adapted to guide the student in the commencement of his career of study. We have heretofore expressed our opinion as favourable to the general end in view in the selection of apparatus of the most simple character, and the clear directions for their use, and it is now only necessary to allude to such improvements as may be presented in the editions now offered. The Introduction to Practical Chemistry is well arranged, and as full in its details as can generally be desired, and hence presents nothing of novelty in these respects. But investigations in organic products are constantly developing some new, or rendering more prominent some hitherto not sufficiently noticed facts, and more direct and simple methods of proceeding are devised, consequently the Practical Handbook of Medical Chemistry should contain such recent additions to organic chemistry as are embraced in the scope of the work. Of these Maumené's test for sugar is given under morbid urine. This, at the same time that it is very delicate, is very easy to perform, and the reagent, though not usually to be met with in the shops, is readily prepared, and being liable to but little change, may be kept on hand for general use, is a desirable addition to the means already attainable for the same end. To the means of investigating the changes in the composition of urine, that proposed by Liebig to ascertain the amount of urea present in any portion of that fluid by means of the nitrate of mercury, with which it forms a nearly insoluble compound, is one of much practical value in the hands of the physician, after he has familiarized himself with the mode of procedure by a few preliminary trials. To facilitate its use, minute details are given of the method of preparing the different solutions used, the apparatus necessary, and the mode of procedure, and the precautions necessary for an accurate result. With these as the principal additions, the work has been brought up to the present state of the science, and continues to deserve the same favour that it has previously received.

ART. XXVIII.—*Sea-Sickness: its Cause, Nature, Symptoms, and Treatment, derived from Experience and Strict Observation.* By M^r. NELKEN, Doctor Medicinæ of the Faculty of Medicine in Paris, France, of the Faculty of Medicine in Wurzburg, Bavaria, and Resident Surgeon in the New York State Hospital, Ward's Island. 8vo. pp. 32. New York, 1856: Stringer & Townsend.

ALTHOUGH to those who "go down upon the sea in ships," the sickness produced by the motion of the vessel is a source always of great annoyance and generally of no trifling suffering, it has unfortunately attracted but little attention from the medical profession. Few have attempted a careful investigation of its true character and immediate cause. This has arisen, no doubt, from the fact that sea-sickness is a troublesome rather than a dangerous disease, and one most commonly of only temporary duration, and which ceases spontaneously upon the removal of its exciting cause.

It is true, we have been favoured with various speculations in explanation of the manner in which sea-sickness is produced. It has been referred to a sympathy between the brain and peripheral nerves, to an irritation of the optic nerves, caused by the apparent vacillatory motion of everything around the vessel, to a sanguine congestion of the brain, produced by the derangement of the centre of gravity during the pitching forward of the vessel, to a sanguine depletion of the brain resulting from a centrifugal force called into action within the bloodvessels, in consequence of the oscillatory motion of the ship, and to a miasmatic intoxication. Dr. Darwin referred the production of sea-sickness to a disturbance of the brain consequent upon the unusual impression produced upon the vision by the movements of the vessel, which opinion is adopted by Dr. E. Miller, of New York, to whom we are indebted for a very excellent monograph upon the subject; he extended the explanation so as to embrace the sense

of touch as well as that of sight. Good considers sea-sickness to be produced by a disturbance of the sensorial function, caused by the direct impression made upon the brain by the motion of a vessel at sea. Vertigo, sickness of stomach, and vomiting, are the most common effects of concussion of the brain, or even of any slighter motion to which the head has been unaccustomed, as that of moving it rapidly from shoulder to shoulder in a half rotatory direction; from the same cause results the vertigo and distressing nausea and vomiting induced by whirling the body around on its own axis, by running, or by riding a horse round a small circle, by the action of swinging or of riding backward in a carriage, etc.

As little satisfactory are the views that have been advanced in respect to the proper management of sea-sickness. Emetics, purgatives, antacids, aromatics, opiates, and stimulants, have all been in turn recommended and condemned.

It was, therefore, with strong hopes of meeting with a more complete and satisfactory account of the immediate cause and true pathological character of the disease, and of the best mode of treating it, that we commenced the perusal of the essay of Dr. Nelken. As surgeon on board a ship, in its passage from London to New York, of seven weeks' duration, with five hundred and sixty passengers, of almost every age and of both sexes on board; among whom, in consequence of the rough and stormy weather they encountered, there prevailed much sea-sickness; the author had ample opportunity "to investigate the disease closely and minutely." From the commencement of the voyage his attention, he informs us, was directed to all that was going on within their little sphere, keeping a watchful eye upon each patient, and observing and recording daily each symptom and incident having reference to the disease in question. "Pre-possessed with no hypothetical theory on the subject, he confined his study to mere facts, keeping free from any tendency to seek explanation, and resolving not to adopt any opinion unless imposed by facts or the result of actual and close investigation."

The essay before us is the result of Dr. N.'s careful study of the disease under these most favourable circumstances. We had a right, therefore, to expect from it a more accurate delineation of its characteristics, a more satisfactory exposition of its pathology, and something more certain in regard to its alleviation and cure than what we were already in possession of. We regret, however, to say that this reasonable expectation has been disappointed. We find scarcely a single idea of any importance that is strictly new. The description given by the author of the disease, its symptoms, progress, and results, according as it occurs in patients of different ages, sexes, and constitution, is more full and accurate than we meet with in the few books where it is formally treated of, but in all else the author has been anticipated by Dr. E. Miller, whose monograph on sea-sickness was published in 1814.

Dr. Nelken's pathology of sea-sickness is given in the following words:—

"The long-continued and violent motion of the ship communicates its disturbing influence simultaneously to all the viscera and organs contained within the abdomen, thorax, cranium, and spinal column—that according to the idiosyncrasy—in other words, to the peculiar structure and impressibility of the ganglion, pneumogastric, and cerebro-spinal systems of nerves in different individuals, various symptoms manifest themselves. Thus with some it is the cerebro-spinal nervous system which seems most affected. The patient then suffers chiefly from dizziness. With others, it is the pneumogastric nerves which appear to be most impressed, and we then observe vomiting and difficulty of respiration as the consequence of their derangement. Again, with others, the effects of the general disturbance seem to bear particularly upon the ganglionic nerves, and result either in dyspepsia, diarrhoea, or constipation. Finally, several of these various systems of nerves may be simultaneously and equally affected, and sea-sickness then develops itself, as it has been seen in the symptomatology, under its combined or complicated forms."

This is but the theory of Dr. Good somewhat developed, but by that development brought somewhat nearer to the truth. We do not believe that the mere impression made upon the visual and external sentient organs by the motion,

apparent and real, of the ship and surrounding objects, is the producing cause of sea-sickness. We know, that by merely closing the eyes, we cannot, as Darwin and Miller suppose, ward off an attack; the fact is, that to remain as much as possible on deck "in all varieties of weather," where the "instability and unaccustomed movements of all objects upon the water," as well as the motions of the vessel itself, must necessarily be experienced to the greatest extent, is admitted on all hands to be one of the best means of preventing sea-sickness, or of allaying it after it has occurred.

Dr. Nelken's plan of treatment is to remove diarrhoea, when present, by the use of mucilaginous and aromatic drinks, or, in obstinate cases, by opiates, and to counteract costiveness, when it exists, by purgatives adapted to the obstinacy of the symptom and the constitution of the patient.

To allay vertigo and vomiting he has no confidence in aromatics or effervescent drinks, ether, or chloroform; while strychnine he ranks as much inferior to the remedy, of which we subjoin his own account.

"After frequently observing," he remarks, "that the stomach, in most of the patients, is momentarily quieted upon the ingestion of food, and that sleep affords them relief, I finally determined upon the possibility of an efficient treatment. I directed my attention, in particular, upon the whole series of narcotics, and selected morphine as the most suitable, and used it subsequently, in many cases, both for giddiness and vomiting, with entire success. I gave it in the dose of half a grain twice a day. In severe cases, and with some individuals, the dose must be increased. But in such cases great circumspection and care are required in its management. The relief afforded to the patient from the use of this narcotic does not generally last more than from twelve to twenty-four hours. With the return of the symptoms, giddiness and vomiting, the morphine must be resumed again.

"The position of the patient deserves equally to be taken into consideration—the horizontal proving much more agreeable than the erect posture, as it better supports the stomach, intestines, and all other internal viscera, and prevents thereby, to a certain degree, their too great disturbance by the oscillation of the vessel. For the same reason, an abdominal supporter, made in a manner to cover the whole abdomen, and to offer a certain degree of resistance, proves also highly serviceable."

In respect to diet, Dr. N. objects equally to abstinence, and to too great an indulgence in food.

"A generous diet," he observes, "that is, substantial and succulent food, easy of digestion, with the addition of a little brandy or wine, according to the habit of the patient, is undoubtedly the most befitting and useful. Such a regimen is nourishing and strengthening, does not oppress the stomach, but acts somewhat as a soothing or sedative remedy; in other words, *settles* the stomach. Sweetened water, with the addition of lemon-juice, or a little citric or tartaric acid, forms a grateful beverage, much enjoyed by the sea-sick. Remaining in the open air on deck, where the shock of the vessel is somewhat modified, is of undeniable service."

The treatise of Dr. N. presents, confessedly, a very good succinct account of the pathology and treatment of sea-sickness. With the exception of a more detailed account of its symptoms, his amplification of the views of Good as to the mode of its production, and his suggestions as to its treatment by morphine, we find, however, nothing whatever in it that is not much better told in the monograph of Dr. Edward Miller, published upwards of forty-two years ago. It is somewhat surprising that this well-known monograph is omitted from the list appended by Dr. N. "of all the articles or treatises heretofore published on the subject." The fact is, with a very little research, that list might be considerably increased.

D. F. C.