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and removing various diseases / by James Scott.**

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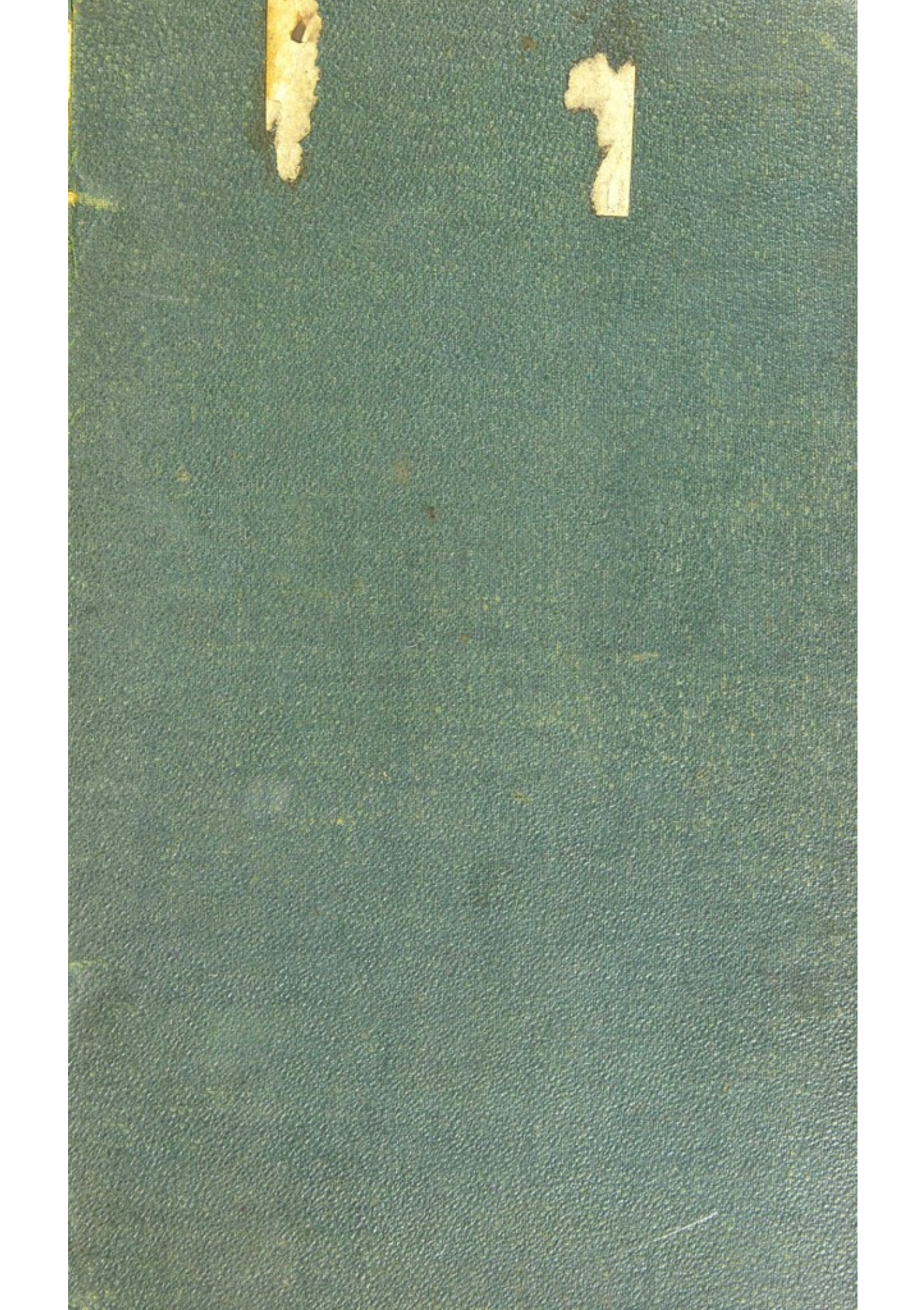
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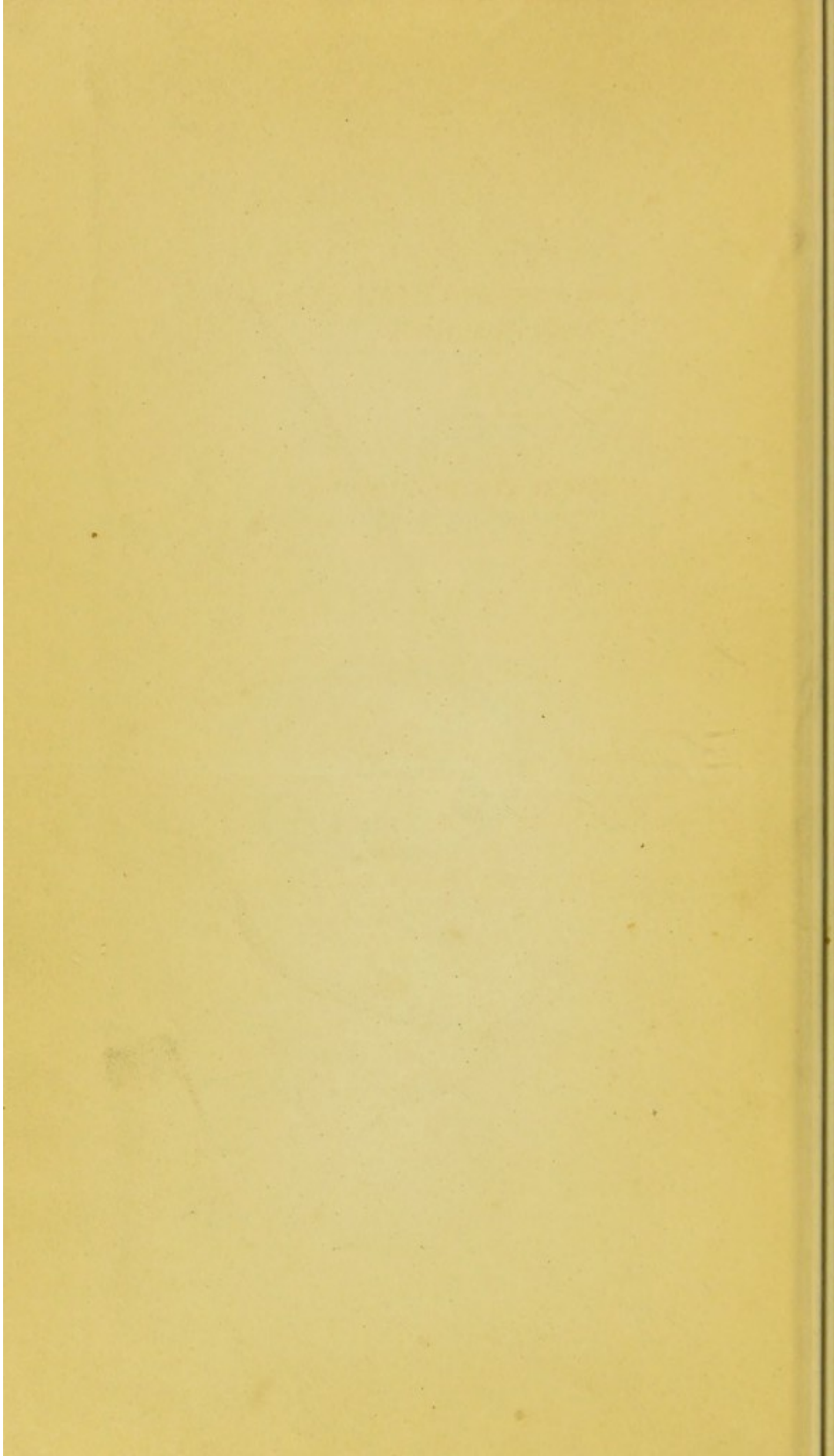




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OF

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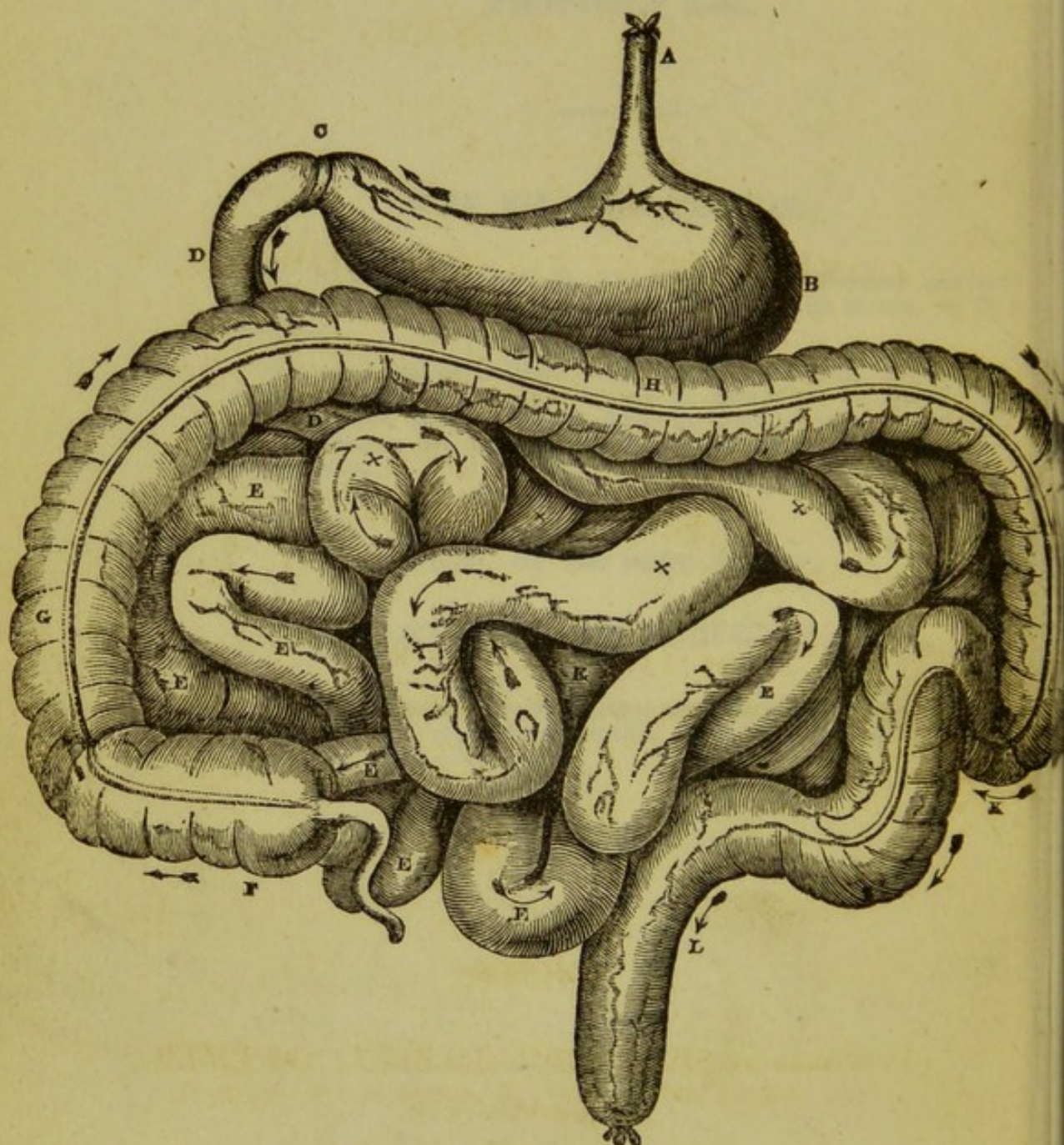
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WHEN FILLED WITH FOOD



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APPEARANCE
OF
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A The Œsophagus.
 B The Stomach.
 C The Pyloric end of Ditto.
 D The Duodenum.
 X The Jejunum.
 E The Ileum.

} Small Intestines.

F The Cæcum.
 G The Colon; ascending portion.
 H transverse arch
 I descending portion
 K sigmoid flexure.
 L The Rectum.

ADVICE FOR THE USE
OF
LAVEMENTS
IN PREVENTING
CONFINEMENT OF THE BOWELS,
AND REMOVING
Various Diseases.

BY JAMES SCOTT, M. D.

Author of "The Village Doctor."—"Journal of Health," &c. &c.

New Edition.

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PREFACE.

In one of Sir Walter Scott's works, a chapter appears, entitled, "*A Postscript which should have been a Preface.*" The learned author's motive for this literary transposition, arose from the suspicion, that a postscript is, generally, read before any other part of the book; whilst, the preface, is as commonly, not noticed at all. In preparing these pages, finally, for the printer, I discover, that I have accidentally fallen into Sir Walter's wake, and have, therefore, nothing more to add in *this place*, than to refer the reader to my "CONCLUSION" or *last* chapter, as *another* example of "*A postscript which should have been a preface.*"

PREFACE

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DEFINITION

OF THE VARIOUS TERMS,

BY WHICH

Entestinal Injections are Designated.

A fluid remedy introduced into the bowels, *by the anus*, is, with much propriety, called an intestinal injection—but as several other terms, descriptive of the same thing, are used in the following pages, it may be as well, to inform the reader, at starting, that they are all *synonymous*, and may be adopted indiscriminately. The word “ENEMA,” is the most classical, as well as the most ancient term, by which, this remedy has been called; but its use has been, almost exclusively, confined to the medical profession—it is derived from two greek words, signifying, *to thrust in*. CLYSTER, is also another greek

derivative, expressing, *to wash or cleanse*. LAVEMENT, means precisely the same as clyster, but is derived from the latin tongue—(*lavo*, to wash) —it has been adopted from the french language, and is very appropriate to the *simple remedy*, so popular throughout france. It would be more strictly correct, perhaps, to confine the term "*lavement*," to injections of *water*, as it would then agree with the sense in which the French use it, viz. washing out—and to this simple kind and signification, have I limited its application, in these pages. Of the *three* terms, *Enema* is the most proper (according to the etymology of the two others) for designating *medicated* intestinal injections—but as the word clyster, is an old name, used by the profession and understood by the public, in the same sense, it may be right to admit its established claim, and allow it to express the same substantive meaning as *enema*.

The pipe and bag—and that clumsy engine, called a French syringe, which were formerly

used for administering intestinal injections, have given place to a safer and more convenient and efficacious apparatus, in the shape of a neat, and, even, elegant little pump, which, unassisted, obeys the hand of the nervous female and the infirm valetudinarian. To the medical practitioner, it presents an improvement upon his former apparatus, more suitable to his use and less annoying to his patient. Under an attack of dysentery, many years since, the medical friend who attended me, administered an opiate injection, from a pewter syringe about *a foot* in length, and the size of *one's leg*; with a long stem (bearing not a slight resemblance in size, to a *shepherd's crook*) which was pushed up the rectum. The severe pain, occasioned by the passage of this *rude pipe*, and the poking of its point, first against *one side* of the bowel, and then, *the other*, (from the unsteadiness of the operator,) compelled me to refuse to have the injection repeated, and was such, as I can never forget. At his own request, I have,

since, put this gentleman in possession of the *modern* lavement apparatus, with which he was, equally, surprised and pleased—and I take this opportunity of offering my services to any of my readers, who may desire to command them, on similar occasions.

INSTRUCTIONS
FOR THE
REMOVAL AND PREVENTION
OF
COSTIVENESS,
&c. &c. &c.

SECTION I.

Preliminary Observations on the Use of Lavements, and the Abuse of Purgative Medicines.

DURING a visit to Paris, some few years ago, I was much surprised at finding that the use of lavements prevailed in all classes of society, and was resorted to by some persons, habitually and even daily. From closer observation of the domestic habits of the French, I found that purgative medicines were scarcely ever taken by unprofessional persons, except

under the direction of their medical advisers — the lavement, as a simple domestic remedy, being preferred, for soliciting the bowels to their necessary and regular action. When I reverted to the popular practice of taking opening medicines, that so extensively prevails in England, and contrasted its unnatural character and pernicious consequences with the harmless simplicity and satisfactory effects of the lavement, I at once ceased to be astonished at the popularity of the latter, in a country where neither quacks nor nostrum venders had seduced the understanding by the self-interested allurements of “bilious pills,” and a host of other advertised Purgatives. But thus far I saw only a demonstration of unprofessional opinion, which, without farther observation, I might, perhaps, have attributed to caprice, or national prejudice. The opportunities, however, afforded me by repeated excursions to the French capital, of witnessing both hospital and private practice, did not fail to shew me, that the popular custom was not only countenanced but adopted by the medical profession, and I could not long remain ignorant of its simplicity and efficacy.

From this time, I continued to bestow much

attention on the subject, and to carry the opinions resulting from such observations, into my daily practice. The consequences could not be otherwise than a thorough conviction, on my own part, that the administration of intestinal injections had been neglected *by the profession*, to the loss of benefits, no other treatment could compensate—and *by the public*, to the injury of their health and comforts. I will go further, and assert, that notwithstanding the aversion is rapidly wearing away, which individuals in this country have entertained against the use of lavements, and that we have among us many experienced and talented medical men who eulogize and practice it—the operation is still very limited, little understood, and not sufficiently appreciated even by many who have experienced its efficacy.

The use of lavements is of very ancient origin, being referred to, in the most remote medical records which have been snatched from the destructive hand of time. It has been the province of *modern* practice to disregard its actual utility, and to supersede its application by an entire reliance upon other modes of treatment. I think I can discover that it is within the last fifty years, that the

administration of clysters first became neglected by medical practitioners—for one can scarcely consult a medical book, down to that time, without observing that intestinal injections were recommended in almost all the diseases therein discussed. In the present century, most certainly, the practice has been on the wane; and within my professional career (which has now been about five-and-twenty years,) it has decidedly sustained a greater diminution. This may be, and indeed I suspect is, owing to the ardour manifested in the prosecution of researches into chemical pharmacy, and to the taste and emulation for making therapeutical experiments—whereby new remedial modes and agents have been discovered, and, in consequence, many of the older disregarded. If, under this modern prosecution of medical routine, we are allowed to conceive that the pruning knife may have been used with more enthusiasm than discretion, it will not much surprize us to find the operation in question, at length cut down by a remorseless sweep, and consigned to a less prominent station in the *methodus medendi* of the present day, than it formerly held. The administration of injections never having been ranked amongst the most agreeable duties of

the medical practitioner, it was, probably, one that he would unreluctantly forego, if a succedaneum could plausibly or reasonably be adopted—or if considered peremptory, he but too frequently committed the operation to the management of an ignorant nurse or an infirm old woman, in whose hands, the practice, naturally, failed to be productive of sufficient benefit to support its tottering reputation. A third cause of neglect of this remedy may fairly be attributed to the want of a proper and convenient apparatus for applying it, of which I shall speak more fully hereafter.

These considerations have induced me to make this appeal in behalf of a curative measure entitled to the serious attention of the profession and the public—to give my testimony of its intrinsic value—and to endeavour to shew, that its great utility entitles it to be regarded as an indispensable addition to the *Materia Medica*, and a valuable requisite in domestic economy.

I must intreat that it may be clearly understood, I have no intention of depreciating the value of purgatives, or of lessening their just importance as indicated in the treatment of diseases. But I would confine them to

their legitimate use, and correct that flippancy in resorting to them, which constitutes a gross abuse of their powers—converts them, but too often, into injurious agents—and occasions a neglect of a safer and more efficacious practice. I need seek no stronger corroboration of these remarks, than the evidence furnished by the enormous revenue derived by the Government from nostrums—a very great portion of which, results from the sale of *purgative pills*. The abuse of aperients cannot be too highly reprobated, for such are the effects of accustomed doses of opening medicines, that the necessity for their repetition is increased by every dose, until the sluggishness of the bowels is rendered so inveterate, that a motion can scarcely be obtained, except procured by the usual stimulus, which to correspond with the increasing torpidity of the bowels, requires to be augmented in strength. An exasperation of costiveness, is invariably experienced from the use of medicines of this class—for most persons must have observed, that their bowels are confined for a day or two after the operation of an active aperient. Besides these inconveniences, there are several evils attendant upon purgative remedies, particularly to

weak and irritable constitutions — such as nausea, head-ache, griping, dryness of the mouth and tongue, pain in the back and hips, lassitude, debility and general uneasiness and irritation. These symptoms are always experienced by myself, even from the mildest cathartic, and I resort with the greatest reluctance to purgation, even when necessary. And again, the quality of the purgatives in popular use, is but too frequently, in itself injurious—particularly of pills, the basis of which, almost universally, is *Aloes*. This article acts specifically upon the lower bowel, creating heat, pain, and tenesmus—producing and aggravating piles—and occasioning scirrhus diseases and ulceration of the rectum. One of the most horrible cases which I have ever witnessed, was that of the late Mr. F—— of the Royal Exchange, who died after protracted sufferings from diseased rectum, occasioned entirely by taking aloetic pills. Generally the cause of constipation is in the large or lower bowels, and in correcting it by the use of cathartics, we inflict chastisement upon the stomach, which is not the offending organ—it is hard that the stomach should be made to suffer for the peccadilloes of its neighbours!

The injurious effects, likewise, of reiterated purgatives, are manifested in many febrile disorders, and more particularly, perhaps, in the exanthematous or eruptive fevers, in which the lining of the stomach and bowels is implicated in the inflammatory action—such as scarlet fever and measles. The stimulus of purgative medicines is frequently observed, also, to aggravate *general* fever, and certainly, under certain circumstances, to increase *local* inflammation, such as of the lungs, stomach, bowels, and uterus. In some stages of typhus and other low fevers—in the latter stages of small pox, erysipelas, &c. the exhaustion occasioned by an improper administration of a single dose of purgative medicine, may plunge the patient into irremediable debility. I do not mean to assert that it would be injurious to *administer a purge* in any of these complaints—just the contrary—the state of the patient may often demand it, and the remedy in the hands of a judicious practitioner becomes invaluable. I speak but upon general principles, and am only desirous of pointing out the expediency of resorting to enemas, in diseases of this nature—in which, as the experience of every medical man shews, the evacuation of the bowels,

(both necessary and essential to the life of the patient) may be daily procured by safe and gentle means, whilst injurious effects may be hazarded by contrary treatment.

I request to state, that it is not my intention, in the following pages, to discuss the method of curing diseases beyond its immediate relation to the subject especially under consideration. I shall, therefore, in as cursory a manner as I can, point out the form and mode of administering injections for the relief of various morbid affections, in which the advantages obtained from their use, cannot be, equally, procured by any other means.

SECTION II.

*On the Influence of Intestinal Injections
derived from the Sympathetic Relations of
the Lower Bowels.*

IN considering this subject, it is necessary to inquire into the capabilities of the *lower bowels* of receiving impressions from external agents, and of communicating them to other organs and parts of the body. It is also necessary for a due apprehension of the subject, that I should state the grounds upon which this mode of practice is adopted. This I shall hope to do in the most convincing manner—but first, let us revert to the original proposition.

Although the *lower* portion of the in-

testinal tube is less abundantly supplied with absorbent vessels than the *upper*, and less exquisitely organized than the *stomach*, it is, notwithstanding, possessed of the faculty of absorption to a considerable extent, and of nervous and physiological relations capable of creating powerful sympathies with various and distant parts of the body. The absorbing power of the mucous membrane of the lower portion of the intestinal tube (denominated the colon and rectum) is evinced by its action upon the fæculent matter passing through the canal, which is semi-liquid at its entrance into the cæcum (or first large intestine) but gradually becoming inspissated and of a firmer consistence, as its moisture is abstracted by the absorbent vessels in its course through the colon, assumes a compact and solid form in the rectum. It is probable that some remaining portions of nutritious matter also, which may have escaped or been rejected by the lacteals of the small intestines, (where the digestive function most especially resides,) are taken up by the less fastidious absorbents of the large bowels—indeed, this fact has been proved by some anatomists, who have discovered chyle in the absorbent vessels passing from the colon.

Another illustration of the same fact, is shewn in the effects of administering soups, broths, milk, &c. in the manner of clysters, by which practice, persons have been kept alive without receiving food into the stomach.

The physiological relation of the lower bowels with the *nervous* system, is demonstrated by the experiment of injecting spirituous liquors into the rectum, by which, not only is intoxication produced, but it is said to ensue *EVEN MORE QUICKLY than if the same had been taken into the STOMACH!* It is also asserted that the virulent effects of several poisonous substances are exaggerated, when the articles are administered clysterways—camphor, by this mode of exhibition, speedily exerts a powerful effect upon the nervous system, A case is related in the “Transactions of the French Academy” of a female patient, who was immediately intoxicated by an injection composed of brandy and camphor—she stated that she tasted the brandy very quickly after its immission into the rectum.

In cases of protracted labour, from deficiency of pains, I have, sometimes, succeeded in arousing uterine action, by injecting into the rectum, an infusion of horse-radish,

savin, or other *Exciting* stimuli procurable on the occasion.

The effect of *Narcotic* injections, in relaxing morbid rigidity of fibre in the muscular structures of the body, is exemplified by the administration of the *tobacco* enema in cases of strangulated hernia, tetanus, suppression of urine, &c.—and of *opium* in the treatment of stricture and of calculous and nephritic diseases.

Hysteria, Asthma, &c. are relieved by the *Antispasmodic* influence of injections impregnated with assafoetida or camphor—and flatulent colic, suppression of urine, &c. admit of similar relief from turpentine.

Tonic injections become eminently useful and necessary in some fevers, ague, &c. when the stomach is unable to retain, or the patient incapable of swallowing bark.

Astringent clysters are indicated in chronic diarrhœas, hæmorrhoids, prolapse of the anus, &c.

Warm and Cold injections of simple water, act beneficially, from their temperature—the former as an internal fomentation to contiguous parts, as the uterus, bladder, kidneys, and other organs—and the latter, from their

direct refrigerating influence in piles, uterine hæmorrhage, &c.

A strong sympathetic action is, certainly excited in the small intestines and stomach, by the stimulus of clysters upon the large bowels—for I have had many opportunities of observing the cessation of vomiting, soon after the administration of an injection, but *previously* to any *cathartic* effect ensuing. This may be considered to arise from the primary or sympathetic action of lavements; an effect that ensues from the administration of *water* only—but if we add *medicinal* substances to the liquid (such as salts, senna, colocynth, jalap) and suffer them to be retained, then the usual phenomena of *purging* takes place after a given time, in the same manner as though the remedy had been swallowed, which is produced, unquestionably, by the absorption of the ingredients of the clyster. By the stimulus of such an injection, a powerful excitement is produced, not only in the whole alimentary canal, but in the constitution at large—giving a temporary stimulus to the nervous and vascular organs of the whole system—whilst (as was remarked, by an experienced and accurate observer) “the

vital properties of the mucous membrane of the colon are developed, the blood flows in greater quantity and with greater force into the capillaries of its texture, which becomes swelled, reddened, hotter and more sensible—in short, a determination of blood and nervous excitement is made, *pro tempore*, to this portion of the canal, which becomes a kind of centre of vital action for the time.”

Thus are enumerated a few examples of the therapeutical agency of various articles in the form of lavement, arising through the vital capabilities of the lower bowels of receiving impressions and of communicating them to other organs,—I shall hereafter, give distinct formulæ for preparing injections suitable to such diseases in which my experience has confirmed their utility.

SECTION III.

*On the Eligibility of Intestinal Injections,
shewing that the Efficacy derived from their
Use, cannot be equally obtained by any other
Means.*

IN the following remarks on the use of Injections, I shall endeavour to shew, (and I have no doubt of doing so satisfactorily) that it is not merely a remedy chosen from the routine list of curative means, without stronger reasons for determining the selection, than its being one amongst the number—but that it is often an imperative and indispensable measure, possessing an efficacy, *no other means* can supply.

In illustration of this remark, I shall first

allude to a fact with regard to the *relative* effects of purgative injections and cathartic medicines, that has been, hitherto, too commonly overlooked—I refer to the general inadequacy of aperients, to clear, thoroughly, the intestinal canal. Every professional man must frequently have observed in his practice, that the exhibition of purgatives, in many cases produces but a trifling benefit (and often none) *notwithstanding they may act with energy and procure numerous liquid evacuations*—but if a *copious* enema be afterwards thrown up, voluminous motions are discharged, attended by complete relief to the patient. I have witnessed innumerable cases, where, after the most active purging, from medicine taken by the stomach, the administration of a copious injection, has brought away *fæces* of such a hardened consistency, as left no doubt that they must have remained impacted in the colon, undisturbed by the previous remedies. Cases frequently occur, of persons, whose bowels having been preserved loose for several days in succession by a course of laxative medicine, have, nevertheless, after the use of an injection, voided a large bulk of hard and figured *fæces*, through which the liquid evacuations had furrowed a passage.

without dislodging it. I have devoted much attention to the effects of purgative medicines, and the papers which I published some years since, upon the peculiar action which various cathartics exert upon particular portions of the alimentary canal, shew that I am sufficiently aware of the specific influence of certain articles of the *Materia Medica* upon the large intestines—but I do not hesitate to assert, that these remedies, when administered by the mouth, have not, generally, the power of unloading the colon and rectum in an equal degree with a copious injection. Indeed, I am almost led to conclude, that cathartics *seldom entirely* purge off the effete matter of the lower bowels, and that in most instances, *solid fæces remain* in them, *after* the operation of the medicine has ceased—this opinion is strengthened by post mortem examinations. I could enumerate many cases of the retention of large quantities of fæces (in despite of active purgation) which yielded to the influence of injections—but my limits forbid the detail.

There are many persons of weak and irritable constitutions, who suffer severely from the action of purgative medicines, as I before remarked, at page 7. To such persons, the

use of a lavement is almost a blessing, as it relieves them, without any of the temporary torment inflicted by taking medicine—and as such persons are exceedingly subject to costiveness, the lavement is a boon of no small value. Acute spasmodic and inflammatory attacks of the stomach and intestines, often leave these organs in a state of irritability during a long period, which causes the mildest aperient to produce severe griping and spasm—and as constipation, usually, exists at the same time, the use of injections is the only means by which the bowels can be acted on, without much suffering. The morbid sensibility of the viscera, in such cases, is sometimes so great, that nothing but *Water* Lavements can be endured, and such, even, not without considerable pain. I have known in those instances, that merely a little camomile infusion or soapy water, injected as an enema, has produced tormenting effects during several hours after. Piles and structural diseases of the parts about the anus, are complaints, also, which are seriously aggravated by an injudicious use of purgatives—and I have seen the utmost distress and danger inflicted in cases of stricture of the rectum, by an accumulation of large quantities of faecal

matter, which had been driven downwards by aperient medicines, and retained at the contracted part until removed by the immission of a lavement.

When opening medicine has been taken, and harasses the individual with gripings and ineffectual attempts at operating, its purgative effects may be hastened, by using a lavement of warm water. A smaller dose, or a milder kind of aperient than would, otherwise, be sufficient, may often be rendered efficacious by a lavement being thrown up a few hours after, to assist the operation. The griping produced by purgatives, especially the resinous and drastic, is also relieved by lavements of thin gruel, starch, marsh-mallow tea, decoction of linseed, and other bland liquids. These mucilaginous injections are eminently useful in sheathing the acrimony of corrosive and metallic poisons, and protecting the mucous membrane of the bowels from their irritation. I had an example of this, in a female who attempted suicide by taking an immense quantity of sugar of lead. I applied the pump and ejected the last particle of the poison from the stomach—but so large a portion of it had passed into the bowels, that there was great danger of the miserable

patient falling a victim to this secondary calamity—happily, the instrument, which performs a double operation, enabled me to evacuate the remaining poison, by lavements.

The peculiar eligibility of injections, is in no disease or circumstances more strongly marked, than in fever. In this class of diseases, the stomach and bowels are the organs on which the first morbid impressions are made. Their secretions become vitiated, and the motions acrid and fœtid. The acrid and septic particles of the fæces, prove exceedingly injurious when absorbed and carried into the blood—and it is of the first importance, therefore, to prevent their retention, and preserve the intestines free from irritation. But this cannot be done by the repeated administration of purgatives, through the course of protracted fever, *without weakening the tone of the stomach and bowels*, and, consequently, by sympathy, *inducing debility of the whole system*. Simple lavements of warm water merely, should, therefore, be administered, once or twice a day during the course of fever, to dilute and wash away the morbid contents of the colon and rectum, and improve the secretions of the mucous membrane of the canal. A small dose of rhubarb

or castor oil daily, in conjunction with lavements, will be sufficient to cleanse the stomach and small intestines.

The eligibility of injections is particularly apparent in cases where their *local* position confers efficacy on their application, such as of *cold* water for prolapsus uteri, piles, uterine hæmorrhage, &c.—of anti-inflammatory injections of Goulard or zinc for hæmorrhoidal inflammation—of astringent injections in prolapsus ani, relaxation of the rectum or the sphincter muscle, diarrhœa, &c.—of irritating injections for the destruction of ascarides—of *warm* water as a relaxant for stricture, retention of urine, &c.—of tonic injections, for averting miscarriage, checking fluor albus and giving tone to the bladder and rectum—of stimulant injections for invigorating the intestinal canal, rousing the action of the uterus, relieving suppression of the menses, and removing female discharges—of nutrient injections for the support of life under extraordinary circumstances—and of demulcent injections for alimentary fluxes, ulceration and poisoning. These are the cases in which *locality* only, confers a peculiar quality upon the remedy, which cannot be communicated by any other mode of practice.

Injectons may also be rendered indispensable, by the patient being unable to swallow—as in cases of stricture of the œsophagus, severe quinsy and malignant sore throat—or during an irritable state of the stomach, when the organ immediately rejects every thing by vomiting. Under suspended animation, the injection of ammonia, or brandy with hot water, is highly necessary.

The state of the stomach is not such as will, at all times, endure the kind of medicine necessary for the disease, as bark, &c.—and in some cases it would be manifestly improper to administer the necessary remedy by the mouth—tobacco, for instance, in the treatment of strangulated hernia. There are, also, many cases in which the stomach would be disordered by a medicine, or its rejection ensue, without any beneficial effects—both of which may be obviated, and our intention fulfilled, by using the same remedy as an enema. On this account, turpentine, opium, assafoetida and tobacco, are frequently thus applied.

We have yet to learn whether the controlling influence of digestion, may not so far influence or modify the effects of medicines introduced into the stomach, as to de-

prive them of many useful effects on the system which may, probably, be obtained by a contrary mode of administration—and whether we may not still farther and usefully extend the practice I have here undertaken to advocate.

SECTION IV.

*General Remarks on the Causes, Prevalence
and Effects of Constipation.*

It may be inquired, what is the state of the bowels that obtains the name of Costiveness? The designation expresses the *omission of a daily evacuation by stool—or the motions becoming so hard and dry as to be discharged with pain or difficulty.* The effects of costiveness, as thus defined, are discovered to vary considerably with different individuals—to some it becoming habitual to have their bowels relieved but once in two or three days, or even longer, and yet continuing in good health. Such aberrations, however, can be attributed

only to a peculiarity of constitution or circumstances not very prevalent, and do not invalidate the descriptive character above given. But still, costiveness must be regarded, rather as a relative than a positive condition, depending upon constitutional effects for its true character. As long as the body preserves its perfect health, a slow action of the bowels cannot, with propriety, be considered morbid, though they should be relieved but once only in three or four days. This condition may be one of a series of functions instituted by nature, upon the harmony of which, the balance of the constitution and the preservation of health may depend. Indeed, I have been strengthened in this opinion, by observing the disturbance, nay temporary illness, induced by the exhibition of a purgative to persons in good health, but who, being naturally costive, have endeavoured to correct it by aperient medicines. No doubt, however, can exist for a moment, of the injurious nature of a slow action of the bowels, whenever symptoms are present indicative of intestinal irritation. Sickness, head-ache, fœtid breath, flatulency, inflammation of the eyes, fever, cough, and uneasiness or tumefaction of the belly, combined with a confined state of the

bowels, are pretty certain signs of its existence.

A strong and robust habit of body seems to be connected with a slow action of the bowels—but it must be also allowed, that costiveness sometimes arises from a weak state of the intestinal canal. It is said also, that very laborious employments render the bowels costive—but however this may be, I believe that the want of sufficient exercise is a much more frequent cause. The sedentary habits of literary and commercial men, entail on them a host of disorders arising from constipation. Diet consisting of too much solid food, especially of lean meat, game, and other stimulating articles, induces costiveness—and the use of port wine and strong malt liquors adds to these effects. The bowels may also be brought into an irregular state by inattention to the claims of nature—this is a fertile cause of the complaint in females, and is often established in early life by the restraints and confinement of schools. It is, also, experienced by persons travelling, and by individuals in professions or employments which oblige them, often, to resist the desire for evacuation and to suit the time of attend-

ing the water-closet to the convenience of business.

Constipation has been regarded by some physicians as the destruction of half mankind—how nearly the number may approximate to this alarming calculation I am not prepared to state—nor is it, in truth, a fact upon which we can acquire a precision in evidence sufficient to enable us to decide in such positive terms. Persons have also said, that those who are costive from an early period of life, rarely attain the age of forty years—if this be correct, it would be an interesting inquiry to ascertain how it operates in shortening life. From my own observation and inquiries into this subject, as well as from the opinions of many respectable medical writers, it seems quite certain that a costive state of the bowels is one of the most general conditions of the body prevailing in civilized society—and though but little noticed by individuals whilst unattended with pain or personal inconvenience, yet it seldom fails to lay the foundation of disorders, that either prove fatal to life, or tend materially to embitter and disturb it.

It is curious to observe, how soon after our

entrance into life, do we become the victims of constipation. It is usually the earliest symptom of disorder experienced by *infants*, and within the first twenty-four hours after birth, often inflicts very severe suffering upon the babe, whose bowels have not exonerated themselves of the meconium. From this period, through all the succeeding stages of life, constipation is a source of serious evils to both sexes. In *males*, it occasions, during the period of youth, a tendency to diseases of the lungs and other vital organs, and if neglected after the meridian of life is passed, induces a loaded state of the vessels of the head, that often terminates in apoplexy or palsy. To the *female* constitution, costiveness is not less destructive—retarding the appearance of the menses, or interrupting them at an important season of youth, when their regularity is indispensably necessary to give health to the constitution and fit it for its future destinies; and when morbid impressions are easily made upon the organs of vitality, of which consumption and other fatal diseases are the consequences. At a more advanced period of life, when the functions peculiar to the sex have ceased, constipation of the bowels lays

the foundation of painful and equally serious diseases.

To persons of every variety of habit, under all circumstances, in all situations, and at all ages from the cradle to the grave, costiveness must and will prove an injurious attendant. If an individual, either by hereditary transmission, peculiarity of formation, or acquired liability be predisposed to certain constitutional affections—as gout, consumption, or scrophula—constipation gives life to the seeds from which they spring, and establishes diseases, that, but for its baneful influence, might never have been developed. It has also been observed, that it predisposes the body to the reception of contagion, rendering us much more obnoxious to the influence of its causes whenever we may happen to be placed within its range. An increased susceptibility to diseases in general, and *to some in particular*, is in fact engendered by costiveness—of the latter I cannot adduce more striking examples than those of yellow fever, cholera, and other disorders that prevail in hot climates.

The severity of almost *all diseases* is increased by constipation—the sympathetic in-

fluence of the bowels extending itself to all parts of the system. We observe most particularly the effect of this influence in *fevers*, and the necessity for a proper and regular evacuation of the alimentary canal is universally understood—in fact, in medical practice, it forms an important indication of cure never to be safely disregarded.

Another injurious effect of a constipated habit, is the straining which necessarily takes place at the expulsion of hardened and bulky fæces, whenever costive persons pass a motion. Inflammation of the eyes is much aggravated by it, and head-ache frequently succeeds efforts of this nature. The records of sudden death, which so often present themselves in our daily publications, shew how frequently persons die at the water-closet or close-stool—the catastrophe, no doubt, occasioned by accumulation of blood in the head, or undue distension of the lungs. During the strong and protracted propulsive efforts, which a costive person is obliged to make for discharging a motion, the breathing is suspended, and the face becomes reddened from the swelling of its blood-vessels—which are dangerous conditions to individuals predisposed to apoplexy or determination of blood

to the head, and equally so to those who are the subjects of cough, pulmonary affections and diseases of the heart or the chest. Ruptures are sometimes actually produced by hard-straining in voiding costive motions. Piles, fistula and diseases of the rectum and of the anus may be reckoned in the catalogue of complaints produced by constipation.

Old age is peculiarly characterised by a prevailing state of constipation, arising from diminished irritability and propulsive power of the intestines. Senility may be considered as commencing at the age of sixty, and from this period the bowels become more torpid from the natural insensibility arising from age, and the increasing weakness of all the muscular structures of the body to which, most probably, a diminution both in the quantity and stimulating quality of the bile contributes. The function of the digestive organs, being also equally impaired, a large quantity of undigested aliment passes into the bowels, where it is detained and becomes acrid and putrescent, giving rise to numerous serious symptoms.

SECTION V.

Females shewn to be especially liable to Costiveness—its injurious Effects upon the Sex at the various and critical Stages of Life, described—and the Necessity of correcting it by the use of Lavements, inculcated.

FEMALES, by formation and other natural causes, possess an inherent liability to costiveness, and few of them, if any, escape entirely its injurious consequences. Its morbid influence upon the general health is strongly marked in the youthful constitution. The girl becomes pale or yellowish, and falls away, her appetite diminishes, (this is not, however, invariable,) the tongue is furred, the breath offensive, the gums swollen, and

she complains of pain in the side; her breathing is short upon going up and down stairs or upon quickening her pace, and she has oftentimes a short hacking cough, palpitation of the heart, and head-ache; the lips sometimes crack, and the teeth become encrusted or carious; pimply eruptions break out upon the face, whilst various parts become puffy. This disturbance of the general health frequently deranges the system peculiar to the sex, checking altogether its function, or leaving its action incomplete and irregular. The bosom now sympathises with its associated organs, and lumps or tumors form in one or both breasts. I was consulted, sometime since, by Mrs. L——, respecting her daughter, a young lady of 19, who had a painful swelling in the left breast. Upon examination, I discovered derangement of the general health, that gave sufficient warrant for attributing the local affection to a disordered state of the bowels. The sequel shewed I had not been mistaken—for under the method which I advised for duly unloading the bowels, the tumour in the breast speedily subsided, after having, for a long time, resisted various local and constitutional remedies. Young persons, who are habitually

costive, frequently complain of pain at the pit of the stomach, so severe at times as to give rise to spasm. It appears to be entirely sympathetic with the large bowels, as the tongue continues clean, and the digestive process uninterrupted.

The evils of this period having been escaped or subdued, the female is yet again to become obnoxious to intestinal disturbance, by a state of things induced by child-bearing. Costiveness is, almost, an invariable attendant on pregnancy, and many distressing symptoms and feelings are occasioned by it. During pregnancy, such an immense volume of fæces has been known to collect in the bowels, as to destroy the patient. Dr. Lemazurier has reported the case of a lady, who died from this cause after delivery, whose colon was so enormously distended with fæces that had accumulated during her pregnancy, that it measured the prodigious size of a foot and a half in circumference—I have calculated that its contents could have been very little less than a bushel by measure. The patient had recourse to medical advice, two months before her confinement; but her physician declined any attempts at unloading the colon, from an impression that it would be imprac-

ticable until after her delivery—an unfortunate conclusion for the poor patient, whose life might, probably, have been saved under proper treatment. A case is also narrated by Dr. De Leon of Colombia, of a collection of *fæces* during pregnancy, amounting to *seven gallons*; the intestines measuring *thirteen inches* in circumference—the patient died a few hours after delivery. Descent of the womb, from relaxation or other causes, will occasion costiveness by the pressure which it makes upon the rectum.

It has been correctly remarked by Dr. Marshall Hall, in his Medical Essays, that the injurious effects of constipation are not experienced at all times, though the cause be never absent—but are developed by accidental circumstances that prove exciting causes; as colds, fatigue, injuries, shocks of the constitution, &c. which are much more likely to induce the morbid consequences of the latent disease in females, than in the other sex—the state of *parturition*, is a period peculiarly obnoxious to their occurrence. Dr. Hall is an attentive, patient, and acute observer of nature, and a close reasoner upon bed-side facts; hence he may be followed as a safe guide in tracing causes and effects

through a chain not obvious to superficial inspection, and I cannot, therefore, too strongly recommend his medical researches to general attention.

The female sex, beyond doubt, are peculiarly liable to an overloaded state of the bowels, and are powerfully and injuriously affected by it through the whole course of their existence. Happily the remedy is obvious, of easy application and may be resorted to, in most cases, with the best hopes of success. I shall divide female life into the various stages of *Youth—Pregnancy—Parturition—Lactation—Weaning—Middle Period of Life—Cessation of the Menses—and Decline of Life*—and shall pass in review the effects of constipation upon each state respectively.

Youth.—In the treatment of disorders attending this time of life, the remedy to which I alluded (the warm water lavement,) has been, from a mistaken and misplaced delicacy, entirely withheld from young women. I attempt not, however, to combat with the prejudices of mankind, otherwise than by holding up a representation of their interest, and shall, therefore, pass at once to remark, that the lavement is, unquestionably, a rational as well as effectual mode of relief, and one

which may be safely and efficaciously adopted at all periods of life, from the cradle to the grave. No girl should be allowed to pass the second or third day with constipated bowels, without receiving a lavement of warm water. The evacuation should be examined, and if little or no fæculent matter has been discharged, the lavement should be repeated in an increased quantity. It is very common for the contents of the bowels to elude the first, and even reiterated injections; but a persistence in the application, never fails in ultimate success, and the prodigious bulk of solid motions often evacuated in this manner, is truly astonishing. Parents and conductors of seminaries ought to be aware of these facts, and be provided with the means of administering the remedy.

Pregnancy.—The great change produced in the uterine system by impregnation, is accompanied by no less an effect upon the stomach and bowels, which disturbs the balance that hitherto equipoised the actions of the alimentary canal—hence uneasiness and irregularity, in these organs, characterise the pregnant state. The free and regular action of the bowels is interrupted by the pressure of the enlarging uterus upon the rectum and colon—

the propriety of obviating which, by purgative medicines, is properly considered, very questionable, as there are not wanting instances of miscarriage and other serious consequences, occasioned by their use. The value of lavements can, therefore, in no case be more highly appreciated, than during pregnancy, and the occasional administration of an enema becomes indispensable. A quart of tepid water, in which a table-spoonful of soft soap is dissolved, may be used twice or three times a week, or oftener if the patient be troubled with piles or tenesmus. It has been recommended that she should recline upon the *right* side during its administration, that the pressure of the uterus might be removed from the colon as it descends upon the *left*. As labour approaches, the bowels should be unloaded by as copious an injection of warm water as can be borne, which should be repeated every twenty-four hours if the labour prove tedious. Dr. Marshall Hall, in his "Commentaries on the Diseases of Females," speaking of the prevention of child-bed disorders, says, "I believe no means would induce so much to this purpose as the invariable administration of copious warm water injections at some period before or during labour

The large intestines would thus be relieved of their load, and a great and fertile source of future disease would be removed."

Parturition.—In the lying-in state, constipation is, also, productive of disease and danger, and the most sedulous attention to the state of the bowels, after delivery, is requisite. The mass of fæces which is prone to collect in the bowels during the period of pregnancy, and the great quantity frequently dislodged by the use of injections, after delivery, sufficiently manifest the utility of lavements in the child-bed state. One or two pints of warm water may be thrown up every morning, which will, in most cases, secure the patient from fever, lessen the pains that succeed parturition, keep down irritation, procure refreshing sleep, and preserve her in comfortable sensations and repose. Instances, of course, will occur, when (from an excessive secretion of milk) painful distension of the breasts with symptoms of inflammation will supervene—purgatives and a more active treatment is then necessary, but I place such cases out of the verge of common occurrences.

In the treatment of puerperal convulsions, the administration of opiate injections is of the highest importance. Opium does not, when

used in this manner, affect the brain as when taken into the stomach, whilst, as I explained in a former chapter, it tends to quiet, in a more direct manner, the contractions of the uterus, and consequently, the convulsive motions of the system. In threatenings of abortion, opiate injections are also beneficial, a lavement of warm water having been first administered to clear the lower bowels.

A loaded state of the bowels after confinement, is created, obviously, by the protracted torpor and distension of the lower intestines from the pressure of the child during pregnancy; and the consequent accumulations in the canal, are productive of *irritation*, which is but too commonly mistaken for *inflammation*. It is not my intention to point out here the distinguishing marks by which the one is to be known from the other; but I must insist upon the fact, that the former is much more prevalent than is generally suspected, and gives rise to affections of the brain and other destructive puerperal disorders.

Lactation, or Suckling.—During the time that a mother continues to be a nurse, the use of lavements is most especially requisite if her bowels are disposed to costiveness—

because this means of relief, does not affect the infant at the breast, which opening medicine, on the contrary, most commonly does. It is a frequent coincidence, that the nurse's bowels shall be obstinately torpid, whilst those of her child are violently relaxed—and as, in such case, the milk of the former would acquire a purgative quality from the introduction of aperient medicines into her stomach, so the complaint of the infant at the breast, would, necessarily, be aggravated from the same source—hence the choice between the use of lavements or physic, cannot be for a moment a subject for hesitation.

There are some women whose milk is easily checked by the slightest cause, and when once lessened, the secretion does not afterwards return in its former abundance—frequently it diminishes to a very considerable extent, and sometimes ceases altogether. No mother with such a liability, should, if possible, take opening medicines whilst she is suckling—the lavement is the safest method of regulating the bowels. Females of weak and delicate constitutions, frequently experience great difficulty in supporting their health whilst they are nursing, and in supplying sufficient milk for the proper nourish-

ment of their offspring. In cases of this nature, the state of the bowels is a key-stone, the disturbance of which, loosens and weakens the functions of the whole maternal fabric, and hence the irritation and debility which ensue from the use of opening medicines, often stop the secretion of milk, or render it scanty, innutritious, and even injurious. The utility of lavements, under these circumstances, is too apparent to require one single word of comment.

Weaning.—In the process of weaning, it is requisite to preserve the bowels in a lax state, in order to lessen the secretion of milk, and prevent inflammation and suppuration of the breasts. I have always found that this is accomplished quite as well by the administration of purgative injections, as by taking medicines, and certainly much more agreeably to the patient. For this purpose, active clysters should be used every day, until the secretion of milk has subsided and the breasts become soft and flaccid. Half an ounce of senna, boiled ten minutes in a quarter of a pint of water, and an ounce of Epsom salts with half an ounce of tincture of jalap added to the strained liquid, form a very proper injection. It should be suffered to cool below

blood heat, thrown up slowly, and allowed to be absorbed.

Mid-Age.—The complaints to which females are naturally liable, are very considerably aggravated by a loaded state of the bowels at the middle period of life. Discharges of some kinds are, probably aggravated, or even occasioned by intestinal irritation—but, certainly, they are much relieved and often removed by keeping the bowels unloaded, by the use of simple warm water lavements. Hysterical and nervous symptoms are also much benefitted by a similar practice. In cases of diseased uterus, the pressure of hardened fæces in the rectum produces pain and irritation: the contents of the lower bowel should, therefore, be removed once or twice a day, by the immission of a simple lavement of water, the mere warmth of which, often mitigates the anguish under which the patient suffers. With this view the fluid may be thrown up at a temperature of about 106 degrees of Fahrenheit's scale. Injections also of opium, hyoscyamus, or hemlock, are useful in lessening the pain.

Cessation of the Menses.—From the period at which the “change of life” takes place, intestinal accumulation induces serious and fatal

diseases. The administration of lavements is in such circumstances, attended with the most beneficial effects, and is the sheet anchor of security. From this period it should be every female's resort against constipation; and notwithstanding the bowels may be spontaneously relieved daily, an injection of warm water once in five or six days will facilitate the complete expulsion of their contents, to a degree that the unassisted efforts of nature are incompetent to effect. It should, of course, be repeated oftener, if the state of the bowels requires it. If the system be full, and there be pain in the head, giddiness, or a sense of bearing down, a purging injection, similar to that directed at weaning, should be used every second or third day, until these symptoms disappear.

Decline of Life.—Females, as I before remarked, being more liable to constipation than the opposite sex, the complaints to which they are subject in the middle period of life, are to a very considerable extent, occasioned or seriously aggravated by a loaded state of the bowels—it is towards the decline of life that the disorder is pregnant with important consequences, and the female should be scrupulously exact in correcting it. From

the period of the cessation of the menses, the health and safety of the constitution seem to be peculiarly, even more than ever, dependent upon the state of the bowels. The intestinal canal actually exerts a perfectly despotic government over the rest of the system, and Cancer, Jaundice, Dropsy, Phrenitis, Palsy, and Apoplexy, are the tyrants which it sets up to torment and destroy life. I should be betrayed far beyond the limits I have prescribed for these pages, if I were to enter upon an exposition of the manner in which these and various other disorders are influenced by intestinal irritation; but such is the fact, and this the conclusion, that no female can pass through the decline of life, either in comfort or safety, without a strict, marked, and unremitted attention to the bowels.

The bowels, in the declining years of female life, demand a cautious attention; for, although there exists a peremptory necessity for preventing accumulation of their contents, this can by no means be safely attempted or properly accomplished by sufficient doses and repetitions of purgative medicines, the effect of which is to debilitate the stomach and alimentary canal, and, consequently, to enfeeble

the powers of life. The safest plan, therefore, of preventing intestinal irritation, is to unload the bowels by the use of injections, (to which a warm stomachic aperient may be occasionally added,) and thus, the general health being assured against a principle that tends powerfully to undermine it, local diseases which follow in the wake of constitutional disturbance, may be diverted, and life itself protracted. These remarks upon old age apply equally to both sexes.

SECTION VI.

*Description of the Position and Course of the
Alimentary Canal.*

THE *abdomen*, or belly, is that part of the body which contains the stomach, bowels, liver and some other viscera. The abdomen (derived from the Latin word *abdo*, to hide,) is a cavity of an oval figure, arched on the *fore side* by soft parts called the abdominal muscles; covered *behind* by the spine and the muscles of the loins; bounded *laterally* by the six lowest ribs, the hip-bones and the muscles filling up the space between the ribs and hip; and, lastly, separated from the chest *above*, by a strong muscular partition, denominated the diaphragm.

The abdomen is convex anteriorly and concave posteriorly—the latter is called the hollow of the back or loins. This convexity and concavity are *greatest* when the body stands erect—the bowels being protruded forwards in that position. In a sitting posture they are considerably *lessened*, and in a horizontal state (on the back) they are still farther diminished, the bowels being then less prominent, but the abdomen more tense. If, however, the thighs are drawn upwards, the belly becomes lax.*

The Stomach is an oblong bag, *large* at one end (B), and *small* at the other (C), having *two* openings, one *into* it from the Œsophagus (A) at the *left* side—and the other *from* it, into the small Intestines at the Pylorus, on the *right*. The bowels form a long tube, reaching from the stomach to the anus, and are called the small and large Intestines. The small bowels are denominated *Duodenum*, *Jejunum*, and *Ileum*: the large, are divided into *Cæcum*, *Colon*, and *Rectum*.

Duodenum.—This part of the bowels emerges from the stomach, bends a little backwards

* Practical inferences may be drawn from these facts which I shall notice hereafter.

and downwards (D), runs towards the *right* kidney, thence crosses the spine, turns a little forward and terminates in the Jejunum. The Duodenum, as its name imports, measures about *twelve fingers' breadth*, in length.

Jejunum.—This intestine, which is a continuation of the former, but more extended in length, makes several turns or convolutions, as marked in the Diagram by asterisks, and terminates in the

Ileum.—The convolutions of this portion of the small bowels, surround the jejunum, as shewn by (E). It is considerably longer than the jejunum, and opens into the side of the cæcum.

The length of the small intestines is considered to be five or six times that of the body, or about thirty feet; nearly two-thirds of this length is denominated Ileum.

Cæcum, or first large bowel (F), is a short, broad bag, lying below the right kidney: it is remarkable for the entrance into it of the ileum, where a valve is placed, to prevent the regurgitation of the contents of the large into the small intestines.

Colon.—This portion of the alimentary canal forms the greatest part of the large intestines. It arises from the cæcum, (of which it is a

continuation,) a little above the groin; ascends perpendicularly (G), passing on the fore side of the right kidney. Taking its course under the liver, before the first turn of the duodenum, and along the front of the lower part of the stomach, it crosses the abdomen (H), from right to left, above the navel: then turns backwards, runs down on the fore side of the left kidney (I), and passing towards the spine, forms an extraordinary incurvation (K), called the sigmoid flexure of the colon. In this course the colon surrounds the small intestines, forming many attachments, and laying in extensive contact with neighbouring parts.

Rectum, continued from the colon, at the last bone of the spine, along the curve of the sacrum (L), and terminates at the anus.

In the Diagram, no other portions of the abdominal viscera are shewn but the stomach and bowels; the alimentary canal being the only part essentially connected with the professed object of this publication. I am indebted to my friend Mr. Stratford, (an ingenious and accomplished young surgeon,) for the sketch of the parts here represented, which was taken from the dead subject. Having first carefully removed the stomach and bowels *en masse*, we proceeded to inject

water into the rectum, by means of Read's lavement syringe, thereby distending the whole course of the large bowels as far as where the ileum enters the cæcum. From the pressure of the injection, the gas contained in the colon, passed freely through the valve of the ileum, and considerably inflated the small intestines—the liquid, I have no doubt, would have passed also, if we had chosen to use any force. We next fixed the pipe into the œsophagus, and pumped a quantity of water into the stomach. The water entered the duodenum, but owing to the volume of gas contained in the small intestines, we found we could not urge much liquid into them, without incurring the risk of bursting some part of the canal. During this distended state of the bowels, the drawing was taken; and allowing some trifling transposition of a convolution here and there, for the sake of displaying the course of the canal, the representation is very correct. The rectum appears rather more on the left side, than it is in the living subject. The direction of the passage of the contents of the bowels, is shewn by a flight of arrows.

Description of the Progress of Food through the Alimentary Canal.—Food received into the

stomach is dissolved in the gastric juices, and by a sort of churning motion of this organ, is mixed and converted into a pulpy mass, called *chyme*. This process usually occupies from two to three hours, being more or less, in various individuals, or as influenced by the nature and digestibility of the food. The *chyme*, protruded from the stomach into the duodenum, mixes with the bile, which is poured into this bowel by a duct from the liver, and with other juices, and is now called *chyle*. This fluid, as it passes through the small intestines, is absorbed by a number of small vessels whose bibulous orifices open on the inner surface of the canal, and is carried into the blood—the excrementitious part or refuse, urged through its course by the vermicular motion of the ileum, is deposited in that pouch or bag called the cæcum, where it accumulates, hardens, and acquires the fœtor of excrement—this second process is usually completed in three hours more. The fæces next ascend from the bottom of the cæcum in a figured form, and pass through the colon, being moved onwards by the successive contractions of the cells or pouches of this intestine, until they reach the rectum, where they excite a desire for evacuation. This *last*

stage of a complicated process is usually accomplished (or ought to be) within the space of twenty-four hours, from the time the food was received into the stomach.

Reckoning that the digestion and expulsion of the refuse of our food, take place in twenty-four hours, Dr. Barclay calculated, that, allowing thirty-six feet for the length of the alimentary canal, the rate of motion would be about a foot and a half every hour, or an inch every three minutes. We can, however, by no means, arrive at any mathematical certainty respecting the rate of progress of alimentary matter, from its being retained longer in the stomach of some individuals than of others, and even of the same person at different times. It is not probable, that the contents of the bowels would become injuriously inspissated if they were not unduly retained, even though they might have been originally deficient in proper moisture. It has been observed that undigested articles of food have been discharged from the bowels, full *three* months after they had been eaten!

SECTION VII.

Costiveness considered in its relation to the natural structure of the large Intestines; and its Seat and Effects elucidated by References to the Frontispiece.

By a reference to the structure, function and condition of the intestines, most of the facts respecting the prevalence of constipation, recited in former pages, will cease to excite much surprise—we shall, therefore, now proceed to their consideration.

For the purpose of conferring on us some degree of controul over the necessities of humanity, nature has endowed the lower bowels with less irritability than the upper—and the habit of subjecting their natural wants to the conveniences and proprieties of social life, adds to their natural insuscepti-

bility. These things, of course, lessen the influence of irritants, giving rise to alimentary collections beyond what may be indicated by any sensation, or by any symptom occasioned by their quantity or bulk. That large accumulations in the intestines should often occur, will also less astonish us, if we examine the structure of the lower bowels. The rectum of the adult is equal to *three fingers* in breadth when empty, and capable of distension to more than twice that size—I have, indeed, seen it as big as a large bladder. The colon is larger than the rectum in diameter, and from five to seven feet in length. Three strong muscular bands (one of which is shewn in the Diagram) pass along its whole course, and, by their contractions, draw the intestine into transverse folds, forming receptacles in it, called the cells of the colon. These cavities or hollows, are in themselves, I conceive, sufficient to cause an occasional obstruction to the free passage of the bowel, and explain the inadequacy of purgative medicines to unload this intestine—for the fæces, which are entangled or tied up in these bags, allow the fluid secretions, produced by cathartics, to pass, without being themselves dislodged, and in this manner

persons are often deceived by passing loose motions after taking physic or otherwise, from which they conclude, that the bowels have been perfectly cleansed. The peristaltic motion of the large bowels is likewise more slow than that of the upper, and the dryness of their contents increases during their passage along the canal.

Naturally then capacious in size, and unequal in calibre—distensible by inherent property—slow in motion—possessing little original sensibility, and gradually losing even a portion of this from habit—their contents, gradually becoming more and more deprived of the moisture and consistence necessary for propulsion, we shall cease to be surprised at these bowels becoming frequently the seat of obstruction, or at their retaining a mass of fæces greatly exceeding the measure of our accustomed evacuations.

The cæcum appears to be, more frequently even than the colon, the seat of obstruction and accumulation of fæcal matter—and this accounts for the pain and swelling at the lower part of the right side of the belly, that so often accompany a loaded state of the bowels. It has been conjectured by some physiologists, that the cæcum performs some-

what the office of a second stomach—for we know that the alimentary matters discharged into it by the ileum, (see the Diagram) are detained in the cæcum, whilst some unknown process takes place. From the irritation of these accumulated matters, the cæcum becomes inflamed, and sometimes suppurates—it has, therefore, long been my practice, when constipation is combined with pain, tenderness and tumefaction at this part of the abdomen, to employ leeches very liberally in conjunction with injections, and this treatment is generally successful.

By a reference to the Frontispiece, it will readily be seen, how injurious an undue distension of the colon must prove, by its mere pressure upon contiguous parts. Accumulations in its *ascending* portion, bearing on the right kidney, is a source of aggravation when this organ is diseased. Distention of its *transverse* arch, by its pressure upon the stomach, duodenum and liver, may be productive of nausea, interruption of digestion, and even temporary jaundice, by its impeding the biliary ducts. I have witnessed bilious vomiting, attributable to the pressure of an overloaded colon upon the duodenum below the part where the common duct of the liver


enters that intestine—or, at least, arising from the propulsion of bile into the stomach by the inverted action of the duodenum, occasioned by the influence of the enlarged colon, however effected. Distension of this part of the colon is sometimes mistaken for enlarged liver, but is easily contra-distinguished by careful examination—for the colon in its entire course around the small intestines, lays in immediate contact with the abdominal parietes, and may be, at all times, felt through its whole extent. The pressure of a loaded colon on the small intestines, as also its sympathetic relations with them, give rise to indigestion and other functional derangements. The ascending portion of the colon, on the right side, is more frequently the seat of obstruction than the descending portion, on the left—probably from its being rather smaller, and the course of its contents contrary to the law of gravity. Colic, therefore, is much more frequent on the right than the left side.

Accumulation of fæces in the *rectum*, is perhaps, more general than in either of the other bowels, and may be induced by that acquired insensibility of this large and capacious gut, which results from over-neglecting

its calls and necessities. The pressure of this bowel, when thus distended, aggravates the sufferings from enlarged prostate gland, and from diseased bladder and uterus. It occasions, even in otherwise healthy persons, various anomalous sensations in the contiguous parts, such as irritation in the urethra, anus, and prostate gland, and sometimes such an obstruction in the urinary passage as to assume the character of stricture. I recollect attending a case, some years ago, where the fæces were so firmly impacted in the rectum, that an injection could not be forced into the bowel, until some portion of the excremental mass had been scooped out with the handle of a spoon. This occurred in a female who was afflicted with disease of the womb, which was exceedingly aggravated by the straining that occurred whenever she attempted to pass a stool. Prolapse, or falling down of the womb, is much augmented, if not sometimes caused, by the great efforts used at the water-closet, by females of a costive habit, especially under certain circumstances, such as after lying-in, or under an occasional relaxed state of the parts.

From these observations it must be ap-

parent that I have not over-rated the importance of injections, for we may conceive the influence of this remedy, when applied through an organ having such numerous and various connections, as the colon. The necessity for unloading this torpid and large tract of intestine, by mechanical means, must, from what has been stated, of course, be perfectly obvious. To persons afflicted with any of the diseases, influenced by the pressure or local irritation of the large intestines, and to females particularly, who in the last stage of pregnancy, cannot, except with great difficulty, bring the propulsive muscles sufficiently into action to expel the contents of the rectum, the use of lavements is paramount to every other consideration.



SECTION VIII.

*Experiments to ascertain the Amount of the
Alvine Evacuations, and the Manner and
Proportions in which the Excretions are
derived from the Aliments.*

NOTWITHSTANDING the familiarity that every person has with the natural evacuations, and an universal admission of the necessity for their due and regular discharge, there are few subjects of general information, less known as to positive data, than the exoneration of the alimentary canal. If the question were put, as to the relative proportion between the quantity of food and that of the alvine evacuation, or of the usual and customary amount of the latter in any individual, I know not to

whom I should look for an answer. I am, therefore, highly indebted to a scientific individual, for a detail of a course of experiments, by which I am enabled to give distinct and positive information on this point. My friend's paper, contains an elaborate train of inductive reasoning upon *collateral* facts, of which, I regret, the limits of this work do not allow me to avail myself—I must, therefore, confine my remarks to such parts of his experiments, as relate to the immediate subject of this publication.

“There is not much difficulty,” says my scientific friend, “in computing the weight of the alvine evacuation, without sacrificing a due regard to delicacy, if the following steps, which it will be excusable to detail, be pursued.

“1st. The urinary bladder having been evacuated, the person should instantly ascertain his own weight by an accurate balance—noticing the precise time at which this is done.

“2ndly. Immediately afterwards, the bowels are to be exonerated.

“3dly. At the end of a certain period (suppose 15 minutes) from the time of weighing, the experimenter will again take the

weight of his body. The difference between the first and second weight, will indicate the amount of matters discharged (in the interval of the two weighings) by the bowels, lungs and skin. Now the lungs and skin, during 15 minutes, can have given off only a small quantum of matter, perhaps less than half an ounce, and, therefore, deducting *half an ounce*, the remaining figures denote the weight of the alvine evacuation."

Proceeding according to the above method, it was ascertained that the quantity of food taken daily by the experimenter, was thirty-five ounces, whilst the diurnal weight of the alvine evacuations, was less than two ounces, or rather more than one-eighteenth part.

Upon refering to my friend's paper, I perceive, that in the experiment for ascertaining the relative proportions of the ingesta and the egesta, in the first place the exact weight of the body was noted—secondly, the quantities of food and drink were accurately ascertained and registered during a period of *seven* day—thirdly, the amount of the excretions from the kidneys and bowels, was recorded during the same interval—And lastly, at the end of the period, the weight of the body (retaining the same dress) was

again determined—the results were the following, viz.

	<i>lbs. oz.</i>
Weight of the body, at commencement	137 12
..... Seven day's food.....	15 5½
..... drink	19 10
	<hr/>
	172 11½
Weight of the body at the termination of } Seven days, to be deducted	135 9
	<hr/>
Total given off.....	37 2½
	<hr/>

Thus it appears that 37*lbs.* 2½*oz.* or 594½*oz.* was the weight of *all* the excretions in one week ; and from other experiments they were shewn to be in the following relative proportions :

	<i>oz.</i>
Discharged from the Kidnies	280
..... Bowels... ..	12½
..... Lungs and Skin	302
	<hr/>
Total 37 <i>lbs.</i> 2½ <i>oz.</i>or.....	594½
	<hr/>

It will, no doubt, appear surprising, that the weight of the evacuations from the bowels should be so small, when compared with the

quantity of food, and an inquiry is rationally suggested, as to the manner adopted by nature of disposing of the *surplus* aliment. The experimenter states, that forty-five ounces (about two pints and three quarters,) of liquids, were drank daily, and forty ounces of urine discharged. There were also thirty-five ounces of water given off by breathing and perspiration, making with the urine, seventy-five ounces of fluid—being *thirty ounces, more* than were taken! It was also calculated, that eight ounces of carbon passed off in vapour from the lungs, every twenty-four hours. Let us, therefore, make the calculation as follows. At the end of seven days, the experimenter weighed thirty-five ounces less than at the beginning, being at the rate of five ounces waste *per diem*. This is a curious fact, because we presume that he took his usual quantity of food, pursued his accustomed routine of employment, and preserved his general state of health during the interval: he makes no comment on the cause of this remarkable fact. This loss in absolute weight, must be calculated as food, which in reality it is, so much of the body being abstracted, to supply the excretions. I will now recapitulate *one day's* experiment.

Forty-five ounces of liquid taken—seventy-five ounces of liquid discharged—consequently, there were thirty ounces of the *latter* in excess.

The food weighed thirty-five ounces—the waste of the body five ounces—making together forty ounces, from which the above thirty ounces were drawn. Ten ounces more remain to be accounted for, and these were discovered to have been discharged in the shape of carbon from the lungs and of fæces from the bowels—eight ounces of the former and two of the latter.

The conversion of solid matter into fluid, at first appears startling—but, from the result of these experiments, the fact can hardly be doubted. The end and aim of the experimenter's labours, are, to shew the probability, that there is a power in nature, by which solid matter is first decomposed, and then its elements recombined, in proportions, of which *water* is the result. And it, therefore, appears, that a considerable portion of our food is daily transmuted into water, and discharged from the kidnies, lungs and skin, in that form.

By an application of these facts to the subject of constipation, the influence of irregularity or excesses in diet, in inducing the

disease, will be apparent. As long as the digestive organs have the power to assimilate the food taken into the stomach, no accumulation or congestion takes place in the system—because nature is enabled to convert the recently animalised products, into new combinations suited for expulsion through various outlets, of which the lungs and skin, (as shewn by the experiments previously detailed) are the principal. But if a larger quantity of food be taken, than can be digested and carried into the blood vessels, and the bowels be debilitated or torpid, the consequence must be, that the surplus will not be properly expelled, and accumulation in the intestines must inevitably ensue.

SECTION IX.

Of the Manner in which the excretions of the bowels are modified by the Aliments.

THE result of the experiments, briefly recapitulated in the foregoing chapter, shews, that the weight of the alvine evacuations daily, was about two ounces. But, it must be granted, that nature is influenced by no fixed laws in this respect; the quality, appearance, and bulk of the fæces, being contingent upon the varying circumstances of season and temperature, exercise and rest, quantity and digestibility of food, constitution and age. In the summer season, the motions are softer, and in the winter, harder. By exercise, their consistence and bulk are diminished, whilst

rest has an opposite tendency. These effects must not be confounded with the causes of constipation, for, although exercise may contribute to the hardening of the fæces, it unquestionably tends to their expulsion. The amount of all the excretions is, no doubt, increased or diminished proportionally to the quantity of food, and the alvine evacuations, of course, in the same ratio with the rest—a similar effect ensues from the greater or less nutritive properties of the various aliments. Persons of weak constitutions, or those who are dyspeptic, digest but a small quantity of their food—consequently the evacuations by stool are greater. It is known that the digestive function of young persons, is better and more completely performed than that of the aged—and, therefore, in youth, less matter remains to be rejected than in old age.

In forming a judgment, therefore, upon the proper and sufficient action of the bowels, (whether from inspection or by the balance,) several circumstances must be taken into consideration. It would be preposterous to expect that the same quantity of alvine discharge should, equally, succeed a feast and a fast—or that a person's motions, who lives

upon twelve or fourteen ounces of food daily (and many in perfect health eat no more) should be as voluminous as those of another, who devours four times that quantity. The same individual, also, though he ate regularly the same weight of food, and the bowels acted with their usual healthy efficiency, would find a difference in the relative proportions of the ingesta and the fæces, according as the quantity of vegetable or animal aliment had preponderated—or, as certain selections might have been made from either of these two classes of food. That is, in the former case, whether he had dined on a pound of meat with half a pound of vegetables, or on a pound of vegetables with half a pound of meat—and, in the latter instance, whether he had eaten of venison or bacon—of potatoes or cabbage. In the first example, the bulk of fæces would be determined by the quantity of nutritive matter contained in the food (which would be more or less as the animal or vegetable portion was in excess,) and, in the second, by the degree of digestibility of the kind selected—venison being more digestible than bacon, and cabbage less so than potatoes. But the quantity of the alvine evacuations is also considerably influenced by

incidental causes; 1st, By the respective qualities of *different* portions of *the same* article of food, such as fat and lean—the *former* being so entirely composed of nutritive principles as to *leave no refuse*, if the digestive organs be in a state of health and vigour. One ounce of fat, in respect to nutrition, is considered to be equal to four ounces of lean meat. 2ndly, By the wild or domestic state of the animal, or by its having been recently killed or otherwise. 3rdly, By the meat being fresh or salted, and by the manner of its culinary preparation. But all these various conditions, whether primary or secondary, are exceedingly influenced, as I observed before, by the *quantity* of our food, and the strength of the digestive apparatus. An undue quantity of the most nutritive food will leave a considerable mass of undigested matter, which nature refuses when aliment is forced upon her in excess. In dyspeptic disorders, the effects of over-feeding are apparent, either in the frequency or volume of the motions, or in the distressing distension and disturbance resulting from constipation.

The experiments mentioned in the previous section, shew that the excretions of the skin and of the lungs are derived from the ali-

ments, and, therefore, it does not follow that the evacuations from the bowels shall at all times correspond with the quantity of food taken, the living body having the power of relieving the system through the former emunctories, as well as the latter; the case of the notorious Tarrare is an example of this kind.

Tarrare, when a boy, once ate a large basket of apples, and at another time swallowed a quantity of flints and corks. Frequent fits of colic obliged him to seek admission into an hospital, where he was detected just in time to prevent his swallowing the surgeon's watch, chain and seals. "Before his enlistment," says Dr. Mason Good, "he was in the habit of devouring enormous quantities of the coarsest flesh, fruits and roots; and, subsequently, he was found, after swallowing his own rations, to feed on the refuse of his comrades' messes, or offensive meat thrown on the dunghills; and to devour cats, dogs, and serpents. M. Fournier tells us, that at seventeen years, when he weighed only one hundred pounds, he could devour in the space of twenty-four hours, a quarter of beef, as heavy as his body: and that on one occasion, when in the army, he devoured in a

few minutes a dinner prepared for fifteen German labourers, and composed of various substantial dishes. There is a singular story, that the French commander attempted to turn this wonderful voracity and extent of stomach, to a good account, by employing it as a safe deposit for a letter of secresy, which he wished to send to a French officer, at that time in the hands of the enemy. He sent for the man, shewed him a wooden case containing the letter, and having put him into good humour, by treating him with thirty pounds of liver and lights, prevailed upon him to swallow it, and to depart with all speed to the enemy's quarters. Tarrare, however, was taken prisoner in the attempt ; and, while in prison, passed the box by stool, before he could meet with the officer, but immediately swallowed it again, to prevent it from falling into the enemy's hands. He was strongly suspected of cannibalism, and was often restrained, with difficulty, from the ward appropriated to the dead. He, at length, fled from the army, before a rumour of having devoured a child of sixteen months old, which had suddenly disappeared. The alvine evacuations of this man were not immoderate ; but, after gorging his stomach, he slept and

sweated in torrents of perspiration." Pouteau mentions the case of a young lady who had no stool for upwards of eight years, although during the last year she ate abundantly of fruit, and drank coffee, milk, tea, and broths, with yolks of eggs; but she had *copious greasy sweats*.

The colour and appearance of the fæces are signs also, denoting the healthy state of the viscera, as well as various accidental influences. Hippocrates remarks, that the best stools are soft, close, of a dark yellowish colour, not very fetid, and discharged at an usual time or hour, *in a quantity proportioned to the food taken in*. For when the stools are thus conditioned, the abdomen or lower belly is in a healthy state." This is as good a description as can be given of healthy motions—but there are other appearances which they assume, under various circumstances. Dr. Paris remarks, that the air changes the colour of the stools, particularly those of infants, which soon turn from yellow to green, by mere exposure—that certain vegetables impart a green hue, and beet root its colour, to the fæces—that persons who take a considerable quantity of milk will pass pale coloured

evacuations, and that cheese is apt to be discharged in an undigested state. The author of a recent medical publication states, that "aloetic medicines produce dark, slimy, and very offensive motions. Senna generally produces very dark motions, which emit a cadaverous odour, often attended with a considerable escape of hydrogen. Rhubarb occasions motions of the yellow colour, which Mr. Abernethy says, indicates a healthy state of the liver; but may it not be attributed to its interrupting the processes of chymification and chylicification, and checking the fæcal secretion of the colon? Almost every aperient medicine, probably, produces motions, either of different appearance or odour. The effect of steel, in rendering the fæces black, is well known." The learned editor of the *Medico-Chirurgical Review*, thus expresses himself with regard to the alvine discharges. "Doubtless the colour of them, is occasionally indicative of morbid conditions, yet the discolouration is often produced by various aliments, fluids, and medicines; and if this fact be overlooked, incorrect opinions may be formed, and improper treatment recommended. Port wine and

claret will make the stools of a black appearance in those unaccustomed to their use ; and so will bottled London porter, unquestionably, from the intermixture of certain noxious ingredients. Again, the fine yellow colour of the evacuations, believed to arise from the exhibition of the blue pill, or calomel, can be generated by eating dried French plums or prunes."

The specific gravity of fæces, is a tolerable indication either of the state of the digestive organs or of the nutritive qualities of food. Healthy motions are observed to float in water, which I attribute to the complete division of the texture of the food in the process of digestion, and its subsequent commixture with air—but if the alimentary substances be composed of materials not properly soluble in the gastric juices, a portion of their fabrick passes through the bowels without being reduced, possessing sufficient gravity, from its density, to cause it to sink in water. This takes place with spinach, pork, fish, &c.

It is often observed, in cases of irregularity of the bowels, that dark coloured and dry fæces are mixed with newly formed portions—this is a certain indication of their retention in the rectum, and of the necessity of expe-

ditioning and assisting their expulsion by the use of lavements.

ANALYSIS OF FÆCES BY BERZELIUS.

Water	73,0
Vegetable and animal remains.....	7,0
Bile	0,9
Albumen	0,9
Peculiar and extractive matter.....	2,7
Salts	1,2
Slimy matter, &c.	14,0
	<hr/>
	100,0

Fæces, when dried, lose $\frac{75}{100}$ of their weight—they are not soluble in, nor do they really mix with water, but by agitation and maceration they may be diffused through it. It is more than probable, that the alvine excretions *do not*, as is commonly imagined, *consist of the mere refuse of the aliment*—for evacuations are produced under a state of abstinence, or even of actual deprivation of food. Mr. Hallam delivered a female of a child, who had no passage into its stomach, and, consequently, received no food during the thirteen days of its life—but, notwithstanding, it passed one or two evacuations daily, not distinguishable in quantity, colour, or consistence, from the stools of children who take food in the usual

manner. In fevers and other diseases, where no food is taken, and sometimes, as I frequently observe in children, not even so much as a glass of water daily, solid evacuations are either passed spontaneously, or may be dislodged by aperients. This is only to be explained, by presuming that the colon itself is an organ of depuration, and by its secretive powers carries off effete matter, which, in conjunction with bile, mucus, &c. is discharged, either with or without the fæculent remains of the food. Pechlin ascertained, by including a portion of intestine between ligatures, that a very considerable quantity of fluid was poured into the small intestines, which, having accomplished its office connected with the function of the bowels, continues to be absorbed in its passage through the canal. Haller estimated the quantity of this fluid as eight pounds daily—but, as Dr. Elliotson has remarked, this statement is exaggerated.

The conclusion to be drawn from these facts is, that, notwithstanding the volume of excremental matter discharged from the bowels, is not always in an exact or fixed proportion to the quantity of food taken, yet, in general, the one determines the other so nearly, as

almost to establish a general rule, to which, of course, there will be occasional exceptions. The rule may be taken from the result of the experiments formerly referred to, viz. that a pound of food produces rather less than an ounce of fæces. This will be, at least, an approximation of the fact, and when qualified by the various circumstances which have in this section passed under our notice, will enable us, most commonly, to come to a conclusion not very remote from truth.

At all times when it is desirable to acquire a knowledge of the state or sufficiency of the alvine evacuations, the *quantity* or actual bulk must be ascertained by examination, as no reliance can be placed on the *frequency* of the discharge, nor on the sensations produced by its expulsion, which are exceedingly apt to deceive us. The eye may be soon practised in the art of determining the quantity and quality of this evacuation, and much benefit result from the acquisition and application of such a tact.]

SECTION X.

On the Regulations of Diet, necessary in obviating Constipation, and giving Efficacy to Means adopted for its Removal.

So many books have been written on *Dietetics*, that it might be considered as a work of supererogation, were I to enter at much length upon the subject—but this I have no intention of doing, not only on the score of inexpediency, but that it would be foreign to the design of my original undertaking. The direct object, however, of this work, being the preservation of a regular and proper action of the bowels, so as to prevent, as well as remove the occurrence of constipation, I should consider my plan incomplete, if I neglected to shew the influence of diet in counteracting, or contributing to these desirable ends. I

shall, therefore, proceed with a brief sketch of the general qualities of alimentary substances, a knowledge of which is indispensably necessary in conferring efficacy upon any method adopted for the accomplishment of the object in view.

What is meant by the terms "DIGESTIBLE" and "NUTRITIVE," should first be clearly understood. These two qualities are generally confounded with each other, or regarded as one and the same; whereas, they are not only perfectly *distinct*, but they are principles commonly *opposed* to each other in relation to the action of the digestive organs upon substances taken for the sustenance of life.

A substance is said to be *digestible*, that admits of being readily dissolved by the juices of the stomach and easily elaborated into a state and consistence, necessary and proper for its reception into those vessels which absorb and carry it into the blood. It is said to be *indigestible* when these changes are effected imperfectly, or with much difficulty.

A substance is denominated *nutritive*, when it is known to contain abundantly, or be composed of those forms and combinations of matter, which are similar to the structure and

composition of the human body itself; and which are, consequently, chemically adapted, to furnish ample materials for repairing the waste of the system. It is denominated *innutritious*, when its bulk is made up chiefly, or in a considerable proportion, of such a fabrick as produces scanty materials for the formation of blood.

Some years ago an American Indian was shot by a musket in the abdomen, the ball penetrating the stomach. As the wound did not afterwards heal, an opening was left, through which, substances were easily introduced into the stomach, and many experiments were made upon the man's digestive function. The surgeon who attended him, thus narrates the particulars of these experiments.

“EXPERIMENT 1.—On the 1st of August, at 12 o’Clock in the day, we introduced into San Martin’s stomach, the following substances, made fast by threads: viz. a piece of alamode beef strongly spiced—a piece of raw corned beef—a piece of fat bacon—a piece of fresh raw beef—ditto boiled—a piece of bread—a piece of raw cabbage stalk. Each article weighed about two drachms. After they were introduced into

the stomach, San Martin continued his domestic occupation, as usual, within doors. In one hour after the introduction of the above materials, we proceeded to examine them. The *cabbage stalk* and the *bread* were about half digested—the *animal food* had undergone *no* sensible change. All the articles were forthwith returned into the stomach. At the end of two hours, the cabbage, bread, and bacon were entirely digested—the other aliments were little altered. At the expiration of three hours, the *alamode beef* was partly digested—the *raw and corn beef* was a little macerated on the surface, but its texture was nearly entire.”

The man was exceedingly ill after this experiment, which shews how the digestive process may be disturbed by a heterogeneous mixture of food. The *corned beef* was not digested after a lapse of three hours, and yet, as will appear by the 3rd Experiment, the man's stomach was capable of digesting the same kind of food in two hours, when the organ was not oppressed or teased by an injudicious mixture of aliments. The effects of this experiment must not therefore be received as evidence of the degree of digestibility of the various articles used, but rather

as proofs of deranged condition of the stomach.

“EXPERIMENT 2.—On the 7th of August, at 11 o'clock in the forenoon, the tube of a thermometer was introduced into the stomach. In five minutes, the mercury stood at 100° of Fah. and continued at that standard. By means of a gum-elastic syphon, one ounce of clear gastric juice was drawn off into a phial, capable of holding three ounces. A small piece of *boiled beef* was immersed in the fluid. The bottle was well corked, and placed in a temperature of 100°. In about forty minutes, the digestion had evidently commenced on the surface of the meat. At fifty minutes, the fluid in the phial, became opake and cloudy. The fibres of the meat began to be disengaged, and in one hour, chyme seemed to be forming. At one p. m. the muscular fibres had diminished one half. At five o'clock, very few remained—and at seven, there was scarcely any visible trace of muscle. At nine, the whole substance was completely dissolved.”

“EXPERIMENT 3.—On the same day, and at the same hour, a piece of meat, exactly the same size and kind as that placed in the phial, was introduced into the stomach, with

a thread attached to it. At the end of one hour, it presented nearly the same appearance as the piece in the bottle. At one o'clock, the thread came away, the meat appearing to have been entirely dissolved. The process, in each case, was the same for the first hour; but afterwards, the meat was much more quickly digested in the stomach than in the phial."

"EXPERIMENT 4.—On the 8th of August, at 9 o'clock in the morning, an ounce and a half of gastric juice was obtained and put into a phial. Two pieces of *boiled chicken* were suspended in the fluid by threads, and the bottle was placed in the temperature above mentioned. A vigilant watch was kept on the whole. The digestion followed the same phases as in the 2nd Experiment, except that it was more slow. The chicken being a denser meat than the beef, the gastric juice could not insinuate itself so readily among its fibres. In other respects the processes were precisely the same."

Man is omniverous, and draws his supply of food, both from the animal and vegetable kingdom—and in the order thus set down, these two great divisions may be classed, in respect to their quantity of nutritive prin-

ciples. At the head of the first class, *venison* perhaps claims its place—to which succeed, beef, mutton, game, pork, veal, lamb, chicken, fish. In the vegetable world, the principle of nutrition observes the following order; wheat, barley, oats, peas, beans, rice, rye, potatoes, carrots, parsnips, turnips, beet root, green vegetables (as cabbage, spinach, &c.) and lastly, fruits.

The above scale of nutrimental value, affords no information as to the digestibility of each article respectively, the former being frequently in an inverse ratio to the latter—thus, jellies which are composed entirely of the nutritious particles of animal fibre, and contain more nutrimental matter than food of any description or kind of an equal bulk, are less digestible than fruit even, which contains the least. During a siege at Middleburgh, in Zealand, “they lived on bread cakes made of lin-seed; the hypochondria were very soon hereby distended, the face and other parts became swollen, insomuch that many died of the distemper.” *Diodonæi Stirp. Histor.* page 335. In this case the lin-seed jelly was too tenacious to be digested.

The principles of nutrition are fixed by nature—the degree of digestibility is qualified

by causes, various in different individuals, and ever changing, in all—hence, the stomach of a dyspeptic or an invalid, shall be disturbed by a slice of the most tender mutton, whilst the ploughman fills his stomach with hard salt bacon, unconscious, except by the removal of hunger, that he has put any thing into it.

“ Nothing so foreign but the athletic hind
“ Can labour into blood. The hungry meal
“ Alone he fears, or aliment too thin,
“ By violent powers too easily subdued,
“ Too soon expelled. His daily labour thaws
“ To friendly chyle, the most rebellious mass
“ That salt can harden, or the smoke of years ;
“ Nor does his gorge the luscious bacon rue.”

ARMSTRONG.

In respect to the degree of digestibility, in reference to the average of mankind in health, the various articles of diet may be arranged in the following order : mutton, beef, lamb, veal, pork, venison, hare, rabbit. With regard to the digestibility of poultry, a modern writer on dietetics, classes them thus—fowl, guinea-hen, turkey, partridge, pheasant, woodcock, duck, goose, snipe, quail, pigeon, grouse, &c. &c. Gelatinous food, though light, and not heating to the system, is, nevertheless, difficult of digestion, and leaves considerable refuse, such as calves' head,

knuckle of veal, tripe, and the feet of animals. Albuminous food, on the contrary, is more completely digested, and forms but little to pass through the bowels, as fish unsalted and not fat, and eggs soft boiled.

The art of cookery, also, disturbs the original qualities of some substances, and, like the magic wand of Harlequin, compels its agents to change places and features, and this distinguishes the alimentary character of roasted and boiled meats—the former being most nutritious, and the latter most digestible. A gentleman in the country who consulted me, for a stomach complaint, and to whom I sent some dietetic axioms, writes to me as follows:—"I do not quite comprehend how boiled meat, which you say is less nutritive than roasted, can be more digestible; because, whatever lessens the nutrition of food, increases, of course, its indigestibility." My reply was, that although a portion of the nutritious particles of meat, be abstracted in the process of boiling, so that it afterwards contains a smaller quantity than the same bulk of roasted meat, yet a weak stomach would digest a larger quantity of the former, than of the latter, in consequence of the softened state of the whole mass—and therefore, if four

ounces of boiled meat are deprived of one ounce of its nutritive parts, by this process, but leaves three ounces of matter easily soluble in the stomach, an individual will receive from it more nutriment, than from four ounces of roasted meat, which from its concentrated texture and qualities, may be so rebellious against the stomach, as to yield but half its bulk to the process of digestion. But in these cases, it is not so much the loss of nutriment that the patient has to complain of, as the uneasiness occasioned by the long retention in the stomach of food difficult of digestion, as this organ allows no substances to pass, until they have succumbed to its discipline, if within its power to accomplish it.

Highly nutritive properties, do not confer digestibility upon aliment, but rather tend to an opposite effect—indeed, a dense concentration of nutrimental matter, almost entirely, precludes its digestion in stomachs not of the most robust order, as was instanced by animal jellies. The tone of the stomach, state of the general health, peculiarity of constitution, and the age and sex of every individual, determine the active power of the digestive organs—whilst the kind, combination, artificial preparation, and quantity of food taken, control and

establish its effects. These circumstances are so varying, that no dietetic rule can be brought to apply to all persons, therefore, as the learned Van Swieten exclaims, “No food is to be called wholesome in general, and he that should ask what food is most so, might as well enquire, what was the best wind, without saying whither he was bound.”

Important as the administration of intestinal injections may be, in the correction of constipation, it must be evident to the reader, that a due knowledge and regulation of diet, are equally so—and that, without the corrective influence of the latter, we incur a much greater risk of requiring the assistance of the former. Need I attempt, in explanation of the preceding views, to prove that such kinds of food as elude digestion and leave a considerable refuse, have a tendency to costiveness, and aggravate its effects?—And is it necessary I should advise persons disposed to this state, to choose a laxative diet, rather than a contrary one? No; enough has already been said, and I shall, therefore, pass at once to its practical application.

In selecting such food as will, probably, least burden the bowels with refuse, too much stress must not be laid upon the scale in which alimentary matters are placed in page 87—

because, as I have before stated, the most nutritious, is not always the most digestible food. That kind should be chosen, which approximates in its principles to the object in view, combined with such other articles, as are sanctioned by a knowledge of their leading character and our individual experience of their united effects. A combination of food of various qualities, is certainly necessary to the health of the digestive organs and the system at large, which cannot be preserved by a sole adherence to that kind of food, in which nutriment exists either too abundantly or sparingly. Hence, we mix vegetable with our animal food, and with much propriety—the bare and scanty nutritive body of the former, being filled up or augmented, as it were, by the excess or superfluity of the latter.

As regards the necessary commixture of vegetable with animal food, and also the effect of aliment, in respect to constipation of the bowels, there is no article of diet equal in importance with *Bread*. Universal consent attributes to this great and prevailing article of food, considerable influence on health, and strength, and very serious complaints are raised against the present mode of preparing it, by which it is considered that its nutrition

is lessened and noxious properties communicated. Without entering into the question whether alum or any other substances be mixed with baker's bread, I have no hesitation in asserting, that *fine* bread tends to produce costiveness, and I believe that the great prevalence of this disorder, might be lessened by recurring to good old fashioned *brown bread*. It is unnecessary I should explain, how, finely or coarsely dressed flour, influences the bowels, farther than this, that white flour contains the *starch* of the wheat without the *bran*, and it is well known that starch is astringent, and bran, laxative. The Romans made their bread of the ground corn, just as it comes from the mill, which they called *Panis Furfuraceous*, or *Syncomiston*; i. e. unsifted. The ancients entertained an opinion, that bread was the more wholesome and nourishing when made of flour retaining the *whole* of the bran contained in the wheat, and that it became less so, in proportion as the flour was made finer by dressing and sifting. Hence, the Greek wrestlers used no other bread than that made with the coarse unsifted flour, and this they conceived was so nourishing and strengthening, that they called a brown loaf, *Coliphium*, which imports, strength of limb. It would

be well then, if those persons who suffer from irregularity of bowels, would make use of this kind of bread only—indeed, I might add, to the almost entire exclusion of vegetables. It is, decidedly, the best *diluter* (I may be pardoned the application of the term in this sense) for the more concentrated and higher animalised kinds of diet, and by its commixture with them, gives, as I am well assured, a solubility to dense animal food, whilst at the same time, by its gently aperient quality, it stimulates the bowels and prevents accumulation of their contents. Rye flour is considered more aperient than wheaten, and some persons make their bread of three-fourths wheat and one-fourth rye flour, but I should give the preference to unsifted wheat flour alone. In point of nutrition, also, the brown loaf has a decided advantage—fine flour contains the gluten of the corn in too concentrated a state to be easily digested, and this objection is valid against arrow root, sago, and other vegetable jellies. Fine bread is certainly improper for children, it renders them costive, and frequently passes through the bowels half digested.

I have dwelt thus long upon the subject of bread, not only because it is the most ne-

cessary and wholesome of vegetable food, but from its being in more general use—my limits, therefore, necessarily oblige me to be brief with the remainder of the subject.

Carrots, turnips, and radishes are slightly laxative, but very innutritious, leaving a large quantity of undigested refuse. Green vegetables and young potatoes, as well as those which are called waxy, are likewise indigestible—potatoes should be roasted. Rice, sago, tapioca, and arrow root are liable to the objections before stated. Oranges, strawberries, and raspberries are laxative. Barley water, gruel, (especially with butter,) and whey are slightly laxative. Milk is most digestible after it is boiled, and when mixed with gruel is aperient also. Raw eggs are indigestible, but laxative—cooked eggs the contrary. Apples are indigestible, except boiled or baked, when they are very wholesome and laxative.

A combination of animal and vegetable matter is essentially necessary in our aliment, and the latter should largely predominate. In proportion as the different articles of animal food are composed of the more dense and nutritive particles, as represented in the list, given in page 87, so ought the quantity and

quality of vegetables taken with them, to correspond. Insufficient mastication is so frequent a cause of indigestion, intestinal disturbance and constipation, that attention to this point, cannot be too strongly insisted on. But above all, and paramount to every other precept and rule, is *temperance*—and though I would not actually enforce the dogmas of *Cornaro*, and prohibit more than twelve ounces of food daily, yet, I would say, that those who preserve the closest approach to such a standard, will incur less risk of the evils arising from irregular and obstructed bowels, than those who indulge more liberally in the gratification of appetite, and who must, sooner or later, pay the penalty which nature imposes upon the transgression. Abstinence is still more peremptorily necessary to the literary and sedentary, and should be ever kept in view by every person, whose habits or avocations are of an intellectual or passive character.

SECTION XI.

Hints for directing the Judgment in selecting
A LAXATIVE DIET.

MAKE choice of such kinds of food as leave the least refuse.


Avoid aliments that are indigestible, as pork, geese, ducks, tripe, dried provisions, cheese, jellies, pastry, mealy potatoes, *fine* bread, green and raw vegetables, salads, stone fruits, melons, skin of grapes and gooseberries, and all kinds of nuts and spices.

Whey may be taken liberally, and barley water as the common drink at meals, except when sweet-wort can be procured. Oranges are laxative, but the skin and pulp should be rejected.

Animal food, rendered soft and tender by slow boiling (but not over-done) is preferable

even to roasted, except the digestive powers are strong. Broiled meat should have the outside pared off, and fried, ought to be rejected.

Oatmeal gruel is laxative, and is very proper both for breakfast and supper—if it does not disagree with the stomach, a piece of butter should be added, as it increases its aperient qualities. Baked or boiled fruits, as apples, rhubarb, mulberries, currants, strawberries and raspberries, are laxative—they should be eaten with coarse bread. Also equal parts of boiled milk and gruel, or honey spread on bread and butter, are laxative. Veal broth is aperient, and if a little thickened with oatmeal or groats is very nutritive. This broth may be also boiled with vegetables and bread, enough of which will be dissolved to render the strained liquid very wholesome and nutrimental—decoctions of animal and vegetable substances of this kind, suffer all their solid contents to be digested, and leave no refuse. Oysters eaten raw for supper, tend to open the bowels on the following morning.



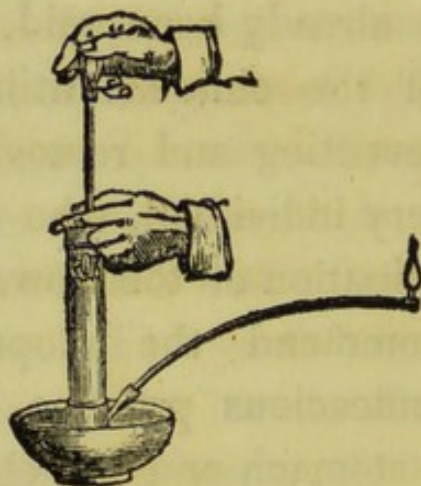
SECTION XII.

On the domestic Use of Injections, for preventing the injurious Effects of Costiveness.

ENOUGH has already been said, to convince the reader of the eminent utility of lavements, in preventing and removing Costiveness. To every individual, who is subject to habitual constipation of the bowels, I would seriously recommend the adoption of this simple and efficacious practice. Instead of teasing your stomach and bowels with opening medicines, procure a lavement machine, and proceed in the following manner.

Obtain a jug of hot water—pour about a pint of it into a basin—add as much cold water to it, as will bring it to about blood heat and encrease the quantity to a pint and a half or a quart. You must then retire to the water-closet, or have a *commode* in the room. Fix the various parts of the injecting

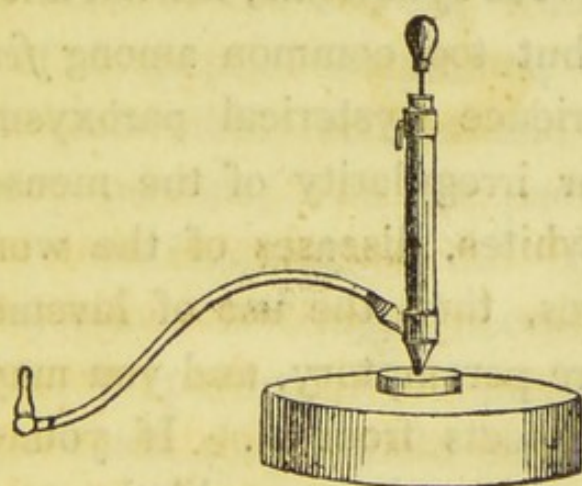
apparatus, together, and having oiled and introduced the pipe into the bowel, place a folded napkin upon the solid part of the top of the seat of the commode or water-closet, and sit down upon it—or a chair may be used for the same purpose, if preferred. Next, place the basin of water on a stool or chair before you, or support it, if equally convenient, on your lap. Insert the pump into the liquid, and inject it gently into the bowels.



At page 49, it was shewn, that in certain positions, the belly becomes either tense or lax, and consequently, the passage of an injection will be either impeded or facilitated, by the posture of the body during the act of administration. Of course, that position is the most favorable, in which the bowels sustain least pressure, *ab externo*, and this, un-

doubtedly, is obtained, by curving the body forwards, and drawing up the thighs. This is demonstrated almost daily, for we see how naturally, persons adopt this position, who are suffering with pain or tenderness of the belly. In self-injection, therefore, of lavements, you should sit rather stooping forwards, so as to bring the abdomen towards the thighs; and if administered by an attendant, recline upon the side, and draw the knees upwards, bringing the thighs to a right angle with the body.

A Reservoir is manufactured, by Mr. John Read, of Regent Circus, Piccadilly, for containing the liquid, to which the pump may be attached by a screw, as represented below.



As most persons prefer going to the water closet upon these occasions, the above apparatus affords the greatest convenience of doing

so, as the instrument and the charged reservoir, may be carried concealed in the pockets, and put together at the place of using. The Reservoir is certainly a very useful addition to the pump, in travelling, or under any circumstances in which the individual has not a comfortable accommodation in his bed-chamber, or prefers to withdraw to the water-closet.

If, in addition to costive or obstructed bowels, you are subject to indigestion, bilious affections, head-ache, stomach and liver complaints, flatulence and spasms, piles, fistula, gravel and stone, stricture, asthma or habitual cough, irritation of the bladder, disease of the rectum, eruptions of the skin, bleeding from the nose or lungs—or you are afflicted with hernia, nervous symptoms, mental affections—or, as is but too common among *females*, if you experience hysterical paroxysms, suppression or irregularity of the menses, fluor albus or whites, diseases of the womb, and miscarriages, then the use of lavements becomes more peremptory, and you may expect the best effects from it. If you are travelling, and (as is very likely to happen) your bowels become slow and irregular in their action, in consequence of those impediments to relieving them, which inevitably

occur during a journey, the lavement machine should be ready in your portmanteau. By this means, whether at going to bed, or at rising, or even upon a short or temporary stoppage on the road, you may procure the desired relief in a certain and speedy manner, without any of the uneasy and protracted effects which result from taking opening medicines.

The lavement, also, is especially serviceable to commercial persons, who are much confined to the desk or the counter, and to those individuals, whose unrelieved employments in business or professional pursuits, often prevent them from attending to the calls of nature, and, consequently, establish an irregular state of the bowels, which is productive of dyspeptic complaints, and many other uncomfortable feelings and disorders. To literary persons, who are peculiarly obnoxious to confinement of the bowels, the use of injections is equally necessary. But to females, in particular, it presents a remedy, to which they should constantly and unhesitatingly have recourse, against constipation; the evils of which (to the sex) have been before discussed.

Sailing is well known to tend to constipation; and in long voyages, the evil is, of course, exasperated by the want of due exercise and by the qualities of the food. Persons, therefore, making voyages, and seafaring people generally, will derive essential benefit from the lavement, which should be used daily, if necessary. Sea-water may be applied in the same manner, but is of course more active in its effects—it is found to be very useful when flatulence attends costiveness.

It is well known that persons residing in the East and West Indies, Africa, &c. are highly disposed to visceral congestion and irritation—hence, it ought to be an object of paramount interest and anxiety to every European, residing in intertropical regions, or countries of high temperature, (more particularly at their first arrival) studiously to obviate constipation both by direct and indirect means. During a domicile in such latitudes, constant attention should be directed to the means of ensuring a regular state of the bowels, and I know of none so safe, efficient, and agreeable, as the Lavement Machine. I will venture to assert, that were this plan more generally adopted by mer-

chants and military men, particularly the latter, we should meet fewer individuals with jaundiced countenance, diseased liver, and broken constitution; for whom, neither the splendid fruits of commerce, nor the honorable rewards of public service, can procure health and comfort. To residents in such climates, I would strongly recommend the daily administration of one or two pints of water, provided the bowels do not, *spontaneously*, act with regularity. Persons whose digestive and biliary systems have been injured by warm climates, should not persist in a constant practice of taking purgative medicines, the effect of which is to debilitate these organs still more, and to increase the torpidity of the alimentary canal—a basin of water unloads the bowels, without, in the least, contributing to render them more costive afterwards, which purgative remedies do.

In a subsequent part of this treatise, I shall give copious directions for using injections and regulating their application—to which, therefore, I refer the reader for more general information on the mechanical part of the subject, than is to be found in this section.

SECTION XIII.

ON THE COMPARATIVE EFFECTS OF WARM
AND COLD LAVEMENTS, AND THEIR
RESPECTIVE EFFICACY IN CERTAIN DIS-
ORDERS.

1st. *WARM Water Lavements.*

CLYSTERS of *Warm Water*, are well suited for the correction of habitual costiveness, and as the remedy is always at hand, as well as being the most simple so is it, likewise, preferable (in this case) to medicated liquids.

In chlorosis, (or green sickness) and in cases of accidental suppression of the menses, the warm water lavement frequently proves very beneficial; here its effects seem to be owing to its fomentative property and to its stimulating the uterus and contiguous parts. When used with this view, the temperature of

the water should be raised to as high a degree as it can be borne, and a pint injected into the rectum twice a day, the patient using, at the same time, the warm hip-bath.

During the progress of fever, it is necessary to preserve the bowels clear, by applying the warm water-lavement once or twice a day—in fevers of the typhoid kind, this practice is still more imperative, not only with the intention of washing away acrid colluvies, but as a succedaneum for purgative medicines. The great determination of blood to the viscera, and the morbid sensibility of the internal parts, which take place in yellow fever, render the injection of warm water into the bowels particularly eligible for diluting the diseased secretions, and preventing irritation from the collection of fæces.

The soothing influence of warm water lavements, is experienced in inflammatory affections of the kidneys, bladder, uterus, peritonæum, &c. and in cases of morbid irritation of the stomach, small intestines, liver, prostate gland, and urethra. A copious injection of warm water should also be administered, once or twice a day, by those who are the subjects of stricture of the rectum, and should at all times precede an attempt at evacuating

the bowels. When retention of urine ensues from stricture or spasm of the urethra, the patient may often be enabled to make water, by the immission of a warm lavement, which takes off the spasmodic constriction, and allows the urine to flow: the same relief frequently succeeds this remedy, in those painful cases where calculous concretions lodge in the ureters, or these tubes are affected with gouty metastasis. In the latter instances, the quantity of liquid thrown up, should be considerable, (three or four pints) and its efficacy is increased by the previous use of the warm hip bath.

I have, also, observed that the introduction of a bougie into the bladder, is facilitated, in difficult cases, by injecting warm water into the rectum.

Numerous other examples of the application of warm water lavements, for the cure of disorders, might be cited—but as I shall, presently, enumerate the various diseases requiring their use, I shall, in this place, merely add to the preceding remarks, that in all cases where warm lavements are administered with the intention of relieving irritation and spasm, their efficacy is promoted by conjoining the use of the warm bath.

2nd. COLD *Water Lavements*.

IF the propriety of using *warm* injections is to be doubted in any cases, those of Hæmorrhoids or Piles, are certainly of this questionable kind. Warm lavements, acting locally, as all tepid applications do, produce an increased afflux of blood to the rectum, and, consequently, where piles exist, tend to the farther engorgement of the hæmorrhoidal vessels: irritating clysters are, of course, still more objectionable. I do not think, upon the whole, that *warm* or stimulating lavements, should be used by persons who are subject to frequent and severe attacks of piles; but such persons may, I conceive, with considerable benefit, use *cold* injections, under certain limitations. I consider, that in *sanguineous* or *bleeding* piles, the use of cold or astringent lavements, should not be adopted, until other means had been had recourse to, and failed, and, even then, with great caution; for we know, that fatal diseases are, sometimes, brought on, by an injudicious suppression of the hæmorrhoidal discharge. But, for *blind* piles, a *cautious* application of cold lavements, is, unquestionably, useful; and for this purpose, five or six ounces of cold water,


may be injected once, a day, to soften and dislodge the fæces. Water, though cold, has the property of stimulating the rectum and expulsatory muscles, and, procuring motions; at the same time, lessening the pain and mischievous straining, which, usually, accompany efforts at stool, when piles are irritable or inflamed. When piles are painful, or occasion tenesmus, or bearing down at the anus, and sympathetic irritation of the urethra, two or three ounces of cold water gives great and instantaneous relief, and may be thrown up, two or three times a day, if the uneasy sensations return.

I would, here, briefly remark, that *large* quantities of cold water, cannot, safely, be thrown into the bowels, under any circumstances—but that *small* quantities may be very efficaciously used, for the relief of those hæmorrhoidal affections before mentioned; always bearing in mind, that the application of cold water, in cases of sanguineous discharge, must be resorted to, with very great caution. To mitigate the pain, in going to stool, which is occasioned by piles and other hæmorrhoidal diseases, the cold lavement should be thrown up, when the inclination to pass a motion comes on. I admit

that the injection of *cold* water, is succeeded by a grateful sensation of relief—but I do not think the practice, is quite safe, particularly to full and plethoric persons, in whom, determination of blood to the head (a very probable result from cold applied to the bowels,) might be productive of bad consequences. But there is less objection, in these cases, to the French mode of applying cold water, which is by a jet or stream, directed *against* the anus—not *within* it! I shall speak farther of this operation, in the following section.

In conclusion, I am constrained to say, that I cannot acquiesce in the propriety of *copious* cold lavements, having, in some instances, found that they produced colic and spasmodic pains of the bowels. On the safety of *cold* injections, Dr. Fuller has the following remarks. “Some have dared to inject glysters, actually cold, and some again condemn it as male practice. But seeing the stomach, (which is of a far more exquisite sense, and hath such a sympathetic influence upon the whole system of the spirits,) I say, seeing the stomach can bear cold, even icy draughts, why should not the guts, the same, or more? *But I never made any experiment on this matter*, and therefore only pro-

pose, but not impose it." *Vander Heyden*, in a treatise published in 1649, says, in speaking of Lavements of Whey, &c. "to the end that the patients may retain them longer, I would have them always administered *cold*, and be often repeated, if there be an extreme griping with the diarrhæa; and so much the oftener, in case the party void blood; but if that cease, and some purulent matter only, or the same mixed with a very little blood, be voided from some ulcer, you must then give your glyster a little warm. And I have always, and to people of all ages, administered cold. For instance, to the daughter of the Count de Wachen, who was sick of a dysentery, and not above *a fortnight* old; by which her health was speedily restored; and even in the very depth of winter, I have, with very good success, done the like to children of not above two or three months old."



SECTION XIV.

ON THE

Medical JET D'EAU, or EXTERNAL *Lavement*,

DENOMINATED BY THE FRENCH,

THE DOUCHE ASCENDANTE.

THE faculty, in France, are in the habit of ordering a stream of cold water to be directed against the anus, which they denominate, "*Douche Ascendante*." The application is, certainly, oftentimes very efficacious, in cases of piles and other hæmorrhoidal affections, especially those painful diseases of the anus, which seem to be of a nervous character.

There are no sufferings, more agonising, than those produced by various morbid conditions of the anal extremity of the rectum—these are especially mitigated by the immission of small quantities of cold water; but M. Montegre, who has published a masterly description of these diseases, recommends, in

preference, the use of the cold "douche ascendante." I attended a lady for nervous pains about the anus, (succeeding vaginal inflammation) which regularly came on every evening, occasioning acute suffering for several hours. She resorted to the use of the cold douche, which soon removed the disorder, after opium, hyosciamus, and sedative applications had failed. These pains, when aggravated by fissures of the anus, are of the most intolerable kind; the gentleman's case, whom I mentioned at p. 7, was of this nature, and his sufferings, which I had but too often the melancholy task of witnessing, are truly depicted by the following description of Montegre.

"The patient experiences, on going to stool, a slight pain, the seat of which is always the same. This pain, is at first so slight, as to be scarcely perceptible. But after an interval, varying from a few minutes to an hour or more, it assumes an intensity, that is compared by the patient, to what might be expected from the introduction of a red-hot iron into the anus. This anguish persists, generally, till the patient falls exhausted into a sound and prolonged sleep, from which he awakes free from pain. The state of tran-

quillity continues till he next has a stool, when he is destined to go, again, through the same train of suffering. When this complaint has continued for a considerable time, the patient becomes affected with an habitual despondency, which is strongly depicted in his countenance. He emaciates rapidly, and often avoids eating, from the fear of having a motion."

The successful removal of these pains, by the use of the cold douche ascendante, is detailed by M. Montegre, in the following cases.

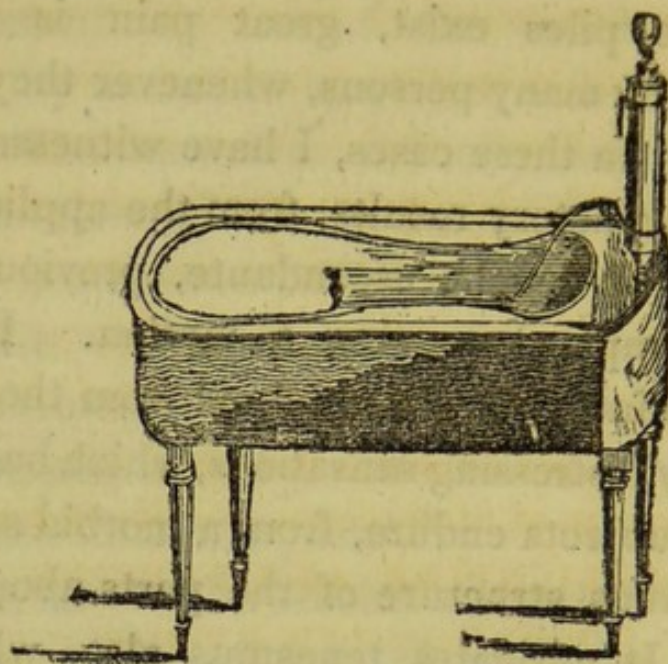
CASE 1.—"A man, 34 years of age, of good constitution, but hæmorrhoidinary from an early period, had, during the last few years, experienced long and painful attacks of the complaint under consideration. The last attack had now continued three months, without any relief from pain, though a great number of remedies had been used in vain. Each evacuation was followed by the excruciating pains already described, so that the poor man was wholly deprived of sleep for whole nights together, was reduced to despair, and almost entirely abandoned food, for fear of the sufferings attendant on the evacuation of the fæces. In this state, he

commenced the use of the *douche ascendante*, by means of a syringe with a crooked pipe. The first effect of this application, was a diminution of the pains, and the reduction of the hæmorrhoidal tumors, so as to be reducible within the sphincter. The process was continued for three or four days, and the pains ceased entirely. He has now been five years free from complaint."

CASE 2.—"The second case was that of a man, 40 years of age, of plethoric constitution, who had been ten years affected with internal piles, without any discharge. A sedentary life, without any regular rest, for some months, had caused an hæmorrhoidal swelling, attended by inflammation, and, finally, by ulceration. To this state, was added the excruciating pains in question. Having a water-closet, of English construction, he contrived to have a jet of water thrown against the anus, which gave him instant relief, for a time. He renewed the application, every time the pain came on, which was, sometimes, very often in the twenty-four hours, and always with the same effect. By persevering in this plan a month, or six weeks, the ulcerations healed, the hæmorrhoids disappeared, and the pains ceased."

Where piles exist, great pain is experienced, by many persons, whenever they have a stool. In these cases, I have witnessed the most satisfactory results, from the application of the cold douche ascendante, previously to any attempt at passing a motion. In the same manner, relief is obtained from those exquisitely distressing sensations, which hæmorrhoidal subjects endure, from a morbid state of the nervous structure of the parts about the anus. It mitigates tenesmus also, whether occasioned by the action of irritating cathartics—by the acrid secretions of diarrhæa, dysentery, and bilious disorders—or by sympathy with diseases of the generative and urinary organs. I have, likewise, employed it successfully, in that irksome and annoying complaint of the fundament, called *pruritus ani*—the incessant and intolerable itching of which, absolutely precludes the unfortunate victim from comfort, and almost from society.

A domestic Douche Ascendante, may be formed, by pumping a jet of water with a lavement machine—and the most convenient contrivance for this purpose, which I have seen, is Read's injecting bidet, as here represented.



This apparatus is, indeed, adapted to several other uses, and especially to the injecting of lavements, for which purpose it is very commodious. In using it, as a *douche ascendante*, the patient, being seated on the bidet—having filled with water, the metallic basin annexed to the pan, and screwed the pump to the tube that descends into it—holds the pipe (which is commonly used for lavements), at the distance of about *two* inches from the anus, with one hand, whilst he throws the liquid against the part, by working the piston with the other. The operation may be continued five or ten minutes, and repeated as often, during the day, as may be necessary.

SECTION XV.

PRESCRIPTIONS

FOR INTESTINAL INJECTIONS

ILLUSTRATED BY PATHOLOGICAL REMARKS ON THEIR

APPLICATION AND EFFECTS

IN THOSE DISEASES WHICH REQUIRE

THE USE OF CLYSTERS.

ABORTION. (Miscarriage.)

SOME medical practitioners place considerable reliance on the use of *tonic* injections for the prevention of abortion; especially when a habit has been established of miscarrying, in every pregnancy, at about the *third* month. I have, however, had no experience in this practice myself, but recommend any of the formulæ, under the class of tonics, to those who are disposed to give the plan a trial. Opiate clysters are decidedly beneficial in this case—they should be prepared

by rubbing down two or three grains of *solid* opium, with as many ounces of fluid starch. The occurrence of pains, such as usually precede abortion, (especially if combined with appearance of discharge) is an indication of the propriety of, immediately, using the opiate injection.

APOPLEXY.

The necessity for acting on the bowels, and the difficulty, generally, of administering medicines by the mouth, suggest at once the use of clysters. Strong and drastic purgatives may be injected, and repeated if they are retained without producing any effect, or rejected without unloading the bowels. The following formulæ present very active purgative compounds, and their effects upon the bowels, when they have been slowly administered and properly retained, correspond with their strength. They are very necessary in apoplectic cases, whilst the patient remains in a state of insensibility.

(1)

Take of, Senna Leaves..... 1 ounce
 Boiling Water..... 16 ounces
 Infuse for an hour, and add
 Castor Oil }
 Epsom Salt.....of each } 1 ounce
 And throw it up slowly at 98 degrees.

Village Doctor, p. 30.

(2)

Take of, Infusion of Senna 4 ounces
 Compound Extract of Colocynth 2 drams
 Tincture of Jalap $\frac{1}{2}$ ounce
 Mix,

(3)

Take of, Aloes, powdered 1 dram
 Castor Oil..... $1\frac{1}{2}$ ounce
 Milk..... 3 do.
 First rub the aloes with a small quantity of
 yolk of egg, and next incorporate the
 castor oil; lastly, add by degrees the
 milk, and dissolve in the emulsion
 Emetic Tartar..... 4 grains
 Rub the whole well together.

The two following formulæ, are recommended by Dr. Clarke; but I have in the

last formula, changed the quantity of tobacco, from a handful of the leaves, to a dram of the dried tobacco of the shops, as being a more determined dose.

(4)

Take of, Antimonial Wine.....	}	1 dram
Syrup of Buckthorn, of each.....		
Decoction of Marshmallows		12 ounces

Mix.

(5)

Take of, Leaves of Rue	}	1 handful
———— Pennyroyal, of each....		
Tobacco		1 dram
Pulp of Colocynth		2 do.
Boil in one pint of Water to.....		10 ounces,
and strain.		

Especial caution is always necessary in administering tobacco, and I would not, in this formula, have ventured on so large a quantity as a dram, but, from the certainty, nearly, that the injection will be expelled, (through the agency of the colocynth,) before the tobacco can exert its whole influence on the system.

ASCARIDES. (Thread Worms.)

There are two varieties of *Ascarides* in the lower bowels—the first, or *long* thread worm, takes up its abode, usually, in the cæcum; the second, is located in the rectum, and may, certainly, be destroyed by various preparations administered as injections—of which the following are examples.

(6)

Take of, Aloes, powdered.....	1 dram
Milk.....	6 ounces

Boil them together until the aloes are dissolved.

(7)

Take of, Spirit of Turpentine	2 drams
Water Gruel	$\frac{1}{2}$ pint

Mix, with the yolk of an egg.

(8)

Take of, the Hairs of Cowhage.....	1 scruple
Water Gruel.....	6 ounces

Mix.

(9)

Take of, Lime Water 6 ounces
 Tobacco..... 10 grains

Macerate the tobacco in the lime water,
 in a covered vessel, by the fire-side, for
 six hours, frequently stirring it.

(10)

Take of, Camphor 1 dram
 Olive Oil 2 ounces

Mix.

(11)

Take of, Sulphuret of Potass 1 scruple
 Rose Water..... 6 ounces

Mix.

(12)

Take of, Nitrate of Silver 2 grains
 Distilled Water 4 ounces
 Gum Arabic, in powder $\frac{1}{2}$ ounce

Mix.

Any of the preceding may be administered
 to children of every age, and repeated every

day or two, until all the worms are destroyed. It may, at the same time, be proper also, to give a purge every other day, of calomel, jalap, scammony, &c. to clear away the slime in which the ascarides envelope themselves.

In addition to the preceding formulæ, *adults* may make choice of either of the following.

(13)

Take of, Olive Oil	8 ounces
Spirit of Turpentine	1 do.

Mix.

(14)

Take of, Olive Oil	2 ounces
Turpentine	} $\frac{1}{2}$ ounce
Assafoetida, of each	
Water	8 do.

Dissolve the assafoetida in the water, then blend the oil and the turpentine with the yolk of an egg, and mix the whole together.

Ascarides may be, also, destroyed by injections of tansy, rue, savin, wormwood, and

common salt—a table spoonful of the latter to half a pint of warm water.

Dr. Fuller, in his Pharmacopæia remarks, that “*Ascarides* are but a feeble nation, and yet so exceedingly hard to be destroyed, that though they should all and every individual be drove out, yet there will not be an end of them so; for a new and numerous offspring will, in a little time, be hatched out of their eggs, which they leave deposited in the *Intestinum Rectum*: and therefore, assure yourself, it’s of no great avail to expel the parents, unless their offspring and seeds be extirpated and clean cast out. And this may be best achieved, if we do *not* presently give over the Glysters as soon as the *Ascarides* cease coming away and are quiet; *but repeat them every third day*; and after, once a week, till they, their nests, and eggs are all torn off, and thrown out.”

Anthelmintic clysters may be rendered tepid, by plunging them into a basin of hot water, for a few minutes before they are used.

ASPHYXIA (Of Infants.)

Many still-born children have been resuscitated by the administration of stimulating injections, which may be prepared as follows.

(15)

Take of, Brandy (or other spirit) one desert-spoonful
 Hot Water.....a tea-cupful
 Mix.

With the same intention may be used, Hartshorn, Essence of Peppermint, White Wine, Spirit of Turpentine, Æther, &c. (as recommended in cases of suffocation, page 209) reducing the quantity of the stimulant, *in this case*, to the proportion of a tea-spoonful for an ounce.

ASTHMA.

It is important, during the paroxysms of this disease, to keep the bowels open *by lavements*, as most practical writers agree in de-

preparing the use of purgative medicines. But it is still more serviceable, to administer injections which are at once aperient and antispasmodic—as the following.

(16)

Take of, Assafoetida.....	3 drams
Castor Oil.....	$\frac{1}{2}$ ounce
Water Gruel	$\frac{1}{2}$ pint

Rub the assafoetida and oil with the yolk of an egg, and then gradually incorporate it with the gruel.

(17)

Take of, Assafoetida	1 dram
Lin-seed Oil.....	$1\frac{1}{2}$ ounce
Epsom Salt.....	1 ounce
Syrup of Buckthorn	1 do.
Gruel	$\frac{1}{2}$ pint

Mix the assafoetida and gruel as directed in the preceding prescription.

Asthmatic persons are not, generally, subject to costiveness; but, notwithstanding, as they are very liable to dyspepsia, and are seriously injured by indigestion and gastric irritation, they should be careful of the state

of the bowels, preserving their regularity, by the use of warm water injections, if necessary.

BELLY ACHE. (Gripes.)

Infants and children suffer severely from gripings and pains of the belly, which are eminently relieved by anodyne and antispasmodic injections. If the bowels are properly open, the following may be used ; but if they are costive, a lavement of four or five ounces of warm water, should be previously thrown up, and repeated, if necessary, until a motion is procured.

(18)

Take of, Laudanum.....	5 drops
Oil of Aniseeds	4 do.
Olive Oil	3 drams
Water Gruel.....	2 ounces

Mix.

If the griping be accompanied by purging, (from acidity in the stomach,) a desert-spoonful of chalk mixture with aromatic confection,

should be taken, three or four times a day, and either of the following injections used.

(19)

Take of, Laudanum..... 5 drops
 Oil of Aniseed..... } 5 do.
 Oil of Juniper, of each }
 Fluid Starch..... 1 ounce

Mix.

(20)

Take of, Prepared Chalk... ½ ounce
 Camomile Flowers } half a handful
 Rue.....each }
 Boil in half a pint of water, to 4 ounces, and
 to the strained liquid, add
 Tincture of Castor 3 drams
 Diacodium (Syrup of Poppies) 4 do.
 Oil of Aniseeds 10 drops.

Mix.

Doctor Fuller recommends the preceding prescription in the following words. "It concentrates acids, comforts the intestines, dissipates wind, eases pain, takes off spasm, and is superlatively good and convenient for small children; when (by reason of hard

breeding of teeth, or acrious humours,) they have green griping stools, and are troubled with inquietude, watchings, feverish erratic flushings— and convulsions threaten them.”

BLADDER, diseases of the,

Cystitis; Inflammation of the Bladder, demands the use of injections, it being absolutely necessary to prevent that irritation, which would ensue from accumulation of fæces in the rectum. The following formula is in use, for this purpose, at Guy's Hospital.

(21)

Take of, Castor Oil	} 1 ounce
Honey, of each	

Rub them together, and add, of

Oatmeal Gruel	10 ounces
---------------------	-----------

Pharmacopœia Guy.

The above, should be injected, at least, once daily, but as the pain and uneasiness admits of mitigation by the local application of warmth, water lavements, heated to 106°, may be injected at intervals, so as to act as fomentations to the diseased organ.

Irritation of the Bladder, arises from a variety of causes, and is commonly attended by more or less inflammatory action. Anodyne clysters, however, in most cases, afford relief, and may be administered in the following forms.

(22)

Take of, Laudanum.....	2 drams
Olive Oil.....	3 ounces
Mix.	

(23)

Take of, Laudanum	1 dram
Camphor.....	$\frac{1}{2}$ do.
Gum Arabic, powdered.....	1 ounce
Water	3 do.

Reduce the camphor to powder by trituration with a few drops of spirit of wine: then mix it, intimately, with the gum: lastly, incorporate it with the water, and add the laudanum.

This disorder, especially in elderly persons, is often accompanied by costiveness, for which the use of lavements is required. Some little difficulty, however, arises, in the choice of an

injection, suitable to the peculiarity of the case. The patient is, generally, much annoyed and inconvenienced by frequent desire to make water, which especially disturbs his rest at night. Now, it happens, that in consequence of the increased activity of the absorbent vessels of the rectum, which is produced by the irritation communicated to it by the bladder, liquids thrown into the bowel, are very readily absorbed and carried to the kidneys. An increased secretion of urine ensues, which adds to the patient's distress, by provoking the call to evacuate the bladder. To avoid this evil, the invalid, should use oil, instead of water—or, some mucilaginous article should be added, to render it viscid, and thus oppose an obstacle to its being absorbed. With this view, a decoction of Marshmallow roots, or of Quince-seeds, may be used—or a quarter of a pound of fresh butter dissolved in a tea-cupful of gruel—or half a pint of lukewarm lin-seed oil (undiluted)—or a wine-glassful of Castor Oil, beaten up with an egg and incorporated with a little barley water, may be thrown up, for the purpose of procuring an evacuation by stool.

Stone in the Bladder. The great utility of opiate injections, in lessening the pain occa-

sioned by the irritation of a stone in the bladder, arises from the power of opium, in diminishing the sensibility of this organ. I have lately, unhappily, verified this remark, by personal experience; having suffered from a disease of the bowels, for which, a long continued use of opiate injections have been indispensable. During this treatment, I had sometimes no desire to pass urine during an interval of 30 hours—when, upon a *voluntary* effort being made, a very large quantity would be discharged. Either of the preceding formulæ (22 and 23) may be administered, to relieve the anguish of the bladder, as occasion requires—and during a violent paroxysm, two or three drams of laudanum, in half a pint of starch, may be thrown into the rectum.

Debility of the Bladder. This disease is known by an inability or difficulty in making water, independent of stricture in the urethra, or any other mechanical obstruction. It occurs particularly in old persons, or those who have been inordinate drinkers. The following injections, used twice a day, have often been found beneficial.

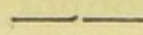
(24)

Take of, Extract of Round-leaf Cornel 1 dram
 Warm Water $\frac{1}{2}$ pint
 Dissolve.

(25)

Take of, Pomegranate Bark 1 ounce
 Water a pint
 Boil to half a pint and strain—then add
 Sulphate of Iron 1 dram
 Compound powder of Tragacanth.. $1\frac{1}{2}$ do.
 Mix.

The preceding (24 and 25) are well calculated to give tone to the rectum and bladder, when those parts have sunk into a state of chronic debility. A medical friend assures me, that he has found the cornel, eminently successful in those cases.



BOWELS, inflammation of the,

Enteritis.—A difference of opinion is entertained, of the propriety of administering purgative medicines, in the first stage of in-

flammation of the bowels. Its opponents contend, that the stimulus of the medicine aggravates the inflammation, and that the practice is *absurd*, inasmuch as the contingency is coupled with an impossible condition—*i. e.* that the inflammation deprives the alimentary canal (or the affected parts of it) of its capability of performing its natural and usual functions; whilst at the same time, the purgative medicines, administered, are urging it to an exercise of those functions. On the other side it is advanced, that the morbid irritation of the bowels, being of a specific kind, is subdued by the counteracting and opposite irritation of purgative remedies; and farther, that the first effects of the inflammation, being an inversion of the peristaltic motion of the bowels, so the readiest means of removing the disease, are those agents which tend, directly, to restore the proper and accustomed action of the alimentary tube. I cannot, here, enter into the discussion, nor is it necessary I should even state, which side I am disposed to advocate; suffice it to say, that all parties agree in the necessity of procuring fæcal evacuations, as speedily as possible, and the enema presents itself, as a remedy, which practitioners of

every school gladly employ. As soon as the pain has been mitigated by the exhibition of Calomel—Antimony and Opium, copious injections of warm water should be used. They relax spasm, (always attendant on inflammation of the bowels) promote the secretions of the mucus membrane, soften the fæces and stimulate the alimentary canal to its proper peristaltic action. If necessary, the quantity of water may be large, even several quarts—indeed there should be no limit to the measure, other than the capability of the patient to endure an increased quantity; and the operation should be repeated, until copious evacuations are procured. If the water lavements fail in procuring motions, the following aperient injection may be thrown up.

(26)

Take of, Infusion of Senna.....	11 ounces
Glauber's Salts	1 do.
Castor Oil	$\frac{1}{2}$ do.
Mix.	<i>Village Doctor, p. 109.</i>

The above, should, if possible, be retained in order that the ingredients may be absorbed, so as to induce a purgative effect. It may be repeated according to circumstances.

BRAIN, inflammation of the,

In this violent disease, purgative injections may be used, to assist the operation of similar remedies administered by the mouth; and for this purpose, either of the formulæ 1, 2, 3, may be selected—vide p. 121.

CANCER OF THE WOMB.

The pain, attendant upon this disease, is of a very severe character, and requires full and frequently repeated doses of anodyne medicines. A continued course of *opiate* remedies, soon deranges the stomach and head, and it is, therefore, desirable to shape our soothing plan in some other manner, to the exclusion of opium, as far as it is practicable, or at least, of its administration by the stomach. The following clyster may be injected, during a paroxysm of pain, every four hours.

(27)

Take of, Extract of Hemlock	}	20 grains
———— Hyosciamus, of each }		
Liquid Starch		3 ounces
Mix.		

This injection will be found useful, in any case of irritation of the womb.

CHLOROSIS. (Green Sickness.)

In those instances, in which the menses do not appear at the usual age, or after being established, have become interrupted or suspended, *arising from a weak and debilitated constitution*, the following stimulating lavenment, used every day, may be the means of soliciting nature into her proper and accustomed course.

(28)

Take of, Grains of Paradise	1 dram
Cubebs.....	1 ounce
Cloves.....	1 dram
Boiling Water.....	12 ounces
Macerate for two hours, and strain, then add	
Honey	$\frac{1}{2}$ ounce

If there be much difficulty in retaining this injection, the bowel should be first cleared by a copious warm water lavement—or the above quantity may be divided and thrown up at twice, with a few hours interval.

CHOLERA.

Copious injections of Whey, weak Veal broth, or Chicken Water, should be frequently thrown up, to dilute and wash away the irritating secretions of the bowels. Dr. Fuller used the following, in most cases of this nature.

(29)

Take of, New Milk	10 ounces
Decoction of Quince-seeds.....	} 3 ounces
Fleawort and Red Poppies	
Diacodium, or Syrup of White	} 2 do.
poppies	
Yolk of Two Eggs	

Mix.

Fuller's Pharm.

The spasm of the intestines and sickness at stomach, occasioned by the acrid bile, poured

out in this disorder, must be quieted by opium, until the excessive secretions of the liver and bowels are suspended, and this is to be attempted by frequently repeated injections—either of the formulæ Nos. 58, 59 or 60 (to be found under the head “*Diarrhæa*”) are eligible for this purpose.

Various *demulcent* injections are useful in Cholera, and may be prepared from Lin-seed, Marsh-mallows, Quince-seeds, Iceland Moss, Pearl Barley, Starch, &c. examples of which, the reader will find under the article “*Dysentery*.”

The above remarks, apply, only, to the species of Cholera that occurs during the summer and autumnal months, *in England*. The treatment of Asiatic or *blue* Cholera, is, at present, not sufficiently established, to permit me to speak of the effects of intestinal injections.

COLIC.

Whatever may be the *exciting* cause of Colic, whether flatulence, accumulated fæces, indigestible food, poisons, worms, intestinal

calculi, acrid bile, acidity, retained meconium, gouty metastasis, stricture, or the fumes of lead, the *proximate* cause is certainly spasm—and the mode of cure is simply to relieve this, and to discharge the offending substance. The vomiting, frequently attendant on Colic, prohibits the administration of medicines by the mouth—and the obstinate state of spasm, and inverted action of the whole alimentary canal, render the effect of purgative remedies, taken into the stomach, entirely nugatory. In the treatment of this disease, more reliance may be placed upon injections, than upon any other method. They should be administered liberally, and any of the formulæ 50, 51, 52, 53, and 54, under the article “Costiveness,” may be chosen, and their efficacy, most probably, increased, by their being largely diluted, or diffused in a considerable quantity of water—say, several pints. I have witnessed admirable effects, from the immission of six or eight pints of warm lin-seed oil, the spasm appearing to yield to the emollient nature of the remedy, and the bowels immediately discharging their contents. Copious injections of warm water, often produce the same effects; and to assist their operation, the water may

be impregnated with soap. According to Dr. Cullen, the soap has no purgative quality, and only tends to the expulsion of the fæces by lubricating the surfaces.

The imprisonment of flatus, should be obviated, by medicating the *purgative* injections with *antispasmodic* ingredients — *turpentine* possesses, peculiarly, both these qualities. The following formulæ may be chosen.

(30)

Take of, Venice Turpentine	1 ounce
Triturate it with the Yolk of an Egg, and add	
gradually	
Warm Water.....	1 pint

This form of enema, Dr. Cullen remarked, was one of the most certain laxatives that could be employed in colic, and other cases of obstinate costiveness.

(31)

Take of, Common Turpentine.....	$\frac{1}{2}$ ounce
The Yolk of an Egg.	
Decoction of Pearl Barley.....	10 do.
Mix.	Pharm. Barth. Hosp.

USE.—Constipation, attended by colicky pains and flatulence.

(32)

Take of, Venice Turpentine.....	$\frac{1}{2}$ ounce
Incorporate it with the Yolk of an Egg, and mix it gradually with	
Barley Water	$\frac{1}{2}$ pint
Olive Oil	$1\frac{1}{2}$ ounce
Sulphate of Soda	6 drams
Tincture of Opium	$\frac{1}{2}$ do.

This enema is highly useful for colic, attended by severe spasms of the bowels.

(33)

Take of, Venice Turpentine	6 drams
Olive Oil.....	3 ounces
Sulphate of Magnesia	3 drams
Decoction of Marshmallows	10 ounces

Mix.

The above, is one of the best forms of a purgative injection, for the relief of flatulent colic.

(34)

Take of, Aniseeds, bruised	} $\frac{1}{2}$ ounce
Castile soap, of each	
Water	$1\frac{1}{2}$ pint
Boil them till reduced one half, then add	
Spirit of Turpentine	1 ounce
Tincture of Assafoetida	$\frac{1}{2}$ do.
Incorporate the two latter with the Yolk of an Egg, and mix all together,	

This enema (34) is useful in colic and flatulent pains of the bowels, and is often administered, with considerable relief, during a fit of gravel. In Tympanitis, it may be used twice or three times a day.

The *spirit* of turpentine, though less a purgative than the native turpentine, possesses, nevertheless, considerable aperient and antispasmodic properties; especially, when in combination with carminatives, it is applied as a clyster in flatulent colic and windy disorders of the bowels; of which, formula 34, is an example. The following terebinthinate injection, is strongly recommended by a late medical writer, for colic and obstinate obstruction of the bowels.

(35)

Take of, Castor Oil.....	2 ounces
Spirit of Turpentine	2 drams
Water Gruel	$\frac{1}{2}$ pint

Mix.

Opium, conjoined with purgative and carminative injections, is, also, very useful in the treatment of colic; for example.

(36)

Take of, Infusion of Senna. 10 ounces
 Opium 3 grains
 Dissolve.

The opium here, tends to relax the spasm of the bowels, and to bring them under the influence of the senna—thus, at once, relieving pain and procuring evacuations. It should be retained as long as possible, that both the senna and opium may act from absorption—and to accomplish this, the injection should be thrown up slowly, and not too warm, the patient remaining in bed, keeping as quiet and tranquil as circumstances will permit.

Dr. Fuller gives the following stimulating opiate injection, in colicky cases.

(37)

Take of, Canary Wine } 6 ounces
 Lin-seed Oil, of each }
 Oil of Amber $\frac{1}{2}$ dram
 Laudanum 60 drops
 Mix.

The violent spasms and sickness, which, sometimes, attend *Colica Pictorum* or *Painter's*

Colic, call for a very liberal use of opium, and here, in addition to the application of opiate embrocations along the course of the spine, *ten* grains of solid opium, dissolved in half a pint of liquid starch, should be injected into the rectum. In the same cases, *Tobacco* injections are very eligible, upon the use and administration of which, the following directions are from the "*Village Doctor*," page 91. "If the spasms continue, and the irritation of the stomach, still prevents the administration of medicine by the mouth, a tobacco clyster should be thrown up, consisting either of the infusion or smoke, prepared in the following manner.

(38)

Take of, Tobacco 1 dram

Boiling Water 1 pint

Let them stand in a covered pot for 15 minutes, and strain—throw up half this quantity, and the remainder, half an hour afterwards, if the first has had no effect.

Tobacco Smoke.—About an ounce of tobacco, is to be put into the canister which is affixed to Read's patent lavement syringe,

and being lighted by a piece of paper, the smoke to be pumped into the bowels."

Notwithstanding the *smoke* of tobacco is preferred by many medical practitioners, above the infusion, in the treatment of violent constipation and colic, there is, I confess, this objection to it—that it does not admit of being applied, in such a defined measure of strength, as the liquid infusion. I am, at the same time, ready to grant, that the fumes, probably, diffuse themselves, with more facility, through and along the large intestines, than a *liquid* injection, and passing the valve of the ileum, penetrate more readily, into the small bowels. I have, lately, seen the report of some violent cases of constipation, that resisted the most active treatment, both by purgatives and injections, which, yielded to the operation of inflating the intestines with air—but of this practice, I have had no experience. The experiment of introducing air into the bowels, can alone be justifiable in severe and dangerous cases—in simple and colicky cases, the patient would, doubtless, experience more annoyance than benefit, from such a practice.

CONVULSIONS.

For child-bed convulsions, Dr. Denman advised clysters, containing six grains of solid opium. The following form, may be adopted, in these cases.

(39)

Take of, Gum Assafoetida	3 drams
Solid Opium	6 grains
Gruel	$\frac{1}{2}$ pint

Dissolve.

For remarks upon the exhibition of opiate injections for puerperal convulsions, vide page 40. The following, is administered in the convulsive disorders of infants.

(40)

Take of, Confection of Rue	$\frac{1}{2}$ dram
Warm Milk	a tea-cupful

Mix.

COSTIVENESS.

The domestic management of Costiveness, by means of warm water lavements, having been, already, sufficiently, discussed in Section xii; we shall, in this place, only consider the treatment of that aggravated torpidity of the bowels, which requires injections more stimulating than water only.

I may here observe, that various simple substances and mixtures, are often resorted to, in the composition of domestic clysters—such as fat broth, milk, whey, gruel, decoctions of lin-seed, camomile flowers or mallow root; to which are, occasionally, added, one or two table-spoonsful of common salt, honey, treacle, moist sugar, salad oil, soft soap, &c. These simple compounds are readily prepared, and may be used, advantageously, in most cases, where necessity, or the whim and experience of the administrator, give them a superiority to mere water. The temperature of these injections should not exceed 100° of Fahrenheit's thermometer, and they will be retained more easily, at a lower heat even than this: viz. 96° or 98°. The following, are examples of mild laxative injections, more active in their effects than the above simple lavements.

(41)

Take of, Barley Water	1 pint
Common Salt	1 ounce
Mix.	

(42)

Take of, Water Gruel	11 ounces
Olive Oil.....	1 ditto
Epsom Salt	$\frac{1}{2}$ ditto

Incorporate the oil with the yolk of an egg, and add the gruel, having first dissolved the salt.

(43)

Take of, Water Gruel	$\frac{1}{2}$ pint
Lenitive Electuary	} 1 ounce
Olive Oil, of each	
Antimonial Wine	3 drams
Mix.	

The three preceding clysters, 41, 42, 43, may be applied for the removal of costiveness, but the latter is the most active, and is recommended by Dr. Clarke, as operating quickly.

(44)

Take of, Sulphate of Soda	1 ounce
Warm Water (100° Fahr.)	$\frac{3}{4}$ pint
Olive Oil	2 ounces
Mix.	

(45)

Take of, Epsom Salt 1 ounce
 Warm Water (at 100° Fahr.) ... 1 pint
 Castor Oil 1 ounce
 Mix.

(46)

Take of, Croton Oil..... 6 drops
 Water Gruel 1 pint
 Mix.

(47)

Take of, Colocynth Pulp..... 1 dram
 Water 12 ounces
 Boil for a few minutes, and strain.
 Pharm. Barth. Hosp.

(48)

Take of, Manna 1 ounce
 Olive Oil..... 1 do.
 Epsom Salt $\frac{1}{2}$ do.
 Decoction of Camomile, viz..... 10 do.
 Camomile Flowers $\frac{1}{2}$ ounce; Carraway
 Seeds $\frac{1}{2}$ ounce; Fennel Seeds 2 drams;
 Water 1 pint.—Boil fifteen minutes,
 and strain.
 Mix. Pharm. Dublin.

The preceding formulæ, 44, 45, 46, 47, 48,
 are examples of gently aperient clysters,

rather more active than lavements of water only. They are applicable, for the removal of costiveness, whenever it may be desired to give a little more stimulus to the bowels, than mere warm water communicates, or when the latter, does not readily succeed in producing evacuations. They are, also, useful, in assisting and quickening the operation of cathartic medicine. Clysters of this kind, should be retained, if possible, ten or fifteen minutes, otherwise no benefit will be obtained from the medicinal impregnation of the menstruum.

Costiveness in children, may be removed, either by warm water lavements, or by any of the simple kinds of aperient injections, composed of chicken or veal broth, with a little sallad oil and brown sugar. The following, is recommended by Dr. Fuller, for costiveness attended by flatulence and gripes, in infants.

(49)

Take of, New Milk	3 ounces
Oil of Sweet Almonds.....	} $\frac{1}{2}$ do.
Syrup of Violets, of each ...	
Oil of Aniseeds	12 drops

Mix,

Obstinate costiveness, or *obstruction* of the bowels, demands the use of purgative medicines, in conjunction with repeated lavements of warm water. The quantity of fluid, administered, should be copious; (three or four quarts) and if unsuccessful, active medicated injections, must be tried, as the following.

(50)

Take of, Senna Leaves.....	6 drams
Boiling Water.....	12 ounces
Infuse an hour, in a covered vessel; add	
Sulphate of Soda	1 ounce
Castor Oil	$\frac{1}{2}$ do.
Mix.	

The above is recommended, in the *Village Doctor*, to be thrown up, (for nervous colic) after the sickness of the stomach has subsided, in order to assist the operation of aperient medicines.

(51)

Take of, Pulp of Colocynth	1 dram
Water	12 ounces
Boil for a few minutes, and add	
Common Salt.....	$\frac{1}{2}$ ounce
Syrup of Buckthorn.....	$\frac{1}{2}$ do.
Mix.	Pharm. Guy's Hosp.

(52)

Take of, Socotrine Aloes powdered	2 drams
Subcarbonate of Potass	$\frac{1}{2}$ do.
Gruel (or Milk)	1 pint

Dissolve the Potass in the warm liquid;
then rub the Aloes with the yolk of an
egg, and mix the whole together gra-
dually.

(53)

Take of, (Simple) Extract of Colocynth...	3 drams
Water....	3 pints
Boil, for 20 minutes, and strain; add	
Epsom Salt.....	} 1 ounce
Castor Oil, of each	

(54)

Take of, Leaves of Senna	4 ounces
Water	1 pint
Boil for 10 minutes, and to the strained liquid, add	
Glauber's Salt	$\frac{1}{2}$ ounce
Antimonial Wine	4 do.

Mix.

Orfila, on Poisons.

The five preceding formulæ, 50, 51, 52, 53, 54, are examples of *actively* purging clysters, adapted to cases of obstruction of the bowels, which resist the administration of *water* lavements, and the milder medicated in-

jections. Formula 53, presents an active injection, suitable for obstinate and protracted constipation—and 54, for cases of painter's colic. Orfila also, advises the latter to be used in cases of powerful intoxication, when the person remains insensible for a longer time than inebriety usually lasts; which is ten, twelve, or fifteen hours. The same is, also, applicable for hastening the expulsion of poisons, for which it is one of the most effectual applications of this class. Dr. Chapman, an American physician, of eminence, recommends purgative injections, prepared by dissolving from 20 to 50 grains of emetic tartar, in a pint of water.

Obstruction of the bowels arises from one or other of the causes, which are enumerated as occasioning *Colic*. Indeed, the first disorder, spontaneously glides into the last—most cases of constipation being attended by such acute spasmodic pains of the bowels, as to merge every other feature of the disease, in this, its most prominent character. *Colic*, therefore, is usually adopted, as the most appropriate name, by which to designate constipation and obstruction of the bowels, in an aggravated form—and to this subject, page 141, the reader is referred, for such farther

information respecting the utility of lavements, in spasmodic diseases of the intestinal canal, as the peculiarity of any particular case, may seem to require.

DEBILITY.

Nutrient clysters are necessary for the support of the system, under great debility and exhaustion, when food cannot be received or retained in the stomach, and may be prepared in the following manner.

(55)

Cut a pound of *lean* beef into very thin slices, and put it into a quart of cold water; simmer it very slowly until one half is consumed; then thicken it with hartshorn shavings, or with arrow-root: throw up a tea-cupful every two of three hours.

(56)

Dissolve a glass of jelly (or half an ounce of isinglass) in half a pint of milk; throw up half this quantity, and repeat it frequently.

In cases of exceeding debility, and the collapse attending typhoid and malignant fevers, it is usual to add bark to these nutrient clysters.

The following cordial nutrient, may, occasionally, be requisite, for the debility which succeeds protracted diseases, or the feebleness and exhaustion of old age.

(57)

Make a decoction of Caragaheen Moss—dissolve two eggs in a tea-cupful of it, and add a glass of port wine. This may be injected three times a day.

DIARRHŒA. (Purging.)

(58)

Take of, Laudanum	1 dram
Thin Starch	3 ounces
Mix.	

(59)

Take of, Confection of Opium.....	2 drams
Gum Arabic	$\frac{1}{2}$ ounce
Milk	3 ounces
Mix.	

(60)

Take of, Opium..... from 2 to 4 grains
 Gruel..... 3 ounces
 Mix.

These formulæ, Nos. 58, 59, 60, are applicable for diarrhœa, when the motions are thin and frequent.

(61)

Take of, Confection of Opium..... }
 Extract of Catechu, of each... } 2 drams
 Starch Mucilage..... ... 3 ounces
 Mix.

This enema, (61), is administered, to check the colliquative diarrhœa of Phthisis, griping and bloody stools.

(62)

Take of, Lime Water 12 ounces
 Red Rose leaves (powdered)... 2 drams
 Gum Kino..... 2 ditto
 — Arabic 2 ounces
 Laudanum $\frac{1}{2}$ dram
 Mix.

The above is an useful clyster, for chronic diarrhœa, and may be repeated twice a day.

(63)

Take of, Pomegranate Peel $\frac{1}{2}$ ounce

————— Flowers..... 1 dram

Boil them in half a pint of milk till only
one half remains—to the strained liquid,
add

Cinnamon Water 2 ounces

Syrup of Poppies 6 drams

Oil of Nutmegs 6 drops

The above, is from Fuller, who says, “ that it may be the longer and easierly retained (which is of great moment) let the patient compose himself to sleep, as soon as he can. This, beyond all other astringents, is prevalent in stopping such a looseness as comes without gripes, and is occasioned, not so much by the quantity and sharpness of the excrement, as by the laxity of the intestines.”

The following injection, which is both anodyne and astringent, is proper for purging of long standing.

(64)

Take of, Confection of Opium 2 drams

Conserve of Roses 1 ounce

Spirit of Cinnamon..... 1 ditto.

Liquid Starch..... 3 ditto.

Mix.

DYSENTERY.

In this disease, the administration of demulcent injections, affords considerable alleviation to the sufferings of the patient, by diluting the acrid secretions, and covering the irritated and eroded membrane of the bowels, with a bland lining, which defends it from the acrimony of the intestinal discharges.

(65)

Decoction of Lin-seed.

Take of, Lin-seed, bruised 6 drams
 Water 2 pints
 Boil for ten minutes, and strain.

(66)

Decoction of Marshmallows.

Take of, Marshmallows, dried 2 ounces
 Water..... 3 pints
 Boil to one half, and strain.

(67)

Decoction of Quince-Seeds.

Take of, Quince-Seeds 3 drams
 Water 1½ pint
 Boil for ten minutes, and strain.

(68)

*Decoction of Iceland Moss.*Take of, Iceland Moss..... $1\frac{1}{2}$ ounce

Water 2 pints

Boil to a pint and a half, and strain.

(69)

Decoction of Barley.

Take of, Pearl Barley 1 ounce

Water 3 pints

Boil to one pint, and strain.

(70)

Compound Decoction of Poppy.

Take of, Poppy-heads, bruised..... 2 ounces

Water 2 pints

Boil for a quarter of an hour and dissolve in the strained liquid

Compound powder of Gum Tragacanth } $\frac{1}{2}$ ounce

(71)

Starch Mucilage.

Take of, Starch 3 drams

Water 1 pint

Dissolve the Starch in the Water cold, and then boil it, until it thickens.

(72)

Emulsion of Suet.

Take of, Mutton Broth..... 1 pint
 ——— Suet 3 ounces

Beat the Suet with the yolk of three eggs,
 and incorporate it by trituration with
 the broth; then gently simmer it toge-
 ther for ten minutes.

(73)

Emulsion of Wax.

Take of, White Wax..... $1\frac{1}{2}$ ounce
 Milk..... 1 pint

Beat the yolk of two or three eggs with
 an ounce of the milk, and the wax
 being melted, stir them together; then
 gradually add the remainder of the
 milk, previously made hot, and simmer
 the whole, very gently, for a few mi-
 nutes.

(74)

Emulsion of Spermaceti.

Take of, Spermaceti $1\frac{1}{2}$ ounce
 Gum Arabic (*in powder*)..... 6 drams

Beat the spermaceti with the gum, and
 dissolve, by careful trituration in
 milk, (at 100° Fahr.)..... 1 pint

(75)

Emulsion of Flour.

Take of, Wheat Flour.....	}	1 ounce
Mutton Suet, of each		
Milk.....		
		1 pint

Rub the flour with the milk, cold, then put it over the fire and throw in the suet; when the latter is dissolved, pour it into a proper vessel, and inject it as soon as it is cooled down to 98°.

(76)

Emulsion of Soap and Wax.

Take of, Plain Curd Soap.....	1 ounce
White Wax.....	2 ditto
Water	1 pint

Boil them together till dissolved.

Any of these formulæ, particularly 72, 73, 74, 75 and 76, are highly eligible in dysentery: they may be repeated twice or three times a day. They may be used, with the same intention and good effects, for Cholera, Diarrhœa, ulceration of the Rectum, and cases of poisoning. The prescriptions marked 58, 59, 60, (article Diarrhœa,) are applicable to dysentery and cholera for relieving the distressing tenesmus which attends these dis-

orders. “Common emollient injections,” says Dr. Mason Good, in his remarks on *diarrhæa tubularis*, “afford temporary ease; and a diluent and anodyne injection of warm water and laudanum, alone, repeated twice a day, still more so.” Mr. Clarke recommends a clyster made by boiling three drams of ipecacuan in a quart of water, till reduced to a pint, to be injected twice or thrice a day in dysenteric diseases.

EPILEPSY.

The Author has had no experience in the use of intestinal injections for the treatment of this disease, but submits the following, upon the authority of Dr. Fuller.

(77)

Take of, Camomile Flowers	1 handful
Boil, in Water to 3 ounces—strain, and add	
Spirit of Hartshorn	8 drops
Oil of Aniseeds	5 do.
Honey of Roses.....	3 drams

Mix.

“The use of volatile salts in Glysters,” he adds, “I take to be a new practice, not thought of by our forefathers in physic. Yet *Ettmuller*, (whose prescript, this is) writes, that a certain eminent physician, commends them (not without success) in an epileptic paroxysm, and gives them as well to children as to grown persons—and this he ordered for an infant of a year old.”

ERYSIPELAS.

Injections present an eligible and convenient mode of administering *Bark* in cases of Infantine Erysipelas, in which there is, usually, an insuperable difficulty, in getting the little patient to take it, efficiently, by the mouth. For the method of preparing these injections, the reader is referred to the article, Intermittent Fever, prescriptions 102 and 103.

EXHAUSTION.

Vide “*DEBILITY*,” page 157.

FEVER.

The necessity of keeping the bowels open, by lavements, during the course of fever, has been pointed out in several preceding parts of this work, to which the reader's attention is directed, at pages 8, 13, 21, 79 and 107. The same practice, also, is equally imperative, whilst the patient is in a state of convalescence, in order to remove, collections of stimulating fæces from the lower bowels, which, at this time, are apt to ensue, from more food being taken, than can be digested, giving rise, either to visceral irritation, or relapse. It frequently happens that after the cessation of fever, the bowels are left in a sub-inflammatory state, which the irritation of retained fæces, urges on to ulceration of the mucous surface. During, therefore, the progress of fever, *two* motions should be procured daily, and, at least, *one*, through the state of convalescence. If any other means are required, in addition to the simple warm water lavements, the medicines should be of the mild gentle kind, described at p. 22, or an aperient injection may be administered, such as No. 41 and 42.

With the intention of exhibiting carbonic acid, for the correction of a tendency to putridity, in *Typhous* fevers, the following injection is, sometimes, recommended.

(78)

Take of, Fresh Yeast	2 ounces
New Table Beer	$\frac{1}{2}$ pint
Mix, and inject at a temperature of a hundred degrees.	

Nutrient injections are sometimes necessary, in the collapse that succeeds malignant fevers—for the mode of preparing them, vide the article, “Debility.” Directions for the administration of Bark, (which applies to all cases of fever, as well as other disorders, requiring clysters of this kind,) may be seen under the article, Intermittent Fever.

FLATULENCE.

This is not only a symptom of several diseases, but is, frequently, found to be an

idiopathic or original disorder, arising from constitutional debility of the alimentary canal. It has been conjectured, that the bowels of those persons, who are subject to flatulence, actually secrete the gas, by which the intestinal tube is tormented. Whether this be correct, and, if true, whether this curious secreting function, be the peculiar but unfortunate privilege of weak and irritable bowels only, I am not prepared to argue: but, I am somewhat disposed to ascribe the leading feature of the complaint, to a morbid irritability of the nervous structure of the intestinal canal, by which the muscular fibres are, easily and frequently, thrown into a state of spasmodic contraction—the phenomena of gaseous inflation and disturbance, becoming developed, as *secondary* symptoms only. The learned Baron Van Swieten, seemed to entertain an opinion of this nature—for he says, “the intestines *always contain gas*, but it does not occasion either belching or flatus, unless from spasms of the bowels. Whilst the air is unconfined in the intestines, it does no hurt; but it appears, by experiments made upon living animals, that if the intestine be irri-

tated in any place, it is immediately drawn together with a strong spasm—if it is touched again, in another place, at a small distance, it is constricted there too—and presently, the intermediate part of the intestine is inflated by the rarefaction of the air within. When, therefore, an acid, by its irritation, produces spasms in the intestines, by which they are contracted in several places, the air within, *rarefies* and *distends them*; and when the spasm is relaxed, it passes upward or downward with violence; or else, shifting its place only, it wanders through the intestines with a murmur, called *borborygmos*, or rumbling of the guts.” It seems, therefore, that elastic gas, is always, more or less, contained in the bowels, but does not produce griping and the symptoms of flatulence, except the intestines are thrown into spasmodic contraction, by some irritating cause.

As this state of the alimentary canal, is, commonly, accompanied by costiveness, the employment of laxative remedies is doubly indicated—and, unquestionably, the most eligible mode of administering them, is, by injection. The choice and combination, however, of this class, is a matter of some mo-

ment. The objects in view, are, to allay spasm and evacuate the bowels—the first, to be accomplished without stimulating the intestines unduly, or to a degree hazarding the production of inflammation—and the second, without inducing either irritation or debility. I have, generally, found it useful, and, indeed, necessary, in the treatment of flatulent complaints, to tranquillize and strengthen the alimentary canal, by the union of an anodyne with a tonic, and at the same time to stimulate the bowels, by a warm purgative. To accomplish this, I have found no plan so efficacious, as the exhibition of the Quinine with Hyosciamus, under the former indication—and of the compound powder of aloes, to answer the second. Clysters, therefore, which are adopted by persons subject to flatulent costiveness, should contain some warm stimulating purgative, dissolved in an infusion of bitter, aromatic, or carminative herbs; and amongst these, *Camomile*, as a bitter conferring tone upon the bowels, is exceedingly conspicuous—take the following as an example.

(79)

Take of, Camomile Flowers	$\frac{1}{2}$ ounce
Water	$1\frac{1}{2}$ pint
Compound Decoction of Aloes...	1 ounce
Soft Soap	$\frac{1}{2}$ do.

Boil the Camomile Flowers in the Water
for half an hour, and strain; add the
Aloes and Soap, and immediately
throw it up.

This enema is very efficacious in dispelling flatulence, and procuring evacuations, in spasms of the bowels. If the first injection does not, properly, cleanse the bowels, the patient continuing distressed by flatus, it may be repeated a few hours afterwards.

Plants of the Verticillate order, fulfil a similar intention—as Pennyroyal, Peppermint, and some others: for example

(80)

Take of, Leaves of Peppermint (fresh) 2 ounces
(or of the dried $1\frac{1}{2}$ ounce.)

Boiling Water 1 pint

Infuse for a quarter of an hour, and
strain; then add

Table Salt.....	}	1 ounce
Honey, or coarse Sugar, of		
each		

This carminative laxative enema (80) is useful as a domestic lavement, to persons of weak, flatulent and costive bowels, and may, if necessary, be administered daily.

Among the aromatics, the terebinthinate tribes, furnish an adjunct to aperient clysters, eminently suitable to flatulent constipation. Turpentine is a laxative, and a diffusible stimulus; the latter principle residing in its essential oil, which is much less laxative when separated from the resin (see formulæ 27, 28, and 29). It solicits an afflux of blood, to the parts affected by its action—induces to them a determination of nervous energy—and equalizes both, when deficient in degree, or unequally distributed. Hence, its beneficial effects in the disease under our consideration, which must be considered to arise from debility of the intestinal canal—this debility rendering the bowels inactive or torpid, and leaving their secreting mucous surface, and the viscera connected with them in function, in a state of atonic imbecility.

There can be no doubt, that, carminative and aromatic medicaments, thrown into the large bowels, will relieve the *small* intestines from flatus and spasm, and even the stomach

itself from cramp. This effect, which results from the sympathy between the upper and lower bowels, (as explained formerly) is more readily induced by conjoining hot fomentations externally, with the clysters. To shew the serious view, which the ancients took, of the injurious consequences of flatulence, a ludicrous anecdote is told of the Roman Emperor, Claudius Cæsar, who, they say “*meditatus edictum, quo veniam daret flatum crepitumque ventris in convivio emittendi, cum periclitatum quendam præ pudore ex continentia reperisset.*” SUTTON, in TIB. CLAUD. CÆS. § 32. p. 477.

The following prescriptions, 81, 82, 83, 84, furnish other examples of laxative-antispasmodic injections, of great utility in the treatment of flatulence.

(81)

Take of, Sweet-Fennel Seeds.....	}	1 ounce
Coriander Seeds.....		
Aniseeds, of each (bruised) ...		
Water.....		1½ pint
Boil to one-half, and strain; then add		
Lin-seed Oil.....		3 ounces
Mix.		

When the bowels are oppressed and griped with flatus, the above will generally afford relief, or may be repeated till it does.

(82)

Take of, Venice Turpentine..... 1 ounce
 Oil of Juniper..... 2 drams
 Oil of Turpentine 1 do.
 Decoction of Marshmallows ... 12 ounces
 Moist Sugar 1 do.
 Mix, with the yolk of an egg.

(83)

Take of, Common Turpentine $\frac{1}{2}$ ounce
 Lin-seed Oil..... 3 do.
 Decoction of Marshmallows..... 8 do.
 Oil of Turpentine..... } 2 drams
 ——— Aniseed, of each }
 Moist Sugar..... a spoonful
 Mix, with the yolk of an egg.

(84)

Take of, Camomile Tea 8 ounces
 Balsam of Copaiva 2 drams
 Castile Soap $\frac{1}{2}$ do.
 Oil of Juniper }
 ——— Aniseeds, of each } $1\frac{1}{2}$ dram
 Moist Sugar 1 ounce
 Mix.

The following carminative injection, is very useful in flatulent colicky complaints, and is recommended by Dr. Thomas, to be thrown up every four hours, to expel wind and abate spasm.

(85)

Take of, Aniseeds, bruised	}	$\frac{1}{2}$ ounce
Camomile Flowers, of each ...		
Boil them in a pint and a half of water to one half, and add		
Sulphate of Soda.....		6 drams
Castor Oil		1 ounce

Mix.

The following, is recommended, to assist the operation of purgatives, in cases of obstruction of the bowels, and in colica pictonum, after the spasm of the intestines has relaxed, and the stomach is become composed.

(86)

Take of, Extract of Colocynth	$\frac{1}{2}$ dram
Infusion of Senna	10 ounces
Castor Oil	1 do.

Mix.

GOUT.

The effect of a simple and single action of the bowels, daily, is truly desirable, during the course of all diseases, attended by pain and inconvenience from variations of posture. Gout being of this kind, as well as of a febrile character, the warm water lavement executes the office of unloading the bowels, with little disturbance from encreasing the loco-motion of the body. The same remarks and treatment, apply to acute Rheumatism. When gout attacks the kidneys, any of the following injections will be found very useful.

(87)

Take of, Laudanum	2 drams
Venice Turpentine	3 do.
Olive Oil.....	$\frac{1}{2}$ ounce
Water	6 do.

Mix, with the yolk of an egg.

(88)

Take of, Laudanum.....	} $1\frac{1}{2}$ dram
Balsam of Peru, of each.....	
Water	$\frac{1}{2}$ pint
Olive Oil	2 ounces

Mix, with the yolk of an egg.

(89)

Take of, Decoction of Poppy-heads	$\frac{1}{2}$ pint
Balsam of Copaiva	2 drams
Olive Oil.....	2 ounces

Mix, with the yolk of an egg.

GRAVEL.

Laxative injections, medicated with diuretic and carminative substances, afford considerable relief, from the irritation of nephritic complaints. During a fit of the Gravel, the injection marked No. 34, (page 144) may be used every eight hours, or the following may be chosen.

(90)

Take of, Juniper Berries	}	$\frac{1}{4}$ ounce
Bay Berries.....		
Carrot Seeds		
Parsley Seeds, of each		
Camomile Flowers		$\frac{1}{2}$ ounce
Marshmallow Root		1 ounce
Water		1 pint
Boil, until one fourth of the liquid is evaporated, then strain, and dissolve		
Castile Soap		$\frac{1}{2}$ ounce
Oil of Aniseeds		2 drams

The preceding, should be retained as long as possible, and with this intention, should be injected at bed time. It produces copious discharges of excrement, wind, urine, and gravel. The injections marked 87, 88, 89, recommended for gout in the kidneys, may be used, for alleviating pain about the hips and loins, in cases of gravel.

HÆMORRHOIDS.

Vide PILES.

HERNIA. (Rupture.)

In cases of strangulated Hernia, the infusion of tobacco, recommended in colic, formula 38, should be administered—one half of the quantity to be injected first, and the remainder, half an hour afterwards, if the rupture continue unreduced, and the nervous system of the patient be capable of sustaining, safely, the effects of the second in-

jection. This should be the *first* and *last* remedy, applied for the reduction of strangulated Hernia—the next step, is the operation of the knife.

HYSTERIA.

This disease has an intimate relation with the function of the bowels, either as cause or effect—and in some forms of the disorder, the administration of laxative clysters is indispensable; viz. when the patient remains in a protracted state of insensibility. In this form of Hysterics, there is, usually, severe cramp, or spasm of the stomach or small intestines; which, from the sympathy between the upper and lower bowels, (as explained at p. 14,) may be relieved by an antispasmodic-laxative enema, such as formula 16, page 128. This injection may be administered, at a moment when the patient is incapable of taking any medicine by the mouth. The following prescription, furnishes, also, another form, for a similar purpose.

(91)

Take of, Assafoetida.....	}	1 dram
Castor, of each		
Olive Oil		2 ounces
Water Gruel.....		10 do.

To be incorporated with the yolk of an egg.

Any of the following injections may be employed for Hysteric fits, when the state of the patient renders it difficult to administer medicines in any other manner. When injected, under these circumstances, into the rectum, they tend to shorten the paroxysm and restore the patient to consciousness.

(92)

Take of, Tincture of Assafoetida.....	2 drams
Oil of Turpentine	$\frac{1}{2}$ ounce
Water Gruel	$\frac{1}{2}$ pint

Mix.

Village Doctor, p. 177.

(93)

Take of, Gum Assafoetida	2 drams
Barley Water	$\frac{1}{2}$ pint

Mix, with the yolk of an egg.

(94)

Take of, Musk	$\frac{1}{2}$ dram
Gum Arabic	$\frac{1}{2}$ ounce
Gruel	4 do.

Mix.

(95)

Take of, Castor	2 drams
Starch Mucilage.....	4 ounces

Mix.

(96)

Take of, Oil of Pennyroyal.....	} 1 dram
—— Rue, of each	
—— Amber	2 do.
Gum, Assafoetida	1 do.
Water Gruel	6 ounces

Mix, with the yolk of an egg.

The latter injection No. 96, is a very powerful antispasmodic, and is applicable for hysteria, with the same intention as the preceding, especially if the stomach be much oppressed with flatulence.

(97)

Take of, Camomile Flowers.....	}	1 handful
Pennyroyal		
Rue, of each		
Seeds of Henbane	}	$\frac{1}{2}$ ounce
——— White Poppies, of each		

Boil them in a pint of water till only half
a pint remains, and strain; add, by
means of the yolk of an egg,

Assafoetida	1 dram
Venice Turpentine	2 do.

This enema possesses considerable reputation for its efficacy in hysteric colic.

The following injection is advised, by Dr. Thomas, for hysterical females, in those attacks of colic to which they are liable, and by which they are frequently attacked.

(98)

Take of, Spirt of Turpentine	3 drams
Gum Arabic, in powder	$\frac{1}{2}$ ounce
Water Gruel	12 ounces

Mix.

—————

INTERMITTENT FEVER. [(Ague.)]

Tonic, stimulant, and nutrient injections often become necessary, in the course of fevers, especially of the malignant kind, either on account of the patient being incapable of swallowing food—unwilling to take bark, or unable to retain it on the stomach. The administration of nutrient injections has, already, been spoken of, under the article “Fever,” page 167. Whenever it may be desirable to exhibit tonics, in the form of clyster, the following prescriptions will be found eligible forms for the same.

(99)

Take of, Extract of Bark.....	2 drams
Warm Water	4 ounces
Opium	$\frac{1}{2}$ grain

Dissolve.

(100)

Take of, Peruvian Bark, bruised.....	1 ounce
Water	1 pint
Boil to one half, and strain; then add,	
Confection of Opium	2 scruples

Mix.

(101)

Take of, Bark, in powder	$\frac{1}{2}$ ounce
Barley Water	6 ounces
Laudanum	20 drops.

Mix.

The preceding formulæ, 99, 100, 101, are examples of injections, containing bark, in its *three* states; viz. in substance, decoction and extract; either, may be administered, every three or four hours. Opium is added, for the purpose of securing the *retention* of the lavement. Should there be any objection to the addition of opium, the injection should be boiled with half an ounce of pomegranate bark. The celebrated physician, *Helvetius*, was a strenuous advocate for bark clysters, in the cure of *Ague*. His practice was, to give the injection, containing an ounce of bark, immediately after the fit had gone off; repeating it three times a day, till it returned no more. After this, he continued the same for 12 days, in the following manner—the first six days he administered an injection, every night and morning—afterwards, in the morning only. When the cure of ague is attempted by means of clysters, the above plan

of Helvetius, is, perhaps, as proper as any that can be devised.

In the treatment of children, for ague, the injections may be prepared in the following manner.

(102)

Take of, Extract of Bark	1 dram
Warm Water	2 ounces
Laudanum	3 drops

Mix.

The above, is of a proper strength for children, from 5 to 10 years old—for younger ones, it must be proportionally reduced. These injections should be thrown up three or four times a day.

In all cases, where children cannot take, or retain bark upon the stomach, the following injection will be found useful.

(103)

Take of, Sulphate of Quinine.....	4 grains
Rose Water.....	4 ounces
Laudanum.....	10 drops

Mix.

The dose of the above is adapted for children of ten years—adults may use it of double strength; and younger children, diminished, according to their age.

INTOXICATION.

A smart purgative injection, such as recommended by Orfila, in his treatise on poisons, may be administered to an intoxicated person, when any apprehensions are entertained for the effect of the liquor upon the brain. The formula No. 54, (article, obstinate costiveness, page 155,) is that which is advised by Orfila, for this purpose. But in all cases of intoxication, the speediest and safest treatment, is the application of the Stomach Pump. And here it may not, perhaps, be thought out of place to remark, that, with the addition of a proper tube, the lavement syringe, is a *Stomach Pump*! Those persons, therefore, who have the former, may, by the additional expence of a few shillings for the *Æsophagus* tube, have it converted to a stomach apparatus, which might, at some time or other (and accidents occur in families and neighbourhoods most unexpectedly) be the means of saving life, in cases of poisoning or other dangerous emergency.

INTROSUSCEPTION.

Entanglement of the bowels, as designated by the above term, is, most commonly, occasioned by obstruction or colic—the subject, therefore, might, with propriety, have been introduced into either of our previous discussions of these disorders. I have, however, preferred giving it a distinct place, with the intention of transcribing the remarks, made on this subject by the learned and philosophical author of “*The Elements of Physics*”—they are as follow :

“Useful as the pump may prove, upon occasions, in evacuating the stomach, its more ancient office of injecting the enema, is still the most important ; and recent experience seems to shew, that such injection may become a remedy, of more extensive utility than had yet been suspected. From an erroneous opinion, that what has been called the valve of the cæcum, acts as a perfect valve, allowing passage *downwards* only, few practitioners have ventured to order much liquid to be injected, for fear of over-stretching 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 reach the stomach. *Perhaps few, if any cases of obstruction of the bowels, could resist the gentle force of penetrating water,* and if so, a mechanical remedy, of certain effect, may, in many cases, be substituted for the drastic purgatives and pernicious bleedings now used, and often used in vain. From what has been said, of the abdomen and the intestinal canal, it appears that an injection tends to spread itself, with singular uniformity, over the whole. This tendency may be rendered obvious to sight, by throwing a sheep's intestine, recently extracted, into a bucket of water, and then pumping water in at one end: - a stream will issue strongly at the other end, although several feet distant, almost immediately, and without any intermediate part having become sensibly tense. Of course, in the living body, in cases of spasm or obstruction, the liquid must be thrown in, against resistance, very gradually.

“That case is called *introsusception* of the bowels, in which an upper portion falls or is received into a portion below, and the receiving part, mistaking the received for

descending food, holds it fast. This occurrence forms a complete obstruction, and generally proves fatal. Many infants, with irritable bowels die of it. Now, a copious enema, such as we have described before, is, almost, a certain cure. The liquid advances, until it reaches the part where the portion of gut has been swallowed by the gut below ; and as it cannot pass without pushing the introsuscepted portion back to liberty, it effects the cure."—Arnott's Elements of Physics, or Natural Philosophy, page 614.

KIDNIES, inflammation of,

Nephritis.—Clysters, in this disease, are extremely necessary, for preserving the bowels in a lax state. To this end, a laxative injection should be administered daily, and either of the formulæ 44, 45, 46, 47, 48, (page 152) may be selected. It is, also, considered, that the introduction of warm water into the bowels, so as to act as a fomentation to the kidneys, is followed by considerable relief.

LUNGS, inflammation of,

The, frequently, atonic character of pneumonic inflammation, or, at least, the proneness of the system, to sink into a typhoid state, under its influence, causes the propriety of frequently repeated doses of purgative medicines, in the advanced stages of the disease, to be, somewhat, *equivocal*. Aperient injections, however, can never be mis-employed, so as to keep the bowels, slightly soluble—a pint or two of warm water, or one of the mild purgative formulæ, marked 41, 42, 43, may be used daily.

MEASLES.

Vide, INFLAMMATION OF THE STOMACH, p. 207.

MENSES, suppression of,

Vide, CHLOROSIS, p. 139.

MENSTRUATION, painful,

Many females suffer, very severely, at every recurrence of the monthly period. The best means of relief, are, to clear the bowels every morning, by a *copious* lavement of warm water—two or three [pints]—and to throw up the following injection, every night at bed time, as long as the indisposition and pain continue.

(104)

Take of, Laudanum.....	30 drops
Extract of Hyosciamus.....	$\frac{1}{2}$ dram
Camphor	10 grains
Gum Arabic	$\frac{1}{2}$ ounce
Milk.....	4 do.

Mix.

This injection may be repeated, during the day, if it does not materially affect the head, and the pain be urgent.

 PARALYSIS. (Palsy.)

Dr. Husson has exhibited the Nux Vomica, in the form of clyster, with much success in paralytic affections, but the author has seen nothing of this practice.

PILES.

Astringent injections are proper for those piles which lie *within* the anus, and may be prepared as follow.

(105)

Take of, Extract of Catechu.....	2 drams
Boiling Water	6 ounces

(106)

Take of, Galls, powdered	3 drams
Water.....	$\frac{1}{2}$ pint

Boil, till one half is consumed, and strain.

(107)

Take of, Oak bark, bruised	$\frac{1}{2}$ ounce
Water	12 ounces
Alum	1 dram

Boil to one half, and strain.

(108)

Take of, Logwood, rasped.....	1 ounce
Alum	1 dram
Water.....	1 pint

Mix.

Either of the preceding, may be injected twice or three times a day; and when the tumours are *external*, they may be applied in the manner of wash or lotion, or the astringent articles may be mixed up with palm oil, and used as a paste or ointment.

Dr. Fuller, recommends the following, which is, no doubt, very soothing in its effects.

(109)

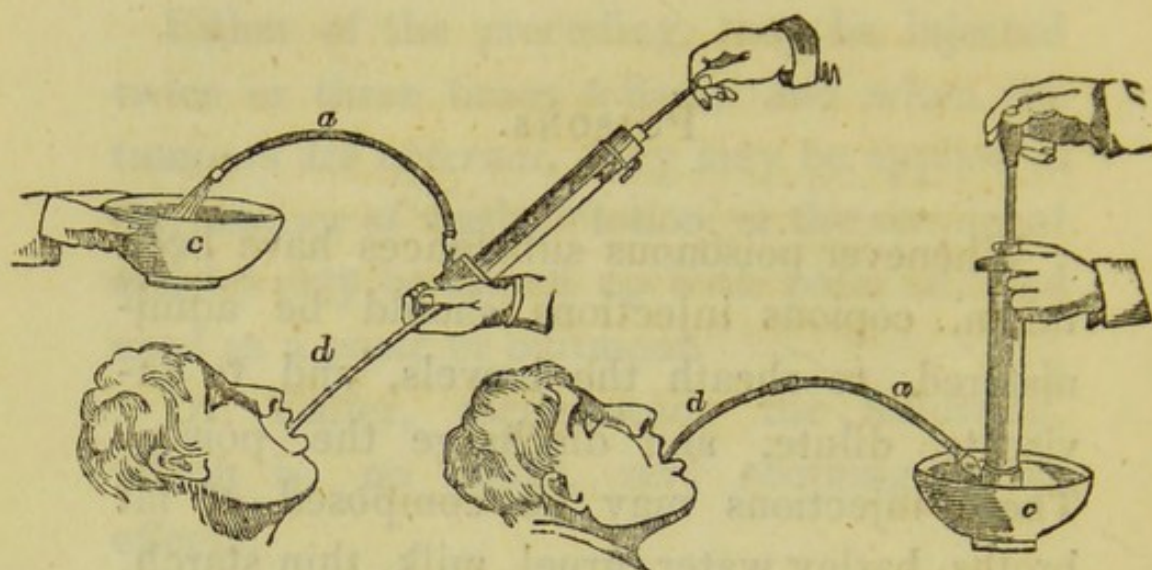
Take of, Mullein.....	}	$\frac{1}{2}$ a handful
Elder Flowers, of each		
Hemlock	}	1 handful
Henbane, of each.....		
Boil in Smith's Forge Water to		12 ounces
Add the yolk of one egg		
Lin-seed Oil		2 ounces
Oil of Amber		$\frac{1}{2}$ dram.
Balsam of Sulphur		2 do.

The prescriber observes, that the above, “discusses the swellings of the *internal* hæmorrhoids, effectually allays their pains, heals the little ulcers, and hinders a farther afflux of blood and ill humours.”

POISONS.

Whenever poisonous substances have been taken, copious injections should be administered, to sheath the bowels, and to inviscate, dilute, and discharge the poison. These injections may be composed of fat broths, barley water, gruel, milk, thin starch, lin-seed tea, solution of gum arabic or arrow root, or any emollient liquid that can be most easily and readily prepared. They must be thrown up abundantly, and repeated often. A smart purgative clyster should, also, be injected, to stimulate the bowels, and bring away the poison as quickly as possible. For this purpose, the prescription, No. 54, (page 155) which is recommended by Orfila, should be prepared speedily, and to save time, (an hour being required to make the *infusion* of senna,) the leaves of senna may be *boiled*, in a covered vessel, for 15 minutes, and the liquid being strained, the other ingredients to be added.

I now present the professional reader, with a tabular sketch of the various *Stomach* injections, which are requisite for the removal or decomposition of different poisons.



The right-hand figure, represents the operation of injecting *into* the stomach, to dilute, decompose or wash out the poison. The left-hand figure, shews the manner of *withdrawing* the contents of the stomach, after the first operation—*a*, the short caoutchouc tube—*c*, the basin to hold the liquid in the first instance and to receive it, in the second—*d*, the long, *stomach* tube.

INJECTIONS FOR COUNTERACTING POISONS, BY THE USE OF THE STOMACH PUMP.

POISONS.	ANTIDOTES.
ACIDS	{ Chalk — Magnesia (calcined) — Soap— each mixed with Milk. <i>Alkalies must not be used.</i>
ALKALIES.....	{ Vinegar—Oil—The <i>former</i> , if <i>Ammonia</i> has been taken.
ARSENIC ...	{ Inject two or three pints of warm water into the stomach, and immediately withdraw it. Repeat the operation at short intervals. <i>No antidote can be relied on!</i>
METALLIC SALTS. { OXYMURIATE of Quicksilver.	{ White of egg, beaten up with water; 12 or 15 to a quart—or wheat flour, if eggs cannot be readily procured. Repeat the operation several times.
VERDIGRIS	{ Wash the stomach repeatedly, with sugared water.

Other metallic poisons may be treated, by injecting a solution of 10 or 15 grains of *Sulphuret of Potash*, at intervals, each dose being withdrawn, before another is introduced—white of egg and flour may be also used, as recommended for oxymuriate of quicksilver. The *ferrocyanate of potash*, decomposes the soluble salts of Copper—Silver—Mercury—Lead—Tin—Antimony. *Sulphate of soda*, decomposes sugar of lead. *Common table salt*, decomposes nitrate of silver.

Alkalies must *not* be used, to counteract *metallic poisons*.

POISONS.

ANTIDOTES.

NITRE.....Inject milk or thin gruel, very copiously.

NUX VOMICA... { Chloride of lime, or tincture of iodine, diluted with milk or water. Query—Will these substances decompose nux vomica in its simple state?

OPIUM,
or Laudanum. { As *no remedy* can be administered to decompose opium, it must be discharged from the stomach, by repeatedly washing it out with warm water.

OXALIC ACID... { Chalk or Magnesia (bi-carbonate) mixed with water or milk. Ceiling or plaster of a room, if neither of the former is, immediately, at hand.

PRUSSIC ACID. { Solution of chloride of lime. *Ammonia* is not safe, as a *chemical* re-agent, being useful only as a stimulant.

All *vegetable* poisons should be washed out of the stomach, by copious injections of water or milk.

PROLAPSE OF THE BOWEL.

“ Vide, “ protrusion of the RECTUM, page 200.

PROSTATE GLAND, irritation of

Vide, “ RETENTION OF URINE ” p. 204.

PURGING.

“ Vide, DIARRHŒA.” page 158.

RECTUM, diseases of,

1. *Debility of the Rectum.* Many individuals, especially elderly persons, experience considerable difficulty at going to stool, in consequence of the rectum wanting sufficient power to discharge the motions. The same affection, is, also, attendant on paralytic attacks, and may be treated by the daily immission of the following stimulating injection.

(109)

Take of, Horse-radish, sliced	1 ounce
Mustard-seeds, bruised	$\frac{1}{2}$ do.
Boiling Water	$\frac{3}{4}$ pint
Let them stand for two hours, and strain.	

With the same intention, prescriptions (24) and (25) page 135—and (28) page 139, may be used once or twice a day.

2. *Inflammation of the Rectum.*—The lower part of the rectum, about the verge of the anus, is very liable to inflammation, from the irritation of piles. These hæmorrhoidal tumours, also, frequently become inflamed and painful, and so tender, that the stools cannot be discharged without considerable suffering. In these cases, the reader may consult, the remarks on the use of *cold* lavements, p. 109, and the succeeding section, on the application of the *douche ascendante*. The following astringent clysters, are found to be serviceable, when inflammation exists in the rectum, or the hæmorrhoidal tumours about it.

(110)

Take of, Sulphate of Zinc.....	$\frac{1}{2}$ dram
Distilled Water.....	$\frac{1}{2}$ pint
Mix.	

(111)

Take of, Super-acetate of lead.....	$\frac{1}{2}$ dram
Distilled Water.....	$\frac{1}{2}$ pint
Mix.	

3 *Irritation of the Rectum*, arises from various causes, as, stone in the bladder—diseases of the bladder, prostate gland and urethra—piles—fistulæ, &c. In most cases, the douche ascendante is proper; for the application of which, vide p. 113—or any of the injections marked 22, 27, 58, 59, 60, and 104, may be administered, as often, as the irritation becomes urgent.

4. *Protrusion of the Rectum*, or prolapsus ani—more commonly designated, “falling down of the fundament.” The most effective injection, for this troublesome affection, is the following.

(112)

Take of, Logwood.....	}	1 ounce
Oak Bark.....		
Galls, of each (bruised)		
Water		2 pints
Boil, till only one pint remains, and in the strained liquid, whilst hot, dissolve,		
Gum Arabic		4 ounces
And add,		
Laudanum		1 dram

Half a pint of this liquid may be injected into the rectum, twice a day, or half that quantity for children, with whom the complaint is more frequent—the management of these cases should be as follows. The

patient, on feeling an inclination to go to stool, should inject three or four ounces of *cold* water into the rectum, which assists in bringing away the fæces with less straining or propulsive efforts, whilst the influence of the *cold* lavement, increases the elasticity of the bowel, and promotes its retrocession. As soon as the motion has been discharged, if the bowel does not return by the natural efforts, it should be carefully replaced by gentle pressure of the hand, or of a sponge or soft pledget of linen, wetted with cold water or a solution of alum. If this plan fail, the finger being oiled and introduced into the bowel, carries the protruded intestine back to its proper situation. The injection is to be immediately thrown in, and repeated in a similar manner, after every motion: or should but one evacuation happen daily, it may, nevertheless, be administered twice a day. If a considerable portion of the bowel protrudes, and I have seen six or eight inches, a pint of the injection may be used at once; in this case, it is prudent to make the liquid slightly tepid.

When any of these diseases are attended by hæmorrhage, whether accidental or habitual, great caution is necessary in the use of

cold or of powerful astringents; nothing but an excessive degree of the discharge, and a weakened state of the system produced by it, will warrant their application.

In those cases, where the cause of the disease arises from an undue contraction of the sphincter ani, the cold water injection, previously to passing a motion, communicates a temporary tone that lessens the spasmodic action by which the rectum, during its natural protrusion in discharging its contents, is entangled, and prevented from retracting within the verge of the ring.

5. *Stricture of the Rectum.* No disease or mal-condition of the human body, requires the use of injections, so much as this. The excrement must be broken down, to allow it to pass through the contracted portion of the gut, otherwise, complete obstruction may ensue, from accumulation of fæces at the strictured part. To dislodge the fæces, and at the same time facilitate their discharge by softening and dissolving them, one or two pints of warm soapy water, should be thrown up every day, or a mucilaginous injection of decoction of marshmallows, prepared in the manner directed for formula 66,

page 161. A pint of warm lin-seed oil—a quarter of a pound of *fresh* butter dissolved in a pint of warm gruel—or a basin of milk, may be used for the same purpose. Indeed, it is always advisable to throw up an injection, whenever an inclination to stool comes on, by which means, the motion is discharged with less straining, violence and irritation.

6. *Ulceration of the Rectum.*—This is, for the most part, an incurable disease, and admits of, little more than mere palliation. To abate the pain and irritation, demulcent injections, such as recommended under the article, dysentery, should be cautiously and gently thrown up, three or four times a day, in order to sheath the acrimonious secretions of the part. Two or three grains of opium, dissolved in a spoonful or two, of liquid starch, may be used once or twice a day, to lessen the morbid sensibility of the gut.

RETENTION OF THE MECONIUM.

The excrementitious secretion of the colon during the fœtal state, denominated the Meconium, if retained after birth, occasions flatulence, griping, and sometimes convulsions ; in anticipation of which, it is usual with nurses, to cram something down an infant's throat, as soon as it is born. A natural, and, indeed, the best remedy, is the mother's milk ; but, if this fail, recourse should be had to injections, as no purgative medicine can be received into the stomach, without more or less disordering it, immediately or remotely. A tea-spoonful of honey, or of soft soap, or of common salt, in a tea-cupful of warm water, may be thrown into the bowels ; and if, without success, ten grains of aloes dissolved in a quarter of a pint of milk. Either of these may be repeated, as occasion requires, great care being taken in the introduction of the pipe, and attention paid to the temperature of the liquid, which should not exceed 100°.

RETENTION OF URINE.

This distressing complaint is often occasioned by spasm about the neck of the bladder—it is concomitant with stone in the bladder, gravelly complaints and enlargement or disease of the prostate gland. An injection, prepared according to either of the formulæ 87, 88, 89, will, generally, procure a flow of urine—they may be administered every six or eight hours. They are both anodyne and laxative, for the opium, though it cause them to be retained for some time, rarely restrains them altogether, on account of the action of the other ingredients contained in the composition, which, generally discharges them, along with the fæces, after an interval, longer or shorter, according to circumstances. Perhaps the most powerful injection of this kind is the tobacco enema, prepared as follows.

(113)

Take of, Tobacco 20 grains

Boiling Water..... 4 ounces

Infuse for an hour and strain.

The above, rarely fails in enabling the patient to make water, especially if it produces nausea and faintness—it may be re-

peated every six hours, if required. The warm bath, or the hip bath should be used at the same time. With the addition of forty drops of laudanum, the formula 98, is very efficacious, also, in relieving retention of urine, from spasmodic stricture of the urethra.

SCARLET FEVER.

The remarks made on the subject of inflammation of the stomach, apply to this disease also—vide page 207.

SICKNESS.

From debility. In this case, nutrient injections are indicated, which may be prepared and administered according to the directions given under the head, debility, p. 157.

From pregnancy. This troublesome accompaniment of pregnancy, is better relieved by anodyne injections, than by medicines taken into the stomach. The formulæ 58, 59, 60, (article diarrhœa) may be chosen, and repeated every day or oftener.

SMALL-POX.

Vide, SCARLET-FEVER—and INFLAMMATION OF THE
STOMACH.

SORE THROAT.

In severe cases of quinsy, malignant ulcerated sore throat, stricture of the œsophagus, &c. food cannot be swallowed—the patient must, therefore, be supported by nutrient injections, of which we have given examples at page 157.

STOMACH, inflammation of,

Gastritis. The state of the stomach, as well as the sickness occasioned by the disease, manifest, the impropriety of irritating this organ, by purgative medicines, in the early stages of the disorder. The bowels must, therefore, be kept open by mild clysters, frequently administered, of which the for-

mulæ Nos. 44, 45, and 46, are proper examples. The liability to inflammatory excitement of the stomach, in the exanthematous fevers, such as Scarlatina, and Small Pox, justifies the propriety of using the same caution with respect to the use of purgatives, in those complaints, as we have inculcated in this.

STRANGURY.

After the application of a blister, some persons suffer much, from a frequent desire to make water, with inability to pass it, except by drops, or in a very small quantity. The administration of the injection marked 23, at page 132, produces speedy relief, if assisted by copious draughts of barley water containing a little gum arabic.

STRICTURE OF THE URETHRA.

Vide, RETENTION OF URINE.

SUFFOCATION ;

OR,

SUSPENDED ANIMATION.

1. *Drowning*. The Author, here transcribes his remarks upon the administration of injections, given in the *Village Doctor*. "Administer a hot clyster, composed of a quarter of a pint of vinegar, a quarter of a pound of salt, and a pint of water—or, an ounce of flour of mustard, stirred into a pint of water—or two table-spoonsful of spirit of hartshorn, or of æther, or of essence of peppermint in a pint of water—or a wine-glassful of spirit of turpentine beaten up with the yolk of an egg, and incorporated with a pint of gruel. The temperature of the fluid may be from 108° to a 110°, and should be ascertained by a thermometer. At the same time, also, warm brandy and water, or wine and water, may be injected into the stomach, or warm water only may be thrown in and withdrawn, and this, alternated successively." *Page 374.*

2. *Excessive cold.* Injections of diffusible stimuli, may be resorted to, if the vital functions are nearly extinguished—as the following.

(114)

Take of, Barley Water..... 1 pint
 Spirit of Hartshorn 1 ounce
 Mix.

(115)

Take of, Essence of Peppermint..... 1 ounce
 Barley Water 1 pint
 Mix.

(116)

Take of, White Wine..... }
 Boiling Water, of each } $\frac{1}{2}$ pint
 Mix.

(117)

Take of, Spirit of Turpentine..... 2 ounces
 Water 1 pint
 Mix, with the yolk of an egg.

(118)

Take of, Sulphuric Æther 1 ounce
 Hot Water 1 pint
 Mix.

These injections may be thrown into the bowels of persons, apparently dead from excessive cold: in cases of still-born infants, the same injections may be used, but the quantity of *spirit* should be a tea-spoonful instead of an ounce, as respects the preceding formulæ. Barley water, gruel, lin-seed tea, or even water may be used as the vehicle—but it may be worth observing, that the spirit should be added at the moment of application, otherwise the heat (which should be nearly 110°) will dissipate its strength. The vapour of the alcoholic principle, probably penetrates into the small intestines and ascends even into the stomach.

3. *Mephitic Vapours*. The fumes of charcoal—the gas arising from fermenting vats, or stagnating at the bottom of wells—the noxious effluvia of subterranean channels, &c. become the causes of death, if not promptly counteracted. Either of the following injections may be thrown up, at a temperature of about 104° .

(119)

Take of, Vinegar	$\frac{1}{2}$ pint
Hot Water	$4\frac{1}{2}$ do.
Mix.	

(120)

Take of, Common Salt..... 4 ounces

Hot Water 1 pint

Mix.

(121)

Take of, Mustard, in powder..... 1 ounce

Hot Water 1 pint

Mix.

This last injection is directed by the physicians of the central board of health, in the state of collapse and prostration, which marks the severer cases of the malignant epidemic, denominated cholera.

SWALLOWING, difficulty of,

Vide, SORE-THROAT. p. 207.

SWELLED TESTICLE.

Hernia Humoralis. The following injection may be administered twice a day.

(122)

Take of, Opium	4 grains
Lin-seed Oil.....	2 ounces

Mix.

This is useful in relieving the pain of swelled testicle, after leeching and opening the bowels; it should be injected previously to the patient using the hip-bath, the scrotum being supported by a suspensory bandage. It, also, relieves the tenesmus attendant on the latter months of pregnancy, and of colica pictonum, after the bowels have been freely opened. In fact, it is serviceable in all cases in which there is great irritation about the rectum or uterus; and in diminishing spasmodic affections of the urethra and neck of the bladder. It should be made milk warm, by its containing vessel being plunged into a basin of hot water.

TENESMUS.

This distressing symptom, which belongs to various morbid affections, has already been spoken of, under several heads. For the treatment, vide formulæ 58, 59, 60, (article diarrhœa) recommended for mitigating the tenesmus that accompanies dysentery and cholera. Formula 22, (page 132,) and formula 122, in the preceding article, afford considerable relief from the tenesmus attending pregnancy and colic.

TETANUS.

Whether the cause of the disease be accumulation and irritation in the intestinal canal, or from any other source, the safest and best mode of unloading the bowels, is by warm water lavements, or by some of the mild medicated injections, recommended at pages 151 and 152. In no cases, is griping and violent purgation proper, as it occasions irritation and recurrence of spasm. For the relief of the muscular convulsions, attending this disease, the injection marked 113 (page 205) may be used, but if the bowels be constipated, the following is preferable.

(123)

Take of, Tobacco.....	1 dram
Boiling Water	2 pints
Infuse for an hour, and to the strained liquid add	
Sulphate of Magnesia	2 ounces
Olive Oil	3 do.

The torpor of the intestines, which accompanies Tetanus, demands correction; and, at the same time, the spasmodic contractions of the muscular system, should, if possible, be moderated or allayed. The above formula, fulfils both intentions, and may be repeated according to circumstances. It is, also, a powerful remedy for obstructions of the bowels, and violent constipation with colic.

TYMPANITIS.

All disorders consisting of, or attended by collections of wind in the bowels, are much relieved by turpentine injections—one of the best examples of this kind is formula 34, page 144.

URETHRA, irritation of,

The following injection, administered two or three times a day, affords considerable relief to the scalding of urine.

(124)

Take of, Extract of Hyosciamus	1 dram
Camphor.....	1 scruple
Gum Arabic	$\frac{1}{2}$ ounce
Milk.....	6 do.

Mix, according to the directions given, with formula 23.

This enema, administered two or three times a day, is highly beneficial for irritative diseases of the urethra, uterus, bladder, prostate gland, &c. It abates the ardor urinæ, arising from gonorrhœal inflammation, and with the addition of thirty drops of laudanum, is a valuable remedy in painful menstruation. In these cases, it should be retained, if possible; and, therefore, the contents of the bowels should be removed by a laxative injection, previously to the immission of the anodyne. It should be used in conjunction with hot fomentations to the pubes and genital organs, or previously to the patient sitting in the hip bath.

UTERUS, irritation of,

Prescriptions for preparing injections, suitable to diseases of this nature, will be found at page 139, formula 27—and under the preceding article, formula 124.

WHITES. (Fluor Albus.)

Tonic intestinal injections, are recommended by some medical practitioners, but, I confess, I have not seen any, very decided benefit, derived from their administration. If, however, it should be desirable to try them, the formulæ 24 and 25, page 135, may be recommended. There can be no doubt of the propriety, nay, necessity, of keeping the lower bowel free from irritation, and, therefore, a lavement of warm water, should be used, two or three times a week, for the purpose of clearing this part of the intestinal tube—two pints should be thrown up.

SECTION XVI.

CLASSIFICATION OF INTESTINAL
INJECTIONS.

(CLASS I.)

ANODYNES.

The leading articles of this class of clysters, are, opium and tobacco. Opiate injections prove of infinite service in fevers, when sickness and collapse of the system, arise from debility occasioned by excessive or misdirected depletion. The same remedy is, also, useful in colic, diarrhœa, cholera, and dysentery, to quiet the stomach and bowels, and lessen the irritation of the alimentary canal. In hæmorrhagia—cancer of the womb, and other uterine diseases, opiate injections, are, frequently, found to be more beneficial, than injections into the vagina itself. When gout attacks the kidneys, lau-

danum in clysters, affords considerable relief, and should be promptly used. In diseases of the bladder, and of urinary irritation and obstructions, opium, administered by the rectum, produces a salutary effect, that can be equalled by no other means; and, when combined with turpentine, its utility in all nephritic disorders, is indisputably increased. Opiate clysters alleviate irritation of diseased prostate gland; of ulcerated rectum; of tenesmus, induced by acrid purgatives, frequent motions, or gonorrhœal inflammation of the urethra; of the passage of calculous concretions through the ureters; of stone in the bladder; and of spasmodic stricture of the urethra. In the same manner, opium relieves the nausea and vomiting of pregnancy, and facilitates the passing of bougies into the bladder. Its effects in checking diarrhœa, are those of an astringent as well as an anodyne; and in those complaints of the bowels to which it is applicable, the remedy may be administered in this manner, without that disturbance of the stomach and system, which often results from its being taken into the stomach. Dr. Percival, in a letter to Dr. Duncan, says, "In violent colics, attended with vomiting and an obstinate constipation

of the bowels, it has been the common practice amongst physicians, to give opiates in conjunction with purgatives. This method of treatment has been lately improved, by administering the opiate first, and the purgative, an hour or two afterwards. But, I take the liberty of suggesting to you, another mode, which, as far as my experience extends, has proved the most successful. I direct, three or four ounces of a strong decoction of poppy-heads, with twenty, thirty, or forty drops of laudanum, to be injected into the intestines, and retained as long as possible. If it be speedily discharged, the clyster is repeated till the pain is relieved and the vomiting ceases. A dose of calomel and jalap, or of any other brisk cathartic, is then administered, and its operation quickened by the use of senna tea, of a solution of the neutral salts, or of castor oil. *By this process*, evacuations are procured, with more ease, certainty, and expedition, *than by any other* which I have tried. For opium, when given in a *clyster*, does *not* check the peristaltic motion of the intestines, nor counteract the operation of any purgative, so powerfully as when *received into the stomach*. And in this way, it is most efficacious in alleviating the sickness,

and in putting a stop to the violent retchings with which colics are often attended." Opium, administered per anum, may be increased to three times the usual dose taken into the stomach, and to an adult, may amount to one hundred drops, or more. But in apportioning the dose to infants, the extreme sensibility of children, to opium, must not be forgotten. I administered *nine* drops of laudanum, in a clyster, to one of my children, when an infant of four months old, for the relief of diarrhœa, and the child slept afterwards for *sixteen* hours.

Of all the narcotics, *tobacco* demands the most circumspection in its administration, being uncertain in its effects, and operating with great violence and disturbance of the vital powers—its influence is directed to the *brain and nervous* system. "A clyster," says Ettmuller, "of the decoction of tobacco is a most dangerous thing; for I have known where there have followed, sickness, anguish at heart, swooning, vomiting, cold sweats, cadaverous paleness and other frightful symptoms." Tobacco, when infused in water, and injected into the rectum, produces effects, according to Dr. Cullen's opinion, more powerful upon the system, than when taken

nto the stomach. Its application clysterways, is chiefly useful in violent constipation, colics, hernia, tetanus, retention of urine, &c.—and, in these diseases, the benefit produced, seems to be derived from the influence of the tobacco in relaxing the morbid rigidity, of muscular fibres in a state of spasmodic contraction.

Hyosciamus and *Hemlock* are, occasionally, very useful remedies of this class, especially when opium disagrees with or disorders the patient, which it does, sometimes, let it be administered as it may, particularly with certain constitutions.

The narcotic principle of *poppies*, is identical with that of opium; and its effects, therefore, are similar, if given to an extent, proportioned to a ratio of their respective qualities.

The quantity of an anodyne injection, should be *very small*, when intended that it should be permanently retained—especially, when the basis of it is *opium*. A clyster of this class, ought not to exceed *two or three* ounces, and the narcotic medicine, should be diffused in some bland, unirritating liquid—gum arabic and starch, dissolved in hot water, are proper vehicles for this purpose. It is,

however, sometimes useful, to combine narcotics in a clyster, with such articles, as we are certain, (either from their stimulating and cathartic properties, or from their bulk) will soon be ejected from the rectum; but still, in these cases, we may expect, that the injection may be retained long enough, for the narcotic to act in some degree, so as to lend its aid, in assisting the general intention of the other ingredients, or in directing their influence upon some particular organ or part. With this view, the quantity of an anodyne clyster, may, sometimes, be made, somewhat larger, than can reasonably be expected will be absorbed by the mucous membrane of the bowels—formulæ 1, 32 and 36, are examples. The *quality*, also, may be such, as is inimical to absorption—viz. *cathartic*, of which, the formulæ above cited, are instances. An anodyne enema for an infant, must not exceed *two* table-spoonsful.

Clysters of this class, should be used at the temperature of, about, 98° or 100°, and if much difficulty be experienced in retaining them, the anus should be fomented with hot water, as soon as they have been injected into the bowel.

(CLASS II.)

ANTHELMINTICS.

The employment of vermifuge or worm medicines, in the form of clyster, has, certainly, been much over-rated. It is necessary to the destruction of intestinal worms, that the remedy should be brought into contact with the animal. Now, we know, that most of these parasitical tormentors, inhabit the *upper* portion of the bowels—and we, also, know, that injections *per anum*, as usually administered, do *not* penetrate into the *small* intestines. To force a liquid so far within the alimentary canal, as to reach to the upper (or small) bowels, the quantity must be very great—more, perhaps, than could be endured under common circumstances. Injections, therefore, of one or two pints of liquid, can be of no avail in removing worms inhabiting the small intestines, such as the *long* ROUND worm, and the TAPE worm—both of which dwell in the ileum and feed upon the chyle. Ascarides or THREAD worms can, alone, be dislodged by means of injections, and one species of these even, the

long thread worm, which resides in the cæcum, can, hardly, be invaded by this means, so as to be destroyed or brought away. An injection, to be successful against such depredators, must not be less in quantity than four or five pints—and even then, there is but slight prospect of its being beneficial.

(CLASS III.)

ANTISEPTICS.

This class admits of little variety—in fact it is but rarely resorted to, at all. *Yeast* and *vinegar*, are the only articles used as direct antiseptics, in the form of clysters. The former is exhibited with the intention of producing fermentation, by which process, carbonic acid is liberated. This gas, it has been supposed, corrects the fœtor and putrescency of the fæces, which prevail in low malignant fevers—the late Dr. James Curry, frequently ordered yeast injections for patients under his care in Guy's hospital, for typhous and other fevers of the same character.

Boerhaave recommends clysters of *vinegar* as antiseptic and refrigerant, in fevers, fluxes, &c.—but I should regard the practice as obsolete, and as having, deservedly, fallen into disuetude.

(CLASS IV.)

ANTISPASMODICS.

Our class of antispasmodics, is, necessarily, very limited, inasmuch as few articles of the *materia medica* are possessed of such qualities, as confer upon them the power of counteracting spasm, generally. The *cause* of spasm, as well as the function and structure of the part or parts affected, determine the kind of remedy, which in every instance, operates an antispasmodic effect. Thus, in cases of spasms, arising from *debility*, TONICS are antispasmodics—from *obstruction of the bowels*, PURGATIVES—from *deficient nervous influence*, STIMULANTS—from *excessive irritation*, NARCOTICS—from *flatulence*, CARMINATIVES, and so on. By this, we perceive, that remedies of an opposite character, pro-

duce the same effect upon many diseases, different *in nature*, but marked or accompanied by symptoms which are common to them all. In this view, numerous antispasmodics, are included in the classes of anodynes and laxatives. In the former, may be noticed opium, tobacco, henbane, hyosciamus, and some others—in the latter, turpentine—antimony—carminative seeds and plants, as pennyroyal, rue, camomile, aniseed, coriander seed, peppermint, &c. &c.—even the *warm* menstruum in which the ingredients of the clyster are dissolved, is, to a certain extent, antispasmodic. But of *pure* antispasmodics, or those remedies in which the principle is inherent and intrinsic, we have, perhaps, few or no examples—the nearest approach to an abstract character of this kind, is found in those articles that are distinguished by powerful or fœtid effluvia, as musk, assafœtida, amber, castor and some others. Æther has been used, in the way of injection, as an antispasmodic remedy, by some practitioners, but of its effects in this mode, I have had no experience. I should consider its vaporizable quality, as unfavorable to its immission into the bowels, at least, in any notable quantity. An ame-

rican practitioner has, however, lately published the report of a case of spasmodic constriction of the colon, which was removed by injections, containing half an ounce of assafoetida with *an ounce* of æther, repeated every *two* hours; *all of which were retained*, until *twelve* ounces of æther had been received into the bowels! I have understood, that half an ounce of æther, administered in a clyster, has, by its rapid conversion into vapour, produced a distressing distention of the bowels, and in some cases, ascended into the stomach and been discharged by the mouth, in voluminous eructations. This fact seems to favor the hypothesis, noticed at page 148, that gas, vapour, or smoke, may readily pass the valve of the ileum, and penetrate into the upper bowels, when injected *liquids* may be excluded.

Antispasmodic clysters, are indicated in convulsive disorders, colicky and flatulent affections, hysterical and asthmatic paroxysms, &c. &c. They should be used at a temperature of, from 100° to 105° of heat.

(CLASS V.)

ASTRINGENTS.

Clysters of this kind, may be prepared from Japan-earth, galls, oak-bark, alum, logwood, zinc, sugar of lead, &c. &c. They are beneficial in cases of, diarrhœa, piles, inflammation and tumours about the rectum and anus, protrusion of the bowels, &c. &c. The temperature of these injections should be about 55° in winter, therefore, it is requisite that they should be warmed—and in summer, cooled down, to the proper degree. They ought to be injected very slowly, and retained as long as possible. It may not be unnecessary to remark, that these and similar clysters which are intended to be retained, excite less inconvenience, if injected at the moment of going to bed—but at all times, the patient should immediately lay down, and endeavour to compose himself to quiet, and, if possible, to sleep. The retention of an injection, depends materially upon its bulk—the expulsion of a *large* quantity, being more likely to ensue, than a *smaller* one.

(CLASS VI.)

DEMULCENTS.

Articles of this class, have few or no *medical* properties—they only serve as *vehicles*, for inviscating or involving those remedies that are rough and acrid—or, they are used, as *un-irritating* pabula, to secure the retention of other remedial agents, in the bowels. They are not less useful, also, in blunting the acrimony of morbid secretions, by commixture with them, and of sheathing the mucous surface of the intestines from their irritation. It is yet, a doubtful question, whether any agent acts upon the *living* fabric, as an *emollient*! if there be such, they are few—and limited, I think, to *water*, *oil*, and *caloric*! An emollient property, is, commonly, attributed to demulcents, but without sufficient evidence.

Demulcent clysters are prepared with linseed — marshmallows — quince-seeds — ice-land-moss — pearl-barley — starch, &c. which are well suited to *cholera* cases. Emulsions of suet — wax — spermaceti — flour, &c. are peculiarly eligible for the relief of *dysentery*.

(CLASS VII.)

LAXATIVES

Little or no increased effect is obtained, by medicating lavements with cathartic ingredients, if the bowels do not retain them a sufficient time, to receive an impulse from the *purgative* principles. In most cases, therefore, where a decidedly cathartic effect is sought, the enema ought not to exceed *three or four ounces*. I say, *most* cases, because it sometimes happens, that the muscular structure of the bowels is so torpid, they cannot even expel an injection, and under such circumstances, I prefer combining the purgative principle with a *copious* quantity of liquid, as shewn in formula 53, page 155. The propriety of this, can only be ascertained by experience—but, usually, only *small* quantities should be injected, when a *constitutional* purgative effect is intended. Examples of concentrated purgative injections are given in formulæ 1, 2, 3, page 121, and, likewise, under the article "*weaning*," page 43. As a general rule for preparing this class of purgative clysters, the quantity of the several ingredients, may be four times what the dose would be, if intended to be taken by the mouth.

(CLASS VIII.)

NUTRIENTS.

Dr. Fuller says, “some deny that there are truly nourishing clysters, but I incline to the contrary opinion—1st. Because the colon hath lacteal vessels implanted into it, though not many—2nd. I have sundry times observed, that a glyster of pomegranate peels, hath been kept in the body, twenty-four hours, and the next stool that followed was not liquid, but hard and solid—3rd. *Hildanus* tells of a certain woman, who for six weeks, took in no sustenance at her mouth, but by the benefit of such glysters, was so well supported, that being great with child, went out her full time, and was happily brought to bed. I could produce many more arguments, but I presume, these may abundantly suffice to prove that there are such things as nourishing glysters.” These injections may be prepared from isinglass; strong broths and soups; eggs and milk, &c. &c. They are administered, under circumstances of great debility from malignant fevers, when the patient is too much exhausted to take food, or the stomach, too irritable to retain it. In cases of stricture

of the œsophagus, the reception of sustenance in this form, is often indispensable, to the life of the patient. Nutrient clysters must be used in small quantities, frequently repeated.

(CLASS IX.)

STIMULANTS.

Of this class of injections, there are *two* kinds—those of the first, may be called *exciting* stimuli, producing a *local* effect only—the other, may be denominated, *diffusible* stimuli, affecting the *whole system*. A few words will be offered upon each variety, separately.

1st. *Exciting Stimuli.*

The bases of many of the formulæ, contained in the preceding part of this work, and intended as laxatives, or antispasmodics, are articles of this kind—their operation as *excitants*, fulfilling or contributing to the *chief* indication of the *compound* remedy. In elu-

cidation of this, the reader is referred to those formulæ, containing rue, pennyroyal, cinnamon, peppermint, ginger, savin, camomile, juniper, anise, fennel, pepper, assafoetida, turpentine, &c. These *excite the mucous membrane* of the bowels, to an encreased and improved secretion, and communicate a stimulus to the nervous and muscular structure of the intestinal canal, that gives a tone, vigour and uniformity to its action, by which colicky and flatulent spasmodic affections of the bowels are removed, and a more active peristaltic motion induced. By *sympathetic* association, also, injections of exciting stimuli, produce corresponding effects upon the *urinary* organs, uterus and other *contiguous* parts—and thence, become useful in disorders, occasioned by atony, debility or relaxation, viz. *suppression of the menses*, and *chronic FEMALE discharges*—grains of paradise and cubebs are here indicated. They are useful, likewise, in arousing and quickening labour pains—of which, savin and horse-radish, are examples, as explained at page 12. Some of this kind, as *mustard, vinegar, salt, &c.* are important in their effects upon the *vires vitæ*, in cases of suspended animation—the *first* article, is recommended by the central board of health of

London, to be injected, in the collapse stage of cholera. Mustard and horse-radish, furnish valuable injections, in cases of difficulty of voiding stools, and of spontaneous dribbling away of the urine, both of which occur in paralytic cases, and often in old persons—the latter from torpor of the neck of the bladder—the former, from debility of the lower bowel.

2nd. *Diffusible Stimuli.*

The influence of intestinal injections, prepared with medicaments of this order, is not confined to the bowels, but is rapidly communicated to the whole nervous and vascular system. The kind of stimulants, which have been usually, selected for this purpose, are alcohol—brandy—wine—æther—spirit of turpentine—hartshorn, &c. &c. Time has been, when this class of clysters, (as well as the practice of exhibiting injections generally,) was extensively resorted to, by many leading practitioners of the day, and we find Dr. Fuller, advocating the utility of stimulating injections, in the following words :

“ ‘Twould make one smile and vex both at the same time, to see the silly pride and malig-

nity of some of our little pert scorers, who though they have neither read, seen nor thought much in physick, are yet continually setting up for judges, and condemning all but their own dear selves and notions. Such insolents as these, I expect, may fall severely upon me, for prescribing such quantities of *vinous spirits and chymical oils*, in glysters. But were they to make due tryal of the same, there's no doubt on't, but observation would teach 'em better, and happy success would command them to applaud what they now oppose. And though this be not a very vulgarly established practice, yet they may know it's not mine, for *Rondeletius* (above 200 years ago) cured a woman of a grievous colic fit, with a glyster of nothing but *hippocras* wine, in which were infused, cinnamon, pepper, ginger, grains of paradise—and *Sanchez*, orders the same. Dr. *Stubbs* (phil. trans. No. 37, p. 271,) relates, that in bilious colic, they usually give, in Jamaica, glysters of a pint of brandy, which will make them as drunk and as mad, as if they had taken it at their mouth. He observed, that *less* brandy would fox them, *in a glyster*, than *if drank*, by them. He tried a quarter of a pint of *gin* in a glyster, on him self, and it made him, not dead drunk, but

raging mad. And he saith, he still remembers, how unruly he was, so as to be held in bed, his reason being depraved by these fumes. Upon this observation, I would never exceed, two or three ounces of brandy, and I declare, so far, I have often gone with safety and success."

The work, from which the above quotation is taken, has only, lately, fallen into the author's hands—it is, therefore, very satisfactory to find the remarks, made in the *former* edition of this treatise, on the effect of spirituous injections upon the nervous system (and for which, vide page 12 of *this* work,) corroborated by the observations of experienced physicians.

Examples of injections of diffusible stimuli, are given (under the head, "suspended animation,") at page 210. In these simple forms, they are especially adapted to cases of asphyxia from drowning or from excessive cold.

With respect to the utility of stimulant clysters, we may fairly infer, that in flatulent and colicky complaints, they offer to those afflicted with spasmodic affections of the stomach and bowels, from wind, a speedy and comfortable remedy. Persons, tormented by

cramps and griping, attended by croaking and distention of the intestines, experience great relief from the occasional use (say two or three times a week, if necessary) of warm water lavements with brandy or wine, in the proportion of a quart of water to half a gill of french brandy—or a quarter of a pint of sherry (spiced with aniseed) diluted with four times the quantity of warm water. These injections, afford more relief, if used at bed time, and if any difficulty be experienced in retaining them during the night, fifteen or twenty drops of laudanum may be added to them—if this fail in securing their retention, the spirituous liquid should be mixed with milk (instead of water) in a small quantity, viz. a tumbler-ful! If constipation prevails, the stimulating laxative injections, recommended under the head “flatulence,” are the most appropriate remedies. It should be always borne in mind, that the source of flatulence, is, in most cases, the stomach—arising from improper diet or from indigestion or imperfect action of this organ.

Wine was recommended by ancient practitioners, to be thrown into the bowels, as being both cordial and nutrient, in malignant

fevers—gout in the intestines—small pox, to accelerate the eruption, &c.—even a *pint* of canary with the yolks of two eggs, was judged to be a proper and necessary injection in these cases! Much caution, however, is required in the administration of stimulating injections, in disorders of a febrile or inflammatory character.

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(CLASS X.)

TONICS.

These injections often become necessary, either on account of the patient refusing to swallow bark, or of the stomach not being able to retain it. The first happens commonly with children; the latter to adults in the advanced stages of fever, and during the progress of intermittents, when the stomach is in so irritable a state as to reject every thing put into it. The difficulty of deglutition, experienced in malignant sore throat, renders it impossible, sometimes, for the patient to swallow, even liquids—and here, therefore, we are glad to have recourse to

bark, in clysters. In the infantile state, we are, also, frequently obliged to avail ourselves of this mode of exhibiting the bark—as in cases of thrush, erysipelas, &c. It is found too, that in certain cases of *local* debility, the administration of tonic clysters, proves more serviceable than the same remedy taken into the stomach—of this kind may be adduced, those distressing and harassing symptoms, which arise from deficient excitability or atony of the bladder and rectum. In the treatment of fluor albus, the utility of tonics, injected into the rectum, is strongly insisted on, by many practitioners, (vide page 217,) and the same is, also, considered as conducive to the prevention of that repetition of miscarriages, to which relaxed and delicate women are subject. The invention, however, of the *Sulphate of Quinine*, has, very much, diminished the necessity for bark clysters; as this excellent and powerful chemical compound, admits of exhibition, without that liability of creating disgust or disturbance of the stomach, which attends the use of bark in substance—and few cases arise, where it cannot be retained, if properly administered.

In all cases, where sickness and vomiting, are urgent symptoms, intestinal injections are

of the first importance—and the greater number of these cases, are generally, of that character which demand either *tonics* or *anodynes*, or both—for example, the exhaustion (attended by rejection of every thing taken into the stomach) which speedily supervenes upon an attack of the present prevailing epidemic called cholera.

The articles belonging to this class are, chiefly, peruvian bark, the cornel and the sulphate of iron. The first, may be administered, either in the form of extract—powder—or the quinine, dissolved in water—or it may be injected in the form of decoction—vide “*Intermittent Fever*,” page 184. The cornel and iron are recommended, for debility of the bladder : vide page 135.

Tonic injections should be administered cold, or at most, not at a temperature above tepid—the former is preferable, if not contraindicated by peculiar circumstances.

SECTION XVII.

*Domestic directions for using Lavements, with
Rules for regulating their Application and
promoting their Effects.*

THE rules which are here recommended, for regulating the domestic application of intestinal injections, are by no means of a *positive*, but rather, of a *relative* character—admitting of variation, according to circumstances which individual experience can, alone determine. In general, however, these rules, will be found to comprise the following points, in respect to domestic lavements—viz. quality, temperature, quantity, administration, retention, expulsion, co-operation and examination.

1—QUALITY.

Warm Water is the most suitable injection, for general use.—To remove costiveness simply, whether habitual or occasional, the immediate intention is, to break down the collected excrements by the immission of a fluid, which shall stimulate the rectum, and, at the same time, become a vehicle for the discharge of the fæces. Soapy water lubricates the inner surface of the bowels, softens and mixes with their contents, and causes them to slide with more facility—it may be easily prepared, by dissolving a table-spoonful of soft soap, in a pint of warm water. Honey is, also, sometimes used in the same manner and quantity. Water gruel, lin-seed tea, and other mucilaginous fluids, probably, facilitate the passage of the fæces, by rendering the surfaces more slippery—and, therefore, under some circumstances, these fluids may be more efficacious lavements, than water. Where it can be ascertained, that the motions are retained in the rectum by habitual *dryness* of this bowel, a decoction of marshmallow roots, may be injected, in preference to water, as it attaches itself, by its viscosity, to the mucous membrane of the rectum, and sup-

plies the place of the defective secretion. Lin-seed oil and *fat* broths, made warm, produce the same effect. Olive oil, castor oil, treacle, sugar, and other substances, may be mixed with water to form lavements, as they are supposed to expedite the effect; but for common and domestic application, these various preparations have no advantage over *water only*, which can be, at all times and places, procured with facility and dispatch.

2—TEMPERATURE.

Lavements should be injected at a heat of 100°.—The *internal* heat of the human body, in a state of health, is, in all parts of the world, from ninety-eight to a hundred degrees by Fahrenheit's thermometer, and the temperature of a lavement, should, on common occasions, correspond with it. An injection excites pain, if thrown up too warm, and will be more quickly expelled—indeed, there are few persons who, at the first application of the remedy, can retain many ounces of liquid, even at the same temperature as the blood—but habit, at length, enables them to sustain a much greater heat. In cases of obstinate constipation or obstruction of the

bowels, the torpidity of the canal may, sometimes, be removed, by rousing its nervous and muscular activity with the stimulus of heat—and here, the temperature of injections, may be raised to 110°. But, on general occasions, as it is exceedingly desirable, the lavement should be borne in sufficient quantity, and retained long enough to make a proper impression upon the canal and its contents, the warmth of the injection should be no more than can be *comfortably* sustained. The *back* of the hand, in the absence of a thermometer, is a tolerable test of the necessary temperature. The liquid, should only convey an *agreeable* warmth to the hand, and if it produces a *more vivid* sensation, it should be allowed to cool lower—a little experience, soon makes the hand expert in this tact, but still a thermometer is *the best* and most certain criterion.

Previously to the administration of injections to be retained, a lavement of warm water, to clear the bowels, should precede it, and the temperature should not be raised above 96° or at most 98° of Fahrenheit.

3—QUANTITY.

A Quart of liquid is commonly required as a lavement.—Frequent disappointment in the use of injections, arise from an erroneous notion respecting the *quantity* that ought to be administered—it being considered, that *half a pint* is sufficient, and a pint, regarded as a *maximum*. Such quantities, it is true, may *sometimes*, produce the desired effect; for it is a curious fact, that *fluids* powerfully stimulate the rectum, as is experienced by an urgent desire to stool, whenever *liquid* fæces descend into this portion of the canal. The presence of the smallest quantity of fluid, under ordinary circumstances, excites an urgent *conatus ejiciendi*, exceedingly painful and difficult to restrain. But, in that state of the bowels connected with a costive habit, an equal irritation does not, usually, succeed the immission of a *very small* quantity of liquid; nor is an excitement, conveyed sufficiently powerfully or remotely through the alimentary tube, to stimulate it to urge forwards its *more distant* contents. *Habitually* torpid bowels, require something more than the stimulus created by the mere *contact* of the injection with the *rectum*. The liquid must be carried into the *colon itself*—softening and dislodging whatever collected fæces may oppose its pas-

sage—stimulating, by its fluidity and temperature—distending, by its bulk, the whole course of this bowel—and exciting the action of the intestinal tube, *beyond that portion* to which, it may be supposed, the injection, itself, penetrates. How far it is reasonable, in all cases, to expect this effect from the immission of half a pint or a pint of liquid, will appear by comparing the quantity with the calibre and extent of the lower bowels. To ascertain what measure of liquid, the large intestines were capable of containing, I tried the experiment, upon the dead body. The subject, was a female of *small* size and stature, but the rectum, colon and cæcum, readily admitted, *seventeen pints* of water, though I did not distend them, by any means, forcibly.

Immense accumulations of fæces, will sometimes, take place in the colon, with vast collections of gas, accompanied by spasmodic constriction of the canal ; giving rise to violent obstruction and colic, and requiring *mechanical* dilatation of the bowels, for their removal. This can only be accomplished, by the immission of a very large quantity of liquid, sufficient to counteract the spasmodic contractions of the colon, and, by distending the bowel to a more uniform calibre, to open a free and uninterrupted canal for the passage of its

confined and impacted contents. The *warmth* of the injection, of course, contributes to a relaxation of the spasm ; but, notwithstanding, it has required, in many instances, the immision of more than TWO GALLONS of liquid, to remove the obstruction. Mr. Taunton has in his possession, the colon of a female, *increased by habitual costiveness, to twenty inches in circumference* : it contained *three gallons* of fæces !

Few persons, at commencing the practice of using lavements, can endure more than a few ounces of liquid, without discontinuing the operation, and permitting the injection to come away—but custom, at length enables the bowel to receive a larger quantity, and, therefore, by those who are in the habit of using injections, one, two, or three pints are usually thrown up. For correcting costiveness with children, a teacupful or from that to half a pint, will generally be sufficient. But I must, here, answer a question, which has been frequently demanded of me since the publication of the former edition of this work, viz., “ what quantity is it *safe* to administer to children ? ” I reply, that no mischief could result, from injecting half a pint of water into the bowels of *a baby* ! and an increased quantity, proportioned to the age of the child,

would be equally safe to young persons farther advanced in years ; for example, a teacupful, for children under *five*—half a pint, for those between five and *ten*—three quarters of a pint, for boys and girls, between ten and *fifteen*—and a pint or more, for young persons between fifteen and maturity.

When it is intended that an injection should be retained, it ought not to exceed four or five ounces in quantity, and if it be composed of *stimulating* ingredients, as all purgative mixtures are, it should not exceed half that quantity. Numerous examples of injections, of this nature, such as *anodynes* and *antispasmodics*, containing opium for the relief of pain—*concentrated purgative injections*, intended to produce an active cathartic effect—*astringent, stimulant, and tonic injections*, to answer various indications—and formulæ from other classes of injections (which produce *local excitement*) are interspersed through various parts of the 15th section.

4—ADMINISTRATION.

a. *The time most suitable for the use of lavements, is the morning.*—There is a sympathetic relation between the upper and lower bowels, by which, as was formerly stated, the actions of the former, may be quickened or

excited, by stimuli applied to the latter. By a converse reciprocity, the lower bowels often obey, very readily, a stimulus applied to the upper ; as is sometimes observable after taking purgative medicine, that a natural evacuation speedily succeeds the reception of the medicine into the stomach, whilst the *purgative* effects do not follow until several hours after. From this physiological association, arises that inclination to stool, which, in many persons, immediately succeeds some particular meal, and more especially breakfast. To assist, therefore, this indication of nature, and to give effect to the natural efforts, the lavement should be administered immediately *after breakfast*, by which, also, another benefit is obtained by costive persons—that of establishing a regular period of evacuation. The method of adjusting and applying the apparatus, has been described at page 99, Section xii.

b. *The immission of lavements should be effected SLOWLY, and regulated according to the sensations produced.*—It may soon be ascertained by the experience of every one, that if a *copious* lavement be thrown up at once, or by quantities in too rapid succession, a reaction of the bowel occurs immediately, and produces an irresistible desire for its expulsion, without accomplishing the object in view. But if the

distension of the rectum be *gradually* effected, and the temperature of the liquid do not exceed that of the bowels, the individual is not immediately sensible of its introduction. Three or four minutes should be occupied by the immission of each pint of liquid, and if the desire to reject it, arises before it is *all* thrown up, the operation should be suspended for a minute or two, *until the inclination subsides*. But if the sensation continue painfully urgent, the injection should be allowed to come away, and another, of the *original* quantity, afterwards administered. It frequently happens, that very little liquid can be borne at one time, and that several attempts are required to throw up the whole lavement, each portion being rejected without bringing away any thing with it—but at length, the bowels will admit at *one* application, a *large* quantity, and a full and copious motion ensues. But it, also, sometimes, occurs, when a lavement is injected and rejected in small quantities only, that *each effort* discharges some trifling portion of fæces; in this case, the attempts to introduce, *at least a pint of liquid or more*, should be continued, until the bowel will receive the whole portion at once, without inconvenience or immediate expulsion. Some time since, a lady, after four days constipation,

had recourse, by my advice, to the use of the lavement. She had, scarcely, thrown up a teacupful, when she was obliged to withdraw the instrument and allow the fluid to escape—a bulk of fæces, equal to *one usual daily* evacuation, was discharged with it. A second attempt was now made, to throw up the remainder, but no more could be received than before—and a bulk of fæces, equal to the former, passed with this also. The experiment was tried *a third time*, when the reception of rather less than half a pint only, could be endured—but fæces were *again discharged* with it. The instrument was applied a *fourth* time, and three pints of water were received, without inconvenience, and retained about a quarter of an hour, when it began to act, and a quantity of fæces, *more than the whole of the three previous motions*, was discharged!

c. *It is, generally, considered expedient, to avoid the introduction of air with a lavement.*—The bowels contain, it is true, a considerable portion of air (as well as some kind of gases which are evolved, by chemical operations going on within them) for it is well known, that a portion of atmospheric air is contained in the intestinal tube, sufficient to support life, in many insects, to whose existence it is indispensable. But it may be presumed, that,

by natural and spontaneous means, the introduction of air into the stomach and bowels, is effected in so gradual a manner, that these organs, probably, *accommodate themselves* to its reception, *without being inconvenienced* by it. It may not, however, be equally innoxious, when, by mechanical or accidental means, it is introduced into the intestines *in a sudden manner*, and in considerable volume; griping, sickness, and even vomiting, it is said, have been known to succeed such an accident. To prevent the possibility of such an occurrence, every part of a lavement apparatus, should be air-tight, and the atmosphere, which is, of course, contained in various parts of the syringe and tubes, may be expelled by pumping a charge of the liquid through them, before the pipe is inserted into the bowel. The reader, however, will not, probably, entertain very strong fears on this point, after perusing the remarks upon inflating the bowels with air, given at page 148.

d. *The individual should make water, before a lavement is injected.*—The pressure of a distended bladder, oftentimes interrupts the free passage of an injection along the rectum, or produces a stimulus upon it, by which the lavement is *prematurely* expelled—during

pregnancy, the gravid uterus, is, also, apt to produce the same effect. In general, therefore, persons should pass urine, before a lavement is injected, provided, no mechanical obstruction precludes the power of doing so. It is advisable, that pregnant women should have the operation performed by an assistant, whilst they recline on the *right* side, which takes off the pressure of the womb, from the lower curvature of the bowel.

5th—RETENTION.

Lavements are sometimes absorbed, and do not pass off by the bowels.—In this case, no serious apprehension need be entertained, that any mischief will arise, from the retention of the liquid, as it is readily carried off by the kidneys. Dr. Cullen says, that he has known, a quart of liquid absorbed by the rectum, in the space of half an hour. When it happens, frequently, to an individual, that the lavement does not come away, a table-spoonful of common salt or a tea-spoonful of ox's gall, should be dissolved in the water, or a purgative injection, (such as formulæ 44, 45, 46) may be substituted for it. The inconvenience of this occurrence, is, however, certainly not

trifling to those who are subject to irritability of the bladder, especially if combined with obstruction or stricture of the urethra. I was consulted on this point by Col. M——, a gentleman of advanced age, who, from diseased prostate gland, had frequent and daily occasion to draw off his urine by the catheter. He found, that lavements of water were so rapidly absorbed by the rectum, that the call to make water was much increased after using them, and I found it necessary to recommend for him, such injections as are advised at page 133.

6th—EXPULSION.

The first impulse to discharge a lavement, should (if possible) be resisted.—Soon after the injection of a lavement, a very pungent irritation ensues, at the anus, which calls, urgently, for the expulsion of the liquid. If the sensation be disregarded, it soon subsides, but shortly afterwards, a slight degree of griping comes on in the belly, about the region of the naval, somewhat similar to that produced by purgative medicine. This uneasy sensation, is the best promise of the approaching efficacy of the remedy, as it shews, that its influence has extended through the course of the colon,

and is, invariably, followed by a full and copious exoneration of the bowels. This is one of the most important axioms connected with our subject, and should, in every instance, be complied with, as far as may be practicable.

7th—CO-OPERATION.

Adjuvants to lavements are sometimes required.—Notwithstanding the acknowledged efficacy and utility of intestinal injections, it is unreasonable to expect unlimited success, and thence we provide ourselves with resources, against any occasional or partial failure, in their operation. I shall, therefore, proceed to notice several co-operative means, required under particular circumstances.

a. *Exercise.*—The complaint, sometimes made, that the lavement returns without producing a stool, would, perhaps, be but rarely urged, if sufficient time and pains, were bestowed upon the operation. In precept c.—rule 4th—page 252, it was strongly recommended, to repeat the injection as often as the lavement returns without effect, and this advice should be complied with, in every instance above cited. There are, also, other adjuvants to the success of the operation, in

these cases, amongst which, *exercise* (especially equitation) is particularly prominent. A young gentleman, subject to costiveness, complained to me, that whenever he used a lavement (which, from the recommendation of friends, he had several times done) it always came away, in the course of ten minutes after being injected, without having, in a single instance, procured an evacuation of the contents of the bowels. I advised him to throw up a quart of tepid water, and immediately to walk briskly about the garden. On the first trial of this plan, a considerable motion was procured, and, as he informs me, he has, several times since, pursued the same course with equal success. In a similar case, I advised the patient, first to cross his horse and trot a distance of five or six miles, and then, immediately upon dismounting, to take a lavement—this plan was equally successful.

b. *Friction* and pressure or kneading of the belly with the hands, conjoined with injections, often succeed, in the instances under our notice, in producing the desired effect—it should be had recourse to, as speedily as possible after the lavement has been thrown up. The same means, also, have been observed,

even in obstinate cases of obstruction, to procure fæcal evacuations.

c. *Cold affusion*.—When the bowels are exceedingly torpid and do not respond to the stimulus of a lavement, or, the enema is repeatedly discharged, unmixed with fæces, sponging the belly with cold water, immediately after injecting the liquid, will often succeed in soliciting evacuations. The use of the cold bath and of lavements, on alternate days, (from the relation which is known to subsist between the mucous membranes and the skin) contributes to the same salutary operation.


d. *Aperient medicines*.—Numerous instances exist, of a disordered condition of the stomach and *small* bowels, attended by debility and torpor of the *large*. The *one*, (disordered stomach,) is indicated by a furred tongue—sense of heat, dryness and bitterness of the mouth and throat—uneasiness about the region of the stomach—slight head-ache—vertigo—diminished or irregular appetite, &c.—constituting a disorder, which in popular language is nonsensically denominated “*bilious*,” or “*an attack of the bile*.” The *other* (disorder of the *upper* bowels) is charac-

terised by flatulence, distention, and constipation. This faulty action of the stomach and small bowels, demands the exhibition of such gentle aperients as will carry away their contents, and relieve the morbid state of the mucous lining. But aperient medicines, active enough for this purpose, are not sufficiently powerful to overcome the *torpidity* of the *lower* bowels; and if, to accomplish this latter object, efficient doses of purgatives be taken into the stomach, that injurious and interminable habit of requiring them, (which has been so frequently deprecated in this work) may become, thereby, confirmed. To remedy these evils, and to obtain the combined utility of *both* modes of practice, *four grains of the compound gamboge pill with a grain of calomel*—or, *two grains of the extract of rhubarb, two grains of the compound extract of colocynth, and one grain of powdered ipecacuan*, (made into a pill,) may be taken at bed-time, and a lavement, used the following morning. By these means, the mucous lining of the whole alimentary tube, will be restored to healthy action, and both the small and large bowels, cleared of their contents. The pill may be repeated every *third* evening, for two or three weeks,

when it should be discontinued for a week or two, and then resumed for a like space, if necessary; the lavement, *if the bowels require it*, may be repeated *daily*, without intermission.

8th—EFFECTS.

Evacuations procured by a lavement, should be inspected.—No other evidence, except that of ocular demonstration, ought to be, or is, a sufficient assurance of the proper effect of a lavement. Persons are frequently deceived by the sensations attending the expulsion of an injection, and are led to imagine, that they have passed a copious motion, when, in fact, they have discharged nothing but the lavement. Examination, therefore, is an important part of the practice of using intestinal injections.



SECTION XVIII.

Importance of the injecting bidet explained and submitted to female attention.


Though somewhat foreign from the professed subject of this treatise, I cannot pass on farther, without calling the especial notice of my *female* readers, to the important utility of the *Injecting Bidet*, represented at page 118. I need not remind them, that, unremitting attention to the person, is rendered necessary, by the structure and functions *peculiar to the sex*—and therefore, the facility which the before-mentioned apparatus, affords them, of properly performing those ablutions *which are essential* to their comfort, is such a

powerful recommendation, that, I am sure, there is not a female of sensibility or delicacy of feeling, who would be without it, were its conveniencies and usefulness, generally known. Every woman, who contents herself by the *common* routine ablution with *sponge* and water, and deceives herself, by believing that, in this manner, she can accomplish all that cleanliness, comfort, and health demand, should know, that her most sedulous and regular efforts thus directed, *are utterly insufficient*, and that no method is effectual, *but that of injection!* Even in health, as well as under disease, *internal* purification is requisite—for by this method alone, can the parts be cleansed from secretions, which (however common, natural or proper) should, from a sense of delicacy, frequently be washed away, especially, when (as is often the case in the *matrimonial* state) they become excessive. The various morbid discharges, to which *all* females are more or less subject, as the Whites, &c. should be daily removed by an injection of tepid water. The same attention is necessary during the period of menstruation—the apparatus being used two or three times a day, and the temperature of the water made about milk warm. In cases of flooding, or of excessive menstruation, in-

jections with the *female* pipe, are equally indispensable ; but here, the propriety of *warm* water injections may be questionable, and even cold or medicated liquids, may be required—but on this point, the opinion of a medical attendant should be consulted. After a lying-in, many disagreeable effects might be removed, by the apparatus in question, which by the assistance of the nurse, should be applied, at least, twice a day—*warm* water, of course, being used for the purpose.

In fine, were the injecting bidet more frequently used than it is, many of the complaints that afflict the sex, and which, either arise from, or are aggravated by the irritation of acrid secretions, would be prevented.

A necessary appendage to the apparatus, is the flexible female pipe, suggested by Dr. Granville, whose exertions I have cordially co-operated with, in super-intending the adaptation of this pipe, to the bidet. I invite my fair readers, to any communication they may be desirous of making—and assure them, I shall have great satisfaction, in affording them every information on the subject, or in being the medium of their obtaining, this useful apparatus.



SECTION XIX.

A few words of advice on the selection and purchase of lavement machines.

IN the former edition of this work, a chapter was occupied, by critical remarks on the construction and merits of the numerous lavement machines, which were *then* before the public. The spirit of commercial and manufacturing competition, has, however, *by this time*, so extensively encreased the variety of these instruments, as to preclude me from repeating my former task—and I shall, therefore, confine my remarks, to such points, as may be necessary to direct the reader, in the choice of a proper and durable apparatus.

It would be idle to waste a moment in proving, that a metallic syringe or pump, is the form, most suitable, for a lavement machine, especially a *self*-injecting apparatus—and I shall only remark, that those varieties in form and materials, which are now recommended to notice, (especially a cloth bag, several feet long—a nasty and ineffectual *french* contrivance) may be, fairly, regarded as gew-gaws, thrust upon public attention, with the speculative view of fishing for customers with the bait of *novelty*! It being admitted, that a lavement instrument ought to be a metallic pump, the next point, is to construct it upon such principles, and to manufacture it with such materials, as shall combine, simplicity of action—facility of application—portability in form—and durability in use. In these respects, no apparatus, hitherto invented, is equal to *Read's* patent machine. The syringe is upon the philosophical principle, of a “*double action*” pump—so that it both receives and discharges, by the mere elevation and depression of the piston, which slides so easily within the cylinder, as to require only a finger and thumb to work it. The material of the syringe, is brass, coated on the inside, with a durable lining of an incorrosive compound of

tin. The valves are simple *bullets*—manufactured by a *secret process* that makes them more perfectly spherical, than the most elaborate operations of the lathe. These metallic balls, possess this great and essential advantage over *every other* kind of valves, that, instead of being rendered defective by wear, they actually become more perfect, the longer they are used ! The workmanship is of the best kind—the pump being constructed with all the accuracy of a mathematical instrument. The flexible tube, consists of strong webbing, united and cemented together, by a peculiar solution of caoutchouc, which enables it to sustain the great pressure of the current, passing through its canal—and to resist the effects of hot water, and of most chemical fluids. The whole of the apparatus is packed in a small mahogany case, which forms no incumbrance in a portmanteau, and may, indeed, be carried in the pocket.

Some envious and interested persons, have urged many objections against *spherical* valves, but all their arguments are foolish and malignant. Unattached globes, form the *most simple* valvular machinery, that it is possible for scientific skill to devise—and as simplicity is acknowledged to be the acme of *mecha-*

nical art, so it must be admitted that the ingenuity of the inventor, *jumped at once* to the *perfection* of his labours.

I shall add but a few words on the subject of *cheap* instruments—made of pewter or other *soft* metal. They are not durable, but are liable to get out of order, and to become useless. The flexible tubes also, that are attached to them, are very perishable, and occasion great inconvenience to the possessor, from the frequency, with which it is found necessary, to renew them.

Purchasers have been cautioned, by *ignorant* persons, against *brass* machines, which, they say, contract *verdigris*, and thereby prove very pernicious in their use. Both postulates betray the grossest ignorance and falsehood, as I could prove, were it worth time and paper.

The pipe which is passed into the bowel when the apparatus is used, should be made of metal instead of bone; as the latter frequently becomes split—or the screw wears out and ceases to retain the pipe in the socket. The moisture, also, is apt to swell the *bone* pipe, and, consequently, to fix it so firmly, that it cannot be detached; which precludes the apparatus from being, afterwards, put into

the case. There is no advantage in having pipes of various sizes—one pipe, made of the shape and length of that given with Read's apparatus, and which admits of being used (by means of a double screw) *by or without* an assistant, is quite sufficient, and equally applicable to children and adults.

SECTION XX.

CONCLUSION.

*Explanation of the Author's motive for altering
the original title and arrangement of this
treatise.*

“ Look upon this picture, and on this !

The counterfeit presentment, &c. &c. &c.”

SHAKESPEARE.

The rapid sale and extensive circulation of the former editions of this work, were convincing proofs of the value which the public set upon my labours ; and I could not, therefore, have felt it necessary to mask an old face and introduce it as a new acquaintance, on the score of whetting the palled appetite of the public, through the means of novelty. The truth is, that an individual who had engaged in the sale of lavement machines, con-

ceived the ingenious expedient of taking my work as a text book, and publishing it as an *original* production of his own; at once accomplishing the double object of appearing an author without any trouble, and of promulgating a system, for the sake of procuring purchasers of the instrument for carrying it into effect. If the reader will take the trouble to refer to a smart little weekly periodical, which flourished last year, denominated "Punchinello," it will be seen that the reviewer detected and exposed the piracy with that pungency which characterised this clever ephemeral production.

I have never imagined that the surreptitious book, interfered with the sale of mine; or inflicted any injury on me, through the medium of my publisher; but I am not equally sanguine that my character escaped with the same impunity, as I believe my pecuniary interest to have done. The piratical book was so parallel a version with mine, both in matter and arrangement (in fact the compiler had done little besides cutting the leaves of my book to send as *copy*, as it is technically called, to his own printer) that no person could look on the two, without being entirely

satisfied of their identity. It, therefore, often became questionable to the reader, which might be the fictitious book. The query was resolvable, in a moment, by referring to the respective title pages, the dates of which shewed my work to have preceded the spurious one, nearly two years. Nevertheless, persons often overlooked this mode of comparison, and I have been frequently challenged to declare, whether I had been the thief or had lost my own goods! In fine, I felt the dilemma in which the suspicion of my interrogators involved me, to be, at once, a moral and literary degradation.

The soi-disant author who thus honored me by adopting my thoughts, being an adventurer assuming the character and functions of one of the medical body, I could not consent to remain an apparent competitor with such an antagonist, but as my book was entirely sold off, I resolved to reprint it in a new form, and I here present the public with the result of my labours. In my efforts to weaken the similitude between this present edition, and the mimic shadow that mocks my former publication, I have, I trust made such additions and improvements to

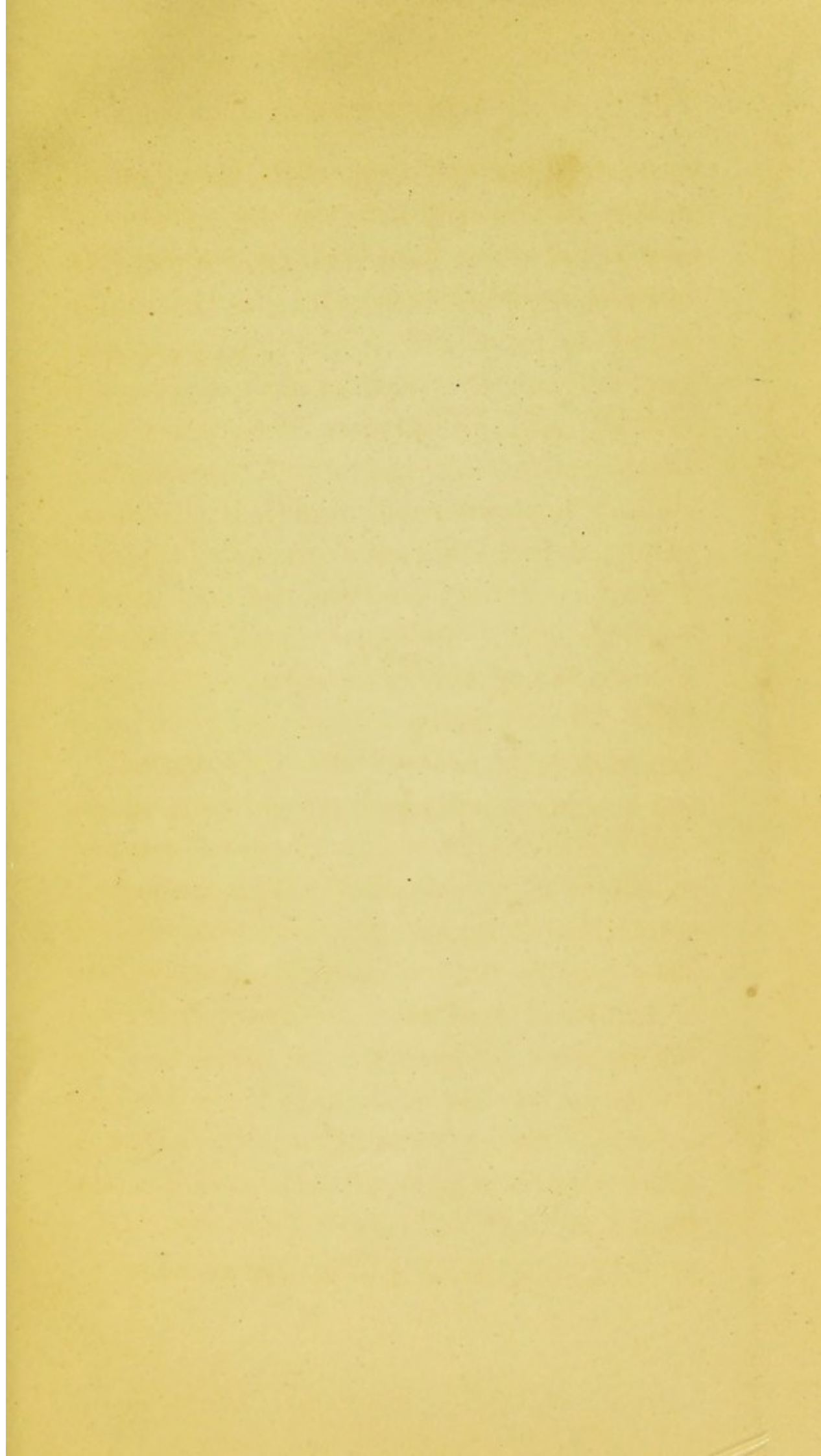
this, as will render it, somewhat, more worthy of that patronage which my first edition received, and which I am sincerely anxious, this new one should deserve.

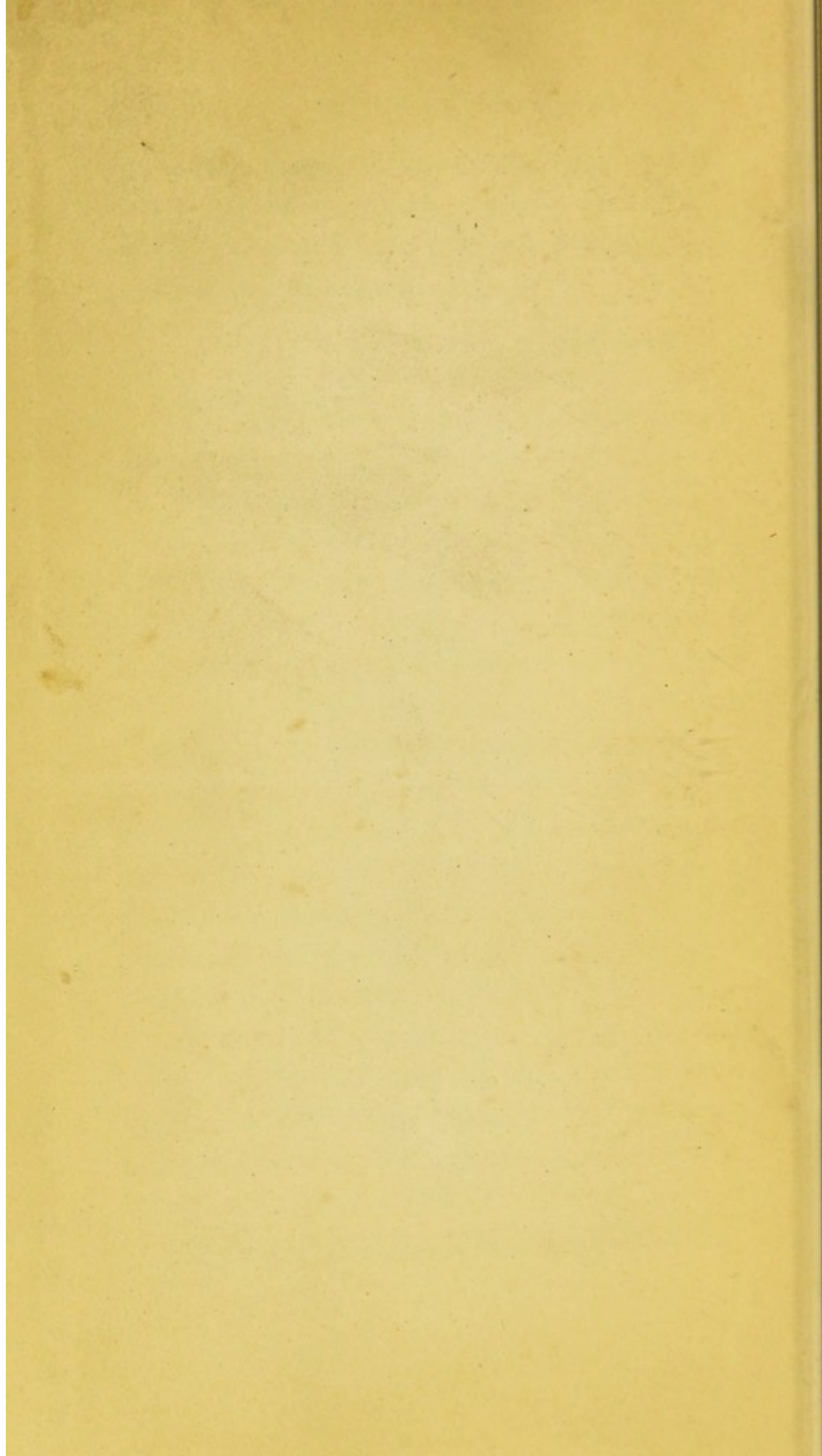
JAMES SCOTT.

35, *Regent Street, London,*

May, 1833.

FINIS.





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