Greene M. Hammond, writing on neuritis from auto-intoxication, says that, while the presence of indican in the urine is significant of this condition, he does not consider indol alone a very toxic agent, but looks on skatol and butyric acid as much more powerful toxins.

Metchnikoff¹ concludes that in the putrefactive bacilli in our digestive canal we have a source of auto-intoxication against which the organization has to fight with all the means at its command. The intestinal putrefaction corresponds simply to the first appearance of putrefaction outside of the living organism.

Fermentation of carbohydrates occurs in the lower ileum and colon; putrefaction of proteids takes place in the large intestines. Putrefaction, except in the pathologic condition, never occurs above the ileocecal valve.

Herter found that administration of indol to healthy individuals caused frontal headaches, irritability, insomnia, and confusion; a long continuance of absorption of indol caused a strong reaction for indican in the urine sufficient to cause neurasthenic symptoms. Gases and other products of fermentation are mostly absorbed by the intestinal wall.

Ortveiler and Muller say that the amount of indican in urine varies with the length of time the feces remain in the colon, with the activity of peristalsis, and with the site of putrefaction of proteins; when putrefaction extends up into the small intestine, urine indican is much increased.

Hammond's remarks as to the influence of diet are so important that I quote:

It is commonly believed that proteid foods are the ones concerned in the formation of putrefactive toxins; that is in the main, true, but it is quite clear to me that all forms of food, when eaten in greater quantities than the digestive fluids can digest, are capable of forming putrefactive poisons, which are deleterious to the human organisms. I have, therefore, insisted that all my patients should eat small meals in which the proteid foods should form a very small proportion. To my mind it is not so much what the patient eats, as how he eats. I have found the best results follow when general food was given, but the quantity of food of any kind was limited to a very small amount. Most people habitually eat, at least once a day and frequently at all meals, not only much more food than they need, but much more than they can digest. In the latter case putrefactive decomposition naturally follows. This may be obviated by giving only as much food as can be digested, and it is even better to give, for a time at least, even less than this amount. When this plan was followed every day for a number of days, the putrefactive products in the urine were invariably decreased and in some cases entirely disappeared.

In this paper I have attempted to emphasize briefly, as suggested by the title, the importance of intestinal auto-intoxication as a factor in the causation of pathologic conditions of the ear, nose and throat. In a subsequent paper I shall mention somewhat in detail the specific manifestations of these pathologic conditions; the treatment employed and results obtained.

Forest Highlands for Sanatoriums.—The Committee of One Hundred on National Health suggests that some of the great lumber companies could allow some of their large tracts of forest lands situated high in the mountains to be used for tuberculosis sanatoriums. As a reciprocal arrangement it is suggested that the state could remit taxes on the lands which lumber companies lease for sanatorium purposes. The tenure would be temporary and under conditions agreeable to all concerned. A further suggestion is made that life-insurance companies could undertake the management and that railroads could aid greatly by making reduced rates at appropriate intervals for the transportation of tuberculosis sufferers.

1. Metchnikoff: *Méd orient.*, 1909, p. 134.

Clinical Notes

A NEW METHOD FOR DETACHING THE CATARACT IN ITS CAPSULE

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I wish to say a word—probably not the last word—on the extraction of cataract in its capsule. Of the Smith operation, which in recent years has attracted the attention of the world, all that need be said has been told by Greene¹ in *THE JOURNAL*. In the same issue Würdemann advocates the operation, but gives credit to Pagenstecher. Major Smith,² in *THE JOURNAL* of September 11, shows clearly that Pagenstecher himself makes no such claim, but, on the contrary, gives credit to Smith. Smith quotes Pagenstecher as calling Smith's "the best operation in the world; I will do nothing else."

While Greene was reading his paper I saw more clearly than ever the amount of trauma necessary in the Smith operation, and became more convinced that this particular operation could never become universal. He had not finished his paper until I had drawn, on the margin of my copy of the program, an instrument for detaching the cataract in its capsule. I later found that my first conception of this instrument was perfect. On my arrival in Philadelphia, from Atlantic City, I arranged for the making of a model. This I brought home with me for trial on pigs' eyes. It proved so satisfactory on these eyes, also on a human eye which had been enucleated, that I returned it to the manufacturer with the request that he make me three detachers just like the original model, differing only in the length of the curves. The following description will be more easily understood in the light of the accompanying illustration:

The instrument terminates at each end in a double curve, the one in line with the handle and the other at right angles to this line. The point of bending is the point of union of the two curves. The two curves are to have the same radius as has the anterior surface of the lens, and the curves are to be 5, 6 and 7 mm. long, for the reason that eyes vary in size. The name will be the "cataract-in-capsule detacher." It is a right- and left-handed instrument, as the cut shows.

The model was made on June 12, 1909, and was used on animal eyes for the first time two days later, June 14.

The means described above makes necessary a new method of operation—new in essential particulars. The following is the method to be pursued:

A. Patient, instruments, operator and assistant are to be thoroughly prepared.

B. Complete local anesthesia is to be used.

C. Lids are to be separated by a stop-speculum, or the upper lid held up by the assistant, with lid elevator, while the lower lid is pulled down by the other hand of the assistant.

D. The operator fixes the eyeball by grasping the tendon of the internus; then with the other hand he makes the corneal incision of the usual size (5/11 of the circumference), associating with it a good conjunctival flap.

E. If an iridectomy is to be done, the one hand continues to fix the globe, while with his other hand the operator seizes the iris with iris forceps and

1. Greene, D. W.: Experience in Expression of Cataract in Capsule by Smith Method, *THE JOURNAL A. M. A.*, Sept. 4, 1909, liii, 777.

2. Smith, Henry: The Smith Operation for Cataract, *THE JOURNAL A. M. A.*, Sept. 11, 1909, liii, 882.

gently draws it out through the incision just far enough to enable an assistant to make a vertical snip of the iris with iris scissors, close to the tip of the forceps. The ideal operation, however, is without iridectomy.

F. The iridectomy having been done—or if the iridectomy is not to be done—the operator, still continuing to fix the eye with his grasp of the tendon, takes in his other hand the cataract-in-capsule detachor and, passing it into the anterior chamber, he directs the free point of the horizontal curve between the iris and anterior capsule, pressing it gently downward until both the horizontal and vertical curves are behind the iris, or between the iris and the cataract; and now the detachor is to be so held that the horizontal curve shall rest on the lens below, but parallel with, the horizontal meridian of the lens, while the vertical curve shall rest on the lens to the outer side of, but parallel with, the vertical meridian of the lens, half way between the center and the margin. This is the primary position of the detachor.

On two movements of the detachor depends the success of the operation:

1. The vertical curve is made to press against the lens in such a way as to rotate it on its vertical axis, causing the outer margin of the cataract to move backward while the inner margin is made to advance to the same extent. The effect of this movement of the detachor is to tear loose the ligament laterally, the tear including much more than two quadrants, leaving untorn, probably, only a few fibers directly above and below. Now the instrument must be returned to the primary position, thus replacing the cataract in its normal position.

2. The horizontal curve of the detachor must now be made to rotate the cataract on its transverse axis by advancing the free end of the instrument while making *gentle* pressure against the cataract below its center. The effect is to make the lower margin of the cataract recede while the upper margin advances accordingly. This motion tears loose the few remaining fibers of the ligament, above and below, making easy the next step.

3. The cataract in its capsule having been torn loose by the two movements of the detachor outlined in 1 and 2 above, this instrument should be withdrawn from the eye, and the cataract in the capsule should be delivered by external pressure, in the old-time way, often without any counter-pressure, the globe still being held by means of the tendon-grasp. Occasionally light external pressure will show that some of the ligaments remain intact, as in one of my eight cases. In such a case the fixation forceps should be laid aside that the left hand may make counter-pressure with the shank of the cystotome until the cataract in the capsule presents in the corneal incision. At this moment the counter-pressure should cease and the presenting cataract should be transfixated from behind with the point of the cystotome, by means of which the cataract may be lifted out, thus minimizing the amount of further external pressure on the lower part of the cornea.

By this method of continued fixation, detaching and delivering, the operation is simple, easy and safe, and the trauma is very slight. Subsequent irritation was practically nil in all of my eight cases.

This operation has been done twice by Dr. M. M. Cui-lum, one of my local confreres. After his first operation he turned to me and said: "Why, this operation is as easy as the old-time operation." After his second operation he telephoned me as follows: "Your operation beats the Smith operation a long way."

The after-treatment is the simplest, varying from the usual in that I leave the eye open behind a gauze flap after the second day.

What is new in this operation can be recognized easily by the reader, but I will summarize the points: (1) Method of fixation; (2) the detachor and the method of using it; (3) the transfixing of the lens from behind in cases requiring much external pressure.

The free use of pigs' eyes will give courage and confidence to the one about to adopt my operation.

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COMPLEMENT FIXATION WITH LECITHIN AS ANTIGEN IN PELLAGRA

A PRELIMINARY NOTE

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The original Wassermann reaction and its many modifications, though at first thought to be specific for syphilis, has been found in a number of other diseases that are all known, or thought, to be of protozoan origin. The reaction seems, then, to be limited to protozoan diseases with the exception of a few cases of advanced tuberculosis and leprosy.

The generally accepted theory of the etiology of pellagra the world over is that it is poisoning from eating improperly cured or diseased corn products. Lombroso extracted from spoiled corn an oil and other extractives with which he produced experimentally in animals a disease very similar to, or identical with, pellagra. In Italy, where there is much pellagra, the authorities have reduced the amount of the disease to less than one-fourth of what it was when the regulation against the use of diseased corn was begun. The work has been based on the maize theory. It should be remarked incidentally, however, that many of the cases have been isolated by providing a number of hospitals for the treatment of pellagra.

There are a few students, however, among whom may be mentioned Sir Patrick Manson, who dispute the maize theory, and believe the disease to be due to protozoa and cite as evidence the similarity of course, symptoms and pathology of the disease to syphilis and sleeping sickness.

In the research laboratory of Tulane Medical College we have so far tested the serum in six cases and all gave positive reactions. The technic followed was the original Wassermann, except that lecithin was used for antigen instead of syphilitic liver extract. The hemolytic system used was sheep corpuscles; serum of sensitized rabbits inactivated at 56° C for 30 minutes; and guinea-pig serum for complement. The patient's serum was inactivated before being tested. All six cases gave strong positive reactions. All the patients gave negative histories for syphilis; three were the mothers and one was the father of healthy children. One of the tests was made on blood taken twenty-four hours after death and is, therefore, not very reliable. One patient denied eating corn meal, though the diagnosis of pellagra appeared fully justified.

I fully recognize that these few positive Wassermann reactions in pellagra may be merely a coincidence and do not justify any conclusions, but if the observation is confirmed in a larger series it would tend to strengthen the idea that the disease may be of protozoan origin. It might also be of service in the diagnosis of the very many early or mild cases.

Still further, it would add another disease to the list for consideration in interpreting a positive Wassermann reaction.

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Mental and Physical Education.—The whole conception of the purpose and curriculum of a college education needs revision and into it must come a better relation of the physical with the mental life of the undergraduates. This characteristic feature of our educational system should furnish quiet years for thought and visions but it should, and that was the purpose of many of those who endowed them, make distinctly for efficient citizenship.—P. C. Phillips, in *Hygiene and Physical Education*.