



FOREWARD

This Guide has been prepared for use by trained native Sanitation Aides working in Alaskan communities. The material includes a review of subjects presented at training sessions and attempts are made to incorporate data that may be of use in the future. With this in mind, the Guide was compiled to permit the addition of material at a later date or the deletion of subjects not significant to the program.

To some extent, the Guide anticipates problems which may confront the aide at the operating level and offers information which may be used in meeting common situations. The duties of a typical Sanitation Aide are outlined and a suggested village sanitation program for new aides are included in the manual.

Due to limitations imposed by climate and other factors, only basic principles and practices having broad application have been included in the text.

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ALASKA DEPT. HEALTH & WELFARE
SANITATION AIDE SERVICES

ACKNOWLEDGEMENT

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- INTRODUCTION -

What is Sanitation

Sanitation is a way of living that keeps people well by providing a healthful place to live. In a sanitary village the people do the following things:

1. Use clean water to cook with and drink.
2. Put body wastes in a place where they do not get into the food or water which they use.
3. Are careful not to spread sickness from one person to another.
4. Store and cook food away from flies, dust, and animals.
5. Eliminate breeding places for flies by covering their garbage and other wastes.

Being sanitary means doing the right things with food, water, and wastes. It means keeping ourselves, our homes, and our villages clean in the best way we know how.

providing = furnishing, giving

eliminate = to get rid of something

breeding = having young, producing

Why we should be sanitary

By being sanitary we have better health for ourselves and our villages. Many kinds of sickness comes from water and food that are not clean. If we become sick we cannot hunt or fish and then our families do not have the food they need. If they do not have the food they need, they may also become sick. Keeping well is important to everyone and sanitary living helps us stay well. A clean village is a safe village, a healthy village, and a village we can be proud of.

How can we be sanitary

We can be sanitary by doing the things that we see and read about in the Guide. We can help others to be sanitary by teaching them to do the things we learned about in School. Everyone can be sanitary in the village, at the fish camps, at hunting camps, and on the trail. Because sanitation is a way of living, we must think about it all the time, wherever we are. When we drink water we should be sure it is safe. We should be careful with our wastes, garbage, and trash. If we are not careful we may make ourselves and others sick.

Who should be sanitary

Everyone in the village should be sanitary. The strongest and healthiest village is a village that works together for sanitation. If one person in the village makes the water supply dirty everyone in the village might get sick. If one person is careless with his body wastes, then everyone in the village may become sick. It is important that everyone in the village should know what things to do to be sanitary. Being sanitary is like rowing a boat. If everyone rows, the boat travels easily and fast. If only a few people row, the work is harder and the boat goes slowly.

What does Sanitation cost

Sanitation costs very little. Very often a small change in our way of getting water, or storing ice, or getting rid of body wastes is all that we have to do.

If a person becomes sick because he didn't know about sanitation, it may cost him quite a bit. When a person becomes sick he cannot work. This costs much more than being sanitary costs.

When we put a faucet on an oil drum this may cost a little money but it may also keep us from getting sick.

Being sanitary with our drinking water, human wastes, and garbage may cost work. But work does not cost as much as being in the hospital.

It may cost a little money to build a privy or a village well but these things are cheap if they help us keep our health.

How to start Sanitation

You learned in School that to start sanitation in the home or village we must first learn what causes people to become sick. Then we must learn how to prevent sickness. When we have learned these two things, we must teach other people what causes sickness and ways to keep from getting sick.

Before we build a boat or a house we must first learn how to build them. Our friends or family very often teach us how. When we start sanitation, the sanitarian aide must first teach the people why and how to be sanitary.

SECTION 1

WHAT CAUSES SICKNESS

Germs:- What they are and what they look like

Before we can start sanitation we must first know what makes people sick.

Many diseases are caused by small living things called germs. These germs are in the water we drink, the food we eat, and the air we breathe. They are on our clothes and bodies too.

Many of the germs around us are good. Some germs cause bread to rise, make plants grow and do other important work. But some of the germs cause sickness such as T.B. and dysentery.

Germs are very small. They are so small that we cannot see them without a microscope. Many germs could fit upon the point of a pin.

All germs do not look alike. Some are shaped like match sticks, others are round, some look like small chains and others are shaped like beans. The drawing shows you what these germs look like under the microscope.

Germs have no arms and legs like people or dogs. They cannot travel about by themselves. Germs sometimes move around by using the wind. We have all seen sand blown by the wind and carried across the beach. Germs may travel this way too. Germs sometimes ride upon people's hands. When we touch food, germs may be left upon the food. When we eat the food, the germs go into our stomachs and may make us sick.

disease = sickness, illness

BACTERIA

A. BACILLI

(CAUSE TYPHOID, DYBENTERY, FOOD POISONING, TUBERCULOSIS, DIPHTHERIA)



B. STAPHYLOCOCCI

(CAUSE FOOD POISONING, BOILS AND CARBUNCLES)



C. DIPLOCOCCI

(CAUSE PNEUMONIA, MENINGITIS, GONORRHEA)



D. STREPTOCOCCI

(CAUSE SORE THROAT, TONSILLITIS, RHEUMATIC FEVER)



E. SPIRILLA

(CAUSE CHOLERA AND RAT BITE FEVER)



How to show germs to other people:-

When you were in school you saw germs under the microscope. You also saw germs growing in the laboratory.

It is important that people should know what makes them sick. When you have sanitation meetings or when someone asks you what germs look like, you can draw a picture of the germs you saw when you were at school. You can also show them the pictures in this guide.

If the school or hospital in the village has a microscope you may be able to use it to show germs at sanitation meetings.

You can also ask your supervisor to order films for you which show germs.

important = valuable, worth a lot

How to kill Germs:

Germs are killed by several things:-

1. Fresh air and sunshine kill germs
2. Boiling water kills germs.
3. Chlorine (Purex, Clorox, etc.) kills germs.
4. Fire kills germs.
5. Soap and water kills germs.
6. Germs may be killed by trapping them in the ground.

Most of the bad germs like to grow in warm, dark, wet places. That is why they live in our stomachs, our mouths, and our throats. Some germs can live in ice or snow. Other germs can live in garbage or wastes from our bodies. It is important to know where germs live so that we can kill them.

If we know some germs live in water, we can kill them by boiling the water, or putting chlorine in the water.

If we know that germs live in dark, warm places, we can kill them by letting fresh air and sunshine into our houses.

If we know that our hands have germs upon them, we can kill these germs by washing our hands with soap and warm water.

If we know that germs may live in our body wastes, we can trap these germs where they cannot hurt anyone. We do this by building privies or honey bucket pits and putting our body wastes in the pits.

How Understanding Germs Helps in Sanitation Work

Sanitation tries to keep people from getting sick. If we know that sickness is caused by germs, then we should know where they live, how they travel, and how we can kill them. If we know what germs need to live and grow, then we can take away these things and germs cannot live. We can use what we know about germs to explain to the people why sanitation is good. If we know how germs live, travel, and make us sick, we can stop them before they do harm.

explain = to show how, make someone understand

harm = to hurt someone

SECTION 2
HOW DISEASE TRAVELS

Body Wastes

We learned in SECTION One that germs could live where it was warm, dark, and where food could be found. That is why disease germs may be found in body wastes.

Disease germs are in the feces and urine of sick people. If a person has dysentery, there will be dysentery germs in his body wastes. If a person has typhoid fever, typhoid germs will be found in his body wastes. If people are not careful where they put their body wastes, the germs can travel from the sick person to a well person. This is how it may happen:

Tom is sick with dysentery. His feces (body wastes) have dysentery germs in them. Tom leaves his feces on the ground outside his house because he does not have a privy. A few minutes later, Tom's friend, Ed, goes by the house and steps on the place where Tom left his feces. Some of the dysentery germs get upon Ed's shoes. Ed does not know they are there because he did not see the feces where he stepped. Ed goes home. The germs on his shoes stay on the floor everywhere he walks. These germs can cause dysentery if they get inside the body of anyone in the house. How can this happen? Very easy. Ed's little girl Mary crawls upon the floor and some of the dysentery germs get on her hands. Mary puts her hand in her mouth and the germs go into her stomach. In a few days Mary is sick with dysentery.

Here is another way Ed's family might get sick with dysentery:

After Ed came home his wife swept the floor. She did not know there were bad germs on the floor from Ed's feet. While she is sweeping, the germs get all around the room on the dust that she stirs up. Some of the dysentery germs get on the plates and cups that the family eats with. Germs also get into the fish cooking on the stove. When the family eats dinner, the germs that are on the plates and fish go into Ed's mouth. In a few days Ed is sick with dysentery.

Here is another way that germs in body wastes can make other people sick:

George has typhoid germs in his feces and urine. George did not use a privy for leaving his feces one day, but instead left them upon the edge of a lake where the village people get their water. The next day it rained and washed some of the feces and germs into the lake. That afternoon Mrs. Smith, Mrs. Lang, and Mrs. Morten went to the lake to get some water. Typhoid germs from George's feces were in the water that they took from the lake. Mrs. Smith and Mrs. Land did not boil the drinking water for their families and both became sick with typhoid in two weeks. Mrs. Smith and the two Lang children died.

The sickness could have been prevented if Tom knew how to take care of his body wastes, if George had known why he should be careful with his body wastes, and if Mrs. Smith had known how disease travels.

prevent = to keep from doing something or stop something

The important thing to remember about body wastes is this:

1. The germs of typhoid fever and dysentery are found in the body wastes of sick people.
2. To stop the germs from traveling from the sick person to the well person we must prevent people, animals, and flies from getting on human wastes. You will learn how to do this in another chapter of the Guide.

Food

We know that disease is carried from a sick person to a well person by human waste that has the germs in it.

Germs which cause sickness may also get into our bodies on the food we eat.

If a person sick with dysentery handles food without first washing his hands, the germs of dysentery may get upon the food and go into our stomachs when we eat it.

Food that is cooked and left uncovered may also make us sick. We know that germs travel about with dust. When this dust gets upon our food we may become sick, if germs are with the dust.

Flies also carry disease germs around upon their feet. When the flies crawl upon the food they leave disease germs. When we eat the food we also eat some of the germs.

Some foods spoil or rot if they are not kept cool or properly preserved. These foods spoil because germs grow in them. If we keep these foods cold, the germs will not grow. Some of the foods we should keep cold are fish, meat, and milk. Ways to keep food cold are explained in another section of this Guide. Other ways to protect food will also be explained.

protect = to guard, keep safe

The important things to remember about foods are:

1. We should wash our hands before handling food.
2. We should keep food covered to protect it from dust, flies and animals.
3. Foods which may spoil or rot when they get warm should be kept cold.
4. The dishes that we eat our food from should be clean and should be covered when we are not using them. Ways we can do this are explained in another chapter of the Guide.

Personal Contact

We learned that germs cannot travel by themselves. Germs very often move from one place to another with the help of people. Here is the story of how germs of measles traveled from one person to another:

Billy was sick at home with the measles. Billy's friend, Tom, came to visit him one day. Tom shook hands with Billy and sat down to visit. Tom breathed the same air Billy had been breathing and when he shook hands some of the germs on Billy's hand passed to Tom's hand. A few days after Tom went home, he too had the measles.

Germs are passed from person to person by other ways too. People with impetigo or scabies should have their own towels. These people should not let other persons wear their clothes until they have been washed in hot water and soap.

Germs are passed to other people when they sneeze or cough. That is why it is important to cover our nose and mouth when sneezing or coughing. This is also why it is important for sick people to sleep by themselves or in a separate room.

Germs like dirty homes and clothes. A clean, neat home is very often a healthy home.

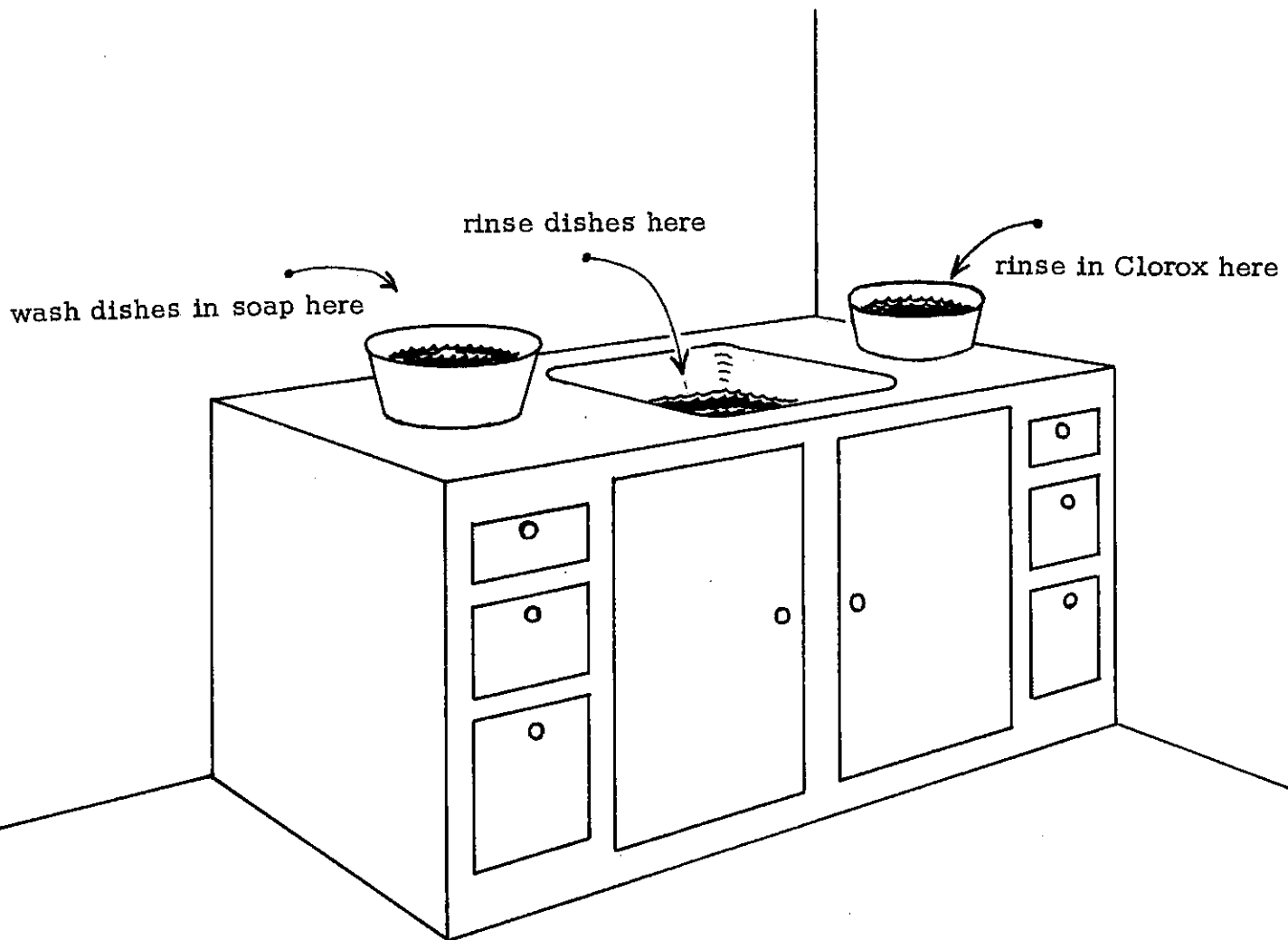
These are the things we should teach people about personal sanitation:

1. Keep our homes clean. This means keeping the floor clean, keeping the shelves clean, keeping clothes and other things neatly hung up. When things are neat and clean it is easier to keep dust and dirt off them. When we talked about germs we learned that germs could be carried on dust and dirt. Germs do not like clean, neat homes.
2. Always wash our hands before fixing food for others.
3. Always wash our hands after using the privy or honey bucket.
4. Wash dishes with hot water and soap. Pour boiling water over the dishes after they have been washed. Let the dishes drain dry. Do not wipe them. If there is a sick person in the house do not wash his dishes with the others. Use another pan of water. Boil the sick person's dishes separately. Use the same dishes for the sick person the next time he eats.
5. Sick people should not sleep with others. If a sick person sleeps with a well person the well person may get sick.
6. A sick person should sleep in another room if possible.
7. Always wash your hands after touching or taking care of sick people.

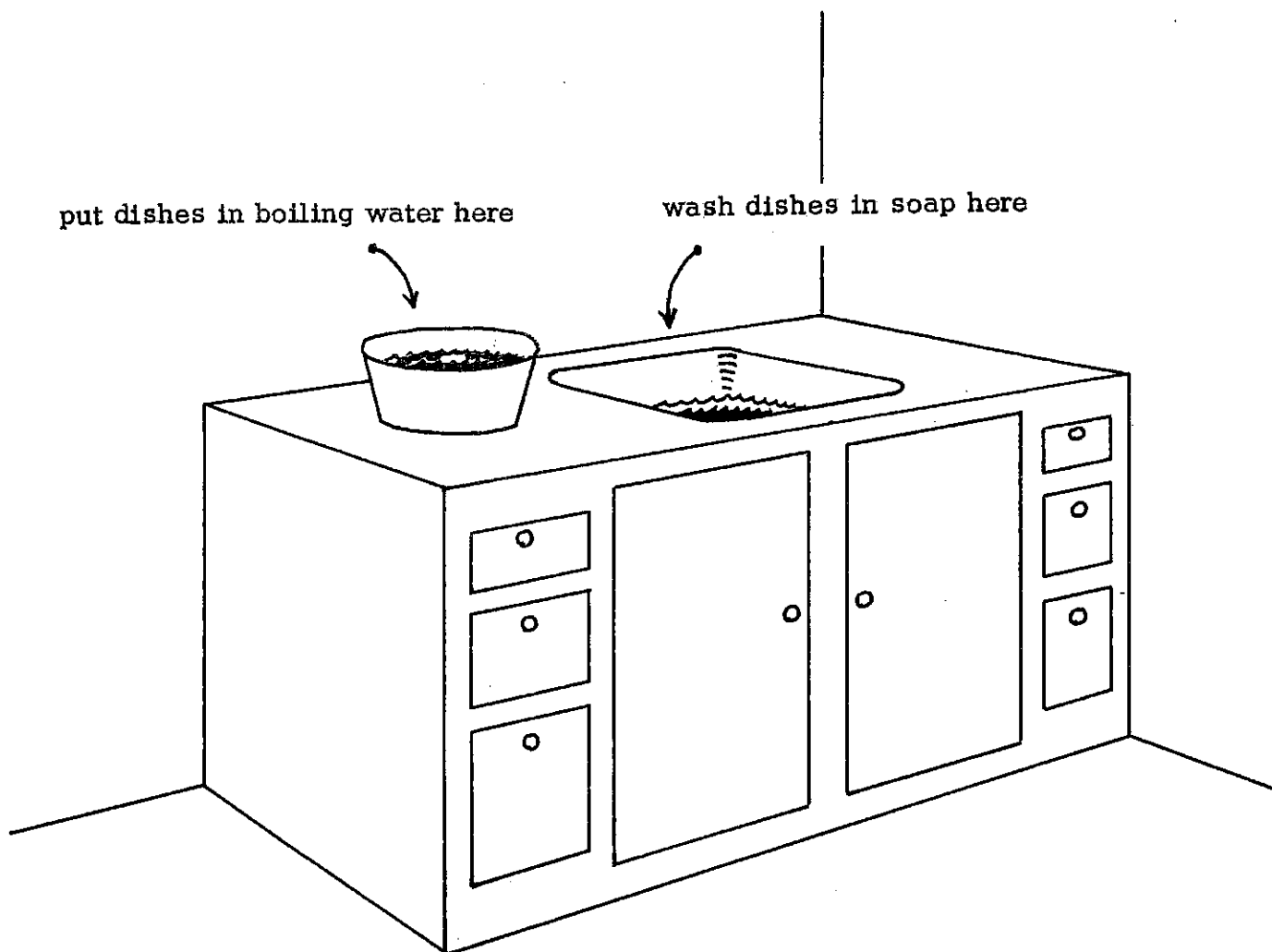
8. People should cover their mouths and noses when they cough or sneeze. Always do this when we have a cold or cough.
9. Visitors should be kept away from sick people, especially dogs and children.
10. People with T. B. should always cough or spit in a paper bag. They should never spit on the floor or outside the house. The paper bag should be burned when we are through with it.
11. Keep a sick person's clothing and bedding separate from other people's bedding and clothing.
12. Fresh air and sunshine in the house helps kill germs.
13. Do not rub your eyes with dirty hands. Dirty hands cause conjunctivitis.

Conjunctivitis = Sore eyes

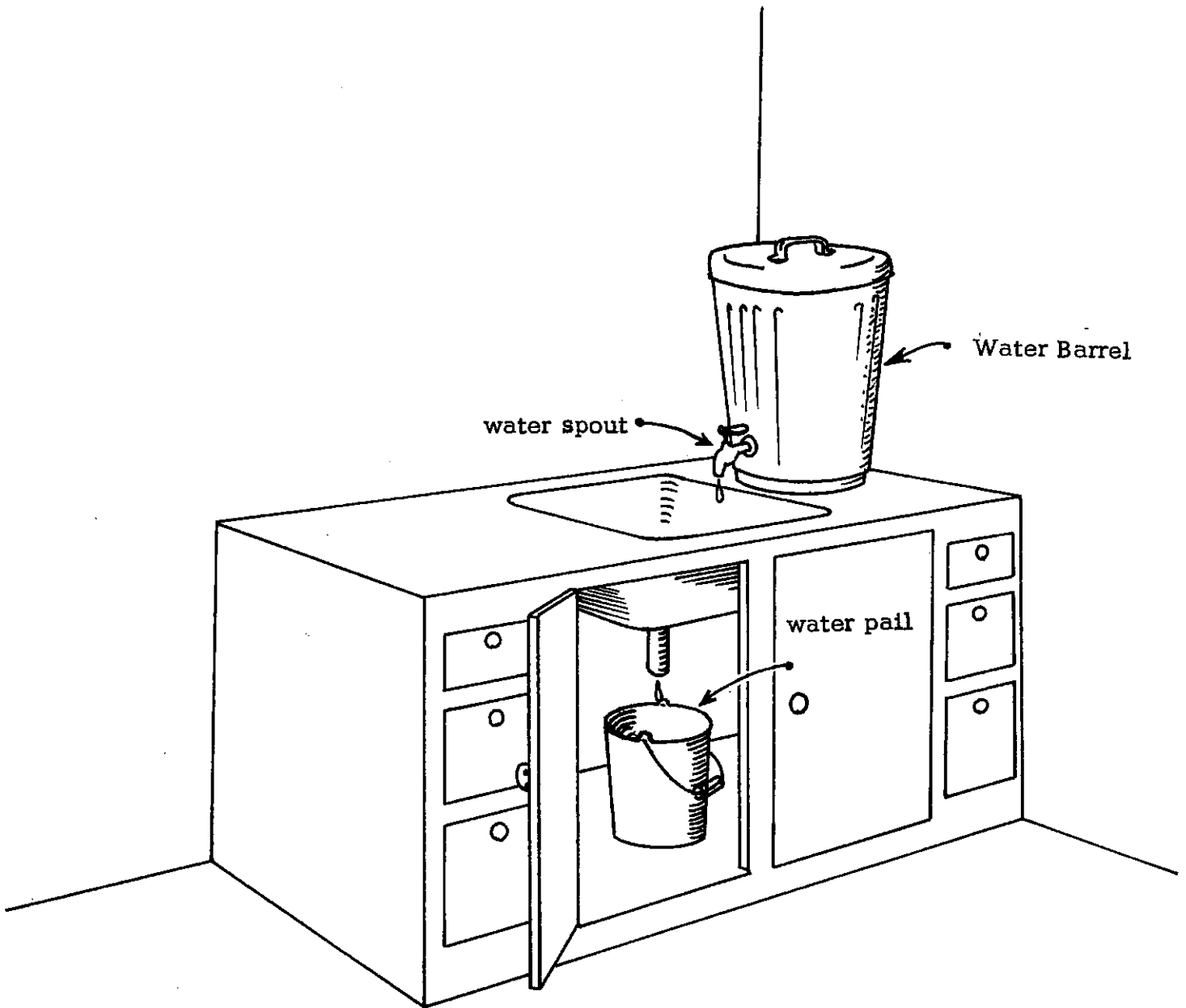
ONE WAY OF KILLING GERMS ON DISHES



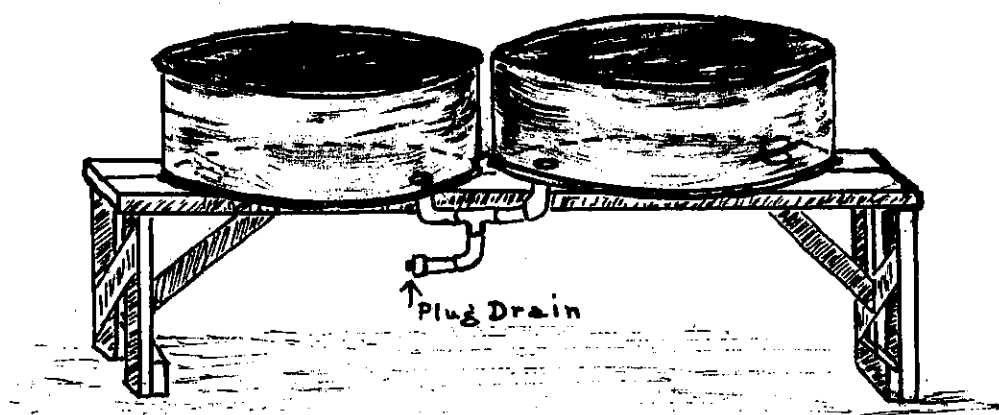
ANOTHER WAY OF KILLING GERMS ON DISHES



ONE TYPE OF A KITCHEN SINK



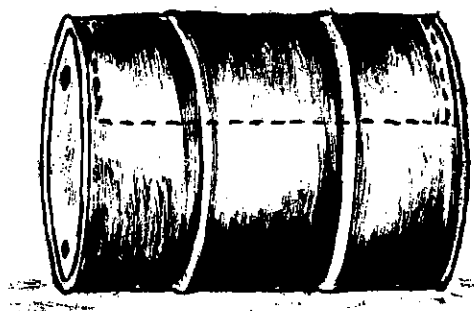
OIL DRUM SINKS



USE TOP PART OF DRUM, CUT OFF ABOUT 12" DOWN FROM TOP. FILE EDGES VERY SMOOTH, TURN TOP (OR BOTTOM) DOWN. REMOVE SMALL $\frac{3}{4}$ " AIR BUNG AND THREAD IN YOUR $\frac{3}{4}$ " PIPE FITTINGS FOR DRAIN. PLACE ON BENCH AT CONVENIENT HEIGHT FOR WASHING.

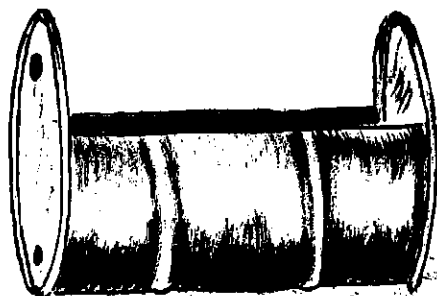
SEE FILM STRIP - SECTION OF HEALTH EDUCATION

BATH OR WASH TUB



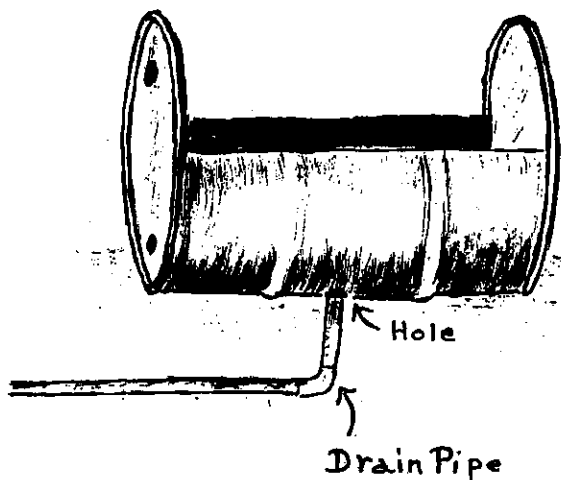
CUT AS PICTURED.
6 INCHES DOWN FROM TOP SIDE AND
AROUND NEXT BEADING, THE LENGTH
WAYS CUTTING OUT TOP SIDE SECTION.

NEXT -



USE YOUR COARSE FILE AND SMOOTH
ALL EDGES SO YOU WON'T SCRATCH OR
CUT YOURSELF LATER.

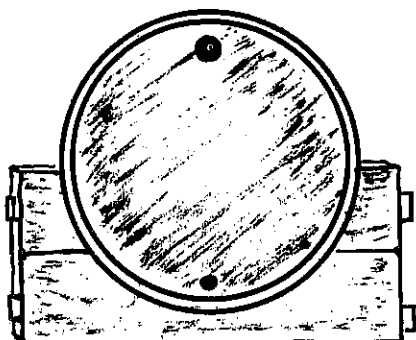
NEXT -



MAKE A $3/4$ " HOLE IN BOTTOM OF DRUM
WITH YOUR KNOCKOUT PUNCH SO YOU CAN
HAVE A DRAIN PIPE FROM THE DRUM TO
THE OUTSIDE OF YOUR HOUSE.

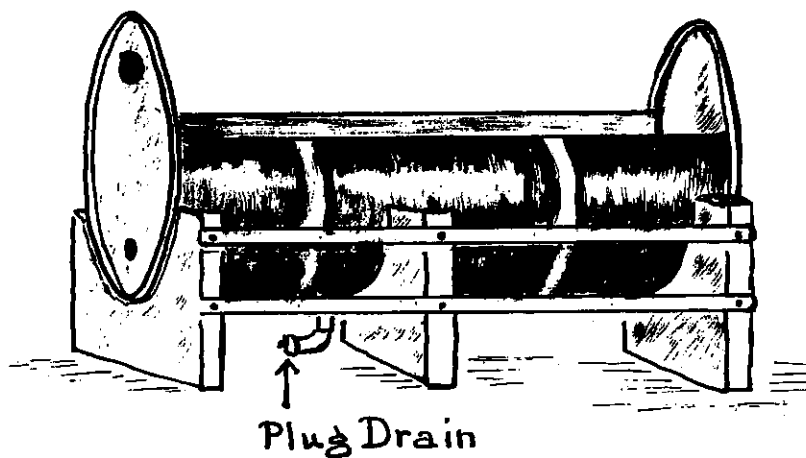
BATH OR WASH TUB

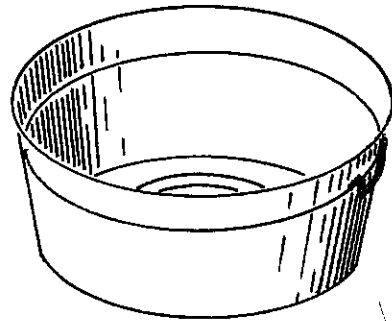
NEXT-



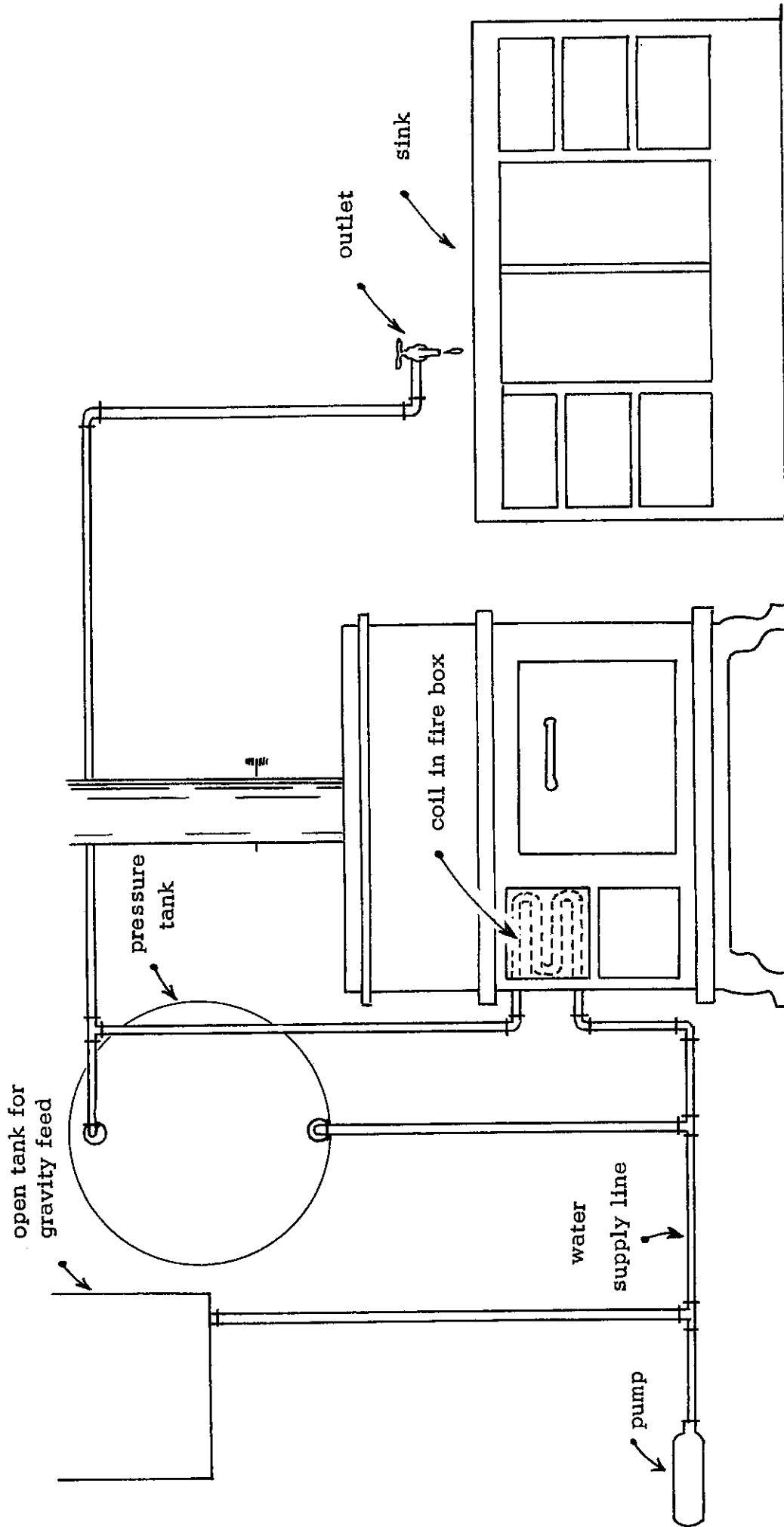
MAKE A CRADLE FOR THE TUB TO SIT IN SO IT WON'T ROLL AROUND. YOU CAN USE SOME HEAVY BOARDS FOR THIS, AS PICTURED. PUT ONE CRADLE AT EITHER END AND ONE IN THE MIDDLE AND FASTEN THEM TOGETHER WITH NARROWER BOARDS.

FINISHED



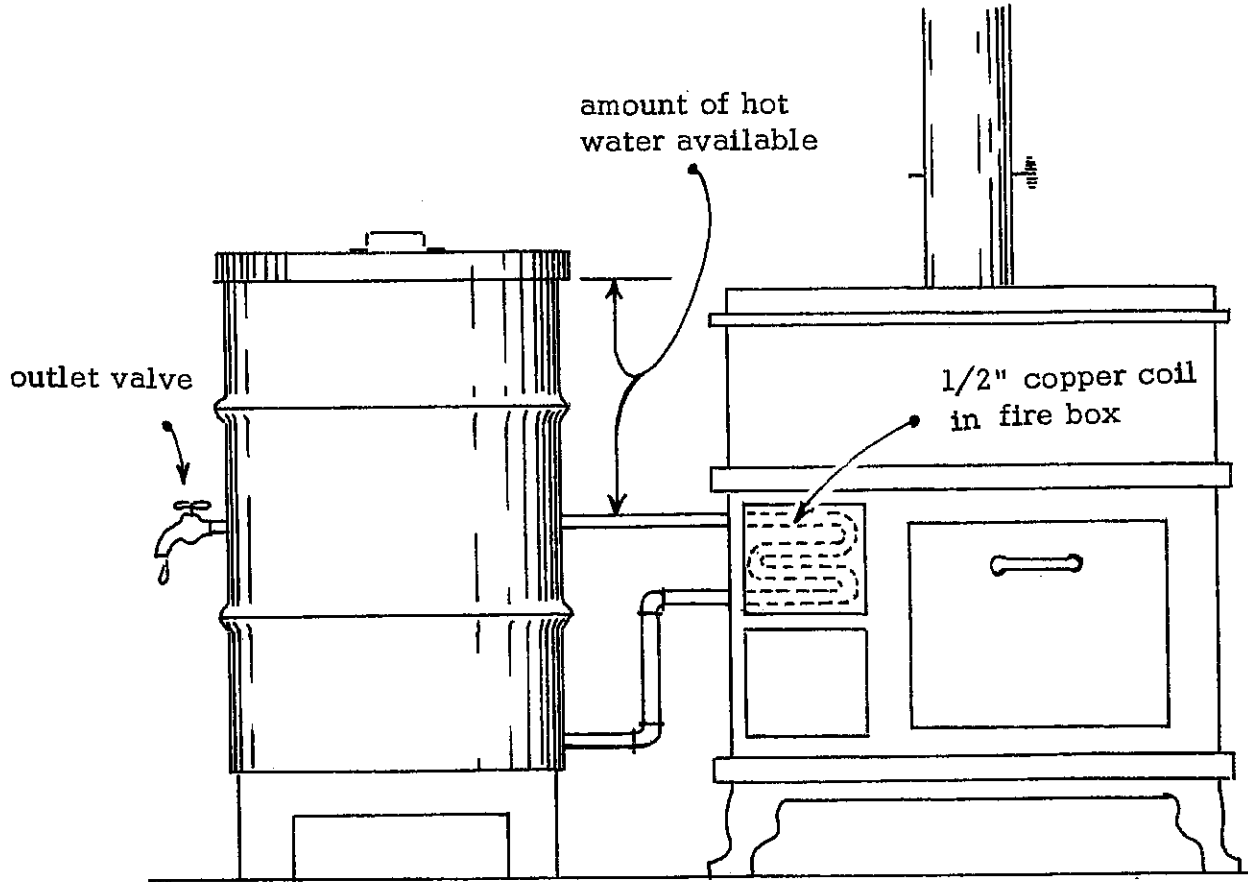


Another kind
of wash tub



HOT WATER PRESSURE SYSTEM

GRAVITY FEED SYSTEM



Water

Water is one of the most important things in our lives. Without water we could not live very long. We use water to drink, to cook with, and to wash our clothes in. We use water to travel from one place to another and water is needed to grow trees and plants.

Before we learn more about water we should know something about where it comes from. We should start first with the ocean, and will explain what is meant by the Water cycle. As the sun shines on the ocean, water vapor that is like steam or fog rises from the water. This is like the steam you see coming out of the pot when it is boiling on the stove. This water vapor or steam goes up very high in the air and then goes into clouds that we can see in the sky. These clouds are full of water vapor. Then the wind blows these clouds across the ocean and across the land. Some times when it comes to a mountain or a place where the air is cooler, the water vapor turns into rain drops inside the clouds. When the vapor turns into raindrops, we call this condensing.

You see this condensing on the cover of your tea kettle or cooking pot after boiling water in it. The steam has formed water vapor which has condensed into drops of water.

After the water vapor has condensed, the rain drops fall out of the clouds and to the ground. They fall on the tundra, the lakes, the rivers, the hills, and the mountains. High in the mountains the rain drops freeze before they strike the ground and turn into hail or snow instead of rain. In the winter time it is cold on the ground where we live so snow falls then.

When the rain falls in the hills some of it runs across the ground and makes streams or rivers. These may travel a long way, but they finally go back to the ocean. Then the water cycle starts over again.

Some of the rain that falls sinks into the ground. This water is what makes springs. We also get well water from the rain that has gone into the ground.

Being sanitary with water is important because we use it to drink and cook with. It is important to know about water because it is one of the ways which disease may travel from one person to another.

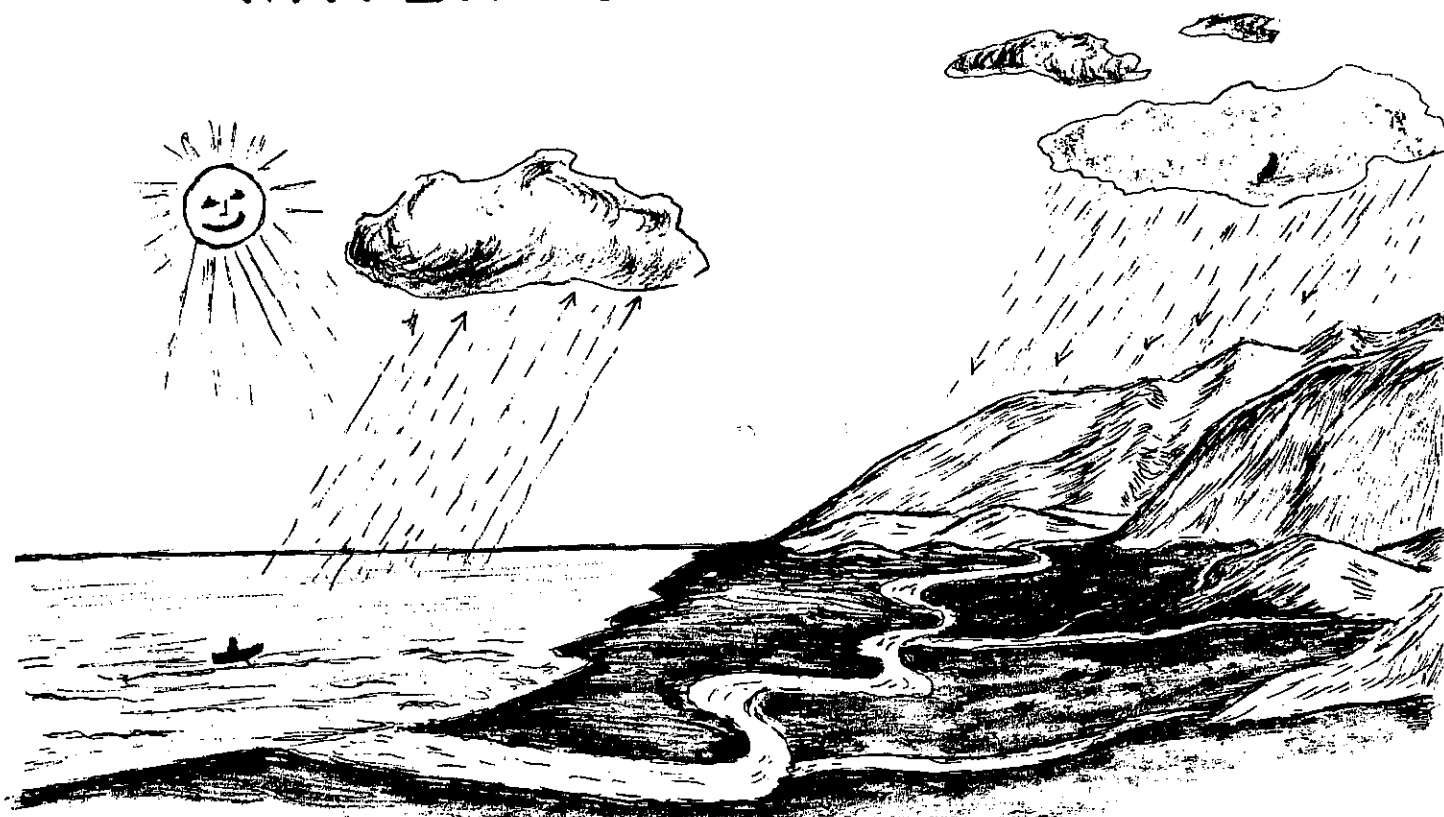
Disease may travel in water these ways:

1. If someone throws human wastes with disease germs in it into a river or stream and if someone drinks the water then that person might get sick.
2. If someone throws garbage into a lake or river, a person might get sick from drinking the water.

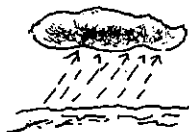
3. If someone has a privy near a well or empties honey buckets near the well, the germs might be carried into the water. People drinking water from that well might then get sick.

4. If dogs are tied near a lake or stream where people get their water, then people might get sick.

WATER CYCLE



1. SUN SHINING ON SEA.



2. WATER VAPOR RISES FROM SEA.



3. WATER VAPOR FORMS CLOUDS.



4. CLOUDS MOVE WITH WIND.



5. CLOUDS COOL. VAPOR FORMS RAIN OR SNOW.



6. RAIN OR SNOW FALLS ON EARTH.



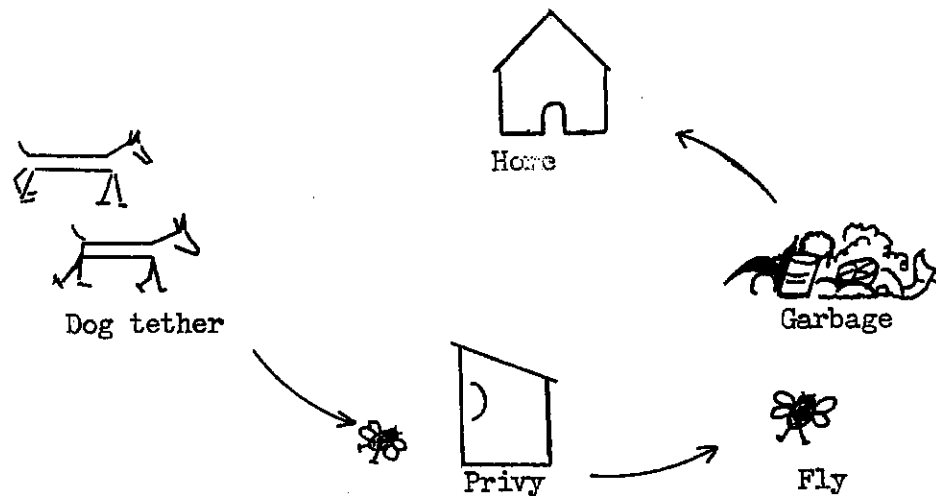
7. RAIN RUNS INTO CREEKS AND RIVERS.

8. RIVERS CARRY WATER BACK TO SEA.

Garbage & Refuse (Trash, Junk)

We have learned that disease germs travel from person to person through body wastes, personal contact, food, and water.

Germs may also travel from one person to another if a village or families are careless with their garbage and trash. Garbage is good food for flies and rats. We know that flies and rats carry germs on their legs and bodies. Here is a drawing that shows how disease travels from garbage to people:



Flies and rats have to eat too. If we leave garbage where they can get to it, our homes will be full of flies during the summer time. If we live where there are rats they will find an easy way to live if we leave garbage for them to feed on.

careless = reckless - a person who does not think about what he is doing is careless.

The important things to remember about garbage and refuse are these:

1. They provide food and a place to live for flies and rats.
2. Sometimes careless people throw things in garbage that could make people sick by walking through it and carrying it into the house.
3. Garbage and trash around our homes and villages is not good to look at.
4. Piles of rubbish can cause fires and accidents.

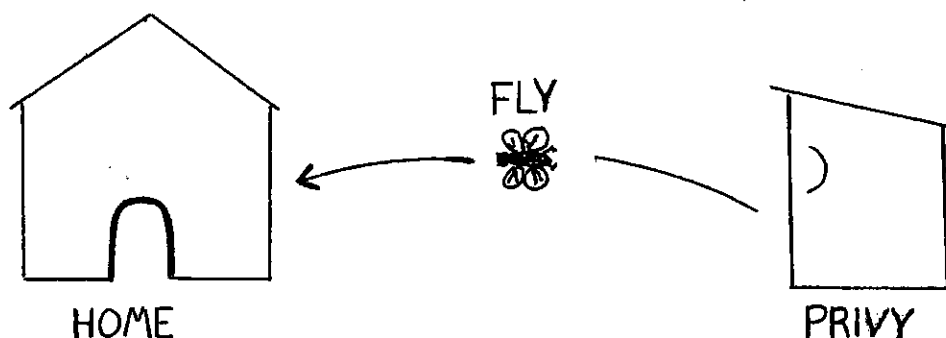
Insects and Animals

Insects and animals are important to sanitation because they may cause sickness in people.

The insects and animals which we should know about are flies, mosquitoes, bed-bugs, lice, ticks, cockroaches, and rats.

Flies are the most dangerous insects to health. Flies lay their eggs in garbage, fresh meat, or human and animal wastes. In from 8 to 20 days after the eggs are laid, new flies are born. When the weather is warm, flies hatch sooner. The colder the weather the longer it takes flies to hatch.

Because flies like to stay around places where disease germs may be, and because they also like to live in our houses where it is warm, we should protect ourselves against them. The drawing shows how a fly travels:



Flies destroy a lot of food each year by laying eggs in meat. When this happens we have to throw the meat away and a part of the winter food supply is lost.

To protect ourselves against flies we should do the following things:

1. We can get rid of flies by putting our garbage in garbage pits with tight covers. (Flies will not have a place to live)
2. Our privies or honey bucket pits should be built so that flies cannot get into them.
3. The places where we tie our dogs should be kept clean so that flies cannot breed in the wastes.
4. Our houses should be screened to keep flies out.
5. Our food should be covered to keep flies from crawling over it and leaving germs upon it.
6. We should have fly swatters or insect spray to use in the house to kill flies that get in.
7. Dead animals should be buried so that flies cannot breed.

The diseases which flies can carry to people are dysentery, diarrhea, typhoid fever, T. B., cholera, and some kinds of worms.

Mosquitoes are a nuisance to people and animals and sometimes carry sickness. Mosquitoes lay their eggs mostly in water that is not running such as lakes, ponds, small pools from melting ice and snow, or in the tracks of animals that have filled with water. The eggs turn into mosquitoes in about 10 days or a month. The colder it is, the longer it takes the eggs to hatch.

nuisance = something which bothers us or is disagreeable.

We can help protect ourselves from mosquitoes by doing the following things:

1. When we build our homes or villages, we should put them upon ground where the rain water and melting snow will run off.
2. We should screen our doors and windows to keep mosquitoes out of the house.
3. We can kill mosquitoes in the house by using insecticide.

Mosquitoes can cause malaria or paralysis.

insecticide = a poison for killing insects (flies, mosquitoes, etc.)

Bed bugs live in the clothing and bedding of people. They also live in the walls of houses, in the floors and in the ceilings. Bed bugs live by sucking blood from people at night when they are asleep. If a person gets bed bugs in his house it takes only a short time before there are many of them. They are also very hard to get rid of.

If a person gets Bed bugs in his house, he should do the following things:

1. Take all clothing out of the house, spread it upon clothes lines or racks and spray the clothes with D.D.T. Wash the clothes before they are worn after spraying them.
2. Take all bedding out of the house. Spread the bedding upon clotheslines or racks and spray it with D.D.T.. The bedding should be washed before it is used again.

3. Spread mattresses on a flat surface outside the building or on the floor of the house. Spray the mattresses with insecticide. Be sure and spray all the cracks in the mattresses. Mattresses will not have to be washed after they are sprayed.

4. Take all the food out of the house, open all the drawers in dressers and move beds away from the walls. Spray the walls, the ceiling, the beds, inside dressers, and everyplace where bed bugs might hide.

5. In about one week these things should be done again. If we spray again, the eggs that bed bugs have laid will have hatched and the young bed bugs will be killed. It may be necessary to spray three times before all the bed bugs are killed.

Bed bugs cause swelling of the face and may carry sleeping sickness, infectious hepatitis, and yellow fever.

necessary - something that has to be done.

Lice are very much like bed bugs because they live with people in their homes. They like to live in a person's clothing and upon his body. A person who has lice usually has a great many in his hair. Lice also live in bedding and may also be found in a person's parka.

Lice may be gotten rid of by doing the following things:

1. All clothing should be boiled in water to kill lice and eggs.
2. Take a hot bath with plenty of soap.
3. Dust parkas and bedding with DDT powder.
4. To get rid of lice in a person's hair wash the hair, then put Benzy Benzoate on the hair. Talk to the nurse about this. She knows what to do. It is better to use Benzy Benzoate than DDT.

5. Put D.D.T. powder on the person's hair.

5% D.D.T. powder is the best. Leave the powder on for 24 hours, then wash the hair.

Do these things again in one week.

6. Put D.D.T. powder on the mattresses and bedding. Do this again in one week.

7. Spray the walls, ceiling, and beds with D.D.T.

Lice can cause Typhus fever, relapsing fever, impetigo, and can also spread eye diseases from one person to another.

Ticks are found on dogs and wild animals like deer, foxes, and wolves. Ticks do not often get upon people. When they do they can be taken off by holding a match close to the tick or any other thing that is hot. Do not pull a tick that is biting you off with your fingers. Some of the head will stay in the skin and may cause infection. If a burning match is held close to the tick he will try to get away. He may then be brushed off.

Ticks may carry Rocky Mountain spotted fever. Their bites may also get infected.