PLATE 1.—*Hilling up new yam garden.*

AGRICULTURAL YEAR AT YABOB VILLAGE

J. R. VICARY

In August, 1948, the author, District Agricultural Officer at Madang, and his staff began a systematic series of observations of native agriculture at Yabob Village, near Madang. The area surveyed was only a short distance from a major centre of population and the time of the survey was during the period of postwar reconstruction, so it was thought likely that methods of agriculture would have changed. However, a shorter observation made in 1960, a description of which follows the main article, shows that the basic native agriculture is substantially the same. As a systematic record of native agriculture at a particular time, Mr. Vicary's account, written in 1949, is published for its general interest and to ensure that it receives a wider circulation.

THE village of Yabob, about four miles from Madang and about two miles from the District Agricultural Station, was selected as a suitable and convenient place in which to study native agricultural methods. The gardens are situated about a mile away from the village. A regular time—each Tuesday afternoon—was set aside for the visit to the village and either the D.A.O. or the cadet, or on some occasions both, visited the gardens each Tuesday, except on the few occasions when other work prevented it.

The natives as a whole were most co-operative and seemed proud that Agricultural Officers were evincing interest in their gardens and their methods of working them.

NOTES ON VILLAGE

Village organization

The Yabob population in 1948 numbered about 200 and was made up of the people of Yabob and the people of Kesup, a small village, which before the war was situated a few miles away. After the war, the Kesup natives abandoned their village and moved into Yabob. The people had seen Australian cities and military camps during the war and had decided they would probably be better off if they pooled their manpower and resources. However, they have since decided that their pre-war style of living in small villages is more to their liking.

Consequently the Kesup people have begun drifting back to their old village area to set up their own village and gardens.

House style

Houses in the village are all raised about 4 feet 6 inches off the ground and the average size is 30 feet by 15 feet. Most of them consist of two rooms and a verandah. House stumps are hardwood, but floor joists, rafters, studs and other construction members are either hardwood or softwood. The flooring is limbom palm and the walls are made of the midrib of sago palm, about 6 feet high. Leaf of the sago palm is used for the roof, which has a ridging of kunai grass.

Houses are laid out in an orderly fashion and are surrounded by small gardens of coleus, hibiscus, Chinese rose, crotons and bananas.

Young unmarried men have a separate house, but there is no house for single girls.

Transport

There is a good coronas (coral rock) road from Madang, but the road ends at the Gum River, the village boundary, which is not passable to wheeled vehicles. The people own no vehicles and women do all the carrying. When firewood or coronas is sold it is picked up by the buyer's truck. Every Saturday morning a privately-owned truck picks up produce for the Madang market. A few small canoes are owned, but they are not used to carry produce.

Land inheritance

Normally the male offspring inherits land, but if a man dies without a son his daughters may inherit a little land if they stay in the village. They lose this land if they marry into another village. If a daughter marries, either from her own village or outside the village, and continues living in Yabob, the husband can work the land but does not own it. However, on the husband's death, the land passes to his sons.

Trade

The main trade of this village is in garden produce to Madang for both Europeans and natives, in clay cooking pots and in the sale of coronas and firewood. Coronas brings in about £150 a year, while firewood returns about £25. It is estimated about 40 tons of garden produce a year goes into the Madang weekly market.

PLATE 2.—*Yabob headman's house.*

The people are not canoe-makers and the few canoes they own have been bought, either from Siar Village, a few miles north of Madang, or from Kranket Island, at the entrance to Madang Harbour.

The main article of native trade is the clay cooking-pot, which the women make from either red or black clay. The women dig a suitable clay, pick out the small stones, mix water and black sand with the clay and allow it to dry a little. Next they roughly shape it into a solid piece, then use a water-worn stone held in the pot

PLATE 3.—*Pre-firing of clay cooking pots, a Yabob industry.*

and a flat board outside to shape the pot. The pots are sun-dried for about two weeks and placed in a house for two to four weeks. They are then painted with a bright red-brown puddled clay and firebaked. Six sizes are made and they sell from a shilling to 12 shillings each, although most of them are bartered for other goods such as skirts, carrying bags, canoes, pigs, wooden plates and meat, such as fish and fowls. One woman can turn out from 10 to 12 pots a week.

Dogs' teeth and boars' tusks are still used as currency and although prices vary a shilling for a dog's tooth and 10 shillings for a boar's tusk would be average prices.

VILLAGE GARDENS

Half-way through the period of observations, 10 different garden areas were being worked, eight of them being new gardens started in the current season and two of them old gardens, started in 1947.

Each year new ground is cleared and planted and these gardens are worked only for about 18 months. In 1947 they had two large gardens totalling 20 acres and many individual gardens covering about six acres, a total of 26 acres of garden.

In 1948 eight new gardens covering 40 acres were made and the small individual gardens were abandoned, so at the half-way period of the observations there were 40 acres of new garden and 20 of old garden for a total of 60 acres.

The gardens are worked so that each is under cultivation during two wet seasons and one dry season. For instance, in August, 1948, it was estimated there were 26 acres under cultivation. In December there were 60 acres. In August, 1949, there were about 40 acres. In spite of the population decline through the departure of Kesup people, twice as much land was prepared in new gardens in 1948 compared with 1947. The largest garden at the half-way time was one jointly owned by Yabob and Kesup, which covered 15 acres. It comprised a flat planted in taro and a ridge with a south-west aspect under mami. Additionally, the Yabob people made six smaller gardens covering about 20 acres, while the Kesup people had made a single five-acre garden.

System of working

The "councillor in charge of gardens" is the person who selects the areas for the new gardens and decides the times for working them. Men, women and children start the clearing and work together until the area is entirely cleared and marked out into plots. The planting may be done either by the family responsible for the plot, or it may be a communal job. Once started, the plots become the responsibility of the family to which they have been allotted and each family does its own tending and harvesting.

The gardening calendar is worked out according to the seasons, which are the wet north-west from January to June and the comparatively dry south-east from July to December. July is normally fairly dry, so the clearing of the garden

is started then. One of the new gardens started in July, 1948, was chosen as the subject for study.

Women and children started clearing the undergrowth with knives and when this was completed the men cut down the timber leaving stumps about four feet high, which were not grubbed out. The only timber removed was the limbom palm which was cut for flooring and some straight poles for house building. Everything else was left lying on the ground. Secondary growth was heavy, as the ground had not been used for about 10 years.

During August, the cut timber and undergrowth dried out and no work was done in the new garden.

Early in September, the trash was considered dry enough and fires were started. After the first fire had swept through, some trunks were kept for marking out plots, then everything else was cut, stacked and burned again. This left only the larger logs, which were later cut for firewood for sale.

The garden was not fenced as, although there were some wild pigs and deer, they appeared to do little damage. The people do not plant sweet potatoes or tapioca in the early stages as they claim these crops attract pigs and the effort of fence building is not justified by the little extra variety in diet which sweet potatoes or tapioca would give.

Immediately after the fire, tobacco was sown. This was done by tying a whole head on to a pole about 10 feet long with about three feet of twine. The poles were then stuck in stumps and the wind scattered the seed on to the ashes. The seed was not covered by hand and germinated after the first rain.

The new garden, of about 3½ acres, had a south-westerly aspect, with a sharp rise of about 35 feet towards the centre. It was decided to plant the high portion under mami as the main crop and the lower portion predominantly with taro. However, both major crops were to be interplanted. Marking out the plots began immediately after the fire. Three straight paths were made through the garden and individual plots were then laid out and marked by timber lying on the ground. One man was allowed to own more than one plot in a single garden and could also own plots in several gardens.

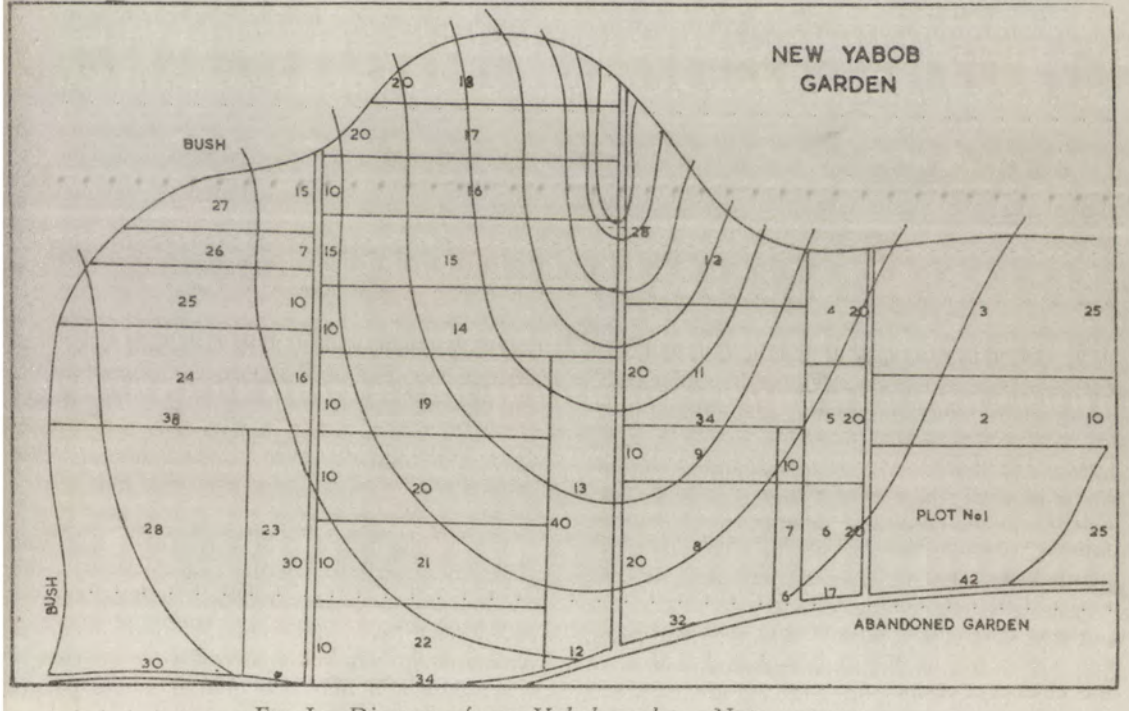

FIG. I.—*Diagram of new Yabob garden. Note contours.*

Planting of taro, banana and maize began in September while burning and marking of plots was still going on. The taro suckers were spaced about two feet by two feet and planted by being placed in a hole about a foot deep, made with a digging stick. Soil was not immediately filled in around the sucker because the people say the taro sucker rots if soil is filled in and consequently the hole must be left open for about a month. The banana suckers and maize were planted haphazardly through the taro. The banana was also planted in a hole made with the digging stick, but, unlike the taro, the earth is tamped around the sucker.

Mami is planted after it has begun to shoot, but if the stored mamis have developed long shoots, these are usually broken off just before planting so that a strong new shoot is on the tuber. A shallow hole is made and according to size one or two mamis are placed in this, shoot up. A mound two feet across and one foot high is then made, with holes over the tubers. The centres of the mounds are three feet apart, so that the edge of one mound almost touches the edge of the next. The mounds are never made before the mami is planted.

Most of the small amount of yam which was planted consisted of whole small tubers, but a few large ones were cut to eyes and used. A shallow hole was made and the yam placed in this and covered, no mound being made. The reason given for this was that yam tubers tend to grow downwards and therefore need no mound while mami tubers tend to grow upwards and need a mound of soil.

PLATE 4.—*Fenced taro garden.*

By the end of September, all the taro had been planted and sugar-cane, pineapple and "pit" (*Saccharum edule*—a wild sugar-cane with an edible inflorescence) were being planted.

Most of the native gardeners planted sections of sugar-cane three nodes long, half in and half out of the ground at an angle of 45 degrees. Long sections of the top of the cane were also planted, but in some cases a short piece of cane was laid flat and completely covered.

Early in October a start was made planting yam and mami on the higher ground. Most of the crop was mami and only a little yam was planted.

When planted, a thin three-foot stick was placed near each set for the first shoots to grow on, but this was later replaced with a heavier and longer pole. A second crop of mami is sometimes grown but a second crop of yam is never grown in the same ground as the people claim it is too hard on the soil.

In early November, mami, corn and bananas were still being planted and a few climbing beans and watermelons were also being put in. At the end of November nearly all the garden was marked out and planted. It consisted of taro on the lower portions, mami on the rise, with a few yams and interplanted with both were bananas, maize, watermelons, beans, sugar-cane and some self-sown papaws. From the time timber-cutting started until the garden was fully planted had taken five months. The garden was producing its first picking, the early maize, cucumbers, watermelons and beans.

In December, the eight-foot poles were placed for the mami vines to supplement the shorter sticks. The poles were placed on the edge of the mound and one pole served two mounds. A few poles were placed for yams, but mostly the small yam planting was left on the ground without any support. A little taro and maize were still being planted.

In all, the garden looked very well as mami and taro were making good growth, a few maize plants held some well-filled large cobs and, as it was a new garden which had been under bush, there was no growth of grass or weeds. The "pit" was growing well around the outside of the garden, where it had been planted because of its rank growth.

During January the garden produced maize, cucumbers, watermelons and aibika. Very few weeds were showing and those which appeared were pulled out. A little mami was still being planted and taro was being placed between the mami mounds.

In February the produce consisted of maize, watermelons, cucumbers and aibika. A few tomatoes and beans were also planted but most of the garden work had been completed by this month.

PLATE 5.—*A mami garden. This is one of the Yabob staples.*

March saw the harvesting of some of the taro, one of the two main crops and also maize, melons, cucumber, aibika and beans. Maize was planted in some places where the taro had been dug and some taro was planted where the maize had finished. A few peanuts also were sown.

During April the rest of the main taro crop was dug early in the month and other produce included melons, aibika, tomatoes and beans. There was no maize. Nothing more was planted in this month and as the garden was still free of weeds the only work was the gathering of produce.

In May, a little taro and some tomatoes and aibika were produced but nothing was planted.

During June a little taro and maize was produced and a few of the early yams and mami were dug. Again nothing was planted. This month the garden started to deteriorate as grass and weeds appeared, particularly where the taro had been and no attempt was made to keep this part of the garden clean.

In May and June production was low as this was the time between the two main crops of taro and mami. It was augmented by produce from the old (1947) garden which, during these months, produced taro, mami and crops which were not yet coming from the new garden, such as " pit ", sugar-cane, pineapples, bananas and papaws.

During July the second main crop—mami—was dug and other produce included yams, taro, aibika, bananas, papaws, sugar-cane and peanuts. As soon as the mami was dug, the old vines were burned and taro was planted in the mounds. As the 1948 garden was now producing bananas, pineapples, papaws and other mature garden crops, the old garden was abandoned and a start was made on clearing for the 1949 garden.

OLD (1947) GARDEN

When the 1948 garden was commenced, the 1947 garden was in full production and supplying the village with food. In August, 1948, some yams and mami were being dug and the natives said these staples were not yet mature, but were being prematurely harvested to maintain a continuous food supply. Taro was also being dug and eaten. Maize was being gathered and the garden was also supplying sugar-cane, " pit ", beans, pineapples, tobacco, melons, cucumber, aibika, tomatoes, bananas and papaws.

During September most of the remaining mami and taro was dug. Some of the taro was taken for planting in the new garden while some was replanted in the old.

In October and November mami was replanted in the same mounds from which it had been dug and taro was interplanted. No yam was replanted.

During December, when the rain started, some sweet potato was planted where mami and taro had previously been. Small mounds were made, but the number of runners planted in each mound depended on the individual's own ideas, varying from two to seven per mound. One-third of each runner was planted in the ground and two-thirds was left out.

A little taro was replanted but most had been planted in the new garden. No maize was being planted as it was all going into the new garden. At the end of December the old garden contained mami, taro, " pit ", sugar-cane, pineapples, papaws, aibika and sweet potato. Beans, melons, cucumber, maize and tomatoes had finished and were not being replanted. All were now being put in the new gardens.

The old garden was still being weeded, but was not receiving much attention as all the work was going into the new gardens.

PLATE 6.—*Yams trained on vines attached to tr*

TABLE I.

YABOB VILLAGE—GARDENING CALENDAR.

Month	OLD GARDEN		NEW GARDEN	
	Planted	Harvested	Planted	Harvested
(1948)				
August	Taro, maize, melon, tomato, beans.	Taro, yam, mami, maize, sugar-cane, pit, beans, pine-apple, melons, tobacco, cucumber, aibika, tomato, banana, papaw.	Tobacco, taro, banana, maize.	Nil.
September	Taro.	As for August.	Taro, maize, cucumber, melon, banana, aibika, sugar-cane, pit.	Nil.
October	Taro, mami.	Taro, maize, sugar-cane, pit, beans, pineapple, tobacco, melons, aibika, tomatoes, banana, papaw.	Mami, yam, melons, cucumber, banana, beans, maize.	Nil.
November	Taro, mami.	Taro, sugar-cane, pit, pine-apple, aibika, banana, pa-paw.	Mami, yam, melons, cucumber, beans, maize.	Maize, beans, melons, cucum-ber.
December	Taro, sweet potato.	As for November.	Mami, maize.	Maize, beans, melons, cucum-ber, aibika.
(1949)				
January	Taro.	As for November.	Mami, taro.	Maize, cucumber, melons, aibika.
February	Nil.	As for November, with sweet potato.	Tomato, beans.	Maize, melons, aibika, cucum-ber.
March	Nil.	Taro, sugar-cane, pit, pine-apple, aibika, banana, pa-paw.	Taro, maize, peanuts.	Taro *, maize, melons, aibika, cucumber, beans.
April	Sweet potato.	As for March.	Nil.	Taro *, melons, aibika, tomato, beans.
May	Nil, planting and weeding stopped.	As for March.	Nil.	Taro, aibika, tomato.
June	Nil.	As for March, and mami.	Nil.	Taro, aibika, mami *, yam, papaw, maize.
July	Nil.	As for March, and sweet potato.	Taro.	Mami *, yam, taro, aibika, banana, papaw, sugar-cane, peanuts.
				* Main crop.

Planting of new crops in the old garden continued until April, 1949, when it was nearly two years old. In July it was apparently rapidly returning to secondary growth and had become a tangle of kunai, saplings and scrub. Scattered through the regrowth was taro, sweet potato, aibika, papaws, bananas, sugar-cane, "pit" and pineapples, all of which were struggling for existence. At this stage the garden was abandoned and its produce was left for birds, flying-foxes and the occasional passer-by.

LABOUR IN GARDEN

The observations of the new garden were started on 10th August, 1948, just after the first clearing had been completed, so it was not possible to make exact observations of the numbers who had participated. However, I was informed that it took six men, four women and two children 10 days to clear the 3½ acres. Counting children as half units, this would give a total of 110 man days to clear the area.

The most people seen working in this garden at any one time was 11, six men and five women. The average number would be about six—three men and three women. Men do more work during the first four months than at any later stage. Once the clearing and planting has been done, most of the work is left to the women. Children have been seen in the gardens, but they do almost nothing.

Work in the gardens begins at seven in the morning and lasts until five o'clock in the evening. No meal is taken in that time but the workers refresh themselves with water, coconut milk or watermelon. No work is done on Saturdays and Sundays. From July to December, the estimated numbers of man days spent in the gardens are shown in Table II.

TABLE II.

Man days spent in garden per month.

1948		1949	
July	110	January	60
August	Nil	February	10
September	120	March	80
October	120	April	20
November	100	May	15
December	80	June	20
		July	80

Garden tools

In the initial clearing, light axes and bush knives were used. After the fire, the ground was not worked and digging sticks were used to plant taro and banana. A small stick was used to make holes for cucumber, maize and bean seed. Hoes were used to make mounds for mami. The sum of the implements in use was thus half-axes, bush knives, hoes and digging sticks.

GARDENING LAYOUT AND PRACTICES

The 1948 garden was laid out as shown in the plan (Fig. I). The area of approximately 3½ acres was divided by three paths into four sections containing 28 different plots which were looked after by four families containing 20 individuals. On the plan, plots are numbered and measurements are in yards.

Table III shows the contents of the various plots.

TABLE III.

Contents of plots in 1948 *garden.*

Plot No.	Contents
1	Taro, a little maize, self-sown papaw.
2	Taro, a little maize, watermelon and papaw.
3	Taro, a little maize.
4, 5	Mami, a little maize and watermelon.
6	Mami, little maize, melons and bananas.
7	Taro, few bananas, tobacco.
8, 9	Mami, few bananas, little maize, melon.
10	Mami, little maize, tobacco.
11, 12	Mami, few bananas, aibika.
13	Taro, mami, little maize, melon.
14 to 21	Mami, little maize, melon, tobacco.
22	Taro, few cucumbers, beans.
23	Taro, little maize, aibika.
24 to 28	Taro, little maize, melon, corn, cucumber.

Fertilizers

Little use is made of fertilizers or compost. After the initial clearing, everything is burned and when the planting is started the ground is bare and covered with a deep layer of ash. During tending, the weeds are sometimes thrown down where pulled, but usually they are thrown against a stump or out of the garden altogether. Use is made of the extra potash where stumps have been burned out and the humus around rotting stumps by planting beans, melons, cucumbers or tomatoes in those places.

Rotations

The theory of rotation is not understood. The people know, however, that some plants—yams for instance—will not grow two successful crops

in the same ground, so they do not attempt it. However, if a fairly good second crop can be obtained, then it is planted as soon as the first is harvested. This is done in the case of the two main crops, taro and mami.

Fallow or cover crop is not used at all and as stated previously the life of a garden is about 18 months. In this area there is no set time for leaving a garden under bush secondary growth. It may be three years or it may be more than the lifetime of those clearing it.

Storage

There is no great need to store food because gardening in this area is continuous. However, mamis, yams, and a little sweet potato, when it is grown, are kept. Mami and yams kept for food or planting are not stored in special yam houses but on the floor of the gardener's home. Taro is eaten when it is dug.

Seeds such as maize cobs, tobacco heads and so on are placed in woven carrying bags or just tied together and suspended from the rafters over the fireplace. Smaller seeds such as melon, cucumber, tomato and bean are put in tobacco or cigarette tins and again placed high over the fireplace to keep out insects and moisture.

Preparation of crops for foods and sale

The only cash crops are vegetables for the Madang market. Sweet potatoes are washed before being taken in, but mami and taro are merely brushed to remove soil. All other produce is sold as picked.

In cooking, the main dish resembles a vegetable stew. The major ingredient—yam, mami or taro—is peeled and cut up and to this is added beans, Chinese cabbage, tomato, pumpkin, tulip (*Gnetum genomon*), gathered from the bush, aibika and young maize. The stew is boiled in a cooking pot and the liquid is also consumed.

If fish is caught or a wild pig or a bandicoot is shot, this meat is added to the stew. Sea water is not used for cooking, as it was during the war, when salt was not available from local stores.

Eggs are eaten hard-boiled. Dogs and cats are not generally eaten now, although the older men occasionally like some.

The better varieties of bananas are eaten raw. Others are sliced and added to the stew or baked in the fire. Green maize is boiled, while the hard, ripe maize is baked in the fire.

No medicinal plants have been seen in the garden and the people say they do not grow either medicine or fish-poison plants. *Hyptis*, used for scent, is grown around the houses.

CROPS AND YIELDS

By measuring areas under different crops, considering planting distances and weighing produce an estimate has been made of the percentage and yield of each crop in an acre of interplanted garden. The measuring is neither easy nor accurate because, apart from the number of different plants in the garden, the fact that some plants are immediately planted when something else is taken out means that the percentage is continually changing.

However, Table IV shows what is considered to be a reasonably accurate list of the crops grown, the percentage of each crop in the garden and the yield of each crop per acre of interplanted garden per annum.

TABLE IV.

Crops and yields per acre.

Crop	Percentage of interplanted garden	Yield per acre of interplanted garden (lb.)
Taro	33	5,000
Mami	33	2,330
Sweet potato	4	480
Tapioca	2	200
Peanuts	2	17
Maize	7	140
Sugar-cane	4	2,240
Pineapples	3	580
Bananas	5	1,350
Papaws	2	1,350
"Pit"		20
Beans		100
Melons		150
Cucumber	5	50
Tobacco		10
Tomato		10
Aibika		200
Total yield per acre		14,230

The estimated total of 14,230 lb. of produce per acre means that this 3½-acre garden produced nearly 50,000 lb. of garden food. As 20 people were drawing their food from this, each one would have 2,500 lb. of food for consumption and sale. At a minimum of 4 lb. of garden produce per person per day for consumption, of

PLATE 7.—*Yabob fishermen using newly-introduced nets.*

this 2,500 lb., 1,460 lb. would be consumed and the remainder sold or traded. On these figures, one acre of garden can provide enough foodstuffs for nine people.

It is interesting to note that figures given in the local sample agricultural census, dated 4th June, 1948, which was conducted before this investigation started, are in keeping with the above figures. For a population of 239, there was a garden acreage of 26, which is about nine persons per acre. In addition to the garden produce, New Guinea people commonly obtain such things as coconuts, forest produce and fish and game.

DISCUSSION

The system of annual shifting agriculture seems wasteful, mainly of three things—manpower, timber and planting material.

While there is plenty of garden land available, and only a comparatively small native population to be fed from it, the system could hardly be classed as being wasteful of land. However, often land does deteriorate as a result of gardening. The scrub and grasses in the abandoned gardens are burned for hunting, which prevents timber re-establishing and also, in some areas, ensures the spread of kunai grassland by eating into the forest fringe.

Manpower is wasted by the annual clearing, burning and laying out of the gardens. If proper crop rotations could be developed it should be possible to use the gardens for a longer period. But there is no shortage of land and the native gardener prefers to spend a month cutting and burning a clearing than to spend time weeding and attempting to keep up soil fertility. With a new clearing, he has a good supply of humus and potash and at least a year free from grass and weeds.

When a garden is abandoned, it still contains plants, palms, canes and trees which are capable of producing food until choked out. This again is a waste, but as there is no shortage of planting material the practice could hardly be condemned.

The opinion is held that, considering the land available and the population that it is at present called on to feed, bush-fallow cultivation is wasteful mainly of one thing, timber.

YABOB—1960

[As a follow-up to Mr. Vicary's observations, another Agricultural Officer stationed at Madang, Mr. B. B. Johnston, visited Yabob Village in December, 1959, and January, 1960. He found a number of changes in the present way of life, compared with that of 10 years ago, particularly a greater dependence for cash income on labouring in Madang. The changes he noted are described below.]

Since Mr. Vicary's observations in 1948 considerable changes have taken place. The Kesup villagers have gone back to their own land,

leaving only the Yabobs. This move was completed in 1949-50. The Yabob village has been divided and half the population is now situated half a mile from the old village site at what is called Morelang or Yabob Nambis.

The Yabob population in 1949 was 167, it is now 246, which compares with the combined population (239) of Kesup and Yabob in 1948. Although the population of the area is almost the same is in 1948, the acreage of food gardens has dropped to approximately half of what it was then.

There are 39 people absent from the village at schools or for other reasons which leaves 207 who actually obtain food from these gardens. The people have also reverted to their old practice of having many small gardens scattered about the bush instead of the two or three big gardens as in 1948.

GARDENS—Crops and areas.

Mami	28 gardens	total 42,065 sq. yards.
Taro	15 gardens	total 14,800 sq. yards.
Tapioca	3 gardens	total 10,000 sq. yards.
Sweet potato	4 gardens	total 1,300 sq. yards.
TOTAL		68,165 sq. yards.

i.e., 0.068 acres per head of population. This figure is very low and is just over half the 1948 figure. Most of the decrease would be due to the fact that few vegetables are now produced for the Madang market.

The clay cooking pot industry is not what it used to be either. The advent of relatively cheap aluminium saucepans has made a big difference and now clay pots are made and sold only when cash is required for some specific purpose, particularly on the part of the women. Most of the sales are to the Kranket people, near Madang, who are the traditional canoe-makers for Yabob.

Yabob is the closest village to Madang and consequently its labour line is the most accessible for any project in or around Madang, such as wharf labour or grass cutting. This, it is felt, is the reason why industries, which flourished in 1948, have declined to their present state.

With the stationing of a Fisheries Officer in Madang the villagers have been given the opportunity to establish a small fishing industry. Fish are netted in the Gum river estuary and on adjacent beaches and sold at the Madang market as either fresh or smoked fish. Fish caught during the week is smoked, but any caught early Saturday morning is sold fresh. Catches to date have been rather small and disappointing.

Copra is the only cash crop other than the odd net bag of vegetables and this is also at an all-time low. Yabob has 1,472 producing coconut palms, yet during 1959 only 1,144 lb. of copra worth £36 5s. was produced by two men.

From observation it is clear that as a whole the villagers prefer to earn their cash by labouring rather than by cash cropping.

Although drastic changes have occurred in the cash economy of these people, their traditional way of life has changed very little. Gardening techniques, laws of inheritance and methods of food preparation have not changed, although their diet is now supplemented a great deal with tinned meat, tinned fish and rice.

It is interesting to note that the price of clay cooking pots, dogs' teeth, pigs' tusks, etc., have not changed and still have their place in bartering and bride prices.

APPENDIX A.

Following is a list of scientific names of native food plants mentioned in the text. The source is the South Pacific Commission Technical Paper No. 94, *Food Plants of the South Sea Islands* (E. Massal and J. Barrau, 1956).

Garden crops.—

Taro—*Colocasia* spp.
Yam—*Dioscorea* spp.
Mami—*Dioscorea* spp.
Sweet potato—*Ipomoea batatas* (Pidgin: Kau kau).
Banana—*Musa* spp.
Pit—*Saccharum edule.*
Sugar-cane—*Saccharum officinarum.*
Aibika—*Hibiscus manihot.*
Papaw—*Carica papaya.*

Bush foods.—

Tulip—*Gnetum genomon.*
Sago—*Metroxylon* spp.