CONNER, C. L., AND ENTENMAN, C. *Production of cirrhosis in the liver of the normal dog by prolonged feeding of a high fat diet. (Am. J. Path., v. 19, p. 9, January 1943)*

The purpose of this paper is to show that cirrhotic changes can be produced in normal dogs by the experimental production of a fatty

liver. Seventeen dogs were used. The dogs were fed twice daily on a high fat diet supplemented with vitamins and Cowgill's salt mixture. All food not voluntarily taken was force-fed. Upon sacrifice or death of the animals, varying from 5 weeks to 75 weeks, microscopic examination of the liver was made and total fatty acid content was determined. The beginning, terminal, and maximal body weights of the animals were recorded.

The results fall into three groups. Group I consisted of 5 dogs, sacrificed or dying in 5 weeks to 24 weeks, and showing hepatic fatty infiltration and total hepatic fatty

acid content from 23.6% to 37.6%. Group II consisted of 10 dogs, sacrificed or dying in 15 weeks to 155 weeks and showing an increased prominence of the intralobular or intercellular connective tissue. Actual fibroblastic proliferation and diffuse cirrhosis were observed in some. Fatty acid contents varied from 12.4% to 46.6% with 6 of the 10 being below 21%. Group III consisted of 2 dogs, sacrificed or dying in 59 weeks and 182 weeks respectively, and showing a nodular cirrhosis and fatty acid content of 5.4% to 13.6%.

A description accompanied by microphotographs of the changes in these livers is presented. Beside the above mentioned findings, there was congestion in several of the livers but none to slight inflammatory reactions. The authors in summarizing, state that hepatic lesions varied from early, slight, or diffuse fibrosis to nodular cirrhosis with adenomatous regeneration produced in normal dogs by the long continued administration of high fat diets. This, coupled with their previous investigations, point to continued fatty infiltration as an important causative factor in the production of liver cirrhosis.

ABBOT, W. E., MELLORS, R. C., AND MUNTWYLER, E. *Fluid protein and electrolyte alterations in experimental intestinal obstruction. (Ann. Surg., v. 117, p. 39, January 1943)*

In order to study the reliability of the hematocrit and plasma protein concentrations as indices of plasma dehydration and of some of the factors involved in intestinal obstruction, the authors produced obstruction by ligature just tight enough to occlude the lumen but not the vascular supply at various levels. Determinations of the plasma volume by T1824 and "available fluid" by sodium thiocyanate were made simultaneously.

In eight dogs with pyloric obstruction, all of which were permitted to eat and drink, the loss of body water fairly well paralleled the amount and frequency of vomiting. After 1 to 3 days the plasma volume showed a decrease varying

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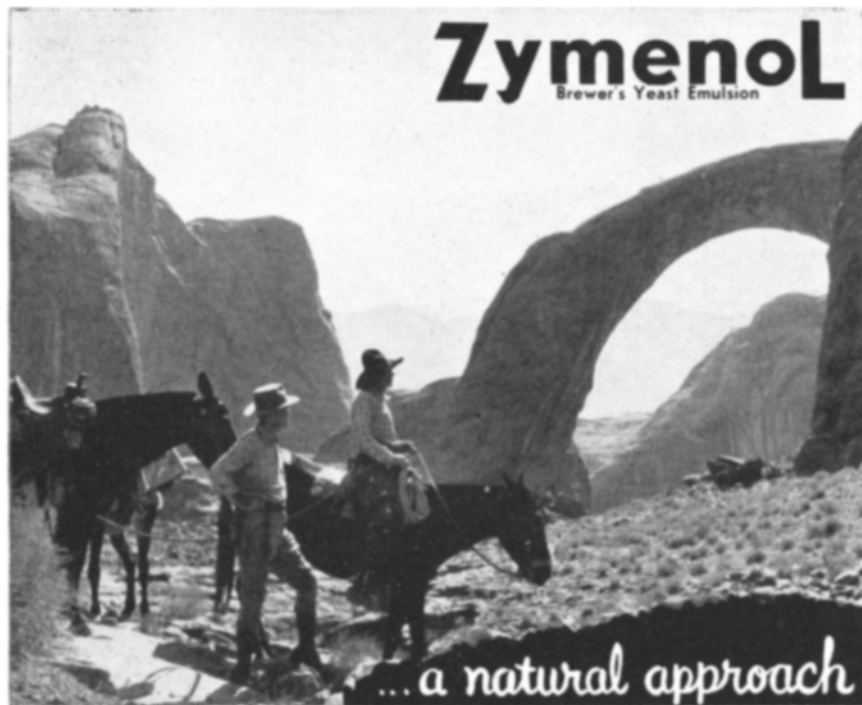
from 9 to 46 per cent and the extracellular, fluid volume a loss of 5 to 30 per cent. At the same time the hematocrit showed an increase of 1.5 to 12.1 per cent and the plasma protein concentration an increase of 1.25 to 3.50 Gm. per cent, while the plasma chlorides varied widely according to the extent of vomiting.

Jejunal obstruction produced a similar reaction in 2 dogs. In 7 dogs with ileal obstruction the extent of vomiting varied widely, and

so did the plasma chlorides and plasma volumes (7 to 50%). The survival period being lengthened (3½ to 12 days), malnutrition became a factor, and the hematocrit and plasma protein concentrations were even less reliable indices of the degree of dehydration showing changes of -5.6 to +7.2 per cent and +.07 to +2.82 Gm. per 100 cc. respectively. The results in colonic obstruction were further complicated by starvation, the four dogs lasting 3 to 14 days. There-

fore dogs were studied for the effect of starvation without obstruction. It was found then that the only reliable criterion of degree of starvation is the loss of total circulating plasma proteins (10 to 32 per cent). The concentration of plasma proteins might not be changed because of hemoconcentration.

The authors further state that when sodium is lost from the body the plasma and interstitial fluids are temporarily in a hypotonic state and then urine containing a low concentration of electrolytes is excreted and water also shifts from extracellular to intracellular. If dehydration is severe, then not enough water to form urine is present to excrete the excessive electrolytes and a rise of plasma chlorides as well as nitrogenous products in the blood occurs. The authors conclude that recognition of all factors involved must be made. Strangulation, distention, hemorrhage, infection, etc., all play their own part in dehydration and must be recognized and corrected before simple restoration of fluid volume, plasma proteins or electrolytes will be successful.—Wm. D. Beaver.



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VERTAININ, A. AND TAIMI, KOSKI. *Do histidine injections prevent the formation of histamine ulcers in the guinea pig?* (*Acta. Soc. Med. Fennica "Duodecim,"* v. 22, p. 1, 1940)

In 55 per cent of a series of guinea pigs ulcers of the stomach were produced by daily administration of 2 to 2.5 mg. of histamine phosphate per kilo for 14 days. Simultaneous administration of various dosage levels of histidine monohydrochloride did not prevent the ulcers from forming. Additional experiments with the isolated guinea pig intestine showed that pretreatment of the animal with histidine did not decrease the sensitivity of the organ to histamine.—G. Klenner.

McIVER, M. A., AND WINTER, E. A. *Deleterious effects of anoxia on the liver of the hyperthyroid animal.* (*Arch. Surg.,* v. 46, p. 171, February, 1943)

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daily to a series of rats in 0.1 mg. doses for a period of 2 to 3 weeks. Although there were clinical signs of hyperthyroidism, in general the condition was good and there were no degenerative lesions of the liver. Hepatic glycogen levels, however, were low. When a similarly treated series of hyperthyroid rats was exposed to atmosphere containing low concentrations of oxygen, there were signs of hepatic damage and 9 out of 17 rats died. Although control non-treated rats kept at

low oxygen concentrations likewise showed lower liver glycogen, there were no signs of hepatic injury and no deaths. The authors believe the experiments to be of clinical importance since anoxia is a hazard to which hyperthyroid patients are often exposed. They suggest that acute lesions of patients dying of hyperthyroidism may be the result of anoxia.—M. H. F. Friedman.

EVANS, J. B. *The mechanism of shock in intestinal strangulation.*

(*Ann. Surg.*, v. 117, p. 28, January 1943)

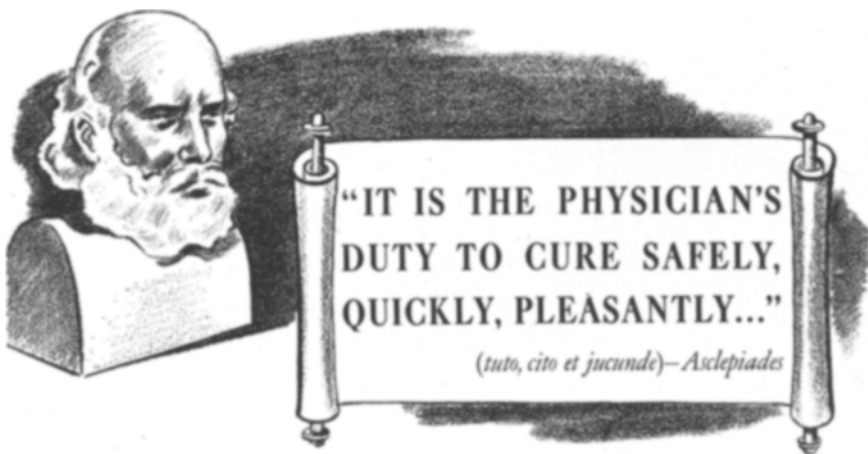
While admitting the evidence of toxicity of the contents of strangulated ileum loops, the author investigated the cause of the shock from the side of absorption of toxins and by plasma loss from the blood. He found first that when the loop was tied off tightly enough to obstruct venous return and to impede only slightly the arterial pulse, there was a generalized loss of blood plasma in a relatively short time which eventually was great enough to cause symptoms of shock. This loss was by local route through the strangulated bowel. That the animals did not show the profound shock of Moon's dogs was probably because they were not permitted to live long enough. The author killed his animals by anesthesia and collected the free peritoneal fluid and found that it had all the characteristics of normal plasma. Upon injecting this free peritoneal fluid into the veins of normal dogs, there was no evidence of depressor elements or shock. Therefore he concludes that, since all venous and lymphatic returns were occluded and any evidence of transperitoneal absorption was absent, the mechanism of shock must follow Blalock's initiating, sustaining, and terminal phases which he outlines.—Wm. D. Beamer.

LAWRY, J. V., ASHBURN, L. L., DAFT, F. S. AND SEBRELL, W. H. *Effect of alcohol on experimental liver cirrhosis.* (*Quart. J. Stud. Alcohol.*, v. 3., p. 168, Sept. 1942)

A dietary deficiency was found to induce liver cirrhosis even in the absence of alcohol. However, the severity of the cirrhosis was increased if alcohol was substituted for drinking water. Alcohol probably produces its injurious effects on the liver through a mechanism other than one involving mere toxicity alone.—G. Klenner.

STEINER, P. C. *A cancerogenic extract from human bile and gall bladders.* (*Proc. Soc. Exp. Biol. Med.*, v. 51, p. 352, Dec. 1942.)

Since methylcholanthrene, a powerful cancerogen, can be made from



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bile acids, the possibility exists that human bile might contain a cancerogenic substance. The excretion of this substance in the bile might induce tumors in the biliary tract and gastrointestinal tract. Human gall bladder bile as well as some of the gall-bladders were extracted to yield a nonsaponifiable residue. Fifty-three mice were injected subcutaneously (250 mg) and injections repeated after 6 weeks. Five sarcomas occurred at the site of injection in mice dying 14 to 24 months later. The tumors were

spindle and mixed cell sarcomas.—
M. H. F. Friedman.

RALLI, E. P., AND RUBIN, P. H.
The effect of meat and meat fractions on the fatty liver of the depancreatized and pancreatic-duct ligated dog. (Amer. J. Physiol., v. 138, p. 42, 1942.)

Depancreatized and pancreatic-duct ligated dogs fed whole raw lean beef have severe fatty infiltrated livers after 8 weeks and up to 33 weeks. When dried extracted

meat powder was fed no fatty infiltration developed. Dried extracted meat powder plus extractives produced an initial fatty infiltration which did not persist beyond 15 weeks. It is suggested that the lipotropic effect of dried meat powder counteracted the effect of extractives.

It is further suggested that the lipogenic effect of raw meat is due to some substance contained in watery extractives. Inositol plus meat powder caused a marked increase in liver fat. Choline added to dried meat powder was without influence.

The authors feel that dried extracted meat powder owes its lipotropic effect to the fact that it is easily digested and absorbed at a time when body protein stores are depleted (poor digestion and absorption of raw meat in absence of pancreatic enzymes; increased urinary nitrogen). Similarities between fatty livers of diabetes and low protein diets are indicated. Furthermore, some substance capable of producing fatty infiltration of the liver has been removed from dried meat powder by extraction.

This suggests two factors which may operate in producing the fatty livers of depancreatized and pancreatic-duct ligated dogs: (1) protein depletion because of poor digestion and absorption; (2) presence of a meat extractive capable of producing infiltration of the liver.—M. J. Oppenheimer.

COHN, A. AND FELDMAN, S. E.:
The relation between the liver and the thyroid gland. I. Blood iodine. (Am. J. Clin. Path., v. 12, p. 27, Jan., 1943).

Contrary to the findings of the other investigators, Cohn and Feldman report that blood iodine is not elevated per se in liver and gall bladder disease. Carbon tetrachloride did not alter the iodine level in the blood of rabbits from the normal value. The functional relationship between thyroid and liver cannot be investigated by blood iodine levels alone and the routine determination of blood iodine in clinical cases is not practical.—M. H. F. Friedman.



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GRAY, SEYMOUR J. AND BARRON, E. S. GUZMAN: *The electrophoretic analyses of the serum proteins in diseases of the liver.* (*J. Clin. Invest.* v. 22, p. 191, 1943.)

The electrophoretic method of Tiselius (*Tr. Faraday Soc.* 33, 524, 1937) was used for a study of serum proteins in normal human beings and in cases with liver diseases. In agreement with other investigators, Gray and Barron found the following average normal proportions of serum proteins in percentage of total serum protein:

albumin, 64; alpha globulin, 7; beta globulin, 14.5; and gamma globulin, 14.4. Electrophoretic analyses of the serum proteins yielded lower albumin and higher globulin determinations, and consequently lower albumin-globulin ratios (av. 1.79) than were obtained by the customary method of fractional precipitation with sodium sulfate (av. ratio, 1.96). An abnormality of two or more protein fractions was observed in every case of liver disease studied, and the degree of abnormality appeared

to depend upon the severity of the disease. The most frequently observed alteration of serum proteins in liver disease was an increase in gamma globulin and a decrease in albumin. These changes occurred most frequently and most severely in cirrhosis of the liver, and next most frequently in the acute parenchymatous diseases. Significant increases in beta globulin were observed in all types of liver disease, but to a lesser degree and frequency than the changes in gamma globulin. The increased beta globulin values were difficult to interpret because the serum lipids migrated with this fraction. The distributions of serum globulin fractions often were found to be abnormal by the electrophoretic method even in those cases in which a normal albumin-globulin ratio was observed by salt fractionation. Gray and Barron obtained evidence indicating that the serum protein changes resulted primarily from the inability of the diseased liver to produce normal serum proteins rather than from external loss of protein in ascitic fluid. Serum protein abnormalities were found to be less prominent in metastatic carcinoma of the liver than in any other form of liver disease. It appeared that jaundice alone did not produce significant serum protein changes.—J. Logan Irvin.

ZUCKER, T. F. AND BERG, B. N.: *Calcium deficiency and gastric lesions in the rat.* (*Proc. Soc. Exp. Biol. and Med.* v. 53, p. 34, May, 1943.)

Lesions in the antrum of the rat's stomach were produced by calcium deficiency. The diets were apparently adequate for normal growth and food intake. The lesions consisted of round hyperplastic areas with a central depression in the mucosa. Vitamin D deficiency played no role in production of the lesions.—M. H. F. Friedman.

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METABOLISM AND NUTRITION

LAZAROW, O.: *Particulate glycogen: A submicroscopic component of the guinea pig livers; its significance in glycogen storage and the regulation of blood sugar. Proc. Int. Med. Chicago, v. 14, p. 211, 1942.*

Glycogen occurs in liver cell as submicroscopic structure. The procedure for obtaining particulate glycogen is given. From molecular weight studies it is found to be an aggregate of many smaller glycogen units. It contains about 1 per cent protein as an integral part of the

particle. This protein is important in maintaining the particulate state. There is an agent in the liver cell effecting glycogen formation; the possibility of this agent being insulin is discussed.—Courtesy Biological Abstracts.

BRIGGS, G. M., JR., LUCKEY, T. D., MILLS, R. C., ELVEHJEMS, C. A., AND HART, E. B.: *Effect of p-aminobenzoic acid when added to purified chick diets deficient in unknown vitamins. (Proc. Soc. Exp. Med., v. 52, p. 7, Jan., 1943.)*

It had been shown previously that p-aminobenzoic acid is a growth-promoting factor for the chick and that it was necessary for the normal development of the keel bone when the diet was deficient in phosphorus. The present authors find that p-aminobenzoic acid (5 to 15 mg. per 100 gm. of diet) produces growth in chicks fed on diets complete except for the unknown vitamins. The action does not appear to be specific on growth but is an indirect one. The p-aminobenzoic acid acts indirectly by stimulating intestinal microorganisms to produce one or more factors essential for the chick.—M. H. F. Friedman.

LECOG, R.: *Influence of alimentary lipidic disequilibria on the composition of muscle and blood. (Compt. Rend. Acad. Sci. Paris. v. 210, pp. 457-460, 1940.)*

Feeding experiments with pigeons show that alimentary disequilibria (both lipidic and glucidic) finally result in an acidosis which, in the pigeon brings about polyneuritic symptoms, in spite of the use of rations high in vitamins. It is observed in both cases, that there is an increase in the proportion of orthophosphates and of total acid-soluble muscular P, and in lipidic disequilibrium, and a marked fall in adenyl-pyrophosphonic acid.—Courtesy Biological Abstracts.



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MISCELLANEOUS

HAHN, P. F.: *Abolishment of alimentary lipemia following injection of heparin. Science, v. 98, p. 19, July 2, 1943.*

The lipemia resulting from the feeding of fat to dogs could be abolished by the administration of heparin. The heparin was administered intravenously either as a solution in saline or as heparinized whole blood or plasma. No reaction occurred *in vitro* when heparin was added to lipemic plasma. The disappearance of the lipemia was noted as rapidly as one minute after the injection of the heparin. The nature of the mechanism involved is unknown.—M. H. F. Friedman.

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The Seal of Acceptance denotes that the statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.



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BECKER, E.: *The source of toxins in intestinal autointoxication.* *Deutsch. med. Wochenschr.*, v. 68, p. 133, 1942.

The origin of toxic substances in the intestinal contents is considered. For the main part, these arise from protein ingested or secreted. Proteoses, amines, amino acids, organic acids, phenols, NH₃, and H₂S are among the toxic constituents formed in the gut. — Courtesy Biological Abstract.

TRIA, AND FABRIANI, G.: *The mineral content of human pancreatic juice.* *Atti acad. Italia, Rend. classe sci. fisial. nat.*, v. 2, p. 381, 1941.

The concentration of various substances in human pancreatic juice is reported in millimols per liter: Chloride 69.0, sulphate 4.2, phosphate 0.013, sodium 90.18, potassium 2.6, calcium 0.7, magnesium 4.14, acids 73.12, bases 93.62.

—Courtesy Biological Abstracts.

TRUB, C. L. P., AND MULLER, R.: *Poisoning in humans by dyes in foods.* *Hyg. Infektionskrank.*, v. 124, p. 83, 1942.

A large number of persons showed gastrointestinal symptoms for two or three days after eating meals seasoned with a powder that was stained. Apparently these stains — Sudan I, Sudan red G, Sudan brown B, and Zementrat VIII — are toxic. — Courtesy Biological Abstracts.

HERSH, A., WOODBURY, F. T., AND BIEMAN, W.: *Influence of heat and cold on the temperature of mouth tissues.* *Arch. Phys. Therap.*, v. 24, p. 219, April, 1943.

The different regions of the normal mouth differ in their normal temperature. These studies were carried out on the buccal mucosa and on the alveolar temperature.

Conductive heat was applied to the cheek. The temperature of the buccal mucosa rose 1.75 degrees F. When cold was applied to the cheek the temperature fell 11.7 degrees. Radiant heat from a 260 watt carbon filament lamp caused a rise of 0.98 degrees.

The alveolar temperature was not altered when conductive heat or cold was applied to the surface of the cheek. Ice placed directly to the gingiva lowered the alveolar temperature by 6.2 degrees. Short-wave current applied by air-spaced electrodes held on the opposite side of the face influenced the alveolar temperature very little. The alveolar temperature was influenced even less when the short-wave current was applied directly to the gingiva. — Carmela Foderaro.

WALKER, FLORENCE: *The effect of caffeine and coffee extracts on the activity of the digestive enzymes.* *Am. J. Physiol.*, v. 139, p. 343, July, 1943.

Coffee in concentrations of 20 and 40 mg. per cent was found to be without effect on the ability of fresh saliva and pancreatic amylase (commercial pancreatin) to digest starch; the digestion of casein by pepsin and trypsin was not affected; and no influence on the lyolytic activity of pancreatic lipase was noted. — M. H. F. Friedman.

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STOKVIS, B. AND NAEREROUT: *The forensic medical significance of hunger.* (*Acta. Med. Scand.* v. 100, p. 35, 1939.)

In general the experimental condition of hunger usually results in a lowering of the blood sugar content and causes a general degradation and greater instability of consciousness. It depends on a certain relationship between the lowering of the blood pressure and the lowering of consciousness. The general lowering of the degree of consciousness, as may also occur in normal persons during a hunger period, must be remembered in the psychiatric examination of delinquents, who under conditions of hunger have committed crimes for which no amnesia exists.—Courtesy Biological Abstracts.

* * * * *
KANEMATSU, S.: *The Relation of Diet to the Development of Gastric Lesions in the Rat.* *Cancer Res.*, 770, 11 (November 1942).

Many attempts have been made to produce experimentally gastric cancer in animals. Successful results were obtained only with some limitations: rats were used exclusively and hence conclusions can be applied only to this animal; the tumors obtained were mostly papillomas of the forestomach (rumen) and no true carcinomas; many of the animals died rather early in the course of the experiments. One fact resulted however rather strikingly, namely, that the incidence of the gastric lesions was definitely related to dietary deficiency. In the present investigation a mechanical irritant was combined with a deficient diet and their combined blastogenic effect was studied. Polished rice with the addition of kieselguhr was fed to young albino rats. Though kieselguhr enhanced definitely the action of the polished rice diet (95% of animals showed gastric lesions against 57% in a group fed with polished rice only) no carcinomas were produced. The only lesions found were nodules of epithelial hyperplasia and hyperkeratosis of the forestomach without signs of malignant change. Quite frequently diffuse hemorrhages in the glandular portion of the stomach were found.

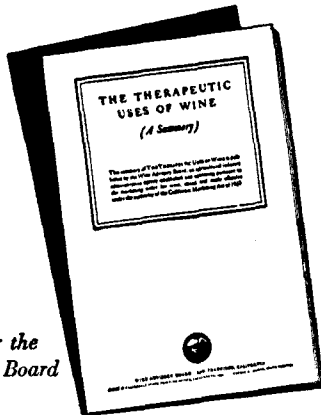
CONNOTATIONS

By
H. J. SIMS

DENVER, COLORADO

Meuse of Venice in 1495 first wrote upon the subject of nephroptosis. Francis Pedemontanus in 1581 removed a movable kidney. Riolan in 1682 recognized a similar case and considered renal calculi in tumors as a probable cause. Gilmore in 1870 and Martin in 1878 did nephrectomies for wandering kidneys. Gilmore's patient was 5 months pregnant and represented the second deliberate nephrectomy and the first kidney operation during pregnancy. Martin popularized nephrectomy for a movable kidney. In 1841 Rayer described 7 cases and discussed the anatomy, physiology, diagnosis and treatment of the anomaly. He observed that relief from the symptoms could be obtained by rest in bed and the use of a pad or belt to support the abdomen. In 1859 Dietl described his

FACTS DOCTORS SHOULD HAVE ON THE ACTIONS OF WINE



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An entire generation of physicians lost touch with the medical lore of wine in the United States following the first World War. Actually, however, few other substances have been as widely recommended. This monograph, which summarizes the pertinent scientific literature in the interest that fact be separated from folklore by the application of impartial analysis, will prove of interest and value to specialists in many fields, and to the general practitioner as well.

A section on wine as a food is included. The actions of wine on the gastro-intestinal system, the cardio-vascular system, the genito-urinary system, the nervous system and the muscles, and the respiratory system are discussed. The uses of wine in diabetes mellitus, in acute infectious diseases and in treatment of the aged and convalescent are dealt with. There is a section on the value of wine as a vehicle for medication. Also an important section on the contraindications to the use of wine. Those who wish to pursue the subject further will find an extensive bibliography.

This review results from a study supported by the Wine Advisory Board, an agricultural industry administrative agency established under the California Marketing Act, and has been sponsored by the Society of Medical Friends of Wine.

Members of the medical profession are invited to write for this monograph. Requests should be made to the Wine Advisory Board, 85 Second Street, San Francisco.



symptom complex referred to as Dietl's crisis. Shede in Germany, Albarran in France, Morris in England, and Edebohls and Kelly in America, became enthusiastic and suspended a kidney with the slightest indication. Glenard in 1885 and Israel in 1900 and later Tuffier in part convinced the profession that nephrotosis represented a counterpart of visceroptosis. Warer and Rugh devised adhesive plaster abdominal support. Almost every conceivable anatomical fixation has been attempted. Hahn on April 10, 1881, performed the first nephropexy. He suspended the kidney by passing sutures through the fatty capsule and the external wound. He called the procedure nephroraphy. Bassini of Italy on July 27, 1832; Weir of America in November, 1872; Newman of England on March 29, 1883, and Basy of France in 1899, carried out the same procedure in their respective countries.

* * * *

The mechanism of labor was first considered by Deventer in 1701.

Hunter in 1774 wrote a manuscript on the pregnant uterus.

Smellie in 1774 introduced the steel-lock obstetric forcep. In 1751 he presented a curved forcep. His text published in 1752 differentiated between a normal and a contracted pelvis. In addition he mentioned the indications for the use of forceps.

Crede in 1854 described his method of placental delivery. Smellie, his son-in-law, improvised a manikin for teaching the mechanism of labor. Foster in 1781 and Dease in 1783 utilized the same method of demonstration.

* * * *

King in 1816 operated for abdominal pregnancy. Mother and baby survived. The operation consisted of incising the vaginal wall and the application of forceps. Prevost, writing in 1835, stated he had executed 4 casesarian sections with 3 deaths. Baynham in 1809 reported having twice observed extrauterine pregnancy. King in 1818 published the first book on the subject of ectopic pregnancy. Lambert in 1830 was the first in America to successfully perform a casearian section in America. Gibson in 1835 reported having twice performed this operation on the same patient with success.

* * * *

In 1896 MacIntyre of Glasgow obtained a skiagraph of a renal stone. Swain of Bristol, England in 1897, and Thyre of Australia in the same year repeated the procedure. In 1898 both McArthur and Vivan reported the fourth and fifth successful cases. Abbe in 1899 collected 25 cases from the literature and Leonard in 1900 was able to collect a total of 36 cases in which a positive diagnosis had been made by the use of the X-ray.

* * * *


Houston of Edinburgh in 1701 tapped an ovarian cyst believing the condition was abdominal ascites. This case report is frequently referred to as the first ovariectomy. Hunter in 1757 proposed excision for ovarian cysts. Pean (1830-1898) and Koeberle in 1862 performed the first ovariectomies in France. Clagen (1801-1893) and Wells (1818-1897) intro-

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duced the method in England. McDowell in 1809 performed the first ovariectomy. Lizar of Edinburgh, who had fallen heir to McDowell's notes, published in 1825 a book on "Observations on Extraction of Diseased Ovaries." Smith in 1821, unaware of McDowell's operation, repeated the operation. The Atlee brothers performed the operation 451 times between the years 1843-1883. Thomas in 1870 was the first to perform a vaginal ovariectomy. Batley in 1872 executed an oophrectomy for the relief of dysmenorrhea and neurosis. Trenholme, Hegar, and Tait utilized this method for treatment of fibroid tumors.

* * * *

John Bell, a pioneer of vascular surgery, wrote a text on the anatomy of the human body. In 1795 his discourses on the nature and cure of wounds was published. In 1801 his book on principles of surgery was presented. Through the efforts of John Gregory, he was eliminated from the staff of the Royal Infirmary.

The first colostomy was performed by Maydl in 1888. Volkmann in 1878, and Kraske in 1888 excised the rectum for cancer. Physick in 1826 described his operation for artificial anus and in 1836 described diverticula of the rectum.

Regner de Graaf in 1664 studied the nature of pancreatic secretion. He described his method of collecting the secretion by the establishment of a pancreatic fistula. Malpighi antedated de Graaf with his work. In 1914 Brodie wrote an article on the influence of the pneumogastric nerve on the secretions of the stomach.

* * * *

Valsalva in 1717, Costungo in 1774, Geoffrey in 1778, and Coporetti in 1789 wrote articles on the physiology and structure of the ear. Scarpa discovered the membranous labyrinth. Catheterization of the eustachian tube was first attempted by Guyot in 1724. Cleland in 1741 repeated the procedure. Wathen in 1755 proposed injecting solutions into the tube through the nose in the treatment of deafness. Morgagni (1782-1771) was the first to show that intracranial suppuration might result from disease of the ear. An opposite view was taught by Valsalva. Petit in 1774 described opening the mastoid process. Schultze in 1866 described the nerve endings of the sense organs in the internal ear, nose and eyes.

Cheselden in 1728 introduced an operation for artificial pupil. Hollaran's treatise on glaucoma appeared in 1750. Elliott in 1909 introduced sclerocorneal trephining for glaucoma. Lagrange and Herbert, Robertson, Blanco and Freeland previously suggested the procedure. Zinn in 1753 wrote an article on the ciliary ligaments. Young in 1793 gave the first description of astigmatism and measurements of optical constants. During the years (1801-1803) he propounded the wave theory of light. In addition he proved that visual accommodation depended upon the curvature of the crystalline lens. Granular conjunctiva was mentioned by Larry, whose writings appeared in 1802. Guthrie in 1812 published a text on surgery of the eye and in 1823 he presented a manuscript on artificial pupil.