SUGGESTIONS FOR THOSE INTERESTED IN WAR DÉPÔTS AT HOME.

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THE experiences of a surgeon who has served for nearly eight months in a St. John's Hospital in St. Malo may be of considerable use, especially to those of us who may be asked to assist in the management of what are called dépôts in England. To Ipswich dépôt—I believe the first of such organizations—I am infinitely indebted for the magnificent way they kept me supplied with all sorts of surgical and other necessities. It is admirably managed and organized, and is under a trained nurse, as all such dépôts should be.

As the wounded in this war do not fall into line according to modern books on surgery, neither do the supplies sent from the dépôts in general quite fulfil the requirements. Economy is essential, and I am convinced that if some sort of standardization were adopted by all dépôts, much money might be saved. It is with this view that I propose to offer certain criticisms that I hope may be of use, and certain suggestions that may be, I hope, of greater use.

Swabs.

Swabs, I believe, can be improved from an economical point of view without losing efficiency. I received many beautifully done up and sterilized. Ideal—but yet not economic. Practically every case admitted to hospital was septic, and most of them very septic indeed. The swabs were made by cutting up squares of gauze, a small handful of cotton-wool was put in the middle of the gauze, and the four corners tied; 500 were then enclosed in a jaconet bag and sterilized. This is theoretically admirable, but practically I may point out defects. First of all, these swabs, about the size of a pigeon's egg, were far too small, especially when wet and squeezed dry. I like a swab to be about the size of a hen's egg, and so do most surgeons. The jaconet bag was beautifully made, with a tape run round the mouth, but to a certain extent this was a waste of labour. A packet of 30 swabs tied up in a muslin bag, and 20 such muslin bags enclosed in a wrapping of jaconet fastened with a pin is all that is required. The jaconet wrapping with pin attached come in very handy for fomentations. Thirty swabs is usually enough for most operations. The remaining 19 packets can remain in their covering till wanted, almost certainly during the day. In big cavities the smallness of the swabs became an absolute danger—there was always present to the surgeon's mind the possibility of losing one. In an emergency with secondary hæmorrhage (a not infrequent occurrence), one packed in 6 or 8 or 10 of these swabs, and one was constantly harassed with the idea that perhaps one was left behind. The known number of 30 saves counting when rushed. Dr. Griffith, discussing this question with me, made the admirable suggestion that squares of Turkish towelling, double or treble thickness, 6 to 8 in. square, should be sewn along their edges and a tag of tape, about 6 in. long, sewn to each at the corner; they cannot be lost because of the tape, and after use can be washed, boiled, and kept in 1 in 40 carbolic solution in glass jars in the theatre, and could be used over and over again, whereas a swab once used is done for. Sponges are old-fashioned, no doubt, but, if properly looked after, are by no means to be despised; they must be good and their care and storage understood.

Sterilization.

Sterilization is certainly admirable, but is not necessary in nine-tenths of the cases from a surgical point of view, but there is one important point that must never be lost sight of. Scattered over England to-day there are various centres where scarlet fever, measles, and diphtheria are known to exist. Many of the bandages sent out are made in schools by school children, other articles are made in homes, others in dépôts by lady workers. The sources, then, of infection are numerous. For this reason, to prevent any infectious disease being sent out, all dressings, bandages, and I would say everything possible, should be sterilized. It would never do to have an outbreak of either measles or scarlet fever in a base or any hospital owing to neglect of this. If it could be brought home to

goods sent out by dépôts, it would, I fear, be a serious blow to them. Hence one necessity of a trained nurse at the head of affairs to keep an eye on these details. I am a firm believer in carbolic acid, and, without exception, all my cases were treated antiseptically as against aseptically. All swabs, sterilized or not, were wrung in 1 in 40. We had only one theatre and antiseptics were *de rigueur*, so that it is essential to have plenty of carbolic acid.

Lint and Gauze.

Boric lint is a necessity, and it can never be wrong to send it out in quantities.

Small packets of gauze about 2 yards are best; larger packets are liable to become soiled. I would suggest that the gauze be cut up into squares of about 6 to 8 in. Packets of a dozen such squares should be wrapped up in waxed paper before being sent out. Long strips of gauze about 2 in. to 5 in. wide, rolled up like a bandage, are extremely useful, and can be packed in the same way.

Splints.

Splints were sent to me which were absolute works of art in the way of padding and so forth, but, to my mind, extravagant again. The wood was covered with corrosive wool padding, and this was held in position by cotton sewn across and across the back. In twenty-four hours the padding was saturated, the wood itself soaked with pus—and alas for the work of art!

I suggest that the wood should be painted first with creosote, and when dry enamelled. This will prevent pus and fluids soaking into the wood. The splint can be used time and again by sponging it over with an antiseptic, instead of getting a new one and burning the old. My advice is not to pad. No limb is perfectly flat; each has its own curves and bends, and each splint should be padded to fit its own limb. I found padding the splint with ordinary cheap wool to fit the contour of the limb, then to slip on a piece of jaconet to cover the whole splint, tying it in position by strips of bandage, saved time and money and fitted the patient best. The cheap wool was burnt, the splint sponged, the jaconet boiled and dried, and so practically there was no waste. No splint yet invented will ever meet every case, no matter how well padded. Many will not agree with this, but it is my personal experience. I found that a piece of board from a packing case, a saw, a few French nails to fasten on a footpiece, and a tin of enamel made the most satisfactory splint. For leg cases I always allowed the T-piece at the bottom to be sufficiently high to act as a support for the foot to be bandaged and to take off the weight of the bed-clothes; the under half of the T was left about 4 in. long to elevate the limb and make an inclined plane. Almost all fractures are compound, comminuted, and pouring with pus, so that soiled padding is inevitable. Lengths and breadths of splints must be assorted; 4½ in. is a good average width for leg splints.

For arms I can recommend a waterproof paper splint resembling gouch, sold in rolls by Cuxon, Garrard, and Co., Birmingham. It can be cut as required by any pocket knife, or a strong pair of scissors. It can be sponged or burnt.

Wool.

For sopping up discharges there is nothing to equal wood-wool, and for dressing wounds outside the gauze, both in the theatre and wards, it is ideal.

I do not like cellulose wadding. It clings to the skin and is difficult to remove, does not absorb pus well, and easily disintegrates and clogs up syringes. In peace times ordinary corrosive absorbent wool is best, but wood-wool is better and cheaper for wounds discharging much foul pus. In the theatre there must always be white absorbent wool.

Pine Sawdust Dressing.

This is in many ways admirable, cheap, and to a certain degree efficient, but uncomfortable. When sodden with pus it gets heavy, and acts like an old-fashioned linseed-meal poultice. I have doubts, too, of its antiseptic properties; sterile they may be, but not satisfactory on the whole.

Drainage Tubes.

I know of no substitute to equal drainage tubes, but they should be big; the index finger or thumb is not a bad guide for size. Let the walls be thick and fairly stiff, so that

when the tube is run through a limb and round the bone it will not kink and be useless, but remain round and a tube. The tubing should not be cut up into lengths; this should be left to the surgeon.

Bandages.

The varieties of sizes and material were legion. Cheap cotton ones are extravagant because the material of which they are made is ruined in the first washing. They do not iron out, and cannot be fitted on to lie flat after washing. Usually their first use was the last. Let the cotton bandages be made of be good; it is cheapest. Far and away the best bandage is made of flannelette; care should be taken to see that it is not inflammable. For many-tailed bandages it is admirable, as good as domette and cheaper. These bandages can be washed, ironed, and are as good as new, and can be used time and again. It is astonishing, too, how often one uses many-tailed bandages made of flannelette for arms, legs, chest, abdomen, etc. Slip the bandage under the limb and the rest is easy—much quicker for the surgeon and easier for the patient, when every movement causes pain, than putting on a roller.

For chest cases the many-tailed bandage has a tendency to slip down, not up. To prevent this I had sewn on to the back top part of each chest many-tailed bandage two strips that came over the shoulders, crossed on the chest, and were pinned to the bandage in front, braces in fact, and found them very useful. Many-tailed bandages should be rolled in the following way: Take two long pieces of stiff paper, 6 inches longer than the depth of the bandage, and commence at each end rolling the many tails towards the centre. The result is two sausages as it were of bandage rolled on paper, meeting at the middle. This can be slipped on under anything, and when unwound and the paper removed everything is finished with, the tails all flat and no rucks.

Three sizes of bandages are sufficient—2½, 3½, and 6 in. are all that are required. With a sharp table knife the 6 in. can be cut if desired to any breadth, 1 in. upward to 5 in.; it must be cut squarely to avoid scalloped edges. Most bandages are far too long. Bits are torn off and thrown away; 4 to 5 yards is enough, instead of 6 yards.

All kinds of arm slings were sent us—patent leather looking things, khaki coloured with buckles and what not. There is nothing to equal the triangular sling, and a colour other than white would be welcome—black or slaty-blue to match the uniform, or khaki. A safety pin (black) should be put in each sling. The standard St. John sling is correct for size.

For irrigating wounds there is nothing to equal a Higginson syringe, with a glass nozzle, but a piece of gauze should be tied on to the other end to prevent bits of wool getting in and blocking the valves. The whole thing can be boiled, and lasts for weeks, or even months. I prefer them as handier than an irrigator with long rubber tubing. Glass syringes, whether hypodermic, exploring, or what not, are always being broken, either in boiling, by accident, or carelessness; all metal is best in the long run. Ordinary 6-inch probes are almost useless. I had made for me probes varying from 1 ft. to 18 in. long. I have seen cases in which bullets have entered at the buttock, and been removed from the back of the neck. Stout copper wire silvered, with a blunt point at one end and an eye at the other, I found admirable; they can be bent to any curve, and are cheap and everlasting.

Drugs.

The tablet form is best, and a great variety is not needed. Calomel, aspirin, morphine, and salol are in constant demand.

Antitetanus serum is essential, but, alas! not always to be relied on. A reliable mark should be got from a reputable firm, and I strongly urge that samples should be submitted to a bacteriological test before sending out. This is most important; certain samples proved to be inert. I found a most practical way of putting up these was a method used by Parke, Davis, and Co. It consists of a round glass container, made with glass tips at each end. Inside this container was the serum, with a plunger at one end. Enclosed in each packet was a sterile needle and a rod. By breaking off one end the needle fitted on, and by doing the same to the other end, and screwing the

rod on to the plunger inside, the syringe was complete. I gave many of these away to young officers going to the front, confident the risk of contamination in such an appliance was reduced to nil, even in the hands of an amateur.

Clothing.

All sorts of strange garments were sent to us by kind souls, who enclosed no name and no address. We never knew what some were—whether socks, mittens, or night-caps. Bed jackets of splendid flannel and exquisite workmanship made so narrow across the back that no ordinary man could get into them. All these had to be altered, and three jackets were frequently used to make two good ones. Shirts, again, have arrived with neck bands so tight as would have throttled anybody who tried to fasten them; the bands had to be taken off and bits let in, and so on. All this means want of some central supervision. They had not been examined at any dépôt, and were sent out by well-meaning people, who had probably never made shirts or bed jackets in their lives before. Standardization is required, and would mean economy. Then there were strange and wonderful garments with tapes up the backs, down the sides, down the front, up the arms, the result of patient work—all very admirable, but in nine cases out of ten not needed, except in paralysed cases the result of injury to the spine. It is not comfortable to be on a string of knots, and patients complained of cold backs. The simpler the garment the better: it should be big enough, but not too big; the wrist bands should let a man's fist through, and the neck be big enough to button. Pyjamas are not much used in hospital wards, but ward suits for patients to walk about the wards and grounds are a necessity. Each hospital should, if possible, have the same pattern in colours and arrangements, or at least each ward or floor.

Various sizes of coats and trousers are necessary for big men and little men. The jackets should have three pockets—two at the sides, and one for the handkerchief. Those known as patch pockets are best and easiest to make. Pockets in the trousers do not much matter. The material of which these suits are made should be washable and not liable to shrink.

Buttons are a great nuisance, and were frequently missing. An excellent button can be got consisting of a metal disc with a central hole, and a separate shank shaped like a collar stud. A small slit was made where the missing button came off, the head of the stud passed through and the disc snapped on. It is easy to do, and makes an admirable job.

French soldiers had no slippers; their hobnailed boots in the wards ruined the floors, and the clip-clop they made was irritating. Slippers of felt are essential, should be big enough to put on a bandaged foot if necessary, and of all sizes. Any ingenious woman can make them cheaply.

Tobacco.

A tremendous amount of money is frittered away in tobacco and cigarettes that could be infinitely better used in other ways. When I left St. Malo at the beginning of June I should think I left behind a couple of hundred-weight of tobacco and cigarettes, sent to us by all sorts and conditions of people and societies. This was due to overlapping from want of organization.

French soldiers are careless with their matches and cigarette ends. They finish the cigarette, and drop it with the spent match by the bedside. Tin ash trays to stand by the bedside are a necessity, yet, except in our hospital, I never saw any.

Ward Appliances.

The best basins for the wards for washing patients I came across were papier-maché ones sent from Ipswich. They were enamelled inside and out. They tumbled about, and had no end of rough usage, but they never broke, never chipped, or, if they did, a 6d. tin of enamel was all they wanted to look and be like new. Earthenware or tin basins very soon got broken, or bashed, or dented. For dressing wounds enamelled ware basins, bowls, and big kidney dishes are a necessity. Kidney dishes can be got in papier-maché, are cheaper than the enamel ware, and do not chip.

The most expensive item we had to deal with was mackintosh. In regard to this, the cheapest is the

dearest; give a good price for a good article. No substitute that I know of equals good mackintosh. It is an absolute necessity. We had many different things to try, but always returned to mackintosh.

Such things as razors and shaving brushes we were always hard up for. Usually the men arrived with nothing but what they lay in. As for trouser braces, nobody ever thought of sending us these useful articles till they were asked for.

There is no need to send crutches. All these are supplied locally, and made by any carpenter. Ordinary unscented antiseptic soap is a godsend for washing the men, who arrive in a filthy condition.

All parcels should be sent out in cases: 3 ft. by 1½ ft. by 1½ ft. is one handy size. The lid should be hinged at the side, screwed down, and a partition should divide the case into two. When stood on end it makes a capital bedside table. Cheap, efficient, very necessary, and far better than an orange box. The screws are an advantage for opening and come in handy for fastening foot-pieces on to splints, and in many other ways. These boxes are useful, too, for storing x-ray negatives, and when placed side by side one tier above another become handy lockers for boots, caps, belts, and so on.

Bigger boxes should be about the height of a table when on their ends. Three or four placed together and covered with a sheet of American cloth make an excellent ward table. If the partitions are put in and the lids hinged they act as cupboards as well, to keep the thousand and one things necessary in a ward. Placed in the linen room they make excellent cupboards for sheets, towels, pillow cases, etc.

It is desirable to have the wood planed, for then it comes in also very handy for many splints. They must have the Red Cross label pasted on, and I like a list of contents tacked on to each box, both in French and English. It saves bother with the Customs. Much worry can be saved by getting the signature of Sir Wm. Garstin at the Red Cross offices, Pall Mall, also to tack on. It acts like a charm on Customs officers. The arrangements may now be different, but the St. John Ambulance Association or the Red Cross will always advise in this matter.

Need for Organization.

It is a great pity that there is not some central organization to deal with overlapping. I would suggest that a central dépôt or committee be authorized to deal with these matters, and that model garments, model bandages, splints, etc., be given to the dépôts throughout the land where charitable people who want to make things and do things in this terrible crisis can see what is required, and have pointed out to them certain faults they must avoid. The money and the will is here, but much is wasted through isolated but well meant unorganized effort. I understand the Marblon dépôt is attempting such co-ordination. I heartily endorse such action, and wish it success.

In this article I am discussing matters as they appeared to me at St. Malo. I cannot speak of what happened further up near the firing line.

FURTHER INVESTIGATIONS INTO LATENT DYSENTERY AND INTESTINAL PARASITISM IN SARAWAK, BORNEO.

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In a previous paper I stated: (1) That many people, European and native, were found to carry what we believed to be *Amoeba histolytica*, without complaining of acute or chronic dysentery, but that they were mostly pale and weak, while many, indeed most, of the same persons had also ankylostomiasis. (2) That in the cleared portions of this country malaria was not common, yet the tradition that every feeling of languor or heat was considered to be "a touch of fever" was so common that quinine was used extensively. After calomel and saline were substituted, great improvement resulted, because the

septic state of the alimentary canal, associated with constipation, was so usual, that "constipation fever" would have been a truer description. (3) I gave a list of 100 unselected cases of all kinds, among Tamils, Javanese, Chinese, Dyaks, Malays, and Europeans, who came into hospital, and I stated that amoebae were found in 34 per cent., ankylostomiasis in 40 per cent., whip-worm in 44 per cent., round-worm in 24 per cent., and monads in 13 per cent. These patients, however, had occasionally been treated for these conditions, and as I wished to find the main reservoir of intestinal parasitism, I set to work to test 100 Malays living on the banks of the Sarawak River in their usual fashion, in palm leaf houses on high piles on the edge of the river.

None were selected or pressed, and few had been treated. These patients often try to get santonin, but the hospital is distant, and we may consider their ailments as practically untreated, the native remedies being of little use. Most people are probably now aware that Malays let all their sewage run into their river. They squat for defaecation in it, and drink from near the same spot, trusting to the current and tide for cleansing. They love their river, are always bathing, swimming, boating, drinking, or fishing in it. To the casual observer they appear as a happy, clean family sporting beneath their cocoanut palms and fruit trees. They are fond of gong-beating and dances on every possible occasion. They dislike any work, save boating and gathering jungle produce in the forest. Yet in reality the average Malay seems sad and seedy when not *en fête* or excited. Careful examination will show that debility must result from the very great amount of parasitism from which they suffer. One of our Malays manages to struggle through his work as boatman and carpenter with filaria in his blood, amoebae, ankylostoma, round-worm and whip-worm in his alimentary canal, having already become immune to malaria, which is found more frequently in the young. He was, on the other hand, an ardent advocate of beta naphthol and santonin among his compatriots, and it was he who went and explained the reason why their stools should be examined. With no small effort, and by sending this man and a laboratory assistant up and down the river, we managed to get good specimens of faeces in Petri dishes, carefully labelled, from 100 Malays—men, women, and children—in the order in which they offered, without any reference to present or past illnesses. The women were somewhat shy, and are therefore in the minority. Four slides were examined, and amoebae were chiefly searched for. Only moving specimens, or those well stained by neutral red, were counted. They had the eccentric nucleus, blunt pseudopodia, and other characters of *Amoeba histolytica*. The differences of size, amount of activity, and tendency to be quiescent we considered to be due to the warmth or coldness, liquidity or otherwise of the stools, and the time intervening between voidings and examination. The work was done by myself, or assistants under my supervision, in a well-equipped laboratory.

The result was as follows: *Amoeba histolytica* was found in 59 per cent. of the samples; *Ankylostoma duodenale* (or *americanum*) in 59 per cent.; monads (*Trichomonas*, 63 per cent., *Cercomonas*, 3 per cent.), 66 per cent.; round-worm (*Ascaris lumbricoides*), 79 per cent.; whip-worm (*Trichocephalus dispar*), 84 per cent. Each person had several sorts at once—in fact, in 17 per cent. five were observed on the same slide, namely, ankylostoma, amoeba, monads, round-worm and whip-worm. The figures are well under the mark, for in twenty cases which were previously negative, where we got a second specimen, we found amoeba in 50 per cent.

Those Malays who came to Sejjik Hospital afterwards for medicine did not complain of any symptoms, but some looked pale and thin, while others, who appeared normal, were not up to a fighting or athletic standard of vigour. On inquiry among 83 whom we were able to meet, we found that of those in whom amoeba had been found, 34 could remember having had dysentery, 26 could not, while of the negative cases, 10 had had dysentery and 13 had not. It may be argued that much of the languor described is due to tropical anaemia after ankylostomiasis or malaria. There is some truth in this, but none said anything about malaria which they knew well; and the following cases will show that those who had amoebae