Mr. Wood have reported cases in which one testicle was absent and the other hypertrophied. In some young cases the testes fail to develop at puberty, in old age they atrophy. Wasting of the gland has been met with in idiots, after injuries to the head, from the pressure of ill-fitting trusses, but most often after acute orchitis. Division or a blocking of the spermatic artery by the pressure of an aneurism will also cause wasting. Sir B. Brodie[4] states "that a part not used will waste, so it is with the testicles and other organs." Most observers are, however, agreed that the testicles do not waste in men who are continent. Paraplegia following injury induces fatty degeneration of the testicles. Inflammation following injury or mumps, new growths within the tunica vaginalis, or a severe injury, will disorganise the gland. A slight wound of the tunica albuginea had better be stitched up with fine catgut. Mr. Hilton[5] gives as the signs of ruptured vas deferens sudden and violent pain after severe exertion or a blow, bleeding from the urethra and not into the bladder; pain or tenderness of the testicle and abdomen where the vas crosses the ureter. If the vas is divided with wound of the skin stitch its ends together. The vas deferens when obstructed may swell and form a small cyst containing spermatozoa (spermatocele). In some instances the testis is so irritable that the patient is unable to bear the least touch; it must then be protected by a well-lined suspender. When neuralgic the attacks come and go, and the testis will bear handling. The various tonics and sedatives, internally and externally, are to be tried. Pain, vomiting, irritability of the bladder, and retraction of the testicle, are present when a stone passes along the ureter. Such accurate observers as Professor Humphry and Dr. Lockhart Clarke have met with cases of impotence after injury from a railway collision. After concussion of the spine sexual power may be regained. In cases of double varicocele spermatozoa have been found wanting. In some instances sexual debility may be due to a central cause. The section of the retained testis under the microscope shows great thickening of the membrana propria of the tubes, the cells lining which do not appear to have been functionally active. In wasting diseases the spermatozoa are few in number. In double syphilitic orchitis patient and energetic treatment is followed by a good result, as well as in those cases where the spermatic duct is obliterated by deposit after epididymitis. The testis must be saved in cases of benign fungus, as a portion still secretes. From Juvenal's "Satires" we gather that it was an old belief that eunuchs were capable of sexual intercourse. Professor Humphry[6] records the case of a married man who suffered such severe symptoms after connexion that he had his testicles removed. He had connexion and emissions for a year, though less frequently, and then desire gradually ceased. Similar cases are reported by Sir A. Cooper and others. Sterility may be due to defective secretion of the testicles owing to debility from illness, excessive sexual indulgence, or from atrophy or want of development of the gland. Many of its causes have been already mentioned when considering malformations, malpositions, and various lesions of the testicle. Obstruction consequent on epididymitis is a common cause of sterility, although the patient is not impotent. The vas deferens may be blocked by a tubercular deposit, as in the specimen shown; the patient died of acute tubercular meningitis, and the question of the possibility of the absorption of tubercular matter suggests itself to our notice. There are several specimens of an excessive dilatation of the vesiculæ seminales and tuberculous abscesses of them and of the prostate leading to degeneration. Dr. Goodhart[7] showed a specimen at the Pathological Society of the obliteration of one vas deferens after lithotomy in a child. Mr. Teevan[8] has also recorded cases showing injury to the ducts after lateral lithotomy. When the testicle is crushed, as in the specimen shown, the gland is quite destroyed. My brother, Dr. John H. Bell, has communicated to me the case of a monomaniac who removed with a blunt pair of nail scissors the whole of the external genitals, including the scrotum, penis, and testicles. The hæmorrhage was great, but would have been greater had a sharp instrument been used. He grew fat and sleek, and sank into a state of satisfied imbecility.

Some interesting casts were shown illustrating malformations and injuries of the penis as bearing on the subject.

4 Clinical Lectures.
5 Mr. J. Birkett on Injuries to Pelvis; Holmes's System of Surgery.
6 Holmes's System of Surgery.
7 Path. Trans., 1876.
8 Clin. Soc. Trans., vol. vii.

A HOSPITAL AND ACCIDENT AMBULANCE SERVICE FOR LONDON.[1]

BY BENJAMIN HOWARD, A.M., M.D., F.R.C.S.E.

IT is now over seventeen years ago since the first ambulance system ever established had its earliest opportunity of proving its value as a distinct organisation. On that occasion, when over 10,000 men lay on the field about Antiatam, by the sudden disability of Dr. Letterman, the supreme responsibility was by special order placed upon me. Thus initiated in a work in which my interest has been active from then till now, it was, I can assure you, in no spirit of criticism I called attention when in London three years ago, and again in the medical journals last July, to the manifest need of an ambulance system in this *quasi*-battlefield of London.

The committee of the London Hospital having upon my urgent representations decided last September to adopt a hospital and accident ambulance service, and having now further arranged for a conference of the other general hospital authorities with themselves within a few days, to be presided over by H.R.H. the Duke of Cambridge, to consider the organisation of a hospital and ambulance system for London, it has been deemed of first importance that, in advance of this public meeting, the whole question be submitted to this Society, which so largely represents the profession of the entire metropolis. As briefly as I may therefore, after glancing at some general reasons for an ambulance system, I will allude to the pre-eminent force of these and other reasons when applied to this particular locality; will give some account of the different systems already in operation or adopted in other cities; describe the system recently initiated at the London Hospital; and lightly touch upon such points as are likely to invite special attention in the future determination of such system or systems as may be practicable and best for this heterogeneous and unparalleled metropolis.

Some general reasons for an accident ambulance system.—The influence of a right or wrong first care, and good or bad transportation, not only in surgical but in many medical emergency cases, towards determining the recovery or death of the patient, it is not easy to exaggerate. In the present absence of system, the earliest diagnosis between apoplexy and "drunk and incapable" is made by the policeman. The treatment on the spot is as miscellaneous as the rival sympathisers can make it. As regards transportation, this, in two or three respects, has, since the Middle Ages, been slightly modified. The police stretcher or the shutter formerly carried by the hands, with the advantages of suspension, is now more usually borne upon the shoulders of unequal men, with the unavoidable hoisting, lowering, jolting, risk, exposure, and fright. A wheelbarrow litter has lately been occasionally used, in a description of which, under the head of "Police Cruelty," the London LANCET, has denounced it as "worse than useless from every medical standpoint." A vivid description of the scenes attending an average transportation in these ways of a criminal or a patient may be found in a pamphlet published last November by Mr. Harrison of Liverpool. The other modification which I would fain not even mention is the cab familiarly known as the "growler." In other respects, while the treatment of emergency patients within the hospital has in every particular marvellously progressed, the provision for their first care on the spot and their transportation to hospital are in the main what they were a century ago. Whatever the sex, age, rank, be the case one of cardiac syncope or apoplexy, of fracture, dislocation, or "drunk and incapable"; whether the one or the other of the means of transportation above-mentioned be used, is left exclusively to the indiscrimination and convenience of the policeman. For the worst fracture in the most distinguished patient there is no choice in removal except risking his reputation on the police stretcher or his life perhaps in the impossible cab. For assurance against volunteer maltreatment of emergency cases and street accidents on the spot; against detention or rejection at the nearest hospital; for assurance that the first case shall be prompt, exclusive, skilful; that the transportation shall combine ease with seclusion, the

1 Read before the Medical Society of London, Jan 30th, 1882.

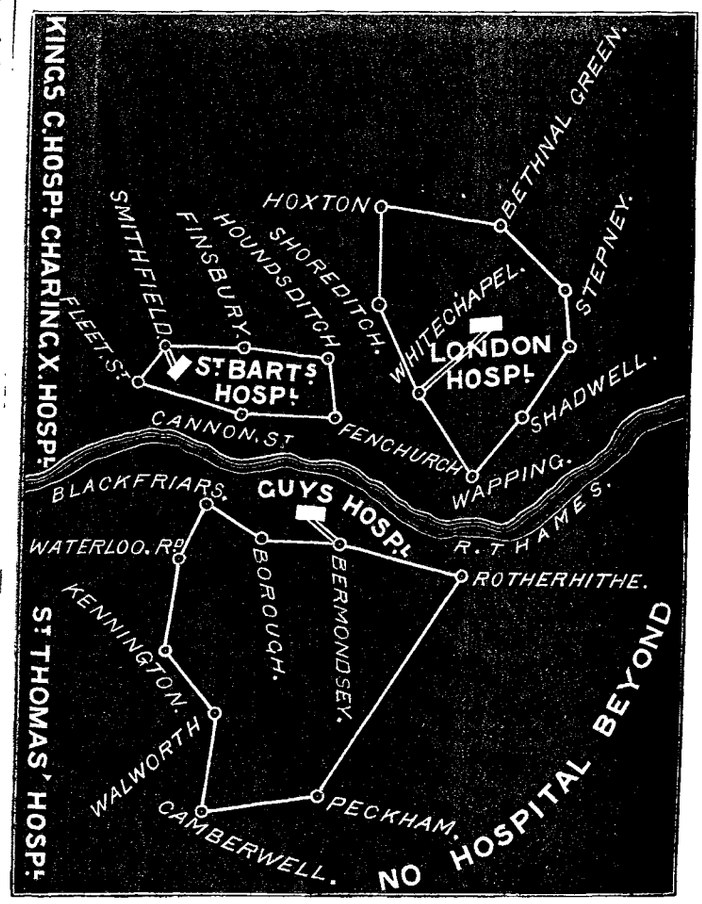
only resource, according to experience, is such co-operation of police, hospital, and other authorities as is implied in a hospital and accident ambulance system.

The importance of an ambulance system for London pre-eminently, as compared with other cities.—The considerable proportion of the twenty-two thousand patients received into five only of the London hospitals in 1880, and all of the nearly three thousands due to horse and vehicle accidents that same year, form but a fraction of the emergency cases whose annual aggregate is vastly greater in London than in any other metropolis. Not only the volume of the traffic, with its dangers, excitements, and delays, but the distances patients frequently have to traverse to reach the nearest hospital, are greater than in any other city. Owing to the unequal distribution of the general hospitals, a fracture from the site of the accident within the registration area to the nearest general hospital, notably if to the London, to Guy's, or to St. Thomas's Hospitals, may have to be transported four to seven miles. This fact gives not only magnitude to the estimate of the avoidable evils arising from the absence of an ambulance system, but to all the reasons which suggest themselves for the adoption of such a system.

An account of the leading points in the ambulance systems working or projected in other cities.—Although the manner of working is not in each city alike, in all cases there are four invariable factors: these are the police, the hospitals, the horse ambulance carriages, and the electrical communication. The points of difference in different cities concern chiefly the location and *personnel* of the ambulance carriage. In Chicago the principal hospital is at the outskirts of the city. With the police stations of course it is otherwise, and at these the ambulances are kept. The *personnel* consists of policemen only. For the ambulance summons a unique provision exists. At the corner of numerous streets are what resemble the ordinary pillar post in miniature. Any one of several keys kept in the houses or shops in the immediate vicinity of one of these posts on being introduced into the keyhole of its corresponding post, sounds an ambulance alarm at the police station of that particular district, and as quickly as it could be done by a fire engine the ambulance at a gallop appears on the spot. As a check to false or reckless alarm, each key, which is registered and numbered against the name of the holder, is so constructed that once introduced it can be withdrawn only by the ambulance driver, who delivers it back to its holder, and takes the patient to the hospital of the respective district. In New York, Boston, and Philadelphia the ambulances are kept at the hospitals only, horses for which, as is common to the system everywhere, are kept harnessed night and day. The *personnel* includes a house-surgeon or substitute. The ambulance summons is sent by telephone from the police station nearest the site of the accident to the headquarters of the police, where on a chart is seen at once the hospital district of the address where the ambulance is required, and the telephonic summons is then forwarded to the hospital of that district. A diagnosis blank is filled up by the ambulance surgeon before removing the patient, and immediately on returning to the hospital this with the time of departure, arrival, return, and other particulars, is entered in a book for that purpose. If after the necessary attention the patient desires it, and the surgeon approves of it, the patient may be transferred by the ambulance to his own home. In Cincinnati, ambulances are kept at all the hospitals, and at only some of the police stations. In Washington, at all the hospitals and at every police station. In each of these cities, in promptness the ambulances rival the fire engines, and from the general interest awakened by the ambulance carriages, not only amongst the police, but the people generally, there is so much familiarity with the provisions and rules of the system, that such intelligent co-operation as may be in any case expedient is rarely wanting. In the neighbouring city of Paris the project which has received the municipal approval consists in having horse ambulance stations corresponding in their distribution to the former Secours de Blessé, stations forming together a distinct municipal organisation.

The ambulance system and ambulance carriage of the London Hospital. — By reference to Fig. 1, it may be seen that nearly equidistant, and in different directions from the London Hospital, there are eight police stations. If not in consequence of my suggestion, certainly in accordance with it, each of these stations, formerly in telegraphic connexion with Scotland-yard, is now by the cordial co-operation of Sir Edmund Henderson being connected also with each other, so as to form a distant but complete telegraphic ring round the hospital. Tapping this circle at one point—viz., the nearest police station, by a telephonic wire, thence to the hospital, it will be seen how, as represented on the diagram, the entire area round about the hospital is brought into direct communication with it. The cost of this wire for the first three months, I am given to understand, will be nothing; afterwards, by special concession, below the usual rates. As one of the privileges of subscribers and at no extra cost, this telephone may be connected at any moment with that of every other subscriber. Thus every policeman within the London Hospital area, having the address of the said subscribers within his beat, from the nearest private instrument of the already many hundred subscribers, the ambulance summons may be sent direct to the hospital. This is the outline of the plan I have submitted to the London Hospital Committee, and which I trust will soon be in complete working order. The ambulance carriage, in the absence of which neither this nor any other scheme could take practical

FIG. 1.



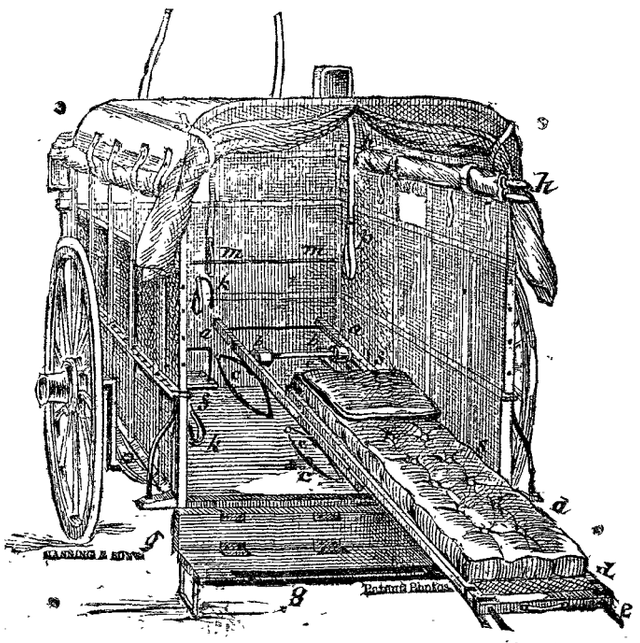
Small circles: Police stations. Single lines: Telegraphic wires. Double lines: Telephone wire. From Guy's Hospital south there is no other general hospital whatever. From the London Hospital north there is no other hospital in any direction, except at Dalston.

form, I thought at first to import from New York, that being the nearest place where any accident horse ambulance could be procured. You will not regret to know, however, that as the ambulance of the London Hospital which I shall show you to-night was subsequently planned by me here, and built for me here with express adaptation for the London service, it is both in design and in make a London ambulance. In every leading particular, too, but one it is different from any ambulance carriage previously constructed. The exception to which I allude is the interior counterpoise springs, used first in my military ambulance so well described in Professor Longmore's book, and which, besides taking the highest international prize at the first Paris exposition, was largely used both in the American and Franco-German wars.

The ambulance which I have now to describe, and which was presented to the London Hospital by its Vice-Chairman, Mr. Crossman (Fig. 2), is, I believe, the only accident ambulance carriage in civil life in Europe; certainly, I think, the only one belonging to a general hospital. It is briefly a neat little apartment, 6 ft. 6½ in. by 4 ft. 1 in., in which on a sliding litter with a perfect surgical bed

the worst fracture patient, his attendant seated beside him, may be transferred from the most distant country seat in Scotland to the farthest Italian villa in safety, comfort, and seclusion. This seclusion may be maintained, without a moment's disturbance, until the patient from the same litter is shifted to the bed awaiting him in Italy. The size of this vehicle is arranged so that, whether shifted from road, boat, or rail, it requires no change, and, being all the

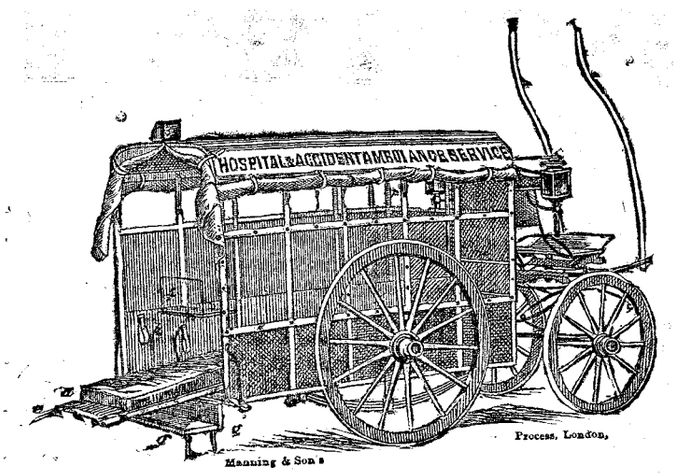
FIG. 2



a, *A*, Tramway; *b*, *B*, Rubber rollers; *c*, *C*, Counterpoise springs; *d*, *D*, Litter; *e*, *E*, Sliding handles; *f*, *F*, Attendant's seat; *g*, *G*, Tail-board; *h*, *H*, Folding stretcher; *k*, *K*, Suspension-loops; *m*, *M*, Supporting-bar for police stretcher; *n*, *N*, Canvas handles of carrying-sheet; *p*, *P*, Patient's aid-strap; *s*, *S*, Lateral rubber buffers. The position of the head of both litter and stretcher is six or eight inches higher than the foot, but is *not* shown in the engravings.

time in running order, there need be no prolonged delays in the shiftings. (Fig. 3.) On looking at the outside, you see it is a light, rather pretty-looking one-horse vehicle, the sides above the body panels, as well as the front and rear, consisting of brown duck, in detachable subsections and small curtains. The floor of the vehicle is but twelve to fifteen inches from the ground, and between these the tailboard when lowered forms a firm equidistant step. The hind wheel is large, and

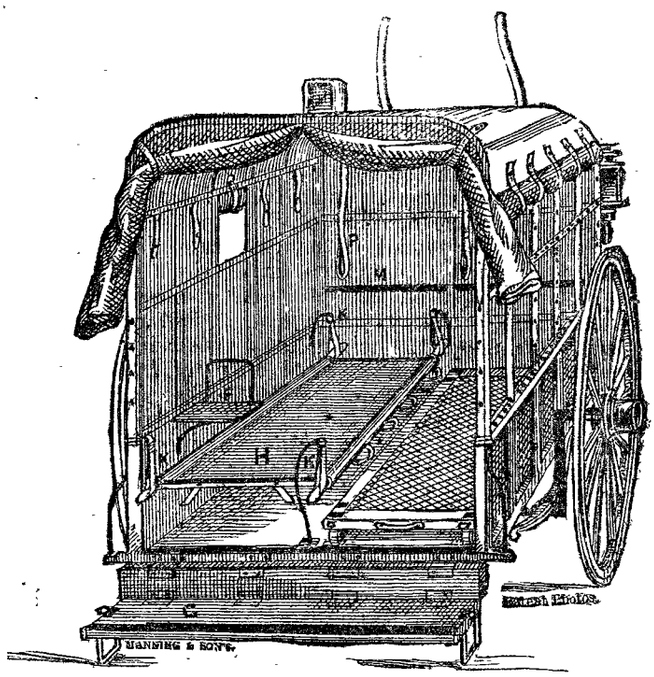
FIG. 3.



is in the centre of the body, the floor of which is below the axis of motion, while the spring from which the body is suspended is a very long semi-ellipse. The four wheels have india-rubber tires. By a special contrivance of the running gear the fore wheels and the entire carriage turns exactly on its axis. Beneath the driver's seat is a box for medical and surgical appliances. Two red lamps beside the driver and one in the rear are used to prevent collision. The shafts are adapted to any cab horse and harness. A centre-pole may be applied for two horses; in any case, however, it can, if necessary, be drawn by one man. The associate editor of THE LANCET started and drew it in the office with his little finger. This has been repeated by myself even in an ordinary paved street. Looking at the interior, which is entered with the same ease as a room on the ground-floor of any ordinary house would be, the right half of the floor is seen to be occupied by a light tramway with india-rubber roller ties. The tramway rests on four light elliptical springs, the pair at the head being about six inches higher than those at the foot. Between the side of the tramway and the inside of the body of the vehicle are india-rubber buffers. Resting upon the india-rubber rollers mentioned is a light cane-bottomed litter, with sliding handles. Upon the litter a waterproof thin hair mattress and pillow are used, or not, as preferred.

The front litter bearer walks into the ambulance far enough to rest his end of the litter on the rear roller, when, the rear bearer pushing with one hand, the patient is slid noiselessly, and with scarcely conscious motion, into position. With a very heavy patient upon it I have done this myself with two fingers. Above the patient, from the roof is a wide-looped pendant leather strap, by which the patient may steady or raise himself. A corresponding contrivance lower down can be attached for suspending a fracture, if desired. In the other half of the interior is a detachable seat for the attendant, the remaining part of the floor being clear. (Fig. 4.) Should

FIG. 4.



two patients need transportation, a folding stretcher is detached from an angle of the roof, the handles of which are received by leather loops, and by which the second patient is suspended parallel with the first. Should it happen that on the arrival of the ambulance the patient is already on an ordinary police stretcher, or should four patients need transportation, a horizontal iron bar receives the front handles of the stretcher, and the iron-shod top of the tailboard the rear handles. Thus there are avoidance of shifting in the one case, and easy transportation for four patients in the other case, without the slightest interference the one with the other; the attendant having in this case simply to ride outside, where there is excellent accommodation beside the driver. Although when perfectly closed the light and air are not insufficient, by means of the eight little upper curtains these can be increased at pleasure, without exposure of the patient to the public gaze. Where the latter is no consideration, the eight sections forming the lower part of the sides above the body can also be removed, forming simply an open but roofed carriage.

The principal objective points obtained in this ambulance are—

(a) *Ease of entrance and exit.*—In every other ambulance, civil or military, as also in every fever carriage, the height of the floor necessitates several attendants, and such hoisting and lowering, pushing and hauling, as are particularly alarming and objectionable. The lowering of the floor, which so completely obviates this, was, I believe, never before

attempted or suggested. This, with the additional arrangement of the rubber-rollers in the tramway, may be fairly said, I think, to make the ease of entrance and exit complete.

(b) *Ease of motion in transportation.*—The central position of the axle, the largeness of the rear wheel, the lowness of the floor below the axis of motion, the length of the semi-elliptical main-spring, the suspension of the body from this, together with the india-rubber tires never before applied to a horse ambulance carriage, have combined to secure the highest degree of steadiness attainable for the body of the vehicle. This minimum motion of the body of the vehicle, instead of being communicated to the patient, is intercepted, its chief force being expended upon the interior counterpoise springs, which, vertically and laterally, poise the tramway. Mr. Adams, the senior surgeon of the London Hospital, lying upon this litter at varying speeds, said it seemed almost easier in motion than at rest, and in running the ambulance over successive pieces of loose wood, the crossing of them he detected rather by the alteration in the planes of the interior than by any conscious jar they occasioned. A gentleman who on a recent trial trip went to take notes of the action of this litter soon after the start forgot his purpose in a gentle slumber, induced, strange to say, by the roughness of the road—in other words, by the oscillations in traversing a street under repair. By the principle of suspension, as illustrated in the attachment of the canvas stretcher, the conditions, though for a fracture case not so desirable as those of the litter, are for a medical case scarcely less agreeable, the elasticity of the stretcher poles, as thus used, preventing the propagation of jar or shock to the patient. One feature in this stretcher is as convenient as it is novel. Across the under side of the canvas, from which both poles and stretcher bars may be easily and completely detached, are stitched four broad bands of the same material, terminating in firm loops slightly projecting beyond the lateral margin. On this carrying sheet, to which the stretcher may be thus easily reduced, the patient may be carried easily and comfortably where the stretcher complete would not go. The ease with which it can be insinuated beneath, or withdrawn from under, a patient, or when there be left there, will be a great convenience and avert much suffering.

(c) *Ventilation and light, with or without exposure of the patient to public view, can be regulated to the utmost.*

(d) *Immunity from contagion.*—The cane-bottomed litter is, without the mattress, sufficiently comfortable. The interior is but wood and iron, and accessible to the quickest and most thorough cleansing.

(e) *Adaptability to other uses.*—The tramway is readily detached from the floor. The interior, then quite clear, is adaptable to any purpose of pleasure or utility for which a vehicle might be desired in connexion with an infirmary, hospital, or other institution.

My thanks are due to Mr. J. U. Burt, of the Swinton-street carriage works, for his patience and faithfulness in carrying out my designs in the construction of this vehicle.

SOME OF THE LEADING QUESTIONS WHICH WILL ARISE IN THE CONSIDERATION OF AN AMBULANCE SYSTEM FOR LONDON.

1st. *The kind of ambulance carriage to be employed.*—Should the carriage I have presented to your notice prompt somebody to the introduction of a better my satisfaction would be so much the greater. To stimulate invention in this direction the suggestion of prizes recently put forward by Sir Edmund Lechmere and Major Duncan would doubtless be of service.

2nd. *The location and personnel of the ambulances.*—Shall the ambulances be stationed at the general hospitals, the police stations, fire stations, or at special ambulance stations? If at any one of these only, which? If at more than one, at which other or others? For the police stations, may be shown their superior number and distribution, the always available force at each; against them, the natural and rightful repugnance of the better classes, for whom the ambulances are equally intended, as well as, indeed, that of all other classes, to personal police attendance; while the absence of all good first care on the spot, and the uncertainties about admission, detention, or rejection on reaching hospital would be then as great as now. For the location of the ambulances at the hospitals, it may be said, the question is one of medical aid on the one hand, of public need on the other, affecting, in a personal way no other question connected with the hospital could, those who, supporting the hospitals, are accustomed to look to them as the natural source of the best and rightful help in a possible street accident to themselves; and that the ambulance of the hospital would be but a natural and legitimate extension of the help it now gives, to the time it is first and perhaps most critically needed; and thus the hospital would complete the function it now but partially fulfils. The facility for a medical attendant would be greater; there would be a guarantee against hospital-yard detention, of possible rejection, and delayed treatment; the help afforded would be dissociated from the now humiliating and criminal suspicions. For the hospitals there would be evoked higher esteem, more personal sympathy, concern, and help from the subscribing classes. As regards the *personnel:* the rank of the medical attendant would be of little consequence, his competency of much; the work would be no harder than that to be expected in country or army practice. The hospital would have by this service a new prize, and another useful certificate to offer the deserving candidate for a term as short as may be found expedient. In America, as a rule, the ambulance system is strictly a hospital-ambulance system—the medical attendant is usually what corresponds to a senior or junior dresser. No part of the scheme has so much secured the success and popularity of the system as the quick medical help it guarantees to the entire public.

3rd. *Special ambulance stations.*—These might be at the same time small emergency hospitals, and in the outer and almost destitute seven-mile belt of London might have a relation to the general hospitals, corresponding to that between the field and the base military hospitals, the patients being drafted from the former into the latter as may be required.

4th. *The form and the source of ambulance summons.*—In America the intercommunication between the respective police stations continues to be telegraphic. Between the police and the hospitals it is telephonic, so that the call can be understood by anybody in attendance at either end of the wire. In regular course the ambulance summons comes to the respective hospital from the head-quarters of the police; it may come, however, from any public or private telephone whatever. As an instance of the quickness of the service made possible by the telephone, only this morning Dr. Beckwith of Washington told me that on the occasion of an accident during the inauguration of President Garfield he (Dr. Beckwith) himself telephoned from a neighbouring store; and notwithstanding the unprecedented multitude in the streets, from the time of the summons to the arrival of the ambulance was by his watch exactly two minutes. Before long all the police stations in London will be in telegraphic communication with each other. One of these stations is sure not to be very distant from a general hospital. One short telephonic wire, therefore, will put every police station in communication with that hospital Moreover, every public and private telephone in London, by the ordinary method of connecting subscribers with each other, will thus be in communication also with every hospital telephone. A street accident occurring anywhere, a policeman, guided by his list, may, from the shop or bank, for example, next door perhaps, telephone the address to the respective ambulance where it is wanted. A purposely false summons would, of course, be a criminal act.

5th. *The relation of the police department to the ambulance system.*—This in any case must, of course, be integral. Whatever the system, it is necessary that every policeman should be intelligent as to the details of it, while the entire force must be in harmony with every other part of the organisation. On this point I am happy to state that by Sir Edmund Henderson, the chief of the metropolitan police, I was long since authorised to say to whomsoever it might concern that his practical co-operation may be fully relied upon.

6th. *The cost, and how it is to be met.*—In America, as a rule, the hospitals have provided the necessary change in their premises, and procured and maintained the ambulance horses, &c., complete, in working order, making themselves simply available; the municipalities have done the rest. The cost of the ambulance I show you will be, I think, from sixty guineas upwards—little more than half the cost in New York of the ambulance there used. Telephonic communication costs, at regular rates, at present £45 a year; but for this service special concessions are promised. On the advent of the expected Government control of the telephonic service, the subscription is expected to be lower, and the distribution of it more general. An ambulance carriage

is just the kind of thing many donors would like to give. An ambulance station is just the kind of thing many would like to endow, its benefit being to them daily visible. From my observation, where the system is oldest I believe that, if put on a voluntary basis, it would by its popularity probably elicit enough to support itself, and do more than all things else combined to augment the hospital fund besides.

7th. *The expediency of attempted complete organisation at the outset, or of allowing gradual development?* — This question, confronted in its entirety, it must be admitted, promises no easy achievement. The hospital modifications, the police and telephonic arrangements, the harmonising of these with the heterogeneous and parochial administrations, like the obstacles which, but incomparably greater, were surmounted by the railway telegraphic and fire brigade systems, may not and should not be accomplished in a moment. The work as initiated by the London Hospital is, considering its importance, strikingly simple and easy. The neighbouring hospitals assuming a similar work for their respective districts, a fair proportion of the metropolitan area would, as shown in the diagram, be provided for, and the ultimate system or systems without delay might be determined by gradual development.

8th. *The authority by which the ultimate hospital and accident ambulance system for London shall be controlled.*— This must remain a question until, sooner or later, the time has fully come for the answer. The necessary integral position of the police department in such system is suggestive. Of this I should venture to say there can be little doubt that, however successfully different districts may be separately worked, in order to the highest success the entire organisation will ultimately be under one authority, so complete and absolute as to ensure corresponding responsibility and accountability in every subordinate whatsoever.

SOME OF THE RESULTS AND ADVANTAGES WHICH, FROM THE EXPERIENCE IN OTHER CITIES, MAY BE REASONABLY ANTICIPATED FROM A METROPOLITAN HOSPITAL AND ACCIDENT AMBULANCE SYSTEM IN LONDON.

1. Quickest possible medical aid, and best form of transportation to the home, or to hospital, in street accidents and other emergencies.

2. A sense of security which by the knowledge of this provision will be imparted to every rank and class throughout the entire community.

3. A more personal interest, a deeper sympathy, and a closer relation will be induced between the subscribing class and such hospitals as by their ambulance service shall manifestly include this class within their most important provisions.

4. The sense of public obligation thus induced, and of which the ambulance carriages as they pass will be a daily reminder, should sensibly augment the hospital revenues, both by multiplying contributions and by promoting endowments.

5. As a substitute for the much-discussed redistribution of hospitals it offers a simple form of hospital extension; the ambulance bringing the hospital to the spot, however distant, where the patient is.

From personal observation, in nearly every city where an ambulance system exists, I should say that in every one of them the ambulance department for the saving of life has come now to be deemed almost as important as the more expensive fire department for the saving of property; that now to abolish the one would be as difficult as to abolish the other.

One of the earlier results of the "Hospital and Accident Ambulance Service of London" which I venture to predict, is a general expression of surprise it was not adopted before.

LIVERPOOL ROYAL INFIRMARY.—The annual meeting of the trustees and subscribers to this institution was held in the Law Association Rooms, Liverpool, on the 30th ult. The report stated the finances to be very unsatisfactory, the subscriptions having fallen off notwithstanding the increased expenditure. It was proposed that the infirmary should be entirely reconstructed and largely rebuilt on its present site, the existing accommodation being most inadequate. The report was adopted. Various speakers made an urgent appeal for increased public support.

A MALTESE cross, fifteen feet high, has just been erected in Allenville in memory of the late Dr. James Simpson, of Aberdeen.

OPHTHALMIC MEGRIM:

AN AFFECTION OF THE VASO-MOTOR NERVES OF THE RETINA AND RETINAL CENTRE WHICH MAY END IN A THROMBOSIS.[1]

BY DR. XAVIER GALEZOWSKI.

WHEN I read a paper on the subject of ophthalmic megrim before the Congress of Genoa in 1877 I had already seen no fewer than seventy-six cases of this curious disease, and had included it amongst the affections of the fifth nerve, and of the vaso-motor nerves of the retinal centre. In my opinion ophthalmic megrim is an affection of that part of the fifth pair which supplies vaso-motor nerves either to the visual centres, such as the corpora quadrigemina, the corpora geniculata of the optic thalami and the chiasma, or to the parts lying more peripherally, such as the optic nerves and the retina. But all nervous diseases, as Professor Charcot justly observes, may be said to be associated with more or less material lesion, and an apparently purely nervous affection may assume at any moment the characters of an organic disease. Ophthalmic megrim affords an additional evidence of the truth of this statement, for amongst the numerous cases that have occurred in my practice I have already met with two cases of thrombosis of the retinal vessels—one case of thrombosis, with rupture of the vessels; and one case of partial atrophy of one optic disc—which I am disposed to ascribe to thrombosis of some cerebral vessel.

The following are the observations which seem to possess special interest:—

CASE 1. *Ophthalmic megrim; thrombosis of the central artery.*—General S——, aged sixty-seven, consulted me on February 1st, 1881, complaining of sudden loss of vision in the right eye, which had occurred five days previously. He stated that for more than twenty years he had suffered from periodical visual trouble in the right eye, in the form of hemiopia or of scotoma, with zigzag lightning, lasting for a few minutes. This was succeeded by violent pain on one side of the head, and vertigo. These phenomena all disappeared in the course of two or three hours. They recurred every month or every week, and even during several successive days. The last crisis was followed by permanent loss of vision. On ophthalmoscopic examination a thrombosis of the arteria centralis retinæ of the right eye was diagnosed, with a few spots of hæmorrhage. The affected eye was entirely blind, except that there was slight quantitative perception of light in the outer part of the field. The disc was white, slightly infiltrated in its outer half; the arteries were filiform, and some light whitish patches of infiltration were visible along the temporo-frontal branch. On compressing the globe, pulsation could be easily induced in the central part of the artery. The examination of the heart made by the physician in attendance on the family and by myself showed that the valves were free from disease.

CASE 2. *Thrombosis of the central artery of the retina consequent upon a succession of attacks of ophthalmic megrim.*—Miss X——, aged fifteen, living with her parents in the south of France, was sent to me by Professor Jaumes, of Montpelier. She had been subject from the age of seven or eight to ophthalmic megrim. The attacks supervened frequently, and without any apparent cause. They were characterised by headache, preceded or followed by disturbance of vision in one eye, and sometimes in both eyes. This disturbance consisted of dimness and lightnings in the form of a rain of fire or of zigzag flashes. Occasionally her vision was entirely lost for a period of ten or fifteen minutes, and was then perfectly restored. These phenomena recurred at different intervals, sometimes every two or three months, and sometimes every week for several successive weeks. During the last year the visual troubles had been so frequent that no day passed without her feeling them more or less distinctly, the left eye being almost always the one affected. The remarkable feature of the case was that as soon as the attacks had passed no visual trouble remained, and the patient could work, read, or write without the least difficulty. On Dec. 25th, 1880, she had an attack of megrim accompanied by dimness and impairment of sight, and a few

[1] A paper read before the Biological Society, at a meeting held on Nov. 26th, 1881.