

## CANTONMENT HEALTH ADMINISTRATION.

BY MAJOR A. E. RICHMOND, O.B.E.

*Royal Army Medical Corps.**(Continued from p. 367.)*

## VI.—THE PREVENTION OF SMALLPOX.

An epidemic of smallpox is an almost ever-present menace in most cantonments in India.

The Indian Vaccination Act, which provides for the compulsory vaccination of the more youthful elements of the population, can be made applicable to a cantonment provided the necessary official sanction is given to the step by the Local Government, and, as far as the writer knows, it is in force in all, or practically all, stations.

This Act, apart from its main purpose already indicated, allows of the making of the necessary bye-laws and regulations in order to ensure that its provisions are complied with, and permits the appointment of public vaccinators, the establishment of vaccination stations, the fixing of the vaccination season (the cooler months of the year), and other essential measures. The vaccination station is usually situated in the cantonment hospital, and is under the ægis of the medical officer in charge of the latter.

In the event of the Vaccination Act for any reason not being in force, general public vaccination can, in an outbreak of smallpox, threatened or actual, be enforced as a special measure under Section 151 of the Cantonments Act already referred to (*vide supra*), and it will be realized that this affords a valuable second line of defence.

Without an efficient system of registration of births, the proper carrying out of compulsory vaccination is an extraordinarily difficult matter, and in reference to this it should be borne in mind that the registration of births, marriages and deaths is one of those subjects in regard to which the Cantonment Authority is at liberty to frame bye-laws.

In the writer's experience, however, and probably in that of many readers also, it is an extraordinarily difficult matter to induce a cantonment, or other Indian population, with its large percentage of illiterate people to report births, marriages and deaths to the registration authority in accordance with the bye-laws on the subject. The cantonment can be plastered with notices in regard to the matter, the town crier can ring his bell and proclaim the regulations having reference to it until he is, metaphorically speaking, blue in the face, people can be threatened with condign punishments for failing to register events of the nature alluded to, and all

conceivable measures can be adopted to ensure that the bye-laws are compiled with, but the net result will usually be that not more than thirty per cent of the births, marriages and deaths in the cantonment are correctly notified, and even the fining of offenders will not produce any much greater effect than this.

The appointment of a good public vaccinator is a matter of extreme moment in diminishing the risk of a smallpox epidemic, but it is no use expecting the cantonment population voluntarily to present themselves or bring their children for vaccination, and they require to be persistently hunted, by written notices and personal visits, to the vaccination station. The public vaccinator plays an important part in this, and the size of the protected element among the cantonment inhabitants is directly proportionate to the amount of energy he expends in personally keeping in touch with all parts of the station.

Unfortunately, to be visited by the goddess Mata (smallpox) is looked upon as a blessing by the Hindu section of the Indian community, and there is no doubt that this belief plays a considerable part in ensuring a heavier incidence of the disease in an epidemic than would otherwise be the case.

It is for this reason, too, among others, that so much trouble is experienced in outbreaks of smallpox, on account of the concealment in houses of cases of the disease. Those responsible can, of course, be summoned under the Cantonments Act for non-notification, but this frequently does not deter them, and a house to house search for such patients may become a necessity. On one occasion in the experience of the writer, when this was being done, he arrived on the flat roof of one house in time to find a smallpox patient being lowered on to the roof of the neighbouring house which had just been searched, and in which the parents had hoped to put the case out of sight until the searchers had departed. The lengths to which many, including the most enlightened Indians, will go on occasions to hide cases of smallpox and other infectious diseases as well, are almost unbelievable, and the practice forms a very serious obstacle in many instances to dealing rapidly and effectively with an epidemic.

## VII.—THE PREVENTION OF RABIES.

The prevention of rabies, a disease which is endemic in most parts of India, lies almost entirely in the proper control of dogs, and this is ensured, as far as possible, by the Cantonments Act and bye-laws made under it. All dogs must be registered and must wear a collar, together with a metal badge issued by the registration authority.

Under the Act the Cantonment Authority may cause to be destroyed, or confined for any period necessary, a dog or other animal reasonably suspected to be suffering from rabies, or which has been bitten by such an

animal. It may direct that, after a specified date, any dogs without collars or marks distinguishing them as private property, found straying beyond the enclosures of the houses of their owners, be destroyed, and they may be dealt with accordingly.

The Cantonment Authority may also order the use of muzzles and chain leads when rabies is prevalent.

Penalties are prescribed against those contravening the Act or orders issued under it, and it is stipulated that any person knowing or having reason to believe that any dog or animal belonging to him, or in his charge, has been bitten by an animal suffering from rabies, must give immediate information to the Executive Officer (s. 119).

Unfortunately, in spite of the powers possessed by cantonment authorities, rabies continues to be more or less prevalent in most stations, this being due largely to the fact that the disease is imported so frequently from the neighbouring cities or townships where usually no system of control of dogs is in existence, while an additional factor which plays a part is the wide extent to which the malady is present in jackals, and the habits of these animals which bring them close to, or into, cantonments at night in search of food.

It is often the case that cantonment authorities employ one or more dog-shooters on whole-time duty whose work is to destroy wandering and unowned dogs. It is very much more satisfactory if soldiers are employed for this purpose if they can be made available, as it is frequently a matter of some difficulty to find Indians who will undertake the task, or who do not, after a few days' trial, throw up the job on account of their being haunted at nights by the ghosts of the animals they have slain.

The keeping down of the numbers of pariah dogs in a cantonment is a matter of much importance and requires careful attention on the part of the authorities concerned.

#### VIII.—POWERS OF ENTRY AND SEIZURE.

The Cantonments Act gives the power of entry into, or upon, any building or land to the President or Vice-President of the Board, the Executive Officer, the Health or Assistant Health Officer, or any person authorized by the two last-named, or by the Board, in order to make any inquiry or inspection, or to execute any work, authorized by or under, or required for the purposes of, the Act (s. 241).

Similarly, the Cantonment Authority may depute any person to inspect any drain, privy, latrine, urinal, cesspool, pipe, sewer or channel, and, in his discretion, to cause the ground to be opened for the purpose of preventing or removing any nuisance arising from one of the sources referred to (s. 243). Provision is also made under this section for the apportionment of the expenses of the work.

Unless expressly arranged for in the Act, entry must not be made

except between sunrise and sunset, and four hours' notice must be given to the occupier or owner concerned, except in the case of a stable, cattleshed, latrine, privy or urinal, or a work under construction, while due regard must be paid to social and religious usages (ss. 246, 247, 248).

Any door, gate, or barrier may be opened if this is necessary for the purpose of such entry, or if the owner or occupier is absent or refuses to open the obstruction.

In addition to the provisions of the Cantonments Act, in respect of powers of entry, already alluded to, one important section permits entry *at any time* into markets, buildings, shops, stalls, or other premises in the cantonment, for the inspection of animals, articles or things intended for sale as human food or drink, or for medicine, irrespective of whether it is for sale, storage, manufacture, or preparation of the foodstuff or medicine that the places are used.

The same section of the Act allows of the seizure of any diseased or unwholesome animal, or other foodstuff, or of medicine, food or drink that is adulterated or not what it is represented to be, or of any utensil or vessel of such a kind, or in such a state as to render any article prepared, manufactured, or contained in it unwholesome or unfit for human consumption, while any perishable article so seized and unfit for consumption may, under the orders of the Health Officer or the Assistant Health Officer, be destroyed, provided, if it is not so destroyed, it is taken before a magistrate.

Penalties to a maximum of 100 rupees may be imposed on offenders against this important section of the Act (s. 215), and it is wise to note that assistance is given at the conclusion of the section in regard to the definition of the terms, "not what it is represented to be" and "unfit for human food."

Comment appears unnecessary in regard to the provisions of the Act concerned with powers of entry and seizure mentioned above, but it is of moment to bear in mind the restrictions laid down, particularly in reference to entry, as if the latter is made at times or under circumstances not covered by the terms of the Act, the individual concerned is liable to find himself summoned for trespass.

#### IX.—SLAUGHTER HOUSES AND MARKETS.

The provisions of the Cantonments Act give to the Cantonment Authority wide powers in relation to the supervision and control of slaughter houses and markets.

It is authorized to provide and maintain such a number of these as it thinks fit, and has the requisite right of entry for purposes of inspection, and of closure, if this is necessary, in the interests of the health of the cantonment (s. 198).

No one is permitted to expose any animal or article for sale in a public market without the approval of the Board (s. 199), and no place can be used as a public market or slaughter house unless a licence for the purpose has been granted officially; this latter, however, not being necessary in the case of the killing of an animal anywhere on the occasion of a festival or ceremony, provided necessary conditions as to prior, or subsequent, notice are complied with, according as the authority concerned directs (s. 202).

Penalties are prescribed under the Act for those who either keep markets or slaughter houses open without a licence, or put articles up for sale, or slaughter animals, as the case may be, in unauthorized places (ss. 204, 205).

Any servant of the Board, duly commissioned in writing by the President, or by the Health Officer, may enter and inspect, by day or by night, any place in which he has reason to believe that illegal slaughtering is being carried on, but in this connexion it is important to note that the written authorization must specify the place to be visited, its locality, and the period for which the order is in force; in reference to the latter point, the period should not exceed seven days (s. 207).

Bye-laws having as their object the proper control of markets and abattoirs are a necessity in all cantonments, and the Board is permitted to frame regulations of this nature dealing with the days and hours of slaughtering, or of selling in markets, as the case may be, the design, ventilation, drainage and sanitation in general of the buildings devoted to these purposes, the stalling of animals prior to killing, the method of slaughtering, the disposal or destruction of carcasses unfit for consumption, and other relevant matters (s. 208).

Finally, an important section of the Act lays down expressly that no person may, without the sanction of the Cantonment Authority, bring into a cantonment any animal intended for human consumption, or the flesh of any beast killed outside the cantonment, otherwise than in a Government or Cantonment Authority controlled slaughter house. Any animals or flesh introduced in contravention of this section may be seized and sold, or disposed of by the responsible authority, the proceeds being allocated to the Cantonment Fund, while the offenders concerned may be punished with a fine.

It is desirable, however, to note that the restrictions outlined in the preceding paragraph do not apply in the case of meat brought into the cantonment privately for private domestic consumption, as distinct from that for sale to the public.

It will be recognized from a perusal of the foregoing that the provisions of the Act mentioned, in a general way, restrict the selling of goods and slaughtering to specified and licensed places, ensure that such premises are properly constructed and sanitary, and put a ban on the killing of animals and sale of goods anywhere and everywhere throughout the cantonment, regardless of the suitability of the premises for the purpose.

## X.—PROSTITUTION.

As regards the removal and exclusion of prostitutes and the suppression of sexual immorality, exceptional powers lie in the hands of the Commanding Officer of the cantonment as distinct from the Cantonment Board.

In the event of his receiving information that any building is being used as a brothel or for purposes of prostitution, he may, after inquiry, direct the owner, lessee, tenant, or occupier to discontinue employing the place for such a purpose (s. 235), while if he is satisfied that any individual residing in or frequenting the cantonment is a prostitute, or has been convicted of loitering for the purpose of prostitution, or of importuning to the commission of sexual immorality, or of abetting such an offence, he may by means of an order in writing expel the culprit from the station, and prohibit her or him from re-entering it (ss. 236 and 237).

Somewhat similar powers lie to the hand of a magistrate of the first class having jurisdiction in a cantonment, but, as regards actual expulsion of offenders and their prohibition from returning, he must furnish his recommendations to the Commanding Officer, with whom any further action in the matter rests.

The practical results of the sections of the Cantonments Act alluded to, tending, as will have been observed, to prohibit anything in the nature of brothels, licensed or otherwise, is that prostitutes are driven on to the roads and by-ways, and are completely out of control from the point of view of medical supervision and inspection, and although much has been done of recent years to improve the lot of the soldier in India and to give him a sufficiency of healthy interests in addition to his work, yet it is very questionable whether such an ideal state of affairs has been reached as renders a limited form of authorized prostitution unessential.

The incidence of venereal disease among troops is still comparatively heavy, and although there are numbers of ladies of easy virtue, professional and casual, among the Indian women in a cantonment, yet it is a most unusual thing for any one of them to be dealt with and expelled under the terms of the Act.

The reason is not far to seek and lies in the fact that the apprehension of offenders in the darkness of the roads and by-ways of the average cantonment is always a difficult matter, while the ordinary soldier is very loath to lay a charge of soliciting against a woman, until he finds he has infected himself with disease, by which time it is too late, as more often than not he has but the haziest recollection of the woman's appearance, and has of a certainty no knowledge of her name or lodging.

Apart from these difficulties just mentioned, "graft" undoubtedly plays its part, while even if a cantonment is by energetic measures denuded of its prostitutes, the trouble still remains of women of this class temporarily imported for the night from the neighbouring city by tonga drivers and



others, their concealment during the journey frequently being effected by hiding them under the seats of the vehicles, putting them in sacks, and by other more or less ingenious subterfuges, so that they may escape the eye of any more than usually watchful policeman.

It will probably be agreed by many readers that it is a pity that the Cantonments Act does not allow of, at any rate, a mild form of licensed and supervised prostitution.

#### XI.—BURIAL AND BURNING GROUNDS.

No place in a cantonment, which was not used as a burial or burning ground before the Act of 1924 came into force, may be used for a purpose of this nature without the written permission of the Cantonment Authority (s. 146), and the latter may accompany its sanction with the imposition of any conditions it may deem necessary with a view to preventing annoyance and danger to health of persons residing in the neighbourhood (s. 146).

Should the Board be of opinion that any burial or burning ground has become offensive or insanitary, it may, with the previous sanction of the Local Government, require the owner or individual in charge to close the place, provided he is informed at the same time as to the conditions consequent upon the fulfilment of which the ground may again be taken into use (ss. 146 and 147).

Little else of importance is laid down in the Act in regard to areas used for interment and cremation, except that the Cantonment Authority may require the owners or persons in charge of such places to supply any information wanted concerning their condition, management, position, etc. (s. 145), and may by public notice prescribe routes in the cantonment by which alone corpses may be removed there.

The authority concerned is, under the sections of the Act quoted, given ample powers for dealing with burial and burning grounds from a health point of view, and no remarks on the subject appear necessary.

#### XII.—HOSPITALIZATION.

Under the provisions of the Act the Cantonment Authority may provide or maintain as many hospitals and dispensaries as it thinks fit, or may make a grant-in-aid to any such institution not supported by it, while every hospital or dispensary so maintained or assisted must have attached to it a ward or wards for the treatment of persons suffering from infectious or contagious diseases (s. 171).

At such establishments the sick poor of the cantonment, and other inhabitants suffering from infectious or contagious disease, may be treated free of cost, and, if looked after as in-patients, may be either dieted gratuitously or be granted subsistence allowances on such a scale as the Cantonment Authority may deem suitable (s. 173), while those who are

ineligible for free treatment can be admitted as patients at charges previously fixed by the authority concerned (s. 174).

The sections of the Act mentioned deal with hospitalization in the ordinary way, but the fact must not be lost sight of that epidemics of infectious disease may arrive very unexpectedly, and it is essential that cantonment authorities should have some scheme ready in advance by which the necessary, and possibly much increased, isolation accommodation for infectious patients may be available in a very short space of time, and should not have to rely on the military authorities to lend tentage and other equipment to deal with the situation. Apart from provision for augmented hospital accommodation of this nature, it is wise to have arrangements made by which a definite area is retained for use, should need arise, as a quarantine camp, and that the requisite material for the construction of temporary shelters for those in quarantine is easily obtainable.

### XIII.—BYE-LAWS.

The Cantonment Authority is empowered under the Cantonments Act to make bye-laws in regard to certain matters, but before being brought into force it is necessary that they be approved by the Local Government and published in the local official gazette.

Matters of importance from a health point of view in connection with which such bye-laws may be made comprise the following:—

(1) Registration of births, marriages, and deaths, and the taking of a census.

(2) Enforcement of compulsory vaccination.

(3) Regulation of the construction, alteration, maintenance, preservation, cleansing, and repairs of drains, ventilation shafts, pipes, water-closets, privies, latrines, urinals, cesspools and other drainage works.

(4) Regulation or prohibition of the discharge into or deposit in drains of sewage, polluted water, and other offensive or obstructive matter.

(5) Regulation or prohibition of the stabling or herding of animals or any class of animals so as to prevent danger to the public health.

(6) The proper disposal of corpses, and the regulation and management of burial and burning places.

(7) The regulation and control of encamping grounds, pounds, washing places, serais, hotels, dâk bungalows, lodging houses, boarding houses, clubs, restaurants, cafés and places of public recreation or entertainment.

(8) The regulation of ventilation, lighting, cleansing, drainage, and water supply of the buildings used for the manufacture or sale of aerated or other potable waters, and of butter, milk, sweetmeats, and other articles of food and drink for human consumption.

(9) Matters regarding which conditions may be imposed by licences granted under Section 210 of the Cantonments Act (*vide infra*).



(10) The control and supervision of places where dangerous or offensive trades are carried on.

(11) The fixing and regulation of the use of public bathing and washing places.

(12) The regulation or prohibition for purposes of sanitation or prevention of disease of any act which occasions or is likely to occasion a nuisance, for the regulation or prohibition of which no provision is made elsewhere in the Cantonments Act.

(13) The prevention of the spread of infectious or contagious diseases within the cantonment.

(14) The segregation or removal from the cantonment or destruction of animals suffering or reasonably suspected to be suffering from any infectious or contagious disease.

(15) The supervision, regulation, conservation and protection from injury, contamination, or trespass of sources and means of public water supply, and of appliances for the distribution of water, whether within or without the cantonment limits.

A matter of particular importance, among those just mentioned, in regard to which bye-laws may be framed, is that of the conditions which may be imposed in respect of licences granted for the carrying out of certain trades and occupations within the cantonment.

Those callings which are of moment from a health point of view and for the prosecution of which licences are requisite comprise those of butcher, poultry, game or fishmonger, pig-keeper or dealer, keeper for profit of milch cattle or milch goats or other animals, dairyman, butterman, maker or vendor of ghee, bread, biscuit, or cake-maker or vendor, fruit and vegetable dealer, aerated water or other potable water manufacturer, ice or ice-cream maker or seller, vendor of medicines, drugs, or articles of food or drink for human consumption which are of a perishable nature, water-seller, washerman, maker or seller of sugar and sweetmeats, vendor of wheat, rice, or other flour grain, and an individual engaged in an offensive trade (s. 210).

Licences in respect of these occupations are issued for one year on payment of the necessary charges, and on the backs of the licences are printed the conditions under which they are issued. These vary to some extent, it is presumed, in each cantonment, but in all cases certain basic points of importance from a health aspect should be covered by them, and when inspecting trade premises the medical officer concerned should make it a habit to call for the licence and to make certain first that its conditions are being complied with, as far as they affect his particular province.

It should not be forgotten that the proprietors of hotels, cafés, and eating houses of all descriptions must have licences, and it is by the conditions imposed by these that a strict control can be exercised over the general cleanliness and sanitation of these places, which are so important from a health point of view, apart from any such control obtained by bye-laws made under sub-para. 7 above.

It would not appear necessary to make any further remarks in respect of those matters which may be covered by bye-laws, as the situation as a whole in regard to them seems clear.

We have now considered the chief matters of importance, from a health point of view, with which the Cantonments Act deals, but it behoves us to mention certain other points in this connexion upon which the provisions of the Act touch.

Of these, one of some moment is that the Local Government may, on application being made by the Cantonment Authority concerned, extend to any area beyond the cantonment, provided it is in its vicinity, and with or without restrictions or modifications, any of the provisions of the Cantonments Act contained in Sections 118 to 279, or of any rule or bye-law made under it which relates to the subject matter of the chapters, which comprise the sections named, and any enactment, rule, or bye-law so extended thereupon applies to that area as if it were in the cantonment. Broadly speaking, this means that any of the provisions of the measure referred to relative to matters of health may be applied to such an area, so that we have here a means of applying suitable measures to insanitary places on the borders of a cantonment which are likely to prejudice the health of the inhabitants within its boundaries.

Another, though less important, point on which the Cantonment Acts throws enlightenment is the definition of the term "nuisance." It will be realized that we are concerned with what we may call sanitary nuisances, as distinct from those which are general in type, but in any case if one is faced with difficulty in the interpretation of the word from a legal point of view, a reference to Section 118 of the Act will be of much assistance, as therein is given a long list of what may be considered to comprise nuisances.

In much the same way trouble is often experienced in deciding as to whether a given condition of affairs may be said to constitute an "insanitary state" or not, and in this matter the Act gives us no help. One can only say that common sense must be relied on, and that it is wise in such cases to remember that two heads are better than one.

In dealing with the matter of the prevention of infectious and contagious diseases, no definition of what these include was given. The Cantonments Act mentions the point and, in the list of definitions given in Chapter I, we find that diseases of the nature alluded to comprise cholera, leprosy, typhoid and paratyphoid fever, smallpox, tuberculosis, diphtheria, plague, influenza, venereal disease, and any other epidemic, endemic, or infectious disease, which the Local Government may by notification in the local official gazette declare to be an infectious or contagious disease for the purposes of the Act. This latter group will normally include any diseases of the kind referred to which are not specifically mentioned in the definition given and which are of any importance from a health point of view.

Finally, two sections of the Act dealing with noxious vegetation and agriculture, and irrigation, should not be left out of consideration.

Under these the Cantonment Authority may by notice in writing require the owner, lessee, or occupier, of any land to clear away thick or noxious vegetation, or undergrowth, likely to be injurious to health or offensive to persons residing in the neighbourhood, and may also prohibit any cultivation or the use of any kind of manure, or irrigation of any land in any specified manner likely to be injurious to the health of persons dwelling in the vicinity, or may have the method of carrying it out altered as necessity directs. It is easy to realize that the provisions of these two last-mentioned sections strengthen to a material degree the hands of those engaged in the prevention of malaria in an Indian military station.

Many readers who have battled through to the conclusion of this article no doubt find themselves in a state of bewilderment as to how it is that, with the extensive powers indicated and placed in the hands of the responsible authorities, cantonments are not as a whole in a far more perfect hygienic state than is the case at present.

Certain explanations offer themselves, and of these, one of major importance is the fact that, when originally planned and built, all the attention that might have been directed to the health aspect of the question was not given, with the result that cantonment authorities are frequently faced with defective conditions of various kinds and magnitudes which have been in existence for decades, and the rectification of which can only be accomplished very gradually indeed, funds not allowing of anything else, while lack of money is also responsible in many cases for preventing the replacement of old-fashioned methods of sanitation and conservancy by measures of a newer and more modern type.

Apart from financial considerations, the habitual ignorance and apathy of the average Indian, the large proportion of illiterate persons in most Indian communities, religious beliefs, conservatism, vested interests, anti-British sentiments, and the prevalence of the usual amount of "graft," are all factors which militate against progress to a far greater extent than in western countries, even though it may be passive antipathy rather than active opposition which they engender.

The fact remains, however, that much progress in the hygiene of cantonments as a whole has been and is being made.

It might be well to remind ourselves that we have been dealing throughout with what we may term the civilian aspect of cantonment health administration, and not with its military side.

Over barrack hygiene in cantonments the military authorities, of course, exercise complete control and are at liberty, when need arises, to place any area, shop, café, bazaar, etc., out of bounds to troops, and to impose any restrictions they like in regard to civilians in barracks, and other matters of similar importance for the prevention of disease in the military

element of the population. Naturally, "placing out of bounds" is a powerful weapon, and used reasonably and justifiably can do more than anything else to make hotel and café owners, and proprietors of similar types of places, keep their premises reasonably clean and sanitary.

In conclusion the writer, while making apology for the length of this article and for inflicting it on those who peruse it, yet pleads in justification the difficulties he himself met with during a period while holding a minor health appointment in an Indian cantonment.

He would also like to thank very much Major D. T. Richardson, M.C., R.A.M.C., Assistant Professor of Hygiene at the R.A.M. College, for perusing the article and for offering valuable suggestions in reference to the arrangement of the subject matter and other points.