REMARKS

ON THE

PRUSSIAN SIEGE OF PARIS

IN SOME OF ITS RELATIONS TO HYGIENE AND SURGERY.*

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ON the outbreak of war between France and Prussia in 1870, I had the honour of being accredited to the French army as Commissioner,† charged with the duty of inquiring into and reporting upon the systems of sanitary and medical administration followed in that service, and investigating such matters of surgical interest as should present themselves.

On my arrival in Paris on the 2nd September, to obtain from the authorities the necessary credentials to enable me to join the army under Marshal Macmahon, rumours were already in circulation in reference to the critical position of that force and its commander, and on the following day the news of the disaster at Sedan was publicly known throughout the capital.

On the 4th, the all but bloodless revolution took place, resulting in the deposition of the Imperial, and the declaration of a Provisional Government. Then followed rumours that negotiations were in progress and the war about to end—rumours which were speedily shown to be groundless—and the rapid progress of events sufficiently clearly indicated that Paris must prepare for a siege. That event, which early in September was a probable contingency, has now passed into history.

The steady approach of the Prussian army; the hurried accumulation of such stores of food within the city as were obtainable; the *levée en masse* of the population for purposes of defence; the enormous exertions made to strengthen the lines of fortifications immediately around and at a little distance from the capital; the endeavours made to provide the effectives with clothing, arms, accoutrements, and to obtain suitable accommodation for troops and contingents; and the gigantic scale upon which arrangements were made for sick and wounded, have all been more or less completely described, although mere description would fail to convey the actual impression of the whole, such as could alone be obtained by an eye-witness.

It would be impossible in a paper of the length to which the present must be restricted, to do more than enter very briefly into some matters connected with the points just enumerated; nor do I omit to observe that, while all of them come more or less directly within the province of the army medical officer, only two or three have reference to the great mass of the profession as represented by its members in civil life. Yet I trust the further observations I am about to offer in regard to the experiences of the siege of Paris may present some points of interest to both classes of my professional brethren; namely, to those in the public service and to those in private life. For the sake of convenience, I shall allude to the topics to be glanced at in the following order.

1. *Physique of the Troops and Contingents.*—Great exertions were undoubtedly made to bring under arms every man capable of military service. Persons of all social conditions were drafted into the ranks; the grey-headed man of fifty-five stood along-side the youth of eighteen, or even less, if we could judge from the appearance of many; nor were the lame and the misshapen exempt from the general obligation to serve in the great emergency which threatened. A *corps d'armée*, consisting of the regular soldiers of the line, entered Paris soon after the Provisional Government was declared; new battalions were quickly formed, raising the nominal strength of the line troops in the capital to upwards of 50,000; the Gardes Nationaux and Mobiles making a strength upon paper estimated at about 475,000, upon whom the defence of Paris rested. Of the contingent forces, a considerable number brought in the early days of the war from the provinces of France consisted for the most part of strong athletic men, although even among them there were many whose *physique* appeared but ill suited to the requirements of severe service during winter. The young men drafted into reserve battalions of the line were, in a large proportion of instances, undeveloped lads. The civic forces themselves contained, with some excellent

materials as soldiers, very much that was utterly unsuited in bodily strength for the hardships of a campaign. Nor can I omit to allude to two other points, which, although not strictly medical in their bearings, have, nevertheless, a very suggestive bearing, if applied to our own military institutions. These drafts were hurriedly brought together; they were imperfectly drilled; they had not time to learn, practically, how much each could perform; self-reliance was still absent; nor were they able to acquire that mutual confidence in each other and in their officers which in reality distinguishes the old soldier from the mere recruit. The officers in many instances, even when the armies of the enemy were steadily closing in around Paris, and after the state of siege had been established, were oftener to be seen pursuing their own gratification than drilling their men. Among the civic forces the officers were elected by the men whom they commanded; and to these combined causes we may, I think, fairly attribute much of the disasters, in a military sense, which happened to the Parisian army in its various collisions with the more powerful, better trained, and self-reliant enemy, as well as the severe losses in killed and wounded which occurred on those occasions.

2. *Clothing of the Troops.*—In the hurry which necessarily attended the formation of the army of the defence, considerable difficulty evidently existed in the process of supplying the whole with suitable and sufficient clothing. The result was that, as the intensity of the winter of 1870 came on, the requirements of the troops were in these respects undoubtedly defective.

Great exertions were undoubtedly made to supply their wants; and, considering all things, it is a matter of wonder how so much clothing as was furnished could have been so quickly obtained. Subscriptions and donations by individuals and societies, moreover, came to the aid of the troops in this as in other respects; yet the fact must, I fear, be admitted, that much suffering and considerable mortality resulted during winter from deficient clothing of the troops when employed in the advanced posts and bivouacking upon and near the fields of battle.

3. *Food.*—Among all the trials to which the occupants of Paris, whether soldiers or civilians, were subject during the protracted siege, the gradually diminishing supply of food was undoubtedly the greatest. Notwithstanding the exertions made to provide ample stores before the investment of the city was complete, and the careful scrutiny that was made of the quantity of food in store, not more than a supply for two months' consumption was estimated to exist; yet the siege really continued for more than double that time. Little by little the supply of various articles was lessened. A careful census of the population was made; and food, whether in the shape of meat or bread, issued in accordance with official cards issued by the different *mairies*.

During the second half of the siege, the public health undoubtedly suffered in consequence of the insufficient and inappropriate food issued; and the effects experienced by us all, in greater or less degree, deserve, I think, to be alluded to here. The insufficient supply of animal food, superadded as it was to the want of fuel, rendered us little capable of withstanding the unusual intensity of cold which prevailed in Paris as elsewhere during the winter of 1870-71. However much clothing we put on, the result was not satisfactory. Our sensation of cold was never absent; yet, with the exception of those, especially the soldiers, who were directly exposed to the hardships of the field, chest-affections and attacks of rheumatism were by no means so prevalent as might have been expected. Cases of frost-bite among the military, especially those who had to bivouack, were both numerous and severe; the liability to be thus affected being increased by insufficient food added to insufficient clothing.

Scurvy in one form or other occurred, and prevailed to a considerable extent among the various classes of persons besieged. Some of the troops, especially those occupying Forts Vanvres and Issy, suffered from the affection in its pronounced form; they having suffered not only from insufficiency of food, but also from the fatigue, exposure, and mental strain incidental to the heavy and continuous bombardment to which for many weeks those forts were subjected by the Prussian batteries on the heights beyond.

Among the ordinary residents in the city the diathesis was readily detected. In some, the condition of the gums at once indicated its existence; in others, it manifested itself in purpurous patches on the surface. Some suffered from hæmorrhages; and all suffered more or less from inactivity and impaired power of undergoing much exertion—a state in part owing, no doubt, to deficient food, but also, in a measure, to inappropriate diet.

On the subject of preserved meat as an article of food, a few remarks are here demanded. Considerable stores of meat, prepared and preserved in tins, existed throughout Paris in the early part of the siege; and as the supplies of fresh meat became exhausted, many persons had to fall back partially or entirely upon the preserved. For a time every

* Read before the Surgical Section at the Annual Meeting of the British Medical Association, in Plymouth, August 1871.

† Surgeon-Major Wyatt of the Coldstream Guards was my able coadjutor on the occasion.

confidence was entertained that the tinned meat was in all respects a complete substitute for the fresh. Nor did doubt for some little time arise on the subject; and, with the aid of condiments of various kinds, and the exercise of a little ingenuity, the besieged were able to indulge in savoury, if not very extensive or varied, meals. But it began to be felt that, somehow or other, the meals ceased to satisfy; there was a constant desire for food experienced; and, as already observed, the power of resisting cold and withstanding fatigue gradually diminished; diarrhoea became prevalent; dyspepsia and acidity were very generally complained of; and emaciation took place so that the clothing of all hung loosely upon them.

I am quite aware of the great importance which attaches to the question now glanced at, and to the great interests connected with its investigation. This consciousness induces me to avoid speculation and adhere simply to facts within my own knowledge, leaving the hearers or readers of this paper to draw their own conclusions, in regard to how far it may be desirable to trust to stores of preserved meat alone on long voyages or in campaigns.

4. *Accommodation for Troops.*—The troops of the regular army who occupied Paris were accommodated in the ordinary barracks throughout the city, in huts erected for their reception in the open spaces and along the principal thoroughfares, and in tents of various kinds issued temporarily for their use. The National Mobile Guards brought up from the provinces found quarters in hotels, private houses, and some also in huts; the National Guards raised in the capital being for the most part permitted to reside at their own houses, except when the turn came for the battalions to which they belonged to go to the front. The Garde Mobile Sédentaire, consisting for the most part of men who, on account of age or family considerations, were not required to go beyond the ramparts, went from their own houses on duty, and when that was over returned to their homes; yet the sight of the entire manhood of a city in uniform was a remarkable one: attendants in shops, cafés, and restaurants, the hairdressers, even the very porters in the streets, were in uniform; and, for the time being, the little boys played at soldiers, carried toy-knapsacks, and drilled with their toy-chassepots.

The question of accommodation has a very important bearing upon health. It had during the siege, and thus demands more remark here. The system of *caserment* of soldiers in France, although in theory perfect, is, in regard to principles of sanitation, extremely faulty. In a barrack the troops are arranged by *squads* and by *sections*; one large compartment of a building being set apart for the accommodation of thirty-two men, each floor of a barrack-building for six such sections, or, in other words, three companies. An apartment of the kind is divided in the middle transversely by a wooden screen about six feet and a half high; the bedsteads being arranged four and four from the walls at each end, and from the screen in such a manner that each side of the central passage through the rooms contains eight men—that is, a corporal and seven men, who are in a manner isolated from the others, and in some degree complete in themselves as a body. The disadvantage in the arrangement, however, is that, the men's beds being placed so as to extend from the transverse instead of the longitudinal walls, free perfusion of air can never be so complete as it is in English barracks, and hence all the usual effects of insufficient ventilation occur.

The huts erected were for the most part extremely flimsy in their nature; their occupants were unprovided with other bedding than a quantity of straw upon the long guard-beds upon which they slept, and their own blanket and greatcoat. Means of cooking were sufficient, but other requirements and outhouses were wanting. *Tentes abri* were only made use of to a small extent, and when employed were of little real use as a protection against the weather. In fact, it is more than questionable whether, during the Franco-Prussian war, any little advantage that might have arisen from their employment was not far more than counterbalanced by the evils arising from their weight, not to speak of the time required to pitch and fold them up again.

5. *Provision for Sick and Wounded.*—Great as were the exertions made to render the defences of Paris effective against a siege, scarcely less in their nature were those undertaken by the Intendance and by various philanthropic associations for the accommodation and care of expected sick and wounded. It was felt that the duty was imperative of making the arrangements for preserving the life of friends as efficient in their way as those for the destruction of enemies were in theirs; and it may be truly asserted that, on this occasion, expense on the part of societies and individuals was considered altogether secondary to the great mission of imparting to sick and wounded the greatest amount of comfort, attention, and attendance, possible. There is, unfortunately, difficulty in obtaining definite information as to the precise extent of accommodation provided in hospitals, appropriated buildings, private houses, huts, tents, etc., for sick and wounded. After a time a considerable

amount of what had, in the first instance, been taken for the purpose, was for various reasons abandoned; a regular system of supervision was also organised; the different temporary hospitals or ambulances were annexed to the large military and civil hospitals; and the whole were arranged under ten great divisions, the number of beds inspected being 25,754, or in the ratio of about five per cent. of effectives, if we accept the strength at 475,000 men under arms within Paris.

It must be observed, however, that many of the wounded were, during the siege, treated in their own homes. The exigencies of the time, unfortunately, left little room for choice in the situation of buildings to be occupied by sick and wounded. Military requirements, as is often the case, superseded hygienic principles; and the result which frequently occurred must, therefore, in a great measure, be looked upon as inseparable from the conditions of a siege. No doubt great differences existed in the degree of suitability of the various buildings; some, and these by no means few, being altogether unsuited for the purpose. As a rule, the larger and more pretentious in appearance was the building, other than those originally instituted as hospitals, the less was its suitability for the purpose; the simpler the arrangement of apartments within, the more readily and satisfactorily was its transformation to its new purpose effected. Churches were, of all kinds of buildings, the most difficult to arrange as hospitals, and the least suitable for the purpose. Buildings, the inner apartments of which communicated directly or indirectly with each other, were unsuitable; and still more were those in which, in addition, a central passage separated opposite ranges of such apartments. In fact, the impression left upon the minds of many men of experience, as well as upon my own, was, that in no permanent buildings, whether originally erected as a hospital or not, were the chances of recovery among the wounded nearly so great as they were in huts, tents, and other temporary erections. This fact is, no doubt, important in itself, and is completely in accord with what has over and over again been said upon the same subject. There is one material consideration, however, which ought never to be passed over in connection with it; namely, that in a siege neither can huts be always obtained in sufficient numbers to meet all requirements, nor space be always available whereon to erect them, nor will workmen be disposable to saw the wood required and put them up when, as was the case in Paris, the male population are under arms. Here, then, is another important point in which hygiene and war are antagonistic to each other.

6. *Infirmiers.*—Under this general term I desire to include all attendants upon the sick and wounded other than surgeons and physicians; among them female attendants, whether as sisters, ladies, or paid women-nurses; as also male attendants or orderlies, whether gentlemen volunteers, members of religious bodies, untrained men hired for the occasion, or the regular *infirmiers*, such as were to be met with in the wards of hospitals, military and civil. I most willingly accord all praise and honour to the ladies, lay and religious, who devoted their time and labour upon the sick and wounded in Paris; yet I venture to remark that there are numerous circumstances in connection with a state of war which indicate very clearly the existence of an urgent necessity that military hospital organisation should be complete, and consist entirely of persons capable of withstanding the discomforts and fatigue inseparable from war. In this as in some other respects, it becomes necessary to guard against considering arrangements adopted or suitable during the siege of Paris as appropriate for the ordinary purposes of a campaign; for experience showed that in many respects they were not so. For military purposes, then, and for all departments connected with an army on active service, we require *men*. For the many duties connected with transport, care and attendance on the wounded, men trained, of good character and position, are quite as much needed as, and in several respects much more so than, in other positions connected with a force; and yet experience on the present occasion has confirmed what has been described in regard to other wars, that, neither in personal character, knowledge, or social standing, do the ordinary run of male *infirmiers* come up to the very important duties which often devolve upon them.

In my official report on my late mission, I enter more fully into the consideration of this matter than I can do here. I must, however, observe that the duty of attending upon the sick and wounded, if not an agreeable one, is one of vast importance, involving as it often does the issues of life and death; and that, therefore, so long as the life of an individual holds that importance to himself and to society which our civilisation accords to it, the necessity is paramount of obtaining the best security possible against its loss. This is indeed generally accepted in regard to surgeons and physicians; it is so in regard to trained female nurses; yet an equal necessity has not apparently been recognised in regard to *infirmiers*. Throughout the siege many circumstances indicated the great comfort enjoyed by the wounded, the attendants upon whom were well educated and intelligent men as contrasted with

those under *infirmiers* of the more common class. The success of surgical and medical treatment was more considerable in the one case than in the other, for the reason that the one class comprehended the importance of the duties which devolved upon them, and carried out with discretion the orders which they received, whereas the very opposite was the case in regard to the other. If, therefore, one lesson more than another was to be learnt from the experience of *infirmiers*, it pointed to the great importance of establishing for all hospitals, whether military or civil, a corps of steady, respectable, and tolerably well educated men as ward-attendants. Let sufficient inducement be offered, and we cannot doubt that men of the class alluded to will be obtained to enter upon the occupation as a regular business. In the words of a distinguished member of the French Intendance, "*Infirmiers*, as they at present exist, are a mistake; they are without interest in their cases; they are without discipline; they have imperfect knowledge. The system in regard to them must be altered."

7. *Societies under the Geneva Convention.*—Various societies under the "Red Cross" were formed in Paris in the early part of the Franco-Prussian war; and it is beyond question that they have been the means of conferring an immense amount of benefit upon the wounded in battle. Of those in Paris, the Société de Secours aux Blessés was the principal; next to it were those of the Press, the American, the Evangelical, etc. Some seventeen or more organisations of similar kind, but upon a smaller scale, were in operation.

In the month of August, 1870, the Société de Secours had despatched various ambulances to the front; the chief part of its operations, however, was confined to the capital. In order to indicate the large scale upon which its general operations were carried on throughout the war, I would transcribe the totals of *personnel* employed, maintained, and paid, by it. This included 16 principal surgeons, 58 surgeons, 101 assistant-surgeons, 139 subassistant-surgeons, 13 principal purveyors, 30 assistant-purveyors, 8 quartermasters, 40 chaplains, 29 *infirmiers* major, 48 corporal *infirmiers*, 546 *infirmiers*, 55 coachmen and drivers, 124 horses, and 40 carriages and waggons.

In the different hospitals working under or affiliated to the Société, the supplies of all kinds were liberal in quantity and excellent in quality; expense was altogether a matter of secondary consideration, the well-being of the sick or wounded being alone taken into account.

8. *Points of Surgical Interest.*—I scarcely know by what means to condense my remarks on this branch of my subject, so as to give on the present occasion even a bare epitome of a few of the most important points. Even in my official report, my observations were more brief than I could have desired, and now they must be still more curtailed. Considering the nature of the arms used in modern war, the character of wounds inflicted by their missiles proved an important object of inquiry; and, contrasting the injuries now seen with those observed in former campaigns, the following peculiarities of those sustained during the siege of Paris may be noted: 1. A large proportion of severe injuries in comparison to slight ones; 2. Frequency of multiple wounds in the same person; 3. The large number of wounds of the upper and lower extremities as compared with those of the trunk of the body (attributable, no doubt, to the increased penetrating power of modern arms and the increased mortality in the field of battle arising from wounds of the chest and abdomen); and 4. The absence of wounds caused by sword or bayonet. The occurrence of a state of "shock" after severe injuries, although in several instances manifest, did not appear to be by any means so numerous as it seemed to be among British soldiers in other wars—as, for example, the Indian mutiny; nor did the condition, when it did occur, command the degree of consideration described in works of the older surgeons of this country. The peculiarity may be attributable to "race", perhaps to other conditions, the investigation of which would have a scientific importance. As a rule, the dressing of wounded upon the field of battle was confined to merely what the urgency of individual cases required to allow the subject of injury to be conveyed in safety to the nearest hospital in the city. In a large proportion of instances, dressings of this nature were performed by the regimental medical officers of the French army under heavy fire—a fact which I take leave to mention specially in this place, as it has not, I think, hitherto obtained that degree of prominence which it deserves. A very large number of the wounded received their first dressings at the hands of surgeons working under the Red Cross; and it may be safely said that the whole of the transport of wounded, in so far as it was efficient or suitable, was performed by societies under the Geneva Convention. Three methods of treating wounds of the limbs appeared to be adopted in Paris. The first consisted in the use of apparatus and applications of the greatest possible simplicity; in the second they were more complicated, although in many respects extremely ingenious; in a third, the performance of a capital operation appeared to be a chief object in view. Each of these had its special recommendations. The two former were adopted in view

to the conservation of injured members; but, as we shall presently see, they were severally suitable only under particular conditions.

Among the methods under the second category, may be enumerated the *pneumatic* plan introduced and followed by M. Guérin. The author of the method having observed the rapidity with which union took place in cases of orthopædic surgery, was first led to treat wounds communicating with the surface by the exclusion of air; he accordingly invented a pneumatic apparatus by which this object might be attained, and, as a result, the occurrence of suppuration prevented. The apparatus consists of India-rubber cases, forcing pumps and air-reservoirs, too complicated for description here; but as a detailed account of it by M. Guérin, containing illustrations, has been transmitted to Netley, full particulars will no doubt be given by some of the eminent professors of that establishment. Wounds of all degrees of severity, if on the limbs, were treated by its means, even to those of a grave nature penetrating the large joints, and with a large measure of success. What is deemed of most importance in this place in connection with it, is, however, the circumstance, stated to be a fact, that the patients thus treated by the exclusion of air escaped pyæmia, although that form of hospital disease prevailed extensively among the wounded treated according to ordinary methods in the same building. It is right to mention that considerable difference of opinion existed in Paris in regard to the efficiency or otherwise of the system as compared to the ordinary methods; the requisite apparatus is, moreover, so extensive and cumbersome as to be quite unsuited for employment in field army hospitals, but it deserves careful trial in stationary establishments; and with this view I solicit attention to it on the present occasion.

A large variety of applications in cases of wounds and operations were used by different surgeons. The various preparations of carbolic acid were extensively used, and no doubt advantageously so, inasmuch as its employment on patients in a ward seemed to greatly lessen, if, indeed, it did not altogether prevent, the occurrence of hospital disease. Solutions of permanganate of potass was used very effectively to foul wounds and to those extending far among the tissues, with or without fracture of the bones, or in which the missile remained imbedded. Nitric acid lotion was another excellent application under similar conditions; and among others used were tincture of arnica diluted, diluted alcohol, tincture of perchloride of iron, glycerine in various forms, simple and other cerates, and various disinfectant powders. In some ambulances, poultices were extensively used, but, in the greater number, fomentations, protected by oiled silk, were employed; drainage-tubes were used to an extent altogether beyond what we in England are accustomed to see; irrigation was in some few places used, but the arrangements necessary were inconvenient, and the process kept the bed of the patient and adjoining floor in an undesirable state of sloppiness. Bandages were, as a rule, applied with great neatness; but the quantity of cloth, charpie, and articles of dressing of various kinds beneath the bandages, not only confined the discharges in the wounds, but maintained an injurious degree of heat in the adjoining parts. Sponges were used far more extensively than they are in our war hospitals; and I cannot help thinking that considerable injury to the wounded in the mass occurred in consequence.

Oakum was first used in the American ambulance as a dressing for wounds, and as padding for limbs fractured by gunshot wounds; after a short time, its numerous advantages obtained for it extensive adoption in several other hospitals; these advantages consisting in its deodorising properties, in the readiness with which it absorbed offensive discharges, and in the excellent support which, by reason of its elasticity, it affords to injured limbs. The kind most generally used was the very coarsest; such, in fact, as is usually obtained under the name of "oakum"; and I am inclined to consider that, for the purposes indicated, it was superior to the finer descriptions of the same material.

A large variety of apparatus were employed for the support of limbs injured by gunshot wounds. Among the most convenient, the *Appareil Bonnet* deserves the first mention. It consists of a strong framework of iron bars well padded, and of a shape and size sufficient to accommodate both the lower limbs, and extend along the back to the shoulders, so that an injured person may lie comfortably in it, the wounded limb secured and padded as may be necessary, and the apparatus itself so arranged by a mechanist as to admit of dressings being readily applied wherever needed. The anterior suspended iron splint, first introduced by Dr. Smith, and improved by Dr. Shrimpton, had a somewhat extensive trial in the Ambulance du Corps Legislatif. It was found useful in some cases of wounds of the lower extremity, but requires much time and labour to ensure its proper application. Gypsum cases placed over suitably arranged splints, or padded so as to avoid pressure upon subjacent parts, were also used, and very successfully; motion in cases of compound fractures being by this means completely prevented; and, lastly, no other support was in some cases applied to wounded in-

ferior limbs than carefully laying the member upon and between properly protected cushions, it being kept in position merely by means of a triangular piece of wood of suitable length placed under the pad on either side. In all these cases, means were of course taken to ensure the absorption of discharges by means of suitable dressings to the wound itself.

The terrible extent to which hospital disease prevailed in the hospitals and ambulances during the siege of Paris is now well known. At the time, it furnished one of the principal causes of anxiety to the surgeons, producing a great part of the mortality which prevailed among the wounded and those subjected to operations. Several conditions combined to produce the various forms in which these affections manifested themselves. As already observed, some of the buildings occupied by the wounded were altogether unsuited for the purpose. Others were overcrowded, others insufficiently ventilated; in some, ventilation was chiefly from one occupied room to another—as, for example, the Grand Hotel; while in others, a central passage received the emanations from the wards on each side of it, but was itself without the means of complete perfusion. It is to be feared that, in some of the hospitals, soiled clothing and bedding were not removed from the rooms occupied by the wounded as quickly as was desirable, and that this defect in sanitary arrangements was altogether beyond the power of the surgeons to remedy. In addition to all these conditions, many of the men had suffered from insufficiency of food for a lengthened time before receiving their injuries, and while under hospital treatment were, from a stress of circumstances, unable to be provided with the amount of nourishment in food and wine that their condition actually needed. In fact, it may be questioned if the same liberal scale of diet and “comforts” which is allowed in ours, is ever given in French hospitals. We give plenty of beef and porter; they give “Vin de Bordeaux” and a little “confiture.”

On taking into account the different kinds of treatment followed for gunshot injuries, the different conditions under which wounded in Paris were placed, and the different results which followed injuries of similar degrees of severity, the importance presented itself of devising certain rules by which treatment under such varying circumstances should be followed. This important point received the attention of many of the eminent men who bestowed their services in the great emergency of the siege; but the result did not indicate more than an approximate arrival at the desired conclusions. These conclusions seemed to be that, as regards amputation, that operation was more suited than excision or resection when its subject had to be carried on with an army; that excision and resection was much more likely to be successful when practised in the upper than the lower extremity; that excision of the knee as a substitute for amputation in cases of gunshot wounds of that articulation, has sadly failed, although it has succeeded in cases of disease occurring in civil life.

The practice of conservative surgery has also proved itself to require the application of definite rules, even in stationary hospitals provided with extensive apparatus, mechanism of all kinds, trained and intelligent attendants, and so on; and its success under such circumstances furnishes no criterion of its suitability in movable hospitals with an active army. Its requirements involve very great attention and physical fatigue on the part of the surgeons; such, indeed, as can alone be fully carried out when there are comparatively few cases of considerable severity to be attended to; there is always great risk of the patient suffering from some form of hospital-disease, and in many cases the limbs saved are of relatively little use. There are exceptions to this, but such is the rule. In tents and huts, patients thus treated have undoubtedly a better chance of recovery than those in houses; but even in them the risk of hospital-disease is by no means absent.

These notes represent very imperfectly some of the valuable professional lessons which were to be learnt in Paris during the siege, and contain no more than a bare summary of some of the subjects, on the consideration of which I have entered more at length in the official report which I have had the honour to submit to the authorities. In that report, I have availed myself of the opportunity afforded to acknowledge the great amount of consideration and personal kindness which I received from members of the profession and others with whom I came into contact in the course of the important events connected with the Siege of Paris, and have mentioned by name those to whom I am in more especial manner indebted. I believe that the courtesy shown me by the members of the medical profession in Paris was, in my person and that of my coadjutor, shown to the profession in this country. In this spirit we received it; and in this spirit I now allude to the circumstance, believing, as I do, that whatever rivalries may unfortunately happen to interrupt the good understanding of nations, we of the medical profession have no rivalry with our brethren of other countries, other than that of a desire to advance our science and extend its benefits for the good of the masses.

ABSTRACT OF A CLINICAL LECTURE ON VARICOCELE AND ITS TREATMENT.

Delivered at King's College Hospital, June 9th, 1871.

By JOHN WOOD, F.R.S.,

Surgeon to the Hospital, and Professor of Surgery in King's College.

GENTLEMEN,—We have had lately in the Hospital many cases of *varicocele*, and you have had the opportunity of comparing several methods of treatment which have been followed. In its general pathology, varicocele resembles the diseased conditions of the veins which are found in other parts of the body, and known by the name of *varix*, and the common forms of *hemorrhoids* or piles. In all these, the coats of the veins are the seat of the disease, which consists essentially in dilatation of their calibre and hypertrophy of their walls, with consequent loss of the function of the valves, which aid circulation of the blood through them. But in each of these different regions of the body where varix is found, there are peculiarities which modify the pathological cause, and require peculiarities of treatment to meet their several exigencies. In true *varicocele*, the veins of the spermatic cord which convey the blood from the testicle are the vessels solely affected; and it must not be confounded with varix of the superficial veins of the scrotum, which occasionally occurs. The circulation of the blood through the testicle is probably normally slow, corresponding by the intricacy of its channels with the very tortuous and complex system of tubes which elaborate and transmit the secretion when formed. The return of the blood through the spermatic veins is retarded (1) by the intervention of an elaborate plexus, the *plexus pampiniformis*; (2) by their passage through the fibrous inguinal rings and canal, and the muscular cremaster and internal oblique, which closely invest the cord as it hangs over Poupart's ligament; and (3) by the length of the column of blood within them, reaching from the testis to the renal or caval veins high up in the abdomen.

Now, in a perfectly normal condition, the elastic resiliency of the coats of these veins is such that the retardation is effectively controlled and modified.

But slight imperfections are extremely common, and are evidenced in most individuals as an increase in the size of the left spermatic cord. In the surgery of the schools, this is commonly attributed to the fact of the left testicle being placed lower in the scrotum than the right, and to the opening of the left spermatic into the renal vein at right angles to the current of blood in the latter, and not, as on the right side, at an acute angle, with a course more parallel to the current in the inferior cava, and more adapted to the efficiency of the valve-action at the acute side of the angle. But a difference in length of column of about half or three quarters of an inch, or in the angle of junction to the extent of a right angle, do not, in normal conditions and in other situations (where they are common enough), produce undue dilatation of the veins. The other predisposing cause commonly assigned for this greater frequency on the left side, is, in my opinion, a much more powerful one; and that is the position of the sigmoid flexure of the colon across the front of the left spermatic plexus. The sigmoid flexure is the temporary receptacle of the fully formed fecal mass, until the habitual or convenient time for its expulsion has arrived. In civilised society, there are frequent and unavoidable conventional causes for delay or neglect of Nature's indications; and constipation and consolidation of the feces is a common accompaniment of artificial modes of living. We have thus greater habitual pressure upon the left spermatic plexus.

But along with these predisposing causes must coexist some other condition lying in the coats of the veins themselves, otherwise the same anatomical, mechanical, and conventional causes would operate alike in all individuals, which is notoriously not the case. Now, in a healthy vein, the middle coat is found under the microscope to contain abundantly muscular fibres of the same kind as those in the arteries. They are arranged both longitudinally and circularly in several successive layers, intermixed freely with white connective tissue, and with a smaller proportion of elastic fibres. In the larger veins, of the abdomen especially, the outer coat also contains, according to Remak, a considerable proportion of non-striated muscular fibres; and this peculiarity extends to a great extent into the spermatic veins. The veins of the lower extremity have thicker coats than those of the upper, and the superficial veins thicker than the deep ones.

If you take a portion of the coats of a vein in a varicose condition,