of eruption, and without any desquamation following; the father, with patches of the rose-coloured rash on his arms, his chest, and his legs, and subsequently the skin peeled in large pieces from his hands.

Now, supposing that these four cases had occurred independently of one another, and unconnected with an epidemic, would they have been recognised as examples of the same disease?

DISLOCATION OF THE SCAPULA.

By W. E. HOME, M.B. Edin., B.Sc., Surgeon, R.N.,
H.M.S. *Alexandra*.

[Communicated by the DIRECTOR-GENERAL OF THE MEDICAL DEPARTMENT OF THE NAVY.]

As dislocations of the scapula are not very common, it may be worth while to put the following case on record.

No. 438, aged 32, captain of the maintop, H.M.S. *Alexandra*, when on leave in Valletta on July 1st, 1886, slipped on a piece of orange peel and fell, striking the back of his left shoulder against the kerbstone. On rising he felt pain in and about the shoulder, so much increased by movement that he came off at once to the ship. When I saw him, half an hour after the accident, he was sitting stripped to the waist, and leaning forward so as to support the left elbow on the knee. The anterior axillary fold was lower on the left side than on the right, and the girth round the shoulder through the axilla was also greater on this side than on the other by an inch. The left clavicle was the same length as the right, and, like the left acromion, was smooth in outline and continuous with itself all round; however, between the clavicle and acromion was a deep groove in which the finger could be laid. The scapula had been displaced downwards, outwards, and forwards, the tip of the coracoid being an inch and a quarter below and a little to the inner side of the outer end of the clavicle. On pressing the clavicle down and the shoulder upwards and backwards, the pain (felt along the insertion of the trapezius chiefly) was relieved, and the normal appearance of the shoulder was restored. To retain the parts in position, the outer end of the clavicle was fixed by a piece of strapping (4 inches by 15 inches) passed over it, another strap, folded round the middle third of the arm and drawn tightly across the back, steadied the arm and shoulder, while the elbow was brought forward and pressed upward by a flannel roller, passing round the body and over the right shoulder. The patient was then laid on his back in bed. On July 9th the strapping was reapplied; and on the 17th he was allowed to get up. The strapping was removed on the 22nd (three weeks after the accident), and he was discharged to duty, well, on the 24th.

Seen again on August 21st, 1887, fourteen months after the accident, he declared that the arm was as strong as ever, and that it gave him no inconvenience. The outer end of the clavicle is somewhat thickened; but the relations of the clavicle to the coracoid, acromion, and scapula, generally, are quite normal, and are so maintained during movements, which are all perfectly performed.

The primary treatment was Sayre's for fractured clavicle; but I believe that the fortnight's rest in bed had nearly as much to do with the successful result.

THE TREATMENT OF SEA-SICKNESS.

By W. W. SKINNER, M.D.,

Formerly House-Surgeon of the Hospital of St. Denis; Corresponding Member of the Anatomical Society of Paris.

DURING the course of several long voyages made in 1886 as ship's surgeon, I have investigated sea-sickness, and have devised a method of treatment of this affection at once simple and efficacious.

The nervous symptoms are as follows: Great prostration; indisposition to make the least effort; vertigo; intense frontal or temporal cephalalgia; a sensation of uneasiness, weakness, and discomfort; and insomnia which may extend over several days. All forms of reflex action remain intact. Myosis is often also observed in these cases. The digestive apparatus furnishes the most striking and best known phenomena: anorexia, adipsia, paleness and coldness of the lips, ptialism, nausea, emesis, gastralgia (frequent after three or four days of sickness), and especially constipation. The tongue, liver, and spleen are normal in uncomplicated cases. The disturbance of the circulatory apparatus, including diminished force of the cardiac pulsations with consequent abnormal depressibility of the pulse, decrease in the number of cardiac contractions (constant decrease in men and in one-half of the cases in women; minimum observed, 57, 51, 45 beats; in women there is often increase: maximum observed, 114

without fever; while in children of both sexes there is almost always increase: maximum observed, 120, without fever), the capillary circulation appears diminished, as may be inferred from the coldness of the extremities, lips, ears, and nose, and from the extreme paleness of the skin. The muscles, composed of unstriated fibres which receive their nerves from the sympathetic system, are evidently parietic, as is denoted by the inertia of the intestines and by the myosis. The urine, as is well known, is excreted in exceedingly small quantities. It preserves its normal colour, precipitates no sediment, is acid, clear, and free from albumen and glucose. Finally, sea-sickness is an apyretic affection, and the period of invasion is exceedingly variable, being from a few seconds to several hours.

For all these varied phenomena there is, I think, a simple explanation to be advanced. Sea-sickness, or naupathia, ought to be regarded as the expression and resultant of certain purely functional or dynamic disorders of the organism, which can all be referred, directly or indirectly, to the sympathetic nervous system. Every symptom named above can be explained by invoking a paralysis, or at least a paresis, of this system, and sea-sickness can be cured by the use of those alkaloids which stimulate the great sympathetic and the unstriated muscular fibres to which it is distributed. The constipation, for instance, may be due to defective action of the great sympathetic upon the muscular coat of the intestine; the myosis to its defective action upon the radiated fibres of the iris; the slowness and weakness of the heart's pulsations to the defective action of the cervical portion upon the intracardiac motor ganglia (Brücke and other authors);¹ finally, general paresis of the great sympathetic explains the lowering of the arterial blood-pressure, which is indicated by the oliguria, the abnormal depressibility of the pulse, the coldness of the extremities, the extraordinary pallor of the skin, and the signs of cerebral anæmia. The symptoms of nausea and vomiting are generally attributed to anæmia of the medulla oblongata, which is due, no doubt, to the general lowering of the arterial tension. Moreover, I have demonstrated by actual manometric experiments upon the lower animals that the alkaloids employed in the new method of treatment, and which cure sea-sickness, really possess the property of raising the blood-pressure.

Excitation of the nerve endings in the abdominal organs, or of the senses of vision and olfaction, or of both, causes by reflex action a suspension of the motor functions of the great sympathetic, which in turn results in the general lowering of the blood-pressure, with all its attendant symptoms.

The medicinal substances employed are atropine, strychnine, and caffeine; the two former are administered simultaneously, the latter alone. Sea-sickness may be cured either by atropine associated with strychnine or by caffeine held in concentrated solution by salicylate or benzoate of sodium. These substances are all administered hypodermically. This mode of administration was chosen for the following reasons: the frequent vomiting in naupathia, by which the agents employed would be lost; the difficulty of their absorption from the stomach in this affection; and also the retaining and destructive action of the liver upon these alkaloids when absorbed from the gastro-intestinal tract (Heger, Schiiff, Lantenbach, and others).

The dose of atropine and strychnine for adults is 1 milligramme of each. It would, perhaps, be better to give a little less of atropine and the double or triple of strychnine. The following, however, is the formula I have employed up to the present time: Atropine sulph., strychnine sulph., aa 0.04 gramme; aq. menthæ, 40 grammes. One gramme of this solution contains 1 milligramme of each of the alkaloid salts. In warm climates the solution must be frequently renewed. Although these substances have been employed a great many times for sea-sickness during the last eighteen months, no injurious effect therefrom has been observed. If after two hours the patient is not cured, a second injection of 1 gramme of the mixture may be given, but it would be imprudent to repeat this dose of atropine too frequently.

Children and adolescents are very susceptible to this medication. A girl aged 2½, sick during fourteen hours, was promptly cured by the injection of one-sixth of a gramme of the solution, that is, by about 0.00016 of a gramme of atropine and as much of strychnine. A boy aged 6 was cured by one-fourth of a gramme of the mixture.

In the majority of cases of simple naupathia, the patients cease vomiting immediately after receiving a single injection of one gramme of the solution. A little later they feel no more nausea, headache, nor vertigo. Almost always they fall asleep shortly after receiving the injection, and remain sleeping for half or three-quarters of an

¹ When there is an increase in the number of pulsations it ought to be attributed to a coexisting paresis of the pneumogastries (vagi) due to anæmia of the medulla.