

TRANSPORT SANITATION.

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THE problems in preventive medicine presented by a ship engaged in conveying troops are not new to the student of hygiene, and simply serve as an illustration of how easily and rapidly communicable disease may be disseminated whenever a large number of human beings are obliged to live in close and intimate contact for a given period of time.

Each and every inmate of the ship, as far as we know, may be the carrier of some pathogenic germ, which may find suitable conditions for its growth and development in the nearest person.

The steps taken to prevent the evil results, following the necessary crowding, and close personal contact among the men on a transport, must take into consideration the actual paths taken by the disease germs from one person to another, and then establish measures to put up a barrier on the different routes, or at least make the transmission a more difficult one.

A measure which naturally presents itself is the removal of any man who may harbor disease germs from the body of troops, so that the process may spread no further. This is done as a matter of course, when the disease can be recognized, but the difficulty lies in the fact that some of our more dangerous carriers give no outward signs that can be detected during a rigid physical examination, and the real condition can only be ascertained by bacteriological and other tests not available

at the time. Another factor to be considered is the fact that most of our communicable diseases have distinct periods of invasion and incubation during which time the personal history of the man is the best guide to his future condition.

It is recommended then that the first step in conserving the health of troops aboard a transport should be a thorough physical examination of every officer and man, conducted by experts, before boarding ship, and that the medical officer accompanying the unit furnish a list of all who have been in contact with, or recently recovered from any illness.

All whose names appear on these lists, together with others detected during the examination are to be considered as a separate problem. No man, however slight his illness or indisposition, should start the voyage in the same quarters with the well troops.

This precaution to be of any value must consist of real work, and the time and effort expended will be well repaid when such is the case. The examination given at the start of the present voyage simply illustrated how little reliance can be placed on such tests when not properly conducted.

After troops are on board ship, a routine should be adopted that would insure that once a day every man would be looked over by a physician and questioned as to his condition, giving special attention to all food

handlers. Slovenly methods and opportunity given to evade such examinations will be sufficient to give a false sense of security, and prove a menace to all.

Pathogenic bacteria gain access to the human body chiefly by inhalation, by the intestinal tract, and through mucous membranes and lesions in the skin.

Invasion by inhalation supposes disease germs to be floating in the air, perhaps free or attached to particles of dust. This only happens under unusual living conditions, where indiscriminate coughing or sneezing is going on, or where much dust is constantly being raised by the tramping of feet or improper methods of cleaning in closed spaces.

Invasion through the skin can take place in various ways, among which the most common are a wound, or through the medium of an insect. The measures that can be adopted to check such method of invasion are obvious.

Invasion through the intestinal tract or mucous membranes, which are the usual paths of infection, requires that the germ be first carried to the mouth or membrane in some manner, most often by the hands or through the food or other inanimate objects.

It is definitely known that most of the pathogenic bacteria which affect men can be found in the secretions of the body; namely, discharges from the nose and throat, saliva, urine and fæces. It has also been shown that there is a constant interchange from person to person through hands, foods and inanimate objects, of their secretions, and that such interchanges are immensely increased when a number

of persons are crowded together for any length of time.

Another factor to be taken into consideration with the above is the length of time such bacteria can live in an unfavorable environment outside the body and also maintain their virulence, although in such crowded quarters as obtain on a transport they would probably be renewed often enough to be dangerous.

Measures needed to combat these sources of infection do not receive as much attention as those directed toward a wound, bad smell, or cloud of dust, because the method of infection is not preceptible to us without special tests, and it is not uncommon to find the entire matter overlooked.

A little thought given to the subject will make clear how easily the hands, and from them food, or inanimate objects are contaminated by body secretions, and how in turn other hands carry them to mouths and susceptible mucous membranes. The spitting nuisance, defective personal hygiene, and general lack of cleanliness are factors to be considered with the above.

In the consideration of measures that may be taken to meet such conditions, it is irresistably brought home to us, that if we could keep all hands and everything that came in contact with them absolutely clean, nothing further would be needed, and this is true, the real question being in what way can this be accomplished:

Under service conditions surgical cleanliness could not be obtained, nor continued, nor is this necessary, as ordinary precautions obtainable by anyone will give very good results.

We will take up this question commencing with the quarters occupied by the men, which in transport ships are usually in the hold, poorly lighted and ventilated and hard to keep clean.

The tiers of berths in the compartments should be so arranged even at the sacrifice of some space, that there will be a clear passage about two and one-half feet wide extending around the four sides of the room. This does away with all corners for the collection of dirt and rubbish, and assists greatly in cleaning.

Framework of berths made of steel tubing are preferable and take up less room than those made of wood, are cleaner, and give greater fire protection.

All surfaces in compartments should be painted in light colors and electric bulbs placed so that when needed for cleaning or inspection, abundant light will flood every corner. The lightest compartment is always the cleanest one. Floor of sleeping compartment should be covered with some cement composition, that will not crack or become slippery when wet. A light color is preferable.

Electric fans should be placed at each corner of the compartment, so directed as to keep up a constant circulation of air around the room, eliminating all dead spaces and avoiding any direct draught on the berths.

This measure with the aid of ventilators and wind sails from the deck would provide adequate ventilation.

Compartments should be kept clean in the following manner:

Once daily roll up all of the lower berths and sweep the floor, so as to

remove all rubbish which may clog up drains. Follow this by scrubbing well with soap and water and then dry thoroughly with well wrung out mops. One or two sweepings will keep the place clean until the following day. Containers should be provided for paper, rubbish, etc., that would otherwise be deposited on the floor.

Once a week all the framework and sides of the compartment should be cleaned in the same manner, and after each trip all canvas berths should be removed, scrubbed, dried in the sun, and replaced.

Bedding and clothing should be aired in sun as often as possible. Port holes should be kept open when permitted by service conditions to admit light and air. A small well-ventilated compartment at either end of ship, having a separate entrance, should be reserved for isolation purposes.

The addition of disinfectants to the water used for cleaning is not recommended. The bactericidal value of the solution is doubtful, and any odor in a close compartment is a disadvantage, giving a sense of false security. It is better hygiene to rely on perfect cleanliness, and not try to cover one odor with another.

Our daily cleaning should not end with the quarters occupied by the troops, but should extend to all parts of the ship, giving special attention to mess rooms and kitchens, where food is handled and prepared. On account of the congestion, the daily cleaning is a matter of carefully worked out routine, the men being moved from deck to quarters and back again, as the different parts are being cared for.

Some portions of the ship, as kitchens and mess rooms, require careful cleaning after each meal, other portions like the latrines require constant attention and these details should be carefully worked out by the one responsible for the sanitary condition of the vessel.

The latrines on board a transport are a constant source of danger, being used to their extreme capacity at almost all hours, the rate being about twelve men per minute. Those on board are of the trough pattern with intermittent siphon flushing. There is a constant tendency for the soil pipe draining these troughs to become obstructed, and cause the troughs to fill, and then have their contents spill over the floor of the apartment with each roll of the ship.

With such constant use a steady flush would be preferable, but this requires extra pumps to furnish the water required. The openings from the soil pipe to the trough should not present any obstructions to a steady flow, and the pipe should be of large enough diameter to readily carry off all the contents of the trough. There is also a tendency for the sides and top to become soiled with fecal matter and a deeper trough, egg shape, with large end down, containing some water all the time yet flushed completely at each discharge of the siphon, and deep enough so that its contents would not slop over with the rolling of the ship, would answer the requirements better.

To maintain cleanliness in such an apartment under service conditions, requires a thorough scrubbing of floors, troughs, etc., once a day, using hot water and soap—a man should be kept

constantly on duty after this to see that the drains do not become obstructed and the place is kept in order.

It is a wise precaution to place a sentinel at the entrance to prevent men from carrying anything into the apartment, thus preventing the throwing of newspapers, waste, etc., into the drains. Suitable toilet paper should be furnished in each latrine.

The serving of food presents a problem which must be worked out for each unit, the system now in use being to form lines of men each man carrying his mess kit. These lines pass before a table where the food is given out by men placed behind the large containers used for that purpose.

All food handlers are sources of danger and should constantly be under the observation of the medical officers.

An adequate supply of boiling water should be on hand after each meal for the cleansing of mess kits, and measures taken to see that every man uses and drinks from his own utensils only.

Personal hygiene should receive close attention, bearing in mind that in the best of sanitary surroundings disease may be easily conveyed by the hand to mouth route and that this path is probably the most common one under any circumstances.

Available shower baths should be so used that the entire command is bathed in turn as often as possible; and the advantage of personal cleanliness should be taught on every occasion. If a basin contrived in such manner as to always automatically contain a small amount of clean water, could be placed outside of each latrine, and each man leaving there be com-

pelled to wash his hands, a great advance would be made. If the same thing were in reach of the mess line and each man had to wash his hands before he handled his food, the hand and mouth route would do a very poor business.

The chances of washing clothing on board a transport are very slight, and each man coming aboard should have had a bath and wear clean underwear, besides having one or two changes in his possession.

All the troops on board should be divided into units of convenient size, and suitable deck space assigned to each at different times during the day, so that each unit will have opportunity

for physical drill and exercise at least twice during the twenty-four hours.

Drinking water and food supply are looked after by the transport service.

Briefly summarized, then, the hygienic requirements aboard a crowded transport are:

1. A rigid physical examination and careful scrutiny of the personal history of each man before going on board ship.
2. Isolate all sick, carriers or suspects.
3. Daily inspection to detect other cases, followed by prompt insolation.
4. Sanitary surroundings.
5. Personal hygiene.
6. Blocking all routes of infection.
7. Sufficient exercise.

HOW TO WRITE NEWSPAPER COPY.

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HEALTH officers, social workers and others who appreciate the value of newspaper publicity in furthering good causes should do their part to make "copy" agreeable to the eye of the editor as well as interesting to his readers. Many a good cause loses headway when a busy editor throws a carelessly prepared manuscript into the waste basket. The following suggestions for making clean copy are offered by an experienced publicity man and are well-worth remembering.

Whenever possible submit typewritten manuscript.

Double-space or triple-space between the lines.

Leave three inches or more blank at the top for a headline.

Leave a half-inch blank space at the bottom of each page for convenience in pasting.

Do not carry a sentence from the bottom of one page of manuscript to the top of the next page.

Avoid breaking words at the end of lines.

Number each page in the center at the top and draw a half circle under the number.

When you write in long-hand print out all proper names.

Be sure to spell all proper names correctly and to supply the initials necessary to identification.

Use paper of standard typewriter size or smaller.

Sign your name.

If you write headlines put action into them.

When you have time rewrite your copy: Cut out unnecessary words and make your opening paragraph as interesting as you know how to make it.

Write only on one side of the sheet.

After the story appears thank the newspaper for printing it and try to avoid criticism if typographical errors or editorial mistakes are apparent.

Remember that the newspaper wants items when they are newsy.