

EXTENSION

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NAGARAM
RURAL EXTENSION TRAINING

THE FARM AND FARM HOME MAGAZINE
FEBRUARY, 1961

LEAFLETS

FOR PROGRESSIVE FARMERS



FARMING

Treat your seed before sowing
Protect your soil
Better implements for a better rice crop
How to treat paddy seed
Better level and bund your field
Raise a better barley crop
Getting good gram yields
The way to higher wheat yields
Late blight of potatoes
How to make silage
Choose your irrigation method
Better grow berseem
How to make paddy straw a better cattle feed
Grow maize the improved way



MANURES AND FERTILIZERS

Compost is easy to prepare
Green manuring
How to use fertilizers
Facts about fertilizers
Water hyacinth gives a good compost



HORTICULTURE

Papaya is easy to grow
Drumstick, the year-round vegetable
Growing grapes in south India
Rabi vegetables—grow them this way



POULTRY

How to fight coccidiosis in poultry
Feeding poultry for profit
Do your hens pay?
Protect your poultry birds against Ranikhet
Save your fowls from tick fever
Fighting fowl pox in poultry
How do you transport your poultry birds
Watch out for pullorum
Culling poultry for profit
How to make a brooder for your chicks
How to start a poultry farm
How to control lice on poultry
The egg and you
Tapeworms in poultry
Your chickens and infectious coryza
Making eggs keep fresh
How to pack eggs for transport
Selecting poultry birds for breeding
Selecting birds for poultry show
Moulting in poultry
Poultry keeping for egg production
Poultry keeping for meat production



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Control loose smut and earcockle of wheat
Controlling paddy pests and diseases
The rice bug
Get rid of white ants

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EXTENSION

THE FARM AND FARM HOME
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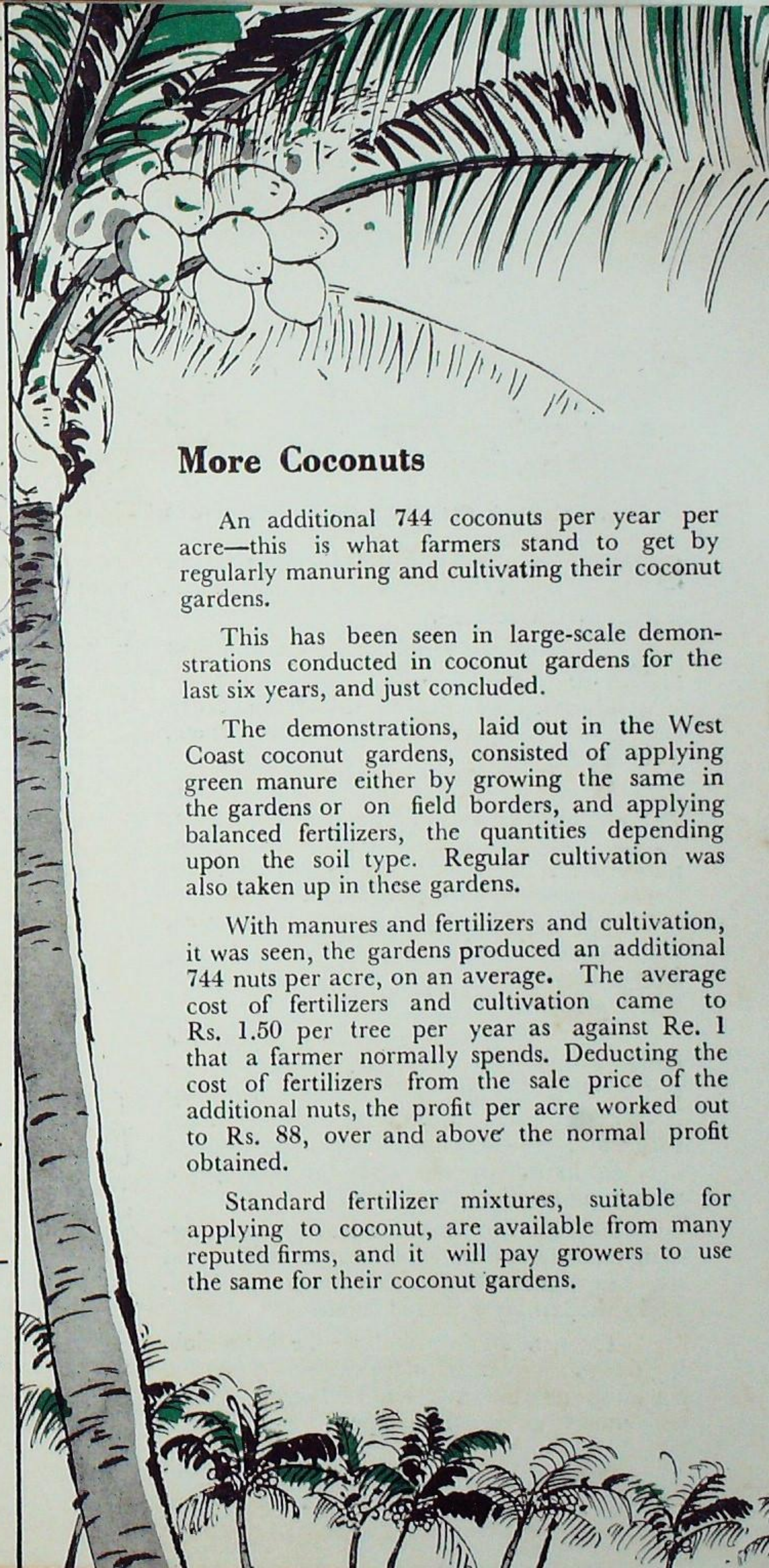
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More Coconuts

An additional 744 coconuts per year per acre—this is what farmers stand to get by regularly manuring and cultivating their coconut gardens.

This has been seen in large-scale demonstrations conducted in coconut gardens for the last six years, and just concluded.

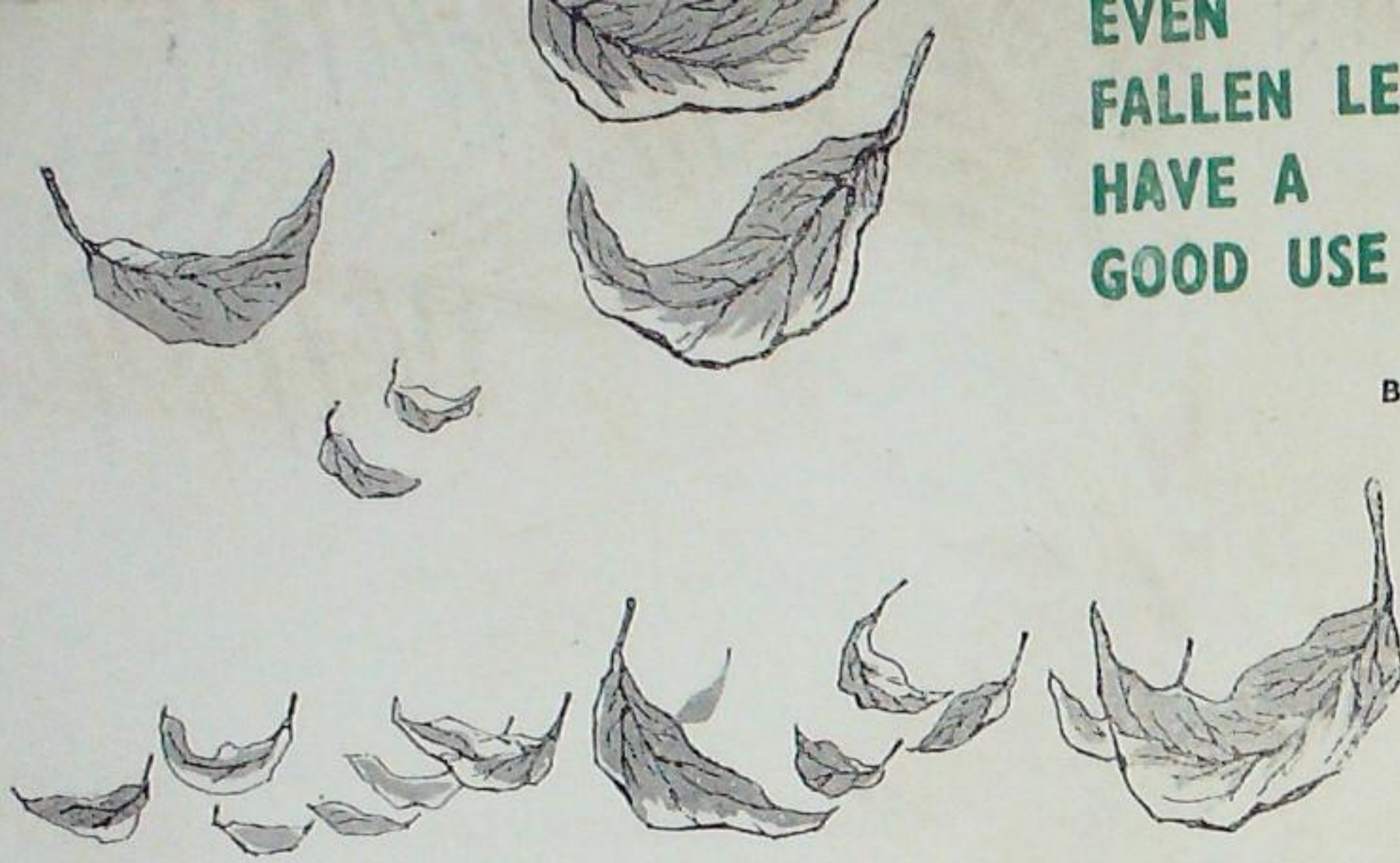
The demonstrations, laid out in the West Coast coconut gardens, consisted of applying green manure either by growing the same in the gardens or on field borders, and applying balanced fertilizers, the quantities depending upon the soil type. Regular cultivation was also taken up in these gardens.

With manures and fertilizers and cultivation, it was seen, the gardens produced an additional 744 nuts per acre, on an average. The average cost of fertilizers and cultivation came to Rs. 1.50 per tree per year as against Re. 1 that a farmer normally spends. Deducting the cost of fertilizers from the sale price of the additional nuts, the profit per acre worked out to Rs. 88, over and above the normal profit obtained.

Standard fertilizer mixtures, suitable for applying to coconut, are available from many reputed firms, and it will pay growers to use the same for their coconut gardens.

EVEN FALLEN LEAVES HAVE A GOOD USE

By G.S. BAWEJA and A.C. GARG



THERE IS ONLY ONE WAY OF PUTTING FALLEN LEAVES TO A GOOD USE—COMPOSTING THEM

SOME trees in the garden or by the roadside have the habit of shedding their leaves during certain seasons.

This creates a problem for you and your local body or *panchayat*.

One way of getting rid of the fallen leaves, and the popular way, is to burn them. This is an easy way, but not a good way.

When you burn a ton of fallen leaves, you are burning away 15 pounds of nitrogen, six pounds of potash and three pounds of phosphoric acid. Certainly, you cannot afford to waste so much of good plant-food.

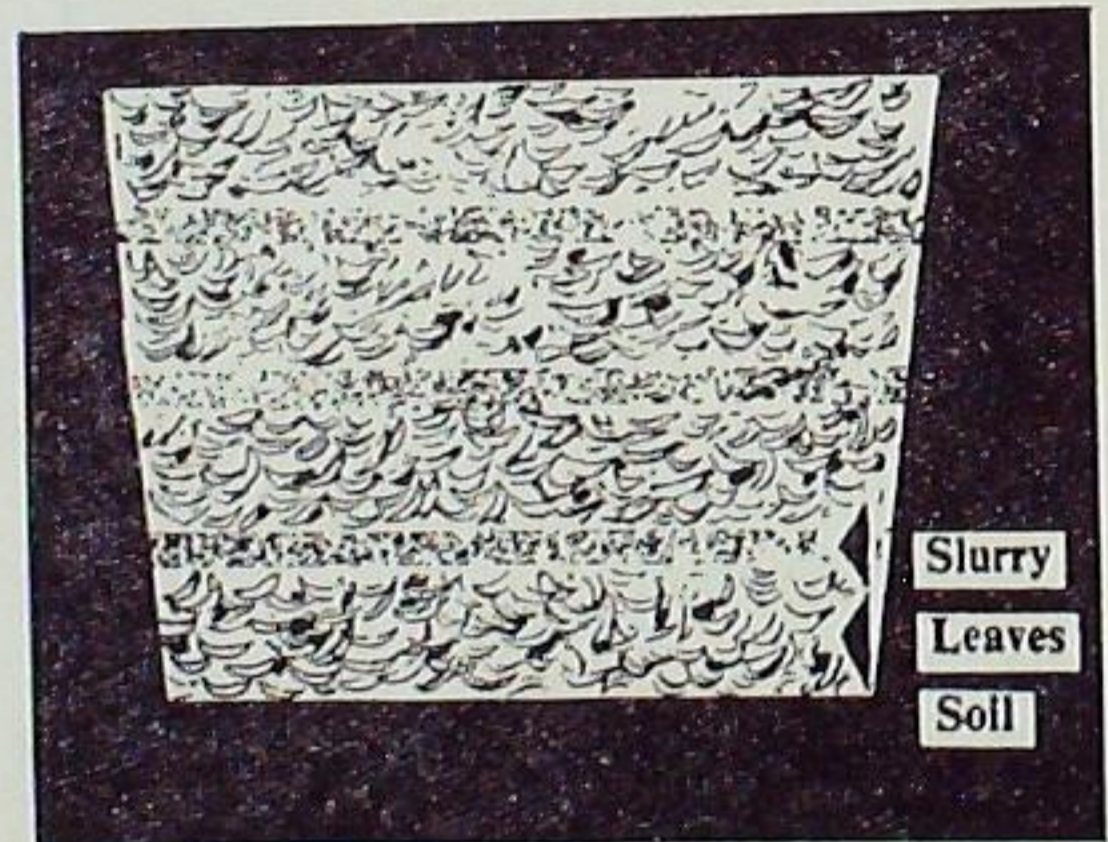
The only way you can make use of the plant-foods is to compost the dry fallen leaves. Composted leaf is good for manuring your flower plants and vegetables.

You will find it easy to compost the fallen leaves. First, have pits of ten feet by five feet by three feet dug up. Spread a foot deep layer of leaves at the bottom. Moisten them with water; do not soak. Press the leaves, but not too hard. Spread over the leaf-layer a mixture of cowdung and water.

Add another layer of leaves, then cowdung mixture and so on, till the pit is filled and the heap rises a foot above the ground level. Make the last layer that of leaves.

The next 15 days will see the heap sinking down. When that happens, add a layer of cowdung mixture and one of leaves. Cover with mud to get a dome shape.

In four to six months, the leaves will form a good compost. If you do not want to wait that long, turn over the heap from time to time. The compost then becomes ready earlier.



A sectional view of a compost pit

If you do not have enough leaf to fill the pit at one time, you can fill only a section of it by using a partition prepared from cotton sticks. When you do this, see that the depth of the pit at one end is 3 feet and at the other 3½ feet. Fill the shallower side first.

A pit ten feet by five feet by three feet will give you two tons of compost. This is enough for manuring 4,000 square feet of your garden.

So you know the way to put the fallen leaves into a really good use.

The POHLI need not be with us

The 'pohli' weed has been a bother in our wheat fields for a long time. It needn't be so any more



The *pohli*, the stubborn weed, has been a bother to the farmers in the Punjab, Delhi, Rajasthan and Uttar Pradesh for a long time.

The two ways by which *pohli* could be got rid of was weeding well the *rabi* crop in which the weed was found, and removing and burning the plants which are still there in April-May.

But farmers have found both difficult to do. *Pohli* has spines, and it is painful to handle the plants. Collecting and burning the weed need labour and time.

Some cut the weed with a long-handled spade, but leave the cut plants in the field, without knowing that these plants have mature seeds, and when blown about by the wind, only help the weed to spread further.

Hence, *pohli* has remained with us.

It need no longer be, because we now have a good and easy way of fighting it out.

The new way is using 2, 4-D. They tried this chemical in farmers' fields in Delhi, with

very good results. *Pohli* was killed hundred per cent.

2, 4-D was used as a spray on the field where the wheat crop was standing. One pound of 2, 4-D (acid equivalent) was used in 60 gallons of water and sprayed on the crop, with care to see that it reached all the weeds in the field.

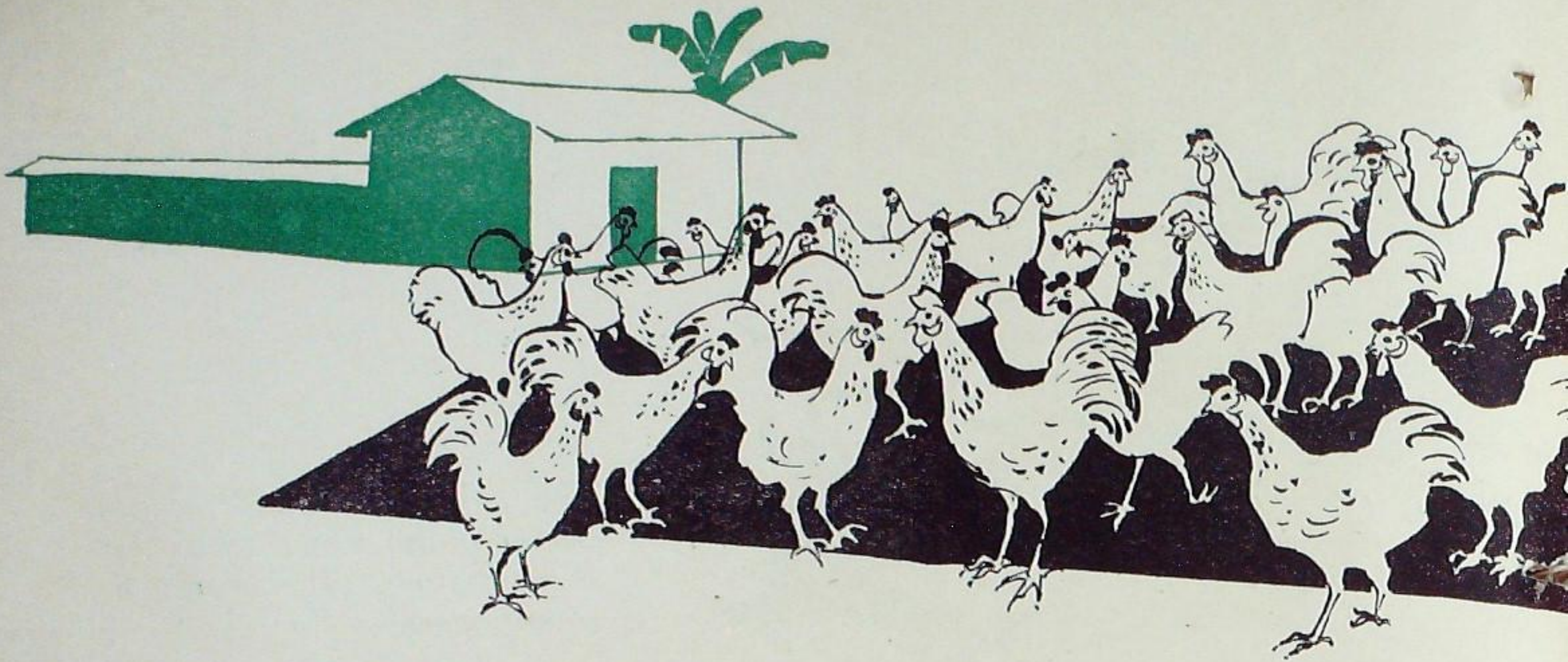
It was seen that not only *pohli*, but other common weeds were also completely killed.

As a result of spraying the chemical and killing the weed, farmers also got increased wheat yields.

2, 4-D is a cheap chemical and can be easily used by farmers for getting rid of *pohli*.

However, 2, 4-D should *not* be used where *sarson* and other broad-leaved plants including legumes are sown mixed with wheat, as the chemical will damage these crops too.

You can also use 2,4-D for killing *pohli* after the crops are harvested.



Keep some poultry in your backyard

By S. G. IYER

EGGS? POULTRY MEAT? GET BOTH EASILY AND CHEAPLY
BY RAISING YOUR OWN POULTRY IN YOUR BACKYARD

IT pays to keep some poultry in the town or in the village.

The housewife can easily look after a dozen hens or so, saving herself the trouble of going to the market for her daily needs of table eggs.

Poultry-keeping in backyard is a useful side-line for the farmer. You can keep poultry in the plains as well as in the hills, wherever you happen to live.

The chicken will make good use of house scraps and waste goods and convert the same into useful eggs and meat.

A dozen good laying hens will give five to six eggs daily, which will cost you less than what you have to pay for in the market.

Backyard poultry-keeping can very well add to your income, provided, of course, you keep the birds the way they should be kept.

You can keep poultry in backyard for :
Breeding and selling 'pedigree' chicks
Producing table eggs
Raising table chickens

Of these, producing table eggs pays the best. For this, start with only ten hens, and gradually increase the number. If you keep a cock for every ten hens in the same pen, you will also get hatching eggs. Eggs from good breeds fetch high prices.

THE RIGHT BREED

Whether you keep poultry for table, for eggs or for breeding stock, select only good breeds.

Whatever the breed, it should be known to be a good producer. In the breed you select, there will be the good-laying 'strain.' You can purchase ready-to-lay pullets of such a strain to start with.

The best breeds to buy in India today are :

White Leghorn
Rhode Island Red

Good laying strains of these two breeds can be had from the Government Poultry Farms in all states.

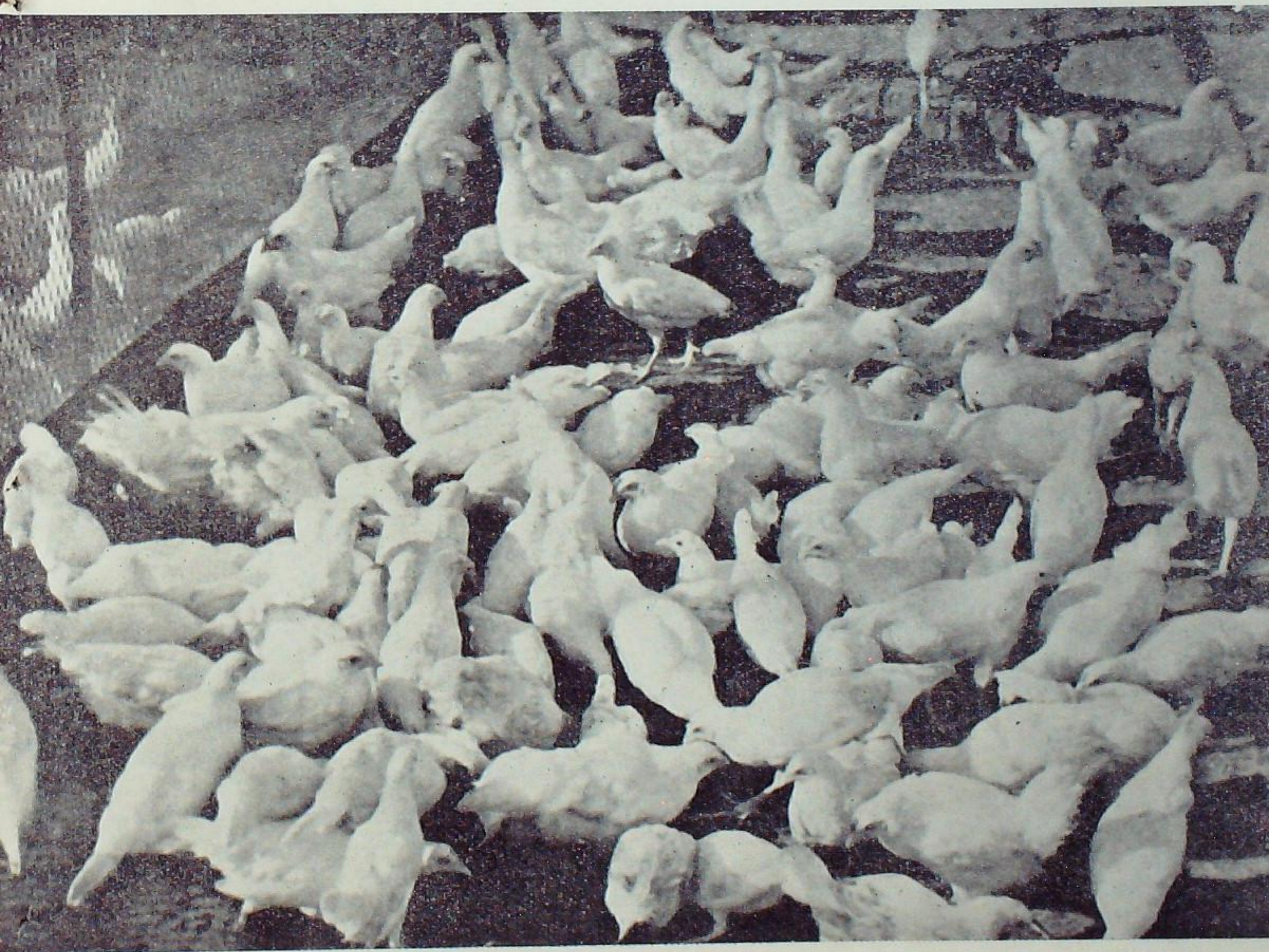
You can get ready-to-lay pullets at Rs. 6.00 to 7.50 each. You can also buy

younger birds if you think you can rear them up. Eight to twelve-week old chickens will cost you two to three rupees each. If you are in the National Extension Service area, you can get your birds at cheaper (subsidized) rates through your Gram Sevak.

But see that you get your birds well before the time they start laying. If they had started laying when you bought them, because of change of place, they will stop laying for a month or more.

If you want to produce only table eggs, then better keep crosses and not pure breeds. Cross-bred birds give 15 per cent more eggs than pure breeds.

White Leghorns are good layers





Rhode Island Reds are good for both eggs and meat

Select any of the following crosses :

White Leghorn x Rhode Island Red
 Australorp x White Leghorn
 Rhode Island Red x Barred Plymouth
 Rock

(The male bird in each case is given first)

PROPER HOUSING

You don't need any big run or ground for keeping poultry in backyard. All that you need would be a cage to protect the birds from the sun and the rain, and for them to rest at night.

You can put up a poultry-house against a wall in the open backyard. Cover the front of the wall with a wire-netting supported on *ballies* or angle-iron bars, and roof it with galvanized iron or asbestos sheets. If you can't afford this roofing, you can have a thatched roof or *chapper*.

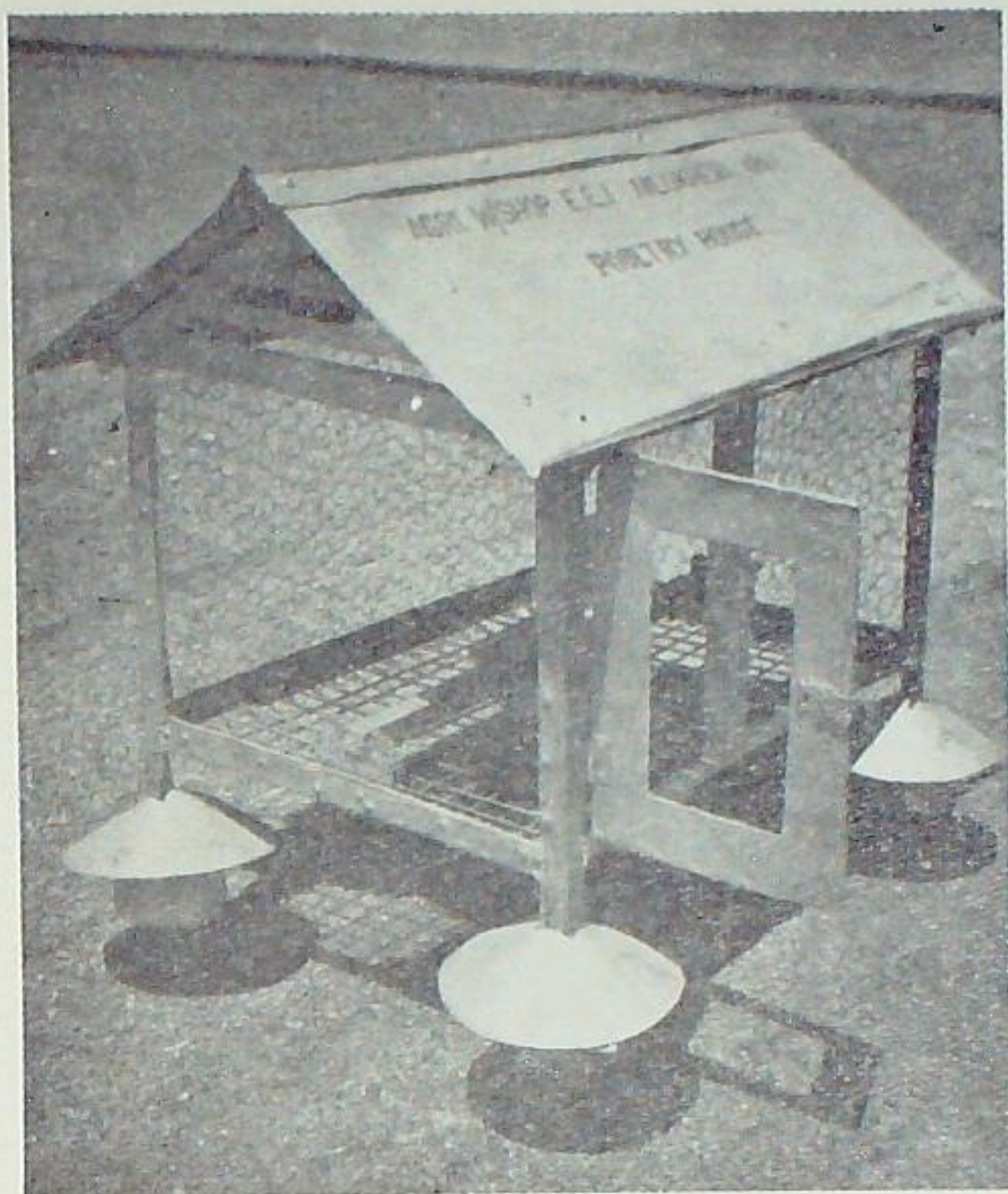
If you want a separate and better poultry-house, build it with angle-iron bars and cover it with wire-netting. Have perches inside and roof it with galvanized or asbestos sheets.

Have such a house rest on four legs, with the floor covered with expanded metal or wooden slats. The droppings will then fall on the ground. You can move such a house wherever you want.

Each hen needs a housing space of a square foot. A house of 8 feet by 6½ feet by 4 feet will house 50 birds.

Whatever the type of poultry-house you build, see that it is :

- kept free of ticks and other virmins,
- sprayed or washed with disinfectants from time to time,
- well-ventilated on all sides, and
- not exposed to draughts.



Such a poultry-house will be ideal for your birds

GOOD FEEDING

Hens are like machines. They take in the raw material you give them as feed and convert a portion of it into eggs. Hence, feed them with care.

The feed should contain :

- Carbohydrates
- Fats
- Proteins
- Minerals
- Vitamins
- Water

Cereals are cheap and good food. They form the bulk of poultry feed anywhere. But they do not have enough good proteins in them; nor do they supply minerals and vitamins.

Hence :

- Better feed a mixture of cereal grains or their by-products rather than one kind of cereal alone.
- Always supplement cereals with other feeds.

- Combine animal proteins with vegetable proteins. The former are more expensive.

For egg production, replace 50 per cent of animal protein with vegetable protein in the form of groundnut cake or copra-meal.

Meat-offal is cheap. Use it freely in poultry feed at one ounce of cooked meat-offal per day per bird. Fish-meal can also be used instead.

The best feed for your poultry will be : cereals + greens + calcium (limestone) + meat-offal or fish-meal.

You can use such waste materials as mango-seed kernel, jaman-seed meal, molasses, refuse from silk industry, and penicillin waste as poultry feed. Your State Poultry Officer will be able to advise you what material is available in your area.

- Use an all-mash diet for feeding your poultry. This is a complete ration, and you *need not* feed cereals to your birds in addition. Here is an example of an all-mash diet.

Parts by weight

Ground yellow maize or oats, barley, jowar, bajra, cheena, ragi or <i>combu</i> or even potatoes when cheap	30
Wheat-bran or rice-bran	20
Groundnut cake	35
Fish-meal or meat-meal	5
Ground limestone	3
Bonemeal (steamed)	1
Salt	$\frac{1}{2}$ to 1
Dried greens or fresh greens	5 as much as birds eat

Mix the mash well before use.

For chickens below eight weeks, feed two ounces, and those above eight weeks four to five ounces of the mash a day.

- See that fresh water is available to the birds all the time.

KEEPING BIRDS HEALTHY

Get your chicks vaccinated against Ranikhet and fowl pox when they are six to eight weeks old.

To keep birds healthy :

- feed them according to their needs ;
- give them plenty of good water to drink ;
- examine them for lice, ticks and fleas. If you find any of these, treat the affected parts of the birds with DDT spray or 'Gammexane' powder ;
- remove the ailing birds from the flock. When you suspect any to be suffering from infectious diseases, better destroy them.

You can readily spot disease-infected birds from their off-colour (pale, unhealthy-looking comb) and sunken eyes. Such birds will keep aloof from the others in the poultry-house.

Better keep a 60 cubic centimetre bottle of 'sulphamezathine' 16 per cent sodium salt handy. It is useful for treating many ailments of the birds.

TIME TO HATCH

Birds start moulting in the rainy season and lay fewer eggs. Egg prices at this time are high. Bad weather during the winter months also affects egg-laying.

Hence, it pays to produce more eggs in such slack seasons. To do this, you must consider the hatching time.

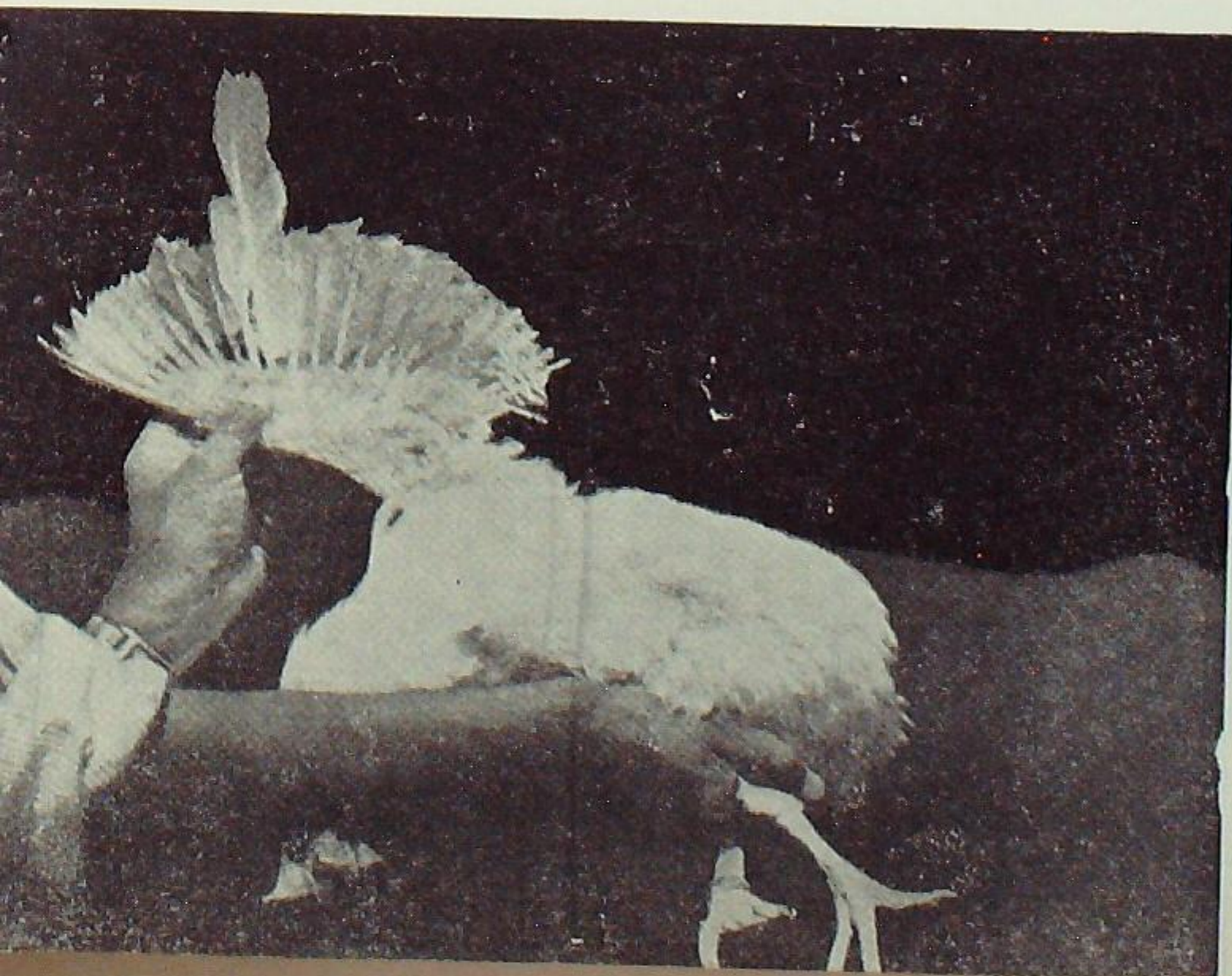
Birds hatched in winter or early spring months lay eggs earlier than those hatched in April or May. Such birds also lay heavily during summer and rainy months and start moulting partially from October to December. Egg production is generally low from August to November in India.

LAYING-NESTS

Good laying-nests should :

- have sufficient space
- be fairly dark
- be cool and well-ventilated
- be easily accessible, and
- be easily cleaned.

Moulting helps in separating good layers from poor layers. (Right) The wing of a late moulter—a good layer. (Left) The wing of an early moulter—a poor layer





Get your birds vaccinated in time and stop worrying about infectious diseases



Spot out the ailing bird and keep it aloof from healthy birds

A space of 15 inches square will be sufficient for a bird. The nest should be sufficiently deep so that the eggs don't roll out.

Most birds lay eggs between 9 and 12 in the forenoon. Hence, provide a number of nests in the yard. There should be one nest for every five birds. Make them moveable, so that it is easy to clean and disinfect them. Don't keep them in the sun, as birds thereby may get heat stroke.

Examine the nests from time to time for ticks, lice and other parasites. If any appear, take steps to control them.

It is better to have trap-nests instead of the ordinary nests. This is a nest with a door which shuts the bird in when it enters it. She will not be able to come out unless you lift the door and release her. This will enable you to know the laying birds.

Provide one trap-nest for every five birds. Put some hay or other soft material in the nest. This will encourage birds to get into

the nest for laying. You can also have a wire-bottom for the nest to keep it cool.

The trap-nest should be 15 inches wide, 18 inches high and 12 inches deep.

REPLACING THE STOCK

A hen generally lays best in the first year. The egg-yield goes down by 20 per cent in the second year, and further down in the third.

Hence, it is better to keep pullets only for a year, and to replace the older birds with new stock every year. It is a good rule to have a flock of two-thirds of pullets and one-third of birds over one-year old which have been very good producers in the first year.

This is so when you consider birds for producing table eggs. For breeding, however, two-year old hens are the best.

For any more information that you need, contact the Poultry Development Officer of your state or your Gram Sevak.

CROP PESTS AND DISEASES IN MARCH

AND WHAT TO DO ABOUT THEM

By D. B. REDDY

WATCH your crops for pests and diseases. If you find any, look at the list given below and see what you should do to fight them. If you have any difficulty in knowing what pests or diseases they are, or where you can get the chemical to dust or spray, your Gram Sevak will help you.

<i>Crop</i>	<i>Pest/Disease</i>	<i>Control Measures</i>
Gram	Gram pod-borer	Use DDT five per cent dust or 0.16 per cent spray.
Mango	Hoppers	Spray 0.25 per cent DDT.
Paddy	Blast Helminthosporiose	Spray 5:5:50 Bordeaux mixture or a copper fungicide.
	Stem-borer	Spray 0.2 per cent Endrin or Parathion or any organo-phosphorus compound.
	Hispa	Dust five per cent BHC.
Potato	Late blight	Spray 5:5:50 Bordeaux mixture or a copper or an organic fungicide.
	Jassid	Spray 0.1 per cent DDT.
Sugarcane	Red rot	Use healthy and disease-free setts. Do not plant in infected fields.
	Smut	Use setts obtained from fields free of disease. Use resistant varieties where available.
	Termites	Use five per cent BHC, Aldrin or Chlordane dust about 20 pounds per acre.
Wheat	Rats	Use zinc phosphide baits.

Some of the pesticides like zinc phosphide, Aldrin, Parathion and Endrin are very poisonous and should be handled and used with great care.

**DON'T WAIT FOR THE WIND FOR
YOUR WINNOWING. THIS FAN
WILL HELP YOU OUT**

By D. N. KHERDEKAR

WINNOW
WHEN YOU
WANT

WHEN the crop has been threshed and has to be winnowed, there sometimes is no wind to help the farmers out.

The grain should not be left lying in the threshing yard, because there may be rains.

At such a time, farmers wish they had a machine to winnow with. There are such machines, but each costs almost Rs. 600, and so every farmer cannot hope to buy one. It is for this reason that engineers have developed small and cheaper winnowing fans.

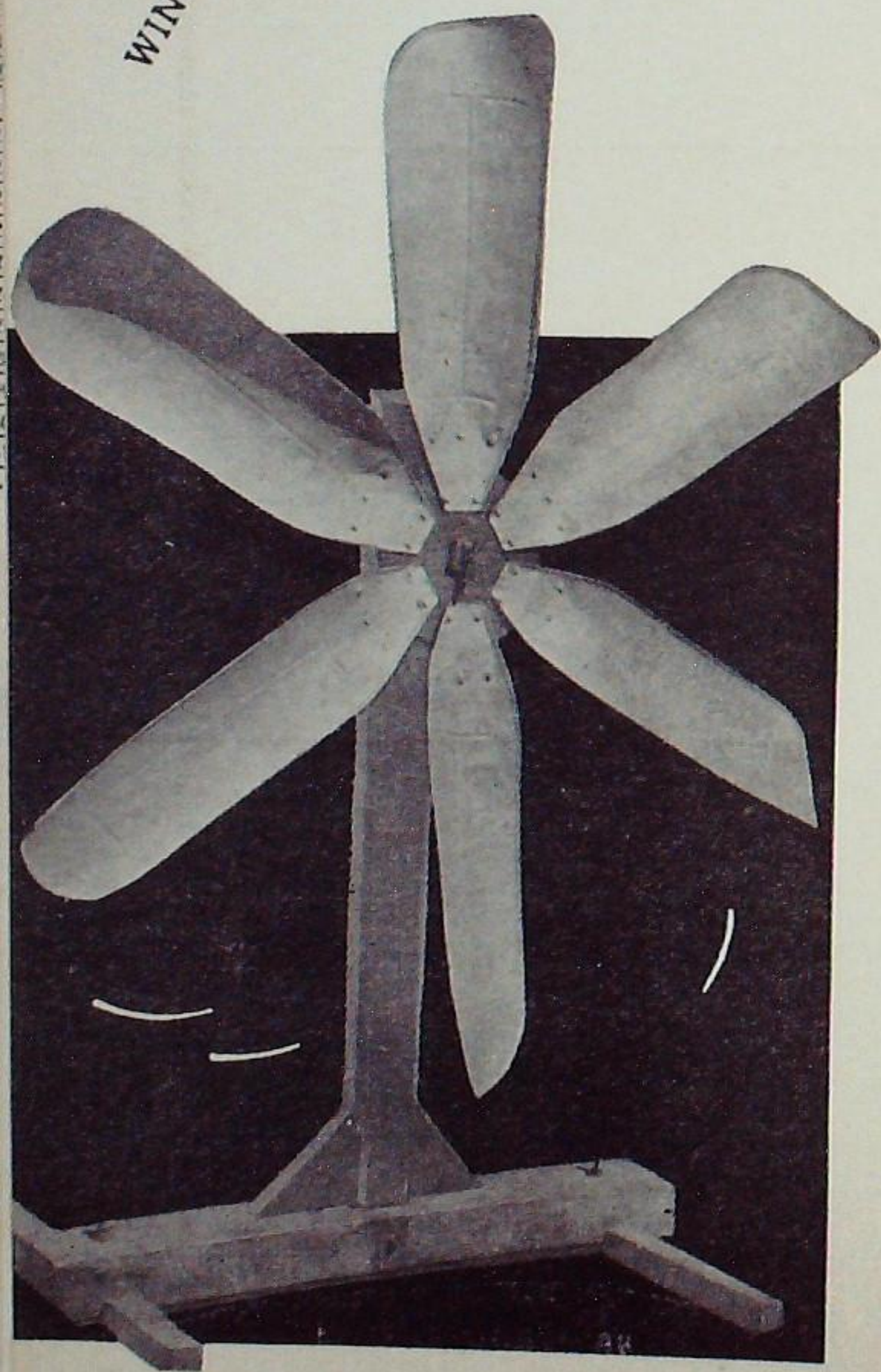
The fan developed at the workshop attached to the Extension Training Centre, Nilokheri in the Punjab, is one of them. This new fan is simple in construction. It has no gears or chains, and no sprockets to worry about.

It consists of six blades of $2\frac{1}{2}$ feet by 12 inches fixed on a wooden pole. It works on bush-bearings.

If you rotate the fan to go one full round every second, it will produce enough breeze for two people to winnow in front of it. With the fan, you can get 20 maunds of the threshed grain winnowed in an hour's time.

You can use the fan for winnowing wheat, paddy, gram, peas, and millets.

The Nilokheri fan costs about Rs. 55. Your village blacksmith can make one for you easily, and also look to its repairs. You can use any vegetable oil for lubricating the fan.



No stranger, THIS GRAM POD-BORER



MAY BE NOT TO YOU ALSO.
HERE IS HOW TO DEAL WITH IT

By D. BAP REDDY

YOU are familiar with the damage the pod-borer does to your gram crop.

Pod-borer is a caterpillar of a moth which flies about at night and lays eggs on the tender parts of the plants. The small greenish caterpillars which hatch out of these eggs feed on the leaves and tender parts of the gram plant. When they appear in large numbers they leave no leaves on the plant. If they appear when the pods develop, they bore into the pods and eat away the seeds.

These pod-borers have light or grey streaks along their sides, and each is an inch and a half long when full-grown.

They also attack Bengal gram, peas, tomatoes, cotton, groundnut, tobacco, opium and *ganja*.

You should go round your field from time to time to check the appearance of the pest. It will be cheap and effective to control it in earlier stages of the attack.

To control the pod-borer, dust the crop with five per cent BHC or DDT, or spray 0.16 per cent DDT. You will need about 15 to 20 pounds of the insecticide to dust an acre.

Do not eat the pods for about two weeks after the plants have been dusted or sprayed.



Things to do for chillies

Research shows the many things you should do to get a better chilli crop

CHILLI-GROWING is a special job, and farmers know how to raise good crops of chillies year after year.

Research stations also bring out new things that you can take up for chilli, to get better and still better yields.

Unlike other crops, you can grow chilli after chilli in the same field. In fact, says research, it is ideal !

So is with a chilli-nursery; you can raise chilli nurseries in the same plot year after year, without the fear of any bad effects.

But here is something else you should do: have your nursery sown thin and uniformly. You will get good and strong seedlings. If you use a heavy seed-rate, you will have a thick nursery, which will easily get 'damping off' disease, especially in the heavy rainfall areas.

And, if you find or suspect 'damping off,' spray the nursery with Bordeaux mixture (one per cent). Repeat the spray if you find the disease still in the nursery when seedlings are three to four weeks old.

Thrips are another enemy of chilli seedlings. Check thrips by spraying BHC (0.39 per cent). Use $1\frac{1}{4}$ ounces of BHC in a gallon of water for spraying.

If you find a month-old nursery showing uneven growth, give a top-dressing with ammonium sulphate. Spread this fertilizer evenly at a pound to one cent area of the nursery. Water profusely. Don't let any ammonium sulphate crystal fall on the leaves of the plants. Shake the seedlings with a plant-stalk. If you are not careful, the leaves will get burnt.

A week before transplanting the seedlings in the field, top them. Do this in the morning of any sunny day. This will help the cut-ends heal quickly.

Topped seedlings will give you better and thicker seedlings which will set root quickly in the field. Topping also helps keep off the 'leaf-curl' disease, caused by chilli thrips on tender top leaves.

It would be ideal for you to use six to eight-week old seedlings for transplantation. Better wash the roots of the seedlings in water, and dip the seedlings in BHC solution to prevent any attack from thrips before planting.

In the main field, either you pen sheep, or apply 10 to 15 tons of farmyard manure. To get a better crop of chilli, you should also use fertilizers.

When you grow chillies on a sandy loam or a loam, drill superphosphate at two to three maunds per acre at the time of transplanting.

For rainfed chilli, experiments at Guntur (Andhra Pradesh) have shown that a dose of 60 pounds nitrogen, 30 pounds phosphoric acid and 50 pounds potassium is the best. Apply these before transplantation.

You can give half the dose of nitrogen as an oilcake and the other half as a fertilizer. Apply the first with the early ploughing and the latter with the final ploughing of the field. See that these are well-mixed with the soil.

Sometimes heavy rains cause waterlogging in the transplanted field, which is not good for chilli. When you find this, apply a fertilizer to give 20 pounds of nitrogen per acre, and give an interculture to the crop.

For an irrigated chilli crop, you have to apply two to three maunds of ammonium sulphate per acre, when plants have just taken root, and another four to six maunds when they flower, as recommended in the Punjab.

If you are in Andhra Pradesh, and follow a spacing of 22 inches by 22 inches and plant four to six seedlings per hill, here is something for you:

1. Plant only one seedling per hill spaced every $5\frac{1}{2}$ inches, and in rows 22 inches apart. This way you get more chillies to the acre.

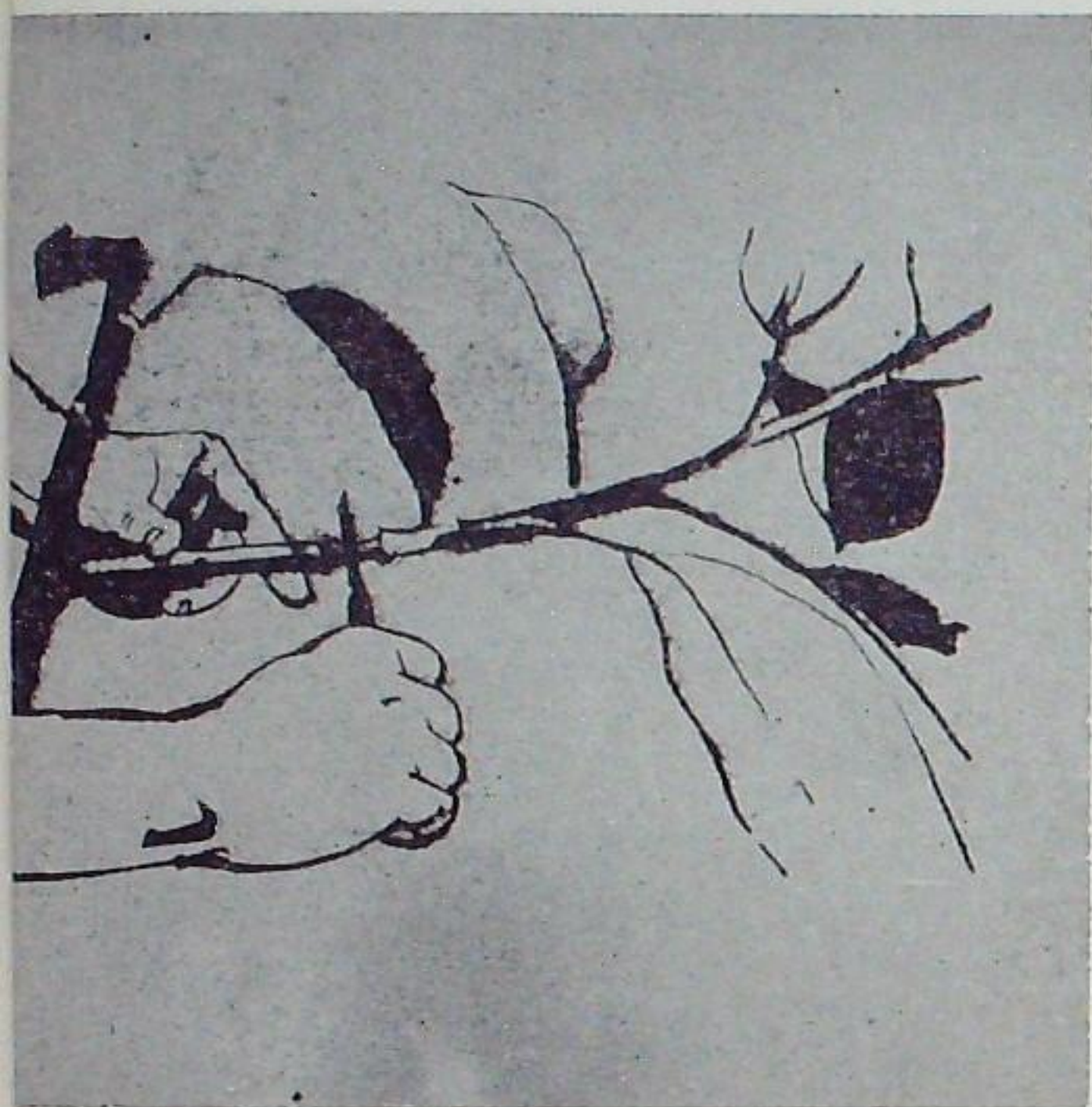
2. The two-way intercultivation, you are doing, will not be necessary. One-way intercultivation is as good!

A month after planting, give your crop a spray with 50 per cent BHC (0.39 per cent strength)— $1\frac{1}{4}$ ounces in a gallon of water. This will keep the chilli thrips in check. You will need 50 gallons of the spray fluid to spray an acre.

Repeat the spray from time to time. Avoid giving an excess of spray, especially when the pods are ripening.

You get nothing but good chillies, if you grow them the improved way





Remove the bark, or girdle the stem about an inch long to induce rooting above the cut

2. Cover up the girdled section with slightly damp sphagnum moss

What to do and

how to do it in

YOUR ORCHARD IN MARCH

Yet another month of attention to your fruit trees to make them pay well

By DALJIT SINGH

HIMALAYAN TEMPERATE REGION

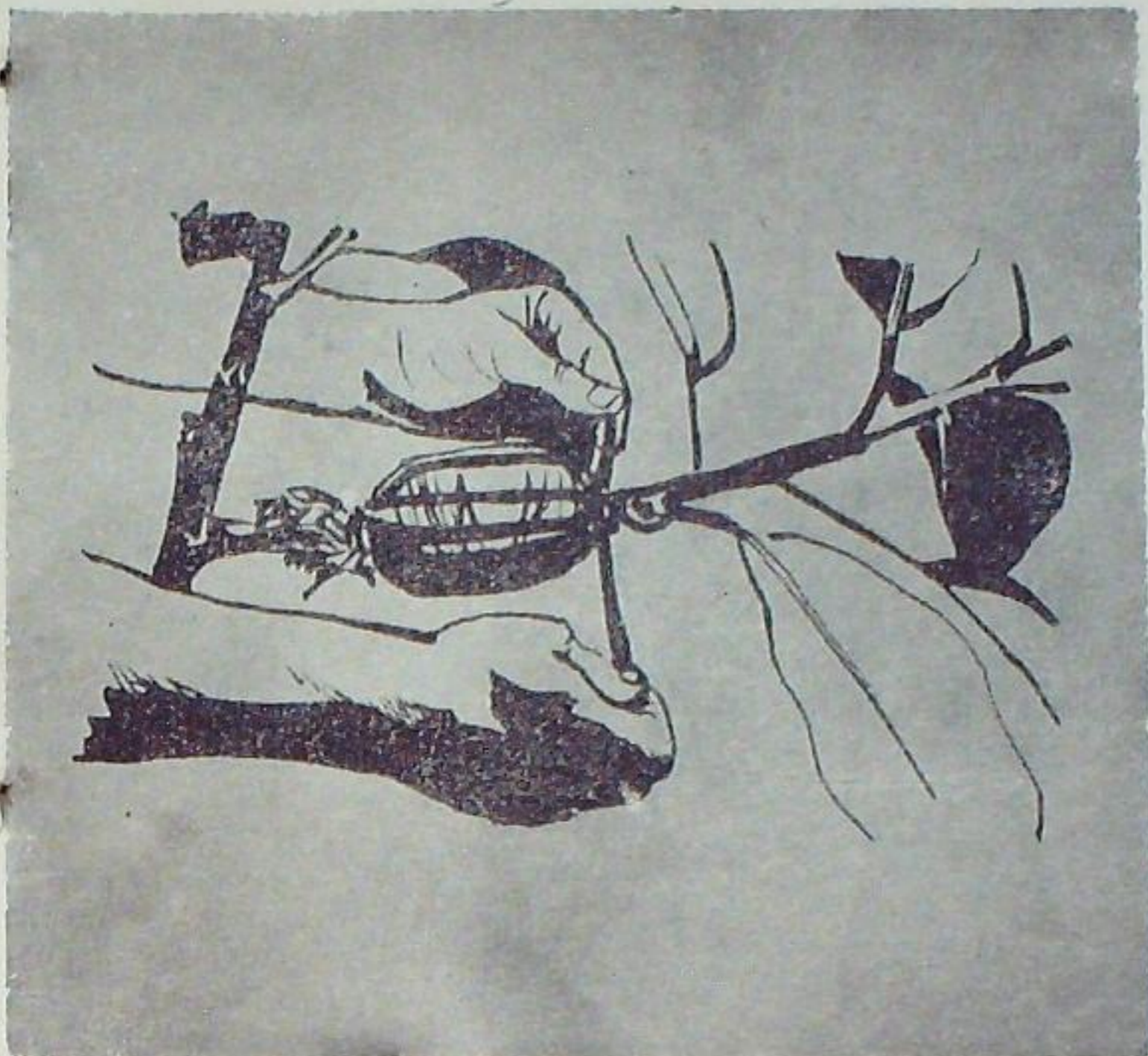
States : Parts of Assam, Kumaon hills (Uttar Pradesh), Himachal Pradesh, the Punjab Hills, Kulu Valley and Kashmir Valley.

You will continue to interculture your orchard ; transplant strawberry

runners and grapevine cuttings in the nursery ; completing the application of fertilizers.

You should also :

- (i) Top-work inferior apple trees,
- (ii) Spray apple trees with rosin-soap to control woolly aphis.



3. *Wrap the balled sphagnum moss with polyethylene film and tie at each end*

- (iii) Spray peach trees with lime sulphur or tobacco decoction to control the peach leaf-curl.
- (iv) Bed the strawberry plantations in the hills with straw to keep the fruits off the ground; also take up fresh plantings. In the plains, replace dead seedlings.
- (v) Apply one per cent phenyl solution to young grapevines before watering to protect them against white ant attack.

NORTHERN DRY REGION

States : Plains of the Punjab, western districts of Uttar Pradesh, western Madhya Pradesh and Rajasthan.

You will continue to plant fruit trees, and apply artificial fertilizers and farm-yard manure to all the fruit plantations.

You should also :

- (i) Do layering of *kaghzi* lime and litchies, and air-layering of loquats and guavas.
- (ii) Do budding of citrus and inarching of mangoes.
- (iii) Sow seeds of *ber*, lime, *khatta* (*jatti khatti*, rough lemon), papaya and mulberry in seed-beds.
- (iv) Water all fruit trees. Give only a light irrigation if fruits have set.
- (v) Withhold irrigation in citrus trees if they are in flower.

EASTERN WET REGION

States : Southern parts of Assam, West Bengal, Bihar, Orissa, eastern Madhya Pradesh, eastern Uttar Pradesh and north-east Andhra Pradesh.

You will be harvesting papayas and cashew-nuts.

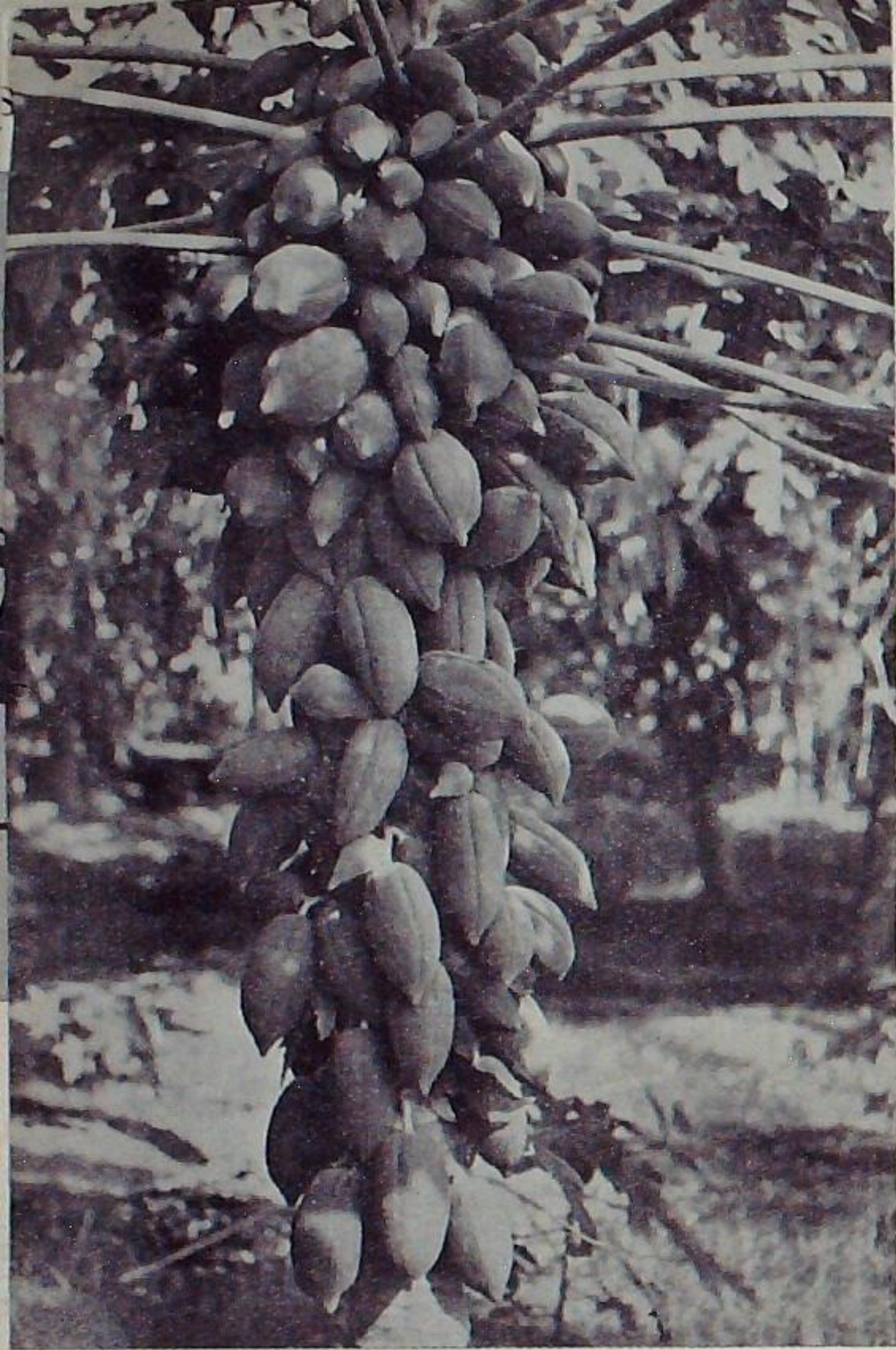
You should also :

- (i) Heavily irrigate pineapples, peaches and bananas.
- (ii) Spray Bordeaux mixture to control soft rot of jackfruits.

SOUTHERN REGION

States : Southern districts of Madhya Pradesh, western Andhra Pradesh and Madras, eastern parts of Mysore, Maharashtra and Madhya Pradesh.

You will be irrigating *phalsa* and mango trees which will now be having marble-size fruits, and banana plantations; and also harvesting fully ripe bunches of grapes.



Too many papayas ; they need thinning

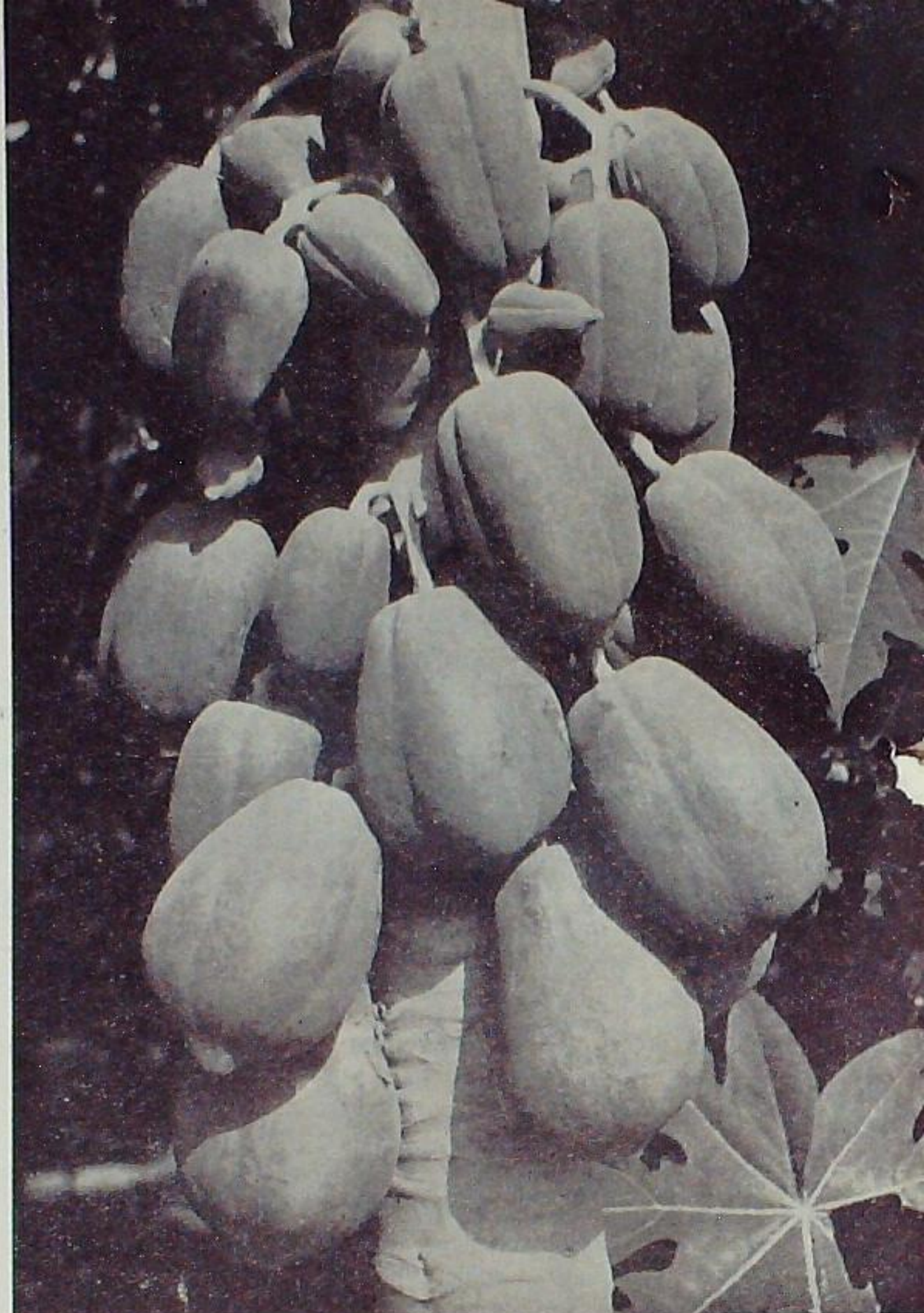
You should also :

- (i) Thin out papaya fruits and remove the male plants.
- (ii) Nip off terminal shoots of grapevines at 'Mandhwa' or 'Pergola' level, and allow two side branches in opposite directions.

COASTAL REGION

States : Strips bordering the Eastern and Western Ghats, parts of Mysore, Madras and Kerala.

You will continue to harvest breadfruit, start harvesting cashewnut and jackfruit.



Properly thinned, the fruits grow uniformly and bigger in size

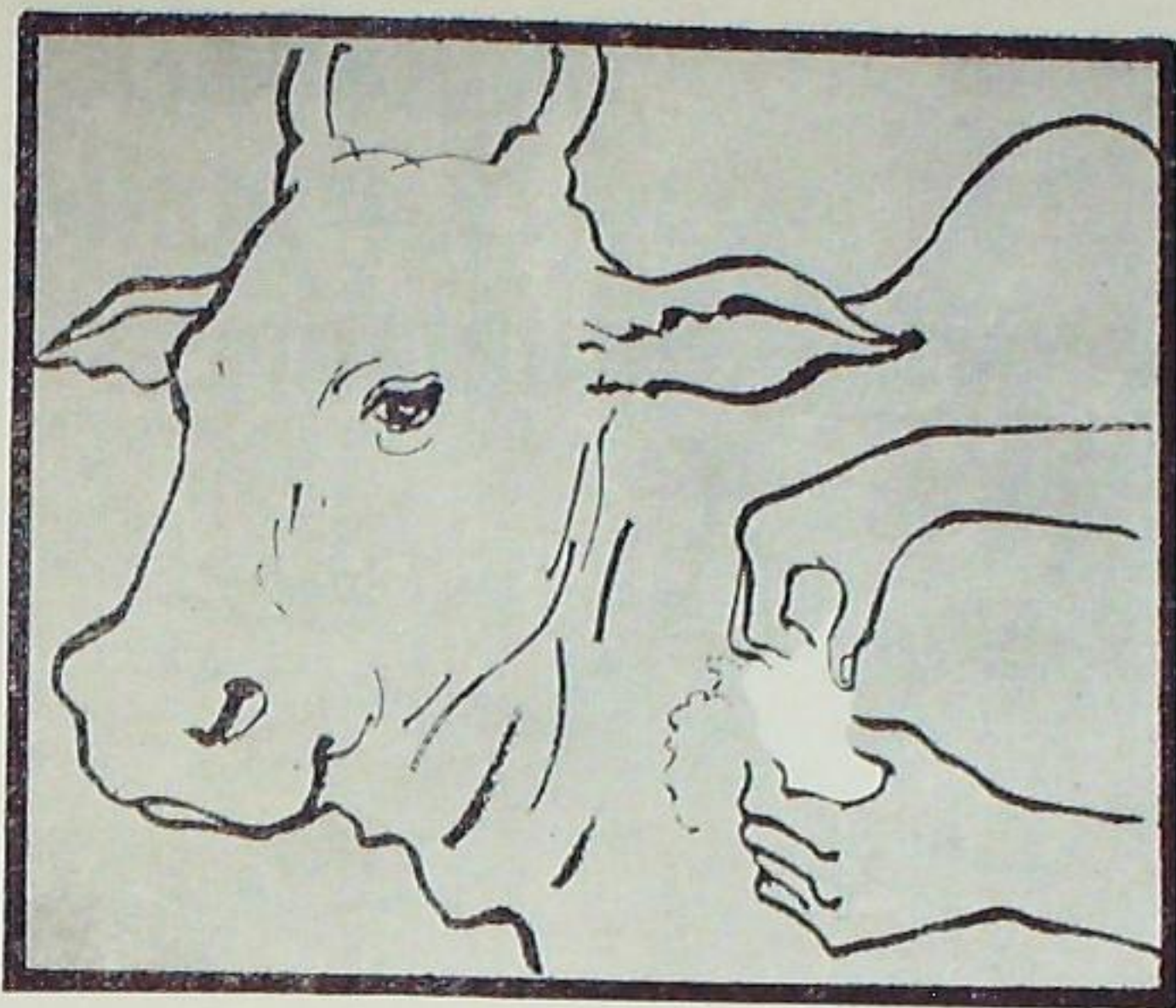
You should also attend to :

Breadfruit

- (i) Dig near the grown-up trees to get root cuttings for propagation.
- (ii) Plant root cuttings in well-prepared sandy beds and water them regularly.
- (iii) If the weather is dry, continue to water the young plants.

Jackfruit

Separate out the grafted plants.



FIRST AID FOR BRUISES AND WOUNDS

PROMPT FIRST AID CAN PREVENT THOSE
BRUISES AND WOUNDS ON YOUR
ANIMALS FROM TURNING MORE SERIOUS

YOU can't prevent farm animals getting bruises and wounds. Animals fight, they collide against objects, they slip on floors. Your man may mishandle them or you may overcrowd the animals in the shed.

All these, and other things like a barbed-wire fence lead to your animals getting injured.

And you will be lucky if they escape with just bruises, or small wounds.

But even these you will have to treat. Otherwise, there is always the risk of their developing into something more serious.

When you see bruises on your animal, clean those first with a piece of clean cotton soaked in a weak phenyl lotion (use phenyl one part, water 100 parts), or potassium permanganate lotion (one part in 1,000 parts).

Let the bruises dry. Then paint them with an antiseptic dressing. For this, you can use four to eight per cent solution of mercurochrome or tincture of iodine.

Dust the bruises thereafter with a mixture of :

Sulphanilamide powder	1 part
Zinc oxide	2 parts
Boric acid	3 parts
Starch	4 parts

or

equal parts of —

Powdered borax (<i>suhaga</i>)
Powdered wood charcoal (<i>koyala</i>)
Powdered alum (<i>phatkari</i>)
Powdered copper sulphate (<i>nila thotha</i>)

FOR WOUNDS

When you see an animal having wounds, secure it first, so that it may not have further injury.

If there is bleeding, try and stop it. This you can do by plugging the wound cavity with some cotton wool dipped in an antiseptic lotion or by applying tourniquet above the wound.

Clip the hair around the wounds ; remove all dirt sticking on the wounds ; clean them well with an antiseptic lotion. Let the wounds dry.

Dress the wounds next with an antiseptic like tincture of iodine, carbolized oil, *nim* oil, or sulphanilamide powder or ointment (1 in 8).

Don't use strong antiseptic lotions. These will do more harm than good.

Cover the wounds with some cotton wool, and bandage, if necessary.

Do not renew the dressings too frequently.

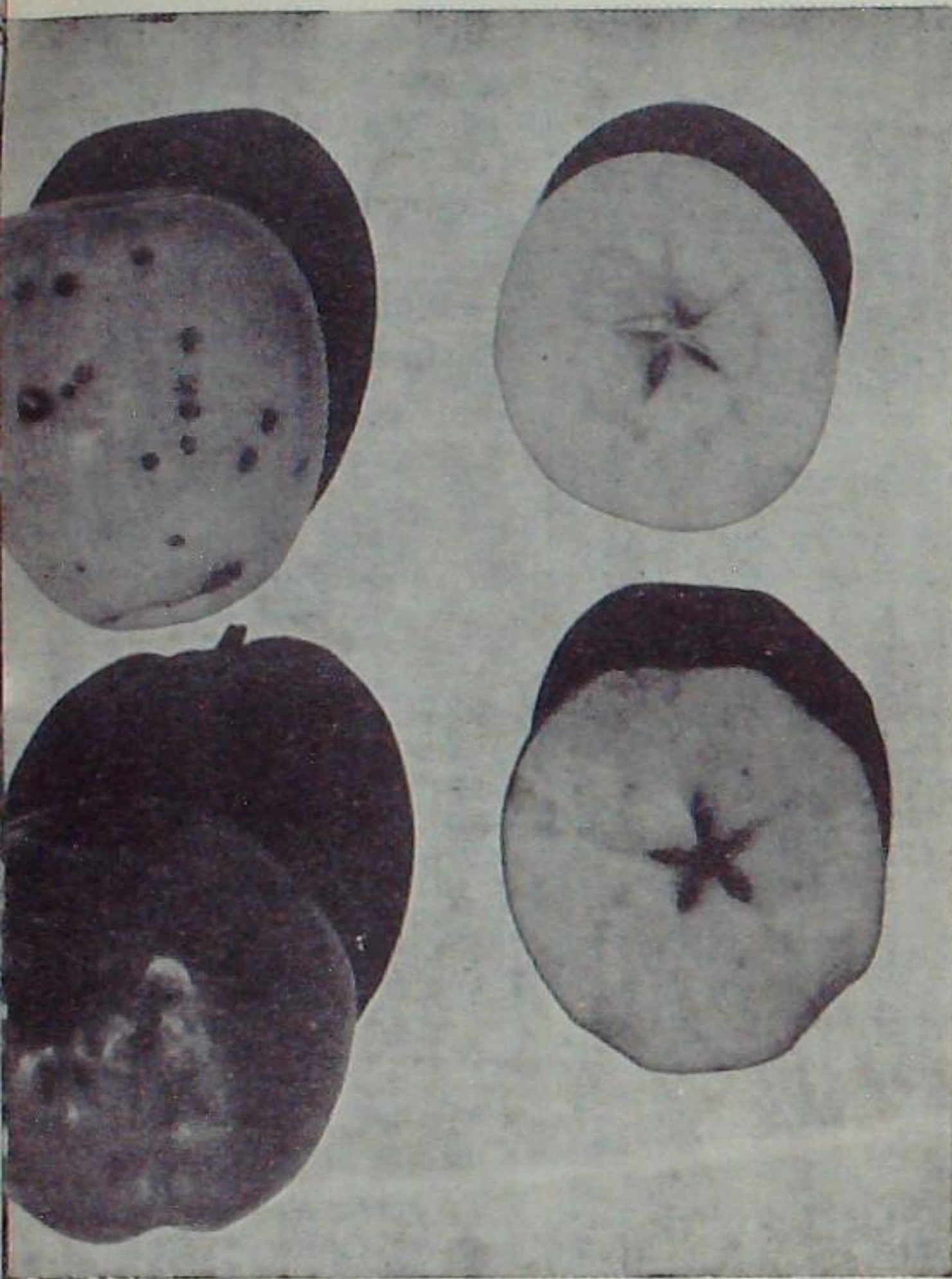
Keep the animal in a clean shed. See that flies don't sit on the wounds and lay eggs.

In case the wounds are large, seek the help of your veterinary doctor.

BORON HUNGER CAN RUIN YOUR APPLES

Like other crops, apples too suffer if they don't get the boron they want. A spray with borax, however, will set them right

By A. K. DUTT



Apples from boron-deficient trees show 'internal corking' and 'external corking' and cracking of the rind



RECENTLY, I saw a few apple trees in the Chaubatia Government Gardens, Uttar Pradesh, showing some hunger signs. The signs were seen on the leaves, twigs and fruits. These showed that the trees were suffering for want of boron, a 'minor' plant food.

As in Chaubatia, apples elsewhere also sometimes suffer for want of boron. When they do, there is less of fruit, the fruit-quality becomes poor, and life of the trees is cut short.

The signs which apple trees show, when there is a shortage of boron, are :

- The bark gets rough and split.
- Leaves growing on the twigs of the current season curl and fall off, leaving only a few small, deformed ones near the tips.
- There is die-back of twigs and branches.

Earlier in the season, soon after petal-fall, fruits develop water-soaked areas on their surface, which later turn hard and brown, giving a cracked and uneven look.

Similarly, the flesh of the fruit also develops corking and cracking. This condition generally develops from two weeks after petal-fall to harvest.

Fruits which develop such symptoms early in the season, get deformed and drop off. If these appear later, the fruits though do not lose shape show large diffused brown patches all over. Sometimes apple trees show one group of symptoms and sometimes another set of it.

When you see these signs, you know that your apple trees are not getting enough boron from the soil or the manures you apply. Hence, you have to supply the boron they need by adding borax to the soil or spraying it on the trees. The spray is more effective.

To prepare a spray which can safely be used, mix borax at the rate of two ounces in four gallons of water.

Spray either when the plants are dormant just before the flush sets, or at fruiting with the petal-fall. Experience will tell you when to spray in your orchard.

When borax is applied to the soil, 8 to 12 pounds of it will suffice per acre. Use the higher dose for heavy-textured soil and which has high organic matter. Mix this small amount with the soil or manure and then apply.

The best time to apply is winter or early spring.

Borax, commonly called *sohaga*, is available in village shops. You can get it at Re. 1 to Rs. 1.50 per seer. In all you may have to use ten rupees worth of borax for an acre.

However, don't apply borax as a routine practice.

Be careful when you apply nitrogenous fertilizers. Too much of them may lead to a shortage of boron.

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If it's Guinea, it is a good fodder grass

*They always grow Guinea when they want
a good fodder yield*

By P.C. RAHEJA

GUINEA is a perennial fodder crop which farmers always prefer to grow on sewage and dairy farms.

It is a grass that gives a good juicy fodder all the year round. It goes on growing as long as it gets enough moisture.

Though Guinea needs a rich soil to give heavy yields, it comes up on any type of soil so long it is not water-logged. You can even grow it where you cannot take any other crop. This is how you grow Guinea.

Prepare the land well. Apply five to ten tons of cattle manure per acre and mix it with the soil.

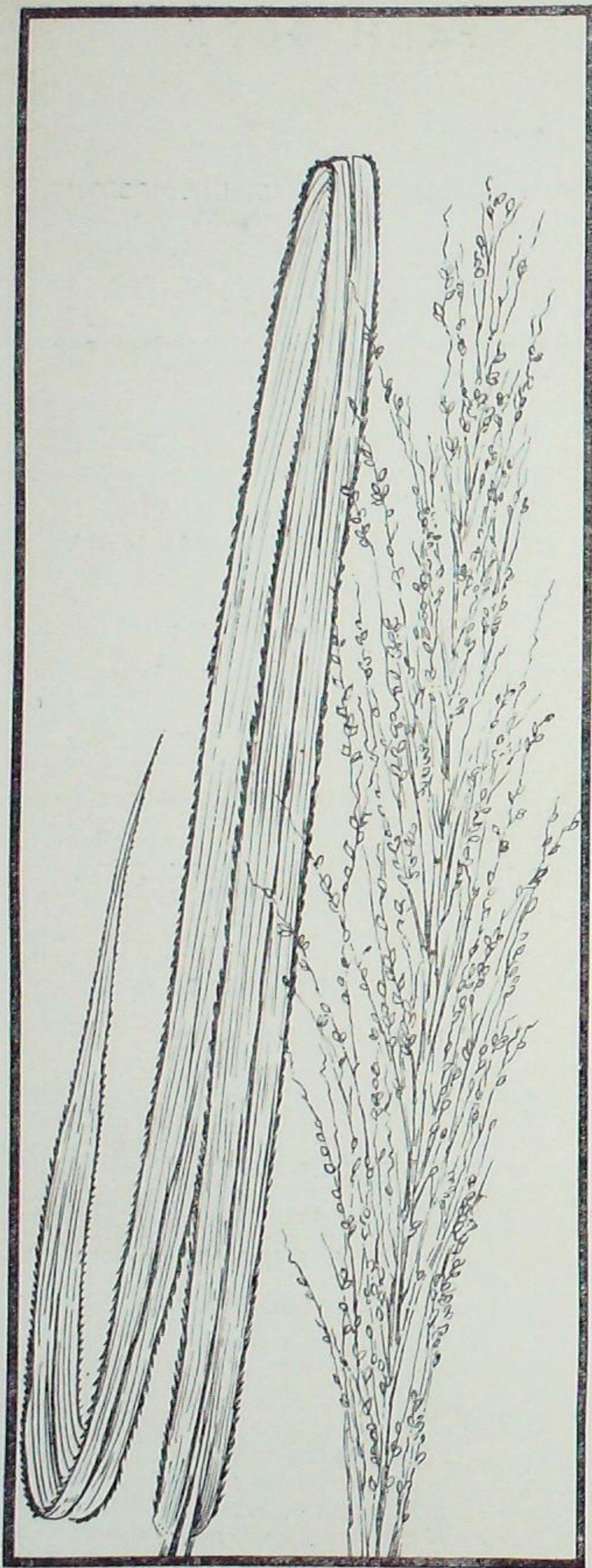
You can either plant slips as you do with Napier, or sow seed in a nursery and then transplant the seedlings in the field. For an acre you need about two to four pounds of seed. When seedlings get ready, plant them $1\frac{1}{2}$ feet apart in rows spaced 3 feet apart.

So that the seedlings take root in the monsoon, plant the grass in mid July.

Keep the field free of weeds. Intercultivate the field from time to time, between rows, both ways with a bullock hoe or a rake. This will uproot the weeds and aerate the soil.

If you cannot apply enough cattle manure to the grass, better fertilize Guinea. Give the grass about 200 pounds of ammonium sulphate and 125 pounds of single superphosphate to the acre. Apply these in spring.

Guinea needs a good amount of water. Irrigate once every 10 to 12 days in summer and 15 to 20 days in autumn and winter.





A view of the Madurai Sewage Farm where Guinea grows in abundance

You can take the first cutting three months after planting the setts. In the North, it is taken in March and the following ones after every four to six weeks.

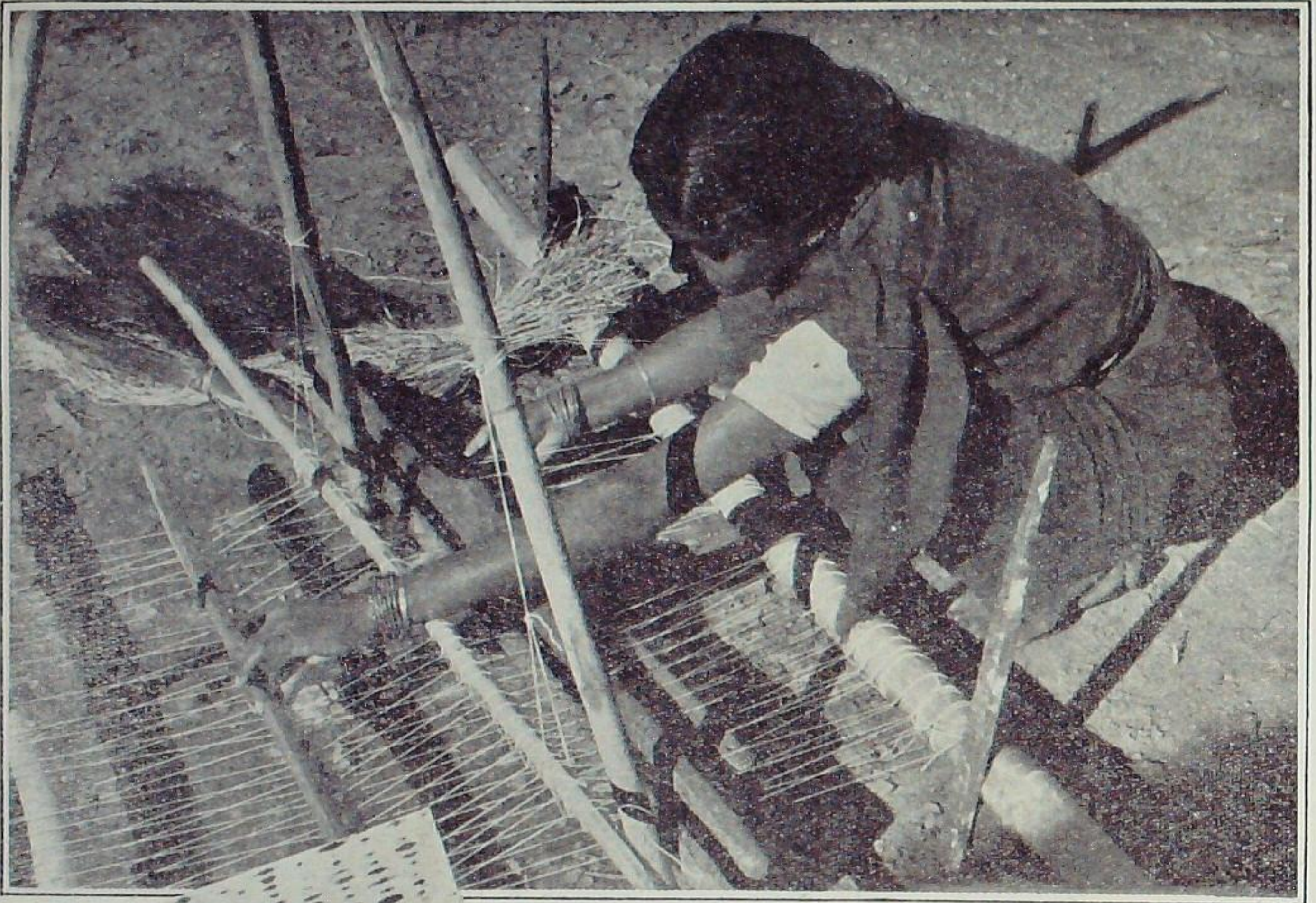
With Guinea, it is important to cut the grass very close to the ground.

Never allow the grass to get woody. The

oftener you cut the better will be the outturn.

During the rains there will be a surplus of green fodder. You can then prepare a good silage out of it.

When you go in for Guinea, you can be sure of a good supply of fodder for your cattle during the season when fodder is scarce.



THERE IS MONEY IN MATS

MAKING MATS MEANS AN EASY, YET INTERESTING WAY OF
ADDING TO YOUR HOME INCOME

By T. MAHALAKSHMI

YES, mats will get you a good daily income. If you are free, you can weave a mat a day. If you are not, spare just two hours a day on weaving a mat, and in four days you have a mat you can easily sell for four rupees.

For weaving these mats, you will need to invest ten rupees for your equipment; and the material weeds and agave,

you can have for nothing in the village.

Here's the equipment :

1. Sickle
2. Knife
3. Needles
4. Four wooden pegs (each 2 feet in length)

5. Three pieces of bamboo, each of 5 feet length and $\frac{1}{2}$ inch diameter
6. Three pieces of bamboo sticks, each of $4\frac{1}{2}$ feet length
7. Tripod stand of bamboo sticks
8. Wooden planks with holes (weaving loom)
9. Wooden spindle
10. Wooden shuttle of 5 feet length, 1 inch width and $\frac{1}{2}$ inch thickness with a hole at one end (Fig 3.S)
11. A thick wooden plank of *Erythrina*
12. A piece of bamboo with sharp edges

Any level, shady plot, nine feet by eight feet, would be suitable for working the loom.

Steps in weaving

- Collection of raw materials
- Installation of loom
- Weaving
- Bordering

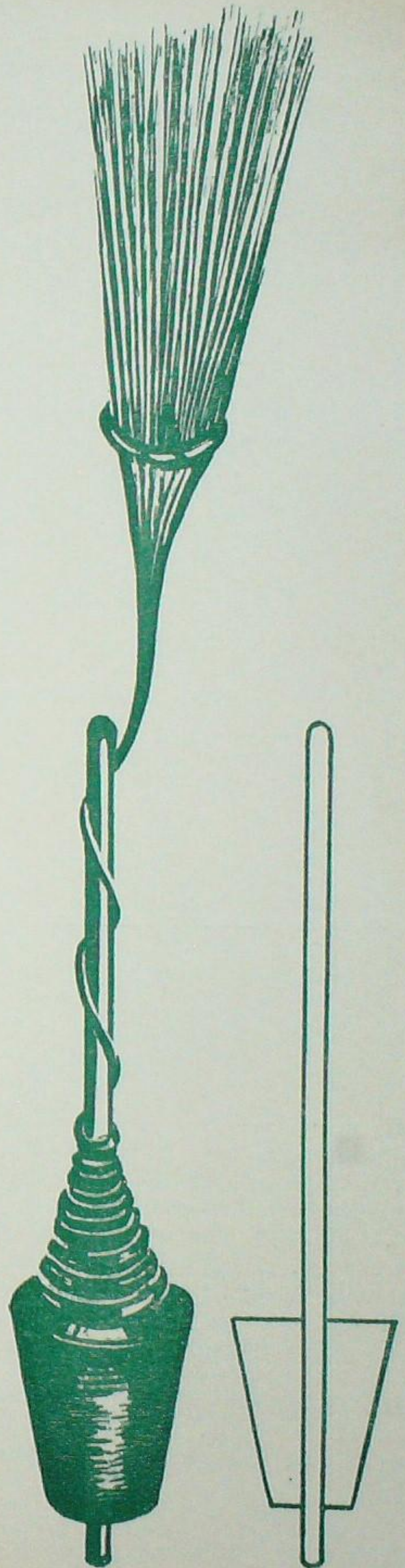
COLLECTION OF RAW MATERIALS

Get the weeds and cut them lengthwise into halves. After drying, tie them into bundles. Get agave and remove the fibres from it by rubbing it on the *Erythrina* plank with a piece of bamboo with sharp edges. Separate the fibres to remove any knot, and tie them. Prepare the string by twisting these fibres with two wooden spindles. Wind the string into a ball (a thick and strong cotton thread can also be used instead of the agave string).

Now the materials are ready.

INSTALLATION OF LOOM

Step I. Fix the four wooden pegs A, B, C and D on the four corners. Let the distance between AB and CD be $4\frac{1}{2}$ feet and the distance between AC and BD 9 feet (Fig. 1).



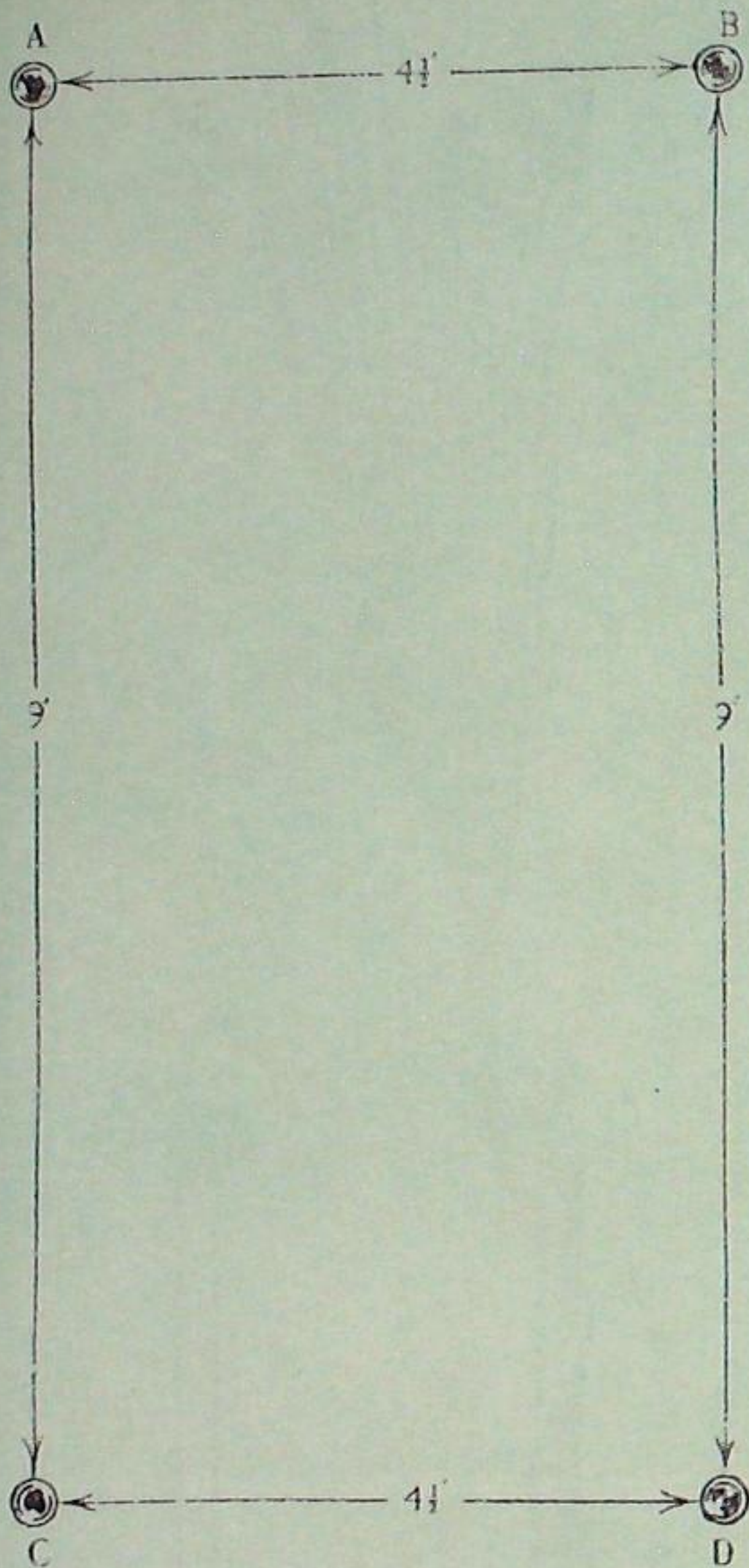


Fig. I

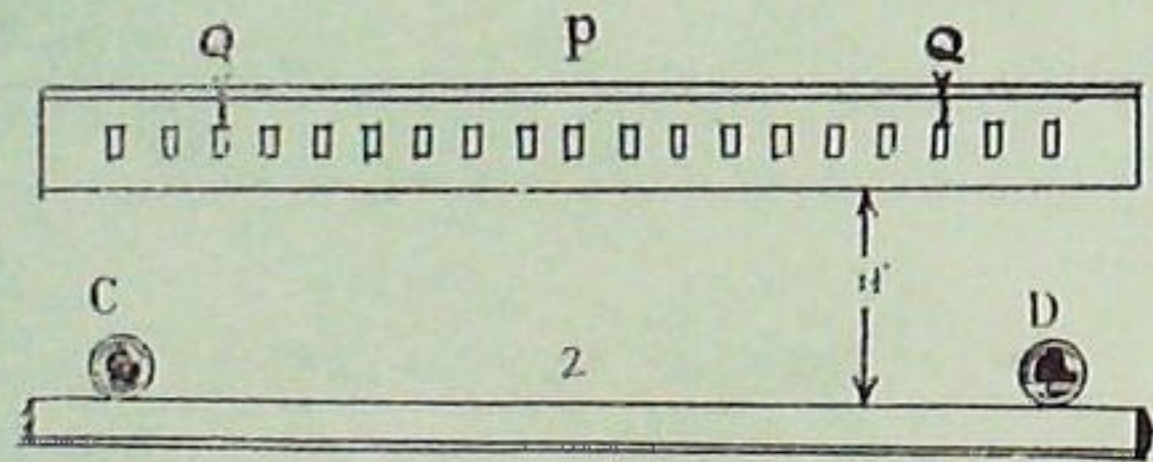
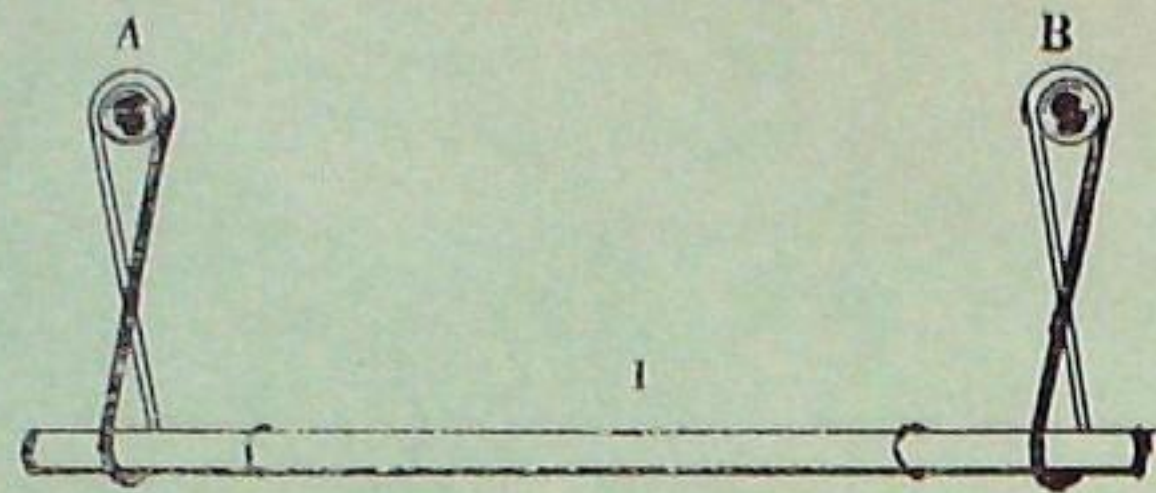


Fig. II

Step II. Keep one piece of bamboo of 5 feet length behind the pegs A and B (Fig. II 1) and the other piece behind C and D (Fig. II 2). Let the distances between 1 and A B be $1\frac{1}{2}$ feet. Tie 1 to the pegs A and B with a piece of rope. Erect a piece of stick in the rope to make it tight or loose while weaving (Fig. III X).

Step III. Keep the wooden plank (loom) in front of 2 in Fig. II. Let the distance between 2 and the loom be $1\frac{1}{2}$ feet (See Fig. II P).

Step IV. Mark the width of the mat to be woven on the loom by tying a piece of thread (Q and Q) to the loom on both the ends through the holes on the loom as shown in Fig. II.

Step V. Prepare the warp by passing the string from the bamboos 2 to 1 through the holes of the loom P. Let the strings towards 1 pass over it and let the strings towards 2 pass over your left hand palm. Tie the strings that are over your palm to 2 with a thick thread by passing it through the strings and over the bamboos 2 (Fig. III).

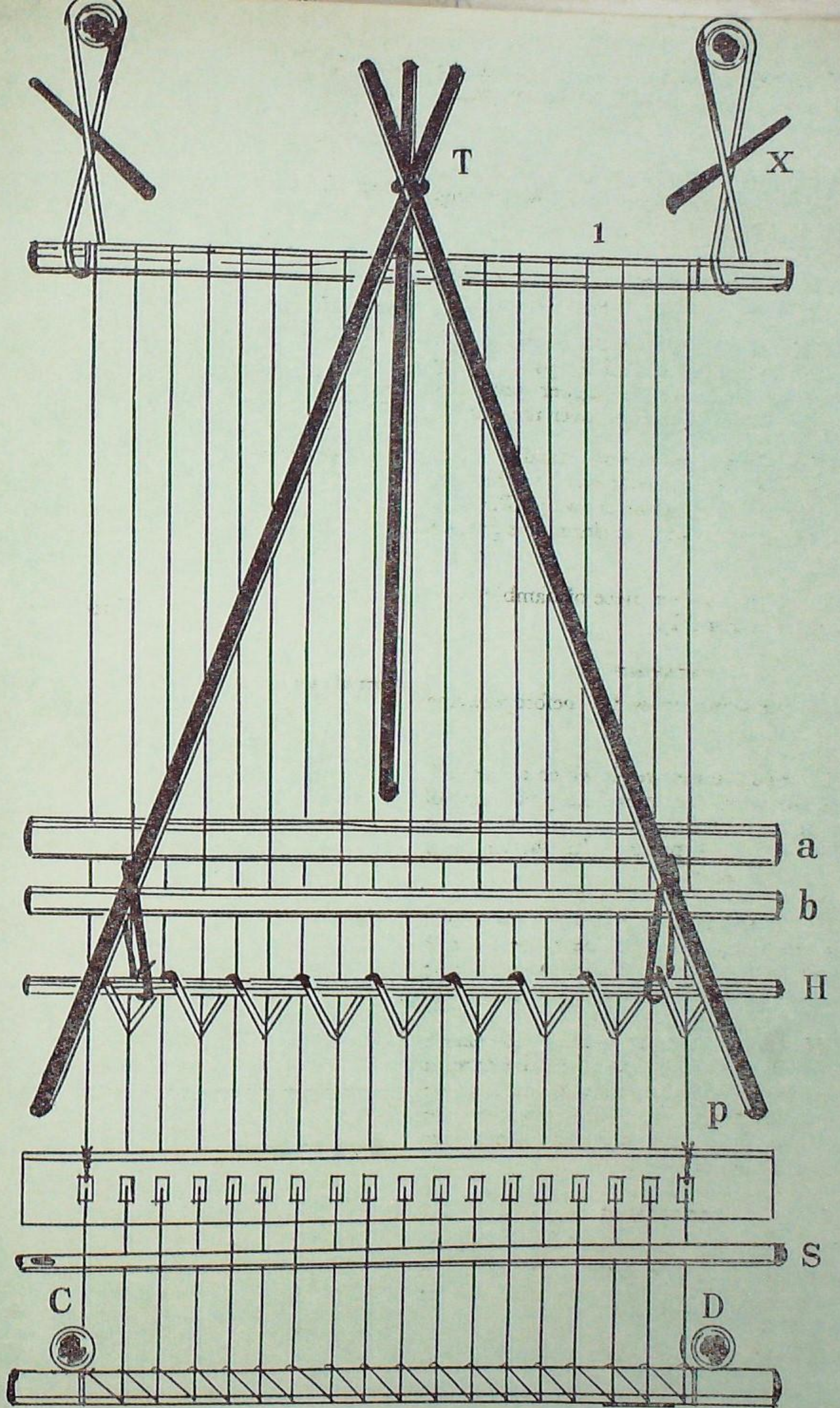


Fig. III

Now there are two rows of strings—upper (strings which are above 1) and lower (which are below 1).

Step VI. Insert a piece of bamboo of 5 feet length inbetween the upper and lower strings (Fig. III a).

Step VII. Place another bamboo stick of 4½ feet length over the warp (Fig. III H).

Step VIII. Tie 'H' to the lower string with a piece of thick thread. This helps in lifting the lower strings above the upper ones (by pressing the bamboo stick 'b' over the warp).

Step IX. Keep the tripod stand as T in Fig. III. Tie the two ends of H to the two feet of the tripod stand as shown in Fig. III. This is to lift the warp up from the ground level.

Step X. Keep another piece of bamboo over the warp (b in Fig III).

WEAVING

Dip the weeds in water before weaving them.

Step I. Pass the wet weeds which act as weft through the warp by introducing one end of the weeds into the hole in the wooden shuttle (S in Fig. III) and passing the shuttle from one end to the other.

Step II. Push the loom P towards the weeds. During weaving, bring 'a' near the loom P and press 'b' over the ward alternately: Weave the mat to the required length.

Step III. After finishing weaving (to remove the mat from the loom), cut the thick threads that were tied to the bamboos 2, and remove it. Cut the strings that are towards the bamboo 1, and put knots so that weeds from the mat will not come off.

BORDERING

After removing the mat from the loom, the weeds on the edges should be scraped a little with a knife so that the mat can be folded easily.

Step I. Take a thick thread and tie one end of it to your left toe and keep the other end below your right foot. Place the mat which has to be bordered below the thread.

Step II. Fold three or four weeds over the thread at one side and tie a knot with a piece of string. Continue this till the weeds are folded and tied.

Step III. Cut off the ends of the weeds with a knife. Now the mat is ready.

You will have to incur the following expenses.

Initial expenses :

Cost of the loom	... Rs. 5.00
Cost of the bamboos	... Rs. 1.50
Cost of the shuttle and spindle	... Re. 1.00
<i>Total</i>	... <u>Rs. 7.50</u>

Cost of raw materials for one big-size mat :

Cost of weeds	... Nil
Cost of strings	... Nil (if agave strings are prepared and used)
do.	... 50 nP. (if cotton thread is used)
Cost of colours	... 6 nP.
<i>Total</i>	... <u>56 nP.</u>

Our Cover Picture Interculture, with a plough or *mamutty*, is important to the coconut. It will keep down weeds, prevent surface matting of roots, and increase yields. In the loamy soil of Agricultural Research Station at Kasargod (Kerala), the yield of coconut went up 170 per cent with a regular ploughing of the plantation.



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To the children of Janoli village in the Kumaon Hills of Uttar Pradesh, a dream has come true, thanks to Gram Sevika Maya Devi. Till Maya Devi came on the scene, the children had been woefully neglected. After her advent, not only have the children learnt to read and write but also to sing and make beautiful toys.

Zealous social workers like Maya Devi are bringing about a silent revolution in the country by guiding women and children to a happier and healthier life. By training the children, they are helping to build a New India.

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PLENTY AND SECURITY**

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