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GUIDE FOR
INSECT and RODENT CONTROL
(A Revised Edition)
July 1948

Fukuoka Ken
Health Department

"COMMENTS OF RODENTS AND
INSECTS CONTROL

Editted by

Fukuoka Ken, ~~Sanitation Bureau~~ Health Dept.

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"COMMENTS OF RODENTS AND
INSECTS CONTROL"

Introduction

Since this country was beaten every kind of infectious disease has been spread, however as the first step of preventing measure, cleaning and dusting of cities and extermination of rodents and insects, which transmit these epidemics, will be enforced to practice systematically as a national plan. On the two days, 5 March and 4 May 1948, memorandum on dusting cities and controlling rodents and insects were handed by SCAP over Japanese government. Since that time rodents and insects extermination undertaking was reported, as an order of Occupation Forces, under the management of Welfare Ministry to all prefectures with a form of notification. As "Matter of City-dusting and Prevention Enforcement Anti-Infectious Disease", the thoroughness of city-dusting was accentuated, and moreever as "Regarding to Rat-Control-Enforcement", setting the main point on each seaport and city, from the view point of preventing infectious disease, a report to enforce continuing and/or periodical operation was issued with a form of notification. On the other hand a notification on "Rat and Insect Control Enforcement" was successively issued and every city, town or village has become to shoulder responsibility to enforce perfectly this undertaking.

On this exterminative operation every city, town, village and/or business center or other cooperation should form Sanitary Team, and the final purpose will be accomplished by actually enforcement not nominally.

On Sanitary Team

The proper task of Sanitary Team is to improve environment sanitation so called such as on water-supply, sewerage, cleaning, rodents and insects control, house sanitation etc., however, owing to shortage of materials and a trifling cost of budget in Japan, the foundamental improvement on water-supply, sewerage, house sanitation and the others has not been proceeded so adequately as we intend, and so, in this time, the only two methods e.i. cleaning and rodents and insects controlling, as the most rough and ready ones among preventive measures against infectious diseases especially its accute form, have been adopted to our objects.

The radical and firm enforcement, which prevents infectious disease from its outbreak rather than to defend against its extention in case of occurence, e.i. cutting off the route, which rodents and insects may transmit the diseases, and making an environment of healthy life at the same time, and therefore Sanitary Team so-called has been started in such a meaning as above mentioned.

Formation of Sanitary Team

The standard of unit number and the formation of the lower part will be one team for the population of 13,000. (The number may be increased if necessary). Summer season and the time wanting for vivid activity will make the number increase:

Leader of Team	one (1)
Inspector	one (1)
Operator,	four (4)
Total	six(6)

Two of six should be fixed stuff at least. In winter and the time not wanting for vivid activity, the number of laborers may be some decreased.

Contents of task of Sanitary Team are stated as followings:

Leader of Team

(Number is one) will control, instruct and manage the member of Team as the central person of Team and at the same time connect with others, instruct and enlighten the inhabitants in the shouldered area as the responsible person.

Inspector

(Number is one) Will go for inspection to every home, public and civil circles, examine the conditions of rodents and insects control, cleaning and improvement, find the places where cleaning is necessary and insects may grow, order its treatment or make operators treat after connections, and he will record these matters at the same time.

Operator

(Number is four) Will enforce to clean and dust, to treat radically upon the places where mosquitoes, flies and other insects may grow or to vaporize or scatter medicine, moreever, in rodents and insects control too, he will lead them directly to treat on the spots or the parts, which are beyond the capacity of the general home and of the others or owing to the shortage of treatments, or they will enforce it directly by themselves. At any rate they should work through the year, even though there is some difference of importance according with each season, they should enforce directly ricketches spray, too, and at the same time they should lead, control and approve the parts of practice to be enforced by each cooperation itself.

5/2 Ko 1

Actual Operation of Sanitary Team

Fixed operations e.i. drainage, reclamation, removing dirtiness, etc. such a control should be enforced specially and thoroughly. Sanitary maintenance of independent house, his own land and his occupied land ought to be shouldered to individual obligation; however, the activity of Sanitary Team and its leadership are necessary in the actual case.

Treatment on public space will be enforced as stated as followings:

1. Repairing and cleaning (containing some dusting and remodelling) of ditch and drainage and necessary emlargment should be shouldered on the responsibility of the bureau and section relating to civil engineering part.

However, control on the spots, where insects may breed in ditch and drainage, should be shouldered on the responsibility of the bureau and section relating to sanitation part e.i. Sanitary Team.

2. Cleaning of street, park and other public spaces should be shouldered on the responsibility on cleaning section, park section or other relative functions, but not on sanitary organization.

However, control of insects breeding and of the obstacles of public health, should be shouldered on the responsibility of sanitation bureau and section, and sanitation functions should treat on it, in case sanitary treatment on the spots, belonging to personnel of other organizations is not adequately.

Task of Sanitary Team will be shown graphically as followings:

Control of Larva of Mosquito and Fly
1. Inspection the place where they may grow and description on map or chart.
2. Removal of the spot where they may grow or breed.
3. Vaporizing and/or scattering of necessary insect-killing-medicine on the place where they may grow. Periodical and physical treatment on the place where they grow (for-instance drawing up drainage of pool, water-closet etc).

(2)

Control of Imago of Mosquito, Fly Flea, Louce and Mite etc.	
1.	Treatment to intercept the route between insects and both human and animals or insects and foodstuff with wire-netting, covering or other means.
2.	Direct vaporizing and scattering insect-killing-medicine on the insects or the place where they are apt to gather.
3.	Killing insects with insect catcher or other means.

(3)

Rodents Control	
1.	Exclusion of the place where rats may breed and live.
2.	Simultaneous control by rat-poison medicine.
3.	Continuing controllings with rat-catcher or other means.

Seasonable activity of Sanitary Team will be described photographically as followings; the month of sloping line drawn shows most necessary one of enforcement and you should not neglect it even the month without sloping line drawn.

Chart of Seasonable Activity of Sanitary Team

Month / Items	1 Jan	2 Feb	3 Mar	4 Apr	5 May	6 Jun	7 Jul	8 Aug	9 Sep	10 Oct	11 Nov	12 Dec	Remarks
Cleaning													Cleaning & Dusting are the radical Points of Pre. of Infec. Dis.
Rodents Control													Continuing control by rats-catcher; Simultaneous control by rats poison

Chart of Seasonable Activity of Sanitary Team (cont'd)

Month / Items	1 Jan	2 Feb	3 Mar	4 Apr	5 May	6 Jun	7 Jul	8 Aug	9 Sep	10 Oct	11 Nov	12 Dec	Remarks
Mosquitos & Flies Control													Inspection upon their growing place before they breed and thoroughly cleaning operation on the places
Lice Control													Cleaning of Body and Clothings
Fleas Control													Cleaning & Sweeping under mats and the soil under floor Vaporizing and scattering Insects-killing-medicine
Mite Control													Rodents Control and Cleaning
Rickettsia Spray													Enforcement on Crowdy-people-collecting-place and filthy place
Remarks													

On Sanitary Inspector

Nowadays the system of Sanitary Inspector has been settled; this member is applied with engineering staffs of the 3rd class qualified, arranged in Health Institute and engaged to instruct and manage environment sanitation so-called such as rodents-and-insects-control, cleaning sanitation and inspection upon water supply and sewerage etc.

Comments of Inspector's Task

1. Sanitary Inspection over the charged area.

2. Leadership and management on sanitary team.

3. Official business an such as; rodents and insects control, water-supply and sewerage, cleaning and dusting, treatment of unclean materials etc.

Above mentioned items will be performed after receiving the order of Master of Health Institute.

Comments of Inspector's Competence

Inspector combines the task of examination committee as a general principle. Morever, undermentioned competences will be invested with him; Prevention Law of Infectious Disease, Article 19.

Item 5: Prohibition to sell, deliver and/or receive eating and drinking materials acting as intermediary of circulative poison of infectious disease, or disposition to abandon the food and drink, and other necessary dispositions or causation to do so.

Item 7: Giving order the enforcement of cleaning and/or disinfection means, giving order to construct, improve, alter, or abandon well, water-supply, sewerage, ditch, dust-bin, and latrine, or suspension to use them as above.

Item 9: Causation to control rodents and insects etc. and to settle installations referring to these matters.

Remarks: I'll not write the copies of translation hereafter, but Brief Summery of Appendix 9 attached to the back-page. They say that this is produced after a long, systematic study by the staff members of Fukuoka Ken; if we try to catch the main points of this pamphlet, we had better look at the Summery Table on another paper.

Translated by Y. Yamasaki
10 August 1948

Appendix 9

GUIDE OF ~~AND INSECTS~~ CONTROL

~~GUIDE OF~~ RODENTS ~~AND INSECTS~~ CONTROL

Kinds	Infectious Disease	Breeding and Growing Place and Habits
Mosquito	Malaria	They grow in such places: moist ground, marsh, pond, reservoir, paddy field, brook, ditch, tank for prevention of fires, water-service-altar in grave yard and all other water-preserving places.
Hamadera Mosquito (Anopheles)	Dengue Fever Japanese B Encephalitis	
Stripes Mosquito (Aedes)	Filariasis Others	They have hour (4) steps of growth such as: egg, larva, pupa and adult. It takes them a term from one week to ten days to grow from egg to adult in Summer time. Female mosquito breeds the number 300 to 1,000 eggs thru her life. The life of mosquito is about from one to three months.
House Mosquito (Culex)	Mental Suffering Sentiment	

Methods of Extermination

Malaria-infectious-mosquito may grow in such places: moist place, marsh, pond, preservoir, swamping field connecting with lake, paddy field, irrigation ditch, drainage, canal etc., you should enforce adequately, according with the special condition of each place, such means, stream-controlling-works, drainage, reclamation small-fresh-water-fish-preserving, spraying and dusting of insecticide etc.

Dengue-infectious-mosquito may grow in such places: tank for prevention fire, pail of water, empty bottle and can, cutting-bamboo-stump, flower-vase in grave yard etc., should be broken down, overturned or reclamated with soil.

Japanese B Encepharitis (B Encepharitis) or Filariasis infectious-mosquitoes may grow in drainage, drain-preservoir, ditch-stream, only-digging-ditch for anti-air craft, paddy field, water-preservoir, etc., you should prevent the growth of mosquito by means of such as --- stream-controlling, reclamation, drainage, fish-preserving, spraying and dusting of insecticide etc.
Vaporizing and scattering insecticide should be enforced once a week.
There are such insecticides as 5% DDT oil, 10% DDT powder, Pyrethrium emulsion, Bactal (a mixed insecticide) etc.

Kinds	Infectious Disease	Breeding and Growing Place and Habits
Fly	Cholera	Moist and warm places upon organic matter, for instance dust-bin, dust box, water-closet, domestic-animals pen, and kitchen etc. They have four steps of their life, such as egg, larva, pupa, and adult. They grow from egg to adult for six days under a best condition. Parental fly breeds over 200-1,000 eggs in the life. Their life is 30-75 days. (two and half months)
House Fly (Mus'ca domestica)	Fyphoid	
	Paratyphoid	
Philaematomy'ca	Dysentery	
Green-bottle-fly (Lucilia Caesar)	Transportation of other Bacteria, Virns, and parasite	
	Mental Suffering Sentiment	

Methods of Extermination

The growing place should be usually dried: cleaning, burning down, spraying and dusting insecticide once a week at least should be enforced. Settlement of such strict coverings over dust-bin, water-closet etc. as to admit not to enter and going out of them. You should pay attention on the underground of dust-bin and dust-box, on water-closet, and on the corners of a box etc., because they grow often in such a place.

You should give specially attention on water-closet and fertilizer preservoir and cover them strictly; furthermore, you should cast insecticide into them or settle the leaves of big-trees on them, cleaning of domestic-animals-pen, spaying and dusting of insecticide and covering domestic vegetable field with soil --- these are to be enforced.

Moreover, for adult fly you should use with fly-catching-basket and or fly-catching paper.

Kinds	Infectious Disease	Breeding and Growing Place and Habits
Fleas	Pest (the black death, Plagne)	Soil under floow, crack of dust in floor and beneath the mats (Tatami).
Human Flea	Murlin typhus	Their growth is divided to 4 terms: egg, maggot (larva), pupa (making cocoon) and adult soonly after.
Rodents Flea	Small Tapeworm	
Dogs Flea	Japanese River Fever	It takes 4-6 months for them to grow from egg to grow adults.
Cats Flea	Recurrent Fever	Femal fleas breed about 500 eggs in her life. Their life is 1-2 months.
	Others	
	Mental Suffering Sentiment	

Methods of Extermination

It is requested that you would enforce such a method: put up mats (Tatami) to expose in the sun-shine over half-day, throw away dirt perfectly, clean the floor-board into the corners and the dust under floor specially and thoroughly; moreover it had better dust insecticide upon them, before putting on mats, lay with newspapers on floor-board, and furthermore it had better lay with Candana leaves, sweet-flag, etc on the jointing place of mats; if it be insecticide, the efficacy will be much more, it is most important for you to clean more thoroughly than and except that of ordinery cleaning about once a week.

Cleaning and isolation of domestic animals and their pen.

Exposing mats etc in the sun-shine very often, Rodents control is necessary also.

Kinds	Infectious Disease	Breeding and Growing Place and Habits
Mite	Typhus Murline typhus Recurrent Fever Moreover, transmitting of Plagne is able by experiment, insufferable itchyness owing to biting and unpleasant feel; skin disease, accompanying with	They grow in such places: rodents' den, rodents' passage, rodents' den in a wardrobe, old cotton, old magazine, waste-papers, old instruments, mattings which are not usually, beddings rags, etc. They breed and multiply by sucking blood of rodents and human body. Their growth is such as: egg, pre-young worm, after young worm, and adult. It takes 4-15 days from egg to adult. They breed 100-150 eggs in their life. They live about 20-120 days.

Methods of Extermination

Enforcement of rodents control, furthermore removal of rodents' den and practice of anti-rodents cleaning at the same time and then spraying and dusting of insecticide adequately on the spots where these mites grow and conceal.

While mites are growing violently, it had better change underwear, short or long drawers, beddings and bed-sheet every morning; wash them immediately in very hot water or soap water. Before going to bed on the night, it had better scatter insecticide slightly on the clothings and beddings and after wards use them.

Furthermore, enforcement of cleaning and sweeping is most necessary also.

Kinds	Infectious Disease	Breeding and Growing Place and Habits
Lice	Typhus	Unclear materials on Human body and clothings .
Head Lice	Returned Fever	They grow in such order: egg, larva, adult.
Clothes Lice	Unpleasant feeling due to their biting	It takes about three weeks for them to grow from egg to adult.
Hair Lice	Skin Disease	They breed 200-300 eggs. They live 1-2 months.

Methods of Extermination

It had better use with insecticide such as 10% DDT, however, you should not wash them about 12 hours in case of using 10% DDT powder.

As a brief method you had better soak the clothings into hot water, or iron or smoothing iron. As they are very feeble to hunger, they will die in forty-eight, hours to the shortest unless sucking blood. You should enforce to clean your physical bodies e, i, expecting to practice bath, clean your changeable clothings and beddings, and to expose clothings and beddings in the sun shine. In case head lice, you should keep the head clearly; if the lice grow, you had better wash it with vinegar, cover with towel and wash with soap after two or three hours.

Kinds	Infectious Disease	Breeding and Growing Place and Habits
Bed Bug	Plague Typhoid Tuberculosis Lepra Filaria Discomfortable feeling due to Biting	The rough surface of timber board, openning crack of domestic articles, floor board, bed and the others. Their growth is divided to three steps: egg, larva and adult. It takes 25-65 days for them to grow from egg to adult. They breed 200-670 eggs. They live 3-10 months.

Methods of Extermination

If you pour hot water of about 80 C, adult, egg, and all the others will be perished to death.

You had better make blow such a flame as Bunsen-burner, wax-candle etc into their dwelling spot, paying attention to accidental fire.

You may spraying such as: Kerosin, crude petrolium, 5% DDT etc.

Enforcement of disinfection by exposure to the sunlight and cleaning.

Kinds	Infectious Disease	Breeding and Growing Place and Habits
Rodents House rats Ditch rats Mice	Murline Typhus Food poisonning Weil's Disease The Japanese River fever etc. Fleas, and Mites are parasitic on rodents	Dark places of house, storage, and all the other places, we can find them everywhere. A pair of couple breed 1,500 descendants in one year. Rodents run from the corner to the other corner of a room. They put their dens in such a place, convenient for food and water, warm, safe and dark. Rodents' existence will be acknowledged by such matters: excreta, running way, footprint, holes, den, biting-mark, damage of food, rats smell, living or died rats etc. (You can think that if you find one rat, there live about twenty rats)

Methods of Extermination

Emancipation of the dark places, not making an openning crack, blockade of rodents' hole, maintenance of usual clearness, etc.

All coverings upon all materials to be rodents' food, using with rats-trap and rats-poison, in this case sellection of feed which rodents are apt to like, settling them on a spot distant about 1-2 feets from rodents' route and moreover it is necessary for people and domestic animals to eat not poison-feed, perfest attention for misunderstanding on them.

It had better put "pre-baiting" surely in case of using rats-poison. For instance:

1st day: Anti-rodents cleaning (all adjustment on every thing to be rodents' bait), selection of feed (test-baiting)
2nd day: Feeding bait (pre-baiting)
3rd day: day off
4th day: Feeding bait (pre-baiting)
5th day: Poison-bait
6th day: Inspection of dead rodents, cleaning on the footprints and night-soil of rodents, blockade of rodents' hole, removing off rodents' den, and spraying and dusting of insecticide.

〔蚤の種類〕

人蚤
鼠蚤
犬蚤
猫蚤

この蚤の種類の中でも特に印度鼠蚤がペストを媒介する。

〔蚤の傳播する疾病〕

1. ペスト（黒死病）
2. 發疹熱
3. 矮小條虫
4. ツツガ虫病
5. 再歸熱
6. その他精神的苦腦感

〔蚤の發生場所及習性〕

家屋内では特に床下の土、床の塵芥間、疊下、鼠の巣の附近、鼠の通路、鼠の死んで居る場所の附近に發生する。

又家畜例へば犬猫についてゐる蚤も人間をおそう。

蚤の雌がこういふ所に卵を産みつけると卵、幼虫（蛆）次に繭を作つて蛹となりやがて成虫になる。4—6週間目で卵から親になる。雌蚤は一生中 500個位の卵を生む。

蚤の寿命は1—3ケ月位。

〔蚤の驅除法〕

1. 鼠の驅除を徹底的に行ふこと。蚤は主に鼠の体に附着していて。鼠が死ぬと体温が無くなるので四散する。
2. 家畜（犬・猫）を常に清潔にすると共に畜舎を成る丈家屋から離しておくこと。
3. 家屋を清潔にして大掃除の際は徹底して行ふと同時に床下の不潔な土砂の塵埃を綺麗に掃き取りこの上に殺虫劑を撒布する。

A. 寄生体に對する驅除法

1. 10%D.D.T粉末撒布

1人當り 1オンス（25瓦）の割合でダスターで撒布する。

撒布後直ぐ拂ひ落してはいけない。

2. ナフタリン粉末撒布
3. 除虫菊粉末撒布
4. クレオリン浴 3% 37°C

人、家畜の場合の共、同様に上記の藥劑を使用する。

B. 發生場所に對する驅除法

1. リケツチヤ消毒

公衆の集る場所例へば映畫館、旅館、乘物、浴場等に對しては市、保健所或ひは各事業場のサニタリチームが藥劑を噴霧する。

2. 殺虫劑の使用

a. 10% D.D.T粉末撒布

室内の壁、寝具に對しては1坪當り50瓦位撒布する

b, バ ク ト ー ル

床下の土砂に對して1坪當り50瓦位撒布する。

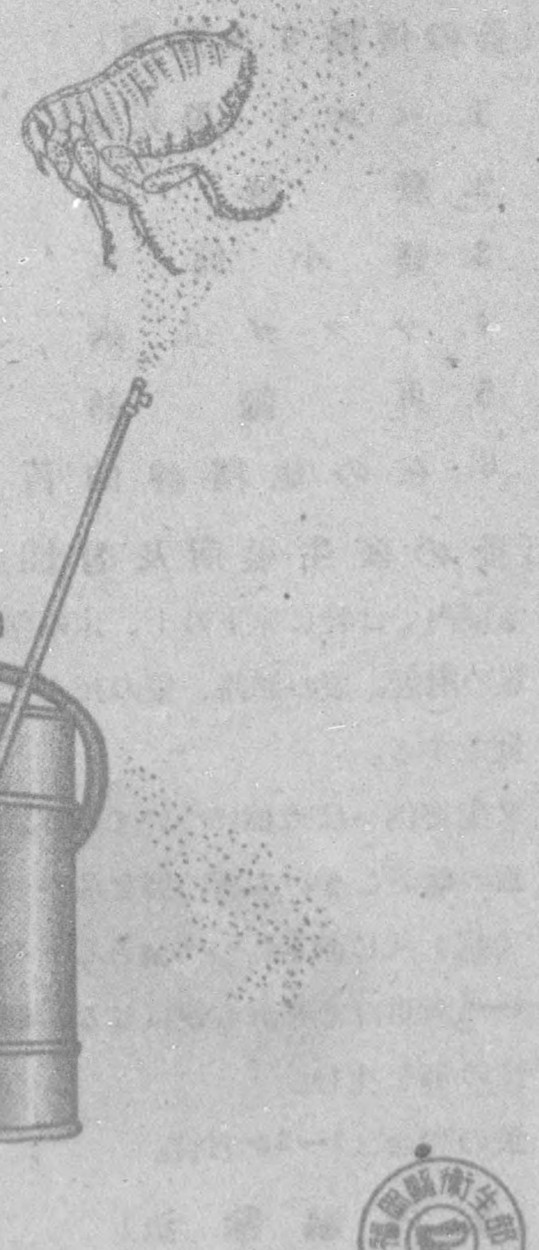
〔注　　意〕

D.D.T 粉末を撒布したときは直ぐ拂ひ落さずに10時間以上その儘にしておくこと。

D.D.T は撒布した後2—3ケ月もその効果は認められる。

D.D.T 油劑を人畜の体に使用してはいけない。

蚤の駆除法について



昭和二十三年十二月

福岡縣衛生部發行

衛生思想普及第二号

福岡縣衛生部 昭和二十三年

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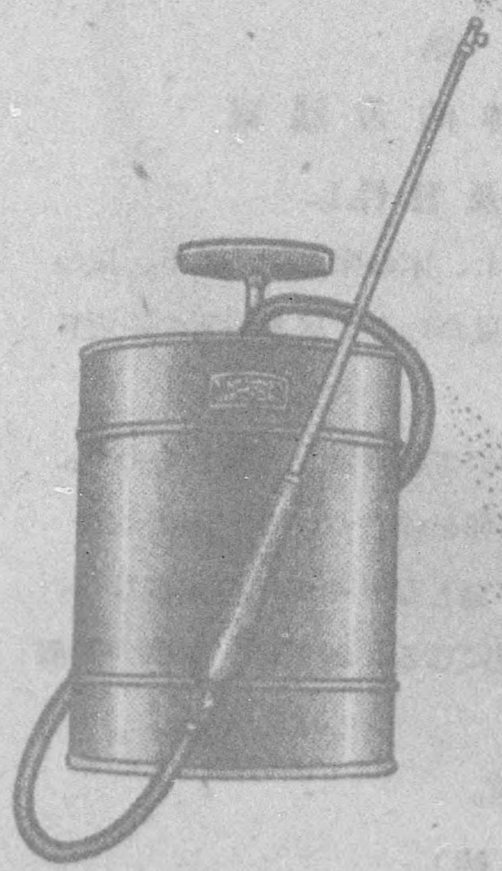
蚤の駆除法について



昭和二十三年十二月

福岡縣衛生部發行

衛生思想普及第二号

〔蚤の種類〕

人蚤
鼠蚤
犬蚤
猫蚤

この蚤の種類の中でも特に印度鼠蚤がペストを媒介する。

〔蚤の傳播する疾病〕

1. ペスト（黒死病）
2. 發疹熱
3. 矮小條虫
4. ツツガ虫病
5. 再歸熱
6. その他精神的苦腦感

〔蚤の發生場所及習性〕

家屋内では特に床下の土、床の塵芥間、疊下、鼠の巣の附近、鼠の通路、鼠の死んで居る場所の附近に發生する。

又家畜例へば犬猫についてゐる蚤も人間をおそう。

蚤の雌がこういふ所に卵を産みつけると卵、幼虫（蛆）次に繭を作つて蛹となりやがて成虫になる。4—6週間目で卵から親になる。雌蚤は一生中 500個位の卵を生む。

蚤の壽命は1—3ケ月位。

〔蚤の驅除法〕

1. 鼠の驅除を徹底的に行ふこと。蚤は主に鼠の体に附着していて。鼠が死ぬと体温が無くなるので四散する。
2. 家畜（犬•猫）を常に清潔にすると共に畜舎を成る丈家屋から離しておくこと。
3. 家屋を清潔にして大掃除の際は徹底して行ふと同時に床下の不潔な土砂の塵埃を綺麗に掃き取りこの上に殺虫劑を撒布する。

A. 寄生体に對する驅除法

1. 10%D. D. T 粉末撒布

1人當り 1オンス（25瓦）の割合でダスターで撒布する。

撒布後直ぐ拂ひ落してはいけない。

2. ナフタリン粉末撒布
3. 除虫菊粉末撒布
4. クレオリン浴 3% 37°C

人、家畜の場合の共、同様に上記の藥劑を使用する。

B. 發生場所に對する驅除法

1. リケツチヤ消毒

公衆の集る場所例へば映畫館、旅館、乘物、浴場等に對しては市、保健所或ひは各事業場のサニタリチームが藥劑を噴霧する。

2. 殺虫劑の使用

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室内の疊、寢具に對しては1坪當り50瓦位撒布する

蚤の駆除法について

b, バクトール

床下の土砂に對して1坪當り50瓦位撒布する。

［注　意］

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昭和二十三年十二月

福岡縣衛生部發行

衛生思想普及第二号

福岡縣衛生部 昭和二十三年

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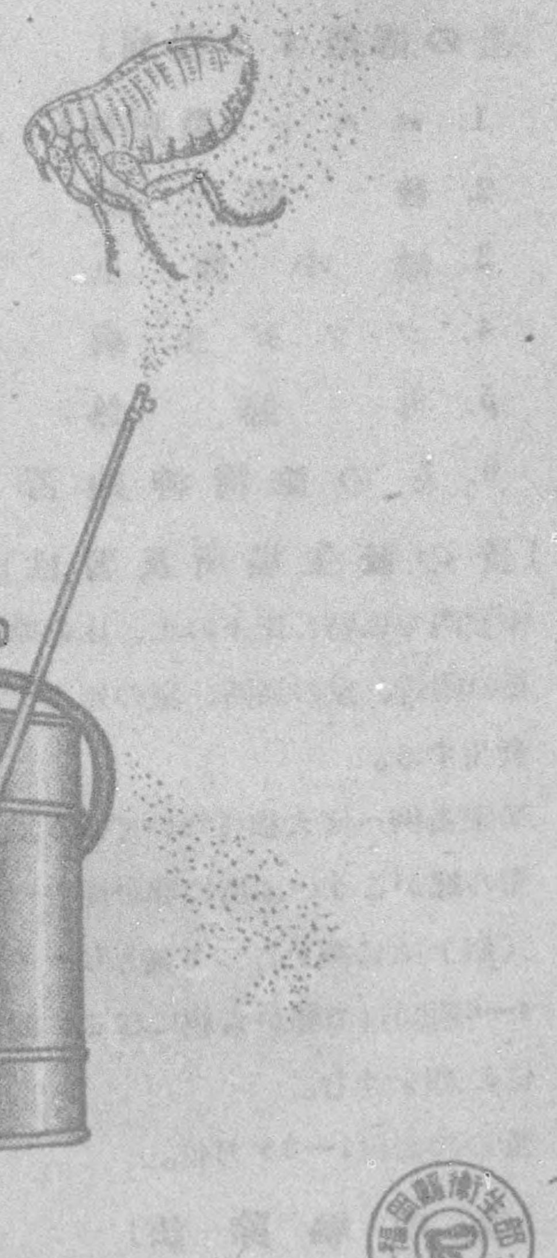

昭和二十三年十二月

福岡縣衛生部發行

衛生思想普及第二号

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蚤の駆除法について

昭和二十三年十二月

福岡縣衛生部發行

衛生思想普及第二号

福岡縣衛生部 昭和二十三年

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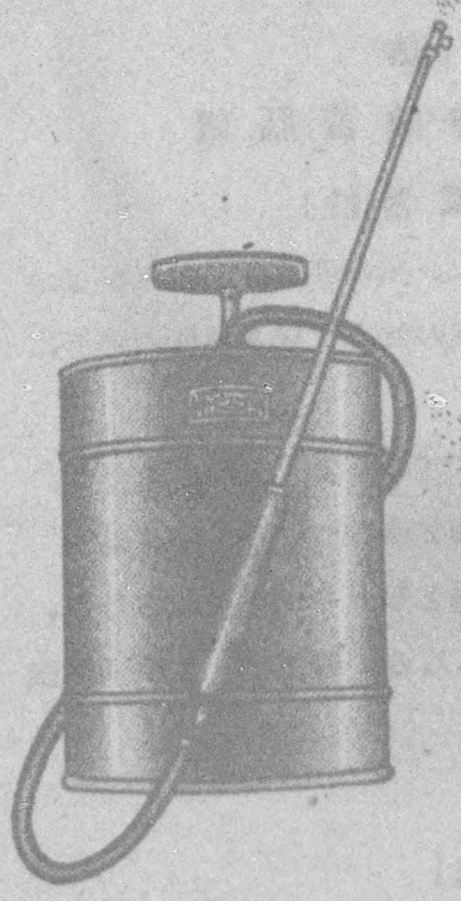
蚤の駆除法について



昭和二十三年十二月

福岡縣衛生部發行

衛生思想普及第二号

福岡縣衛生部 昭和二十三

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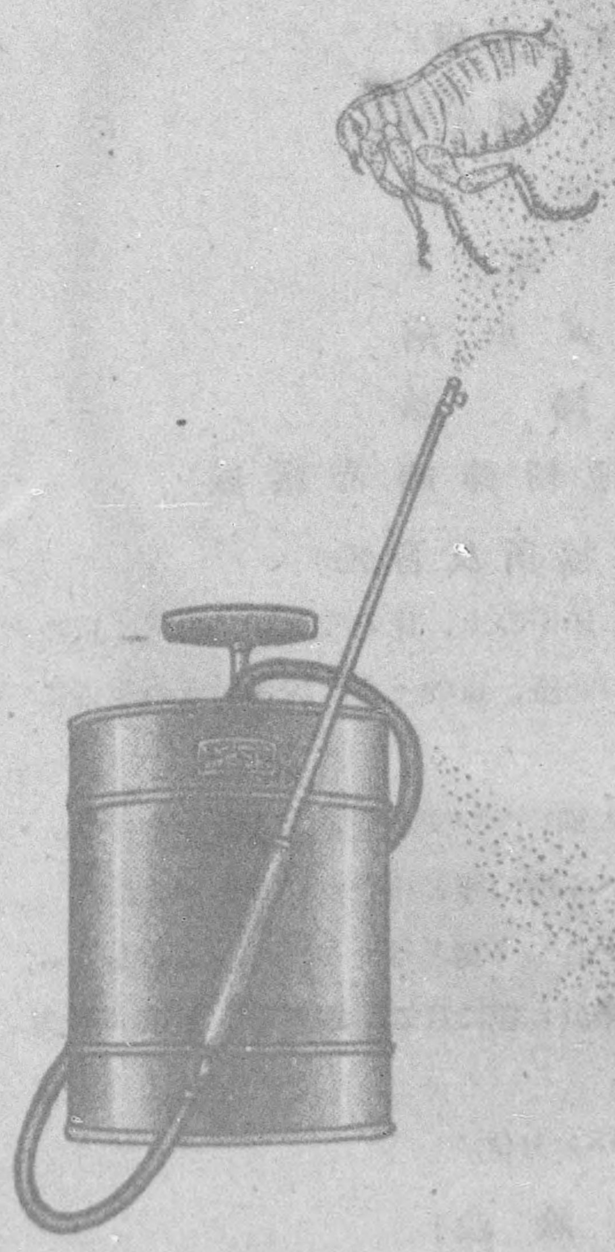

昭和二十三年十二月

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衛生思想普及第二号

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2. 發疹熱
3. 矮小條虫
4. ツツガ虫病
5. 再歸熱
6. その他精神的苦腦感

〔蚤の發生場所及習性〕

家屋内では特に床下の土、床の塵芥間、疊下、鼠の巣の附近、鼠の通路、鼠の死んで居る場所の附近に發生する。

又家畜例へば犬猫についてゐる蚤も人間をおそう。

蚤の雌がこういふ所に卵を産みつけると卵、幼虫（蛆）次に繭を作つて蛹となりやがて成虫になる。4—6週間目で卵から親になる。雌蚤は一生中 500個位の卵を生む。

蚤の壽命は1—3ケ月位。

〔蚤の驅除法〕

1. 鼠の驅除を徹底的に行ふこと、蚤は主に鼠の体に附着していて、鼠が死ぬと体温が無くなるので四散する。
2. 家畜（犬・猫）を常に清潔にすると共に畜舎を成る丈家屋から離しておくこと。
3. 家屋を清潔にして大掃除の際は徹底して行ふと同時に床下の不潔な土砂の塵埃を綺麗に掃き取りこの上に殺虫劑を撒布する。

A. 寄生体に對する驅除法

1. 10%D.D.T粉末撒布

1人當り 1オンス（25瓦）の割合でダスターで撒布する。

撒布後直ぐ拂ひ落してはいけない。

2. ナフタリン粉末撒布
3. 除虫菊粉末撒布
4. クレオリン浴 3% 37°C

人、家畜の場合の共、同様に上記の藥劑を使用する。

B. 發生場所に對する驅除法

1. リケツチヤ消毒

公衆の集る場所例へば映畫館、旅館、乘物、浴場等に對しては市、保健所或ひは各事業場のサニタリチームが藥劑を噴霧する。

2. 殺虫劑の使用

a. 10% D.D.T粉末撒布

室内の疊、寢具に對しては1坪當り50瓦位撒布する

b, バ ク ト ー ル

床下の土砂に對して1坪當り50瓦位撒布する。

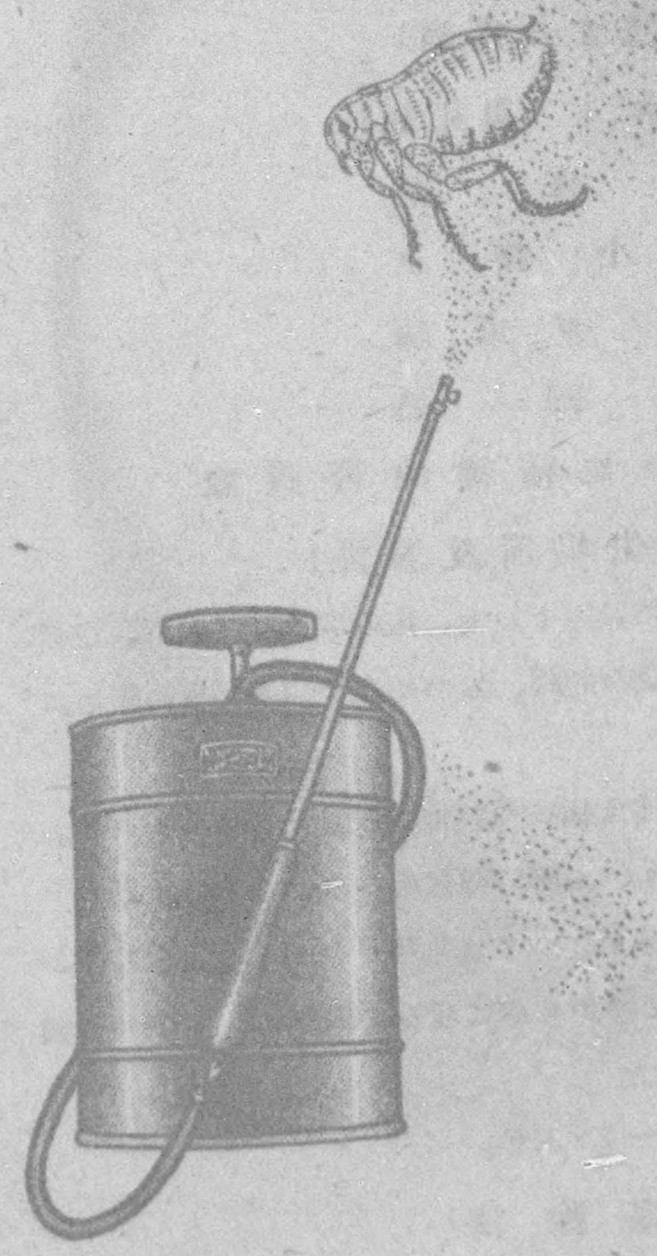
〔注　意〕

D.D.T 粉末を撒布したときは直ぐ拂ひ落さずに10時間以上その儘にしておくこと。

D.D.T は撒布した後2—3ケ月もその効果は認められる。

D.D.T 油劑を人畜の体に使用してはいけない。

蚤の駆除法について



昭和二十三年十二月

福岡縣衛生部發行

衛生思想普及第二号

Concerning the Louse Control

Louse breeds in the uncleanly sanitary environment, which does not only makes our lives unpleasant but also conveys the typhus, typhus fever and other various disease. This louse starts breeding, when the climates gets warm, like spring and autumn. Especially this carries out from one person to another where many peoples assembles, like in trolly, train, bath room, and theatre.

Head Louse

This head louse parasites on the people's hair, and we could find larvae and eggs beside the mother louse in the hair. And these eggs are tightly sticked on the hair.

To control this breeding is to keep your hairs always clean. If once this starts breeding, control it with drugs or other methods.

1. 10% DDT dust

To you this is very simple and effective, but in case of using this, try to spray it to all the hairs, and spray it, so that it will stick into the skin completely. After you spray this, you have better not wash your hairs for about two weeks. In case you washed your hairs, repeat spraying this DDT for three times, every one week. In this case it is necessary to spray it over to your hat.

Notice: After you spray it over to your hairs, do not put any oils on your hairs. Do not use DDT oil, which might cause dermatitis.

2. Vinegar and gasoline (or benzine)

Mix these in equal amount, dip head hairs in this solution, wrap the hair with a towel and 30 minutes later wash with soap.

3. Vinegar (or 10% acetic acid)

Dip the head hair into the vinegar; wrap it with the towel and 2-3 hours later, wash with soap good.

4. Phenol

Make 2.5% liquid out of this and the same method as vinegar.

Notice A. In case of using the drugs for the louse control, which are selling in the market, obey the instruction.

B. In case for the head louse control, cover your eyes with towel or cloth, so that the drugs will not go into your eyes.

C. You can get rid of the eggs easily by using comb.

Cloth Louse

This can be found chiefly in the cloth, especially it likes to stay in the seams or crease of the cloth and the eggs are mostly attached in the fibre, but occasionally it is attached to the body hair. To protect this is to take the bath or to change the cloth oftenly.

1. 10% DDT dust

This is very simple and effective like head louse case. Spray it over to your body and cloth, especially both side of the cloth, inside of the hat, and to the seams and crease of the cloth. At the same time spray it to the towel, sheets, mats, beddings, pajamas.

2. Hot water and iron

In case you don't have any 10% DDT dust, put your cloth and other stuffs into the hot water over 30 seconds up to 5 minutes, and then wash it good.

If there is not so many louse, pay attention that the electric iron goes through the seam and creases of the cloths so that it will fully attain the purpose.

Notice: A. Do not use DDT oil. This will infect your skins or cloths.

B. Pay attention to the instruction which are selling at the shops.

C. Among these three kinds of lice, this cloth louse carries out typhus, typhus fever, so it is very important to control this.

Hair Louse

This is not found so many, but it is almost found in the hidden hairs. Sometimes hair under the axialloris, eye lash or moustache.

1. 10% DDT dust

Use it in the same method in case of head louse. Use the comb as same as the head louse for the eggs, or cut the part of the hidden hairs. Take the same method as the cloth louse, in case there is any in pants.

2. Mercury plaster

Sometimes they use this but it threatens to poison, so the safety way to use this is to consult the doctor before using it.

3. Stuffs selling at the shops

Don't make any mistakes on using it.

Translated by M. Nakayama

すとくに色々な人に接する人、通勤者又風の發生し易い環境にいる人は尚一層のことであります。

C　早期届出と隔離

發疹チフスは11種の法律できまつた傳染病の中でも特別に早く届出をする規則があつて流行時期に入つたら醫者は診斷して2時間以内に市町村長か保健所長に通報する義務があります。醫者ばかりでなく一般家庭では世帶主　團體ではその代表者又は管理者は本病の疑ひをもつた場合届出の責任があります。これを怠ると處罰をうけることになります。不幸にして本病が發生しても早く届出ることによつて蔓延を最小範圍に防ぐことが出來る譯であります。これには現在出來て居ります各地の[redacted]醫師會保健所等が常に協力し合ふことが大切であります。尚本病は發生後患者の隔離消毒、交通遮斷等も8時間以内に完了せねばならぬといふ特別の規定がありますから御注意願ひたいと思ひます。

(4) 發疹チフスと發疹熱（滿州チフス）

この二ツは非常によく似た病氣であります。が發疹熱は風でなく鼠にいる蚤がその仲介をするのであります。症狀も初期はよく似ていて一寸見分けることが困難であります。

然し發疹熱は症狀も輕く且死亡者も殆んどない位いであります。見分ける爲には科學的の檢査と症狀の經過で判別する譯であります。こんな工合ですから發疹熱の場合も發疹チフスと同樣にDDT粉末の撒布と藥液の噴霧消毒に併せて鼠の一齊驅除を行なうことが大切であります。

福岡縣衛生課防疫班

1948.5.……衛生思想普及版 No2

虱からうつる發疹チフス

虱でうつる發疹チフス

終戰後の日本に發疹チフスが猛威をふるい昭和21年の如き全國で約3萬人の人が罹患し　わが岡岡縣に於ても540名といふ多數の患者を出した狀態で戰後の敗會混亂衣食住の不足非衛生的環境等に原因するとはいひ乍　一日も早くこれを撲滅し本病を一時的の流行に終らせねばなりません。

元來本病は戰爭熱又は飢餓熱とも申します樣に戰爭凶作等の場合におこる熱性の病氣ですが腸チフスとは全然異る病氣ですからそのバイキン（病原体）も腸チフス菌でなくリケッチヤといふバイキン（病原体）によつておこつて參ります。そしてその仲介をするのが虱であります。

「虱なき所に發疹チフスなし」と申します樣に虱の發生と發疹チフスの流行とは正比例して居りますのでその流行期も冬から春にかけて多く就中春先が最流行期にあたります。

女より男が多く罹り易く死亡率も 50 才以上になると 40% 前後の高率を示して居ります。私共はその症狀及び豫防法その他をよく理解して一日も早く本病を撲滅し衛生國家として快的な生活が出來る樣にしたいものであります。

(1) 發生場所と感染

多くの人の集る不潔な環境（獨身寮、合宿、勞務者宿舍、刑務所、留置場等）に多發し易く、又本人自身は清潔でも交通機關、共同浴場、映畫劇場　旅館その他の接客業者等、他人から病毒を持つた虱を貰ひ感染される機會が多いのであります。又虱の糞の中にもこの病原體が居りますのでこれを吸込んだり皮膚の創口からはいつて感染したりすることも考えられます。本來虱は人の血液を食物とし、住むに適當な温度を必要としますが人の體温が最も適温となります。從つて厚着をする冬から春にかけての季節が虱の生存に好季となり氣温の高い夏期には病氣の發生も終熄するのを常といたします。

(2) 症　　狀

潜伏期は大體12日位ですが多くは急激に發病することが多く惡感發熱筋肉痛　とくに腰痛があり眼の結膜の充血、氣管支炎を伴ひ時期的に見て感胃や肺炎等と間違ひ易いのですが下熱劑を飲んでも中々熱が降らず 39度 前後の熱が二週間位つゞきます。發病して 4~5 日すると四肢、上胸部等に小さい發疹が現われ關症狀としてはウワゴトを言つたり中には暴れたり又は無欲狀態を呈したり致しますからこんな場合は時期と場所を考え一應本病を疑つていゝと思ひます。

流行地域に住む人や虱の存在を發見した場合等は尚一層疑いが深い譯ですから一刻も早く醫師の診斷をうける樣にしなければなりません。

(3) 豫防法と届出

A　第一に虱を無くすることが最も大事です。これには普段から衣服や住居を清潔にし入浴を勵行する尚出來得れば人込みを避ける樣に致します。
又虱の發生し易い所に DDT 粉末その他の藥劑の撒布及び病原體すなはちリケッチヤを消毒する爲にクレゾール又はミケゾール等のはいつた DDT 油劑及び除虫菊乳劑その他の消毒劑で噴霧消毒を致します。DDT は各家庭にお分けするだけの量がありませんので　市町村事務場等に設けてある DDT 撒布所（ダステングステーション）を利用するのがいゝと思います。

B　豫防注射

これによつて發生を少くし萬一不幸にして病氣になつても死亡率を非常に少くする譯ですから進んでお互ひに豫防注射をうけることが大事であります

GUIDE FOR

INSECT RODENT CONTROL

(Original Edition)

April 1948

FUKUOKA KEN

HEALTH DEPARTMENT

PREFACE

Since the surrender of Japan various kinds of communicable diseases have spread in our country. So, synthetic plan for exterminating rodents and insects which are the hosts of communicable disease and for the clearance of cities and towns as the first step for preventive medicine.

On 3 March 1946 and on 4 May 1946, S. C. A. P. memorandum for I. R. C. have been given to Japanese Government, and since that time notifications have been issued from the Welfare Ministry regarding I. R. C. as orders of the Occupation Forces to each prefecture. Also, Welfare Ministry emphasized the thorough clearance of cities and towns by the notification "Clearance of Cities and Towns and Forcing Epidemic Control". Besides, the communication was issued and periodical prevention measure must be taken regarding rodent control for ports and cities in particular.

Moreover, notification regarding rodent control has been sent and each city, town and village must take the responsibility about the thorough administration of this business.

This business must be carried out by full-time (or pay) teams organized by local communities (one team per 10,000 population) working places and other cooperations. Moreover these teams are organized about six personnel each (This number may be increased if necessary.), and give education and encouragement to each home and sanitary association.

If roads, public land and building public facilities and houses can't be administered or insufficiently administered due to the finance or short of hands, men of these teams bring about by themselves.

Teams of working places and cooperation administer control at divisions under their charge, but sometimes they help other places.

Foreman: One

He is a center of a team and controls and guides his team members. Also, he is in charge of communication to other agencies as a charge person, and gives education for residents in the division under his charge.

Inspector: One

He travels around each home and public agencies and inspects I. R. C. activities clearance activities and improvements and finds out necessary places for clearance and insects growing places. He orders the disposition or makes laborers dispose. At the same time he puts on records.

The foreman may hold additional post of the inspector.

Laborer: 4

They bring about clearance and radical disposition or drug spray at mosquito and fly growing places. Moreover, as to the rodent control, they directly guide or administer for places where each home can't administer or administer insufficiently. The activities of I. R. C. teams have to be done throughout a year. Rickittsicidal spray must be done directly by these men. They have to guide, look over and stamp seal about places where the various cooperations administer.

1 RODENT CONTROL

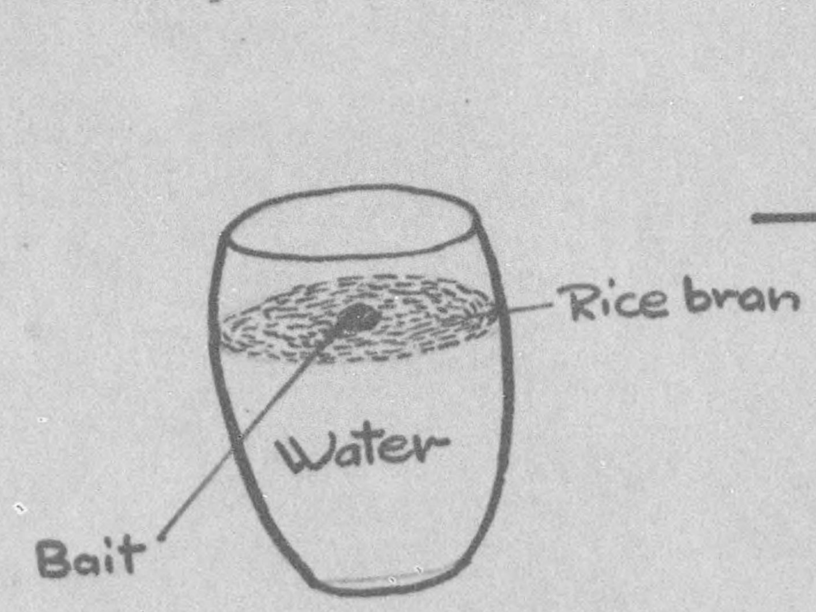
(1) Kind of Rodenticide and Rat-trap:

Rodenticide - Made of Urea ANTU (0.1g)(See Appendix 4)

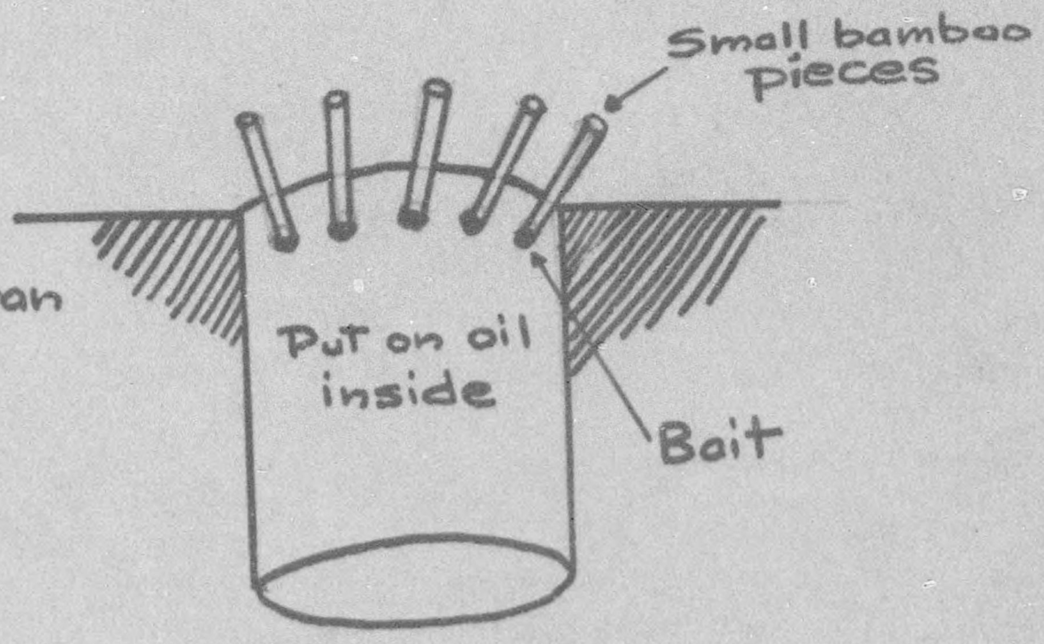
- " " Yellow Phosphor NEKOIRADU (0.01g)
MESSO (0.1g)(See Appendix 4)

- " " Arsenic ..Sub-arsenic-acid (0.006g)
and Carbonic-acid Barium, Phosphoric Zinc
Sulpharic acid Barium

Rat-trap - Net type



(Fig 1)



(Fig 2)

Spring type

Use of Jar (See Fig 1)

Drum (See Fig 2)

Bamboo-pipe

(2) Way of making Baits (See Appendix 4)

Materials - potato, bread, carrot, various fries, wheat flour

Way of making poisonous baits - Size - lap of finger and packing

Way of kneading together

Way of mixing

Way of enclosing

Way of covering (smearing) with

Use of water

Way of spreading about rat-hole

(3) Existence or in-existence of rat

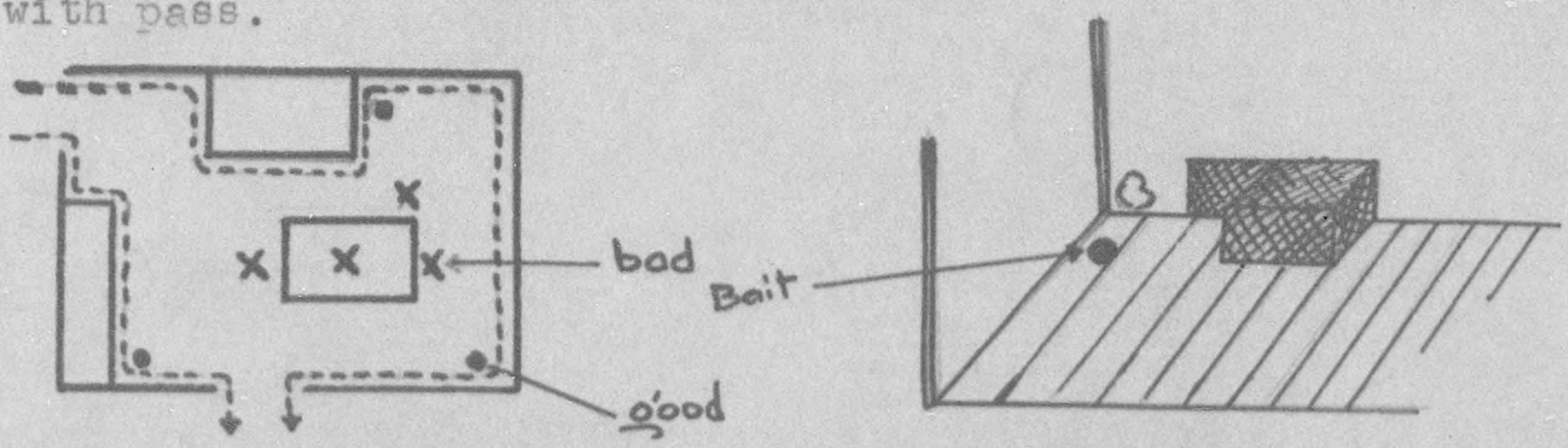
Finding foot-trace, ordure, rat-hole, biting-mark, nest and rat itself.

The hiding places of rats - Garbage-hole, dust dump, lumber-yard, stone-yard, stone-hedge, various warehouses, attic, closet under the building or straw spread on the floor.

(4) Places for Baits and Rat-trap:

When you place baits or rat-trap, take care about pass and hole for rats and place them at points 1 - 2 feet distant from pass or hole.

No. of baits at one place is 4-5 pieces. And rat-trap have to be put so as to be at right angle with rat-hole and parallel with pass.



When you place the trap out-door, you have to choose fine day or places which will not be drenched by water.

(5) Continuous Control

Administer with rat-trap. Always carry out rat-controlling clearance. This clearance must be administered always by I. R. C. teams, and each home and cooperation shall enforce strictly. Especially ports, cities and foodstuff agencies must not neglect it.

(6) General Control

According to the directives of Prefectures each local community, each working place and other cooperation must administer more than 2 times a year fixing dates and areas. (Cities must do more that 4 times)

(7) Rat-controlling Clearance and Pre-baiting:

Rat-controlling clearance

(a) All food-stuff for rats must be covered, burnt up or buried.

(b) Foot-traces or ordures must be thoroughly cleared up.

(c) Stoppage of rat-hole (with tin-plate, empty can or mixture of hair and clay or using pine or cedar).

(d) Removal of rat-nest (Nests are made at such places where there is water and food are conveniently got and enemy can't find out so easily.

(e) Insecticidal Spray

Insecticidal spray after finishing rodent control exterminates fleas andticks and also prevents the growth of them.

PREBAITING:

This must be done in the afternoon or in the night.

1st day - Rat-controlling clearance (Only one (1) must be carried out). Choice of baits.

2nd day - Pre-baiting (To collect the remainder of foodstuff given at 1st day anduse the only kind of baits best eaten).

3rd day - Rest (Collect the remainder of foodstuff given on previous day).

4th day - Pre-baiting (Same baits as 2nd day).

5th day - Poisonous Bait (Collecting the remainder of previous day's foodstuff, administer poisoning).

6th day - Collecting the remainder of the poisonous baits, burn or bury beneath ground about 3 feet.

Investigation about dead rats and poisonous baits.

Rat-controlling Clearance (Administer from (2) to (5)).

Reports for Rodent Control.

(8) Rodent-proof Building:

Japaness house is now built so as to make rats live in well. So, we have to build rodent-proof houses as well as possible at all cost. In another word, houses without ceiling, and rats can't enter even floor or wall..... In a word, we have to shut out all the rats from our houses.

2 MOSQUITO, FLY CONTROL

(1) Kind of Insecticide, sprayer, duster.

Insecticide (This is not a disinfective medicine, so you have to use another disinfectant in case of communicable disease).

100% D.D.T. (See Appendix 1)

5% D.D.T. Oil (" " ")

10% D.D.T. Dust (" " ")

Pyrethrum Emulsion (30 times) (See Appendix 2)

Baktol (See Appendix 3)

Mikesol (This is a disinfectant as well as an insecticide)

Others

Sprayer

Semi-automatic Sprayer (Each kind)
Shoulder " (" ")
Hand " (" ")

(2) Instruction of places where mosquitoes and flies grow. (See I.R.C. Guide)

Mosquito growing places.

Water-tank for fire prevention, water tank, water pool, drainage, artificial-pond, washing-basin, empty can, empty bottle, old pail, flower vase, flower-pipe (made of bamboo) of grave, water- presenting-coop, rice-paddy, swamp, pond and others.

Fly growing places

Toilet, dust-garbage-box, dust dump, stall, kitchen, manuer-pool and other unclean places.

(3) Clearance of Mosquito, Fly-growing-places.

You must always have concern about above mentioned insect-growing-places, and keep records and make efforts for clearance by I.R.C. teams themselves or with cooperation of

others. This is a fundamental problem for mosquito and fly control.

(4) Spray Exercise with Drug and Equipment. (See Appendix 6)

Estimated Amount of Drug of Spray

5% D.D.T. Oil - Maggot 90cc-140cc for 10sq.m.
Mosquito Larva, spray in such a degree as to make thin membrane over the surface of the water.

10% D.D.T. Dust - Spread slightly over the objects.

Pyrethrum Emulsion - Maggot - 23cc per 100 sq.m.
Mosquito-Larva-Spray in such a degree as to make thin membrane over the surface of the water.

Baktol (Mixed Insecticide) - Spread a little bit more.

Mikesol - Maggot 25-50 times solution.
Mosquito Larva - 5000 times liquid.

When 100% D.D.T. is melted in Petroleum or heavy oil:

D.D.T.% X Amount of petroleum X weight of petroleum 1 gal.
= 100% D.D.T. needed amount.

(For example to make 5% D.D.T. Oil solution
0.05 X 55 gal. X 6.8 lbs 1 gal = 18.7 lbs)

(5) Equipment for Preventing Mosquito and Fly:

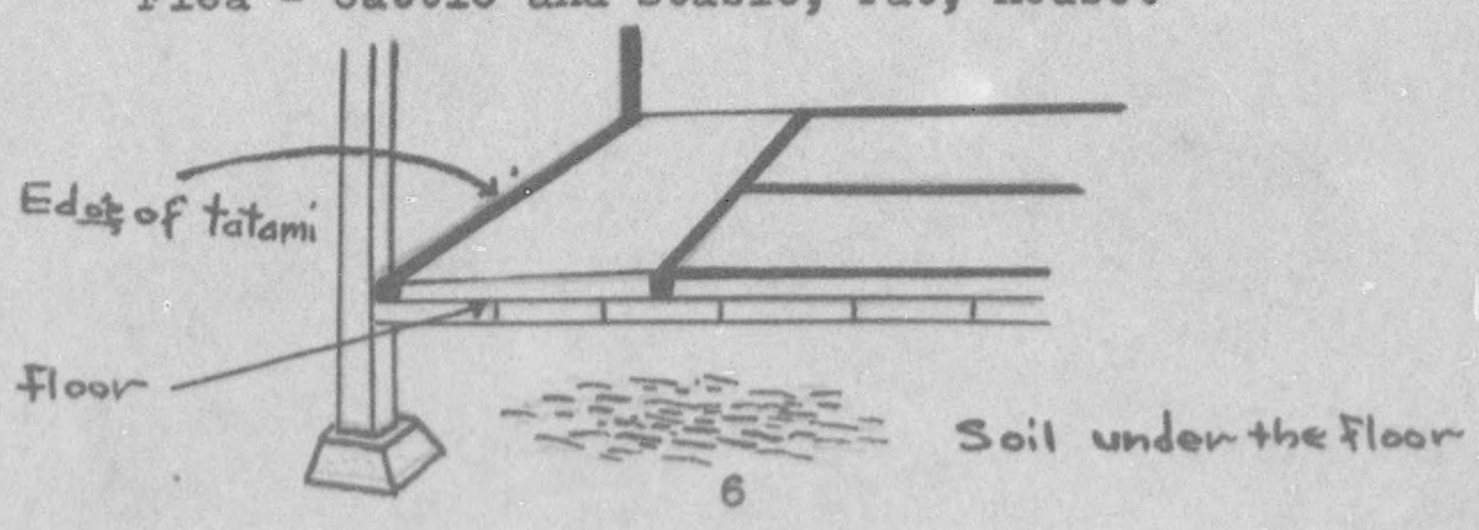
All the spaces and windows must be covered with wire-net and prevent insects. Besides, all the foods and drinks must be put in the utensils covered with wire-net. This method can prevent rats at the same time.

3 FLEA, LOUCE, TICK,
BEDBUG CONTROL (See Appendix 6)

(1) Kind of Insecticide, Spray, Duster. (See 2nd clause (1))

(2) Instruction of growing place (See I.R.C. Guide)

Flea - Cattle and Stable, rat, house.



Louce - hair growing part ofthe body, clothing and others.

Tick - Rat, nest of rat and other unclean house.

Bedbug - Board, Sidewall, floor, bed and others.

(3) Dusting about human-body (See Appendix 5)

(4) Spraying and Dusting for House.(See Appendix 6)

(5) Rodent Control (See 1st clause Rodent Control)

(6) Isolation of Cattle and Stable and clearance.

4.DISPOSITION IN CASE OF COMMUNICABLE DISEASE OCCURENCE

See Preventive Medicine Plan (Ken Health Department)

In time of occurence of communicable disease, disinfection due to the "Epidemic Prevention Law" should be thoroughly administered as well as the carrying out of I.R.C.

(1) Disinfection with Legal Disinfection Drug (Epidemic Prevention Law).

(2) Insect Control with D.D.T. Spray.

(3) " " " " Dust

(4) General Control of Rat

This must be done by the activity of I.R.C. team and every possible cooperation of all people. Those diseases which need I.R.C. are like below,

(a)

Typhus, Scrub Typhus, Typhus Fever, Recurrent Fever.

Rickittsicidal Spray and 10% D.D.T. must be administered at the dame time. Area of radius 100m. taking the patient happened place as it's center must be completely disposed within 8 hours from the notice of disease. Moreover, nickittsicidal spray must be carried out at least two time at intervals of one week.

(b) Plague

Rodent Control, of course, flea, tick must be also controlled.

(c) Cholera

Thorough control for fly about disease happened area.

(d) Typhoid, Paratyphoid, Disentery and other digestive-organ C. Disease

Fly Control for 4 k.m. diameter area.

(e) Japan B Encephalitis.

(f) Weil's Disease

Thorough rodent control, clearance for ditch and swamp of disease happened area. Administration of disinfective spray.

(g) Poisoning by food.

Rodent and Fly Control.

(h) Malaria, Dengue, Filaria, Mosquito Control.

GUIDE FOR

INSECT RODENT CONTROL

(Revised Edition)
July '45

APPENDIX

APPENDIX 1

REGARDING D.D.T.

1. D.D.T. is a kind of compound drug and is in a state of very stabilized crystal.

Excellent character of D.D.T. is its continuance of efficiency for more than 90 days, which may be extinguished by washing and rubbing.

A. 10% D.D.T. dust:

To be used against crawling insects namely, flea, louce, maggot, mosquito larva and etc. . . . . .

Objects are clothings, cushions, tatami, mats, hairs and each regions of body, Moreover, spread over the surface of the places where maggots and mosquito larva lodge.

If the way of using the drug is loose, you will make big loss. So, you have to use D.D.T. as a last measure.

B. 5% D.D.T. oil solution

Effective for fly, mosquito control, namely spray over the surface of places where fly mosquito stops or out on with a brush.

Mosquitoes like dim and cool places in the room shut out from out-door air, and near human being and domestic animals.

In winter they live in warm and cool place.

Flies like warm and strangely smelling places, ceilings, kitchens, toilets where there are few people.

Object of the drug: So for mosquito, dark corner of the room, ceiling, kitchen, stable, toilet, under the desk closet and etc..... So for fly, electric cord, frame of the picture, old decorations, toilets, mess-room, kitchen, stable, and etc.....
Remarks: This drug will easily flash, so you must take care for fire.

2. Both D.D.T. dust and D.D.T. oil must not be headlessly spread or sprayed on the earth, ditch, out-door and other places. You have to check these places first under strict supervision and find out fly, mosquito growing places. As a rule, you have to clear such places so as not insects grow. And, if clearance be impossible, spread insecticide. D.D.T. is not the all of sanitation, but it must be used as a supplement, for we can't disinfect bacteria with D.D.T. only, so the term D.D.T. disinfection is not proper.

APPENDIX 2

REGARDING PYRETHRUM EMULSION

This drug was made due to the directive of SCAP.
1. This insecticide is made of effective component PIRETRIN of Pyrethrum (0.18%). Petroleum (68%) SCAP and others. This drug is used throughout U.S.A. Comparing this drug with D.D.T. oil, its remaining effect is short (about 10 days), but its influence against larva and maggot of fly and mosquito is very strong; its price is cheap. It does not harm human body and fish and vegetable..

2. There are two kinds of pyrethrum emulsion, namely, ten times one and 30 times one. We use almost always the latter. We add 20-30 times of water to the original liquid slowly stirring up and use this diluted liquid vy sprayer. The diluent will change if it be kept for a long time, so you have to dilute every time you need it.

3. Object: Mosquito, fly, flea, louce, bed-bug, tick -- and other imago and larva. Spray once a week for such places where these insects likely to grow.

4. This drug is indispensable for making Rickittsicide No. 2 and No. 3.

5. This drug can't disinfect bacteria.

APPENDIX 3
REGARDING BAKTOL

This is a compound of naphthalene, antrasen, kreosote, and hydro-calcium, and it is a light-brown powder. A part of it will be melted into water, but others can't be melted.

1. Flea Control and Preventive method. (See I.R.C. Guide)
First thing for flea control and prevention is clearance.
Use about 100 grams of this drug for one tsubo (1 tsubo=36 square feet) on the soil of under floor. Besides, spread about 50 grams for one sheet of TATAMI (Japanese mat) (6 feet long 3 feet wide) laying newspapers over the floor-board. You have to use at the time general clearance administered or in Feb. Mar. Apr. when flea grow.

2. Tick Control and Prevention (See I.R.C. Guide) Tick lives upon rat, so rodent control is the first thing. You have to remember the general clearance along with rodent-control, (see 1st clause of rodent control), namely, spread this drug over back of ceiling, store-room or under floor where rats always live.

3. Fly, Mosquito, Larva Control and Prevention: (See I.R.C. Guide)
Clearance is the fundamental method of control. And we spread this drug over places where fly, mosquito grow once a week. We have to spread slightly more quantity of drug over toilets and garbage-box, and pervade over water-holes and water surface where mosquito larva grow. This drug may be able to prevent bad smell. Moreover, this can be used for warehouses and farming-animal stables.
Remarks: You can use duster when you spread this drug.

4. This drug is not disinfection drug.

APPENDIX 4
REGARDING ANTU

ANTU (Alpha, Naphtiel, Tio, Urea) was found in America and licenced manufacturing in Japan. Comparing this drug with old rodenticide, its efficiency is sure and way of use is easy and safe.

(WAY OF USING ANTU)
Electuary Method:--Knead one paper-bag (3 g) of ANTU with grains 10 g. and water and divide it into 30 pieces (One piece contains 0.1 g of ANTU) If you use boiled potato and other water-much-containing foods , you have to use ANTU more than 10 grams. Size of bait is as big as a top of your finger.

Mixing Method:--Mix ANTU with wheat-flour, starch and something like that so as one piece contains 0.2 gr. and place these baits at fixed places.

3. Enclosing Method:--Enclose ANTU in baits so as one bait contains 0.1 g. of ANTU. The size of baits is same as above.

Covering (Smearing) Method:--Cover ANTU over the surface of water much containing bait (for example vegetable and fried foods) so as one piece of bait has 0.1 g. of ANTU. Size is same as above. Wrap each bait with a sheet of paper and place 4-5 pieces at fixed places.

Using water:--Pour water into a dish and spread ANTU so as it make a thin membrane over the surface of the water. Or mix ANTU with water (rate of 2:100) and stir at times so as not to sediment. This method is useful when and where rats are eating only dried up foods.

Way of spreading about rat-hole: Spread ANTU only at rats-hole or rats' pass. You can use slightly much ANTU in this case.

ATTENTION:
1. Though ANTU gives no harm against man and animal, you have to take care for children and domestic animals with cautions.
2. After using ANTU once, you have to wait at least three months intervals. A rat which has eaten a little bit of ANTU and survives get immunity and does not die even if it eats ome degree of food.

REGARDING MESSO

Main stuff of MESSO is yellow phosphor, and it differs with NEKOIRAZU and contains material which rats like. This is a new rodenticide.
Way of using MESSO: Poisonous baits are made by the electuary method, enclosing method already mentioned above. For example, knead baits which rats like with 0.1 g. of MESSO (cover or enclose in) and put on rice-bran or wheat-flour. Size of baits is as big as a top of a finger. When you make a dumpling bait, the size of it must be about 5 g. You had better make many small baits. You can make 50 pieces of baits with 1 tube of MESSO. You need average 20-30 pieces of baits . Place 4-5 pieces of baits, 1 foot or two feet distant from rat's pass or little way from rat-hole, wrapping them with paper.

ATTENTION: MESSO is made of yellow phosphor, so you have to make all the family known before use.

APPENDIX 5
FLEA CONTROL USING D.D.T.

1. Fleas begin to die within 6 hours after the exposition to D.D.T. dust and all of them die within 20 hours. Eggs don't die and be hatched after 10 days. Properly disposed clothings have effects of killing fleas for 21-30 days. If you use them in that condition, all the imagoes and larvas invaded during that period will be killed. If you have changed your clothings, before egg-hatching period has been lapsed, you have to spread the drug again.

2. Group Controlling Method:
a) Hand-duster: You had better organize flea-controling team with 3-5 men under one expert guide. One team can carry out flea control for 150-250 persons within one hour. Beginner have to undress first several persons and examine whether the dust has been spread perfectly or amount used is proper or not.

b) D.D.T.-gun. Filling about 3/4 of its capacity with dust and use 1 oz. of dust per man. Amount of D.D.T. under 1 oz. is not effective. If amount of D.D.T. exceeds 1 oz. you have to remove dust by a bath or changing cloths at once so you had better avoid such things.

c) Those who get D.D.T dust must take off their hats loosen neck-bands and bands and stand or sit with the hats in their hands.

d) Enter the hole of D.D.T gun into the right sleeve of them and make their arms stretch as high as their shoulders. Discharge twice towards armpits. Administer same as above at light sleeve.

e) Entering the hole of the gun under the underwear of the back of the neck-band, discharge twice towards right armpits and left armpits.

f) Entering the hole of the gun at the back of the neck discharge twice towards right and left shoulders. Administer same as above concerning under the underwear of collar region and bath shoulders.

g) Entering the hole of the gun under the front band discharge twice towards right leg's buttock and left leg. The degree of power to be used at the moment is most important. This can be get due to training.

3. Flea Control for Individual. One who already got training guides control: spread 1 oz. of D.D.T. underneath the hair of (259) head and pudenda underwear and shirt, trousers.

4. Flea Control for Clothing and bedding
a) To control flea for clothing and bedding not being used is good. Dispose all the surface up to seams, skirts folds. You have to expose them (clothing and bedding) in dust at least 20 hours. As eggs do not die at that time, you have to keep the drug effective in clothing and bedding after 20 days so as to kill newly hatched larva.

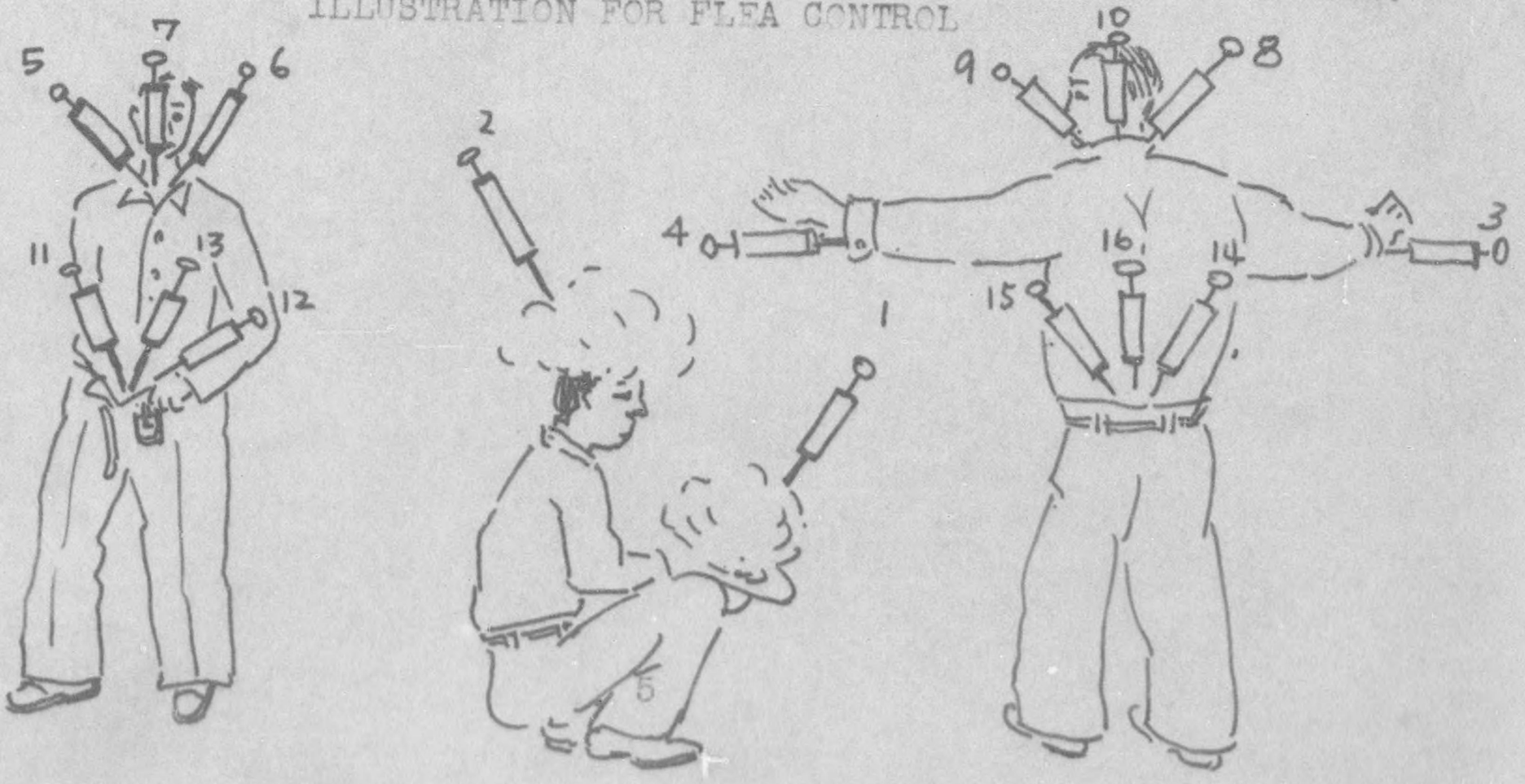
b) When you expose flea containing clothing and bedding to coldness under 10° below zero at least two hours, and lay them in that state 3-4 weeks in ordinary temperature, all fleas and eggs will be exterminated.

5. Disinfection of clothing and bedding:
a) D.D.T. can't kill germs of typhus and typhus fever, namely Rickittsi. So you need proper care for the disinfection of clothings of typhus or typhus fever patients. If there is no fear of harming clothing or bedding, you can disinfect easily by vapors or boiling. So to wool textile or leather article or something like that, you can dip them in 2% Kresol liquid and disinfect them.

6. Spreading method for individual: You have to adopt the most exact method, especially, you have take heed to the clothings.
a) One who get D.D.T. spreading must loosen collar, belt, necktie and others and stand or sit with a hat.
b) First spread for the hat. (cap)
c) Next spread for hairs of head separating one by one until all the hair become entirely white.
d) Raising the left arm sidelong, spread D.D.T. from the sleeve along the skin until armpit. Administer for right arm just like left arm. In this case make him face to the opposite side.
e) Enter the top of the duster from the front of the neck and turn the top towards right armpit, and then towards abdomen region, next towards left armpit and spread dust. In this case you have to spread perfectly among each underwear. The head must be erected upright.
f) Enter the top of the duster from the back of the neck of the shirt and then turn it towards right shoulder, next downwards, next towards left shoulder and spread D.D.T. In this case the his head must be bent below. Take care about collar as fleas easily assemble to it.
g) Enter the top of the duster from the back of the trousers to the skin spread it over the right leg next downward and next over the left leg. In this case, taking care of each underwear spread exactly. Administrater can go round the person being dusted or the person can go round.

This method is a way of flea control and not disinfection.

ILLUSTRATION FOR FLEA CONTROL



As for female person omit after 11 clause and administer before clause 10. Head flea controlling drug other than 10% D.D.T. dust. 1 Vinegar and Petroleum (mix equal amount). Dip head-hair in this solution wrap the hair with a towel, and 30 minute later wash with soap.

Wash hair with only vinegar, wrap it with a towel, and 2-3.

SPRAY AND DUSTING FOR BUILDING
APPENDIX 6

1. Spray: This is applied mainly for controlling mosquito, fly, louce, flea, tick, bed-bug, and etc. See attached clause of Rickittsicidal spray.

Material-Sprayer, 5% D.D.T. oil solution, pyrethrum emulsion, Mikesol.

Amount-Spray with sprayer so as not the liquid flow over.

About 1 litre for 25 sq. m.

2. Drug Spray: Use mainly for controlling flea, lice, tick, bed-bug and for larva of fly and mosquito.

Material-Duster 10% D.D.T. dust, Baktol.

Amount-Spray so as the drug pervade over the surface.

Object-bedding, closet, ceiling, surface of Tatami, under tatami, floor-board toilet, kitchen, soil under the floor, stable, warehouse, water-tank, drainage, garbage-box, manure-pool.
(But, Baktol is no good for bedding and TATAMI.)

APPENDIX 7
RICKITTSICIDAL SPRAY

Rickittsicidal spray means a spray which is used to kill the host (medium insect) of typhus and at the same time disinfect patheogen rickittsia. Namely, along with killing flea, louse and tick it disinfect rickittsia contained in excrement of the insect.
We spray 2% Kresol or 2% mikesol.

1. Drug and Equipment:
   Sprayer....Semi-automatic-shoulder type hand-type
   Brush.....
   Drug.....Preparation of the drug must be done before using.

No. 1 liquid	(5% DDT Oil Solution	30 Litre
	(Kresol(or Mikesol)	600 cc
No. 2 liquid	(Pyrethrum emulsion (30 times)	1 litre
	(Water	30 litre
	(Kresol(or mikesol)	600 cc
No. 3 liquid	(Pyrethrum (10 times)	3 litre
	(Water	30 litre
	(Kresol(or mikesol)	600 cc.

When you prepare No. 2 liquid or No. 3 liquid, you have to add water into pyrethrum emulsion and stir it well, then mix Kresol or mikesol.

2. Objects: Vagabond-camp, social-welfare facilities, unsanitary lodging-house, R.R. Station, Isolation Hospital, hospital, clinic, jail, police-jail, private R.R. Performance-place, barber-shop, bath-house, hotel, restaurant and others.

Heads of local communities organize spray teams (or I.R.C. teams) and administer it. The members of a team are about 5-6.

Ken Health Department and Health Clinic give cooperation as well as supervision and guidance.

3. Places: R.R. Station -- passage-floor, wall, chair, bench, stairway--stairway, wall, side wall hand-rail.
Waiting-room -- side-wall, bench.
Business-room - toilet, wash-stand and others
Carriage, street-car, bus - wall, side-wall, ceiling, seat, chair.
(About 5-6 litre of the liquid is necessary for one carriage of 16x2½x2½ meter)
Jail, police-jail -- wall, sidewall, pass, toilet, business-room and others.
Isolation hospital, hospital, clinic -- ward, waiting-room for patients, examination-room and other necessary places.
Vagabond Camp, nursage, lodging-house, poor men's camp-wall, sidewall, pass, toilet, bath-room and others.
Bath-house--dressing-room, clothing-box(or basket), wall, sidewall, wooden-clogs box and others.
Hotel, restaurant, barber-shop--wall, side-wall, stairway, hand-rail, bathroom, toilet and others.
(Besides, barber must carry out provided disinfection of tools himself).
Performance-place--all the places except ceiling.
Other places where flea, louse, lick grows and many people crowd.

4. Way of using drug: Amount to be used--about one litre for 25 m^2

Spray with sprayer, or suffuse with paint brush. The distance between objective surface and the top of the sprayer must be 10-20 m, and administer so as the drug not drop down.

Attention:--Use well trained and well qualified person. Fire is restricted. During the operation, doors and windows must be open and let them in that state for several hours after operation. Don't touch the drug for a long time.

5. Spray Period: No. 1 liquid -- twice a month
No. 2 liquid -- " " "
No. 3 liquid -- " " "
Total 4 times a month

If you have no D.D.T. oil solution needed for No. 1 liquid, you can administer 4 times a month with No. 2 liquid.

Attention: Every time after administration once a week, notify with following form and stamp the name-stamp of local community directly attached I.R.C. team member.

S P R A Y
(Rickittsicidal)

Date of Administration
Year Month Day S e a l

When you administered rickettsicidal spray, you have to report monthly to local communities and the latter have to report to the Preventive Section until 10th next month.
7. Immediate administration: Typhus, typhus fever (See Preventive Plan)

APPENDIX 8
Regarding Market, Ryotei, Restaurant, Food-Store, Food Warehouse:

Regarding above mentioned places, specially keen attention must be paid on account of their environments.
1. Regarding places where foods are stored, you have to make equipment to prevent rats and keep the food-stuffs completely. For example, to use Nezumikaeshi (*uncertain) or close the storeplace completely with concrete. Of course, general rats control or continual rats control must be carried out. Also, screens are to be put over doors and windows to prevent mosquitoes and flies.
2. Complete covers must be put over the dust garbage dump, for example, they are to be made of concrete or made of solid wood. Moreover, clear around and inside, and spray periodically (at times of clearance).
3. Clearance for inside and outside of house in particular, for mess-room. When restaurants, eating-houses, tea-houses are decorated, take care so as not those decorations become rats' pass or nests. Always clear thoroughly, in particular execute rickittsicidal spray for sidewalls and floors.
4. Clearance of kitchen: Kitchen should be always kept clean. and dispose garbage boxes every day due to clause 2 (above-mentioned). Spray under the kitchen and other important places.
5. Foodstuff at the store: Foodstuff, for example, fish, meat, candy and others should be covered strictly and others should be covered strictly with glass covering so as flies not assemble and dust not enter.

APPENDIX 9
GUIDE FOR INSECT AND RODENT CONTROL
--Fukuoka-Ken Health Department.

Kind of Insect	Disease	Place they grow & habit	Way of Control
Mosquito	Malaria	Swamp, marsh, pond, water-pool, rice-paddy, stream, ditch, water-tank	Regarding swamp, marsh pond, water-pool, rice paddy, drainage, creek & other places where anopheles lives, currency adjusting, drainage, reclamation, rearing small fishes spraying & dusting.
	Dengu-fever	Water presenting vase at grave & other water holes	Break down, tumble down, or bury sand & soil into water-tank, empty bottle, empty can, stump of bamboo, flower-vase of grave and etc.
Anopheles	Japan B-encephalitis.	There are 4 stages of growing egg, larva, chrysalis, imago).	

Kind of Insect	Disease	Place they grow & habit	Way of Control
Anopheles (cont'd) House-mosquito Stripe-mosquito	Filaria Others Mental Agony	It takes 7-10 days from egg to imago and female mosquito lay 300-1000 eggs in her career.	Regarding sewer, ditch creek, air-invade-shelter, rice-paddy, water-hole & etc., currency adjusting, burying, drainage, fish-rearing, spray or dusting should be carried out in order to prevent growing of mosquito. Spray once week. As for insecticide, 5% DDT oil solution, 10% DDT dust pyrethrum emulsion, Baktol have to be administered.
Fly House-fly (Tabanus) Stripe fly Golden fly	Cholera Typhoid Paratyphoid Dysentary other poison. Mental agony	Warm and damp places on organic matters, for example, dust garbage dump, garbage box, toilet, animal stable, kitchen, (egg, larva, chrysalis, imago)4 stages. If condition be best, it takes only 6 days from egg to imago. Female fly lay 200-1000 eggs in her career.	Always make fly-growing places dry, clear once a week. Burn or spray insecticide. Cover garbage-box, toilet strictly so as fly can't go in and out. Take care about soil under garbage-pool or garbage box, corner of toilet where fly likely to grow. Also cover manure-pool & toilet & cast in insecticide & leaves of figs. clear animal stable, spray insecticide. Cover soil over vegetable-garden use, fly-basket or fly-paper.
Flea Human-flea Rat-flea Dog-flea Cat-flea	Plague Typhus fever Scrub typhus Recurrent fever Others Mental agony	Soil under the floor, among dust & garbage of floor. Egg - maggot - chrysalis- imago. It takes 4-6 weeks from egg to imago. Female flea lays about 500 eggs in her career term of life 1-2 months.	Lifting up Tatami, expose it in sun-ray for more than ½ day. Dust down well, clean corners of floor-boards, especially clear dust & garbage under the floor thoroughly and spray insecticide, covering new newspapers over floor-boards and spreading leaves of bead-tree or of sweet-flag under the edge of tatami, you have to set tatami. You had better spread insecticide. Besides, you had better carry out careful clearance beside ordinary one once a week.

Kind of Insect	Disease	Place they grow & Habit	Way of Control
Flea (cont'd)			Clearance & isolation at animal stable. Tatami should be exposed in sun-shine at times
Tick	Typhus Typhus fever Recurrent fever Transmission of plague is experimentary possible. Itchy & uncomfortable feeling, & following dermatology disease.	Nests of rats, pass, nest in closet, old cotton, old magazine, paper-scrap second-hand article, mat, beddings, old cloths; tick lives on blood of men & rats. Egg - larva - pre-young caterpillar post-caterpilla-imago. It takes 4-15 days from egg to imago. Female lick lays 100-150 eggs in her career. Term of life 20-120 days.	Carry out rat control, & remove nest of rats. Also bring about rat-removing clearance and spray or spread insecticide for places where ticks grow or incubate. While ticks are living, you have to change underwear, pants, night-gown, seats & wash them quickly with hot-water or soap water. When you go to bed, spread insecticide over clothings & beddings and then use them. Moreover, enforce clearance.
Louse Head louse. Cloth " Hair "	Typhus Recurrence fever Uncomfortable feeling due to puncture. Dermatology disease.	Unclean body clothings. Egg - larva - imago It takes about 3 weeks from egg to imago. Lays 200-300 eggs in term of life. Term of life: 1-2 months.	10% DDT is the most good insecticide. But in case of 10% DDT dust you must not wash it within 12 hours. Simple method is to dip the cloth in hot-water or to iron it. It is weak against famishing & if we can prevent sucking blood for 48 hours lice will be exterminated. Enforce bodily cleaning, bathing, dressing, clearance for beddings. Expose clothings & beddings in sun-ray sometimes. As for head-lice, always clean hair, and when lice grow, wash hair with vinegar, wrap the hair with towel and 2-3 hours later wash with soap.
Bed-bug	Plague (?) Typhoid (?) T.B. leprosy Filaria Uncomfortable feeling due to puncture.	Rough surface of wood-board, furniture, floor-board, bed, & crevice of beds. Egg - larva - imago. It takes 25-65 days from egg to imago laying of egg is 200-670. Term of life-3-10 months.	Imago and egg both die if hot water of 80° be poured. You can breathe the flame of Bunzen tamp or candle light into the places where bed-bug live, taking care of fire. Or, you can spray DDT oil, petroleum, heavy oil. Sun-ray disinfection, clearance.

Kind of Insect	Disease	Place they grow & habit	Way of Control
Rodent House-rat Ditch-rat Mouse	Plague Typhus fever. Food poisoning Vilus-disease. Scrub typhus. Flea & tick are also parasitic.	Dark corner of house, warehouse and other places. One pair of rats bear 1500 children in a year. Rats run from corner to corner. Nest are made at places where foods and drinks easily got and dark and warm and safe places. Existence of rats is notified by dropped things, passage, tracks, holes, nests, traces of bite, damages of foodstuff. Smell of rats. Living rats, dead rats (If you see one rat, there are about 20 rats living there).	Open dark places and crevice. Fill rat-hole. Always keep clean. Cover all the foods against rats. Use traps and rodenticide. Use baits rats likely to prefer. Place baits 1-2 feet distant from pass. Take care so as not the family eat baits. Do prebaiting without fail. For example:-- 1st day-Clearance Choosing of baits. 2nd day-Prebaiting. 3rd " -Rest. 4th " -Prebaiting. 5th " -Poisonous bait. 6th " -Checking of dead rat, clearance of track and ordure. Fill rat-holes. Removal of nest. Spray or dust insecticide.

TYPHUS FROM THE LOUSE

After the termination of the war the typhus was very powerfull. Like in 1946, there was 30,000 peoples in our country who get infected.

In Fukuoka Prefecture we had 540 patients. Though it causes on the chaos of society, shortage of food, cloth, house, and the unsanitary environment, we have to exterminate this as soon as possible, and try to make it as a temporary epidemic.

Formally this is a kind of feverish sickness just like in case which occurs in a poor crops owing to the war feverish or starve feverish, and it is quite a defference from the typhoid.

Its bacteria is not same as typhoid bacteria, but it comes from the bacteria named Rickittsis, and the louse carries this. As "no louse no typhus" runs the word, the breeding of the louse is direct ratio with the epidemic of the typhus and this epidemic terms is mostly from winter to spring, especially last spring was the most epidemic term. Male gets more easily infected than female, and the percentage of its death shows high percentage to the people over 50 years old, shows around 40%. We must understand the condition and immunization perfectly, and try to exterminate this desease as soon as possible and built up a sanitary nation, so that we can make a pleasure living.

1. Breeding place and communicating. It easily breeds in an unsanitary environment (bachelor's quarters, quarters, labours quarters, prison, stockade) where many peoples assembles.

Though the people himself is clean, he will easily get communicated by the louse which is carrying the bacteria, through communication, public bath room, theatre, hotel. Besides as the bacteria exist in the forces of the louse, you must consider that it will infect you if you eat it or night come through the cut past of the skin.

Originally the food for louse is the blood of human, and it requires a suitable temperature to live, but the temperature of the human is most adequated. So from winter to spring which most of the peoples wears thick clothes, are the most reasonable season for the louse to live and on summer which the temperature is most high, is the termination of the out break of desease.

2. Condition

The incubation terms is about for 12 days but most of the case, it sudden or occurs and chill fever muscle pain especially stomacheache occurs and the conjunctiva of the eyes gets hyperemia, and bronchitis comes out at the same time, this periodically easily threatens to misunderstand, and though you drink the antipyretics, the fever will not come down so easily, the fever continues up to 39 degree for about two weeks.

Four or five days after you get fever, the small typhus shows up to the ex-tremetiese, and upper thractic region, and as for the cerebral condition, he deliriums and sometimes he gets rough or shows no appetite condition, so in this case consider about the time and place and you case have a suspicion on this desease. The people living in the epidemic area or the louse to be found, in that case it is more under suspicions, so you must have to consult the doctor as fast as possible.

3. Preventive method and report.

a. First it is very important to exterminate the louse. For this, keep your clothes and houses clean constantly, and take the bath as much as possible, and if possible try to keep away from the crowded place. Spray the DDT dusts or other insecticide where the louse easily breeds, and to disinfect the Rickittsis is to spray the DDT oil mixed with cresol or mikesol and pyrethrum emulsion or other disinfection drugs. We do not have enough DDT to supply to each homes, so I hope it is the best way to utilize the DDT dusting station set up in each city, town and village.

b. Prefentive injection.

By this, cut down the number of occurance, and though unfortunately you get infected, it will reduce the percentage of death, so it is important to take this injection voluntarily, especially the one who communicates with the people very oftenly living out employees or the people living in the environment where the louse easily breeds, must take this.

c. Priority report and quarantine.

Typhus got the regulation to give a fast report among the 11 kind of communicable desease, which has been settled by the law, and during the epidemic terms, the doctors are obliged to report immediately to the chief of city, town village or to the director of health center, after diagnoses within two hours. Not only the doctors, but also the householder of the family, representative or manager of the organization are obliged to give an report in case of suspicion of this desease. If they re-lax this, they might get punished. Unfortunately, if this desease occurs, you can stop spreading this in minimum. For this it is important to cooperate each other with doctor's association, and health center.

Pay attention that this desease got regulation that the quarantine, disinfection and cut off the traffic, must complete within 8 hours.

4. Typhus and typhys fever (Manchukuo Typhus) This is a desease which simillar very much, but the difference is that the fleas carries the typhus fever from the rat. And the condition in the first term simillars very much that it is very hard to decide.

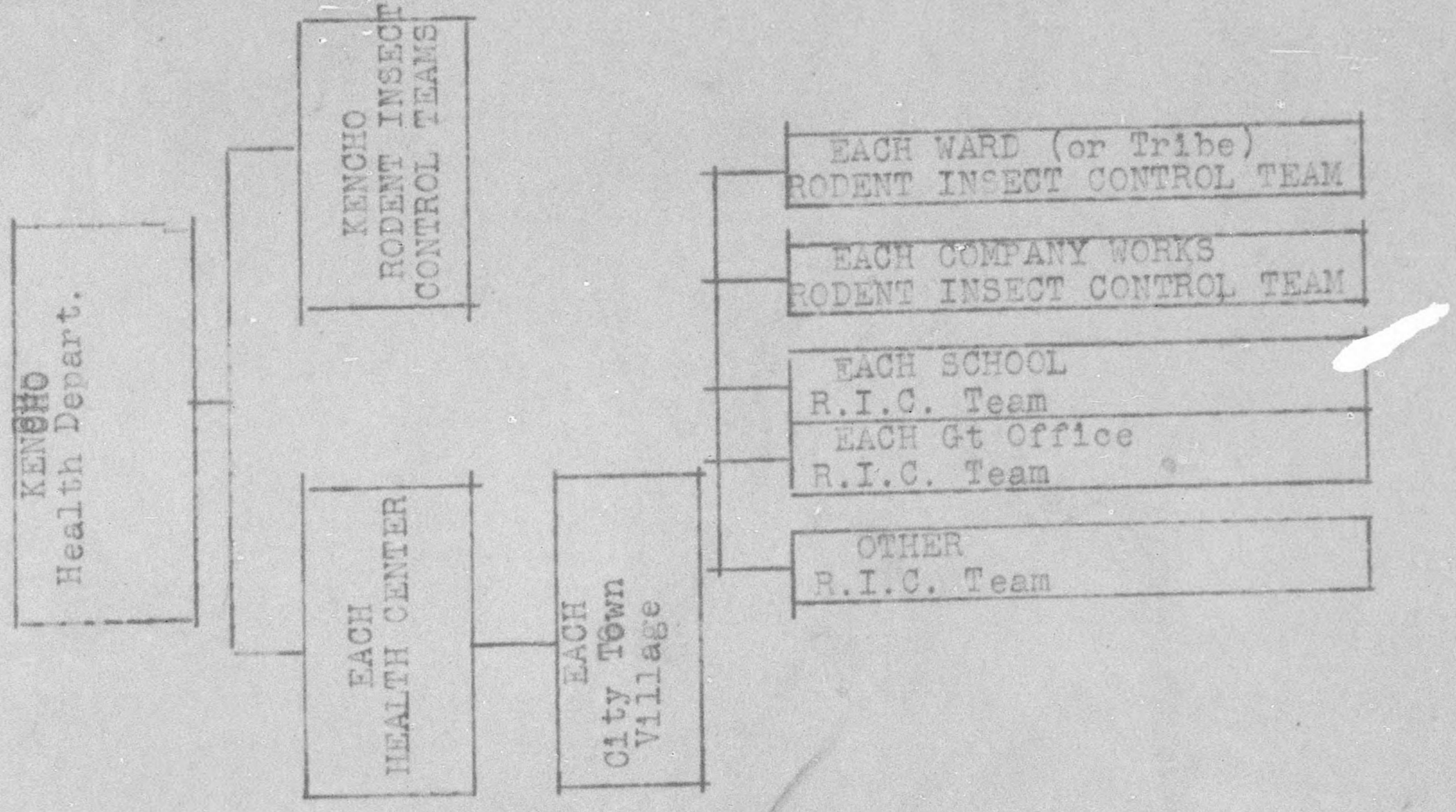
But the condition of typhus fever is very light, and the death is very seldom. And to decide this is to find through the scientific examination and by the elapse of the condition.

For this it is very important to spray the DDT dust and disinfection by drugs and at the same time to control the rats, as same as in typhus case.

Translated by
M. Nakayama

SYSTEM OF RODENT INSECT CONTROL TEAM AND PROPER CHANNEL FOR MATERIALS

I SYSTEM



Health Depart.: General Guidance, Supervision, Adjustment for R.I.C. and Assistance for distribution of Materials.

Health Center: Enlightment, Education, Propaganda for Residents keeping close contact with Local Communities; Technical Guidance for R.I.C. Teams along with Local Communities.

Local Community: (City Town Village) Enlightment, Education, Propaganda for people keeping close contact with Kencho and H.C., Guidance for R.I.C. Teams and Each people of Clearance. R.I.C. Teams directly attached to Local Communities administer clearance directly and also guide and supervise other teams.

For Fujioka's reference

Test for Efficacy of 10% DDT Powder Against Lice Infesting Humans

The common laboratory procedure for testing the efficacy of 10% DDT powder is known as the "beaker test". This method was devised and used by both the U. S. Department of Agriculture and the Rockefeller Foundation to test the effectiveness of various insecticide powders against lice. This test may be used to test any lot of powder which may appear to be ineffective against lice in routine louse control operations.

In brief the method is as follows:

1. Secure five small glass beakers (50 cc) or five small 5 mm petri dishes or ordinary table glasses.

2. Cut five pads from old army wool shirt or underwear (50 mm in diameter)

3. From local louse infested individuals secure a supply of native wild lice (Last large nymphal stage is the most suitable). These should be captured as near the time of testing as possible.

4. Count out 25 lice onto each of the five cloth pads. (Four pads of 25 lice each for testing, and one pad of 25 lice for control).

5. Place the pads with the lice in the bottom of the glass containers.

6. From the sample of powder to be tested, apply 50 mg of powder evenly over both surfaces of each of the four pads. (50 mg per pad) Fifty mg is approximately the amount of powder picked up on the end of the small blade of a pocket knife extending back on the blade about 1/4".

7. Place the glasses on a table at ordinary room temperature and examine the lice at intervals of 1, 3, 6, 12, 18, 24, 36 and 48 hours, or more often if desired. Examination is best conducted in strong light using a hand lens or a dissecting scope (if available). Criteria of death when all peristaltic action ceases (easily seen with a lens). All lice under test should be dead within 24 hours.

Fukuoka. Mil. Govt Sec.

THE CHEMICAL CONTROL OF INSECTS OF MILITARY IMPORTANCE

INSECT	PLACE OF TREATMENT	INSECTICIDE	AMOUNT AND METHOD USED	TOXICITY TO HUMANS
Mosquito and Fly Adults	1. Inclosed spaces as barracks, rooms, barns, airplanes, etc.	1. AEROSOLS(**) a. PYRETHRUM - DDT AEROSOL (0.4% Pyrethrins plus 3% DDT plus 5% cyclohexanone plus 5% lube oil in Freon) QM 51-I-159 b. PYRETHRUM AEROSOL. 1% pyrethrins plus 2% sesame oil in Freon. QM 51-I-159	Spray 4 sec. per 1000 cu. ft. N.B. Spray 17 sec. per 1000 cu. ft. for insects in airplanes. Aerosol Bomb--spray 4 sec. per 1000 cu. ft. Spray into air.	Studies indicate not toxic when used properly at recommended dosages. None.
		2. DDT CONCENTRATED FLY SPRAY (2% pyrethrins plus 20% DDT plus 20% cyclohexanone plus 5% lube oil in kerosene).	1 cc. per 1000 cu. ft. sprayed from Orlando pocket size dispenser.*** Excellent for use in forward military positions.	Studies on small animals indicate not toxic when used properly at recommended dosages.
		3. DDT SPRAY RESIDUE DEPOSIT. a. DDT IN KEROSENE (5% DDT in crude kerosene). Straight 100% dissolving DDT. QM 51-L-120; 5% DDT in kerosene QM 51-I-105. NOTE: DDT is an abbreviation for dichloro-diphenyl-trichloroethane. b. DDT WATER EMULSION CONCENTRATE (25% DDT plus 10% Triton X-100 plus 65% xylene). QM 51-I-156.	Heavy spray on interior of buildings (1 qt. per 250 sq. ft.) Concentrate where flies and mosquitoes rest. One application will eliminate flies and mosquitoes from treated buildings for 3 - 6 months. N.B. Highly recommended for control of all domestic type mosquitoes and flies. TREAT NATIVE SOURCES. 1 part concentrate with 4 parts of water and use same as in (3) above.	Same as (1a) above. Studies indicate not toxic when used properly as recommended.
		4. PYRETHRUM EXTRACTS. (1 lb. pyrethrum, containing 1% pyrethrins, per gallon of kerosene).	100 cc. per 1000 cu. ft. Spray into the air.	None.
		5. PYRETHRUM PLUS SYNTHETIC ORGANIC COMPOUNDS such as Thanite. QM 51-I-169.	100 cc. per 1000 cu. ft. Spray into the air.	None. Irritating to some.

INSECT	PLACE OF TREATMENT	INSECTICIDE	AMOUNT AND METHOD USED	TOXICITY TO HUMANS
	2. Outdoors (from airplanes)	10% DDT emulsion in water, kerosene, lube oil, or combination of these materials. NOTE: Experiments are now being done to determine the feasibility of smokes made by spraying these materials onto airplane exhaust manifolds.	From FAST MOVING PLANES—see findings AAF Board. Project No. F3486. SLOW MOVING PLANES—2 qts. of 5% DDT per acre greatly reduces adult population and control mosquito larvae. Use 5 to 10 gals. of 5-10% DDT per acre for a residual spray effective over a longer period. Material poured or sprayed into slip stream of plane in various ways.	Probably not toxic when used properly at recommended dosages.
	3. In Jungles (Ground Treatment)	1. AEROSOLS (see 1a and 1b above)	Tie aerosol bomb to end of stick and spray 6 inches from ground (bomb horizontal). Apply in swaths at 20 ft. or 7 pace intervals. One bomb per acre controls mosquitoes in jungles for about 12 hours. Temporary mosquito control in bivouac areas.	None.
		2. DDT SOLUTIONS. (5-10% DDT in kerosene or as a water emulsion).	Atomize 1 qt. per acre in underbrush for temporary control. Use 5-10 gallons per acre for a longer period of control. Excellent reduction of mosquitoes and flies.	Studies indicate not toxic when used properly as recommended.
Mosquito Larvae	Rivers, lakes, swamps, pools, ruts, and water containing receptacles around houses.	1. DDT WATER EMULSION CONCENTRATE (25% DDT plus 10% Triton X-100 plus 65% xylene) QM 51-I-156.	Dilute 1 part concentrate with 24 parts water. Use 5 qts. per acre. Apply with a fine spray nozzle with main emphasis where aquatic vegetation or debris is thick, particularly along water margins. Lasts 7 to 10 days.	Same as above.
		2. DDT OIL SOLUTIONS (1% DDT in kerosene, diesel, fuel or crankcase oil).	Add 2 lbs. DDT per 25 gals. oil. Use 5 qts. per acre of water. Emphasis on water margin treatment as above.	Same as above.
		3. 5-10% DDT emulsion in water, kerosene, lube oil, Diesel oil or combination of these.	Spray from airplanes. Amount and method as listed above for adults.	Same as above.
		4. PARIS GREEN (Copper acetoarsenite containing 50% plus of arsenious oxide) QM 41-7839. 7-7.	1 lb. Paris Green per acre. For hand or power dusting dilute to 5-10% with inert dusts such as road dust, fine sand, talc, hydrated lime or condemned flour. As an airplane dust dilute to 2%. Apply every 7-10 days. For control Anopheles mosquito only.	Very toxic if eaten. Non-toxic in water at recommended dosage.

INSECT	PLACE OF TREATMENT	INSECTICIDE	AMOUNT AND METHOD USED	TOXICITY TO HUMANS
		5. PETROLEUM OIL. Light oil of #2 grade or "Bunker C" diluted 1/3 with kerosene. QM 7-0-200 fuel). QM 7-0-164-55	15 - 25 gals. per acre depending on density of aquatic vegetation. Applied by spray, drip cans, and other methods. Apply every 7-10 days. For general mosquito control.	Essentially non-toxic.
Lice (Cootie, Greyback)	1. On body and clothing.	1. DDT POWDER (10% DDT in pyrophyllite or other inert dusts). 2 ounce cans. QM 51-I-173; Bulk QM 51-I-180.	MASS TREATMENT. Thoroughly dust between inside garment and skin by applying dust gun at all openings of clothing. Use 1.5 ounces per individual. Body lice are most frequently found in the seams of clothing. INDIVIDUAL TREATMENT. Apply powder from sifter top can over the entire inner surface of underwear and treat seams on the inside of shirt and trousers, use one (1) ounce powder.	Essentially non-toxic.
		2. MYL POWDER	Same as for DDT louse powder (1a) above. ovicidal.	
	2. Body	1. BENZYL BENZOATE CONCENTRATE (68% Benzyl benzoate plus 12% benzocaine plus 6% DDT plus 14% Tween 80 emulsifier). QM 51-I-310	Dilute concentrate 1 part with 5 parts of water and spray hairy parts of body with about 20 to 30 cc. or 1 oz., of the liquid.	Studies indicate not toxic when properly used as recommended. Protect eyes during application.
	3. Clothes impregnation.	1. DDT WATER EMULSION CONCENTRATE. QM 51-I-156.	Dilute to 2% DDT. Use ordinary laundry facilities, one pint per suit of underwear.	Studies indicate not toxic when used properly as recommended.
	4. Mass clothing treatment.	1. METHYL BROMIDE (danger) QM 51-M-892.	8 lbs. per 1000 cu. ft. for half hour. Use in specially constructed fumigators. TO BE USED BY EXPERTS ONLY.	Very toxic. No warning odor.
Fleas	1. Rooms	1. DDT OIL SOLUTION (5% DDT in kerosene) QM 51-I-305.	1 gal. 5% DDT in oil per 1000 sq. ft. gives good results. 2 lbs DDT in 5 gals. oil. Spray infested areas.	Studies indicate not toxic when used as recommended.
		2. MYL POWDER	Liberal application in infested areas (rugs, floors, rubbish, etc.)	Not toxic.
		3. NAPHTHALENE (moth flakes)	3 lbs per 1000 cu. ft. Thorough dusting on floors, especially cracks. Overnight fumigation.	Not toxic unless eaten.
		4. PARADICHLOROBENZINE	Same as #3 above.	None.

INSECT	PLACE OF TREATMENT	INSECTICIDE	AMOUNT AND METHOD USED	TOXICITY TO HUMANS
	2. Animals	1. DDT DUST (10% in pyrophyllite) QM 51-I-180	Light application over animal.	Somewhat toxic to animals.
		2. DEBRIS POWDER	Thorough application over animal.	None.
Bedbugs (Cinches)	Inclosed spaces	1. DDT OIL SOLUTION (5% in kerosene oil) QM 51-I-305	3 to 4 gals. per 74-man barracks. Thoroughly spray mattresses, beds, and into cracks and crevices in wall, with particular attention to springs and into corners of beds. Residual effects for year or more.	Studies indicate not toxic when used properly as recommended.
		2. HYDROGEN CYANIDE (Danger) QM 51-C-418	TO BE USED BY EXPERTS ONLY	Extremely toxic.
		3. PYRETHRUM EXTRACTS (1 lb. per gallon of kerosene.	Thorough wetting of cracks and crevices containing bedbugs. For minor infestations. Repeat.	None.
Roaches	Inclosed spaces	1. DDT DUST (10% in talc) QM 51-L-122	Apply by hand duster with particular reference to cracks, crevices, and behind objects. Dust near water supply.	Studies indicate not toxic when used properly as recommended.
		2. AEROSOLS	Spray into air after opening cabinet drawers, doors, etc. Spray 15 to 30 sec. per 1000 cu. ft. Repeat.	None.
		3. PYRETHRUM POWDER	Thorough dusting of cracks and crevices especially around water. Repeat.	None.
		4. SODIUM FLUORIDE (should be colored).	Thorough application to infested areas. Keep dry.	Very toxic if eaten.
Mites (Chiggers, red-bugs, harvest mites)	Body	1. DIMETHLYPHTHALATE (see repellents below) toxic to mites.	BARRIER TREATMENT. Apply thin layer ½ inch wide along all openings of uniform and socks. Good until uniform is washed. Most rapid acting. CLOTHES IMPREGNATION. Make 2% soap emulsion in water and add 5% Dimethylphthalate. Dip outer clothing in it.	Not toxic.
		2. SULFUR DUST (1 part to 3 parts talc)	Thorough dusting of legs and lower body, especially around belt.	Irritating to groins and armpits.
		3. COLLODIAN SOLUTION (finger-nail polish) Not an insecticide, gives quick relief to irritated areas.	Apply to affected areas.	None.

INSECT	PLACE OF TREATMENT	INSECTICIDE	AMOUNT AND METHOD USED	TOXICITY TO HUMANS
Sarcoptes (Scabies, mange)	Body	1. BENZYL BENZOATE CONCENTRATE. (68% Benzyl benzoate plus 6% DDT plus 12% Benzocaine plus 14% Tween 80 emulsifier) QM 51-I-310	Dilute 1 part concentrate with 5 parts water. Apply as spray or by hand over body except head.	Studies indicate not toxic when used as recommended.
		2. SULFUR OINTMENT (5% sulfur in lanolin)	Thorough application to affected parts.	Somewhat irritating.
Insect Repellents (flies, mosquitoes, gnats, mites, sandflies, fleas, ticks, etc.	Exposed surfaces body and clothes	1. 6-2-2 (6 parts Dimethylphthalate plus 2 parts Indalone plus 2 parts of 612, mixed mechanically) QM 51-R-265 (2 ounce bottle)	APPLICATION ON SKIN. ½ teaspoonful into palm of hand, rub hands together and then apply in thin layer to face, neck, ears, hands, and wrists. Lasts 1-2 hours, Care not to get in eyes and mouth. ON CLOTHES. Spray or apply by hands on clothes. Effective for a number of days. Best all around repellent. Combines good qualities of three ingredients.	Not toxic. Very irritating to the eyes.
		2. DIMETHYLPHTHALATE. Bulk QM 51-R-300.	Particularly effective against Anopheles mosquitoes and larval mites (chiggers). Use same as (1) above.	Same as above.
		3. INDALONE	Same as (1) above. Best used against biting flies.	Same as above.
		4. 2-ETHLY HEXANEDIOL-1-3 (repellent 612)	Same as (1) above. Best used against Aedes mosquitoes.	Same as above.

** United States Department of Agriculture Public Service Patent by Goodhue and Sullivan.
*** United States Department of Agriculture Public Service Patent filed by Schroeder and Lindquist, of the Orlando Laboratory.

「虱の駆除法について」リーフレット配布計画表

Distribution of Leaflets "Method of Louse Control"

市保健所名 Name of Health Center	配布部数 No. of Copies to be distributed	市保健所名 Name of Health Center	配布部数 No. of Copies to be distributed
福岡市 Fukuoka	450枚	大牟田市 Omuta	400枚
門司市 Moji	400〃	若松市 Wakamatsu	350〃
八幡市 Yawata	400〃	戸畑市 Tobata	350〃
小倉市 Kokura	400〃	直方市 Nogata	350〃
久留米市 Kurume	350〃	飯塚市 Iizuka	400〃

田川市 Tagawa	400枚	若松保健所 Wakamatsu	200〃
福岡保健所 Fukuoka	200〃	戸畑保健所 Tobata	200〃
門司保健所 Moji	200〃	直方保健所 Nogata	200〃
八幡保健所 Yawata	200〃	飯塚保健所 Iizuka	200〃
小倉保健所 Kokura	200〃	田川保健所 Tagawa	200〃
久留米保健所 Kurume	200〃	箱崎保健所 Hakozaki	200
大牟田保健所 Omuta	200〃	東郷保健所 Togo	200〃

新尾 保健所 Ario	200枚	大川 保健所 Okawa	200枚
宮田 保健所 Miyada	200〃	瀬高 保健所 Sedaka	200〃
大隈 保健所 Okuma	200〃	福島 保健所 Fukushima	150〃
甘木 保健所 Amagi	250〃	黒木 保健所 Kuroki	150〃
二日市保健所 Futsukaichi	250〃	吉井 保健所 Yoshii	200〃
前原 保健所 Maebara	200〃	添田 保健所 Soeda	200〃
三井 保健所 Mii	200〃	行橋 保健所 Yukuhashi	200〃

八度保健計	150枚	
Hachiya		
計	2.000枚	
Total		

除虫菊乳剤配給系統図
Pyrethrum Distribution Chart
Pyrethrum Emulsion

厚生省
Welfare Ministry

除虫菊工業組合
Pyrethrum Manufacturing Association
Pyrethrum Emulsion

福岡県
Fukuoka-ken

福岡防疫機関
Control Office in Fukuoka-ken

市保健所
City Health Section / Health Center

町・村・事業所
Town, Village & various Companies

赤痢
Individual Home

Distribution order

D.D.T. 配給系統図
D.D.T. Distribution Chart

G.H.Q.

厚生省
Welfare Ministry

Additional Re-Manufacturers

加工業者

国内製造業者
Manufacturers in Japan

日本薬業株式会社
Japan Medicine Supplies Co, Ltd

日本薬業
福岡出張所
Japan Med. Supplies Co Fukuoka Branch

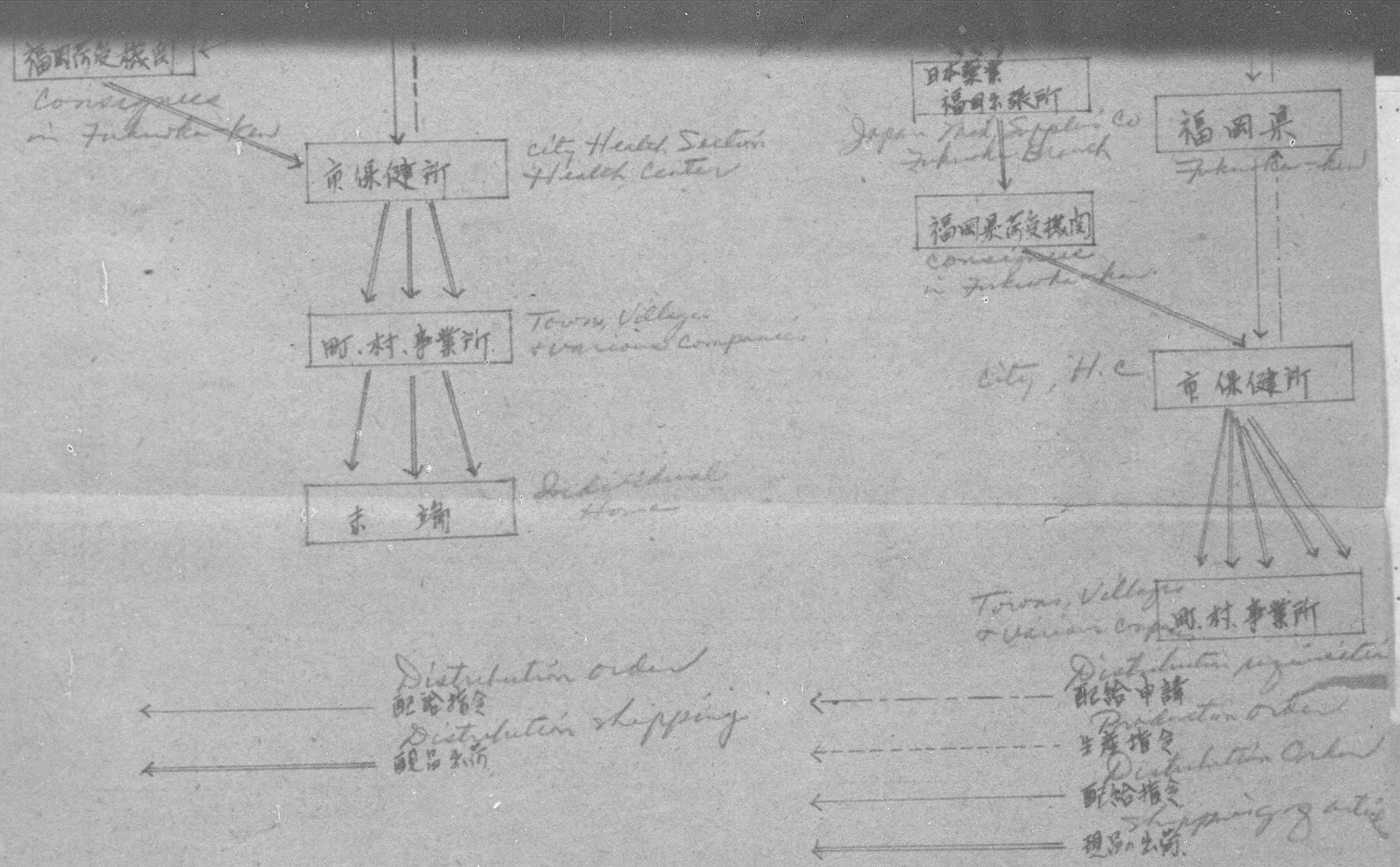
福岡県防疫機関
Control Office in Fukuoka-ken

福岡県
Fukuoka-ken

市保健所
City, H.C.

町・村・事業所
Town, Village or various Companies

Distribution organization



註 殺菌剤は本省おりの通牒により統制解除
Insecticide

四、薬品資材の消費状況

イ、進駐軍より入手したもの

品目	入手量 本月分	入手量 累計	使用量 本月分	使用量 累計	備考
一〇〇% D·D·T					
デーゼル油					
一〇% D·D·T					
ダスター					

ロ、厚生省より入手したもの

品目	入手量使用 本月分	入手量使用 累計	代金支拂額	累計	代金未拂額	累計	備考
一〇倍用除虫菊乳剤							
三〇倍用除虫菊乳剤							
殺虫乳剤							
フエノチアジン							
エーデスメッ							
アンツー							
肩掛式噴霧器							
半自動式噴霧器							
DDT用ダスター							
發條式捕鼠器							
金網式捕然器							
ミケゾール							
五% D·D·T油劑							

注 ① 殺虫乳剤とは衛生堂ラビ殺液、日本石油乳剤、山川殺虫剤、を総括せるもの

五、従業員調査

職種別 / 業種別		直営 常雇 男	直営 常雇 女	直営 常雇 計	直営 臨時 男	直営 臨時 女	直営 臨時 計	請負 男	請負 女	請負 計	備考
トラック運転手											
荷馬車運搬人夫											
其ノ他											
合計											

六、尿尿塵芥運搬車調

	本月分尿尿運搬 累計	本月分塵芥運搬 累計	処理方法
トラック	臺	臺	
右使用ガソリン量	立	立	
荷馬車	臺	臺	
右使用馬糧	キロ	キロ	
車力	臺	臺	
其ノ他			

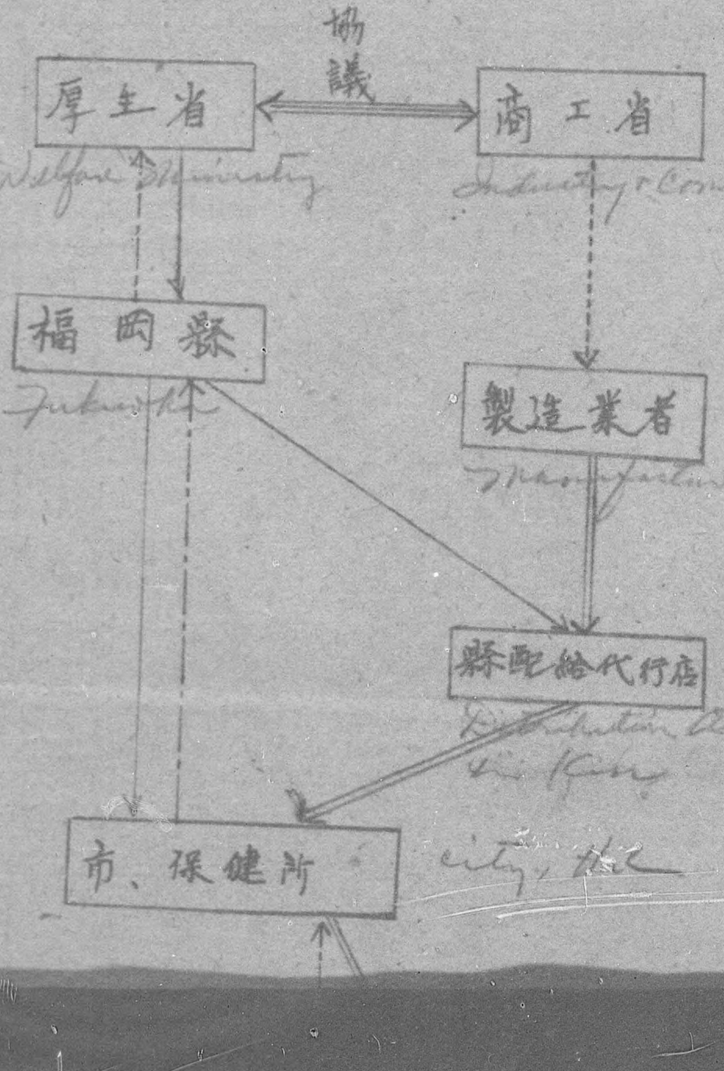
七、

フエノチアジン	
エーデスメツ	
アンツー	
肩掛式噴霧器	
半自動式噴霧器	
DDT用ダスター	
發條式捕鼠器	
金網式捕然器	
ミケゾール	
五%DDT油剤	

注 ① 殺虫乳剤とは養生堂うじ殺液、日本石油乳剤、山川殺虫剤、を總括せるもの

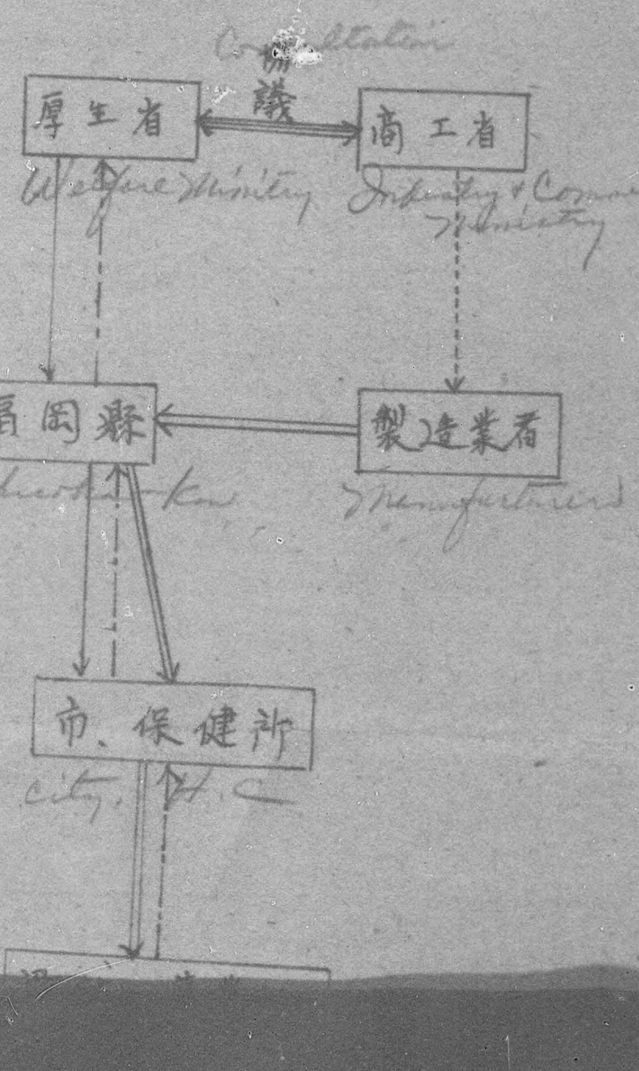
噴霧器配給系統図

Sprayer Distribution Chart



ダスター配給系統図

Dusters Distribution Chart



製造業者

Manufacturers

縣配給代行店

市、保健所

city, Ku

町村、事業所

Towns, Villages, Various Companies

配給申請

生産指令

配給指令

現品出荷

鼠族昆虫驅除及清掃實施成績月報

月分　市名　保健所名

一、駆鼠族昆虫驅除責任擔當者

二、鼠族昆虫驅除班及班員數（月報は月末現在を以て翌月十日迄に必着する如く提出のこと）

區分	編成數	編成人員	備考
市部			
町部			
村部			
合計			

三、鼠族昆虫驅除實施成績

區分	實施面積	累計	備考
スプレイング	平方米	平方米	
ダスティング			
溝掃除			
排水 水槽			
排水 水溜			
戰災地の清掃			

二、屠芥處理量

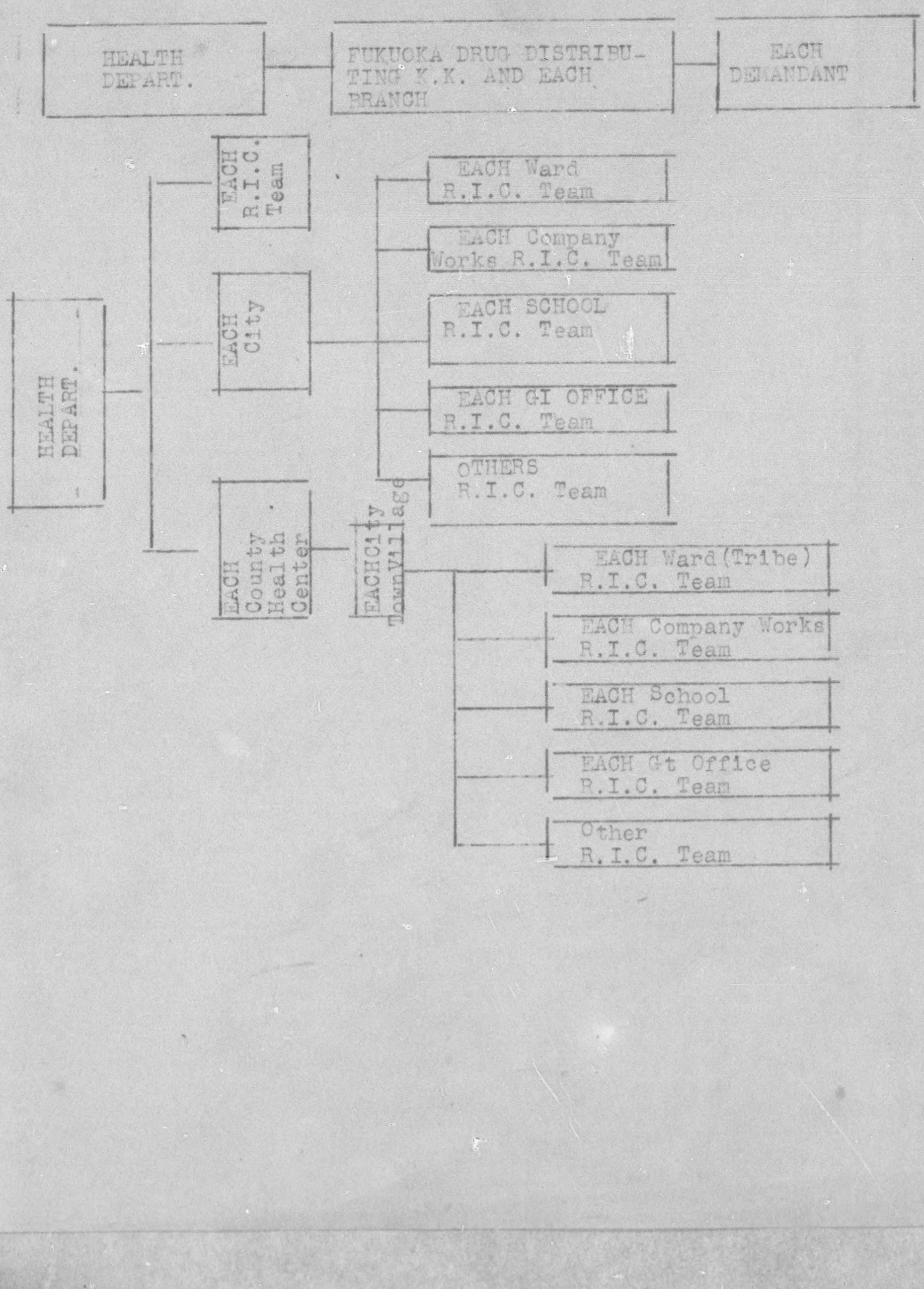
區分	燒却量		棄却量		計	
	市部	郡部	屯	屯	屯	屯

三、鼠族驅除實績

區分	本月分			累計			備考
	捕鼠數	剖檢數	有菌鼠數	捕鼠數	剖檢數	有菌鼠數	

四、

區分	實施件數			累計			備考
便所に對する防蠅							
肥溜に對する防蠅							
便所の構造改良							
料理店の防蠅							
學校の防蠅							
停車場の防蠅							
水田に對する防蠅							
墓の周圍の水溜除去							

スプレイング	平方米						
ダスティング							
溝掃除							
排水	水槽						
	水溜						
戰災地の清掃	平方米						

II PROPER CHANNEL FOR DISTRIBUTING MATERIALS
(Rat-Trap, Rodenticide, Sprayer, Insecticide, Others)