lent in money, calculated at a penny *per diem*, and to be styled *liquor money*, shall in future be given on all foreign stations, where rations of provisions are issued under the authority and scale of this warrant.

“As, however, in cases of active operations in the field, the officer in command of the forces may find it indispensably necessary to supply them with the articles in kind, such officers shall have the discretionary power of discontinuing this allowance in money, and of substituting for it a ration of wine, spirits, or any other article of subsistence; and the officer commanding any regiment, troop, company or detachment, shall, at his own discretion, when engaged in operations in the field, or employed on board transports, suspend, diminish, or wholly take away the liquor ration when issued in kind, in case of the misconduct of any soldier or officer's servant.

“If, at any station abroad, local or temporary circumstances should render it at any time adviseable, either owing to the remote situation of the post or station, or for the health of the troops, to substitute wine or spirits in lieu of the penny a-day, the officers in command of the station shall, in the exercise of his discretion, authorize the same, and in the latter case, or on report made by a board of medical officers assembled by his orders, having, if the case admits of the reference previously obtained, the sanction of the superior officer of the command, reporting the same for the approval of the Lords Commissioners of the Treasury.”

This measure has worked extremely well, and it promises to be highly beneficial, especially in regard to recruits or young soldiers who have not already been corrupted by the influence of the former system. The gratitude of the army and the country is most justly due to Sir Henry Hardinge, for abolishing an improvident law which, however well intended, has been followed by most deleterious results. As Dr Jackson observes, although the bad effects were obvious, and universally admitted, it required courage to propose a remedy, and an example of superior virtue and energy to carry so important a measure of reform into execution. The plan adopted for this purpose was highly judicious, and it has been completely successful.

ART. III.—*Observations on Epidemic Gastric Fever, as it appeared in Limerick Garrison during the months of May, June, and July 1833.* By RICHARD POOLE, Esq. Assistant-Surgeon 32d Regiment.

AFFECTIONS of the alimentary canal were the prevailing dis-

orders in the 32d Reserve, during the period of its being quartered in Limerick; but it was not until the subsidence of the influenza, that any examples of gastric fever made their appearance. Before this, one or two sporadic cases of an inflammatory type had occurred; but in these no decided evidence of gastro-enteric character existed. Besides, as the treatment, apparently the best adapted for these, would have had less beneficial effects in the complication mentioned, it is but fair to infer, that the alimentary canal was not the seat of any lesion that could have influenced their character; and it is singular, too, that, even during the time cholera existed in the garrison, some fevers, without any gastric complication, made their appearance.

Be it remarked, then, it was not until the influenza had existed for some time, and was on the decline, that a change in the type of the fever was observable; and that it is from this period I date the commencement of the epidemic which it will be my task in the following pages to describe.

It is not necessary for me to mention here the frequent instances on record of gastro-enteric fever, and diseases following the march of this singular affection. They are well known to most of the older practitioners who have paid any attention to epidemic constitution, and are amply detailed in the article Influenza published in the Cyclopædia of Medicine, to which I refer. It is equally unnecessary for me to give the *rationale* of their connection. This must strike any one who considers the similarity of the textures concerned, especially as, of late, attention has been much paid to the sympathies existing between the two membranes, and to the facility with which disease in the one is extended to the other. The article on Epidemic Gastric Fever by Dr Cheyne, in the work alluded to, is a valuable summary of most of the facts connected with the disease; and nothing would induce me to go over nearly the same ground, but the wish to adduce farther testimony to the truths it contains,—and some anxiety to impress upon the attention of my professional brethren in this country, the necessity of admitting the existence of a class of diseases which requires a plan of treatment very different from any promulgated by the authorities on whom they have been long in the habit of placing exclusive reliance.

That the disease in question depends upon a lesion of the gastro-enteric mucous surface, I conceive to be as probable as the connection between *pneumonia* and its symptomatic fever; and, although I cannot bring forward necroscopic appearances to elucidate the position,—none of the cases having proved fatal,—I consider the relative proofs so strong, that I do not hesitate in giving to the disease the name here fixed,—believing that, under this, it is deserving of a place in any system of nosology

founded on a pathological basis. Its similarity to the disease described by Dr Cheyne, who gives several dissections, is farther evidence of the correctness of this view.

Most of the cases which came under my observation presented, before the disease was unequivocally developed, considerable general disturbance, but by no means of a nature to excite apprehension of its invariable results,—being confined in a great measure to lassitude and prostration,—the patients complaining of general uneasiness, without being able to point out one sensation more uncomfortable than another. They were heavy, dull, and listless,—hanging over the fire,—feeling chilliness at one time, and irregular distribution of heat afterwards, with loathing of food, and frequent inclination for cold drinks, from the dry and parched state of the mouth. This was generally greatest in the morning. The complexion was usually dusky, all trace of sanguination being gone from the cheeks, and often the lips. These disagreeable symptoms lasted for several days, and were soon followed by the developement of fever, which was most complete towards night. The pulse averaged at 110; was sometimes tense, but generally soft and full. The skin became remarkably dry and harsh; moisture was never observed on it; and, in some cases, it assumed a degree of roughness similar to what is observed in chronic affections of the gastro-enteric organs. The patients became more and more depressed, and were overpowered by an apathy to external objects or ordinary impressions; and, though even now they scarcely complained, except, perhaps, of weakness, the whole expression showed amply the extent to which the disease had overcome their energies. As the fever may be now reckoned at its height, it will be better, for the purpose of elucidating its nature, to take a view *seriatim* of the symptoms, as referable to their respective localities.

I think it will be proved, in the course of this memoir, that the symptoms which might be termed cerebral were merely functional or sympathetic; but, to make the history as complete as possible, I shall mention, in the first place, all of them that may be attributed to an irritation of the *sensorium*. The most remarkable of these was profound torpor. The patient lay without exhibiting any evidence of intellect remaining,—the eyes were closed, and only sluggishly opened when he was addressed,—a few incoherent words were uttered at first, and as it were at random,—but presently he became roused, and answered questions as distinctly as the dry state of the mouth would permit. There was now complete return of consciousness, and the patient described with correctness his situation and feelings. In one case only, a man of the 83d Regiment, was there total insensibility, with picking the bed-clothes. Some complained

of confusion in the head, giddiness when it was raised from the pillow, with noise and buzzing in the ears. Deafness was also observed. In one, twitching of the lips and slight contortion of the mouth were detected; but these, I think, were almost entirely occasioned by the intense dryness of the fauces. Pain in the head was seldom complained of, and certainly was not felt at all by many, while giddiness and beating were often mentioned. The eyes were never injected, but dull and heavy; the cheeks seldom flushed,—the complexion being generally of an earthy-yellow cast.

All these symptoms, I am induced to believe, were entirely due to sympathetic excitement, and in no case appeared to depend on structural lesion. They become worthy of some special consideration, with a view to tracing their dependence on derangement existing in another situation. To this, however, I shall refer in its proper place.

The chest, examined by the stethoscope, afforded in every case, during the pyretic stage, numerous sibilant and sonorous rattles; but I generally found these disappear, without being followed by others, or any symptoms of bronchial disease. In some cases, however, they were attended by cough and expectoration, but never with pain; and in several I found benefit result from treating this affection locally,—a fact which I might readily have overlooked, but for the stethoscopic observation.

From these circumstances, and many others which I need not detail here, I think the stethoscopic signs deserving of attention, in showing the intensity of the disease when taken along with the symptoms; but I safely can state, that I usually considered the former of little importance, when not accompanied by other evidence of disease, and that I never had cause to regret having done so. Laennec probably carried his views on this point too far, and I hold the profession indebted to Dr Graves for having sometime ago drawn their attention to the subject, and shown the errors into which we may fall by placing too much reliance on the signs furnished by auscultation during the progress of certain fevers.

But to proceed. The pectoral symptoms, when they did appear, were never serious. Some cough, with varied expectoration, might occur in the morning; but there never was anything like profuse secretion from the bronchial membrane, and in none of the cases did the *parenchyma* or its investments suffer.

A *gastro-enteritis* being, so far as I can determine, the immediate cause of the phenomena observable in this disease, the symptoms ascribable to the disordered *viscera* demand the greatest attention. Yet with all this, an observer might overlook the seat of the whole mischief, and be led to consider a disease

essentially specific, and requiring a distinct plan of treatment, as either of no importance, or similar to others which he is daily in the habit of meeting. A most mischievous and absurd blunder about pain at *epigastrium*, red tongue, &c. as characterizing gastric complication in different diseases, has been of late freely promulgated; and one is almost tempted to understand, that inflammatory affections of the muco-enteric surface have been specially favoured in being made so palpable to our powers of discrimination. But, however *decided* ignorance may be in its dogmas, any one who has paid attention to the diseases in question cannot but state, that their symptoms are far from being so glaring, and, from out the innumerable variety exhibited, will fail in pointing out any one or two as pathognomonic. In none of the numerous disorders produced by this lesion are the symptoms so varied and obscure as in the one before us; and it is only from their assemblage, and not from any in particular, that a diagnosis can be made. For example, in not one of the cases did there exist tenderness at the *epigastrium*, or any other part of the abdomen. Pain and weight, indeed, were often felt, but they were by no means constant, and depended most frequently either on distension from wind, or the soreness that attends a loose state of bowels.

Diarrhœa invariably ushered in the complaint, and frequently reappeared during its course; but the bowels were at other times slow, and required to be unloaded. Every medicine in this way, however, required to be of the mildest nature, as even the gentlest laxative produced often violent effects. The fecal discharges were varied;—in some they appeared wholly serous or mucous; in others natural, but liquid. Various intermixtures of colouring matter were frequent;—in some blood; in others bile; and, in a case of the 83d Regiment, what might be termed *mælena*. In this case, large quantities of calomel and Cayenne pepper had been given by a practitioner in the country, who, fortunately for the patient, considered his case bad enough to have him removed to head quarters. Griping was a frequent attendant, but *tenesmus* was not observed. Vomiting of *bilious*-looking matter occurred in one case; but the stomach was generally retentive, though nausea was by no means unfrequent. Complete *anorexia* existed for many days. The patients obstinately refused to eat any thing,—appearing to loathe the sight of food, or the idea of using it.

Thirst was incessant, cold drinks being greedily asked for, and relished; whereas anything warm was as much an object of aversion as food. The mouth for many days was dried up, and parched to a remarkable degree; the fauces, gums, and tongue were red and glazed, as if covered with gold-beater's skin;

the latter, during the course of the fever, became hard, dry and chopped, enveloped with a firm dark brown or black fur, and bleeding from its numerous fissures, when protruded from the mouth, which was done often, only with difficulty. This state of the tongue was very constant, and lasted until the fever was on the decline. The dryness of the fauces, as I mentioned before, was the cause of the deficient power of enunciating which existed in all the cases. I was led at first, however, to look upon it in another and more serious light.

To the state of the stomach and bowels must also be referred the constant prostration and feeling of languor and helplessness which characterized the attack; and I cannot but believe, that the torpor observed in many was but a high degree of this feature. The value of determining the point can only be appreciated by taking into consideration the readiness with which it may be confounded with *coma*, and attributed to structural derangement of the brain or its membranes. In two of the cases, in which it was most evident, a man of my own corps, and one of the 83d Regiment, in which it was attended with involuntary discharge of feces, total insensibility, picking the bed-clothes, and other ataxic symptoms, it was entirely removed by copious leeching of the abdomen, and cold drinks,—with small doses of *Acet. Morph.* in the latter case; in which, had it been occasioned by sensorial lesion, it would surely have been increased by the opiate. In the former case, the assumed debility and prostration were so intense, that the patient could scarcely turn in bed. Yet, after the second or third leeching, he recovered so much, that, on awaking from sleep, and probably dreaming of other days, he got out of bed, put on his clothes, walked down stairs, and was found at the door of the hospital by the hospital-sergeant, whom he told he was going by my leave to visit his mother in an adjoining county.

These facts, with others which I need not detail here, serve to show that prostration and torpor are but shades of the same disorder; and that, whenever they exist, we are warranted in believing the gastro-enteric surface the seat of more or less inflammatory action. They are, however, by no means new, having been brought before the profession some time ago by M. Broussais, since confirmed by the researches of Andral, and, if less known in this country than they deserve, which I think scarcely admits of a question, it is the fault of a few to whom for long a blind deference has been paid by the mass of practitioners. This, however, is not the place for a discussion of the subject.

The duration of the stage, characterized by the preceding symptoms, varied, of course, in different cases; but, on an average, may be stated to have lasted from a week to ten days. In

all of them was observed great tendency to muttering during sleep; and several of the patients got up while asleep, and attempted to leave their wards. The pulse varied but little, either in frequency or force,—being often for days 130, but seldom under 100. In this fever, no critical discharges were ever observed; the symptoms gradually declined in severity; the skin became softer and cooler during the day, but evening accessions were observed for some time afterwards; the tongue got daily more moist,—the dry patches disappearing, and being replaced by a creamy deposit, which I always looked upon as the harbinger of recovery. In some cases, this became dry and scaly, from some fresh irritation; but in some of them it slowly went off, leaving the tongue remarkably white, and as it were firmer and closer, from being decreased in volume. The thirst abating, some appetite was felt; but it was never craving or voracious, and was readily satisfied by light farinaceous diet, which the patient invariably relished more than any other that was offered. The cough generally went off about the same time; the bowels became easy and regular, and seldom required during recovery assistance from medicine. Convalescence was tedious and protracted, but in no case was there any relapse.

The duration of the attack averaged from five weeks to two months. As I stated before, no death occurred in any of the cases that came under my observation, which included a squadron of dragoons, the 32d Reserve, and 83d Regiment; but I was given to understand that the son of an officer belonging to another corps sank under a protracted attack. Some cases of fever of a like character prevailed in town; but I cannot state any thing concerning their progress or termination.

Treatment.—General bleeding was adopted in several cases at the commencement, with a view to cut short the disease by making an impression on the system, and to pave the way for local depletion; but I cannot state that in any it appeared to fulfil the intention. In no case, however, did it seem to do harm, as the quantity abstracted was never great. My conviction is, it might have been safely dispensed with in all, as the *phlegmasiæ* of mucous membranes, and especially of the enteric, appear to be little under the influence of the general circulation, and few of them ever excite any violent action of the heart, which demands the use of this remedy. But for all this, cases often occur in which the general excitation is great, and in these general depletion is undoubtedly required, as the attempt to unload the capillaries must be always futile when the centre of circulation continues over-active. I might digress here to some length, as the subject is an interesting one; but the object of this memoir

being merely to describe facts and occurrences, anything like discussion is contraindicated.

Suffice it to say, then, that none of the cases exhibited any great vascular excitement, and that the general bleeding was perhaps used more from speculation than cogent reason. Local depletion was in all of my own cases freely used when the disease was pronounced, and different parts of the abdomen were at times selected for this purpose. When much diarrhoea existed, the position of the lower end of the *ileum* and course of the colon was chosen,—the region of the *duodenum* in one, in which there was much yellowness of the skin and *conjunctivæ*; and in most of them, at one time or another, the *epigastrium*, without being demanded by any of what have been looked upon as specific gastric symptoms. Leeches were always used, as cupping is generally more irksome to the patient, and frequently a less efficacious means of procuring blood. From this remedy the best effects were produced,—in most of the cases a marked improvement following each application. The extent to which it was carried was regulated of course by the demand. In some cases, as of men belonging to other corps, in whom the treatment had been conducted from the beginning on different principles, and who presented the worst symptoms observed in the disease, copious leeching was invariably followed by an almost immediate change for the better, and it was from this period alone that the recovery might be dated. I can therefore safely state, that, on this remedy, I chiefly depended as a means of reducing the local affection, after which the progress of recovery was uninterrupted.

Different counter-irritants were likewise applied to the abdomen, as emetic tartar ointment, any of the ethers, turpentine, &c. the former frequently with good effects in restraining diarrhoea, and the others in relieving the sensations of uneasiness complained of.

Counter-irritation on the chest was freely used during the existence of the pectoral symptoms. Tepid and even cold sponging was plentifully used, and always produced grateful and salutary effects. The loose state of the bowels at the commencement precluded every thing in the form of purgative; but, during the course of the disease, attention was paid to procuring daily evacuations by laxatives or *enemata*. This affection, as Dr Cheyne truly observes, is not a fever that requires anything like a purgative plan of treatment,—all that is demanded being merely the emptying the contents of the canal, which is to be done only by the mildest remedies.

As adjuncts to local bleeding, in allaying the irritation of the membrane, and quieting the different uneasy sensations that occurred, I found many of the sedative medicines beneficial, and, when used with caution and due regard to the condition of the patient,

I can safely say, that, even under circumstances which might be accounted as contraindicating their employment, they always appeared to me to be followed by excellent effects. The medicines of this class chiefly used were hyoscyamus or the acetate of morphia. The former, in almost every stage of the disease, produced quietness and relief to the local pain; it in some instances gently moved the bowels, and frequently in full doses produced a quiet night's rest, without being followed by disagreeable sensations next morning. Combined with any of the gum solutions, but especially the tragacanth, it formed an excellent lenitus for allaying the cough, and, even in this form, appeared often to relieve the irritation attending the diarrhœa. The morphia was used in several severe cases in the 83d Regiment, even under the worst of the *cerebral* symptoms, with good effects, and in no instance appeared to increase them. I used it in several cases in the 32d Regiment, and found that it frequently procured good nights without any bad effects; but, in others, observing the tongue in the morning more parched, I was naturally led to substitute for it the hyoscyamus, which never occasioned any change in the secretions. In advanced cases, it answered better, particularly if there was troublesome diarrhœa.

During the whole course of the fever, the patients drank freely of cold acidulated mucilages, which relieved their thirst in a way most grateful to their feelings. During the first week or fortnight, abstinence was both enjoined and voluntary; but, on the return of the appetite, mild farinaceous diet was allowed, and the patients by degrees, as the fever declined, returned to the use of more nourishing food. In some, a little wine or malt liquor was allowed during convalescence; but they were not generally required.

I may conclude by saying, that the treatment adopted, with the exception of the depletory measures, was essentially expectant;—in fact, there were but few symptoms to combat, and I took care, as far as possible, to develope no new ones,—a care, in which, as there never appeared any of those alarming and sudden phenomena so peculiarly observed under different circumstances, I have some cause to believe I succeeded.

ART. IV.—*On the Motions of the Pupil.* By THOMAS WHARTON JONES, Esq. Surgeon.

“Il y a certainement quelque chose à decouvrir encore sur le mécanisme par lequel se meut la pupille.”—*Adelon.*

“Farther inquiry is undoubtedly necessary.”—*Lawrence.*

THE opening in the iris called the *pupil* is subject to con-