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KYUSHU MILITARY GOVERNMENT REGION
HEADQUARTERS AND HEADQUARTERS DETACHMENT
Fukuoka, Kyushu, Japan

APO 929
24 January 1949

MEMO TO: Capt W. H. Earl, Public Health Officer
Saga Military Government Team, APO 929

SUBJECT: Report of Sanitary Engineer about visit on Dec 15-18
1948

1. Prefecture Sanitary Engineering Division.

a. Organization of this group is very much as suggested in the past and in the Kyushu Mil Govt Region SOP, Annex S, Public Health Engineering. Positions and personnel are as follows.

Sanitary Engineering Division Chief	- Mr. Miyazaki
Insect and Rodent Control	- Mr. Koji
Water Supply Control	- Mr. Iwaya

This organization is satisfactory and the above persons seem capable and energetic enough to do a good job. Mr. Koji will require a technical assistant so that sufficient attention can be given to the establishment and operation of the sanitation programs in the Health Centers and municipalities throughout the prefecture. Mr. Koji's principal deficiency is inexperience, but he seems quite enthusiastic and practical.

2. The Health Department has hired 15 Environmental Sanitation Inspectors in compliance with Welfare Ministry Ei Hatsu 318, 15 November 1948 and plans to train them as directed. Two of these Inspectors are to be assigned as assistants to Mr. Koji and the rest will be assigned to Health Center Sanitation Sections. These Inspectors are to conduct sanitary inspections of public buildings such as tea houses, bath houses, theaters, barber shops, and hotels, as well as necessary community inspections to provide guidance for the insect and rodent control programs.

3. Mr. Gonsaku Mizuta of the Civil Engineering Department recently completed the short course in Sanitary Engineering at Tokyo. I suggest that he remain in the Civil Engineer Department as a counterpart to Mr. Iwaya and that he work closely with him in water supply problems.

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4. Mr. Miyazaki and Mr. Koji reported that there were 138 permanent Sanitary Teams in Saga prefecture, employing 526 persons on a full time basis and 121 more on a temporary basis. These teams are located in 122 municipalities. Team strength varies from 2 to 6, depending on the population served. The teams are stationed in the community served and are supposed to receive supervision from the Health Center Sanitation Section.

This is a satisfactory organization and plan but as yet the operation of the programs for control of insect and rodent borne diseases are inadequate.

A visit was made to Imamachi Mura Sanitation Department and the Sanitary Team was observed during operation. Only two of the reported four employees were at work and these persons lacked knowledge as to the purpose of the Sanitary Team and procedures of operation. It was suggested that a delousing station be set up in the city hall and efforts be concentrated towards louse control.

5. The following typhus control measures were discussed with Mr. Miyazaki and Mr. Koji. These practices should be in effect at the present time.

a. General Epidemic Control

Louse surveys can be made periodically among the general population to ascertain the need for delousing. These examinations can be followed by delousing of infested individuals. The survey can be made in slum areas, bath houses, factories, stores, railroad stations or on busy streets. If infestation is widespread, mobile or temporary delousing stations can be set up. Permanent delousing stations can be set up in Health Centers, City Halls, or indigent areas.

The louse is the spreader of epidemic typhus. It is cheaper and easier to control the louse than any other typhus factor such as the rat, so emphasis should be placed on louse control. The most desirable and permanent means of louse control is personal cleanliness and regular changing and laundering of clothing. These simple facts should be well publicized.

b. Institutional Epidemic Control

It is desirable to establish a louse control team of several persons in institutions such as prisons, asylums, orphanages, schools, and hospitals. Regular louse surveys and necessary delousing will effectively reduce the possibilities of an epidemic in these focal points. Health Center

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or city personnel should train the institution team (inmates or employees), provide occasional supervision, and furnish DDT dust for delousing.

Vaccination may be more feasible than periodic delousing in some institutions. This must be determined by a study of the conditions.

c. Rodent Control

The Sanitary Teams should do much of this work but volunteer groups such as the Boy Scouts, PTA, and other civic organizations can be enlisted to assist in large poisoning or trapping campaigns. The Sanitary Teams should train and direct the activities of volunteers used in rat elimination drives.

The most important places to derat are institutions and all buildings which can be inexpensively rat proofed. In all cases, however, permanent elimination measures should precede or accompany the trapping and poisoning of rats. Food-stuffs should be stored in ratproof containers, wastes should be covered and premises should be kept clean of rubble and other junk piles which harbor rats. Although it is desirable to kill the fleas on rats before poisoning, it is often impractical or uneconomical. If rats are to be poisoned without prior flea control, it is advisable to poison during December to February to minimize the risk of Murine Typhus. It is also advisable to coordinate the rat poisoning campaign with delousing of people.

d. One of the most important measures in typhus control is the preventive measures taken in the area where a case occurs. This is an existing Japanese practice but I feel that it could be improved by better training of the key personnel and better general supervision.

e. Publicity

Success of the program depends largely on cooperation of the people. All control measures should be publicized and explained prior to commencement.

6. Kanzaki Health Center

A brief inspection was made of the Kanzaki Health Center well and benjoes. The benjoes should be fly proofed by complete coverage of all openings and the installation of spring operated, outward opening doors. The collection pit covers were not satisfactory because they didn't completely cover the openings.

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The well was located about 50 feet from the benjo collection pit, which is permissible, especially if the pit is leakproof. The well was not properly covered, having a piece cover with a crack in the center instead of the one piece cover. The well pump is satisfactory. The casing of the well should be examined to ascertain if solid, without cracks at the joints. The concrete apron at the well site should be repaired so that all drainage around that area will be away from the well.

The Health Center with advice of the Pref. San. Eng. Div. can develop this well into a model quite easily, and it can then be used as a demonstration of good construction to other institutions in the area.

I hope that Kanzaki is planning to construct a municipal water works.

7. Nakabaru National T.B. Sanatorium.

a. Water Supply

The sanatorium obtains water from three shallow wells, two on the premises which are fairly well protected, and one in a rice paddy at the side of a small stream. The first two wells are adequately protected from flooding and are not subject to any great risk of underground pollution. The rice paddy well is adequately protected from surface flooding contamination but seepage contamination from the stream or rice paddy is possible. One of the three well pumps operates semi automatically and the other two are manually operated to keep a 72 cubic meter elevated tank filled. The sanatorium uses 200 cubic meters daily.

Your previous suggestion that chlorination is desirable was repeated. The chlorine or bleaching powder solution can be added conveniently into the suction line of one of the three pumps. It was also suggested that complete analysis of the water be made about bimonthly.

The entire sanitation condition of the hospital was discussed with Mr. Mizuguchi, Engineer, of the Kyushu branch of Welfare Min National Hospital group.

b. Benjoes and Waste Disposal.

About four benjo stations, selected at random were inspected and were found to be well constructed. The only defect was sliding doors, which can be easily replaced by spring operated, outward opening doors. It was reported that the benjo collection pits are emptied by farmers before they fill.

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Garbage and trash is being used for land filling and is being burned in an incinerator. Some food wastes are dumped into a concrete box with a wooden cover and one wooden side, for storage prior to burning or burial. This structure is not flyproof and is also a nuisance because of its smell. I suggest that this storage be eliminated and garbage be disposed of immediately or else composted by storage in a better container or mixing with nightsoil.

c. The kitchen was very well flyproofed by screening. The food warehouse was surprisingly well rodent proofed.

8. Karatsu Water Works.

An inspection was made of the filter facilities. The plant, four slow sand filters, is well designed but items such as flow rate controllers and the chlorinator room are in need of maintenance and should be repaired or improved. Openings in the filtered water reservoir should be covered.

In the past it was necessary to discontinue water service for several hours each day because of power shut off but the recent installation of a separate electric power ^{line will allow} _{continuous} service.

The elevated storage tank is about 60 meters high. As most of the distribution is at levels very close to sea level, this requires an unnecessary use of power. In plans for future expansion of the system, construction at ~~the~~ lower level (about 35 meters should be sufficient) should be considered.

9. General

a. Karatsu Health Center Sanitation Section and Karatsu City Sanitation Section.

Efforts of the sanitary teams of these two groups are misdirected. There seemed to be little effort towards louse control, and no delousing stations.

b. A pastuerizing plant in Karatsu was visited. I have no comments about this installation.

ALECK ALEXANDER
Sanitary Engineer

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KYUSHU MILITARY GOVERNMENT REGION
HEADQUARTERS AND HEADQUARTERS DETACHMENT
Fukuoka, Kyushu, Japan

APO 929
21 January 1949

MEMO TO: Capt. Wm. Yancey, Public Health Officer, Nagasaki
Military Government Team, APO 929

SUBJECT: Report of Sanitary Engineer About Field Trips, Novem-
ber 29 to December 3, 1948 and December 27 - 28 1948.

A. SANITARY ENGINEERING DIVISION ORGANIZATION AND FUNCTIONS

1. The Sanitary Engineering Division consists of 3 sub
divisions and department chiefs as follows:

Sanitary Engineering Division - Dr. Taira
Insect and Rodent Control - Mr. Fukuda
Water Supply Control - Mr. Shibahara
Supplies - Mr. Yoshikawa

This organization is good and the personnel appear
to be capable. Mr. Fukuda had only one assistant at the time
of my visit. Two or three more assistants are needed for Mr.
Fukuda so that supervision of sanitation programs throughout
the prefecture will be adequate to establish sound and effi-
cient services. See reference Kyushu Military Government
Region SOP Annex S, Public Health Engineering.

Mr. Shibahara seems to be enthusiastic and energetic
but is handicapped principally by lack of experience.

2. The Sanitary Engineering Division has submitted a re-
quest for sufficient budget to subsidize Sanitary Team activi-
ties in the same manner as in 1948. Budget for salary and
travel expenses necessary for Mr. Shibahara to make three ins-
pections of each municipal water works in the prefecture in one
year was also requested.

3. The Health Department had hired 30 Environmental Sani-
tation Inspectors in compliance with Welfare Min. Ei Hatsu 318,
15 November 1948 and was training them as directed. Several
of these Inspectors could be used as assistants to Mr. Fukuda
and the remainder assigned to Health Centers.

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B. TYPHUS CONTROL

1. The following was discussed with Mr. Fukuda.

a. General Epidemic Control

Louse surveys can be made periodically among the general population to ascertain the need for delousing. These examinations can be followed by delousing of infested individuals. The survey can be made in slum areas, bath houses, factories, stores, railroad stations or on busy streets. If infestation is widespread mobile or temporary delousing stations can be set up. Permanent delousing stations can be set up in Health Centers, City Halls, or indigent areas.

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b. Institutional Epidemic Control

It is desirable to establish a louse control team of several persons in institutions such as prisons, asylums, orphanages, schools, and hospitals. Regular louse surveys and necessary delousing will effectively reduce the possibilities of an epidemic in these focal points. Health Center or city personnel should train the institution team (inmates or employees), provide occasional supervision, and furnish DDT dust for delousing.

Vaccination may be more feasible than periodic delousing in some institutions. This must be determined by a study of the conditions.

c. Rodent Control

The Sanitary Teams should do much of this work but volunteer groups such as the Boy Scouts, PTA, and other civic organizations can be enlisted to assist in large poisoning or trapping campaigns. The Sanitary Teams should train and direct the activities of volunteers used in rat elimination drives.

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The most important places to derat are institutions and all buildings which can be inexpensively rat proofed. In all cases, however, permanent elimination measures should precede or accompany the trapping and poisoning of rats. Food-stuffs should be stored in ratproof containers, wastes should be covered and premises should be kept clean of rubble and other junk piles which harbor rats. Although it is desirable to kill the fleas on rats before poisoning, it is often impractical or uneconomical. If rats are to be poisoned without prior flea control, it is advisable to poison during December to February to minimize the risk of Murine Typhus, and also to coordinate the rat poisoning campaign with delousing of people.

d. One of the most important measures in typhus control is the preventive measures taken in the area where a case occurs. This is an existing Japanese practice but I feel that it could be improved by better training of the key personnel and better general supervision.

e. Publicity

Success of the program depends largely on cooperation of the people. All control measures should be publicized and explained prior to commencement.

2. Sanitation Program Inspection.

a. Mr. Fukuda reported that there were 160 Sanitary Teams employing 401 persons in the prefecture. Teams were reported to be in the Health Centers, cities and in small villages. The latter was said to employ the Sanitary Teams for purposes such as cleaning, insect and rodent control, ditch cleaning and other civic projects. The teams in the small villages are under the direction of the Health Center of the area.

This organization is satisfactory and the number of teams is adequate.

b. A visit was made to Yagami, a village near Nagasaki with a population of 3000 and a one man sanitary team. The one-man team was actually the Health Department of the village and performed clerical duties principally. There was no delousing station in town and the man had an inadequate knowledge of the problems in sanitation and what could be done to improve conditions in the village.

I suggested to Mr. Fukuda that the Health Center Environmental Sanitation Division Chief should visit these vil-

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lages and instruct the personnel. Delousing stations could be set up in the city hall, information disseminated, and a reliable system for waste disposal set up and maintained.

c. Nagasaki City Sanitation Section

This visit was made with Mr. Fukuda to demonstrate a method of surveillance and to provide advice as to defects of the program. The city Sanitation Section is typical of most large cities and consists of the Cleaning Division and Insect and Rodent Control Division. The Cleaning Section was reported to have about 100 permanent employees but an insufficient number of vehicles and carts. My observations around the city indicate that the clearance services can be improved considerably.

One of the city's five Sanitary Teams was observed during a routine DDT dusting of school children. Four men spent the entire day on this job for 250 students. This is gross inefficiency and Mr. Fukuda was requested to suggest that such labor wastage be eliminated.

d. These field trips indicated that the insect and rodent borne disease control program probably is not understood well enough. I hope that Mr. Fukuda and his assistants will be able to effect some improvements in the future. The concept of prevention of disease must be put across.

C. NAGASAKI WATER WORKS

At the time of my visit the total water in the city's reservoirs had been reduced to about 20 days supply, or about one third of full capacity. Two of the filter plants were visited. A bad leak in a pipeline and sand washing operations were consuming precious water. Further investigation revealed that the water department personnel (Mr. Hamamura) was well aware of the hardships imposed by rationing, which is necessary almost every year in the dry season, and that considerable data had been collected. But plans and attempts to conserve water by intelligent operation schedules are poor. It is important that the city increase the supply of water to assure a continually sufficient supply, but I feel that the existing system can be used to better advantage by leakage reduction and conservation.

The city is planning to construct coagulation and settling tanks at the slow sand filter plants. These are needed principally during rainy days when turbidities exceed the maximum limit recommended for satisfactory slow sand filter operation.

The city should make a better effort to protect the treated and chlorinated water by coverage of all openings.

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D. YAGAMI WATER WORKS

Yagami-mura water system consists of a slow sand filter, a treated water storage tank and a distribution line to the village. Raw water is obtained from a small stream, said to be spring-fed. All water flow is by gravity. About 100 families obtain water from this system.

The plant was not being operated at maximum capacity, but could easily increase its output and thus serve considerably more persons than at present. The stream can provide twice the present consumption easily and throughout the year.

It was suggested that Mr. Shibahara make a thorough inspection and advise the village officials.

E. NOMOSAKI WATER SUPPLY

This field trip was made because of a misunderstanding on my part that the village had a water works and plans were underway to extend the distribution system about one mile and about 500 feet (elevation) to provide drinking water for the 610th ACWS Station.

The village has no municipal water works. Townspeople use private wells.

The M. C. Aid Man at the 610th Station reported that the present water system consists of an impoundment that stores 150,000 gallons of water, a pumping system, filters at the camp, a storage reservoir, and distribution system. The impounded water was said to be of good quality because there is no farming or habitation on the catchment area. The storage of raw water is inadequate to last through the dry winter season, however, so plans are underway to supplement the water supply by development of a well in the stations and a pipe line about one mile long.

I couldn't find out how thoroughly the matter had been investigated, but I would like to know if the possibility of increasing the capacity of the existing impoundment was considered. This latter method is the most desirable because it will not require any new power line, pump, or pipe line installation, but will utilize existing facilities.

I have not contacted the First Engineers Office or Air Force as yet on this matter but since it is a tactical force problem, we can only advise or offer our services.

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F. SASEBO WATER WORKS

This field trip was made on Dec. 27-28, 1948 to ascertain the necessity of electric power to pump water into Sasebo's reservoirs during the dry season. Rainfall during the months of Oct to Feb. inadequate to supply the reservoirs with as much water as the city consumes, so the reservoir storage capacity of about 50 days supply is drawn from. Experience has shown that 50 days storage is often insufficient so plans for an increase are underway and pumping stations have been installed on several rivers to supplement the supply. A power allocation request for 400,000 KWH per month for the largest pumping station was disapproved by the Construction Ministry and Economic Stabilization Board at Tokyo, and no allocation was given for Jan., Feb. and March of 1949.

My investigation revealed that the storage capacity is inadequate to meet the present demand of the city. The electric power requested is sufficient for continuous pumping at full capacity and will be used in an emergency, when reservoir levels fall excessively.

The Kyushu Branch of the Economic Stabilization Board at Fukuoka has allocated to Sasebo about 70% of the power requested and will allocate an additional emergency amount later, if needed. The unusually heavy rainfall in late December and early January may make this allocation adequate.

It is desired in the future that the full requirement be made available. Sasebo City can probably obtain this emergency allocation by a complete explanation of their needs in their request, and this was suggested. It was also suggested that the system be checked thoroughly for leaks, leakage eliminated, and conservation practices be instituted.

ALECK ALEXANDER
Sanitary Engineer

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KYUSHU MILITARY GOVERNMENT REGION
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Fukuoka, Kyushu, Japan

AA/tn

APD 929
21 January 1949

SUBJECT: Increase of Electric Power Allotment to Sasebo City
Water Department

TO : Eighth Army Procurement Section, Fukuoka Branch
Attn: Major E. H. Helway

1. Reference is made to attached correspondence.
2. This matter has been investigated.
3. Sasebo has been allotted about 70% of the power requested for the months January, February and March and additional emergency power may be available. This allotment was made through normal Japanese channels without advice of the Occupation Forces.
4. The water needs of the Sasebo area Occupation Forces can be completely fulfilled this year.

1 Incl:
Ltr, Regional Post
Engr, dtd 10 Dec 48
w/Incl.

ALECK ALEXANDER
San. Engineer
Kyushu MG Region

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KYUSHU MILITARY GOVERNMENT REGION
HEADQUARTERS AND HEADQUARTERS DETACHMENT
Fukuoka, Kyushu, Japan

AA/mh

APD 929
14 January 1949

MEMO TO: Capt. L. B. Fierman, Public Health Officer, Fukuoka
Military Government Team.

SUBJECT: Report of Sanitary Engineer on Field Trips During
Oct., Nov., and Dec. 1948.

A. Sanitary Engineering Organization.

The following was discussed at a conference with
Dr. Fujioka and Mr. Oho of the Sanitary Engineering Division
of the Prefectural Health Department.

1. Prefecture Sanitary Engineering Division.

a. The following organization was suggested.

(1) Chief of Division.

6 or 7-Professional Assistants (Sanitarians)

(2) -Water Supply Control Engineers ~~Several~~
Clerks. - *as needed*

b. Responsibilities of these positions are as

follows:

(1) Division Chief is responsible for administ-
ration, direction, and correlation of
activities of the Division.

(2) The Professional Assistants should provide
supervision and advise to the Environmental
Sanitation Division of Health Centers
(or cities) which is needed to organize,
plan, and conduct a sound sanitation pro-
gram, principally for the control of insect
and rodent borne diseases. They should
~~and~~ conduct routine inspections of
sanitation programs throughout the Prefec-
ture so as to evaluate existing programs

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and to provide necessary advice to the Health Center or City Sanitation Section concerned.

Sanitarian training and/or experience in insect and rodent control are desired qualifications for this job.

- (3) The Water Supply Control Engineer should concern himself with control of all municipal or public water supplies. This job consists of periodic inspections of water works, advising as to sanitary structural and operational deficiencies and their correction, review and approval of all plans for new construction or extension, inspection of new construction to ascertain its conformance with approved plans, and encouragement of the establishment of test laboratories by the water department. Periodic water analysis of samples from the various water works by the Prefecture or Health Center laboratories should supplement the Engineer's visual inspections.

The Prefectural Civil Engineering Department now has the responsibility of reviewing and approving plans for construction of practically all structures, including water and sewage works. The Sanitary Engineer should establish a working agreement with this Department so that plans are reviewed jointly by the Health Department for sanitary design while *Civ Eng. Dept* reviews structural design. This is desirable because the Health Department is concerned with the operation of these plants, to assure production of safe water.

If time permits, the Engineer can devote some attention to improvement of private water supplies, especially of institutions such as health centers, prisons, schools, hospitals, asylums, and orphanages.

The existing water works act gives

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the Governor authority to perform the necessary inspections and issue advice to assure a safe and adequate municipal water supply. This law does not designate or suggest a responsible agency, however, Eighth Army OD #9 (1948) lists "Water Supply Affairs" as a responsibility of the Public Health Department, so this work can be carried out by the Health Department using the authority granted by the water works act.

The Water Supply Engineer should be a graduate Engineer with water supply experience and/or the short course in Sanitary Engineering.

c. Dr. Fujioka is sufficiently, capable and adequately trained to successfully direct the activities of the Prefectural Sanitary Engineer Division, but he has an insufficiency of assistants for the program undertaken. Four of the six existing assistants are clerks and the other two perform technical work. One of these, Mr. Oho, has considerable training and has been Dr. Fujioka's principal assistant in the field inspections and demonstrations of insect and rodent control. Engagement of 3 or 4 more technical assistants and allocation of sufficient funds to allow considerable field work is necessary to the efficiency and success of the sanitation program.

d. Welfare Ministry bulletin, Ei Hatsu 318, November 1948, requests that Fukuoka Prefecture hire about 60 Environmental Sanitation Inspectors for the inspection of public facilities such as bath houses, theaters, and restaurants, in addition to general community inspections and to provide guidance to sanitary team activities. Several of these Inspectors could be retained at the prefectural level and the rest assigned to Health Centers, as requested.

e. Mr. Yoshida is performing his duties as Water Supply Control Engineer well. Our encouragement and assistance will provide him with valuable experience and incentive. A good working relationship has been established between the Prefectural Health Department and Civil Engineer Department.

3. Health Center and City Sanitation Sections.

Sanitary teams for the control of insect and rodent

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borne diseases should be organized and operated as closely as possible to the 1948 Welfare Ministry instructions (KSMG letter, 15 June 1948). Cities and health centers can make changes to adapt the program to local financial conditions or problems. In most cases, the Sanitary Teams should control insects such as flies and mosquitoes in the summer (May to September) and should control typhus by louse, rat, and flea control in the winter (September to May). Typhus control principles are given in TB-Ph-Prev. Med. 3 and in PHW Bulletin 101. Insect control principles are given in KSMG letter, 8 June 1948, in several PHW Bulletins and other publications.

Adequate and reliable services for trash and garbage collection and disposal, sewer cleaning, nightsoil collection and disposal are essential to a successful insect and rodent control program. In general, all of these services are considered individual responsibilities and are not entirely satisfactory. In larger cities, city agencies are given these responsibilities, but it is desirable to have an inspection and advisory group or agent. The Sanitary Team are Environmental Sanitation Inspectors can provide advice but each community should provide for the necessary services as well as possible.

It is reported that there is at least one Sanitary Team for 13,000 population. The efforts of these teams seem to be ineffectual and the control and direction of the programs by the prefecture is far from adequate.

4. Typhus control program.

The following typhus control measures were suggested to *Dr. Fujita* as most practicable under existing conditions. These measures should be in practice now.

a. General Epidemic Control.

Louse surveys can be made periodically among the general population to ascertain the need for delousing. Examinations and delousing, if necessary, can be made at random throughout the community and in places such as "slum" areas, factories, stores, bath houses, railroad stations, and on busy streets. Where the louse survey is made without delousing, mass or group delousing by mobile stations or otherwise is in order either when individual louse counts are high or lice are found on many persons. In small communities and areas where conditions of louse infestation and propagation are favorable, a permanent delousing station located in a Health Center, City Hall, or other such building can be set up for regular services.

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The louse is the most important link in the chain of epidemic typhus transmission and is the most economical and positive means of typhus control at the present time. The most desirable and permanent means of louse control is personal cleanliness and regular changing and laundering of clothing. These simple facts should be well publicized.

b. Institutional Epidemic Control.

It is desirable to establish a louse control team of several persons in institutions such as prisons, asylums, orphanages, schools, and hospitals. Louse surveys and necessary delousing will effectively reduce possibilities of an epidemic in these focal points. Health Center or city personnel should train the institution team (inmates or employees), provide occasional supervision, and furnish DDT dust for delousing.

Vaccination may be more feasible than delousing in some institutions. This can be determined only by a study of all conditions.

c. Rodent Control.

The Sanitary Teams should do much of this work but volunteer groups such as Boy Scouts, PTA, and other civic organizations can be enlisted to assist in large poisoning or trapping drives. The Sanitary Teams should train, and direct the activities of volunteers used in rat elimination drives.

The most important places to derat are institutions and all buildings which can be inexpensively rat proofed. In all cases, however, permanent measures should accompany, preferably precede, the trapping and poisoning of rats. Food-stuffs should be stored in ratproof containers, wastes should be covered, and premises should be kept clean of rubble and other junk piles which harbor rats. Although it is desirable to kill the fleas on rats before poisoning, it is often impractical or uneconomical. If rats are to be poisoned without prior flea control, it is advisable to poison during December to February to minimize the risk of Murine Typhus, and to coordinate the rat poisoning campaign with delousing of people.

d. One of the most important measures in typhus control is the preventive measures taken in the area where a case occurs. This is an existing Japanese practice but I feel that it could be improved by better training of the key personnel and better general supervision.

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e. Publicity.

Success of the program depends largely on cooperation of the people. All control measures should be publicized and explained prior to commencement.

B. Kurume Water Works.

This installation was visited on October 25 with Mr. Witunski and Mr. Yoshida.

Plant operation is fair. The supervisory personnel requires guidance and advice to improve operations. Advice is needed as to the cleaning of partially plugged pipelines, control of filter operations, sand cleaning, and good sanitation practices in general.

Kurume obtains raw water from the Chugoku River through an infiltration gallery. The water is filtered, chlorinated and finally pumped to an elevated storage tank from where it is distributed to the city. The plant is operating very near its design capacity of about 14,000 cubic meters per day which is adequate for the city. However, plans for increasing the output should be investigated in anticipation of increasing consumption.

C. Nikka Rubber Company.

The dispensary at Nikka Rubber Company in Kurume was visited. At the order of the Prefecture Health Department, 5 Sanitary Teams consisting of 20 persons are providing services for the factories and houses and dormitories for 5,000 persons. Though the company management was pleased with the teams performance, I believe that they are inefficient and not aware of the purpose or function of Sanitary Teams. The company purchased spray and dusting equipment on the open market and buys only DDT insecticides from the Prefectural Health Department. Though the program was undertaken at the order of the Health Department, no inspections of this organization have been made by Prefectural officials.

This is one instance of several hundred where unnecessary expense was incurred at the insistence of the Prefecture. It is desirable that the Prefectural Health Department revises its' request ^{and} make it a suggestion and that sufficient advice be provided, either directly or indirectly, to these industrial sanitation programs to correlate them with city or health center activities and to make them sound and effective.

MEMO: Kyushu Mil Govt Region, APO 929, dtd 14 January 1949,
Subj: "Report of Sanitary Engineer on Field Trips
During Oct., Nov., and Dec. 1948."

D. Omuta Water Works.

This installation was visited on October 26 with Mr. Witunski and Mr. Yoshida.

The system consists of nine deep wells, all located in farm fields, a pump house, and a filter plant located in Arao City, Kumamoto Prefecture. Design capacity is 20,000 cubic meters daily but encrustation in the pipe lines has reduced this to 16,000. As a result, and because of the increase in Omuta's population, there is a continuous water shortage and water rationing is necessary. An anticipated growth of 50% in population in the next 6 years makes it imperative that plans to increase the output be studied immediately and work started as soon as practicable. KSMG letter, 26 November 1948 describes one such plan, which is still uncompromised.

Water from the wells is of high quality and chlorination alone should suffice. The water is filtered through rapid sand filters, chlorinated, and distributed. If expansion plans require a filter, it is intended to discontinue filtration of the well water and make the filters available.

The wells, pump station and filter plant are very well kept, a reflection of intelligent and conscientious management. The Water Department has a small laboratory for making routine analysis.

E. Mitsui Water Works, Omuta.

The Mitsui Mining Company has a large, quite well designed rapid sand filter plant with a total capacity of about 100,000 cubic meters per day. About 20% of the raw water is treated in a separate system and distributed to the dormitories and homes owned by the company for sanitary use.

Operations are not as good as desired, but the Department Chief is a very enthusiastic man who is anxious to perfect his system. A laboratory is being installed at the filter plant and advice was sought on numerous matters.

Additional water treatment facilities are now under construction. It is possible that the company can extend some service to Omuta City users to supplement the city water department supply.

MEMO; Kyushu Mil Govt Region, APO 929, dtd 14 January 1948,
Subj: "Report of Sanitary Engineer on Field Trips,
During Oct., Nov., and Dec. 1948."

F. Chikushi National Hospital was inspected about December 8 with Dr. Matsuda and Mr. Mizugushi of the Welfare Ministry, Kyushu Branch, National Hospital Directive Office.

The need for proper waste and nightsoil collection and disposal, benjo flyproofing, flyproofing of kitchens, rodent proofing of food warehouses, and water supply were discussed. Deficiencies of the hospital in these respects were indicated.

Benjo construction is poor and in need of flyproofing.

The kitchen had been inadequately screened but was partially fly proof.

The water source is two infiltration galleries (or wells), perforated pipes buried under cultivated fields which collect ground water. The water is pumped to a storage tank on a hill behind the hospital and flows to the various parts of the hospital through a distribution system. The water is chlorinated about once a month. Water tests are made infrequently. Regular chlorination was suggested.

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II 6c

KYUSHU MILITARY GOVERNMENT REGION
HEADQUARTERS AND HEADQUARTERS DETACHMENT
Fukuoka, Kyushu, Japan

APO 929
6 January 1949

MEMO TO: Capt B. Detrick, Public Health Officer, Miyazaki
Mil Govt Team, APO 24-2

SUBJECT: Visit of Sanitary Engineer, November 2 - 6, 1948

A. Sanitary Engineering Organization

The following was discussed at a conference with Mr. Setoguchi, Asst. Chief of Prev. Med. Sec., who is serving as head of the Sanitary Engineering Division of the Prefecture Health Department.

1. Prefecture Sanitary Engineering Division.

a. The following organization was suggested:

1 Chief of Division
2 or 3 Professional Assistants (Sanitarians)
1 Water Supply Control Engineer
Several Clerks

b. Responsibilities of these positions are as follows.

- (1) Division Chief is responsible for administration, direction and correlation of activities of the Division.
- (2) The Professional Assts should provide supervision and advice to the Environmental Sanitation Division of Health Centers (or cities) which is needed to organize, plan and conduct a sound sanitation program, principally for the control of insect and rodent borne diseases. They should conduct routine inspections of sanitation programs throughout the Prefecture so as to evaluate existing programs and to provide necessary advice to the Health Center or city Sanitation Section concerned.
Sanatarian training and/or experience in insect and rodent control are desired qualifications for this job.

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- (3) The Water Supply Control Engineer should concern himself with control of all municipal or public water supplies. This job consists of periodic inspections of water works, advising as to sanitary structural and operational deficiencies and their correction, review and approval of all plans for new construction or extension, inspection of new construction to ascertain its conformance with approved plans, and encouragement of the establishment of test laboratories by the water department. Periodic water analysis of samples from the various water works by the Pref. or Health Center laboratories should supplement the Engineer's visual inspections.

The Pref. Civil Engineering Dept. now has the responsibility of reviewing and approving plans for construction of practically all structures, including water and sewage works. The Sanitary Engr. should establish a working agreement with this Dept. so that plans are reviewed jointly by the Health Dept. for sanitary design while the Engineering Dept. reviews structural design. This is desirable because the Health Dept. is concerned with the operation of these plants, to assure production of safe water.

If time permits, the Engineer can devote some attention to improvement of private water supplies, especially of institutions such as health centers, prisons, schools, hospitals, asylums, and orphanages.

The existing water works act gives the Governor authority to perform the necessary inspections and issue advice to assure a safe and adequate municipal water supply. This law does not designate or suggest a responsible agency, however, Eighth Army OD No. 9 (1948) lists "Water Supply Affairs" as a responsibility of Public Health Dept., so this work can be carried out by the Health Dept. using the authority granted by the Water works act.

The Water Supply Engineer should be a graduate Engineer with water supply experience and/or the short course in Sanitary Engineering.

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c. Mr. Setoguchi has one or two Assts but very little field work has been done by this group in the past. The prefecture was in the process of hiring 31 Sanitary Inspectors as directed in Welfare Min Ei Hatsu 318, November 1948, four of whom would be assigned to the Prefecture Health Dept. The remainder will be assigned to Health Centers and given the responsibility of inspections of public facilities such as bath houses, theaters, and restaurants, in addition to general community inspections which can be used to guide the activity of the sanitary team. This personnel will make it possible to give much better attention to the organization and operation of sanitation programs. Mr. Setoguchi seems to be a capable and well-informed man and should be able to handle the job of division chief successfully.

The employment of Mr. Moriyama as Engineer is encouraging. He seems capable, intelligent, and energetic and should benefit the Dept. greatly. I hope that we can encourage and inspire him with our visits and advice.

2. Personnel Training

Three of the men who attended a Sanitarians short course are employed in Health Center Sanitation Sections. This is good utilization of the training and personnel and such practice should be encouraged. One of the trainees was employed at the Miyazaki Model Health Center.

3. Health Center and City Sanitation Sections.

Sanitary teams for the control of insect and rodent borne diseases should be organized and operated as closely as possible to the 1948 Welfare Ministry instructions (KSMG letter, 15 June 1948). Cities and health centers can make changes to adapt the program to local financial conditions or problems. In most cases, the Sanitary Teams should control insects such as flies and mosquitoes in the summer (May to September) and should control typhus by louse, rat and flea control in the winter (September to May). Typhus control principles are given in TB-PH-Prev. Med. 3 and in PHW Bull 101. Insect control principles are given in KSMG letter, 8 June 1948, in several PHW Bulletins and other publications.

Adequate and reliable services for trash and garbage collection and disposal, sewer cleaning, nightsoil collection and disposal are essential to a successful insect and rodent control program. In general, all of these services are considered individual responsibilities and are not entirely

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satisfactory. In larger cities, city agencies are given these responsibilities, but it is desirable to have an inspection and advisory group or agent. The Sanitary Team and Environmental Sanitation Inspectors can provide advice but each community should provide for the necessary services as well as possible.

It was reported that there were 43 Sanitary Teams in the Prefecture. Each team had six men but was to be reduced to two men.

4. Typhus control program.

The following typhus control measures were suggested to Mr. Setoguchi as most practicable under existing conditions. These measures should be in practice now.

a. General Epidemic Control

Louse surveys can be made periodically among the general population to ascertain the need for delousing. Examinations and delousing, if necessary, can be made at random throughout the community and in places such as "slum" areas, factories, stores, bath houses, railroad stations, and on busy streets. Where the louse survey is made without delousing, mass or group delousing by mobile stations or otherwise is in order either when individual louse counts are high or lice are found on many persons. In small communities and areas where conditions of louse infestation and propagation are favorable, a permanent delousing station located in a Health Center, City Hall or other such building can be set up for regular services.

The louse is the most important link in the chain of epidemic typhus transmission and is the most economical and positive means of typhus control at the present time. The most desirable and permanent means of louse control is personal cleanliness and regular changing and laundering of clothing. These simple facts should be well publicized.

b. Institutional Epidemic Control

It is desirable to establish a louse control team of several persons in institutions such as prisons, asylums, orphanages, schools, and hospitals. Louse surveys and necessary delousing will effectively reduce possibilities of an

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epidemic in these focal points. Health Center or city personnel should train the institution team (inmates or employees), provide occasional supervision, and furnish DDT dust for delousing. Vaccination maybe more feasible than delousing in some institutions. This can be determined only by a study of all conditions.

c. Rodent Control

The Sanitary Teams should do much of this work but volunteer groups such as Boy Scouts, PTA, and other civic organizations can be enlisted to assist in large poisoning or trapping drives. The Sanitary Teams should train, and direct the activities of volunteers used in rat elimination drives.

The most important places to derat are institutions and all buildings which can be inexpensively rat proofed. In all cases, however, permanent measures should accompany, preferably precede, the trapping and poisoning of rats. Foodstuffs should be stored in ratproof containers, wastes should be covered, and premises should be kept clean of rubble and other junk piles which harbor rats. Although it is desirable to kill the fleas on rats before poisoning, it is often impractical or uneconomical. If rats are to be poisoned without prior flea control, it is advisable to poison during December to February to minimize the risk of Murine Typhus, and to coordinate the rat poisoning campaign with delousing of people.

d. One of the most important measures in typhus control is the preventive measures taken in the area where a case occurs. This is an existing Japanese practice but I feel that it could be improved by better training of the key personnel and better general supervision.

e. Publicity

Success of the program depends greatly on cooperation of the people. All control measures should be publicized and explained prior to commencement.

5. The Miyazaki Health Center Sanitation Section was visited and a sanitary team was observed in action. The intended purpose and functions of a sanitary team were not understood clearly by the workmen or team chief. Work of the

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team was restricted to a few routine sprayings and dustings in some public places. None of the typhus control measures given in this report were in effect to the desired extent. These deficiencies in concept of the program and direction of work may be corrected by the engagement of the new Sanitary Inspectors.

Municipal garbage and trash collection and disposal was inadequate.

B. Asahi Chemical Co., Nobeoka

1. Chlorine Manufacture

Inspection of chlorine cylinders at numerous water works in Kyushu showed that maintenance of the cylinders and valves is poor. The chlorine filling and cylinder maintenance facilities were inspected and the section chief was urged to give the matter proper attention. The plant has facilities for maintenance of cylinders and valves and sufficient personnel for the job. A budget for rehabilitation of cylinders is available and it was promised that the condition of the cylinders would be improved.

I left a note on this matter for the Economics Officer.

2. Water Supply

Mr. Moriyama accompanied us on this inspection and conferences.

The company has decided to increase chlorine dosage in water being supplied to dormitories and homes for personal usage, and is now making installations or investigating the problem.

It seemed that operation practices could be improved considerably and Mr. Moriyama plans to advise the company engineer, Mr. Shibata, in the study of the system. The rapid sand filters are being backwashed twice a day and are operated at only one-half of the regular design capacity. If improvements are possible in this respect, the company may be able to provide the rest of Nobeoka city with potable water.

The company hospital now makes periodic water analysis. Tests should be made according to the standard methods of the Japanese Water Works Assoc. Dr. Tamai, hospital director, is in charge of the laboratory and said improvements would be made in analysis procedures.

3. Waste Water Disposal

Sgt Henninger informed me that the rayon plant had re-

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requested advice regarding the disposal of water containing some carbon disulfide. The nature of the problem must be determined first. I would suggest that the effects of the present practice, which is to run the waste water into the river, and the characteristics of the waste be ascertained. Some possible hazards or effects of carbon disulfide are: (1) the poisoning of fish or fowl; (2) contamination of bathing places; and (3) creation of fire hazards by vaporization and collection of carbon disulfide near the stream. The cost of carbon disulfide may be sufficient to justify recovery. The characteristics of the waste such as amount of waste, carbon disulfide content, turbidity, appearance, and pH should be determined. Effects of the waste can be ascertained by physical examinations of the stream and questioning of city authorities. Methods of treatment can be tested after the basic data is obtained.

Analysis for carbon disulfide in the water can probably be made by distillation. I have no data on methods for this analysis, but the Asahi laboratories may have a procedure which is acceptable.

C. Miyazaki City Water Works

1. This inspection was made with Mr. Moriyama.
2. A new chlorinator is to be installed soon. It was advised that it be located in the same place as the old one and that the chlorination room be provided with two vents, one at the floor and one at the ceiling levels, and that a water storage tank with a capacity of at least, six hours of chlorinator operation be installed. The existing storage tank serves for 1 to 2 hours of operation. Plans were to install the chlorinator on the ground floor, but the entire problem will be reconsidered in the light of our advice. The procurement of a chlorinator is a sign of improvement.
3. Filter operation is still unsatisfactory. The controls of one filter were altered so that a higher water level could be maintained. This increased the time between necessary washings to 14-16 hours, which probably is still too frequent. Improvements in this respect will require a good understanding of principles of operation and a study of the system. Mr. Moriyama discussed this matter with us and will endeavor to effect an improvement.
4. The doors of the filtered water storage tank are still not repaired. Water samples are still dipped from the reservoir. The doors should be repaired and samples drawn from a spigot to avoid contamination.

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5. The city should be endeavoring to increase the output of water so that rationing will not be necessary. It may be possible to get a sufficient increase by improvement in the operations.

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