

REMARKS ON
RECTAL FEEDING IN DISEASE.

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REMARKS ON
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For a considerable period of time it has been well understood that nutritive aliments introduced into the body per rectum were capable of sustaining life almost indefinitely, even when unaided by the ordinary methods of ingestion. It is, however, a matter of considerable doubt whether the knowledge of this fact has been made as useful in the field of therapeutics as might have been reasonably expected from a method so potential, so simple, and withal so certain in its action.

Two causes, it appears to the writer, have operated in a large measure to narrow the field of usefulness of rectal alimentation in the management of disease, viz. : first, a want of proper confidence in the measure on the part of the profession; and second, a prejudice against it on the part of the laity.

The latter state of things is but a natural outgrowth of the former; so for both lamentable conditions we, ourselves, are responsible. If, therefore, the first-mentioned hindrance can be removed, the other obstacle falls to the ground as a matter of consequence.

It is confidently believed that in the intelligent discussion of methods of science and practice on all proper occasions, much can be done to strengthen our own hands on the one side, as well as to remove

prejudice and doubt from the minds of the laity on the other.

The remarks which the writer is about to offer on the subject of rectal feeding, will only embody a few thoughts suggested by a somewhat limited clinical experience with the method, together with some ideas derived from a hasty glance at a portion of its recent literature.

Perhaps it were as well to begin with a narration of cases; yet, as nothing can be more wearisome to the listener, or dreary to the reader, I will be brief, limiting the record to four of my latest patients with whom the method has been employed.

CASE I.—Mr. L—, aged fifty years, came under my observation May 24, 1879, suffering with chronic catarrhal bronchitis. After some months pharyngeal ulceration began, when dysphagia became a troublesome factor in the case. The blandest aliments, and even water, were now swallowed only with the greatest pain, and finally, buccal ingestion became impossible.

Rectal alimentation was substituted therefor on the 25th day of October, and was regularly kept up until the death of the patient, January 6, 1880. For seventy-four days the rectum was the main avenue of nutrition in the case, the only nourishment taken by the mouth during that period having been a few raw oysters occasionally, and less than three pints of cod-liver oil, except during the last few days of life, when milk-punch was thrown into the stomach through an œsophageal tube. When the rectal feeding was inaugurated the patient had taken very little food for a week, and death from exhaustion seemed imminent; but, from that moment, the strength and vitality improved so much as to give him hopes of ultimate recovery. The friends, however, were advised of the incurable nature of the malady, the disease having now degenerated into a well-marked form of broncho-pharyngeal phthisis.

The gratifying features of this case may be summed up as follows: that, by a well-organized and thorough plan of rectal alimentation and medication,

the patient was rescued from impending death, and a two months' lease of life thereby obtained, thus enabling him to adjust important business interests which, without his personal attention, would have embarrassed his estate.

CASE II.—Mrs. X.—, aged 28 years; married July 25, 1879; consulted me October 30th for gravid nausea and inanition, having been for some time previously under the care of a homœopathic practitioner. The case presented a history of chronic gastric catarrh, extending back through a period of some years, to which was now superadded the excessive and uncontrollable nausea and vomiting of pregnancy. Examination by the touch and speculum discovered only the normal condition of a uterine body, say ten weeks pregnant. There was no erosion of the os; the cervical canal appeared healthy, and the parts were free from discharges. The position of the uterus was also normal, and the other pelvic organs healthy. All food, and even water, was now being rejected by the stomach, the retching and vomiting almost constant, as well as painful, and emaciation was marked. Rectal alimentation was, therefore, instituted November 2d, when all buccal ingestion was suspended. The potassic bromide was also given per rectum, according to the method of Prof. Busey,* which had the effect to so modify the nausea and vomiting that, by the 9th, small quantities of iced lime-water and milk were allowed per orem. For the next three or four days the patient's condition continued to improve so much that her husband felt warranted in postponing a consultation, which I had proposed, with an eminent obstetrician residing in a neighboring city. Finally, however, the rebellious stomach again began to reject everything, and on the 20th all stomachal ingestion was positively prohibited. Rectal alimentation and medication were steadily maintained for the succeeding fourteen days, to the exclusion of all other

*Am. Jour. Med. Sciences, January, 1878, p. 140 et seq., and January, 1879, p. 112 et seq.

methods, and by this time the nausea and vomiting had nearly ceased.

In the meantime, however, the patient's mind became confused and wandering, although her physical condition seemed not to retrograde to any appreciable extent. On the 5th of December buccal ingestion was partially resumed, though only the blandest aliments were allowed, and these in small quantities, cautiously administered. Rectal alimentation was, moreover, still maintained as the chief dependence for nutrition. I should have mentioned that on the 25th of November, Dr. J. R. Cotes, a physician of large experience and undoubted skill, was invited to consult me in the case. He cordially approved of the plan which was being pursued, and advised its continuance, as he did, also, at a later consultation. From the 5th to the 11th of December the condition of the patient remained apparently unchanged. She took small quantities of broth, lime-water and milk, barley water, etc., by the stomach, as well as beef-essence, brandy, milk, and eggs by the rectum. Glairy mucus welled up from the stomach in greater or less quantities daily, from the commencement of my attendance, though without much retching or vomiting after December 5th. On the 11th of December I relinquished the care of the case to Dr. Cotes for the succeeding ten days, during an absence from town. Meanwhile, another physician was associated with Dr. C., as counsel, and I am informed that this *gentleman*, who shall be nameless, for obvious reasons, indoctrinated some of the friends of the patient with the idea that the cerebral disturbance was caused by the rectal feeding, or the stomachal rest, or both—in short, that she had been starved at my hands. Be that as it may, somebody succeeded in so prejudicing the husband against the methods which I had employed, as to make it impossible for me to return to the case. The patient died on the 25th day of December, Dr. Cotes continuing in charge, and he informs me that rectal feeding was maintained to the last.

It is worthy of special remark that the potassium

salt operated to control the hystero-neurotic* symptoms most effectually in this case, and, but for the fact that chronic gastric catarrh had so long pre-existed, thus seriously complicating the pregnant sickness, I have no doubt that the rectal alimentation and medication would have proved successful. Moreover, in spite of all, life was prolonged much beyond any possible point, had the stomach alone been depended upon as an avenue of nutrition.

CASE III.—Mrs. Z——, aged about 24 years, consulted me November 3, 1879. Her previous history disclosed a long-standing case of gastric catarrh. Present condition: emaciation well marked; stomach rejects all food, and even water often returns; eructation of glairy mucus constant and profuse. Examination per vaginam revealed the presence of a small ring-pessary, which the patient informed me she had worn for more than a year, on account of some supposed malposition of the uterus. The pessary was removed as being no longer required. The os uteri, as seen through the speculum, was healthy, though the cervical canal was filled with ropy mucus, while the endometrium was sensitive, and bled when gently touched with the probe. She had never borne children, and stated that she had never miscarried. It is proper to add that she had not lived with her husband for the past two years or more.

November 5th.—On my visit to-day I was shown more than two quarts of viscid, glairy mucus, unmixed with ingesta or other elements, which had been vomited during the previous night. I immediately commenced a systematic course of rectal feeding, prohibiting, at the same time, all stomachal alimentation. Under this plan the stomach soon became more quiet, and no desire for food per orem was expressed. Thirst, which was never extreme, was readily allayed by a goblet of water per rectum, administered twice daily, together with occasional chips of ice per orem. The nourishment of the body, under this plan, was fairly maintained; but, at

* Engelmann: Gynecological Trans., vol. ii., p. 518.

+ lining membrane of the womb

the end of three weeks, her mind, which had already, at times, exhibited confusion, now began to manifest symptoms of acute mania.

December 5th.—Small quantities of very bland aliments were now allowed by the stomach, cautiously administered, however; these were well retained, though rectal alimentation was still continued supplementary thereto.

December 10th.—Beef-essence, in teaspoonful doses, directed to be given per orem. This patient was, on December 11th, confided to the care of Dr. C. F. Rand for the next ten days, for the reason of my absence from town referred to in the previous case. While I was away the same practitioner, alluded to before, was invited to a consultation in the case, and he also visited the house daily for some days, as I am credibly informed, in the intervals of Dr. Rand's regular visitations. On my return I found that the friends of the patient had obtained the impression, in some way, that the cerebral disturbance had been produced by the methods which I had employed, viz.: rectal feeding and medication, and stomachal rest; whereupon my attendance ceased. I understand, however, at the present writing,* that rectal alimentation is still maintained in the case, and with slow but steady improvement.

CASE IV.—Mr. W. H. P.—, aged 57 years, consulted me November 10, 1879, for inanition and its consequent debility. Abdominal palpation revealed a tumor in the right hypochondrium, besides general tenderness on pressure over the entire region of the liver. There had been, for many months previously, general digestive disorder, with foul, gaseous eructations; moreover, the patient was now quite emaciated. I expressed the opinion that the symptoms pointed to malignant disease of the left lobe of the liver, although I did not, at that time, feel quite sure as to its true nature. He experienced so much distress after taking food, that I advised rest for the stomach for a time, and that rectal alimentation be substitu-

* January 28, 1880.

ted. In two days I was called and requested to assume charge of the case, the patient having been, for some months previously, under the observation of a homœopathic practitioner. Under perfect stomachal rest for a week, with rectal feeding regularly conducted, the stomachic condition so improved that buccal ingestion was cautiously resumed; only the blandest aliments, however, were allowed, supplemented with nutritive clysters. This plan has been steadily adhered to until the present time, with a gradual improvement in the stomach symptoms, much to the comfort of the patient; nevertheless, his physical condition does not change for the better. He is still greatly emaciated, and the tumor appears to increase in size, though very slowly.

Prof. James P. White, M.D., of Buffalo, N. Y., was invited to consult with me in the case, and did so on the 7th of January last. He concurred with me in diagnosis and treatment, and likewise gave an unfavorable prognosis.

I have briefly sketched these cases, in outline, for the purpose of basing thereupon some remarks germane to the general subject of rectal feeding in disease; and, for convenience, I have arranged what I shall have to say under three general heads, viz.:

I. Stomachal rest.

II. Methods and rationale of alimentation.

III. Conclusions.

I. First, then, of stomachal rest. A considerable experience and observation has convinced me that an essential factor in the employment of rectal feeding, especially in the severer forms of stomach disability, is absolute and unconditional rest for a time, for that organ, in so far as the introduction of ingesta is concerned. Moreover, I am not alone in this opinion, as I shall presently show. I am not unmindful of the fact that this will, oftentimes, appear to the friends of a patient as a stern, and possibly cruel mandate. Indeed, I have even heard physicians intimate as much, and say, when besought on the subject, "Oh, yes! always give some food by the stomach; a portion of it will stay and do some good;"

and this, too, when everything was being tossed back as soon as swallowed. Nothing can be more harmful, in my view, than to torture an irritated and rebellious stomach in this manner, and nothing could be more reasonable than to apprehend injury from stomachal ingestion in such cases.

It cannot be denied that cases occur, now and then, where the stomach will not retain even the blandest aliments, either liquid or solid, and it needs no refinement of logic to prove that such a condition would only be aggravated by the gastric ingestion of any substance whatsoever. Would it not be far better to rest such a stomach until the disturbances shall have been sufficiently repaired to warrant the belief that the assimilative processes have, at least, been partially restored?

Says Leube, in writing upon chronic gastritis: * "After the diseased gastric mucous membrane has been, as it were, prepared for recovery by one of the methods just mentioned, the most important indication is to *preserve it from all irritation* which might interfere with the cure. This indication is only perfectly fulfilled when, for a considerable period, absolutely no food at all is received into the stomach, for even the blandest nourishment excites the activity of the affected mucous membrane, and in this way may disturb the healing process. In severe cases, therefore, it is always advisable to prevent entirely the reception of food by the mouth and to nourish the patient for some time entirely by the rectum."

Again, when writing upon cancer of the stomach,† the same author remarks: "If these regulations are ineffectual, it is well to give the stomach complete rest for a time by the employment of nourishing injections." This author makes further reference to the importance of stomachal rest for even a considerable time, when speaking of gastric ulcer, acute gastritis, and some other diseases of the alimentary canal. In the excessive and uncontrollable vomiting

* Ziemssen's Cyclopædia, vol. vii., p. 184.

† Op. cit., p. 253.

of pregnancy, a number of writers have of late directed attention to the importance of entire prohibition of stomachal alimentation as a remedial resource. Prof. Busey, in the papers already referred to, makes mention of its efficacy.

Prof. Henry F. Campbell, M.D., of Augusta, Ga., in a paper lately published * "On Rectal Alimentation, etc., in Pregnancy," bears testimony, in measured terms, to the necessity of rest for the stomach in gravid nausea and inanition. The writer of this article has also discussed the question, *inter alia*, of stomachal rest as an important factor in the successful management of the obstinate vomiting in pregnancy, in a paper which will be found in the *American Journal of Obstetrics* for January, 1880. Did time permit, many other authorities might be cited whose opinions bear strongly upon the importance of prolonged stomachal rest in cases of severe disability of the upper portion of the digestive tract; but it would seem an excess of sentiment to dwell over-much upon so simple and plain a question, where the propriety of the practice cannot be doubtful.

II.—We therefore pass to the second part of our discourse, viz., methods of alimentation, in which will also be discussed, to some extent, the rationale of the efficiency of rectal ingestion. Since it is desirable that the rectal food shall be a concentrated form of liquid nourishment, it would seem that the articles best adapted to the purpose are beef-essence, meat broths, milk, whipped cream, raw eggs, etc.

Dr. Nathan Bozeman, of New York, in a recent most valuable and instructive paper on ovariectomy, † recommends the employment of "mashed beef" in rectal feeding, which he thinks greatly exceeds in value any other form of animal nutriment generally made use of for this purpose. It is prepared by chopping say three pounds of fresh beef very finely, then mashing it in a wooden bowl with a pestle. A teacupful of cold water is now added and thoroughly

* Trans. Am. Gynecological Soc., vol. iii., 1878.

† MED. RECORD, July and August, 1879.

incorporated with the mass. The whole is then strained through coarse crinoline, when it is ready for use. It can be kept in a cold place within a glass fruit jar, and should be warmed a little before being drawn into the syringe. For some time past I have made meat juice obtained in this way, the basis of rectal ingesta for patients requiring this method of nourishing, and can testify to its value and efficiency. I am often in the habit of adding to it some of the other articles mentioned, as well as arrowroot, animal jellies, the various condensed preparations or extracts of meat, etc. From four to eight ounces of food prepared in this way may be administered, say two to four times a day, according to the necessities of the case; and, should the rectum become irritated or intolerant of the clysters, the addition of a few drops of laudanum, or, still better, of Squibb's compound liquor of opium, will, speaking generally, arrest such a tendency. Brandy, quinine, and any other remedies needed, can be added to the nutrient injections, according to the requirements of each particular case. In cases where absolute stomachal rest is enjoined, it is well to give, per rectum, a goblet of water once or twice a day. This will have the effect to prevent or relieve thirst and dryness of the mouth, quite as effectually as if given per orem. In many diseases of the stomach and œsophagus, the supply of food and water must take place exclusively through the rectum.* Under this plan, however, rectal alimentation, medication, and stimulation can be gradually carried to the point of affording the greatest amount of nutrition and support. When it is judiciously and faithfully carried out, it furnishes a most precious way of restoring the functions of an irritable or diseased stomach, and is, in many instances, the *only* way in which that organ can be prepared for the ultimate reception of food and medicine.

The resumption of buccal ingestion must, however, be made under the most careful watching and with

* Ziemssen, vol. viii., p. 137.

the greatest precautions; since too early resort to the stomach, in severe cases, for the introduction of either food or medicine into the system, is highly prejudicial to success, and oftentimes provokes irreparable mischief. Great caution should be observed, therefore, in selecting such articles, both of medicine and of food, as may be best adapted to the ends in view, and particularly in testing them with the strength or tolerance of the stomach.

With defibrinated blood as a rectal aliment I have no experience, but, on theoretical grounds, I should expect good results from its employment. It has been used by Dr. A. H. Smith, physician to St. Luke's Hospital, New York, in a large number of cases, and I understand that its therapeutical value has been clearly demonstrated by that observer.*

More recently, Dr. F. E. Stewart, of New York, has brought to the notice of the profession a desiccated preparation of blood† for rectal alimentation, which is now on trial at St. Luke's and other places. If the introduction of blood into the system per rectum should prove as certain and effectual in its action as claimed by its advocates, then will the days of blood-drinking and transfusion be numbered; since the former disgusts many patients, while the latter, even in the most skilful hands, is not unattended with danger. "But its injection per rectum is an easy and safe operation, which can be frequently repeated without risk of injury."‡

Says Dr. Stewart, in the paper already referred to: "Desiccated blood is therefore suggested for rectal alimentation, where the life-powers are threatened by asthenia, due either to the loss of blood, loss of nerve-power, or both. It is indicated in all cases where, for any reason, digestion is impaired, in cachectic states from special constitutional poisons, and

* I regret that I have not Dr. Smith's paper at hand. See, however, Archives of Medicine, vol. 1., p. 113.

Prof. Busey, of Washington, D. C., writes me January 24, 1880, that he has also used it with marked benefit, and corroborates all that Dr. Smith says of its value.

† MEDICAL RECORD, January 3, 1880, p. 11.

‡ Stewart: loc. cit.

in all cases where impaired blood, nerves, or digestion give rise to the anæmic condition with its resulting general debility, hypochondriasis, or other functional disorder."

This brings us to a brief study of the rationale of the efficiency of rectal feeding in disease. What becomes of the aliments when placed in the rectum for purposes of nutrition? In what manner do they finally reach the blood in sufficient quantities to sustain life? Are they absorbed directly by the rectum or colon? Do the digestive fluids descend to meet them in the large intestine, and there prepare them for chylication and absorption? Or does the food ascend to the small intestine, where those digestive principles abound for its assimilation, and where, likewise, are found in abundance lacteals for chylous absorption?

These interesting questions have engaged the attention of physiologists for a considerable period of time; but it is possible, after all, that clinical observation may throw considerable light upon the subject, and, perhaps, aid materially in its final solution. The fact that proper food, timely and wisely placed in the rectum, does, somehow or another, furnish nutrition and support to the body, is quite beyond cavil; but if the *modus operandi* of rectal feeding, in accomplishing these important results, can be assuredly determined, a greater confidence will obtain for the method, and, as a consequence, its domain in the field of therapeutics will be greatly extended.

No doubt the failure of rectal ingestion to obtain the high therapeutical importance which, in the opinion of the writer, properly belongs to it, has been due, in a large measure, to the incredulity which exists in regard to the digestion, assimilation, and final absorption into the blood of aliments, when administered in this manner. It is well known that both rectum and colon are comparatively deficient in lacteal vessels; moreover, if these organs were so endowed, they do not possess the necessary digestive fluids for the disintegration, solution, and chylication of the alimentary matters so requisite to prepare

them for absorption into, and final admixture with, the blood. Hence, some observers—notably Leube—deny the possibility of rectal nutrition unless the food has been first artificially digested. While it is highly probable that the rectum possesses the capacity, in a limited degree, to absorb medicines, water, and even aliments in thin solution, whence they are received into the portal circulation, and then distributed to the system after digestion by the liver; yet this avenue would seem entirely inadequate to furnish sufficient nutrition for the sustenance of life during any considerable period. If, therefore, the absorption of aliments by the rectum or colon was, alone, depended upon to sustain the vital powers during prolonged rectal feeding, it is more than likely that disappointment and failure would result. In discussing this question, Dr. Campbell remarks* as follows: “No physiologist of the present day, however fully impressed with the wonderful capabilities of venous and membranous absorption, can feel perfectly satisfied that these alone, and without the intervention of some other factor wanting in the rectum, can rationally and adequately account for the success and apparently perfect efficiency of rectal alimentation as reported in journals—and here and there in some works on practice.”

The most reasonable explanation of the efficiency of rectal alimentation is, in the opinion of the writer, to be found in the recognition of the reversal of the normal peristaltic action of the intestinal tube, whereby the rectal pabulum is propelled upward from the rectum to the small intestine, where it meets the requisite juices for assimilation, and where, also, abound lacteals for its absorption into the blood. This newly-recognized function of the alimentary canal has been, by its discoverer, Dr. Campbell, very aptly termed “intestinal inhausion;” moreover, he also claims that this phenomenon must invariably occur when rectal nutrition is accomplished.

Dr. Routh bears testimony to the retrostaltic

* Loc. cit., p. 263.

action of the intestinal canal after rectal feeding, in the following paragraph, which I shall take the liberty of quoting from his book: * "Aliment in a fluid state is often absorbed in this way (*i. e.*, nutritive injections), as in the sad examples of adult persons intent on suicide, and who have cut their throats. In these persons, swallowing in the ordinary way has become impossible, yet they have been kept alive for six weeks by these injections. The same is true for cases where, from disease of the stomach, food could not be swallowed without provoking vomiting. Life in this manner has been prolonged till the irritation of the stomach has subsided, and food could be taken in the ordinary way. Even cod-liver oil may be absorbed, if given in an injection. Persons who have so taken it, have complained to me of *feeling the taste of it in their mouths for hours after.* †

That the alimentary canal frequently performs retrostaltic acts in its different sections, under conditions of irritation or morbid disturbance, is a fact of daily observation. In citing examples of this sectional inhaustion of the digestive tract, I adopt, in the main, the admirable description of Dr. Campbell. †

"I. 'Gagging' is an action of the faucial muscles which reverses that part of the act of deglutition in which they are concerned.

"II. Vomiting, regurgitation, rumination (Cope-land-Pavy) and several acts of this class concern both the cesophagus and the stomach. The contents, both solid and fluid, ascend, being forced up into the mouth and out of it.

"III. The familiar phenomenon of the ascent of bile into the stomach, indicates inhaustion between these two portions of the alimentary canal.

"IV. Chylous vomiting (Pavy) is inhaustion from the small intestine, the result of a reversal of peristalsis.

* Routh on Infant Feeding, p. 234, Wood's Library, 1879.

† The italics are mine.

‡ *Loc. cit.*, p. 288.

"V. The stercoraceous vomiting in ileus and in strangulated hernia, and in a few other conditions of serious intestinal disturbance, in which the matters are fluid, semi-fluid, and solid, tells its own history, and we know the journey it has taken, and that it must have passed through the ileo-cæcal valve. . . .

"VI. The ascent of fæces under restraint of the sphincter ani, in which the solid mass ascends above the sigmoid flexure" into the colon, where it remains for some time, if the desire to evacuate the rectum is resisted; and this desire is only again provoked upon its redescent.

"We have seen, then," says Dr. Campbell, "that every section of the intestinal canal is at times subject to inhaust, or receive from below the contents of the section continuous with it. That which is so familiarly and demonstrably true, as pertaining to one and all the parts of this alimentary canal, may certainly, under similar circumstances, be predicated as pertaining to the whole. Then this upward movement, continuously maintained from the rectum to the small intestine, is what I would designate as the intestinal inhaustion subservient to rectal alimentation."

The permeability of the entire alimentary canal by enema has been demonstrated over and over again by numerous observers. In the fifteenth century, Guaynerius related the story of a man who vomited a suppository which had been previously placed in his rectum.*

J. Mathias de Gradibus (Venice ed. of his work, 1502) relates the case of a girl twelve years old, suffering from ileus, who not only vomited fæcal matters, but afterward clysters were rejected by the mouth shortly after they were introduced into the rectum. This state of things lasted for three days, during which time suppositories introduced into the rectum were vomited in like manner.† J. Optheus

* See foot-note to p. 836, Med. and Surg. History of the War. Medical Vol., Part ii., 1879.

† Ibid.

reports a case (cited with others by Senneritus to prove that ileus is not due to obstruction, but to reversal of the normal peristaltic action of the intestine) in which a piece of tallow candle used as a suppository was vomited shortly after its introduction.*

More recently, Dr. Robert Battey, of Rome, Ga., has demonstrated a similar permeability of the alimentary canal. In a paper presented to the American Medical Association in June, 1878, an abstract of which appeared in the *Virginia Med. Monthly*, vol. v., p. 551, the author states that in March, 1873, while giving a large injection of soap and water to a patient, she recognized the taste of soap in her mouth. In January, 1874, he established the feasibility of injecting fluids into the rectum of a cadaver until they escaped by the mouth.

Experiments had been previously made (1845) to the same effect by Alfred Hall, and reported to the Medico-Chirurgical Society of Glasgow. †

Dr. Arnott is cited by James Scott ("Commentaries on the Use and Necessity of Lavements, etc.," London, 1829) as having written: "From an erroneous opinion that what has been called the valve of the cæcum acts as a perfect valve, allowing passage downward only, few practitioners have ventured to order much liquid to be injected, for fear of overstretching or bursting the lower part of the intestine; and the possibility of relieving disease above the supposed valve has scarcely been contemplated. It is now ascertained, however, that fluid may be safely injected, even until it reaches the stomach. ‡

It would, therefore, appear that the permeability of the entire alimentary canal by enema has been clearly established through undoubted testimony.

I have taken some pains to study the phenomena clinically which have occurred in my own cases during the process of rectal feeding, through a care-

*The cæcum
valve acts
as a perfect
valve*

* Ibid.

† Monthly Jour. Med. Sciences, vol. v., 1846, p. 1.

‡ See foot-note, loc. cit.

ful questioning of the patients, and likewise by observations made in persons at the time of rectal ingestion. Soon after the aliments are injected a gurgling sound may generally be heard, and some intestinal commotion may also be observed. Moreover, the patients themselves, when questioned upon that point, have invariably informed me that they can "feel the injection going upward in the bowels" while the rumbling is going on. After the cessation of the commotion they have experienced no fear of the loss of the clysters. In some instances they have complained of tasting the aliments not long after their injection.

Experimental research on the lower animals, so far as made, goes to support the view that intestinal inhaestion occurs when aliments are placed in the rectum; and, if further experiments and observations should confirm those already made in regard to the retrostaltic action of the intestinal tube as an important factor in promoting the accomplishment of nutrition in rectal feeding, its rationale will be so simplified that all doubts as to its efficiency will fall to the ground.

Rectal alimentation will then take rank as a foremost therapeutical measure in all disabilities of the digestive tract, whether of reflex or structural origin, where stomachal ingestion is harmful or impossible; and it will likewise become an important agent in their intelligent management.

One word more before passing to the final section of this paper. I have observed that, now and then, the rectum becomes so irritated by the frequent use of the syringe as to jeopardize the success of the method by an occasional loss of the pabulum. To overcome this difficulty I have of late, in prolonged rectal feeding, been in the habit of introducing the clysters through a Wales' rectum bougie, previously carried into the rectum, and even past the sigmoid flexure. These bougies are made of pure, soft rubber, are quite flexible, and are tunnelled longitudinally, thus readily admitting the syringe nozzle. They are, in fact, most complete rectal-feeding tubes

through which the nutritive injections can be easily propelled. The subjoined cut gives a tolerably good idea of these instruments, which are manufactured by Messrs. Tiemann & Co., New York City.



CONCLUSIONS.

The principles which this paper seeks to enforce may be formulated as follows :

I.—That rectal alimentation is a valuable agent, nay, even an indispensable factor, oftentimes, in the management of all cases of disability of the upper portions of the digestive tract when, from any cause, stomachal ingestion becomes harmful or impossible.

II.—That stomachal rest, in so far as the entire prohibition of buccal ingestion can make it so, is a condition precedent to success in all the severer maladies for which rectal feeding becomes necessary. There cannot be the slightest doubt in regard to the adequacy of nutritive injections, to sustain life and maintain the nourishment of the body, wholly unassisted by the ordinary methods of ingestion, for a considerable period (from three months to five years), as attested by well-authenticated cases of record.

III.—“That rectal nutrition requires rather an explanation of its *rationale* than a demonstration of its truth.”*

IV.—That in a more enlightened understanding of its value and certainty of action on the part of the profession, rectal alimentation and medication will obtain a wider range of therapeutical usefulness than it has heretofore occupied. Limited in the past, speaking generally, to the severer forms of chronic diseases of the stomach and œsophagus, I cannot

* Campbell, loc. cit.

doubt that they will, in the near future, become of vast service in the management of acute disease when, from any cause, the stomach becomes intractable and rebellious.

Example.—In October last I was treating a case of typhoid fever which, by the twenty-first day, became so critical that all hopes of recovery were abandoned by the friends of the patient. The case was rendered particularly desperate by the fact that the stomach now declined to further retain anything—water, food, or medicine. At this juncture, while collapse was threatened, I suspended all attempts at ingestion by the stomach, and gave injections of beef-essence, milk, brandy, ammonia, quinine, etc. This plan was steadily maintained for five days, when buccal ingestion was gradually and cautiously resumed, from which time everything progressed favorably; convalescence was promptly established, and the patient is now quite strong and well. There cannot be the slightest doubt, not only in my own mind, but also in the minds of others who saw the case, that success was due to the timely abandonment of the stomach, and the employment of rectal alimentation and medication.

V.—That the rationale of rectal nutrition is not satisfactorily explained in the absorption of the aliments by the rectum or colon alone; nor by means of the artificial digestion of the food previous to its injection, after the method of Leube; nor by the vicarious secretion of the digestion juices, according to Flint; nor by the attraction downward of the digestive fluids of the stomach and small intestine, until the alimentary mass is met and rectal digestion is accomplished, also an ingenious proposition of Flint. But I am persuaded that the adequacy of rectal feeding, in supplying nutrition and support to the body, can be fully accounted for in the recognition of the retrostaltic action of the intestinal tube—the “intestinal inhausion” of Campbell—whereby the pabulum ascends to the small intestine, meeting there those digestive principles so necessary for its assimilation and chyliification, preparatory to its admixture

with the blood. Here, also, are found in abundance the lacteal vessels for the absorption of the chylous emulsion, ready to perform their part in the vital constructive process, whereby blood is made for the repair of the wasted and worn-out tissues, and for the building of such new ones as are demanded by the economy. Furthermore, that in this manner digestion is as certainly accomplished as though the food came by way of the mouth instead of the rectum.

VI.—That a timely and systematic employment of rectal alimentation and stomachal rest, in cases where the stomach is so disabled as to render the ordinary methods of ingestion harmful or impossible, is demanded alike by reasons scientific and humanitarian; and no person, except the most ignorant or malicious, could for a moment call it starvation. But, on the other hand, rectal alimentation, medication, and stimulation can be carried up to the point of affording the greatest amount of nutrition and support, and that wholly unassisted by any other means of ingestion.

VII.—That, in many forms of disease, stomachal ingestion is positively harmful, even though *all* food may not be immediately rejected. Such as is retained oftentimes undergoes decomposition, producing thereby fermentation, irritation, and distress, rendering it unfit for the purposes of nutrition; and, finally, the stomach expels the offending contents undigested. In such cases digestion is so disturbed as to render stomachal alimentation positively harmful—nay, even impossible; and its entire prohibition becomes at once a therapeutical factor of the greatest import.

VIII.—And, finally, that food sent upward through a healthy avenue, in good and sufficient quantities, will contribute with vastly greater certainty to the nutrition and support of the body, than when it reaches the absorbents through a diseased and disordered digestive tract, with its juices chemically at fault, and all its functions rendered morbid by pre-existing reflex or organic maladies.

