as has lately been recommended. In the *Medical Record*, New York, July 2nd, 1881, is a report of a meeting of the American Neurological Association. Dr. W. Hammond, of New York, is reported to have said that "he had seen many cases in which acute mania had been produced with bromides, and he believed that there was a stage beyond which bromides could not be continued without producing mental aberration. The cumulative properties of the bromides should be studied more carefully than they had been. He had had four patients die while under the extensive use of bromides under his direction."

But while I deny that there is any specific remedy or panacea for the disorder, I hasten to acknowledge that many of the conditions may be relieved by medicine. Sea-sickness, after all, is but a form of passive indigestion, the result of a functional neurosis, in which the pneumogastric nerve is either excited or depressed. Like many other functional disorders, if anything is to be done at all for it in the way of medicine, it requires to be *treated*. One is sometimes surprised at the complete failure in some cases of a remedy which in others has proved of great service; and, conversely, one is sometimes charmed with the effect of a remedy on some which has failed completely with others. With regard, for instance, to the use of alkalies as stomachic sedatives, one seems sometimes to hit upon by chance, to distinguish intuitively, or rather, perhaps, to learn by experience, what particular drug to use in each individual case. The same may be said with regard to aperients, &c. Thus would I explain the differences and agreements in the opinions of writers who have given the results of their experience to the public.

One cure, indeed, there is—viz., custom or habit. In the course of time it almost invariably asserts itself, and "we become second nature." The sooner one can accustom or habituate oneself to the altered conditions of things, the sooner will one become a good sailor. The best means of doing so is to forget it, to banish it from one's memory by the substitution of gymnastic and other exercises, and by learning the art of balancing oneself. The more that one is able to forget oneself, the more that one's attention can be distracted from one's own condition, and diverted to other things and other people, the less will one feel the disagreeable sensations. What people want on board-ship is resolution, and when the will is not sufficient and moral means have failed, the most effectual, though not by any way the most practicable, is to have recourse to force.

I may add that this is a mode of treatment perfectly well known in the merchant service, and found to be of inestimable value even at the very commencement of the complaint.

Liverpool.

SEA-SICKNESS, ITS CAUSES AND TREATMENT.

By P. W. G. NUNN, L.R.C.P. LOND., M.R.C.S.

THE symptoms of this distressing complaint are in all probability known to most of us, but a careful consideration of each symptom as it occurs may perhaps help us better to understand the true causes of the disorder, and to suggest a remedy. In all cases of sea-sickness, the actual vomiting is preceded by certain sensory impressions. I allude more especially to the disgust of the sense of sight, smell, and taste. For instance, most of us have observed that the sight of a person actually sick will often precipitate vomiting in another; so also are we very prone to be annoyed by certain smells which, under ordinary conditions, we should take no notice of, or odours which in some instances might be the reverse of unpleasant. Sea-sickness is generally accompanied by a sensation of chilliness and cold perspiration. Extreme pallor of the face is always noticed before vomiting; this pallor is not altogether like that preceding faintness, and as a rule is not accompanied with giddiness. This syncope condition is, I think, more allied to that form of shock which occurs in a strangulated or intussuscepted bowel, or from a severe blow over the abdomen. A knocking, or sensation of pulsation in the head, is often complained of by some people at this period. An excess of saliva (liberated probably by a paralytic condition of the ducts) is generally noticed in the mouth before sickness. The vomiting is usually sudden, with free discharge of contents of stomach. For a few moments after the vomiting the sick person feels

somewhat better, but the nausea and vomiting soon return, and become as horrible as before. The feeling of utter prostration which comes on at this period is only too well known to most of us, and need not be described. If the voyage be a long one, this excessive condition of prostration, with inability to take food, may cause the condition of the patient to become serious. Constipation, due to a cessation of the normal peristalsis, may also become a dangerous symptom.

Causes.—The causes of sea-sickness are undoubtedly in the first instance mechanical. If it were possible to make a tracing of the movement of the vessel with the same accuracy that the pulse and respiration can be taken, we should find that no two successive movements were equal, either in time of swing or direction. No two waves are of exactly the same height, nor does the ship rise over them in the same period of time. It is an impossibility to get absolute rhythmical or synchronous movement. In consequence, then, of this great irregularity of movement the voluntary but automatically acting muscles of the abdomen are unable to fulfil their duties of pressing and supporting the contained abdominal organs. In other words, they are reflexly unable to appreciate the exact moment of time when the upward or downward movement of the vessel takes place, and are thus unable to act effectually. Want of support and due pressure on the contained abdominal organs permit greater latitude of movement, and especially increase the downward movement of the small intestines on their attached mesentery. These parts are perhaps more mobile than any other part, and the mesentery being very highly endowed with nerves, ganglia, and bloodvessels, a disturbance and discomfort must soon occur from the unaccustomed pitching and stretching that ensue, especially on the downward movement of the vessel. In connexion with this loss of tonic support by the abdominal muscles it is easy to understand how persons with pendulous and flaccid abdomens suffer as a rule more intensely from sea-sickness than others. The want of normal pressure by the abdominal muscles and a continuation of the deflexion and undue stretching of the intestines on their mesentery soon produce nerve-shock and paralysis, more especially to those branches of the sympathetic which are connected with the small intestines, and those vaso-motor branches which control the calibre of the bloodvessels. The normal tonic contraction of the arteries, which should exist, gives place to vascular dilatation, and the blood in these vessels becomes increased. The arteries of the abdominal area are more dilatable than those of any other area, and this with the loss of resistance in the vessels will permit the admission of an undue amount of blood. This extra blood is abstracted from the general circulation, and consequently other areas become anæmic, and their tone lowered. From the evidence of syncope before mentioned, it is quite clear that there is a defective supply of blood to the head and extremities. The defective tone of the cerebral circulation may account for the sensation of knocking or pulsation in the head so often experienced in sea-sickness. The immediate cause of the actual vomiting may be due to the excessive irritability of the periphery of the nerves of the stomach and intestines, due to the before-mentioned hyperæmia, or to the anæmic and disturbed circulation of the brain and spinal cord. The nausea which some persons feel when riding with their backs to an engine or horse, although less in degree, is susceptible of a similar interpretation. For instance, when a person rides back to the engine (or horse), any continuous jarring or irregularity of the moving vehicle tends to throw the mesentery and bowels from their spinal attachments forwards, and so stretch them; but when riding face to the engine, the tendency is to throw the bowels and mesentery on to their spinal attachment in the reverse way, and consequently without any stretching of the nerves or vessels. The abdominal muscles, acting also as a guard, appreciate the shock first and press inwards.

Treatment.—From the foregoing remarks on the symptoms and probable causes of sea-sickness, it will now be readily understood that anything which decreases the mobility of the abdominal organs or mesentery tends to check the severity of sea-sickness. Following out this practice, I always recommend the taking of a brisk aperient pill, either compound rhubarb or aloes, on the evening previous to a sea voyage. This removes all solid matter, and by so doing lessens the pendulous action of the intestines on their mesentery. The vacuum produced is replaced by certain gaseous matters which, I think, are rather beneficial than otherwise. This leads me up to refer to the value of most effervescing drinks, such as champagne, soda-water, zoedone,

&c. The benefit resulting from these is due, I think, to the liberated carbonic acid gas; this gives pressure and support to the abdominal organs from within, and renders them less liable to be depressed. The inhalation of nitrite of amyl has at different times been recommended for this disorder, and sometimes used beneficially, but it relieves only one of the symptoms of sea-sickness—viz., the syncope. It is a dangerous remedy if persisted in, and should never be used except under the direction of a medical man. Chloral and morphia injections can only act by their power of narcosis, which causes a blunting of peripheral and central sensibility.

Pressure over the abdomen is by far the most hopeful remedy we possess. A well-made mechanical appliance, specially designed for this purpose, and made for me by Messrs. Maw, Son, and Thompson, Aldersgate-street, I have found to be most efficient. This support fixes the abdominal organs, it also helps to do the work of the abdominal muscles until they become sufficiently educated to reflexly appreciate the exact moment when their duties should be performed. Bearing upon this latter point, it is well known that old sailors, after a long Pacific voyage, where the seas are regular and very large, frequently become sea-sick when crossing the British Channel and the Firths, where the waves are short and choppy, and the movements of the vessel very different from that which they have been accustomed to. In this case the abdominal muscles of the sailors have been well accustomed to one kind of movement, but are utterly unable to appreciate the other. It is found by experience that if the abdominal muscles can be kept in an almost continuous state of contraction, the tendency to sea-sickness is very much lessened. We can do this either by strongly willing to make these muscles contract, or by making a continuous expiratory effort as in singing or whistling; but most will agree with me that this would be by far too tedious a procedure to recommend.

It is well known that certain positions in a vessel are more likely to provoke sea-sickness than others. For example,

an upright position with the back to the bows of a ship, and at one or other extremity of the vessel, is more likely to induce sea-sickness than the horizontal in the centre of the vessel would be. If from any cause the voyager is unable to assume the recumbent position, the next best one is to sit down on a low chair or stool, with the knees drawn up to the body, the body being bent forwards, and a roll of clothing pressed between the stomach and the knees. I have often noticed that this position gives relief, the extreme pallor of the face changing to a normal colour.

The abdominal support before alluded to is in the form of a belt with five air-cells worked between the two layers of the material—three in front, A, B, C, and two behind, D and E. These air-cells are all connected together by small airtight tubes, F, F, and with the inflating nozzle G, and outlet plug H. The belt is applied to the body over the jersey, and buckled comfortably tight. When the sea is gentle and smooth, there is no need to tighten the belt by inflating the air-cells, but if rough these are inflated until such compression is produced as will convey a sense of support and comfort. The belt when inflated is not noticed under a loose waistcoat. If worn by ladies it should be worn without stays. The pads D and E are applied over the small of the back on either side of the spine. When the air-cells are strongly inflated, the belt is capable of sustaining a person in the water. When used for this purpose, care should be taken to secure the shoulder-straps crossways over the neck, and the belt should be drawn up under the arms.

Bournemouth.

ON CONCEALED ACCIDENTAL HÆMORRHAGE; WITH CASES.

BY EDGAR G. BARNES, M.D. LOND.

THE subject of this paper has been forced upon me by the occurrence of two cases which I will briefly relate, and which I think are sufficiently uncommon to justify me in recording them.

Cases of so-called accidental hæmorrhage are of course common, but cases in which that form of hæmorrhage is concealed in the complete manner in which it was concealed in these cases are rare, and at the same so difficult to diagnose in their early stages, and so frequently fatal, as to give them a very painful interest to those who, engaged in the practice of midwifery, may at any time be required to diagnose and treat them, possibly without the advantage of the advice and assistance of a colleague.

My first case occurred on Oct. 6th, 1877. A healthy woman, about thirty-five years of age, pregnant with her third child, and daily expecting her delivery, sent for me at 9 A.M. in consequence of being taken with faintness and shivering. On my arrival I found her looking pale and faint, and she had that kind of shivering, without the sensation of cold, which so often occurs during labour. Her pulse was only 90, and her symptoms then did not alarm me. I considered them due to the nausea and discomfort which frequently precede labour, and having made a vaginal examination, and found a natural presentation, and the os uteri undilated, I contented myself with giving a dose of opium with spirit of ether, and requested that I should be sent for if she became worse. At 3 P.M., when I was again summoned, I found the aspect of the case strangely altered. She had had a little pain since my visit in the morning, chiefly of an aching, stretching character, and unlike labour pains in being continuous, though slightly increased at intervals. She was blanched, extremely faint, with an anxious countenance and restless manner; her skin was cold, her pulse of that character best known as "rapid," a combination of extreme frequency with extreme feebleness—in fact, she had all the symptoms of a woman dying from hæmorrhage. I placed my hand on her body and was instantly struck by the immense enlargement which had taken place in the uterus since I left her, six hours previously, and I came to the conclusion that this must be due to hæmorrhage into the cavity of the uterus, but was somewhat puzzled to find there was not even the slightest discharge of either blood or serum externally. The os uteri was at this time dilated to the size of a crown-piece, or a little larger, and readily dilatable to any extent that might be necessary; the membranes were tense and bulging, and the head presenting; and I hastily resolved on a procedure which I know many will be inclined to criticise, and possibly, on more mature reflection, I might have decided on a different course. My practice in this case, however, has the sanction of as eminent an authority as the late Dr. Robert Lee, who advises that where a great internal hæmorrhage has taken place, turning should be preferred to the simple rupture of the membranes, as the over-distended uterus does not contract sufficiently to restrain the flow of blood. Following this practice, then, I turned the child. When I ruptured the membranes in the course of this operation, an immense quantity of blood was forced out by the side of my arm in jets like water from a garden hose—myself, the bed, the floor, the very walls were drenched, and the whole formed a scene of distress not readily forgotten. I delivered without difficulty a dead female child; and the placenta, which seemed fatty and readily torn, also came away easily. Shortly after delivery the collapse increased, her respiration became sighing, and extreme restlessness supervened. I gave a dose of ergot, as the uterus did not contract well, and then ten minims of laudanum with a little ether. Slight oozing continuing, I injected perchloride of iron into the uterus and ether under the skin, but she expired one hour and a half after delivery.

My second case occurred on Aug. 7th, 1880, the patient again being a healthy woman about thirty-five years of age, who had had several children previously. As my partner (Dr. Miller) and I were driving past her house we were called in. We found her pale and collapsed, with rapid pulse and exsanguine lips, and with a fixed impression of im-