

possible for it to experience a single sensation. That is, that it could neither smell, taste, hear, see nor feel. Manifestly, a being of this simple description would be less complex than the sensitive plant. Yea! it would be a *no-sense* being. Having no organs to sense wave-motions reflected from objects, what the premise for affirming that such an organism can give forth expressions that are indisputably sequences of ideation?

These statements permit the declaration, that we have ground for an enduring hope in the progressive character of humanitarianism, as expressed by those who maintain that the raw material out of which ideas are made are the *motion-things* we call sense-impressions. And further, that this unitary font of human intellection, has already been placed upon a permanent basis. Nevertheless, the student-teacher should ever evince a hearty zeal in teaching his pupils, among other things, that the senses of taste and touch are stimulated only by objects in actual contact, while the senses of smell, of sight and hearing are exercised only by reflections from objects that are always out of impact; *i. e.*, at a distance. Herein Ziehen is right in saying that it is from sense-impressions that the brain can build up ideas, to which I will add, that it is from these ideas being regarded as a whole, we have what we are pleased to call mind.

The hope of the race is now, as heretofore, in the student who is ever on the alert and questions the position of state, of church and of philosophy, as to their individual worth; if either makes for an enlarged personal freedom it shall be fostered; but if either shall be found to retard personal advancement, it, through neglect shall be permitted to enter upon the period of senile atrophy.

The earth—man's home—is for the enlightened. Only they who are loyal to this spirit are destined to survive. They alone have in them the functional activities of organic life. A human being who pits his organic life against his spiritual, is an anomaly, and one or the other of these opposing forces will sooner or later yield to its unfitness.

The argus-eyed student is always conservative and patient, but ere long physiology's shrill voice will call upon the differentiators of things—builders of facts—to join their forces, and all the obstacles to human betterment growing out of the mythological aspect of mind, however formidable, will go down before the advance of an enlightened people.

Yes, mind *is* a product of brain energy.

Out of the myriad observations made by myself and others of sensations after having been modified by cerebral tissues, I have synthesized their ultimates into one sentence, namely,

Mind is the sum-total of one's comprehended impressions.

IMMEDIATE CAPSULOTOMY FOLLOWING THE REMOVAL OF CATARACT.

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All ophthalmic surgeons endeavor to obtain perfect vision after the removal of a cataract. On account of its prevalence, the loss of one of the most valued of the senses, and the restoration to vision by

a bloodless and painless operation have concurred to render this operation an object of the highest attention to surgeons; and the progress of improvement in the operation has been commensurate with the advances made in surgery elsewhere in the economy. Unfortunately, with all our skill and knowledge, success does not always follow the removal of an opaque lens. The many contingencies incident to the healing of the wound, the distortion of the cornea, the subsequent change in the media caused by iritis, or a thickening of the posterior capsule—one or all of these factors play a very important rôle in the subsequent restoration to vision.

The opaque lens, with its capsule, obstructs the vision, causing blindness of the patient. To remove this obstruction requires considerable dexterity; to restore vision, absolute cleanliness and most careful after treatment. The most disheartening factor in a cataract operation is that sooner or later the posterior capsule thickens, and again dimness of vision follows; the lessening of the sight is not so great as it was before the removal of the lens, but still the patient is debarred the comfort of reading, writing, or attending to business matters in which it is necessary to have perfect vision. It is to prevent this latter change that I advocate the splitting or parting of the posterior capsule at the time of the primal operation.

Having had the opportunity of following many operators, good, bad and indifferent, and noting the after results, I frequently saw excellent vision follow bungling manipulation. The surgeons did not possess that delicate sense of touch so essential in making the corneal incision, snipping the iris, lacerating the anterior capsule, and delivering the lens. They lost courage, or their hand became so tremulous after they had ruptured the capsule that the operation would have been a failure had they not taken a lens scoop in hand, entered the eye, and fished out the cataract and its capsule, with always more or less loss of vitreous. With very great care in the after-treatment many of these patients would recover, and in the majority of cases which did recover no capsule interfered with their visual acuity. It was witnessing such operations that led me to think that a parallel process carried out, however, on more delicate operative lines, at the time of the primary operation, would still lessen the dangers that such harsh measures would be sure to excite.

The ancient method of removing cataracts from the direct line of vision was by *couching*; that is, passing a delicate needle through the sclerotic coat on the temporal side of the eye-ball, posterior to the ciliary bodies; pressing it forward and into the crystalline lens. Then, by a backward sweep of the point of the needle, lens and capsule were torn from their position, and deposited down and out in the vitreous chamber. Celsus, the celebrated Roman physician, who lived at or about the commencement of the Christian era, describes, and is generally esteemed the father of this operation. It was not very satisfactory in its results, according to the data obtainable from the earlier writers. Fabricius, who flourished in 1600, speaks with great despondency of this operation; later on, Hiester, 1711 says: "Though the operation is easy to be performed, the success is so very precarious that among a great number of persons, couched by the most distinguished oculists, very few met with the desired

results; and upon the vast number of patients upon whom the celebrated itinerant Taylor operated, not one in a hundred recovered his sight." He further says that in several different places he saw many miserable objects in tormenting pain, arising from inflammation consequent upon the operation, and that of those who regained their vision, there was scarcely one in ten who did not sooner or later lose it again. For eighteen hundred years this puncturing of the eye-ball, with its most deplorable results, was the only method held out to the blind. It was the outgrowth of an accident which gave birth to the rival plan of extracting the opaque lens through an incision of the transparent cornea. It was the failure to remove a cataract which had escaped into the anterior chamber by couching, that led M. Mery to recommend, in the year 1707, the practice of extraction in all other cases of this disease. It was left, however, for Daviel, the celebrated surgeon of Paris, 1745, to bring forward this method as one infinitely less dangerous than couching. From that day to this the incision is made through the cornea, or along its margin, and the percentage of loss is to-day what the gain of vision was one hundred and fifty years ago.

PRELIMINARY TREATMENT ESSENTIAL IN CATARACT OPERATIONS.

I deem it of the greatest importance to interrogate all cataract patients presenting themselves for an operation, as to their general habits and family history, and to make a careful examination of the urine, restricting meat diet and increasing a vegetable one; while last but not least, placing the patient, one week before the operation, on the mixed treatment, also paying particular attention to bathing both eyes with a boracic solution containing sulpho-carbolate of zinc; examining the eyelashes and particularly the nasal cavities. If any catarrhal affections are found in these cavities it is of paramount importance that they receive the proper treatment before an operation is performed. The day before the operation, the patient is given a warm bath and a saline purgative, kept in bed, and his face washed with Castile soap and water, then washing the skin around the eye to be operated upon with ether, following this again with a 1-5000 solution of corrosive sublimate after a German method (Schweigger).

The reason I call attention to these minute details is that the patient may suffer from some defect which would not affect an eye in a comparatively healthy state, but might exercise an extremely pernicious influence on the eye after the irritability following the operation. The effect to be dreaded is inflammation, and therefore every measure calculated to prevent its occurrence must be taken. There are still a few ophthalmic surgeons who think it quite unnecessary to take these preliminary precautions, but happily the number is growing less year by year.

At the time of the operation still greater precautions are taken; the patient's face, neck and mouth are thoroughly cleansed, clean underclothing, over which, and fitting close to the neck, a sterilized sheet is wrapped, head bandaged in a sterilized towel, and the eye irrigated with an aseptic fluid, as hot as the patient can bear it. The instruments are also sterilized; all fluids, such as atropin and cocain, are sterilized in a Llewellyn flask. The operation is performed then in the usual manner.

After the delivery of the lens (cataract) and all cortical matter is washed out of the anterior chamber, I proceed with the rupturing of the posterior capsule,—the subject of my paper. The instrument used is a gold enameled hook, made as delicately as is consistent with keeping its shape. It is of malleable steel, so that it may be bent to any angle which I find is convenient, especially when the eye of the patient lies deep in the orbit. The hook is passed into the anterior chamber, and behind the lower pupillary margin of the iris, on its flat side. It is then rotated backward, hooked into the capsule, drawn gently upward to the mouth of the incision, rotated on its flat side again, and then taken out of the chamber. By this means, the capsule is torn and the vitreous presses forward between the rent. Very little or no vitreous shows at the mouth of the wound. If it does, I snip it off.

When the operation is performed after the simple method (without iridectomy), the same manipulation is carried on with but one exception; and that is, the line of incision is not so long. The ophthalmostat is removed, and the eye-ball again irrigated with the hydrostatic eye-douche, followed by dropping one drop of sterilized atropia solution into the eye; the lids closed and thickly anointed with vaselin, which has been sterilized by boiling; over this specially devised eye-pads, which have also been sterilized by heat, held in place by adhesive strips, which keep the bandages securely fixed, permitting the patient to change his position in bed as often as is desirable. In twenty-four hours the dressings are removed, and both eyes bathed with warm water and irrigated with the sulpho-carbolate solution, another drop of atropia applied, and similar eye-pads adjusted with as much care as at the primal operation; and so continued from day to day until the eye is out of danger.

Is this a new operation? Some of the older writers of fifty years ago hint at the removal of the lens and its capsule, but they are not explicit enough to say that they did so. The only authority that I can find saying so positively, is Richard Middlemore, who, on page 138, Vol. ii, in his great work on "Diseases of the Eye," published in 1835, after speaking of the removal of the lens, when the pupil is not clear, on account of the thickening of the posterior capsule or the hyaloid membrane, says: "In every such instance, I have found it absolutely essential to the successful result of the case, to lacerate the posterior capsule and hyaloid membrane, and permit the escape of a portion of the vitreous humor." Coming nearer to our own day, I must say a few words about the distinguished surgeon who left his impress upon all who witnessed his wonderful skill as an operator. I have reference to the late Dr. Richard J. Levis, of this city. I have had the opportunity of examining quite a number of patients from whom cataracts were removed by this eminent surgeon. In nearly every instance the posterior capsule was evidently ruptured at the time of the primal operation. Whether this was a constant practice of Dr. Levis' I am unable to say, but I am sure he realized the importance of removing the posterior capsule at the time of the original operation. Pagenstecher, of Wiesbaden, is also an advocate of removing the lens and its capsule at one sitting. Hasner, another German ophthalmologist, is an advocate of this radical operation. It has recently come to me indirectly that Dr. Knapp,

of New York, is also lacerating the posterior capsule at the first operation.

Is the operation always successful? Laceration of the capsule alone does not prevent the hyaloid membrane from becoming slightly translucent. When this takes place, we may follow with a needle operation, and not provoke cyclitis by trying to tear a tough inelastic tissue.

I have been in the habit of performing this operation in alternating cases, for ten years. In those patients upon whom the operation was performed, I had to repeat a needle or capsulotomy (scissors) in about 15 per cent. of the cases; where it was not performed, in about 75 per cent. In the 15 per cent. of the cases where it did not succeed, I can only attribute it to a very thick posterior capsule, the vitreous receding after closing of the eye-ball, and thereby not keeping the capsule separated, but practically closing again. My experience has led me to believe that there is less danger of inflammation of the eye-ball in immediate capsulotomy, than in a subsequent operation.

The elder operators recognized the gravity of puncturing an eye-ball with a needle, and hailed with delight the improved method which completely revolutionized statistics. My own experience is fast leading me to adopt the cutting the cornea with a keratome and the incision of the capsule with a De Wecker's scissors, disregarding the needle altogether. With the preliminary treatment, and with the aseptic methods now employed, success is almost always assured, while with the treacherous needle almost every surgeon has, had occasion to regret his *modus operandi* in more ways than one.

GASTRO-HYSTEROPEXY AS A SAFE AND RELIABLE MEANS OF CORRECTING PROLAPUS AND RETRO-DISPLACEMENTS OF THE UTERUS.

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By far the most frequent displacements to which the uterus is liable are the downward and backward, namely, the various degrees of prolapsus, retroversion and retroflexion. But few if any troubles in the entire field of gynecology impose more of suffering and misery than is entailed by the inflammatory consequences of these affections. The reflex disturbances and the general ill-health that usually follow often lead to melancholia, hysteria, and even more pronounced insanity. In many instances the physical health is wrecked, and the functions of the various systems of the body are so perverted as to lead to a condition of general impairment of nutrition, which predisposes to the activity of any inherited tendency to disease.

I should like to emphasize the significance of the phrase, "inflammatory consequences," in this connection; for it is to these that symptoms are chiefly due; for example, pelvic peritonitis, with adhesions binding the uterus, ovaries, Fallopian tubes and sometimes the bladder in unnatural positions; ovaritis and salpingitis terminating in cystic or pus formations; endometritis, cystitis, chronic constipation, etc. I am aware that these conditions some-

times predispose to or bring about the displacements in question, but I am satisfied that in very many instances they stand in the relation of cause rather than of effect; and I am convinced from ante-mortem observations that the generally accepted idea that pelvic peritonitis with its train of evils is almost uniformly due to salpingitis incident to endometritis, is an error; that in reality its most frequent cause, apart from post-partum sepsis, is the pressure and consequent disturbed circulation, friction, etc., of the retroposed uterus.

I shall not presume, before this intelligent audience, to make anything like a systematic and complete presentation of the history, etiology, symptoms, physical signs and treatment of these affections; such an exposition would be appropriate before a class of students, or adapted to the ends of a textbook. The purpose that I have in view in presenting this paper is to emphasize a pathologic and etiologic condition shared by all of these affections in their initial departure, from which proceeds a common and major principle of treatment. However, the fact should not be lost sight of that the individual affections call for special means in addition to the principle of treatment common to them all.

In order that I may make myself understood, it will be necessary that I recall to your attention the fact that in the erect posture the pelvis is placed so obliquely with reference to the trunk that the axis of its inlet is represented by a line drawn from the umbilicus to the middle of the coccyx. Now, as you know, the axis of the uterus corresponds with that of the pelvic inlet; hence the normal position of the uterus is such that the force of intra-abdominal pressure, which is perpendicular, falls upon its posterior surface, and operates not only from above but from behind. Temporary departures from this relation of the position of the uterus and the direction of intra-abdominal pressure are constantly occurring, but they are only temporary and therefore physiologic.

Any permanent deviation from their nominal relation becomes at once the prominent determining etiologic factor in the production of either a prolapsus, a retroversion or a retroflexion, and the particular displacement is determined by the condition or state of integrity possessed by the suspensory supports, namely, the long, the broad and the utero-sacral ligaments, together with the restraining supports or pelvic floor.

Now it can be appreciated that however prominent a part may be played by a breach in the pelvic floor, or by impaired suspensory supports, in predisposing to and determining the character of the displacement, yet the salient fact remains that they are but contributory agencies in their accomplishment; they determine the direction of retreat of the uterus from the cause operating above, namely, intra-abdominal pressure. For example, if of the suspensory supports the round ligaments be alone principally elongated, and the walls of the uterus not wanting in tonicity, we will have retroversion. If to a similar state of the suspensory supports be superadded a flabby condition of the uterine walls then we will have retroversion plus retroflexion. If the round, the broad and the utero-sacral ligaments be elongated, and the integrity of the pelvic floor is wanting we will have prolapsus.

It will be perceived that under normal circum-