hours after meals, which increases to a severe gastralgia which is only relieved by vomiting. There is often anorexia, flatulence, and intestinal disturbances. These patients frequently give the history of having taken a vast array of drugs for an alleged disorder of the liver. It has been found and is illustrated in several of the following cases that loss of gastric secretion predisposes to diarrhea and intestinal catarrhs, which are not benefited until the gastric defect is discovered, when rational treatment effects improvement. These diarrheas are probably due to fermentative processes developed in the absence of hydrochloric acid secretion and dependent upon the lack of its antiseptic effects.

In the treatment of the condition, hydrochloric acid given after meals is of the first importance. Its action is threefold: First, it supplements the digestion of proteids in the stomach; second, it acts as an antiseptic; third, it is a tonic and stomachic. It has been questioned whether enough hydrochloric acid can be taken by the mouth to make up the gastric deficit. One hundred drops of dilute hydrochloric acid digest only four drams of egg albumen. Notwithstanding this doubt and theoretical objection it takes but a brief clinical experience to observe the remarkably good results from the administration of the acid even in comparatively small doses. For a full consideration of this subject see "Aclylia Gastriea," in Hemmeter's "Diseases of the Stomach."

Case I. March 20.—Mr. U., 62 years old. Every two or three days, vomits after a meal. Bowels are constipated for two or three days and then there is diarrhea for several days. The trouble has lasted five or six years. Examination.—Stomach on inflation with CO_2. is not found to be enlarged. After the double test meal of Salzer, hydrochloric cannot be detected by the delicate test with dimethyl-amido-azo-benzol. There is no acidity with litmus. The total acidity using phenolphthalin as an indicator is 10°. Ordered teeth to be cleaned and attended to by dentist. Ordered diluted hydrochloric acid 20 gtt. after meals. March 31. Feels well, no diarrhea, no vomiting. Has continued well since.

Case II. April 7.—Miss V., 26 years old. Complains of vomiting supper five or six hours after taking it. Appetite fair. No flatulence nor eructations. Bowels regular. Examination—Stomach on inflation is normal in size. After double test meal, hydrochloric acid is found to be absent. Total acidity is 25°. Egg and meat of morning meal is not yet digested. Ordered 10 m. dilute hydrochloric acid after meals. April 15. Feels perfectly well. No trouble with stomach. Good appetite. April 22. Says she is cured. Analysis since shows continued absence of hydrochloric acid.

Case III. April 19.—Mr. W., age 49 years. Complains of a sense of weight in stomach and a pain in epigastrium; poor appetite; waterbrash; frequently bloats; never vomits; bowels regular. Has had to quit work. For last 11 years has been under treatment for disorder of stomach and liver and has complained of symptoms similar to these. Examination—Lower border of stomach on inflation at level of umbilicus. After double test meal a fair amount of chyme expressed. A small amount of egg and meat still undigested. Chyme consists mostly of bread and water. Hydrochloric acid absent. Total acidity 10°. Ordered 10 gtt. of dilute hydrochloric acid after meals. March 4. Is much improved. No more pain in abdomen nor back. Has gained five pounds. Analysis of stomach contents shows absence of hydrochloric acid and there is no acidity by litmus. Returns to work, taking 40 gtt. of dilute hydrochloric acid after meals.

Case IV. May 9.—Mr. X., age 51 years. Complains of excessive secretion of saliva. Anorexia; constipation; indefinite distress in stomach. Examination—Stomach contents withdrawn after Ewald's test breakfast. Considerable mucus present. Hydrochloric acid absent. Total acidity 10°. Litmus shows slight acidity. Lactic acid absent. Ordered XX gtt. dilute hydrochloric acid after meals. May 26. Weight has increased 10 pounds. Has no complaints. At last report he is feeling well as long as he takes the acid regularly.

Case V.—Mrs. Y. has had a diarrhea for two weeks, which is not checked by large doses of Bismuth subnitrate. Necessary to give morphin to stop the frequent evacuations. Complains of distress in epigastrium. Examination—After test breakfast hydrochloric acid is absent. Total acidity 45°. Ordered a mixture of Betanaphtol-bismuth and resorcin with 20m. of dilute hydrochloric acid after meals. Recovery from diarrhea complete.

Case VI. June 9.—Mrs. Z., age 41. Complains of pain and tenderness in epigastrium; vomits occasionally after meals; constipated. Has lost 14 pounds in six weeks, weight now 150. Trouble began six weeks ago, like an attack of biliousness. Examination—Stomach being inflated with CO_2 its lower border reaches 1½ inches below umbilicus. After double test meal hydrochloric acid is absent. Hemoglobin percentage is 50. Urine shows a slight excess of indican. Ordered 20 gtt. dilute hydrochloric acid after meals. Fluid ext. cascara for the constipation. July 1. Much improved, but complains of occasional biliousness. Ordered 40 gtt. dilute hydrochloric acid after meals. Aug. 25. No longer has any pain in stomach nor nausea, but complains of not getting strong, of feeling drowsy, bad taste in mouth and having to continue cascara. Examination—Hb. 65 per cent.R, B. C. 3,000,000 per cmm. After double test meal some meat, egg and coagulated milk still undigested. Hydrochloric acid absent. Lactic acid present. Total acidity 25°. Treatment—Continue hydrochloric acid with addition of iron for the anemia, and strychnia.

PUERPERAL SEPTICEMIA.*

By R. A. WHIFFIN, M. D., San Jose.

THIS subject has recently been brought so strongly to our notice that it seems to me a short paper to bring it before us for discussion will be pertinent at this time.

This is a disease that has probably existed almost as long as the human race, yet one that has not been understood until comparatively recent times. Dr. Oliver Wendell Holmes in 1843 made a strong plea for care in attending cases of confinement after attending autopsies or cases of erysipelas, but it fell to the lot of Semmelweis of Vienna, in 1847, to discover that what Dr. Holmes suspected was a fact, and to him we owe our first real knowledge of the causes of puerperal septicemia. It was not exactly an

* Read before the Santa Clara County Medical Society.

accidental discovery, but was made by comparing the symptoms of the fatal illness of Prof. Koletchka of Vienna, which illness was caused by a wound he received while dissecting, with those of puerperal septicemia, which they resembled. This resemblance made Semmelweis think there might be a connection between the two diseases, and to prove it he made all his students who were working in the dissecting room wash their hands in chlorine water before examining a pregnant woman, and by so doing reduced the mortality from septicemia among women confined by his students from 11.4 per cent to 1.27 per cent, which was certainly proof that unclean hands carried the disease. Without knowing it Semmelweis anticipated Lister and Pasteur in practical antisepsis. It was a long time before Semmelweis' ideas received much credence, but they have been gradually elaborated until at the present time we know that puerperal septicemia is caused by an infection with some microörganism, almost always from outside the uterus or vagina.

The actual cause of septicemia is the toxins elaborated by the microörganisms which infect the abraded surfaces and develop in the secretions and detritus left after childbirth. A number of bacteria can cause the disease; chief among the offenders are the staphylococcus pyogenes aureus and streptococcus pyogenes, and occasionally diphtheria or colon bacilli may be the cause; any pathogenic microörganism may cause the disease, although the infections by different microbes no doubt cause different degrees of severity of the disease. When we speak of one form of microorganism being the cause, I think we must consider the predominating microörganism, as there is no doubt very seldom a case caused by one microörganism alone.

The pathology is not very lengthy. When the bacteria once get inside the uterus they find conditions that are unsurpassed for development; the secretions are profuse and there may be a few shreds of membrane or a small piece of retained placenta which, with the heat and moisture, make excellent culture media. They develop rapidly, elaborating their poisons, which are as rapidly absorbed by the abundant blood vessels and lymphatics in the walls of the uterus and vagina. On the surface where the placenta has been removed and on the surface of any abrasions along the parturient canal may be found ruptured blood vessels and lymphatics; into these the bacteria advance, thus getting into the general circulation to be carried to other parts of the body. Those taken up by the lymphatics are more liable to lodge somewhere in the pelvis, causing cellulitis; those getting into the blood vessels by passing through the general circulation may form abscesses in any part of the body. In some cases we apparently have only the poisons absorbed from the uterus, resulting in a comparatively mild disease as there is only the one factory for toxins; when other abscesses occur we have several factories making toxins. In the very virulent cases where death occurs there is very little pathology; in fact, outside of the infection and inflammation of the uterus there is only to be found a beginning fatty degeneration of all the organs of the body; when the disease lasts for several days or weeks we usually have septicemia and pyemia combined, or, as it has been called, septico-pyemia, with abscesses outside of the uterus as well as general fatty degeneration. If the patient recovers we frequently find abscesses in the cellular tissue of the pelvis, or tubular or ovarian abscesses.

Passing over the symptoms, which can be read in the text-books, I will give you some of the methods of treatment which should most interest us as practical physicians and surgeons. The first thing we think of when a chill occurs or the temperature creeps up, is that there is some absorption from the vagina and we try a few vaginal douches; this, of course, providing we can find no other absolute cause for the chill or temperature. If the vaginal douches fail to accomplish a reduction of temperature and other symptoms of toxemia arise, the next thing is to douche the uterus; if that accomplishes our end we do no more, but if not, the patient is put under an anesthetic and a thorough curetting of the uterus done with a dull curette, giving a douche at the same time. Here is where a difference of opinion occurs; some surgeons believe in not packing the uterus at all after curetting, others in packing with plain gauze, which seems to me the most rational, while others use iodoform gauze, which I object to on account of the possibility of iodoform poisoning. Dr. Ochsner of Chicago packs with gauze saturated with alcohol, a treatment I have never seen used. Any of these packings should be removed in 8 to 12 hours and the uterus douched; in some cases repacking may be done, but I have thought that the best results were obtained by douching the uterus every 12 to 4 hours; in the treatment used by Dr. Ochsner, he repacks with gauze saturated with alcohol and keeps the patient in as near absolute rest as possible. He believes that absolute rest in all inflammations is a necessity in order to obtain the best results. Solutions for douching may be normal saline solution, lysol 2½ per cent, bichlorid of mercury 1-10,000 to 1-5000, or carbolic acid 2 per cent to 5 per cent. I prefer the solution of bichlorid of mercury, followed by normal saline solution until I see some slight symptoms of mercury poisoning, then changing to lysol. The lysol solution is more soothing to the patient. As to the quantity of solution necessary for each douche, I prefer

about four quarts, with the syringe or irrigator hung very low so as to make very little pressure and have the douche last from fifteen to twenty minutes. I think it is not advisable to leave any antiseptic solution in the uterus, as in its lax condition it will retain some, I make a practice of following mercury, lysol or carbolic acid irrigations with about two quarts normal saline solution.

We hear a great deal about antitoxins and the use of anti-streptococcus serum. To my mind there is no doubt of the value of anti-streptococcus serum if we can prove that the streptococcus is the offending microörganism, but that is something the general practitioner cannot often prove, and in fact, we are more apt to have a mixed infection. If we have a membranous condition present and a culture develops diphtheria bacilli in a few hours, we should certainly use anti-diphtheritic serum, but it would not be right to stop other treatment and depend entirely on the serum as we might have other infection as well. I don't want to be misunderstood in regard to serums, for I have great faith in them where we can prove that they are applicable; I simply want to carry the impression that it would be harder to prove the streptococcus to be the cause of severe symptoms than to prove the presence of diphtheria when a membrane is present. If we give anti-streptococcus serum I think we do so more as a precautionary measure than with a feeling of certainty that we are going to counteract a streptococcus infection. The use of formalin solutions which was loudly heralded a short time ago, seems not to be a practical treatment.

Sustaining treatment is of great importance and as usual, in cases of fever, we put the patient on a liquid diet, furnishing as much nourishment as possible with the least effort on the part of the digestive organs. Whiskey, with some physicians, has been a sort of sheet anchor in suppurative cases for a long time and does a great deal of good, but I prefer a nourishing diet and such stimulants as strychnin and nitroglycerin. I also think that an infusion of normal saline solution occasionally does a great deal toward diluting the toxins and helping the system to throw them off. Any other treatment would be for the relief of symptoms as they arise.

More important than treatment is prophylaxis; we, as physicians and surgeons should use every means in our power to have our obstetrical patients cared for in a cleanly manner, as near aseptic as possible, making the surroundings the best that circumstances will permit and leaving nothing undone by ourselves in the way of sterilizing our hands and instruments. It is seldom that we do not have time to prepare for taking care of our patients and there is always plenty of soap and water to be obtained for the asking. The vigorous use of that same soap and water and a good brush will save us a great deal of trouble and no doubt save some lives, although we may not be aware of it at the time. I wish to protest against the somewhat general idea that a little antiseptic solution to wash the hands in is sufficient; the hands should be thoroughly scrubbed with a brush and soap before using an antiseptic solution, and if the soap and brush are properly used I think the antiseptic solutions as usually used are little aid to antisepsis, but more of a show. I therefore make my plea for a more thorough use of soap and water and a good stiff brush. Running water is preferable.

A society for the study of tropical medicine has been organized at Philadelphia, with Dr. Thomas H. Fenton as president, and Dr. Joseph McFarland as secretary.

An appointment as assistant demonstrator of physiology in the Medical Department of the University of Pennsylvania is open for applications. The appointee will devote his mornings to laboratory teaching, his afternoons to research, and will receive a salary of $500.—*Science.*

NOTE: As there will undoubtedly be a great many applicants for a position carrying such a munificent salary, "call early and avoid the rush."

INTERESTING BULLETIN.

Studies of the Food Value of Fruit at the University of California; a bulletin (No. 473) of the Dept. of Agriculture, compiled from the experimental work of Prof. M. E. Jaffa, U. C.

"The cost of the fruitarian diet per person per day varied from 18 to 46 cents, values which compare favorably with those found for an ordinary mixed diet.

"Although it is undoubtedly advisable to wait until more data have been gathered before making definite statements regarding the digestibility of different fruits and nuts, enough work has been done to show that they are quite thoroughly digested and have a much higher nutritive value than is popularly attributed to them. In view of this it is certainly an error to consider nuts merely as an accessory to an already heavy meal and to regard fruit merely as something of value for its pleasant flavor or for its hygienic or medicinal virtues.

"As shown by their composition and digestibility, both fruit and nuts can be favorably compared with other and more common foods. As sources of carbohydrates, fruits at ordinary prices are not expensive; and as sources of protein and fat, nuts at usual prices are reasonable foods.

"In the investigations at the University of California the question of the wholesomeness of a long-continued diet of fruit and nuts is not taken up. The agreement of one food or another with any person is frequently more or less a matter of personal idiosyncrasy, but it seems fair to say that those with whom nuts and fruits agree can, if they desire, readily secure a considerable part of their nutritive material from such sources."