show an absolutely healthy pancreas, yet it occurs often with chronic interacinous pancreatitis. Diabetes is closely related to destructive lesions of the islands of Langerhans, especially with hyaline changes and interacinous pancreatitis. In diabetes the number of islands may be diminished and the pancreas be nearly always atrophied. Arterial sclerosis accompanies many cases of diabetes; also, acromegaly may accompany diabetes. It is occasionally associated with tabes. The celiac ganglion is atrophic in this disease. (Orth.) Neuroretinitis is very common and there may be hemorrhages in the retina and opacities in the vitreous. The most usual change is a thickening and congestion of the membrane. The blood generally appears normal, but contains an increased amount of glycogen and may be loaded with finely divided fat which floats on the surface in a cream-like layer. There may be lipemic clots in the vessels. Fat embolism of the pulmonary vessels has been described. The myocardium is pale and soft; rarely it may be hypertrophied. Advanced fatty degeneration of the muscular fibers is the characteristic change in long-standing cases of diabetes. Croupous pneumonia and bronchopneumonia, chronic interstitial pneumonia and tuberculosis are common complications; many of them terminate in gangrene.

"The lung may soften (malacia) and, becoming mixed with stomach secretions post-mortem, form the so-called *pneumomalacia acida*. It has a sour but not a gangrenous odor. The spleen is usually small, pale and soft, but may be enlarged and congested. Diffuse nephritis with fatty degeneration, and frequently glycogenic degeneration, most marked in the pyramids, may occur. Boils, carbuncles, onychia, eczema and gangrene of the extremities are common. The liver is usually enlarged, often congested, abnormally firm to the touch and gives the glycogen reaction; fatty degeneration is common. Do not mistake diabetes mellitus for alcaptonuria; in the latter disease pigmentation of the cartilages or ochronosis may occur. Some alcaptonurics do not show ochronosis, but thus far all the cases of ochronosis exhibit alcaptonuric changes in the urine.

"Established facts concerning diabetes: (1) Considerably more than one half of all cases are due to a destructive disease of the pancreas. (2) When due to disease of the pancreas, injury to the islands is responsible for the disturbance of metabolism in the carbohydrates. (3) Common lesions injuring the islands are chronic interacinous inflammation and hyaline degeneration. (4) Other lesions of the pancreas do not attack the islands of Langerhans, but produce diabetes by destroying the interacinous islands along with the secreting parenchyma. (Opie.) According to the experiments of Sauerback upon guinea-pigs, total extirpation of the pancreas or the tying of its secretory duct gives rise to atrophy of the islands of Langerhans and the subsequent development of diabetes.

"The Bremer-Williamson reaction of diabetic blood may be obtained a considerable time after death; the procedure is as follows: 40 cmm. of

water are placed in a small narrow test tube; to this are added 20 cmm. of blood, 1 cmm. of a 1:6,000 aqueous solution of methylene blue and 40 cmm. of liquor potassæ. The test tube is placed in water for four minutes, at the end of which time, if the blood is diabetic, the blue color will have disappeared and a dirty green color will have taken its place. Williamson obtained the reaction in 43 cases of diabetes tested and thinks it is due to an increase of glucose in the blood. The reaction is of special value in coma where urine cannot be obtained."

Clinical Department.

CASE OF POISONING BY MERCURIC BICHLORIDE.*

BY J. WINTHROP SPOONER, M.D.,
Medical Examiner of Hingham, Mass.

Mrs. D., aged twenty-one, married, mother of two children, had been through a very trying experience with her husband about two years ago. The husband is now an inmate of one of the state insane hospitals, an incurable. She had at the time of her death recovered from the melancholia of two years ago and was as bright and cheerful as could be expected. As her mother stated, she had had sufficient trouble to lead to suicide, but she had lived it down.

She had been subject to headaches for a long time, and when these were very severe had resorted to headache powders for relief.

On the morning of Nov. 9, 1908, she had been preparing her little daughter to make a visit on the child's aunt. She had complained of headache, and finally told her sister, who was with her, that she must take a headache powder or tablet. She went upstairs with this intention, but was gone so long that the sister sent for her. Mrs. D. came downstairs looking very pale and sick. She said that she had never taken a headache powder which tasted so queerly or made her so sick, and said she must have taken the wrong medicine. Her aunt, who lived next door, was summoned, and she gave her mustard and water. She vomited very soon. She had previously vomited a watery fluid. A second emetic was given, but produced no emesis. Strong coffee was given, which she was unable to swallow. In the meantime the aunt had called the doctors from Hull, Hingham and Cohasset, but could get none of them. She died a little more than an hour after taking the fatal dose.

Autopsy at 9 A.M., Nov. 11, 1908.

Dr. Gilman Osgood, of Rockland, rendered valuable assistance, and Dr. W. H. Sturgis, of Hull, was also present. The stomach and lower part of the esophagus were placed in clean jars, together with sections of the liver, spleen and one kidney, and submitted to Dr. W. F. Whitney for examination.

In the section of the esophagus were found a number of pieces of a white chalky substance, the largest about a quarter of an inch in diameter, which resembled a broken tablet. There was a marked congestion of the lungs, heart, liver, spleen, kidneys and brain, but no structural change. The uterus was functioning.

Dr. Whitney reported that he found sufficient corrosive sublimate to cause death. "From this it appears that she must have taken a corrosive sublimate tablet instead of a headache powder."

* Read before the Massachusetts Medico-Legal Society, Feb. 3, 1909.

A thorough search of the house failed to disclose any tablets or powders or receptacles for the same. Mrs. D.'s aunt said she had some headache powders, which she got on a physician's prescription, and she had at different times given a single powder to her niece, but she had had none for several months. Mrs. D. last summer worked in a general store at Nantasket where they sold headache powder and various tablets, so that she was in the habit of handling these articles. She was a very careless, heedless person in some respects, childish, as her aunt stated. Considering her character as described, and the absence of any cause for suicide, the cause of death was returned as accidental poisoning by mercuric bichloride.

REPORT OF CASE OF CORROSIVE SUBLIMATE POISONING.*

BY FRED E. JONES, M.D., QUINCY, MASS.

ON Feb. 6, 1907, at 7.30 A.M., Annie C. L., aged seventeen years, rugged, healthy, happy dispositioned, of Swedish-American descent, weighing about 115 lb. and five feet six inches in height, was found sitting on the floor of her room and leaning against her bed.

Her eyes were fixed and staring, her face had a purple tinge, and, although motionless, she was apparently suffering severely. She was nauseated and was coughing and expectorating a small amount of blood-flecked mucus and saliva. She said, or intimated, that she had a pain in her stomach, otherwise wouldn't or couldn't answer questions. A small amount of brandy was administered, but probably none of it was swallowed. She died in less than five minutes after being found in her room. At about 7.15 A.M. she was playing joyfully with a pup on a couch in the kitchen, so that less than twenty-five minutes had elapsed before she was dead. Having been carefully observed up to this time, she had taken no food or drink that morning, and was romping with her usual exuberance of spirits.

An examination of her stomach contents by Dr. William F. Whitney revealed mercury in moderate amount. A bottle of corrosive sublimate tablets was found in a bureau drawer in an adjoining room.

One interesting feature in regard to this case was that the manner of administration of the poison was not discovered; another, that the medical examiner received no notice of the case, except accidentally, after an autopsy was held, and another, that death took place in a much shorter time than in any other case reported, known to me.

DISCUSSION.

DR. WILLIAM F. WHITNEY: The cases of Drs. Jones and Spooner are clinically interesting because of the extreme rapidity of fatal action. This was due largely to the fact that the stomach was empty; hence there was no food to furnish an albuminous substance to combine with the mercury to render it insoluble, nor to interfere mechanically with its ready absorption.

In Dr. Jones's case the poison seems to have acted directly upon the nervous system as a depressant rather than as a local irritant. Yet this latter action was manifested in the intense injection of the blood vessels of the stomach and kidneys. This was evident to the eye, and microscopically the small vessels seemed almost bursting they were so overfilled with blood.

In Dr. Spooner's case it is interesting to note that portions of the tablets were still retained in the lower part of the esophagus in spite of vomiting.

* Read before the Massachusetts Medico-Legal Society, Feb. 3, 1909.

In both cases the detection of the poison was very easy, as the clinical symptoms pointed to one of the acute irritant poisons, at the head of which stand arsenic, mercury and antimony; a Reinsch test was made.

A portion of the stomach wall and adherent contents were placed in a crucible containing water strongly acidulated with hydrochloric acid and boiled together with a strip of bright copper foil. A silvery metallic deposit was formed on the surface of the copper within a few minutes. The piece of foil was then dried between filter paper and introduced into a short piece of small glass tube closed at one end, and gently heated. The deposit was sublimated from it and was again deposited on the cooler parts of the tube in minute glistening metallic drops, easily recognized as such with the microscope. As a confirmatory test, a minute fragment of iodine was dropped into the tube and gently heated. It volatilized and combined directly with the mercury, forming the iodide of mercury, recognized by its deep-red color.

As neither of the cases came to court, no quantitative determination was made. Even if they had, it was not necessary to recover a poisonous dose from the body. For it can well be the fact that only the smallest amount sufficient to kill had been administered, and to effect its work that amount, say 5 gr., was scattered far and wide throughout the body. What comes into the hands of the chemist is but a tithe of this, and if he can show the presence of poison, more than the slightest trace, it is fair presumptive evidence that death was due to poison.

This is rendered almost positive when the autopsy shows only lesions in the organs of the body which are consistent with its known actions.

REPORT OF A CASE OF DEATH FROM H.M.C. ANESTHESIA.*

BY JOHN H. GIFFORD, M.D., FALL RIVER, MASS.

I was called on the evening of Aug. 25, 1908, to investigate the cause of death of Mrs. I. L., residing on East Main Street, Fall River. I arrived at 9.15 P.M. The statement of the husband was as follows: The family comprised himself, his wife and three children, aged six years, three years and fourteen months. His wife had menstruated as usual July 6, since which he had no sexual intercourse with her. Up to that date she wore a cervical pessary for preventing conception, introduced by Dr. H. About July 17 she began vomiting and went to consult Dr. C., but he was not at home, so she went elsewhere; he supposed to Dr. H.

She had no discharge prior to this visit, but later flowed one and one-half days, since which time there had been no discharge. Her husband produced some chocolate-coated tablets, apparently an emmenagogue, in the envelope of a local druggist, without written directions. She had taken some of these. He also stated that Dr. H. had introduced the pessary every month to prevent conception. He went with his wife to see Dr. H. Aug. 23. The doctor examined her then, but not in the presence of the husband, and said he would do an operation two days later.

He said he would use morphine, but did not say chloroform. He came home about 3 P.M., Aug. 25, the day appointed for the operation, and found that Dr. H. had already been there and injected morphine, and that his wife was then dizzy. The doctor came half or three quarters of an hour later with a district nurse from the hospital. More morphine was given. Later,

* Read before the Massachusetts Medico-Legal Society, Feb. 3, 1909.