of life upon the earth was that of swimming; when a terrestrial mode of existence supplanted the earlier aquatic life, a new application of these members was made in grasping, pulling and holding on, and latest of all arose those complex forms of manipulation, involving independent use of the various fingers and the opposition of the thumb. The same succession of function forms is now manifested in the infantile development of motor activities; swimming movements appear first, those of grasping and pulling follow, and not until much later are the fingers used for touching objects or does the hand begin to make those beautiful and elaborate adjustments characteristic of mature life.¹⁸

The phenomena of the mental world, on the other hand, have barely been scrutinized from this point of view. Yet these rudimentary organs and functions of the soul surely exist, the echoes of the long past, survivals of uncouth activities and strange ancestors,

" Whose distant footsteps echo
Down the corridors of Time."

We need a paleontology of the soul, tracing its progressive adjustment to the changing environment, the sloughing of old, the acquisition of new functions and sentiments, with its consequent explanation of atavistic tendencies and facts of reversion, instinctive impulses unintelligible to ourselves, automatisms which now appear as monstrous and inexplicable twists of our nature, and all the cumbering rubbish of ancient forms and activities which no longer fulfil any useful function, but which because they have so long been ours we cannot shake off.

The trancies of the child, insistent in the face of punishment, the unrest and aversion to settled modes of life which seize upon all of us at certain seasons, the curious impulses to vagrancy which appear at all ages and in all classes, driving their subjects forth into the wilderness, together with the whole tramp problem, point to the outcropping of some old migratory instinct in the human race whose purpose and even existence had been forgotten. Collecting manias of coins, stamps, hats, sticks, newspapers, and the like, and the various forms of pathological secretiveness met with among the insane, are interpretable as survivals from a period where the hoarding instinct was as important a function in the life of the human race as it now is in that of the squirrel and dog.

(To be continued.)

ON THE ADVISABILITY OF A MORE OR LESS GENERAL EXPLORATION OF THE ABDOMEN WHEN IT HAS BEEN OPENED FOR AN OPERATION.

BY JOHN HOMANS, M.D., BOSTON,
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It has happened to me to discover very happily in several instances conditions and diseases entirely different from the one for which I had opened the abdomen, and it seems to me as wise as it is harmless to make a rapid examination of the abdominal organs other than those we are operating upon, when a favorable opportunity occurs. In this way I have three times removed gall-stones, whose presence was unsuspected,

¹⁸ A. A. Mumford: *Survival Movements in Human Infancy, Brain*, vol. 20, pp. 289-306 (1897).

and whose removal did more for the patient's recovery and perfect subsequent health than did the removal of the tumor for which the abdomen was opened. I do not mean to recommend the lengthening of short incisions in order to explore. If the incision has been made an inch and a half long for an appendectomy, or for the removal of an ovarian tumor, or for an easy cholecystotomy, I would not lengthen it, but if we have removed a good-sized pelvic tumor, or a kidney, or for any purpose have made an opening sufficiently large to get the hand into the abdominal cavity, I think it is a good plan, particularly where there are any unexplained symptoms of pain and discomfort, to put in the hand and explore, particularly in the region of the gall-bladder, stones in which give rise to a great variety of symptoms and make life a burden.

So in regard to the appendix, which is often found diseased in connection with salpingitis and sometimes adherent to the tube. It is not always easy to say which of the organs was originally diseased, nor to decide whether the appendicitis follows the affection of the Fallopian tube or whether the Fallopian tube was infected by the appendix.

As illustrations of the wisdom of the course I have been advocating I will relate briefly the following cases:

Mrs. B., thirty-eight, emaciated and anxious looking, was sent to me by Dr. Spofford of Cavendish, Vt., in March, 1895. Her symptoms were nausea for last eight years at various times, she not being able to eat and retain solid food for eight months. She had become very thin and was suffering much from pain and backache, and felt as if a string were tightly tied around her waist; she stooped in walking and moved with much pain and difficulty. She has been treated in various hospitals during the past seventeen years and her pains and aches have been considered reflex from her diseased pelvic organs. She has had two children; the youngest was seventeen years old. Her uterus was retroverted and fixed, the tubes and ovaries were enlarged, prolapsed and adherent. Her catamenia had appeared once in the last fifteen months. Her body was covered more or less by spots caused by scratching, but no pediculi were found.

Her stomach was washed out daily by Dr. Pease and she improved somewhat; her vomiting became less frequent, but her backache and pelvic pain and tenderness continued. On April 6, 1895, with great difficulty, a left adherent tubo-ovarian cyst was dug out. The hemorrhage was so persistent that I thought of tying the internal iliac artery, but I finally clamped all the bleeding points with five long clamps, which I left in the abdomen with their handles outside the abdominal walls. I then inserted my hand through the wound and felt of the gall-bladder, which I found full of stones. The wound between the umbilicus and pubes was then sewed up around the clamp handles and another incision was made parallel with the cartilages of the ribs, over the gall-bladder. Ninety-seven gall-stones were then removed. She vomited incessantly for a week, then improved and went home at the end of five weeks perfectly well and able to eat anything. She grew fat and strong and continued comfortable for more than a year.

In December, 1896, her old symptoms of vomiting and pain had returned, and I opened the gall-bladder again and removed seven calculi, which had formed around pieces of silk which had united the gall-bladder

to the peritoneum, just as alum crystallizes around a thread suspended in a hot saturated solution.

This case of recurrent gall-stones was published in the *Annals of Surgery*, with a colored plate showing the stones and ligatures, and was subsequently distributed as a reprint.

Mrs. M., forty-two years old, was brought to me in May, 1897, by Dr. Dibble, of St. Stephen, N. B. She had a lobulated abdominal tumor which was a sacculated right kidney filled with pus and calculi. This was removed by abdominal section and after its removal I inserted my hand and felt of the gall-bladder; it was full of stones. Without enlarging the incision the gall-bladder was opened and nine stones, varying in size from a No. 6 shot to a robin's egg, were removed. Another stone was impacted in the common duct but, after much manipulation, was finally worked up into the bladder. The remaining kidney worked beautifully, the wound healed by first intention except when the gall-bladder was draining, and the patient left the hospital perfectly well on the twenty-first day after the combined nephrectomy and cholecystotomy. Had I not made this manual exploration the patient would have gone home but half cured.

Mrs. D. was sent to me in March, 1899, by Dr. Witherlee of Castine, Maine. I found a fibroid tumor the size of a large orange, and to the irritation of this tumor was ascribed her digestive symptoms, which were quite severe. For three years she has been good for nothing and could hardly eat anything. Formerly she weighed 180 pounds and now weighs 124. On March 20, 1899, I removed the fibroid tumor, and then inserted my hand, passed it up to the hepatic region and found that the gall-bladder contained one large stone. The abdominal incision was lengthened upwards to a point two inches above the umbilicus, and the fundus of the gall-bladder was drawn through the wound and a stone one inch square was removed. The bladder was immediately sewn up and the wound closed without drainage. Her dyspeptic symptoms were much relieved by suggestions from Dr. E. G. Cutler, and she is now well and strong and can do and eat what she likes, and has nearly regained her former weight. Other cases could be cited, but it seems to me that those above narrated justify and, indeed, should compel exploration whenever feasible.

Clinical Department.

A CLINICAL STUDY OF HEROIN.

BY JAMES R. L. DALY, M.D.,
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A NEW agent in the treatment of cough, at present in wide use and attracting considerable attention in the medical world, is heroin. It is a derivative of morphine—the diacetic acid ester—and is a white crystalline powder, almost insoluble in water, but readily soluble in water to which a few drops of acetic or hydrochloric acid have been added. It possesses many advantages over morphine as a respiratory sedative, among which the following may be mentioned: (1) It prolongs respiration, and at the same time increases the volume of each inspiration, making it a remedy much to be desired in the treatment of cough; (2) it is not a hypnotic; (3) absence of dan-

ger of acquiring the habit; (4) it does not weaken the respiratory apparatus; (5) it does not cause unpleasant disturbance of the stomach or intestines; (6) it can be prescribed in cases in which heart complications occur without risk of any deleterious effect upon that organ; (7) the ratio of the therapeutic dose to the toxic dose is considerably smaller than that of morphine.

The following cases, taken at random from a clinical field of over 100 cases of pulmonary tuberculosis in all stages of the disease in this hospital, will best serve to illustrate the efficacy of the drug:

CASE I. A. B., male, age thirty-two, clerk, entered hospital with history of pain in left side, which began about four months before admission; night sweats; hacking cough, most troublesome at night, with markedly diminished secretion, and slight dyspnea at varying intervals during day and night. Physical examination revealed consolidation of upper lobe on left side, and of apex on right side. Mist. codeia, one drachm, three times daily and at midnight was administered, and continued for two weeks, but with little result. At the end of this period the codeine was stopped and heroin substituted in doses of one-twelfth grain three times daily and at midnight. In four days the cough began to lose its hacking character, and the secretion became more abundant; in about one week the cough could only be observed in the morning and evening, and remained sufficiently loose to render the patient very comfortable. No dyspnea was observed a week after the heroin was begun and breathing still remained free. Mean respiration during first twenty days in hospital, A. M., 29; P. M., 29½. Mean respiration for twenty days following the first administration of heroin, A. M., 24½; P. M., 25½. For the night sweats the patient was given a pill of zinc oxide, two grains, with extract belladonna, threenths grain, for three nights without result. On the third night heroin was substituted for codeine, and on the second night following the sweats ceased.

CASE II. On admission the patient complained of severe and painful cough throughout the day and night; expectoration scanty, and obtained only after considerable effort. Physical examination showed both lungs involved with cavity in right middle lobe. The patient was given heroin, one-twelfth grain, three times daily at first, and shortly after the dose was increased to one-sixth grain. After one week of heroin the cough was diminished to a marked extent, and the pain heretofore associated with the cough had disappeared.

CASE III. Patient entered hospital complaining of "smothering sensation" in chest, with slight pain. Heroin, one-twelfth grain, three times daily and at midnight was administered, and in three days this "smothering" had disappeared, but not permanently, as the patient has since complained of it; but he says that it is not as severe or as lasting as before he was put on heroin. Of course, the cough which was present was greatly loosened, and this it was that gave the patient relief.

CASE IV. Patient entered hospital complaining of hard, dry and persistent cough, most troublesome towards evening. Expectoration scanty, and effort of coughing caused great pain in chest. The patient was given heroin, one-twelfth grain, and in three days the cough became soft, and expectoration became quite free. The pain in the chest had, of course, dis-