

Observations on the preliminary care and attention necessary for accidental bodily injuries and mutilations occurring in mines and establishments where many workpeople are employed / by T. Longmore.

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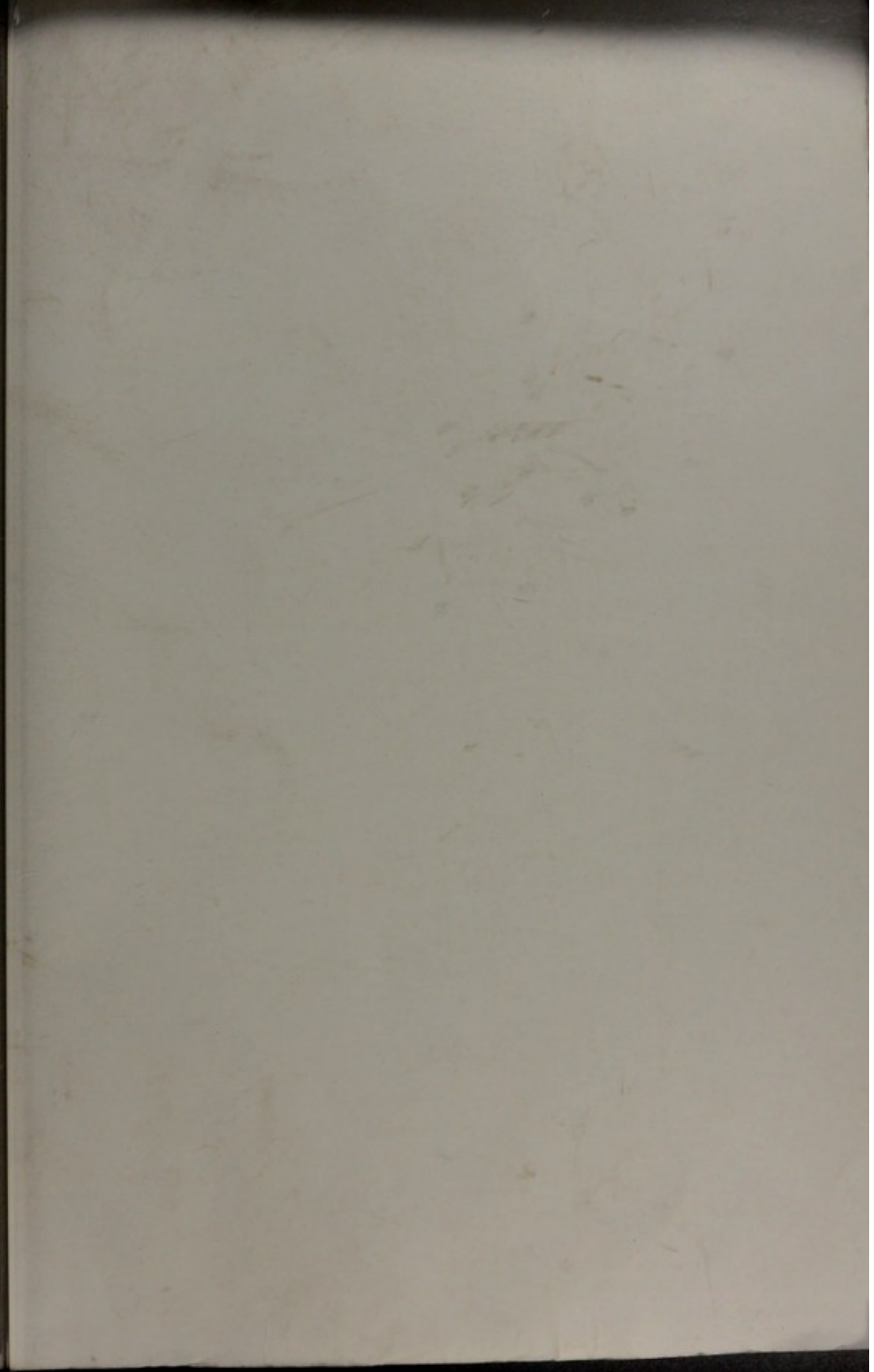
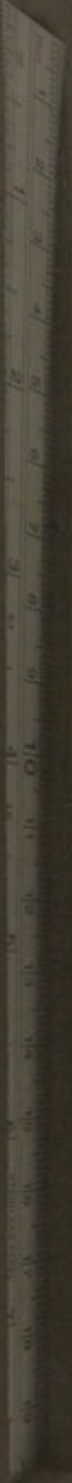
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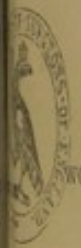


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OBSERVATION

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PRELIMINARY CARE AND
NECESSARY FOR ACCIDENTAL
AND MUTILATIONS OCCURRING
AND ESTABLISHMENT

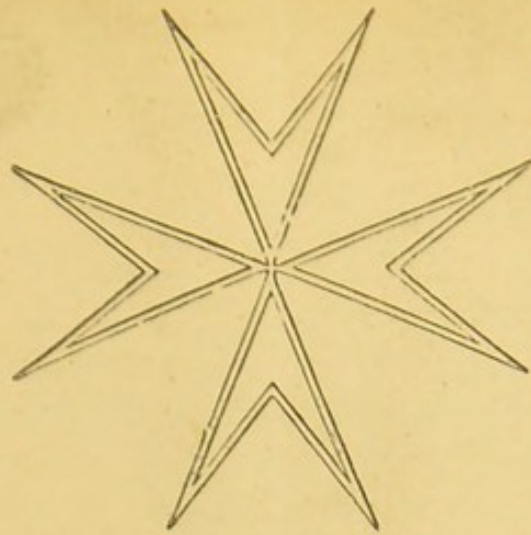


WHERE MANY
WORKPEOPLE ARE EMPLOYED

BY
SURGEON-GENERAL T. L. CLARKE
*Honorary Surgeon to Her Majesty; Honorary
of St. John of Jerusalem in England; Fellow
Surgeon in the Army Medical Department
etc., etc., etc.*

READ AT THE ANNUAL GENERAL MEETING
OF THE ORDER OF ST. JOHN OF JERUSALEM
LONDON ON ST. JOHN BAPTIST DAY

14



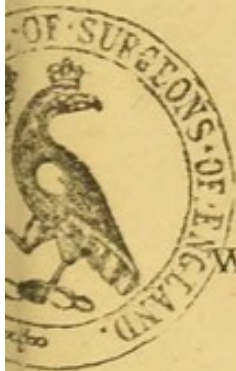
OBSERVATIONS

ON THE

PRELIMINARY CARE AND ATTENTION
NECESSARY FOR ACCIDENTAL BODILY INJURIES
AND MUTILATIONS OCCURRING IN MINES
AND ESTABLISHMENTS

WHERE MANY

WORKPEOPLE ARE EMPLOYED.



PRESENTED
by the
AUTHOR.

BY

SURGEON-GENERAL T. LONGMORE, C.B.,

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etc., etc., etc.*

READ AT THE ANNUAL GENERAL ASSEMBLY
OF THE ORDER OF ST. JOHN OF JERUSALEM, HELD IN
LONDON ON ST. JOHN BAPTIST'S DAY 1874.



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OBSERVATIONS

ON THE

*Preliminary Care and Attention necessary for Accidental Bodily Injuries
and Mutilations occurring in Mines and Establishments where
many Workpeople are Employed.*

MY LORDS, LADIES, GENTLEMEN—HOSPITALLERS,

The Secretary of the Order, Sir Edmund Lechmere, who appears not to be satisfied with the good works he is already engaged in, but to be constantly on the look out for fresh opportunities of exertion *pro utilitate hominum*, has asked me to furnish a short paper on the care and conveyance of injured persons in peace time, with particular reference to the Mining and Colliery Districts where accidents are frequent. In obedience to that request, I beg to submit the following notes, merely prefacing them with the remark that I have taken the liberty of considering the necessities of injured persons, not only in mines and collieries, but in all situations where bodies of people are collected together under conditions which render them liable to meet with grave injuries requiring hospital treatment.

In every establishment in which many persons are employed and in which the nature either of the occupations followed, or of the machinery in use, entails risk of accidents and injuries, there ought to be some arrangements made beforehand for dealing efficiently with these casualties should they happen to occur. The necessity for such a provision is all the greater in proportion to the distance at which the establishment is placed from a hospital, or from skilled surgical aid. But even when professional aid is not far off, the means of affording immediate preliminary help ought still to be provided; for this preliminary

help in many cases will materially lessen the ill consequences of an accident, and in occasional cases will be the means of saving lives which, without it, would be lost before the patients could be placed in a hospital, or professional assistance be brought to the patients.

The organisation for providing the necessary attention in accidents entailing bodily injuries should be simple and inexpensive in character, and, like the means for extinguishing a fire, should be so contrived as to ensure that, whatever provision is made, it shall always be at hand and be in working order. The organisation should be simple and inexpensive, because, if so, it is more likely to be generally adopted in mining, manufacturing, and other such establishments: it should ensure the means of help being always at hand and ready to be applied, because no one can say beforehand at what moment the need for their application may occur.

In order to carry out the last named requisite the provision for administering the first help must be within the establishment concerned, and must form part of it. If placed outside the establishment, no dependence can be placed on the help provided being forthcoming at the moment it is urgently required.

The provision to be made must include certain *material* means of help, and certain *personal* means of help. To carry out the analogy with the arrangements for meeting the accident of fire, just as these ordinarily comprise a supply of water at hand, and the necessary mechanical appliances for conveying and applying it to the place where the fire breaks out, and just as there must be on the spot persons knowing where to find these appliances and how to use them, so, in cases of bodily injuries, certain protective and supporting materials must be on the spot for use on these accidents occurring, and certain persons capable of using them in the requisite way. But the analogy ceases with this general resemblance. In the case of fire, if the material means are well devised and well disposed, any one who possesses sufficient bodily strength can give valuable assistance in applying them to meet the existing exigency. Not so, however, in bodily injuries. These vary so greatly in their characters, they are always of so delicate and complicated a nature, that though the requisite material provision may be at hand, persons not acquainted with the proper mode of applying it, may, if they attempt to put it to use, do no good, and indeed

in some instances may do so much mischief that the patients would have been better without the interference. In short, to meet cases of serious bodily injuries, it is not enough to provide the needful material means of help, but the persons on whom the application of these means will devolve must be trained to apply them.

I will not attempt to mention the various ways in which early assistance in cases of severe bodily injuries by persons having a certain amount of needful knowledge may be of essential, even vital, benefit; nor the various ways, on the other hand, in which ignorant, though zealous and kindly intentioned, interference may entail serious mischief on the disabled recipients. It would require time to enlarge on the topic, and I take for granted that most persons are sufficiently acquainted with the general truth, that immediate attention is required in all grave bodily hurts, but that, when given, whether it does good or whether it does harm will depend upon the manner in which it is given.

The following questions then arise :—

1. What are the material means of help which should be provided?
2. Who are the persons to be trained to use them?
3. What training should these persons receive?

I will try to furnish replies to these three questions in succession.

First, What material means of help should be provided?

These must consist of (a) some materials for dressing wounds, and contrivances for the protection of the parts injured; (b) a few instruments for special purposes or for general use in injuries; and lastly, (c) some kind of conveyances for removal of injured persons to their homes or to hospital.

In considering the particular articles that should be provided under these three sections, it is to be borne in mind that only provisional treatment and protection are contemplated, and that this preliminary treatment is to be afforded by persons whose knowledge and experience will be of comparatively a very limited character.

The nature of the injuries which persons engaged in special occupations are liable to must also be taken into account. If the occupation be such as to cause the occurrence of extensive

burns to be not improbable, obviously the materials for dressing such injuries should form a large proportion of the provision under the first section. If it be such that severe lacerations by machinery or cutting of limbs by sharp instruments are to be feared, the dressings provided will principally consist of those necessary for the first care of wounds. If it be such as not improbably to cause fractures of bones from falls or crushing violence, an ample provision for the protection of the injured parts against aggravation of the original injury until they can be placed under the care of a surgeon will be necessary. These modifications in the arrangements must be made when the provision for particular establishments is being settled.

As, however, in every undertaking in which many workpeople are employed, such as a mine, colliery, large factory, or a steam-mill,* accidents of any one of the kinds above named may occur, the material means of help provided should include the necessary primary dressings for all such injuries. These primary dressings, whatever their nature, should be as few in number and as simple in character as possible.

The following list will probably include all the materials and instruments that need be at hand under the first two sections (a) and (b):—

- (a) *Materials for first dressings and appliances*: lint, triangular bandages, carbolized tow, cotton wool, splints.
- (b) *Instruments*: Tourniquets, hospital attendants' dressing case.

The quantities of dressings provided need not be large, as in the fixed establishments of civil life they can be readily renewed when expended.

The splints for the protection of broken limbs should be of a simple kind, easily applied, and accompanied with plain directions for their use. The splints, to which the name of "Moffitt's battlefield splints" has been given, would perhaps prove the most suitable for the circumstances contemplated.

The tourniquets under section (b) should also be of a kind easily applied, and such as are not likely, though their use may be long continued, to lead to injurious constriction and conges-

* In docks and very large establishments where accidents are liable to occur frequently, there ought always to be a surgery complete in surgical appliances and materials, and a surgeon on duty during the hours of general work. The remarks in this paper refer, however, only to establishments where there is no resident surgeon.

tion of the limbs upon which they are placed. The tourniquets known as the Winged Screw Tourniquets would be the best suited for the purpose.*

The dressing case need contain but few articles. A surgeon's pocket-case, containing cutting and other special surgical instruments, would be quite out of place as part of the provision to meet the needs contemplated. The army hospital attendants' dressing case, arranged by the Surgeon who designed the fracture splints just now mentioned, contains the following articles, and they are all such as are usually required when bodily injuries have to be attended to in numbers together: (1) strong clasp knife, suitable for cutting up boots; (2) strong scissors, suitable for cutting thick clothing, &c.; (3) pins; (4) needles; (5) thread; (6) forceps.†

The third section includes the conveyances for the removal of injured persons to their homes or to hospital. These will probably vary to some extent according to the distance and the nature of the ground that has to be passed over before the homes or hospital can be reached, and to the kind of vehicle in ordinary use in the locality concerned. As a general rule it cannot be expected that regular wheeled ambulance carriages constructed for draft by horses will be available for such purposes in civil life. Ambulance conveyances that can be moved and managed by a couple of men will be more generally suitable. If the distance be not far, nothing is better than carriage on a hand-litter or stretcher; but it is essential for the comfort and safety of patients that those who act as bearers of such conveyances should have had preliminary instruction and practice in the mode of carrying them. As a kind of conveyance that can be managed with comparatively little training, and that combines moderate cost with general suitability for the removal of sick and wounded persons, that can be easily wheeled over even roads by one man, and easily carried over a ditch or other obstacle by a couple of men, I have generally recommended Neuss's two-wheeled litter. These litters are equally suitable

* These tourniquets, and the splints mentioned in the previous paragraph, are to be obtained at Messrs. Evans and Wormull's, 6, Dowgate Hill, London, E.C.

† The army hospital attendants' dressing case contains, in addition to the above, a spatula and a probe, but these would not be required for use in the *preliminary* dressings of injuries.

for moving sick people as for moving wounded ones, but of course it would not be prudent to use the same litter for removing persons suffering from small-pox or infectious fevers, and for the conveyance of persons disabled by injuries or sickness of a non-infectious character.

Two of these ambulance litters have been already procured by the Chapter, and one is now established at Burslem, under the direction of a Committee of the Order, and the other at Worcester, and as four others have been ordered, their practical advantages for the purposes contemplated will shortly be fully tested. It is a subject for congratulation that Surgeon-Major Manley, V.C., whose generous donation of money has enabled the Chapter to carry out Sir Edmund Lechmere's suggestion of the formation of an Ambulance Department, has consented to take general charge of this portion of the work of the Order, for no one could have been selected more competent to undertake the task.

The second question is: Who are the persons to be trained to apply the means provided for administering the first help in cases of accident?

In all large establishments like collieries and factories, in order to ensure the persons who have been trained for administering help being constantly at hand, it seems to be essential that they should be persons forming part of the establishment in which the need of help may occur. The party should consist at least of one head as director, and four subordinates for every hundred persons employed in the establishment; or still better, if practicable, of six subordinates, so that the casual absence or disability of one or other of the party may not impair the efficiency of the help provided. If more than one party be formed, a chief director should be appointed. The head should always be a person of general intelligence and of acknowledged influence, and one who, in training, had exhibited the necessary aptitude and liking for the work. The subordinate aids should also be reliable persons selected for aptitude and willingness to undertake the charitable and responsible duties of helping their wounded fellow-workers, and conveying them, if needed, to hospital. The chief of the party should be in charge of the surgical stores for accidents. Local means should be adopted to ensure a knowledge among all the persons employed in a given establishment of the arrangements made for meeting accidents, and especially for preventing delay

in communicating with the chief of the aid staff whenever an accident may occur.

For general purposes, in a town for example, the necessary Ambulance Corps can be trained, equipped, and stationed ready for call, under the direction of a Committee of the Order ; or, if the *personnel* can be obtained by other means, and the Order would provide the conveyances, retaining proper control over them, very great advantages would accrue from even this help to sick and injured persons requiring removal to hospital. So long as the necessary primary assistance and protection can be furnished on the spot itself where a grave accident occurs, the time occupied in sending a messenger and collecting the Ambulance Corps and their litters would be of no material account.

The third question is: What training should the persons named in the second question receive?

Neither reading nor oral instruction are sufficient for training persons to deal with the accidents and injuries to which men are liable in great manufacturing or mining establishments. There must be a certain amount of manual practice, in order to enable a theoretical knowledge of the modes of attending to injured persons to be turned to really useful account. How to stop the flow of blood from a severed artery—how to treat a person when faint, or in a state of collapse from bleeding—how to lift injured persons according to the kind of injuries they have received—how to protect a broken limb, so that it may not be further damaged beyond probable hope of recovery during the removal of the patient—how to carry disabled persons on stretchers, or to convey them to their destination in wheeled litters, without aggravating their injuries, and increasing their sufferings—and other like matters, can only be taught by demonstration and practical instruction.

The training should be as simple and brief as practicable consistent with obtaining the requisite efficiency. I would suggest the following as the headings of the course of instruction which should be acquired by the accident helpers contemplated in this paper:—

1. A slight general knowledge of the human body, with particular knowledge of the position of the main arteries of the limbs.
2. The use of tourniquets, and a knowledge of other methods of arresting bleeding.

3. The attention to be given in the first instance to injured persons according to the nature and situation of the injuries.
4. The application of the first dressings to wounds and burns, and of temporary splints in cases of fractured bones.
5. Modes of lifting and carrying injured persons, and the modes of putting them in and out of conveyances, according to the nature and situation of the injuries.
6. The mode of resuscitating a person rescued from suffocation or drowning.
7. The use of hand and wheeled litters.

The attainment of an useful amount of practical information on these subjects need not occupy a long time. Two or three weeks' systematic instruction and practice would suffice for the purpose with persons suitably selected for the work. At the same time an annual repetition under the direction of the chief of the help party would be advisable, in order to maintain the necessary adroitness and readiness of the subordinates.

I am not able to name any civil institution in which this practical instruction can be at present obtained. In the army instruction of the kind is afforded to the men of the Army Hospital Corps, but as these men are engaged to act also as nursing attendants on the sick and hurt in the hospital wards, their education is necessarily far more extended than would be necessary for the occasional helpers in cases of accidents in the civil establishments referred to in this paper. It would be easy for the required course of instruction to be given in every County Hospital, and it might be given by simple arrangements at a very small expense. It seems very unlikely that there would be any difficulty in respect to the instruction being afforded, provided the necessity for obtaining it were felt by the large employers of labour and the heads of mining and manufacturing establishments. The means of giving the instruction exist at every large hospital. But the principle must first be established, that just as motives of prudence cause the necessary provision to be made for meeting the calamity of fire when it occurs, so motives of prudence, and still more motives of humanity, require provision to be made for affording primary care and attention when the personal hurts and mutilations referred to in this paper take place. No establishment in which large numbers of work-people are employed should be held to be complete in its organisation without provision having been made for immediate

personal and material assistance of a suitable kind on the occurrence of grave bodily injuries.

A just comprehension of the necessity for preliminary aid in cases of accidents hardly appears to exist at present, if we may judge from the little that has been done practically towards meeting the want. Even in our large metropolis, where accidental injuries are so frequent, as shown in the weekly reports of the Registrar-General, no organised system, as far as I am aware, exists for affording trained primary help to the unfortunate sufferers. Some years ago I observed at Paris, stations at various parts of the city, with the words *Secours aux Blessés*, in conspicuous letters over them, where sufferers from bodily injuries were sure to find both material and personal assistance, and proper means for removal to hospital. These stations were well-known, so that no delay took place in the removal of a person who fell in a fit, or met with an injury in the streets, to the nearest help station. This system, I find, continues in force to the present day.* Why should there not be similar establishments in our metropolis? If the need were acknowledged in London, as it surely ought to be, there would be less difficulty in getting it acknowledged in the establishments mentioned in this paper. The need is equally urgent in both cases in proportion to numbers.

The Order of St. John has already taken the initiative in devising the best means of calling public attention to the necessity for establishing and maintaining training institutions for nurses for the sick poor—a necessity of first importance; it will be extending its useful and charitable work if it can also become the means of calling attention to the urgent necessity that exists for a proper organisation being established in all large communities of people, whether collected in cities, or at work in mines, collieries, mills, factories, and other similar institutions, for meeting the first needs of sufferers from wounds and injuries, and for ensuring the early and safe removal of the patients to the hospitals where surgical aid and the care and attention of trained nurses will furnish the best prospects of recovery. The work, so far as it rests on man's help, will be complete in all its parts, when the sufferers from accidental injuries have the benefit of proper preliminary care and attention, proper means of conveyance to their homes or to hospital, and surgical advice with skilled nursing when they arrive there.

* The arrangements in Paris are under a special Bureau, the *Conseil de Salubrité* of the *Préfecture de Police*.

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