

the city. In this capacity the inhabited parts of the city were divided into districts, with a medical officer in charge of each. He also assumed control of the camps of refugees on the Presidio reservation and Fort Mason and in Golden Gate Park and exercised sanitary supervision over other small city parks. A hospital for contagious diseases was established April 21, at Harbor View Park, large enough to accommodate 200 patients. It was admirably situated for this work, through its water supply and laundry pavilion.

In the beginning needful medical supplies were freely issued from the General Hospital to hospitals and camps. On April 21 a medical supply depot was improvised in tentage within the grounds of the General Hospital, under Lieutenant-Colonel Brechemin, deputy surgeon-general, U. S. A., who assumed charge of the work, his entire depot of medical supplies having been destroyed in the city. Medical supplies have been promptly issued by Colonel Brechemin to all authorized applicants. Vaccine virus was also freely distributed on requisition. Twenty-six dispensaries were speedily opened, where free medicines and free medical attendance were available to every applicant. The wonderful health of the city and the not unreasonable complaints of destitute doctors and druggists that such action was most injurious to them caused me to soon reduce the number to six, which were very speedily still further reduced to one, with the consent of the city authorities and of the health commission.

Except for the first week, when many slight and minor injuries were treated and delicate persons placed on the invalid list, the hospitals of San Francisco were fully able and entirely willing to treat all cases. Indeed, it may be noted, as showing that there was no absolute need of outside medical help, that, as officially reported to me, one large hospital had some sixty vacant beds and was not called upon to attend to a single patient on account of the earthquake and fire. Nevertheless, the extensive precautionary arrangements by the Medical Department, though happily not absolutely necessary, were none the less wise in view of the many instances in the past where epidemics have followed great disasters.

As soon as settled conditions obtained, it seemed best to return to army methods and control. Cooperation with the Board of Health had not proved entirely satisfactory, as it devolved responsibilities and expenses upon the army far exceeding the advantages derived from a system wherein the army could only express its opinions without means of enforcing them.

CAMP SANITATION.

On May 13 there were 50,000 people living in more than 100 separate camps, of which 21 were under military control. The health commission was unable to care for these great and extensive problems thrust upon them, and the sanitary conditions were gradually becoming worse and worse. In many cases there was neither power, personnel, nor money to remedy even the worst conditions which were daily reported by the inspector-generals of the military division.

On May 13 official cooperation between the health commission and the army ceased by the relief of Colonel Torney. Dr. J. W. Ward, president of the health commission, was informed, with the assent of

Mayor Schmitz, that thereafter the army would neither assume responsibility nor incur expense connected with the sanitation of the city of San Francisco, but that medical advice would be given on any particular problem, should such counsel be desired. It was further stated that the army assumed the entire control and expenses of medical and sanitary measures connected with the 21 military camps.

In reorganizing this service Army Regulations were followed, the relations of the camp surgeons and commanding officers to be identical with those obtaining at military posts. Colonel Torney remained as chief sanitary officer until May 23, on which date, with the consent of General Funston, the duties devolved upon Col. C. L. Heizmann, who succeeded Colonel Torney as chief surgeon, Department of California. Colonel Heizmann's extended experience and professional knowledge were freely placed at my disposal. To as great an extent as was practicable, his recommendations were followed, though, owing to the scarcity of officers in the Medical Department, I reduced the requisition for additional surgeons of the Army from 25 to 10, depending on the local profession in case of an emergency.

The most rigid supervision was exercised over military camps in which there were at different times 20,000 refugees, and a close eye was had on 25,000 scattered campers not under our supervision, and the 5,000 in temporary shacks. In addition to rigid daily inspections by the surgeons and commanders the camps were often visited by the officer in general charge of camps and his chief surgeon. The division inspectors kept close watch on the outside private camps. Careful attention was given to limiting fly infection by screening the kitchens and insisting on the use of gauze over all cooked food. Reed troughs were added in every camp, and in the larger camps odorless excavating machines were utilized. Facilities for washing, for bathing, and for laundry work were furnished as far as practicable. The tents were floored and daily ventilation and the exposure of the interior of the tents to sunlight were insisted upon. Provisions were made for the prompt transfer of all serious cases of sickness to selected hospitals so that the attention of the camp surgeons could be given almost exclusively to sanitary and precautionary measures. The daily report showed an average sickness of less than 3 per cent.

Whenever a case of typhoid fever occurred in or near any one of the military camps the utmost care was used to thoroughly disinfect everything connected with it. As typhoid cases were almost entirely contracted outside of military camps, instant and suitable action was urged on the municipal authorities. Later, samples of water in common use were collected weekly and cultures made therefrom to determine its potable safeness. Every resident of a camp who would consent was vaccinated. As to those refusing, it seemed best under the condition of the public mind to defer compulsory vaccination until smallpox should break out in some camp, which it did not. The cooperation of the health department and of every hospital in the city was secured relative to typhoid fever cases, and a daily report thereon was made. Every case was traced to the point of its original infection, and these were charted on a map of the city. While the cases were sporadic, yet when two or three developed in the same general neighborhood the sanitary conditions of the district

were carefully examined by division inspectors. Steps were then taken to enforce suitable sanitary regulations and to removing the campers through the medium of the Mayor, the health department, and the police.

Asst. Surg. J. R. Devereux, in charge of the medical data at these headquarters, reported, in part, on the conditions from April 18 to June 23, as follows:

We have an account of 99 cases of typhoid fever—of these, 4 cases occurred prior to April 18; of the 95 remaining cases, 30 originated in April, 55 in May, and 10 in June. Of these 95 cases there are remaining 49, either in hospitals or in private houses, 17 have died, and 33 have been discharged as cured. Of the 49 cases remaining, there are 4 in the United States General Hospital that are, to all intents and purposes, cured cases, so that we have practically but 45 cases of typhoid fever remaining in the city. Of the total number of cases reported only 5 were derived from permanent military camps whose residence was sufficiently long to have made their infection possible at these camps. * * *

Of the smallpox cases, there were admitted in the Smallpox Hospital in the month of April, 74 cases, with 9 deaths; in the month of May, 41 cases, with 2 deaths, and in the month of June, 8 new cases and no deaths, and there are 25 cases remaining in hospital. The total number of cases, therefore, is 123, with 11 deaths. There have been, approximately, in the permanent camps, 15,000 people (as an average) and only one case has originated in a camp under our control.

It is too much to assume that this wonderful record of freedom from infectious disease among a population of 50,000 persons living in camps has been due to methods followed or precautions taken. It is, however, reasonable to assume that the above precautions, along the lines recommended by medical officers of the Army, served as preventives against the development of sporadic cases into an epidemic.

MILITARY CAMPS.

The question of providing temporary shelter for the 200,000 homeless people who remained in San Francisco was facilitated by the mildness of the climate, the abundance of canvas, and the considerable numbers of convenient squares and public grounds. Three thousand tents were promptly available at the Presidio, and large numbers were later received. In every convenient spot outside of the burned district there speedily sprang up tent cities and temporary barracks, into which the destitute crowded as fast as they could be erected. Although the unburned houses were thrown open with the greatest freedom and generosity to stranger and friend alike, yet a week passed before the entire community was sheltered. In several places barracks of considerable extent were speedily erected. Those in Golden Gate Park and the Speedway were provided with excellent sanitary arrangements for sewage and refuse.

As early as May 1 I urged the extreme importance of constructing on public grounds additional temporary buildings for at least 10,000 people, but such action was not favorably considered by the relief authorities. The conditions under which lived many, outside of the army camps, were often insanitary, and it was speedily evident that concentration into large camps under military supervision would best insure the public health. Although recommending this scheme to the

Mayor, it was with the distinct announcement that the army would use neither moral stress nor physical force, relying upon the attractiveness of properly constructed, well-policed, and orderly camps against others of heterogeneous character.

The system of permanent military camps was reorganized and defined by General Orders, No. 29, of May 13, under which 21 (18 in San Francisco) of the so-called permanent camps were eventually established under army control. In charge of this work was originally placed Lieut. Col. R. K. Evans, who was known as the commander of permanent camps. There were also detailed as assistants eight of the especially detached officers, besides the 1st Squadron of the 1st Cavalry, under Major Gaston, and Companies B, D, E, and F, of the 10th Infantry. This camp system was made an independent command, and the commanding officer of each camp was entirely responsible for discipline, the sanitation, and for the execution of all orders and regulations. In short, each camp was considered an independent military post. In addition to a chief surgeon for all the camps, a medical officer of the Army was assigned to each camp with suitable medical assistants in the way of enlisted men of the Hospital Corps, and with civilian physicians on the ratio of one doctor to each 700 persons. Upon the relief of Colonel Evans, on May 31, the command of these camps passed to Maj. Joseph A. Gaston, 1st Cavalry, under whose supervision they were brought to a high degree of perfection.

Entire responsibility for the sanitation was assumed by the division commander, the chief sanitary officer being responsible for the assignment of suitable medical officers for the efficient control of sanitary matters. They were particularly charged to devote their entire energies to the work of thorough sanitation, and proper arrangements were made for the removal of garbage and all other refuse. In addition to the inspection of the camp restaurants by the camp surgeon, there was eventually detailed a medical officer of the Army whose business it was to see especially that these restaurants were maintained in the best condition, sanitary and otherwise, consistent with the surroundings. As to the inmates of these camps, there were no restrictions on personal conduct or liberty save for three purposes—those of decency, order, and cleanliness. Unless occupants were willing to conform to those three simple rules they were obliged to forego the benefits of Government canvas, Government bedding, and relief stores. The camps are made attractive by first assuring order, cleanliness, and also by giving the occupants for a time coffee and sugar in addition to the three components to the ration issued elsewhere, namely, bread, potatoes, and meat. Gradually methods of general messing were introduced which had a tendency to cause those with money or credit to purchase their food and rely upon the Government only for shelter and bedding. At each camp was stationed a small guard to insure order and enforce the simple regulations formulated for the conduct of the occupants.

The Red Cross was asked to station at each camp a competent agent to look after the registration of the occupants, investigate cases of fraud or imposture, issue clothing, and determine the special needs of the applicants, particularly of those who could be placed on a self-supporting basis. This agent was to be an understudy to the officer