CASE OF INFECTION WITH THE RAT-TAILED LARVA OF THE DRONE FLY.

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Dr. Boston, Philadelphia, found on postmortem in a child which died in convulsions and great agony a parasite, which he sent to Professor Stiles of Washington, D. C., who replied that the specimen was a species of the genus *Helophilus* or *Eristalis*. Dr. Boston gives no history or treatment of his case further than that the child died in great agony and convulsions. With the exception of this case I fail to find that any other author mentions this species of parasite. I feel that this disease is very grave and that perhaps it is often met without being recognized. The case which I wish to report came under my personal observation, and the pain and agony was something terrible. I have never seen any human being suffer more than did this child.

History.—On Sept. 12, 1905, I was called to see a little negress 18 months old, at Sloss Mines, Ala. The child was sitting in its mother's lap, crying loudly and pulling out the hair from the front of its head; the eyes were glaring. The child seemed to be terribly frightened; saliva was pouring from its mouth, and it had the appearance of an insane child. The child's mother could do nothing to quiet her. I gave the patient a hypodermic of morphin, 1/16 of a grain, and in ten minutes she was quiet, so I proceeded to examine her further. The mother told me that the child had suffered three weeks previously from teething, so her physician had told her, but he had treated her ever since without any apparent result, and the child had continued to grow worse. She would crawl on her abdomen, and in this position she would stop crying and seem to be easy, and would finally drop off to sleep for a period of half an hour. She would then awake in great pain, and very much frightened and nervous. She cried continually, pulled her hair and scratched her buttocks. These attacks of agony would last from 15 to 30 minutes and then she would be quiet for about one hour, except that she would be very fretful for an hour or two.

The surroundings were very good; the location of the house is 635 feet above sea level. The water is taken from a covered natural spring. The child's diet consisted of fried ham, bacon, eggs, greens, Irish potatoes and cornbread; she also drank a great deal of buttermilk.

Examination.—The child was very anemic and emaciated; the eyeballs were sunken far back in the socket. Temperature was 99.8; pulse 88. The tongue was coated, moist and trembling. The lungs were in good condition except for a slight cough; the heart's action was good. The abdomen was very much distended, and was tense like a drum. The child was having and had had for the past two weeks, frequent passages of mucus, with great tenesmus; moving of bowels did not relieve the pain. The child passed about 32 ounces of urine a day, and on examination I found the specific gravity 1.026; reaction, acid; no sugar nor albumin, but an excess of phosphates. There was no pain on urination.

Treatment.—I prescribed (and with good results:)

R. Hydrarg. chlor. mitis.....grs. iii 2|
Santoningrs. iss 1|

Mt. et. ft. chart. No. 3. Sig. 1, powder every 2 hours.

This was followed by a tablespoonful of castor oil and two drops of turpentine.

Result.—Six hours afterward she passed twenty-four live worms, which lived two and one-half days without food. These worms or parasites were grayish in color, one and one-half inches long, from head to tip of tail, and half an inch in diameter. They had two horns, one on each side of the head, sucker-shaped mouths, and were very vicious; they would snap at a straw or at anything held close to the head. The tail of each was one-half inch in length and had a stinger

or horn on the end of it. The tail was held straight up when crawling, and the worms could crawl very fast. These worms looked very much like new-born mice, with the exception of the legs, which were very much like those of a thousand-leg worm. After the passage of the worms, the child rested well that night; the next morning her mother showed me the worms. I was utterly astounded and told her that I knew no human being could pass mice, which they resembled very much, so she brought in enough eye witnesses to convince me that she spoke the truth. I gave the child the following:

R. Hydrarg. chlor. mitisgrs. iii 2|
Salolgrs. iss 3|
Santonin, aagrs. iss 3|

M. et. ft. chart No. 3. Sig. 1 powder every hour.

This was followed by one tablespoonful of castor oil. In four hours the child passed four more worms; they were dead. Since that time (Sept. 13, 1905) she has passed no more worms to date (Oct. 27, 1905). And at present is in good health and is gaining in weight rapidly. She sleeps well at night, and is entirely well, in my opinion. As an after treatment, I gave her calomel in broken doses, 1/6 grain once a day for seven days, and followed this with a tonic of iron, strychnin, quinin and cod-liver oil. She is taking this tonic now.

[The parasite in question is the "rat-tailed" larva of the drone fly (*Eristalis tenax*), or of some closely allied form. The drone fly is common about flowers. The larva lives in foul water, feeding on decaying vegetable matter. The tail is a telescopic tube which can be lengthened or shortened as necessity dictates; at its end there is a rosette of hairs which may spread out on the water and keep the larva from sinking; through this tube the larva obtains air when the body is submerged. Some allied larvæ live in rotten wood. This organism is not normally a parasite, but it might be swallowed accidentally. It was described as a parasite of man by Brera in 1809, under the name *Cercosoma* (misquoted by some authors as *Conosoma*). If the larvæ were actually passed from the child in this case, as claimed by the mother, the infection was doubtless purely accidental and probably took place through the drinking of some stagnant water.—Editor.]

OBSTRUCTION OF BOWELS FROM GALLSTONE.

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Obstruction of the bowels from gallstone is of infrequent occurrence, being variously estimated from 8 to 15 per cent. of all intestinal obstructions. I may be pardoned, therefore, for reporting a case occurring in the practice of Dr. Ithamar Davisson, of Flemington, a village ten miles from this city, and in which I was called in consultation the night previous to the day of operation.

History.—A woman, aged 56, multipara, rather corpulent, had had stercoraceous vomiting for two days; there had been no movement of the bowels for five days, with severe pain in the epigastric region. Patient gave a history of having had attacks of gallstone colic about eight years previously, but had had no recurrence until the beginning of present illness. When I saw the woman she had a temperature of 100.4 degrees; the pulse rate was 120. Early the next day she was brought to the Grafton City Hospital, where she was immediately prepared for operation.

Operation.—A median incision six inches long was made. The abdominal wall was very thick. The intestines were highly injected and very much distended. I drew out through the incision a few coils of intestine, and then passed my hand down to the right inguinal region, where a hard mass was felt. On withdrawing the mass I found that it was within the lumen of the bowel, about ten inches above the ileocecal valve. Immediately above this point the bowel was distended and highly injected. Near the cecum the intestine was normal in appearance. One assistant was instructed to grasp the bowel on either side of the obstruction. After thoroughly

walling off the abdominal cavity by packing with gauze wet in hot normal salt solution, a longitudinal incision was made directly over the obstruction, which proved to be a gallstone. After thorough cleansing, the opening in the intestine was closed by a continuous Lembert suture, reinforced by a second row. The bowel was cleansed, the omentum drawn down, and the abdomen closed with silkworm gut and chromicized catgut.

Remarks.—The patient made a rapid and complete recovery. The gallstone was egg-shaped and measured one and one-half inches in the longitudinal and one inch in the short diameters.

COMPOUND FRACTURE OF THE VAULT WITH LOSS OF BRAIN SUBSTANCE.

A REPORT OF TWO CASES WITH RECOVERY.

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I feel that no apology is necessary in reporting the following cases, as they are of sufficient rarity to merit attention. Cranial injuries, moreover, occupy a place of the first surgical importance, notwithstanding that only 2 or 3 per cent. of all fractures are found to be of the skull; for the reason that the skull contains so vital an organ, and that there is a mortality of from 20 to 25 per cent. in all vault fractures with or without depression.

It behooves us, then, to give our most serious thought to such cases, the treatment of which appears to be not so well comprehended as the treatment of similar injuries to bones in other situations. Why this should be is not easily explained; certainly the brain, so intolerant of violent usage, the one organ above all others that can not be maltreated with impunity, that promptly re-sents insult, not alone deserves, but demands proper treatment in the event of its injury. If it were not for brain implication in so many of the cranial fractures, these fractures would have no claim to a more prominent position than similar damage to the long bones. As is well known, the serious aspect assumed by these cases results, not from the extent of the fracture itself, but from the probability of brain involvement, which is the more conspicuous by reason of the higher degree of fragmentation of the inner plate than of the outer. This is particularly evident in gunshot wounds, the exploration of which often discloses an unexpected splintered or depressed inner table. The relative infrequency of fracture at a distance in these cases is probably explainable on the ground that the force of the vulnerating object is expended at the point of impact.

In deciding whether or not to explore it is wise to bear in mind the danger of pus formation outside the dura, the easy infectibility of the diploë, and the chance of the inner table being comminuted or depressed, even though there be but slight evidence of injury to the external table. Hence, before making any but the most superficial examination, it is well promptly to shave the head and to scrub the scalp and one's hands as though going into the cranial cavity; then one is prepared, if it should be found necessary, to proceed with whatever measures may be deemed essential without danger of infection, and thus also to avoid dangerous delay fraught, as it often is, with such possibilities for harm.

CASE 1.—I saw this patient, a strong, well-developed man of 40, at midnight on May 18, 1899, about thirty minutes after the accident, which resulted from a quarrel, during which the patient was struck on the head with a woodman's ax. A wound had been inflicted $3\frac{3}{4}$ inch long, $1\frac{1}{2}$ inches above the nasion; the anterior angle five-eighths of an inch to the left of the median line; the posterior angle was three-quarters of an inch to the left of the median line.

Treatment.—The head was shaved, scrubbed with chlorinated soda solution, ethereal soap and bichlorid of mercury. On exploration there was found the cleanest-cut wound I have ever seen in bone; it had the appearance of a clean-cut incision in any of the soft parts, or as though made by a saw. Within the wound were a few tiny particles of brain tissue. A resolute effort was made to ascertain if splintering, comminution or depression of the inner plate had occurred, including careful probing with a trephine probe, but no evidence of such a condition could be detected. This is the more remarkable, as one familiar with skull fractures, with a knowledge of the inflicting weapon and the probable force used in delivering the blow, would naturally expect to find that considerable more damage had been done the inner plate than had been done the outer. That splintering did not occur is seemingly convincing testimony to the keen edge of the penetrating blade. The wound was sewed up tight, resulting in primary union. While we have no means of ascertaining whether or not harmful adhesions have formed, nevertheless there is at this time (six years following injury), no symptomatic evidence favoring such a theory.

CASE 2.—This patient, a robust man of 28, was seen about two hours after the accident, and presented a small, round wound a half-inch above the right superciliary ridge $1\frac{1}{2}$ inches from the median line. There was a second wound about three inches posterior to the first and a trifle mesially. These injuries were said to be self-inflicted from a 38-caliber gun. The wounds were characteristic of bullet wounds; that of entry, the anterior one, being round and small compared with that of exit, the posterior one, which was larger and lacerated. The area surrounding the anterior wound was powder stained, showing the close proximity of the revolver when discharged.

Treatment.—After cleansing the scalp, during which process considerable brain tissue escaped, the two openings were connected by a straight incision which was prolonged backward to permit thorough exploration. Considerable comminution and depression was then noted. The opening in the skull was enlarged with DeVilbiss' forceps to permit the elevation and extraction of fragments of bone imbedded in the brain. During this procedure a portion of the bullet was also removed, and more brain tissue unavoidably lost. Profuse diploic oozing from the posterior angle was a disagreeable feature attending the operation. This area was packed, just sufficient room being left in suturing to permit protrusion of the gauze. The wound healed by first intention, except the packed area, which, however, closed without difficulty. At this time (nine months following injury), no untoward symptom appears.

It is to be borne in mind in giving prognosis, however, that epilepsy has been known to develop even many years after skull fracture; and also, that traumatic epilepsy most often follows wounds of the frontal and parietal regions.

To the tyro, the presence of a wound of exit might be taken as positive evidence that the entire bullet had passed out, and be misleading to the extent of his concluding that it probably inflicted slight injury to the skull and its contents. The proximity of the two wounds might also lend color to the belief that the bullet had entered at a slight angle, been deflected by the bone, which it possibly had not injured to any great extent. An immediate exploration will always safeguard against error, and should invariably be performed in doubtful cases of head injury. The experienced surgeon might expect to find irreparable damage to the brain by reason of the revolver having been held at such close range at the time of its discharge. As a rule, gunshot wounds of the skull (except those resulting from small caliber weapons) are hopeless because the explosive effect on bone and fluid—or semifluid-containing cavities, frequently insures extensive fissuring and comminution of the skull and great or excessive contusion of its contents.