occurred in the Japanese ship *Hujei* at the battle of Yalu are to be avoided. In this ship the surgeons' station was in the unprotected wardroom. Here a shell entered and exploded, killing or severely wounding the surgeons, nurses, and most of the wounded who had been brought there for treatment, and destroying all the surgical instruments and dressings. This shell also set fire to the ship, and in separating from her consorts to extinguish the fire she lost them, and was without medical assistance of any kind until the following forenoon. When the surgeons who came to her assistance got on board, they found twenty corpses and thirty-five wounded men.

2. *The Time of Treatment.*—In all modern navies it has always been the custom in time of war, and, until recently, the intention in time of peace, to remove the wounded at once from where they fell to the surgical station for immediate treatment. It has, however, for some time been inferred that in future naval warfare it will not be practicable to remove the wounded during an action, but that they will have to shift for themselves until it is over or a lull occurs in the fighting; and the experience of the Japanese in their naval battles in the late war with China must be taken as demonstrating that this inference is correct, and that the practice of the past must be abandoned.

Of course, the conditions which have brought about this proposed revolution in the treatment of naval wounded are connected with the construction of modern ships and the nature of modern fighting, but there are also other conditions which, though by themselves would not justify a departure from the old custom, yet show that the new intention is not so inhuman as it would at first sight appear. Thus the duration of a modern naval action is short, the wounds are rarely attended with dangerous bleeding—not so often as in the days of solid projectiles—there are few suitable places on board a ship where the wounded would be safer than where the bulk of the men are fighting; and during an action, as the Japanese found, the surgeons are not able to do work of any value. M. Fontan, Médecin en chef de la Marine de France, in a paper which he read at the International Medical Congress in Paris in 1900, stated that it had been practically decided in the French Navy not to attempt to give treatment, altogether illusory, to wounded during an action. The men should receive an elementary instruction in how to assist themselves, and a goodly supply of stimulating and restorative drinks should be provided before the action began.

3. *Conveyance of Wounded.* — Though the wounded may be allowed to remain where injured during an action, when it is over they will have to be moved either for treatment on board their own ships, or, what will be better if obtainable, discharge into hospital ships.

For the conveyance of sick and wounded men on board ship, both in peace and war, many contrivances have been proposed and used, but except the service cot, stretcher, and ambulance hammock, none has received official recognition. As far as I am aware, this is also the state of matters in all foreign navies except those of France and Chili, in which M. Auffret's *gouttière metallique* has been adopted. The Japanese, during their war with China, were only provided with the ordinary appliances I have mentioned, and, as might have been expected, they found these useless under the conditions of war. They threw them aside, and carried the wounded by hand alone. This method, however, has two great disadvantages—the large number of men required to carry the wounded (four for each) and the great danger of aggravating the injuries, especially when there is fracture of bone.

An ambulance to be suitable for use on board ship must satisfy several conditions. It should be able to retain its occupant safely in all positions, from horizontal to perpendicular; it should be able to go down a hatchway by sliding down the ladder, if there is one, or by being lowered at any angle, if there is none; it should be as short as possible in order to get easily round corners; and in confined spaces, where there is not room for two men to carry it, it should be transportable by one.

As far back as 1886 I brought under the notice of the Naval Medical Department an apparatus which I had invented to meet these conditions, and which I now call an "ambulance sleigh." Not meeting with approval, when brought forward, on account of its size and weight, I allowed it to lie aside for fourteen years. Last year, when attending the International Congress at Paris, I became aware of the existence of M. Auffret's *gouttière metallique*, which has lately been introduced into the French and Chilian navies, and on which its inventor began to work in 1892. This apparatus I was surprised and pleased to find was constructed much on the same plan as my ambulance sleigh, except that it lacked the distinctive and most valuable sleigh characteristic of my apparatus. On returning to England I resurrected my old invention, lightened and improved it, and it is now undergoing official trial.

To make more complete my reference to the conveyance of wounded on board ship, I must mention some of the other contrivances which have been from time to time proposed. Among them are modifications of the service hammock (Macdonald), cot (Gorgas and Loyd), and stretcher (Dick), and Mowll's patent chair.

previous page next page