

seventy feet from the road leading from the village of Shelburne Falls over Crittenden Hill, and about one-fourth of a mile from any dwelling.

"I identified the body as that of Mrs. Hattie E. McCloud. External appearances were as follows: Hair, tangled and filled with broken leaves, was drawn out loose above her head. Hat off, lying on the ground in good order about five or six feet above her head, toward the road. Outside garment a cape, buttoned around the neck. Hands dressed in black yarn gloves, clenched tightly by her sides. Feet dressed in cloth shoes, with rubber overshoes, and legs covered by her skirts to the knees. The face and lips were livid, with froth about the mouth. Eyes closed, mouth closed. On raising her skirts considerable whole and broken leaf matter was found adhering to the open knit drawers. The hands, face, feet and other external parts of the body were frozen. Red marks on front of throat, with abrasions of the skin over the larynx, upper part of the windpipe and under side of the chin.

"I ordered the body removed to the house of her father, George D. Crittenden, where an autopsy was made by myself, assisted by Dr. F. H. Zabriskie, at about two o'clock A. M., January 9, 1897, and witnessed by Benson Munyan, Edwin Baker, Wilfred Ball and William Johnson (undertaker). Wilfred Ball acted as clerk, and took notes at my dictation. Inspection of the body showed a livid face, ecchymosis of the lips and eyelids, dried frothy matter about the lips, abrasions and red marks about the front of the neck over the larynx and windpipe, with prints of a thumb and three fingers clearly outlined. The hair was tangled and filled with dry forest leaves. Clothing not torn or disarranged. Her open knit drawers were stained with blood at the opening, and sticking to the drawers about the thighs and legs, also in the hair of the genitals, were found dry forest leaves, most of them more or less broken up. The lips of the vulva were swollen and gaping, and dark blood was oozing from an abrasion at the entrance of the vaginal canal.

"On dissection of the neck the superficial veins were found much distended with dark fluid blood. The muscular tissue about the larynx and upper portion of the windpipe was stained with blood from capillary bleeding; the proper relations of the cartilages of the left side of the larynx disturbed, and the second and third rings of the windpipe broken in front. The lungs were filled with dark venous blood. The cavities of the right side of the heart were also filled with dark fluid blood, but the left auricle and ventricle were empty, and the organ and its vessels apparently healthy. The uterus and ovaries were normal. She was not menstruating. The blood-vessels of the brain were distended with dark venous blood; otherwise the brain was healthy.

"Matter stained with blood was removed by a teaspoon from different parts of the vaginal tract, and taken to Greenfield by Dr. Zabriskie for microscopical examination. The examination was made by Dr. Zabriskie, assisted by Mr. Frank B. Wells, an expert microscopist, with the following result: Semen with spermatozoa was found in the specimen taken from the upper part of the vagina, also much vaginal cell matter, a part of a leaf, and several bits of hair—the latter being found in the specimens taken from the lower portion of the vagina.

"Mrs. McCloud was thirty-seven years of age; had

been a widow six years; was well nourished and strong; of medium height, and weighed 145 pounds.

"My examination shows clearly that Mrs. McCloud died from strangulation by means of a hand upon her throat, and that sexual connection with her had taken place at or near the time of death."

This was dated at Shelburne Falls, January 12, 1897.

John O'Neil, Jr., a man twenty-eight years old, almost always out of work, and of gross habits of intemperance, very soon attracted notice and excited suspicion by his behavior—more especially by the free use of money in the saloons, which he was known not to have possessed before the evening of the homicide. He was arrested on the charge of murder January 12th, and the government at once set to work to make out their case against him on what proved to be wholly circumstantial evidence, which was only successful through the most able and carefully prepared work of the district attorney and those whom he called to his assistance.

Evidently the first hope of the defence was to show that the woman's death was not by violence, but that the cause and manner thereof were different from that claimed by the prosecution, or at least to throw doubts upon this claim; and to this purpose both the medical examiner and his assistant, Dr. Zabriskie, were subjected to a long and severe process of cross-examination. The government, by request of counsel for the defence, secured for them the services of Dr. Woodbridge, Professor of Anatomy and Physiology in Williams College, and a very able and successful practitioner of medicine at Williamstown; and it was under his advice and instructions that the cross-examinations were conducted at the trial.

Every step of our work was closely followed, and the order in which it was done, and every means possible put forth to weaken the force of the conclusions we had reached, both from gross appearances as well as from the microscopical examination.

On the third day the defence came into court, admitting the government's claim that a homicide and rape had been committed, and Professor Woodbridge went home. The trial lasted eight days; and though the prisoner was never located within an eighth of a mile of the spot where the body was found, and not any direct and positive evidence offered, yet the jury brought in a verdict of murder in the first degree within an hour after being charged by the judge.

CONTRECOUP; ITS RELATION TO INJURIES OF THE HEAD.¹

BY B. H. HARTWELL, M.D., AYER, MASS.

MUCH has been said by the older writers about injury to the skull by contrecoup, but it is probable that the skull is seldom fractured by force applied from the opposite side of the head, except those cases of fracture of the base from blows upon the vertex, and a large proportion of these are from radiation and not contrecoup. Aran found only four of the latter out of sixty, in which the base of the skull had been fractured, the others having radiated from the site of the blow. Charles Phelps states that 60 per cent. of severe injuries of the head involve fracture at the base, and a large majority of these are continuous

¹ Read before the Massachusetts Medico-Legal Society, October 6, 1897.

with fissures extending from the vertex. The character and extent of these injuries is so influenced by the nature of the blow, its rapidity, the instrument used, the position of the body and head, the variation in the density and thickness of the bone in different individuals that no rule can be formulated as to the amount of injury done by a given blow. Injuries to the brain from contrecoup are much more frequent, and it is desired to direct attention to lesions that are opposite to or more or less remote from the force applied, and which may appear minor in degree when only said force or the character of the injury is considered.

It is not infrequent that cases come under the notice of the Medical Examiner in which the local lesion is small in comparison to the brain injury and in the absence of cerebral symptoms have been treated by the medical attendant as simple contusion, or have received no treatment at all. These cases are of a good deal of interest to all medical observers, and in their medico-legal bearing are of great importance to us. They furnish additional proof that the answer to the question, "What cases shall be viewed by the Medical Examiner?" should be, "All cases where violence enters as a factor in the cause of death." By violence here is meant force from without, whether or not it appears plain at the time that it was at the hands of some person or persons. It is not difficult to understand how a blow upon a thickened portion of the skull in being disseminated over the head should fracture the bone on the opposite side, where the resistance is less, as in the case of our martyred President Lincoln, where the bullet entered the occipital bone and fractured the orbital of the opposite side, or in cases of fracture of the base of the skull from a blow upon the top of the head. But that a blow upon one part of the head should injure the brain at or near the opposite side without injury to the skull, either at the site of the blow or the brain lesion, is not so readily understood. Duret interprets these lesions by a certain elasticity of the cranial vault, and the pressure in the brain of the cerebro-spinal fluid, and has shown that the wave in this fluid created by a blow produces what is often its maximum effect on the opposite side of the head, tearing vessels of the pia and cortex.

We have abundant proof that the skull has a certain amount of elasticity. We know that the cerebro-spinal fluid extends from the lymph sheaths of the small cerebral arterioles into the spaces between the convolutions, thence into the large sacs, the largest four being near the fissures of Sylvius, at the base of the brain, the inferior portion of the spinal cord and below the cerebellum, this latter connecting through the foramen of Magendie with the fourth ventricle, thence by the *iter tertio ad quartum ventriculum* with the third and lateral ventricles. These anatomical points are necessary that we may understand the phenomena of concussion and explain disseminated cerebral contusion.

The following cases, briefly stated, will serve to illustrate:

C., colored, age thirty, large frame, well developed and muscular, was at work in a brick building when a brick fell and struck the top of his head to the left of the median line. He paid no attention to it at the time except to notice some dizziness and soreness at point of injury. There was contusion of the scalp, but no bleeding or separation of the parts. He con-

tinued to do some light work, but complained of headache and a feeling of easy fatigue. Four months afterwards he was found dead in bed, not having been seen for two days. He lived alone and had no medical attendant. There were no marks of violence upon the body. A slight scar was found at the point of the blow, but no injury of either external or internal tables of the skull. In the middle lobe of the brain, right side, about one-half inch from the base of the skull, was a spot of softening the size of an almond. It was of a soft creamy consistency and around it the brain substance was yellow in color. The rest of the brain was in a healthy condition and the other organs of the body showed no evidence of disease.

C. P., age sixty, was thrown violently upon the sidewalk by a large dog running in the opposite direction. He struck the outer portion of the left orbital ridge on the ice, cutting through the skin and causing a good deal of swelling and discoloration. He did not consult a physician. When seen four months afterwards, he gave a history of continuous pain from the time of the accident back of the right ear, though he had been attending to his usual duties. Temperature 101°, pulse 70, labored. He was put to bed and the unfavorable nature of the case explained. The rise of temperature continued for two weeks. Meanwhile almost complete paralysis of the left side developed, with delirium and stupor. Gradual improvement took place, and at the end of six months recovery was complete.

W. B., age fifty-three, was sitting in a chair in the rear car of a freight train, when the car was suddenly stopped by the setting of the brakes. He was tipped back, striking his head against a portion of the car. He got up, complained of pain in his head, became unconscious and died in eight hours. There was no bruise or mark upon the head, nor was the skull injured. Autopsy showed that the pons varolii had been torn, and in the softened places were small clots of black blood.

S., age twenty-eight, was struck on the left side of the head two inches from the median line. He lived forty hours. There was a stellate fracture extending to the base of the skull, but no depression of the bone. In the middle lobe of the brain, right side, under the pia mater, was a brown spot, size of a peanut, composed of broken-down brain tissue and blood from injured vessels. There was no fracture of the bone on right side, nor injury of the brain except at this spot.

Contrecoup is a factor in the causation of death in certain cases and is to be taken into consideration in all injuries of the head; and outside of medico-legal questions, if an operation is to be performed, the side to be opened is to be determined by cerebral localization rather than by external evidence of injury. The first two cases show that results may not come upon receipt of the blow, and, although they were purely accidental, might easily have been homicidal. The third case, from the absence of all external evidences of injury, the character of the blow, the manner of death, the short time that elapsed after the fall, the increasing coma and absence of reflexes might readily have been mistaken for apoplexy. In the fourth case, though the disorganization of a small portion of the brain had nothing to do with the death, it is still interesting from the fact that had the fracture

not radiated to the base of the skull, death might not have resulted for some time, and the blow as a cause have been overlooked.

Clinical Department.

FOUR INSTANCES OF APPENDICITIS IN PATIENTS OF ADVANCED AGE.

BY J. C. IRISH, M.D., LOWELL, MASS.

SINCE the beginning of the present year, among my cases of appendicitis have occurred the four following, which are worthy of mention principally on account of the age of the patients:

CASE I. Miss A., of Billerica, aged sixty-five, patient of Dr. Tyler, Billerica. The attack had continued about three weeks before the operation, which was performed February 23d. There was a large pocket of pus, containing in all about two quarts. The appendix not found. The cavity was washed and drainage inserted, and the patient made a complete recovery with no return of the difficulty.

CASE II. Mr. B., of Westford, age seventy-six, I saw with Dr. Bass, of Lowell, May 12th. This patient had an old, inguinal hernia, which a truss had only imperfectly retained. Although the intestinal portion of the hernia seemed to return to the abdominal cavity without difficulty, there remained a mass that was irreducible. The patient gave all the symptoms of acute intestinal obstruction, so the conclusion was reached that the man was suffering from intestinal strangulation in connection with this hernia. Dr. Bass made an incision over the hernia; but no incarcerated intestine being encountered, the incision was extended upward through the abdominal walls, for several inches, and a gangrenous appendix was found and removed.

The abdominal cavity contained quite a large quantity of sero-pus; in short, there was gangrene of the appendix, with general peritoneal infection. The patient died a few hours after the operation.

CASE III. Mrs. K., of Lowell, aged seventy-five, under the care of Dr. Pinkham, of Lowell. The patient gave a history of preceding slight attacks of appendicitis, from which she recovered. The present attack commenced August 14th. August 18th I operated, and found a small pus-pocket around a perforated appendix, containing two fecal concretions; appendix was removed and cavity drained. The patient died two days after the operation, death apparently due simply to her generally enfeebled condition, as nothing, so far as the operation was concerned, went wrong.

CASE IV. August 26th, Mr. C., of Lowell, age seventy-six, under the care of Dr. Chadbourne, of Lowell. On August 24th he developed the ordinary symptoms of an attack of appendicitis. I saw the patient August 26th. At this time, temperature was 102°, pulse 120. There had been extreme pain over the site of the appendix, and marked tenderness at McBurney's point on pressure. A well-defined bunch could be traced in the region of the appendix. No operation was done; and the patient, at the end of about four weeks, had made a complete recovery. In this case, although the diagnosis was not verified by operation, still, from the above symptoms, I am

absolutely certain that we were dealing with an ordinary, typical case of inflammation of the appendix without perforation.

These four cases, in an approximate total of forty seen by me within this year, may be a rather unique experience; still, they establish the fact, if not established already, that appendicitis may occur in very old people. To a certain extent, they tend to show that the disease is not so very infrequent among patients of advanced age.

Medical Progress.

RECENT PROGRESS IN OPHTHALMOLOGY.

BY MYLES STANDISH, M.D., AND WILLIAM D. HALL, M.D., BOSTON.
THE TREATMENT OF HIGH MYOPIA BY OPERATION.

DURING a discussion led by Mr. Lawford at the July, 1896, meeting of The British Medical Association concerning the treatment of high myopia by operation, allusion was made to the great frequency of the occurrence of myopia in Germany and Austria to explain why the operation has been done so much more frequently there than in other countries. The age, state of health, the character of the myopia and complications that exist should be considered as well as the degree of the error. The social condition and the nature of the employment must also be thought of. The operation does not benefit myopes having less than 11 D., while Schweigger's case of 33 D. is the highest thus far reported as having undergone operation. After removal of the lens there is noticed a diminution of the myopia in most cases of from 16 to 13 dioptries, and this greater the higher the myopia. A myope of 7 D. may be found to have become hypermetropic 6.6 D.; and in Schweigger's patient there remained only 13 D. after the removal. A fluid vitreous or a choroidal atrophy is not found to contraindicate, although it would be better not to interfere if a staphyloma should invade the macula. This procedure is especially applicable to children and young adults; but von Hippel and Sattler have been satisfied with their results in patients as old as sixty-four, and others have operated successfully on patients between the ages of thirty-five and fifty—a tolerance probably explained by an observation of Sattler that the lens of myopes does not sclerose as in emmetropia and hypermetropia. Although Vacher¹ has reported a series of good results by extraction, others are generally in accord in recommending a free breaking up of the lens substance with consecutive evacuation of the fragments or repeated dissections with evacuation, if indication for it arises, through a small corneal incision by means of a curette or the syringe of Bowman. An iridectomy should be avoided, even if possible, as a round and contractile pupil is even more to be desired in this instance than after the cataract operation. Usually the vision is doubled or quadrupled; and, even if it is not increased, the visual capacity is more satisfactory, and patients can now tolerate weak *plus* or *minus* glasses continuously for distance who formerly could only wear their strong concaves for short intervals. The advantage in near work through ability to converge and the acquirement of binocular vision is

¹ Rev. Générale d'Ophthal., June, 1896.