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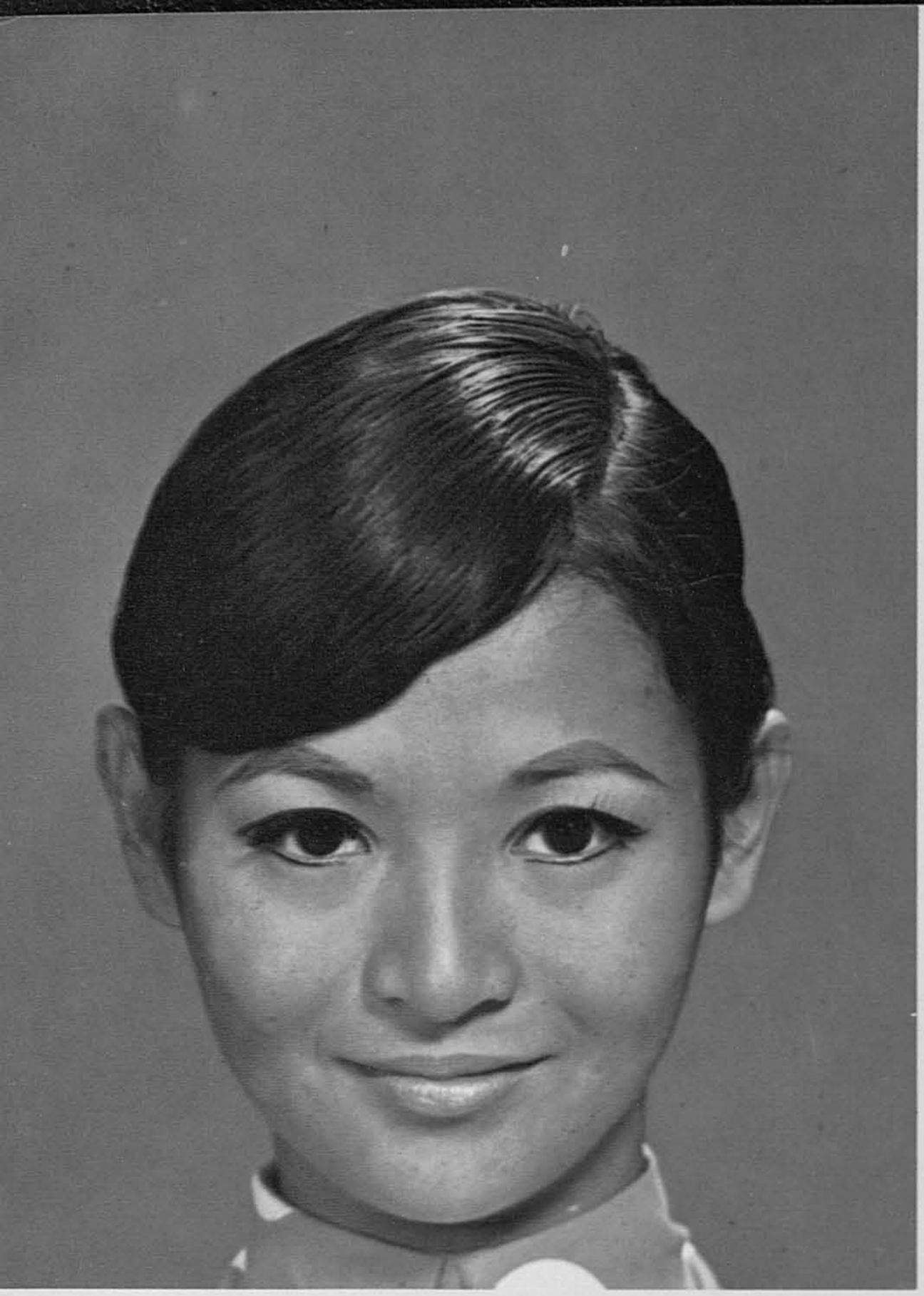

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Editorial:

TAKE AWAY THESE BAUBLES!

It has been announced that the Government will shortly launch a Road Safety Campaign which is to last eight months. It will be interesting to see what techniques are used to sustain the momentum of the campaign over so long a period. When Oliver Cromwell uttered the words of our title, he unwittingly coined a slogan which is very apt some three hundred years later. The law states that a driver's forward vision shall be totally unimpaired, yet a high proportion of vehicles in this country are still allowed to sport baubles, bunches and beads hanging from their interior rear-view mirrors. The distraction and visual "cut-off" caused by these ridiculous gewgaws are frightening, and no statistic or police report can ever reveal the number of accidents they must cause. Further examples of the Knick-knack Syndrome are fancy number-plates and spiked hub-caps, both proscribed by law. The former pose no danger to other road-users; the latter certainly do. The point however is that long after the police have stated that both are illegal, these law-despising gimmicks are still commonly seen, bringing the law into ridicule. It is this state of near-anarchy which is leading more and more motorists to do as they please and to cultivate a contempt for authority.

The average driver is sensitive to being made to look foolish, and instant exposure of his faults to the public eye and that of other motorists would be both chastening and instructive for him, and an object lesson to his audience. His dignity suffers little—if at all—when he compounds his offence, and only slightly more if he is brought to court. Much better if justice is not only seen to be done, but heard as well. In a country where the basic rule of the road is to Drive on the Left, it is preposterous that motorists are permitted to drive the entire length of the Federal Highway in the right-hand lane without being warned or apprehended. One loudspeaker-equipped patrol car on permanent duty along this route, and other similar thoroughfares, could work wonders in proclaiming these and other misdemeanours both to the culprit and the world at large.

The blithe indifference, or ignorance of these motorists should be attacked with the utmost vigour in the Government's campaign, as should the widespread aversion of so many road-users to the left side of the road. At the same time it would be as well to warn 'the man behind' who (frustrated and therefore potentially dangerous) is ultimately goaded into overtaking on the inside, that if anything goes wrong while he is doing so, the blame will rest with him, and not the driver of the vehicle baulking him. (A grimly suggestive euphemism for this dangerous form of overtaking might be "undertaking".)

We have the impression that more and more drivers are getting into the habit of driving with the right arm outside the car. Apart from the likelihood of losing the arm in an accident, the law demands that one must be in proper control of the

(Contd. on page 46)

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PHYTOPHTHORA STEM CANKER OF COCOA

by

K. H. CHEE
The Rubber Research Institute of Malaya, Kuala Lumpur

T. A. PHILLIPS
Commonwealth Development Corporation, London

In a previous article in *The Planter*, Chee and Wastie (1970) described the *Phytophthora* diseases of cocoa in Malaysia—black pod and seedling dieback—and drew attention to the potential danger of these diseases to local cocoa plantings. Here we report an outbreak of a new disease, Phytophthora stem canker, which has recently been found on two estates in Johore.

A number of 6-yr-old plants growing under oil palms were observed to be suffering from dieback caused by stem canker at two localities in Johore. In one estate $7\frac{1}{2}$ acres of cocoa planted under 8-yr-old palms were affected; in a similar planting in another estate at least 40 acres were involved. A census at the first locality showed that 20 trees had varying amounts of dieback; cankers were present on the main trunks, branches or jorquettes—often at all three sites. The extent of dieback was related to the severity of the cankers, and trees that were almost dead had ring-barking cankers on the main trunk. The original material planted at the first locality is Amelonado cocoa mixed with Amazon material. It is not possible as yet accurately to relate the occurrence of the disease to the type of cocoa.

The symptoms of the disease show in the appearance of dieback of one or more branches, with yellowing or browning of the leaves and death of the branch from the tip backwards. By the time these symptoms appear, however, there will have been appreciable death of tissues at the site of the canker and the branch will probably be past saving.

The early stages of the disease are difficult to identify since they involve only very slight discolouration of the bark and sometimes exudation of a gummy resin. On cutting the tissues the infected area is seen to be wine red in colour, darkening considerably on exposure, with exudation of a gummy substance.

On cutting away the surface tissues the wood underneath appears brown or purple to a depth of several millimetres. (*Fig. 1*). The necrotic patch either takes the shape of a narrow vertical streak, or extends sideways to girdle the trunk or branch. The cocoa strain of *Phytophthora palmivora* was readily isolated from such necrotic tissue.

Reports of black pod and seedling dieback of cocoa caused by *P. palmivora* have been of rare occurrence in Malaysia (Chee, 1969; Chee & Wastie, 1970). In the present canker outbreaks a number of trees had black pods; in the second locality, in particular, up to four pods per tree were found on a group of seven trees. The fungus associated with black pod was identical with that isolated from cankers.

The stem canker disease caused by *P. palmivora* occurs in a number of cocoa growing territories. It is generally not regarded as a serious disease of Amelonado cocoa in West Africa, where the black pod form of the disease is however very important. In Asia and the Pacific region stem canker has been recorded in a number of territories. It has proved very troublesome in Fiji (Firman & Vernon, 1970) and also in the Solomon Islands (Friend, 1970).

The occurrence of the disease in West Malaysia has serious implications for the cocoa development which is now being undertaken in the country. In other countries the Amelonado type of cocoa has proved the most resistant to this form of the disease. In West Malaysia Amelonado cocoa has not flourished, and present cocoa plantings are mainly based on hybrid cocoa. No screening work for *Phytophthora* susceptibility has yet been done in Malaysia on these hybrids.

Some Trinitario and Criollo type cocoas have proved very susceptible, and some hybrid progeny has been more susceptible than the parent material in Fiji (Firman & Vernon 1970). One of the parents (Na 32) of the material found susceptible in Fiji is widely used in the present hybrid material in Malaysia.

It is not known to what extent good management and agronomic practice can be offsetting factors against inherent susceptibility to the disease. Without good management the disease is likely to kill substantial numbers of trees at ages of five to ten years, just when their economic value should be reaching its full development.

There should be much care taken in choosing areas for further cocoa development. The areas where the disease has been found receive about 100 in. of rainfall per annum, and under the rather heavy shade of oil palms, the high relative humidity probably encourages the growth of *Phytophthora*. On Trinitario type cocoas in the Solomons the disease has caused damage in rainfall conditions below 100 in. per annum (Phillips, 1970).

The inference to be drawn from experience in other countries is that areas which average 100 in. per annum or more of rainfall might be predisposed to a heavy incidence of black pod and canker.

There is a clear need for research work to be started immediately on the susceptibility of the planting material now being issued, to the strains of *Phytophthora* present in Malaysia. It would be particularly valuable to know whether hybrids with Amelonado as one parent are any less susceptible to the disease, both in the "stem canker" and the "black pod" forms of the disease, than hybrids having no Amelonado parentage. The production of a susceptibility rating for all the planting material now in use could be of value providing standardised techniques were used in making the assessment.

Meanwhile it is important that cocoa planters keep a sharp lookout for the disease. Where the disease is found to occur in any locality it will be necessary to ascertain whether cutting out and destroying diseased material and the disinfecting of wounds and of tools can be effective in controlling it. The disease should be detected in its early stages, and the tree pruned back to healthy tissue.

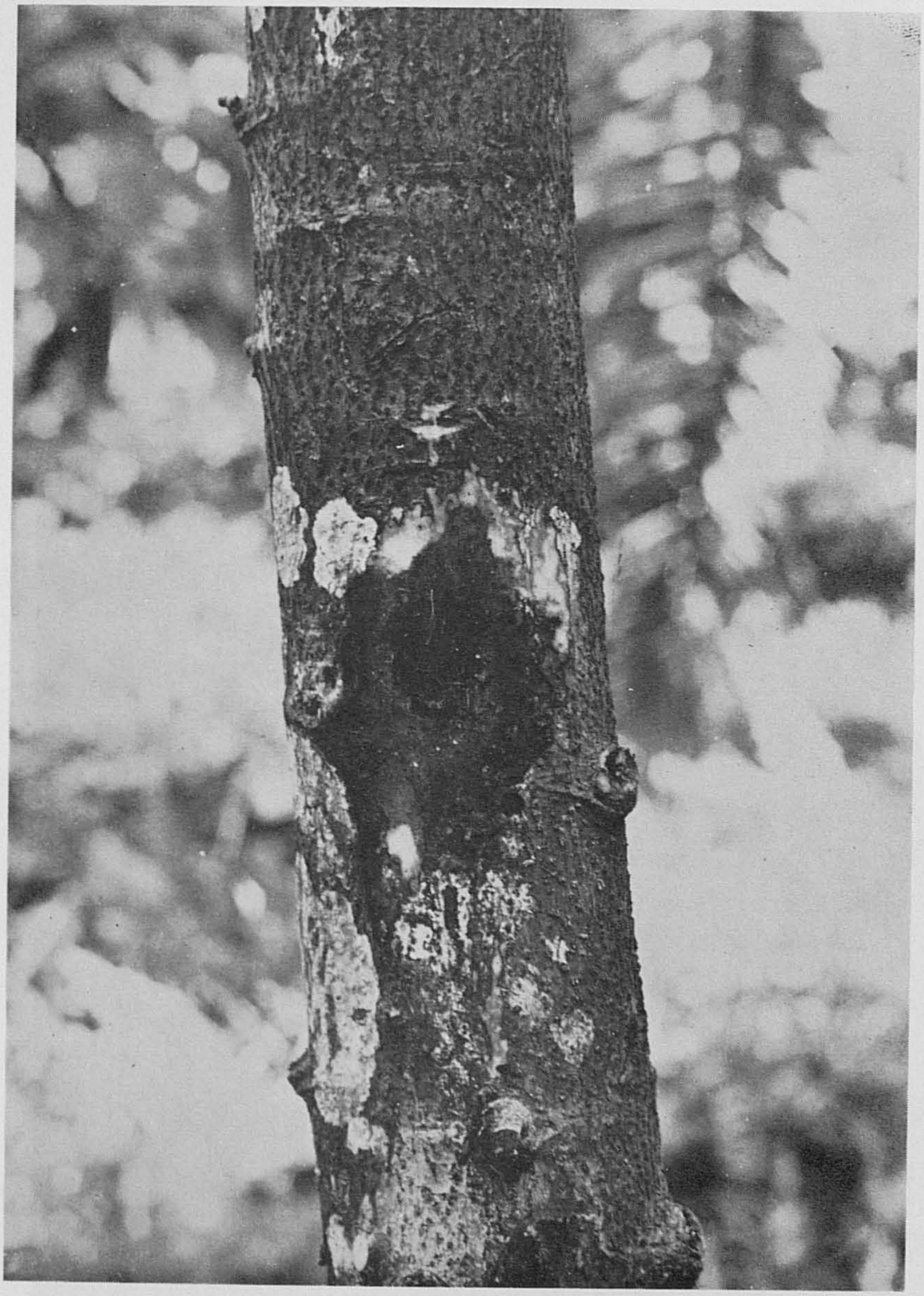

FIG. 1. Canker on the trunk of *Theobroma cacao* caused by *Phytophthora palmivora*.

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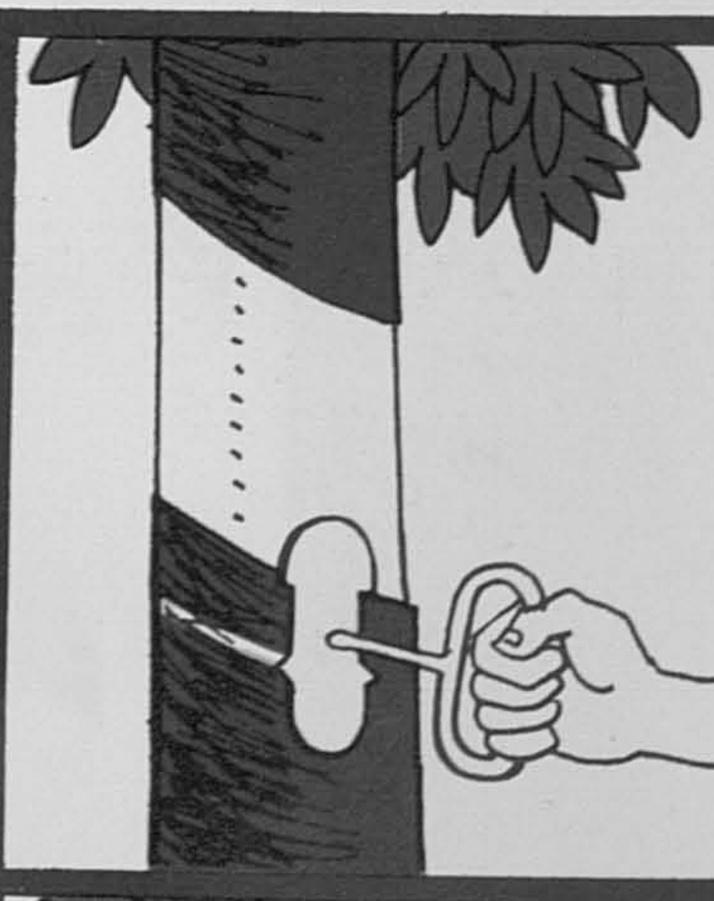
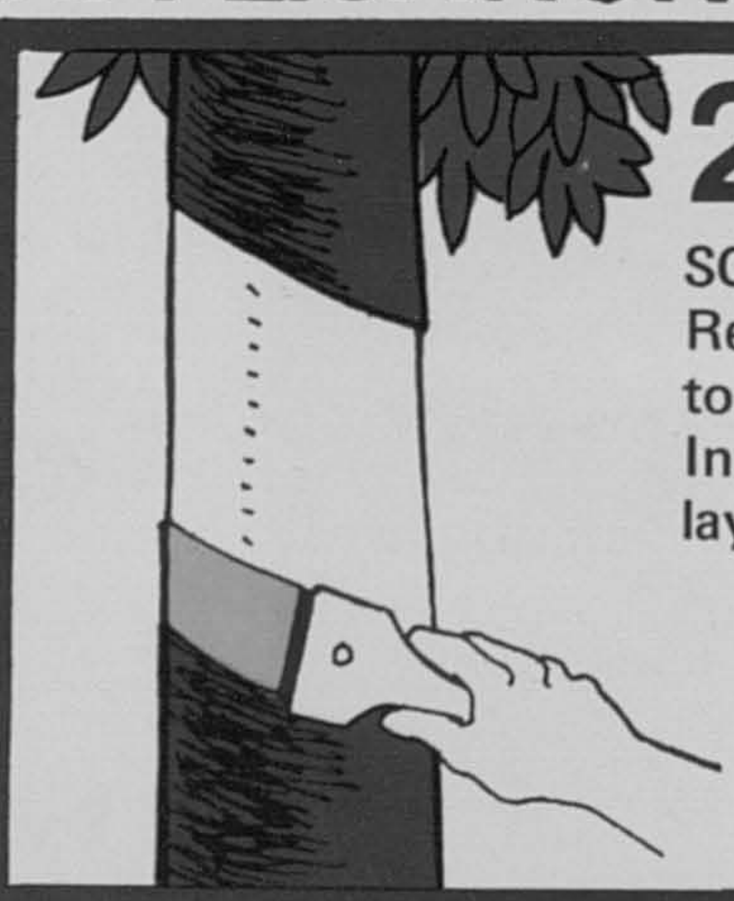


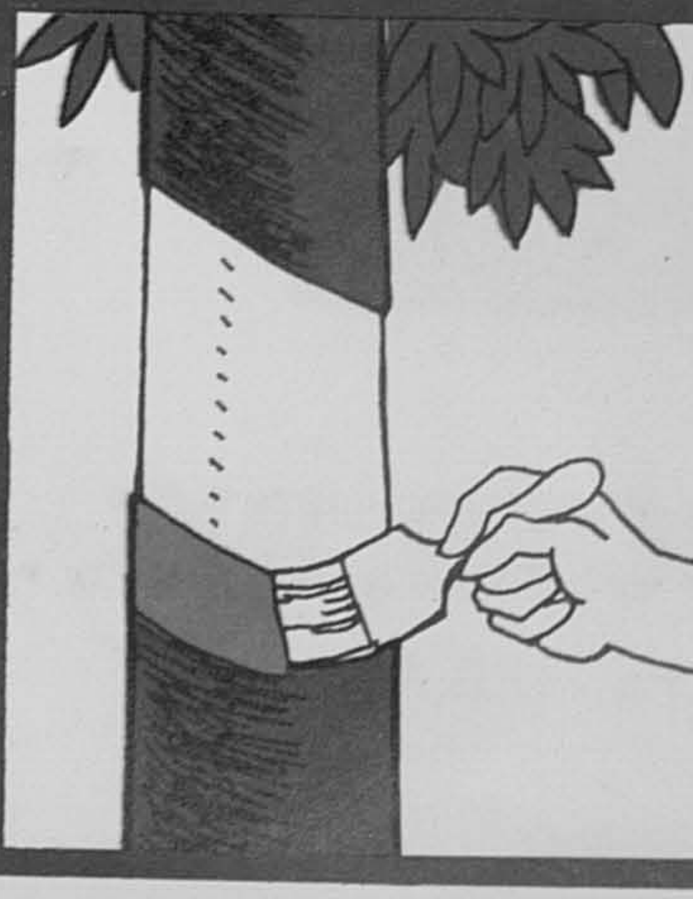
1

MARKING
Equivalent to 2 months bark consumption.



2

SCRAPING
Renewed bark scrape to the pink layer.
In virgin bark, white layer to be exposed.



3

APPLYING:
Use flat brush paint ETHREL evenly on the scraped bark.

WITHOUT ETHREL

WITH ETHREL

4

YIELD:
Without ETHREL: 1 cup
With ETHREL increased by 50 to 200 %.

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(Editorial contd. from page 42)

vehicle at all times, and the supercilious air of the driver who is seen negotiating traffic or a tricky bend, with a hand on the roof, could be punctured effectively by a few well-chosen words from the police loudspeaker. After all, the one-handed steering-wheel has not yet been invented.

Every Planter is, at one time or another an amateur road-repairer; he is more conscious that most of the need for an adequate and properly-maintained road system within his estate. He is, or should be, used to careful driving, paying due attention to the blind corner or change in road surface, and regard for the proper mechanical maintenance of his (or his employer's) vehicle. His standard of driving is probably better than that of the roads he habitually uses, and we doubt if this can be said of motorists in Malaysia as a whole.

Some years ago Planters in Kedah made strong representations to the Police about the continued failure by cyclists to display rear-lights or even reflectors. Our Members reported frightening near-misses and were under no illusions as to the likely consequences of their mowing down a cyclist. They also complained of the dangerous situations arising from lorry-owners displaying coloured lights—some of them red!—at the front of their vehicles. These matters were raised at liaison meetings between Police and Planters, and some improvements were subsequently noted. If the Police remain in the mood to accept reasoned criticism and comment from Planters, a lot might be achieved.

In wishing the Road Safety Campaign every success we would suggest that the most effective way in which the authorities concerned can show that they really mean business, and a sure way to their securing the confidence of the public, is to tackle, early in the campaign, the menace of speeding commercial vehicles. A blind eye has been turned too long to the flagrant contempt of the law by the owners and drivers of these vehicles.

SHADE—ITS CULTIVATION, MANAGEMENT AND PROBLEMS AT BAL COCOA ESTATE*

by

D. K. K. Chok

BAL Estates Sdn. Bhd., Tawau

In its native environment cocoa is a lower-storey jungle tree of the lowland tropical forest. It thrives well where conditions are warm, shady, and humid[1]. It has therefore been assumed that shade is a prerequisite for growing the crop. The extent of protection is dependent on various factors, principal amongst these being climate, soil type and topography. The need for shade protection is often the subject of debate and a shade protection policy applicable to one country may not apply to another.

Although it was generally assumed that the main function of shade was to reduce the intensity of sunlight on the foliage of the cocoa, it is now increasingly accepted that shade is probably more important because:

(a) it gives the estate an equable microclimate

(b) it keeps the soil cooler

(c) it reduces the dangers of soil erosion.

EARLY SHADE POLICY—USE OF JUNGLE SHADE

When BAL first started growing cocoa on a commercial scale in the early nineteen fifties, very little attention was paid to the introduction of large-scale shade protection, reliance being placed on that which was there at the time of planting.

At that stage the practice was to remove with an arboricide all jungle shade which was not considered suitable for cocoa; the trees retained being mainly *Macaranga* and *Mallotus* spp. In open areas however, shade was introduced. This method was considered to be satisfactory and some one thousand acres of cocoa were planted under thinned jungle shade.

THE DEVELOPMENT OF PRIMARY SHADE

The Introduction of Leucaena glauca

After a visit to New Guinea during the latter part of 1959 it was decided that *Leucaena glauca*, used extensively there, was a suitable shade protection for cocoa under Sabah conditions.The species had been introduced into this country some years previously but the exact date is uncertain. It is generally accepted that it was introduced for food and wood[2].

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* This paper, and the one that follows it (page 54) are among the seven presented at the Cocoa Seminar organised by the Sabah Planters' Association at Tawau, 20–21 November 1970. Both papers are reproduced here with the permission of their authors and of the Association. A full set of preprints of the papers can be obtained from the S.P.A., P.O. Box 1204, Sandakan, Sabah, price $7.50.

Cocoa under Leucaena shade. During 1960 four trial plots of one acre each were laid down and cocoa was subsequently planted under these, the cocoa under Leucaena showing marked superiority over that under thinned jungle shade. In a further experiment in an area of virgin jungle, ten acres were planted to Leucaena and ten acres were left as control. The control had only thinned jungle shade protection. Unfortunately, the area selected for this experiment was on marginal basalt soil[5]. The cocoa did not do well, neither did the shade. To add to this problem, jungle felled some two weeks earlier was accidentally burned. In spite of this, the cocoa under Leucaena shade was considerably better than the cocoa under thinned jungle shade in the control plot.

After a lull in planting during 1962, the next big planting programme was undertaken during 1963. At this stage it was decided to plant 100 acres with Leucaena as shade protection. The results further reaffirmed the earlier experience that Leucaena was a better shade protection for cocoa than thinned jungle shade.

Method of establishment. Under local conditions it was found necessary to sow the Leucaena in drills, planted in lines of 10 ft hedges at the very high seed rate of 20–25 lb per acre. The reason for this was to force the shade to a suitable height and also to prevent early seeding. It was also necessary to clean weed for 3–4 months for best performance, as Leucaena will not tolerate severe weed competition.

Problems and disadvantages of Leucaena. With the outbreak of confrontation with Indonesia,, BAL suffered from severe labour shortage. As a result shade upkeep inevitably had a low priority, and after $3\frac{1}{2}$ yr the then 500 acres under Leucaena was grossly over-shaded. This over-shading and a severe incidence of insect damage caused the general weakening of the plant and the subsequent infection by the fungus *Botryodiplodia theobromae*[6]. This fungus was responsible for over 40 per cent of our cocoa casualties. In order to save the existing cocoa it was necessary to thin the Leucaena shade severely. This process of thinning to let in light for the cocoa caused profuse Leucaena seedling growth, which proved to be very expensive to control. Many different chemicals were tried before it was decided that the best means of control was to wipe with a 5 per cent solution of 2,4,5-T in diesoline. The use of this dangerous arboricide required very careful supervision, and in spite of this some of the cocoa succumbed to 2,4,5-T poisoning.

The labour shortage was undoubtedly a contributing factor to the failure of this shade protection but not enough was known of the problems that came with the introduction of Leucaena shade. In an effort to solve the seedling problem, new strains were imported but because of the experience with Leucaena little interest was shown in these.

The introduction of Gliricidia maculata

A more manageable shade protection than Leucaena was obviously required. The estate was fortunate that it did not have to look far for a sound alternative, as Gliricidia had previously been introduced as a shade for tea. The tea however,

had not done well and was subsequently abandoned and no great interest had been shown in the use of Gliricidia as shade for cocoa. This was because it was susceptible to scale insect attacks and there was a fear that it might compete with cocoa for water[4]. Gliricidia was used mainly as a roadside shade and as an infill where all other shade had failed. In a trial started in 1965 a 20-acre block using Gliricidia and Leucaena shade indicated that cocoa performed equally well under either type of shade.

Method of establishment. Gliricidia is easy to establish; in this country the seeds are seldom viable and the best method of establishment is by brown wood cuttings. The system used at BAL is to line for cocoa planting using Gliricidia sticks. These lining sticks are allowed to grow to form the eventual shade protection for the cocoa. The advantage of this system is the saving of cost in lining for cocoa later on. When there is sufficient shade protection the cocoa is planted either along the Gliricidia rows or is offset by templates between previously-planted Gliricidia avenues.

Problems and disadvantages. Gliricidia may suffer badly from scale infestation and may also be host plant to the tree hopper, *Colobesthes falcata* Guer. It has a 'willowy' branching habit which frequently interferes with the cocoa canopy; this may however be avoided to a certain extent by pruning and shaping. There have been instances of high failure rate in establishment of Gliricidia due to contract labour not firming stakes sufficiently.

Thinning and control. Thinning out and eradication work is easy; sodium arsenite and 2,4,5-T are generally used, both with great success. Pruning and shaping is also possible using sodium arsenite; an unwanted branch is ring-barked and a paste of 50 per cent sodium arsenite applied. This will kill off the poisoned branches without killing the rest of the tree, although a certain amount of defoliation may sometimes occur. Gliricidia is highly susceptible to 2,4-D type weedkillers and the use of these should be avoided when it is still young.

DEVELOPMENT OF PERMANENT SHADE

The decision to clear jungle completely and to establish cultivated primary shade, previously Leucaena and now Gliricidia, prompted us to formulate a policy of simultaneously cultivating permanent shade, both in the long term to take over from primary shade and in the interim to act as an insurance should primary shade suffer from severe pest attack.

The introduction of Albizzia falcata

The exact date *Albizzia falcata* was introduced into this country is uncertain. It is found throughout the country, especially in towns[2], and may have been introduced for shade. Cocoa has performed well under *A. falcata* but it fell into disfavour during 1965 because of severe wind damage, and was removed.

Method of establishment. The normal practice is to raise *A. falcata* as seedlings in baskets and to plant out at three to four months, simultaneously with the primary shade. Seeds are normally pretreated to obtain best germination, both acid and hot water treatments being successful. Where ground conditions are clean and there is no overhead shade, planting of seed-at-stake gives very reasonable success. Thinning is easy as it is highly susceptible to both 2,4,5-T and sodium arsenite.

The introduction of Parkia javanica *and* Albizzia chinensis

Both *Parkia javanica* and *Albizzia chinensis* were used to some considerable extent before *A. falcata* was eradicated. When use of the latter was discontinued, the estate focussed its attention on these other two trees for permanent shade protection. *A. chinensis* may be native to Sabah but was perhaps introduced by the Japanese, possibly as shade for coffee. On the other hand *P. javanica* is almost certainly native, being found in a wild state throughout Sabah[2].

Methods of establishment. Seeds of both species are pretreated to obtain best germination results; either with hot water or acid. Normally the plants are raised in polybags in a nursery and planted out some three to four months later. Parkia will survive rough handling but *A. chinensis* will not and needs a little more care. Both do well planted as seed-at-stake, Parkia being especially successful but where snails and slugs are troublesome this method should not be used. Parkia can also be planted out as stumps with very good results. The great advantage of this method is that it is possible to establish Parkia under a closed cocoa canopy. The accepted planted distance for both these shade trees is 40×40 ft with the intention of thinning them down to possibly 40×80 ft or wider.

Other shade species

From time to time various other shade species have been tried; principal amongst these being tree cassava. It was introduced *via* Quoin Hill, where it was then popular. It was found to be too heavy a shade protection for cocoa and was a nuisance if uncontrolled but it had some value for shading out persistent lallang.

Kapok has also been tried but for one reason or another was discontinued in estate plantings. *Terminalia* spp. also suffered the same fate. A *Sesbania* sp. has been tried but this again did not receive much attention. Papayas were also tried, but as they attracted pests and suffered from the depredation of the labour force, this idea was also discontinued.

THE POLICY OF REPLACING JUNGLE TREES WITH LEGUME TREES

No substantial shade replacement took place until late 1965 when it was decided that jungle trees were competitive to cocoa and that best yields were not being obtained. It was therefore decided progressively to remove the large jungle trees and to replace them with fast growing legumes; *A. chinensis* and Gliricidia were

the species most commonly used. Gliricidia had the advantage over the other shade trees in that it was possible to plant it as large stakes and therefore it stood a better chance of growing through the closed cocoa canopy.

Sodium arsenite and 2,4,5-T were used to poison the jungle trees, which invariably stood for a considerable period of time before they actually died or were defoliated, as a result they still provided a substantial amount of shade protection for the cocoa while the Gliricidia and Albizzia were being established; the cocoa was accordingly never completely without shade protection for any great length of time.

PRESENT SHADE PROTECTION POLICY

The degree of shade protection which we feel is necessary for high yields and which will at the same time maintain a fairly sound cocoa canopy is minimal, and we try to maintain a situation of 50 per cent shade measured by the amount of light which filters through the overhead shade. A light meter was tried out, but it was found necessary to remove shade at the time for it to be of any use and we reverted to the established practice of visual judgement. This practice of shade thinning is very much one of hit-and-miss and the margin of error is considerable. Very frequently it has been found necessary to come back and infill shade on the exact spot where shade had been considered too heavy just some few months previously. A precaution practised to some extent is to plant either a Gliricidia stake or infill an *A. chinensis* at the same time as shade poisoning is done.

This policy has only been pursued for about three years but during this time we have obtained sufficiently high and improved yields to feel satisfied. The estate has however, also applied a heavier dressing of fertiliser, and how much of this yield increase is due to the latter is not known.

At the same time, progress is being made in converting the whole of the planted cocoa areas to a 'box' system of shade protection[3]. What has been done is to plant lines of Gliricidia at 200 ft intervals in a north-south direction; when this is well grown, all shade not in these lines will be poisoned. At the same time all the roads are shaded. This gives a box size of about three acres. In three or four years time a new line of Gliricidia shade will be planted midway between the existing rows of Gliricidia and when this has grown the existing Gliricidia will be poisoned. This will mean that the 'boxes' are moved and that cocoa which had suffered the most exposure will in time receive heavier shade protection for a change.

COCOA IN THE ABSENCE OF SHADE PROTECTION

During 1965 and 1966 we removed all shade protection from Field F6 of 9 acres, and Field G1 of 11 acres. This trial reaffirmed findings elsewhere that very substantial increases in yields were obtainable in the absence of shade (*Table 1*). In Field G1 the cocoa was in any event poor and the canopy was incomplete;

some ten months after shade removal this showed signs of deterioration and it was considered necessary to replace shade protection immediately. In Field F6 growth was rather better although the cocoa canopy did show some signs of deterioration, and it was decided to replace shade only on the periphery and where there was a break in the cocoa canopy.

Table 1. Yields of Amelonado cocoa before and after shade removal. (lb dry beans per acre)

Field	*Acres*	*1961*	*1962*	*1963*	*1964*	*1965*	*1966*	*1967*	*1968*	*1969*
F6[1]	9.00	59	767	922	966[2]	1856	2059[3]	1628	2246	2098
G1[1]	11.00	36	280	564	505	398[4]	1956[5]	1185	1460	1393

1. Planted 1958.
2. Shade removed August 1964.
3. Shade replaced along roadside and in breaks in the cocoa canopy.
4. Shade removed March 1965.
5. Shade replaced over the whole field.

FUTURE SHADE POLICY—'THE BOX SYSTEM'(3)

In the areas presently being planted with Upper Amazon Hybrids, the shade, predominantly Gliricidia and Parkia, is planted so as to make it readily convertible to the 'box' system mentioned previously. There are now some fifty acres in an experiment under this system of shade protection; various 'box sizes' are being tried out, ranging from $\frac{1}{4}$ acre to 4 acres, and with a range of different species of shade. This experiment started in 1969 and it will be at least five years before it will give guidance on shade policy.

CONCLUSION

Most of the shade work mentioned in this paper has been with Amelonado cocoa. There are various small plots of Upper Amazon, Amelonado/Amazon Hybrids and Trinitario/Amazon Hybrids, but these plots of cocoa are generally unshaded. In every case these plantings are higher yielding than the Amelonado cocoa and have continued to maintain a reasonable canopy and indications are that this situation will persist for some time to come. The general consensus of opinion at BAL is that the new Hybrids may well respond favourably to less shade protection than the Amelonado cocoa.

Acknowledgements. I am grateful to BAL Estates Sdn. Bhd., Tawau, for permission to present this paper.

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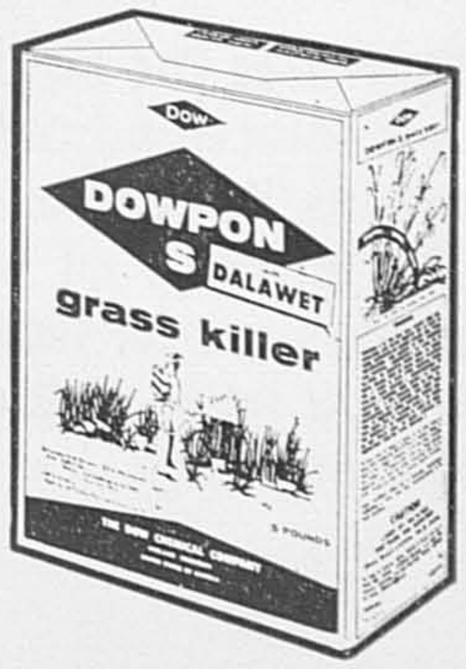

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SHADE FOR COCOA*

by

E. A. Wyrley-Birch

Department of Agriculture, Sabah

It is not the intention in this paper to discuss the optimum level of shade for cocoa, or whether any is needed at all. The assumption will be that it is, and that once it has been reduced to a sufficiently low level further reductions will not give any additional increases in either yield or growth rate.

Quansah[5] commenting on the shade and fertiliser trials in Ghana indicated that shade removal with Amelonado cocoa produced more spectacular increases in yield than it did with Upper Amazon cocoa which, under shade, yielded more than the Amelonado did. Wide-spaced fields had shown a decline in yield, which in some cases was due to insect attack. Where fields were lightly shaded the benefit of shade removal would be unspectacular. In Ghana, experience with shade removal was still limited to small areas surrounded by high trees. Vernon[6] established a curvilinear relationship between light intensity and yield. While he did not have enough experimental data to substantiate the curve for values between 60–100 per cent full daylight, it is interesting to note that the yield at 62.4 per cent light was 98.4 per cent of the maximum.

JUNGLE VERSUS PLANTED SHADE

Any planter who has had experience with planting cocoa under jungle and planted shade is bound to agree that in Sabah it is much easier to plant cocoa on well-cleared land under properly established shade. Planting under jungle shade usually closely follows timber extraction operations during which damage to the lower storey trees and accumulation of trash is considerable. The latter makes access more difficult, and hence also planting and maintenance, for several years. Most of the rapidly regenerating secondary species are unsuitable as permanent shade for cocoa and when the time comes for their removal there are, most often, not enough of the more suitable primary species available to replace them. Something could be done about this during the early underbrushing and lining stages but this would require considerable effort and time consuming expert attention. The cocoa also seems to do better under planted shade and shade manipulation is very much easier.

When jungle is allowed to regenerate for several years after timber extraction, planting cocoa in it is a much more practical proposition. The undesirable secondary species are less numerous and many more of the desirable primary species have had time to establish themselves and shade selection is a much less difficult operation.

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* *See* footnote on page 47.

These have so far mainly been directed towards finding species which are suitable for planting as shade. The one experiment of this kind for which yield figures are available has not been particularly successful. In it, five species of shade are compared with cleared jungle; the plots are about one acre in size and there are three replicates in a randomised block design. It was laid down in 1963 and 1964.

Because of inexperience and a shortage of funds, the initial clearing was poorly done so that ease of access, one of the advantages to be gained by clearing and planting shade, was lost to some extent. Too many large unburnt logs remained on the field and were not wind-rowed properly. There were difficulties with the establishment of some of the shade species, partly because this was done with the cocoa under light shade provided by tree cassava and because some of the species would have been difficult to establish even under the best conditions.

This experience emphasised a few obvious points which tend to be ignored where cocoa planting under planted shade is first embarked on. Most shade trees are light-loving and should be established under full light. They should be easily established and planting material (seed or cuttings) should be readily available. A species with an open canopy is preferable but if dense, it should not be spreading and umbrella-shaped. It should be quick growing; particularly so if it is a temporary shade. It should be free from insect attack and require a minimum of maintenance after planting. In this instance the timing of clearing and shade planting operations are important. Shade planting should follow clearing closely so that the shade trees can be well established before weed competition begins. In this way the number of weeding rounds can be reduced. There should not be a seasonal leaf fall (this is only important where there is a regular dry season). The shade should not compete with the cocoa and ideally it should itself have commercial value. It should not be too low growing so that the cocoa canopy and shade crowns intermingle.

Yields from the experiment have been recorded since 1966 and these are shown in *Table 1*. The yields under *Parkia javanica* were highest possibly because of the sparse canopy this species has when young. The cocoa under *Grevillea robusta* came next. In these plots there are large open areas because termites have decimated the shade. Early plantations of this species in West Malaysia were similarly attacked(2). Gliricidia has been disappointing, and whereas the cocoa under it looked well to begin with, it has deteriorated considerably during the past twelve to eighteen months. Because of its straggly growth and smallness it is useful only as a temporary shade. *Terminalia catappa* was very difficult to establish and growth has been variable. *T. subspathulata* established well and initially grew well; later leader shoots began to die back either because of disease or insect attack. During the past two years the cocoa in the thinned jungle plots has improved considerably but there are again large open patches because, as far

Table 1. Yields from cocoa planted under various species of shade (lb dry beans per acre)

Year	*Parkia javanica*	*Grevillea robusta*	*Terminalia catappa and subspathulata*	*Gliricidia maculata*	*Thinned jungle*	*Delonix regia*
1966	249	268	174	127	66	49
1967	979	861	721	635	373	221
1968	1 151	735	611	670	533	220
1969	1 031	959	671	738	854	571
Total	3 410	2 823	2 177	2 170	1 826	1 061

as possible, all competitive and undesirable species, such as *Macaranga* sp., have been eliminated. *Delonix regia* is very competitive and the cocoa has always looked poor under it. Over the past couple of years there has been improvement which seems to have coincided with a reduction of the number of shade trees to a minimum. However, the cocoa in the *D. regia* plots has never really been overshaded.

Several other shade tree species have been or are being investigated. These, with those above, are listed in *Table 2* in which they are evaluated against the criteria previously mentioned. A star indicates a species suitability, a dash its unsuitability and O, possible potential. It will be noted that none of the species mentioned is suitable in every respect. The first four criteria are the most important and a fault with any of these virtually eliminates the species for general suitability.

Parkia javanica (with a temporary shade until crown forms properly), *Gliricidia maculata* (only as temporary shade), *Albizzia falcata* (on poorer soils) and *Albizzia chinensis* (on fertile well drained alluvium) are the best. Tree cassava (*Manihot* sp. ? *glaziovii*) is scorned but is well worth considering in the limited role of a very easy-to-establish quick-growing shade which should definitely not be retained for more than eighteen months to two years. In not all areas is *Erythrina subumbruns* attacked by insects and in these it could be a useful temporary shade. It could not be retained for long because as it ages the crown tends to become too dense and spreading. *Lannea grandis,* except for its dense rounded crown, has many desirable attributes. It is a larger tree than Gliricidia and provided it is not competitive with cocoa could replace it. It is most unfortunate that *Grevillea robusta* is so prone to termite attack. It has a narrow, not too dense, conical crown which is ideally suitable for a wind break type of shade which, as suggested previously[8], may be the best compromise between some shade and no shade at all.

Table 2. Table showing how suitable various species are for cocoa shade

Species	*Planting material easily available*	*Easy to establish*	*No pests or diseases*	*Not competitive*	*Rapid growth*	*Easy to maintain*	*No leaf drop*	*Deep rooting*	*Has commercial values*	*Temporary (T) or Permanent (P)*	*Crown*	*Remarks*
Albizzia falcata	*	*	*	*	*	*	*	—	0	T.P.	Open spreading	Too lush and weak-limbed on fertile soil
Albizzia chinensis	*	—	*	*	*	—	*	—	—	T.P.	Open spreading	Best on fertile alluvium
Acacia auriculiformis	*	*	*	?	*	*	*	—	—	T.P.	Open	Sometimes mis-shapen Experience limited
Anthocephalus cadamba	*	*	*	*	*	*	*	—	0	T.	Open	Useful as pulp but matures too quickly
Cordia elliodora	*	*	*	?	*	*	*	—	—	T.	Dense cone young open mature	Experience limited
Delonix regia	*	*	*	—	*	*	—	—	—	T.P.	Open	Highly competitive
Durio zibethinus	*	*	*	*	—	*	*	—	*	P.	Dense cone opening to maturity	Experience limited
Dipterocarpaceae	—	?	*	*	—	*	*	—	*	P.	Open	Experience limited; some species may not be suitable
Erythrina subumbruns	*	*	—	*	*	*	*	—	—	T.	Spreading dense when mature	Suitable in pest-free areas
Gliricidia maculata	*	*	*	*	*	*	*	—	—	T.	Irregular sometimes dense	— do —
Grevillea robusta	*	*	—	*	*	*	*	—	0	T.P.	Conical open	Decimated by termites

Hymenopsis sp.	?	*	*	?	*	*	*	—	?	?	Compact dense	Experience limited
Koorderlidendron pinnatum	?	?	*	?	*	*	*	—	0	P.	Cylindrical open	Experience limited
Lannea grandis	*	*	*	?	*	*	*	—	—	T.	Compact rounded	Experience limited
Leucaena glauca (leucocephala) local variety	*	—	*	—	*	?	*	*	—	T.	Open	Competitive, establishes easily only on fertile soil
Leucaena leucocephala var. Guatemala El Salvador	?	*	*	?	*	*	*	?	—	T.P.	Open	Two varieties similar, taller than the local and may be less competitive
Parkia javanica	*	*	*	*	*	*	*	—	0	P.	Sparse canopy when young makes it suitable only for permanent shade.	
Peltophorum sp.	*	*	*	*	*	?	*	—	—	?	Dense umbrella mature	Experience limited
Pithecellobium sp. (local)	*	?	*	*	?	*	?	—	—	?	Open	Experience limited
Terminalia catappa	*	—	*	*	?	*	—	—	0	P.	Pagoda sometimes dense	
T. subspathulata	?	*	—	*	?	*	—	—	0	P.	Pagoda dense	Die-back of leader
T. superba	—	*	?	?	*	*	—	?	*	T.P.	Pagoda not too dense	When young, subject to borer attack
T. ivorensis	—	*	—	?	*	*	—	?	*	P.	Pagoda open	Decimated by giant snails
Tree cassava (*Manihot* sp.? *glaziovii*)	*	*	*	*	*	?	*	—	—	T.	Dense rounded at maturity	Should under no circumstances be retained for more than two years

* = Qualifies; ? = limitations; — = does not qualify; 0 = possible potential.

Growth rate, ease of establishment, strength of branches and canopy characteristics of shade trees can change from one site to another. Soil conditions in particular play a very important role. On less fertile soil establishment may be difficult, growth slower, branches stronger and the canopy more open while on fertile soil faster growth, weaker limbs and a denser canopy may be obtained. *A. chinensis* for example is much more easy to establish on fertile alluvium than on poorer soils and growth is much more rapid. *A. falcata* grows too rapidly on fertile soil, has a heavy canopy and is more subject to wind damage because of the weakness of its branches. It is not known how fertilisers would modify the effects of the poorer soils.

In a large shade species trial in Trinidad[3] conducted over a period of about fifteen years with 32 species, 11 died out including *Gliricidia maculata* and *Peltophorum dasyrachis*, and only six were considered healthy. Three of these were found to be too quick growing and to have unsuitable crowns and only *Pentaclithra macroloba*, *Inga laurina* and *Erythrina poeppigiana* were found to be suitable. *Parkia javanica* was considered unsuitable because it developed a lopsided crown which was thought to be due to competition for light before it was being thinned out.

ESTABLISHMENT SYSTEMS FOR PLANTED SHADE

Very little experimental work has been done in Sabah on the best methods of establishing cocoa under planted shade; such experience as there is has been gained by observation. On estates the aim is to establish shade as cheaply as possible immediately after clearing operations are completed, to spend the minimum on the maintenance of the shade and to get the cocoa planted as quickly as possible.

Smallholders may want to grow a field crop immediately after clearing and then a temporary shade of something like papaya or bananas and a permanent shade of fruit trees. We have no experience in Sabah of such systems of establishment but it is hoped that experiments can be laid down in the near future.

The best system so far evolved for estates is to use, for temporary shade, a tree that establishes easily from cuttings. These are used as stakes for lining, the cocoa being planted midway between stakes. *Gliricidia maculata*, *Erythrina subumbruns* and possibly *Lannea grandis* are suitable for this purpose. To produce shade more quickly tree cassava stakes could be planted in alternate lines with one of the others. For this purpose as well, dibbling various bush covers on either side of the cocoa planting point has been advocated but even if shade is established in six rather than nine months, it is doubtful that the small saving in time warrants the extra expense. Permanent shade should be planted at the same time as the temporary shade but at a wider spacing. The species used will depend on the individual choice of the management and advisors.

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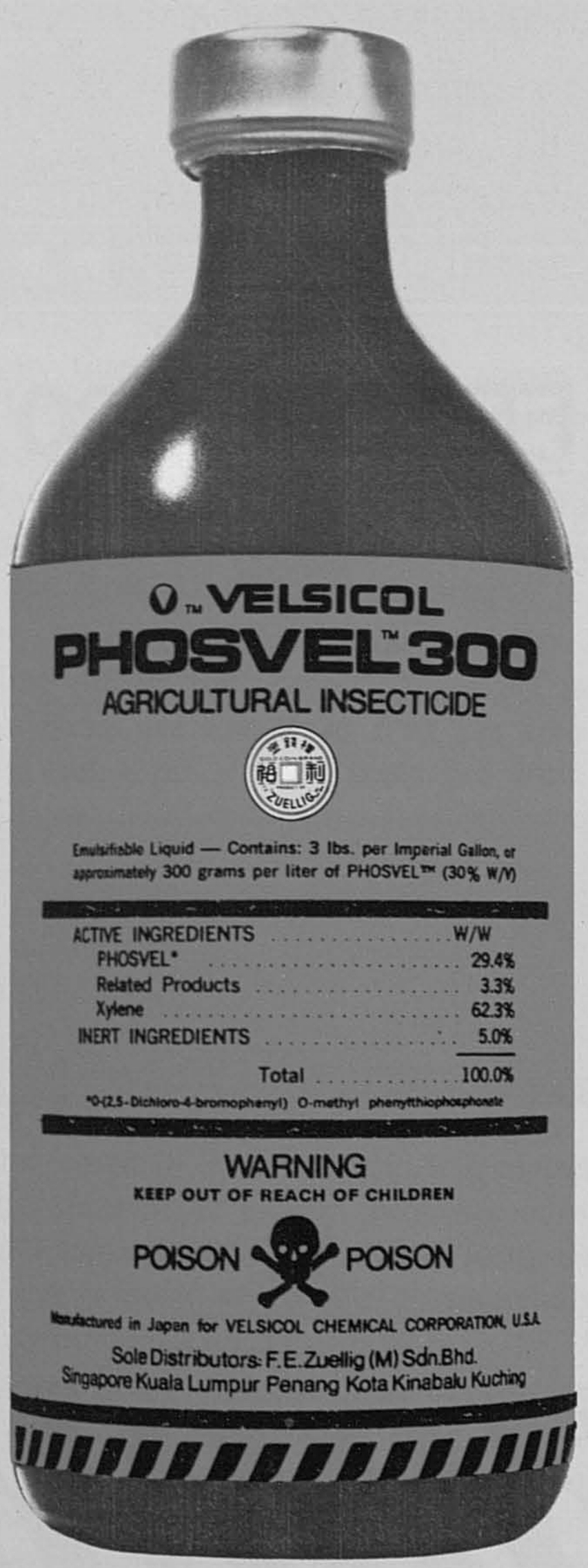

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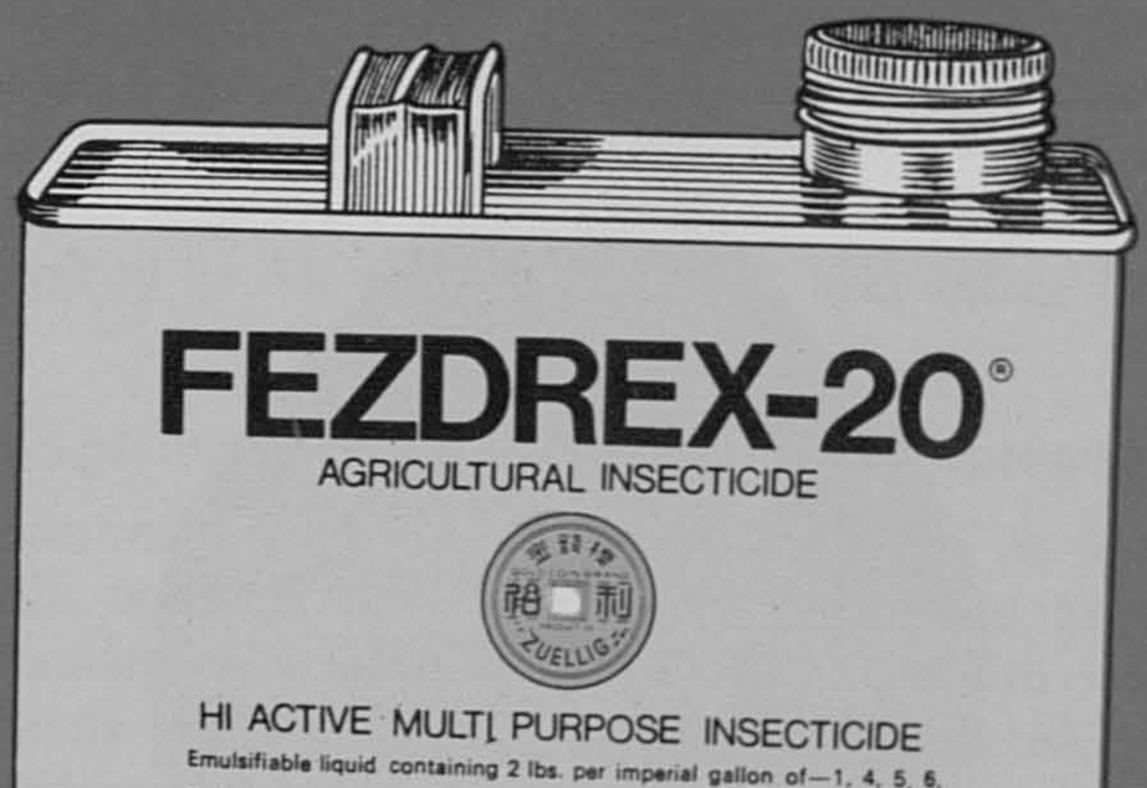

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from West Malaysia[7] indicated that cocoa under oil palm although not over-shaded yielded poorly. Blencowe and Templeton[1] have described the satisfactory establishment of cocoa under rubber.

Another attractive but long-term possibility is the use of timber producing species as shade. Among these the best would appear to be seedling durian because of the fruit the tree produces. The canopy of a young durian tree is rather dense and compact but at maturity it is irregular open and spreading. The lower branches of the young trees which interfere with the cocoa canopy can be pruned back or cut off until the crowns are clear of the cocoa. Thereafter no further pruning will be necessary. One would expect to start off with between 20 and 40 trees per acre and then reduce these to 10 to 15 by the time the trees were marketable as timber. There is little information available on the number of fruits a seedling durian tree will produce. In a clonal durian trial at Serdang[4] it was found that the trees came into bearing in seven years and for the next nine years yields varied between 8 and 43 fruits per tree per annum but thereafter yields declined again, possibly because of disease, breakage of branches and competition when a canopy formed. Local evidence suggests it is not likely to occur with seedling trees and that yields will increase as the trees mature. A closed canopy of shade will of course not be allowed to form. The Serdang clones were originally chosen for eating quality and not for yield and the mean yield of all these will probably approximate to that obtained from seedlings grown from unselected seed from say the Kota Kinabalu fruit market.

At Quoin Hill, seedling durian has come into bearing in about seven years. Using the Serdang figures of an average of 25 fruit per tree per annum for the first nine years of bearing and a price of 50 cents per fruit, the cash yield per acre will be between $250 and $500 per acre. In subsequent years the thinning of the durians should be compensated for by increases in yield and provided the price does not slump the return from fruit should continue at the same sort of level. Figures are difficult to come by, but marketable timber will probably be available in about 50 years, allowing for two cycles of cocoa. Under plantation conditions where fertilisers are applied and shade trees are not competing with each other for light, the time to maturity may be shorter. At this stage each tree will probably produce 100–150 ft^3 of timber or between 1 000 and 2 000 ft^3 per acre. What this will be worth in 50 years time is a matter for conjecture but allowing for the normal devaluation of money, probably considerably more than it is to-day since the world's timber stocks are rapidly being depleted. The timber is not of the best quality but is quite acceptable commercially.

Problems could of course arise. Hundreds of durians crashing through the cocoa canopy may wreak havoc on the trees and injure workers, possibly fatally. However, it is difficult to imagine that irreparable damage will really be done to the cocoa and crash helmets for the workers during the durian fruiting season may be the answer. Workers may be keener on collecting durians than cocoa and the yield of the latter may be seriously affected. Clearing the first cycle of cocoa for the second may not be easy under standing shade.

Durian is best established under shade and can therefore be planted out with the cocoa. The same applies to some of the dipterocarp species which once established also make good shade and will in 50 years produce saleable timber. However, with these, obtaining seed when it is required will present difficulties because fruiting cycles occur bi- or tri-ennially.

In *Table 2* other species, which are not at present considered suitable, have been listed as having commercial potential as timber. The information was obtained from Burkill's dictionary[2] and it is felt that some at least, may in the more distant future acquire commercial significance when other species are becoming scarce, or the variety of uses to which timber is put in this country, expands. This is probably only likely when a larger secondary timber industry has developed.

CONCLUSION AND SUMMARY

There is not enough evidence available yet to prove that cocoa is best grown without shade. Under light shade which still affords some protection for the cocoa, maximum or near maximum yields can be obtained.

In Sabah cocoa is best established under planted shade on well-cleared land. Under these conditions it is easy and cheap to maintain.

An experiment at the Cocoa Research Station to compare five species of planted shade with establishment under jungle was of limited value because of the uneven establishment and growth of the shade and the decimation of one species by termites.

The choice of species that can be planted as shade is limited to *Gliricidia maculata, Erythrina subumbruns, Albizzia falcata* and possibly *Lannea grandis* as temporary shade. For permanent shade *Albizzia falcata* or *A. chinensis* (depending on soil fertility) and *Parkia javanica* are possibilities. *Duria zibethinus* because of the highly prized fruit it produces and because of its value as timber in the long term, shows particular promise. Species of the family Dipterocarpaceae are also promising for their long-term timber value.

The dangers of pink disease attacking both the shade trees and the cocoa planted beneath them were mentioned. In discussing cocoa dieback, it was emphasised that there was no evidence that *Botryodiplodia theobromae* ever behaved as a primary pathogen.

If cocoa is to be grown in conditions where planted shade is required, then clearly trees that yield an economic crop should be sought. Cocoa grows well under coconuts and may be expected to yield as much as 750 lb per coconut acre; would it be practicable to plant coconuts as shade for cocoa, the latter to be planted some 5–7 years later? Other possible crops suggested (in addition to durian) were kapok, avocado, illipe nut, jambu (*Eugenia* sp.?), and nutmeg. The latter two were said to be planted in the West Indies in a one-acre "box" system analogous to that described in Mr. Chok's paper. Illipe nut was said to be difficult to establish.

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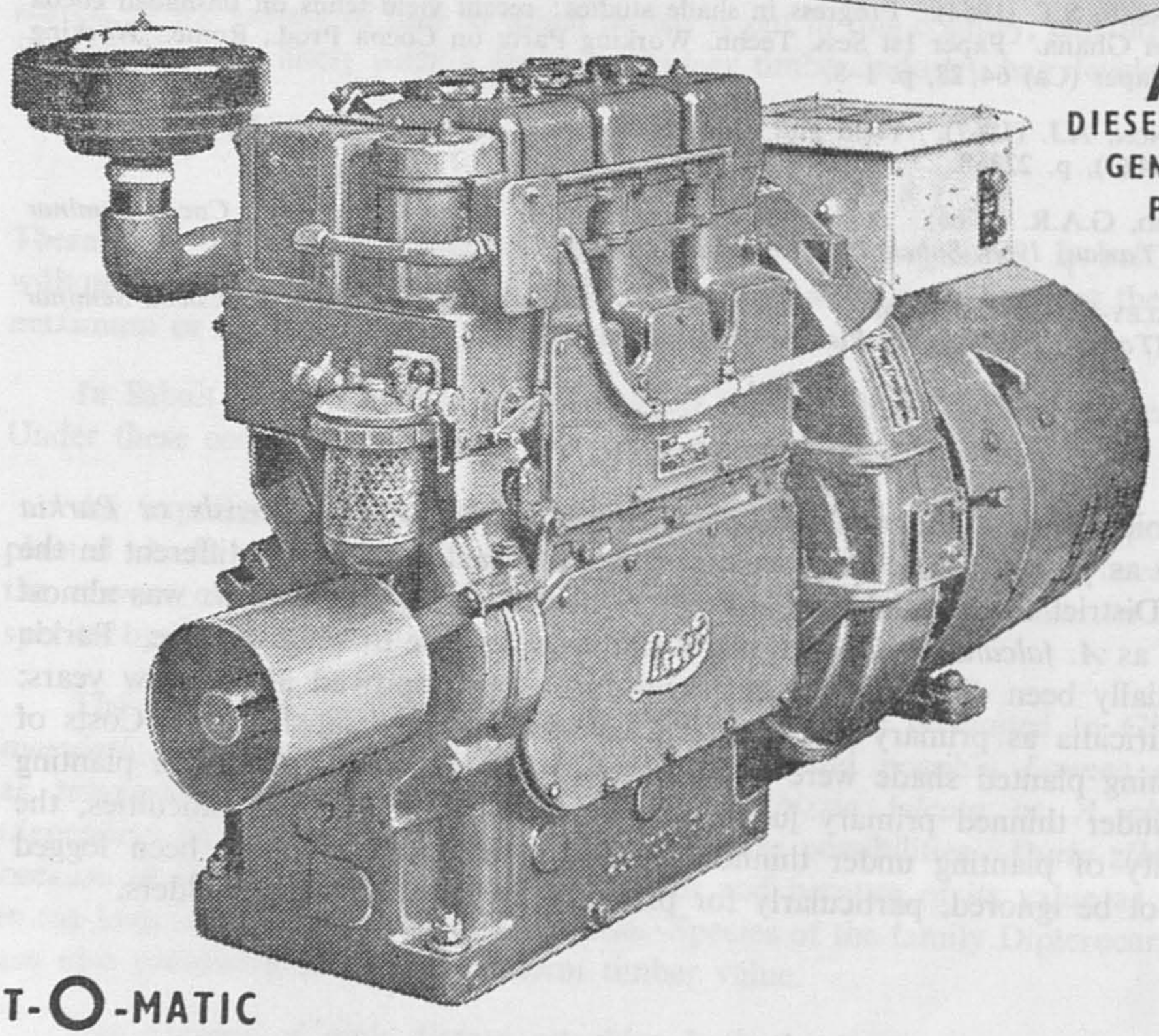
DISCUSSION *

If a choice were to be made between *Albizzia falcata, A. chinensis* or *Parkia javanica* as planted shade for cocoa, the species selected might be different in the Tawau District than in the Labuk Valley. In the Labuk *A. chinensis* was almost as good as *A. falcata,* although it might prove susceptible to wind damage. Parkia had initially been disappointing in growth-form, but improved after a few years; with Gliricidia as primary shade, Parkia could well prove satisfactory. Costs of establishing planted shade were quoted at $40–$50 per acre. Although planting cocoa under thinned primary jungle had presented a number of difficulties, the possibility of planting under thinned secondary jungle after it had been logged could not be ignored, particularly for plantings by individual smallholders.

* The Chairman of the session, Dr. J. W. Blencowe, accepts responsibility for his summary of the transcript of the discussion of this and the preceding paper.

LISTER



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HEADQUARTERS AFFAIRS

After the Deluge—the Reckoning. The Society sustained the loss of about $25 000 worth of I.S.P. publications and considerable damage, some of it irreparable, to equipment and Society archives. However, we were insured against floods and the auguries for our claims being met are good; meanwhile fingers are kept crossed and breath in the fully-bated position. It will be some time before Headquarters is able to return to normal working. There are hundreds of files to be "unstuck", cabinets to be cleaned and de-rusted, and equipment put in order. Walls have to be re-painted and floors refurbished. The Staff responded splendidly to the crisis, and the number of Members and friends who hurried to Headquarters as soon as they could, was most heartening. Stories abound; some grim, others amusing. When the Secretary wanted to know how the lock on the main office doors came to be smashed, he was told that this happened "when a boat hit it." When the Assistant Secretary was first able to get into the office, practically the only thing to be seen above water was a large, shivering Alsatian which turned out to be standing on his desk.

The Annual General Meeting of the Society will be held at *Le Coq d'Or*, Ampang Road, Kuala Lumpur, on Saturday 17 April and will as usual be followed by a luncheon. Guest of Honour at the luncheon will be Mr. G. C. McCulloch, who will have completed three years outstanding Chairmanship of the Society, and who hands over to the present Vice-Chairman Mr. Chua Hood Chuan. Reservations for the lunch may be made on the form which appears on the front page of the Members' Supplement contained in this issue.

The R.R.I.M. Annual Planters' Conference is announced for 12–14 July 1971 at the Federal Hotel, Kuala Lumpur. Starting a Conference on a Monday morning is a break from tradition which may not please everybody!

The National Productivity Centre announces two Plantation Management Courses for the current year. The first is for Conductors and will be held 15–19 March; the second, for Managers, is from 19–23 April. The Secretary/Executive Officer represented the Society at the official opening by the Prime Minister of the Centre's fine new building at Petaling Jaya on 1 February.

We have noted with interest the first appearance of the rather curiously named *We–Plant*, the official journal of the Association of West Malaysian Plantation Executives. Their Editorial speaks of the Association's aim "to improve the standards of the planting industry", a sentiment with which no Member of the I.S.P. will quarrel. Elsewhere in this inaugural issue it is pleasing to see the record set straight on the subject of the pace of Malaysianisation in the Planting Industry.

I.S.P. ANNUAL GOLF COMPETITION

Presented by The "Tiger" Brewery
Planters v Agents
1955

Presented by Malayan Fertilisers Ltd
1960

Presented by The Agency Houses
(Best Scratch Score)
1955

Jumbo Downs Challenge Cup
1955

In the course of a welcoming message to *We–Plant* the Hon'ble Tan Sri Manickavasagam, Minister of Labour states: "I am aware of the present fast pace in the taking over of Managerial and Executive positions by Malaysians."

U.S. mum on spy flights over China reads a headline in *The Malay Mail*, but nowhere is there any mention of poor old dad.

Vampires Corner A recent appeal for blood, to replace that supplied to the wife of a Member who had undergone major (and successful) surgery, brought a satisfactory response from the Branch concerned. We have been reminded, however that a number of Members are already registered as regular donors to their local hospitals, and they cannot always be expected to respond to sudden appeals of this kind. A Life Member, himself a regular donor since 1950, wrote saying that he thought such appeals quite unnecessary as "all who are public spirited enough already give blood, and those who do not never will!" Well everybody has to start somewhere don't they? and there must be many Planters who have never given blood but only need that little shove to start doing so. One hospital at least offers special inducements to these waverers, and the University Hospital in Petaling Jaya, outside Kuala Lumpur, informs us that donors who give two or more pints of blood a year will be granted the following privileges:

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Members admitted to any of Kuala Lumpur's hospitals are encouraged to let Headquarters know about it if they can. We may be able to do something about cheering you up, or run essential errands for you—there are always letters to post for instance.

Members of Sabah Branch will receive *The Planter* by air mail at no extra charge with effect from this issue. We regret that it is not possible to extend this facility to other overseas territories, as the cost is prohibitive.

We are pleased to announce the revival of Golf as an official Society activity. There are a number of handsome trophies, illustrated elsewhere in this issue, which will be played for at a special Golf Day at the Kampong Kuantan Club, on Sunday 18 April. Invitations are being sent to Agency and Management Houses and a number of firms are being asked to contribute in kind to what promises to be a very good day's sport. More details will appear in these pages next month but in the meantime you can always telephone Headquarters for the latest information, or to put your name down to play.

Prince Philip is to visit Pitcairn Island in the Pacific on 21 February, to become, says *The Straits Times* of 30 January, "the first Member of the Royal Family to see the spot made famous in 1970 by the Bounty mutineers." We hope H.R.H. will remember to take a packed lunch. The last we heard, the grub's not too good aboard Bounty.

Book Review:

Planters and Speculators: Chinese and European Agricultural Enterprise in Malaya, 1786–1921 *J. C. Jackson, University of Malaya Press, 1968,* 312 pp. *Price* M$30.

The development of plantation agriculture in what is now West Malaysia (the author uses Malaya to mean the former Federation of Malaya together with the island of Singapore) is an interesting story both agriculturally and sociologically, a story which is brought vividly to life in this book.

Beginning from the time of the establishment of a British Settlement in Penang in 1786 the author charts the changes on the agricultural scene to the time of the rubber restriction scheme in 1921–1922.

Immigrants from China pioneered the first agricultural enterprises in Penang and Singapore, chiefly in establishing gambier and pepper plantations. With the advent of British control a rapid influx of Chinese agriculturalists took place, stimulated by the opportunities for trade with the western world which were thereby presented to them. Other crops were profitably produced: initially chiefly tapioca, but later sugar and coffee.

Early European venturers lacked a knowledge of local conditions, and at first planted crops which were successful in other parts of the world. Thus pepper, nutmegs and cloves were planted in Penang, and later sugar, tea, tobacco and cinchona were tried with mixed success, until at the turn of the last century coffee, and then of course rubber, became popular.

The author compares and contrasts the different approaches of the European and Chinese agricultural pioneers: the former chose slow-maturing perennial crops that were both capital- and labour-intensive; the Chinese, on the other hand, relied on crops that would grow anywhere with the minimum of care and which gave quick returns on a small investment—an ideal pioneering approach.

The book is divided into three parts; the first deals with the efforts of early Chinese settlers and describes the workings of the 'Kangchu' system which they developed in response to local conditions; the second describes the early and relatively less successful attempts to develop plantation agriculture on European lines, and the changes which subsequently allowed it to prosper; the final section, probably of greatest interest to the rubber planter, deals with the effects of the introduction and expansion of the rubber industry and the shift from Chinese to European domination of the plantation sector. Approximately one-fifth of the book is devoted to the development of the rubber industry.

Plantation agriculture forms one of the twin pillars of the Malaysian economy. Its development is an essential part of the development of modern Malaysia; as described here, from the local point of view, it is a lively and stimulating story of agricultural history. It fills a gap in the planter's bookshelf, although it makes no mention of the early history of oil palm, the first commercial plantings of which began in 1917. A small annoying feature is the fact that the illustrative figures have been banished to the end of the book, rather than inserted where they are needed. However, this detracts little from the readable style in which the book is set.

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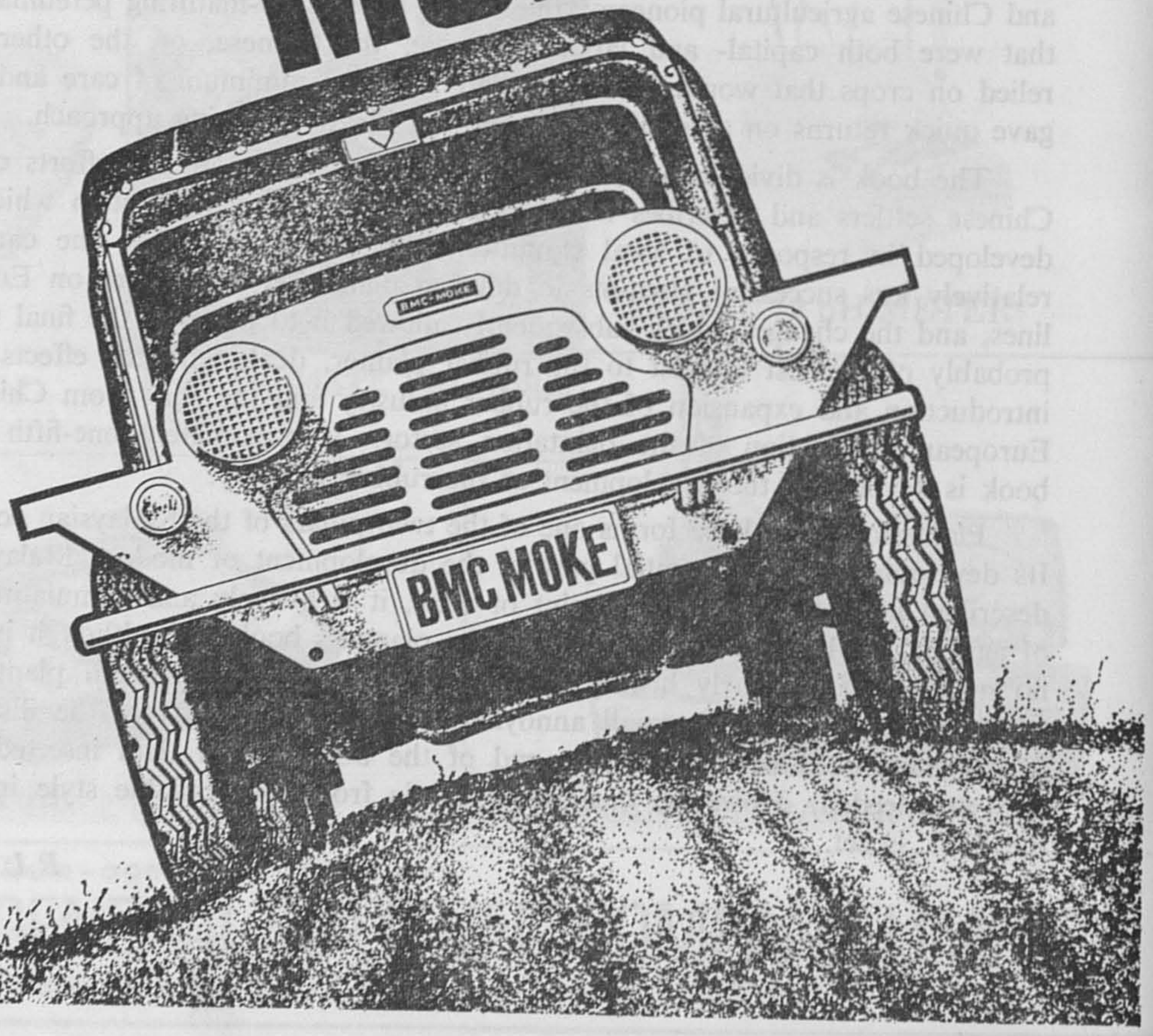

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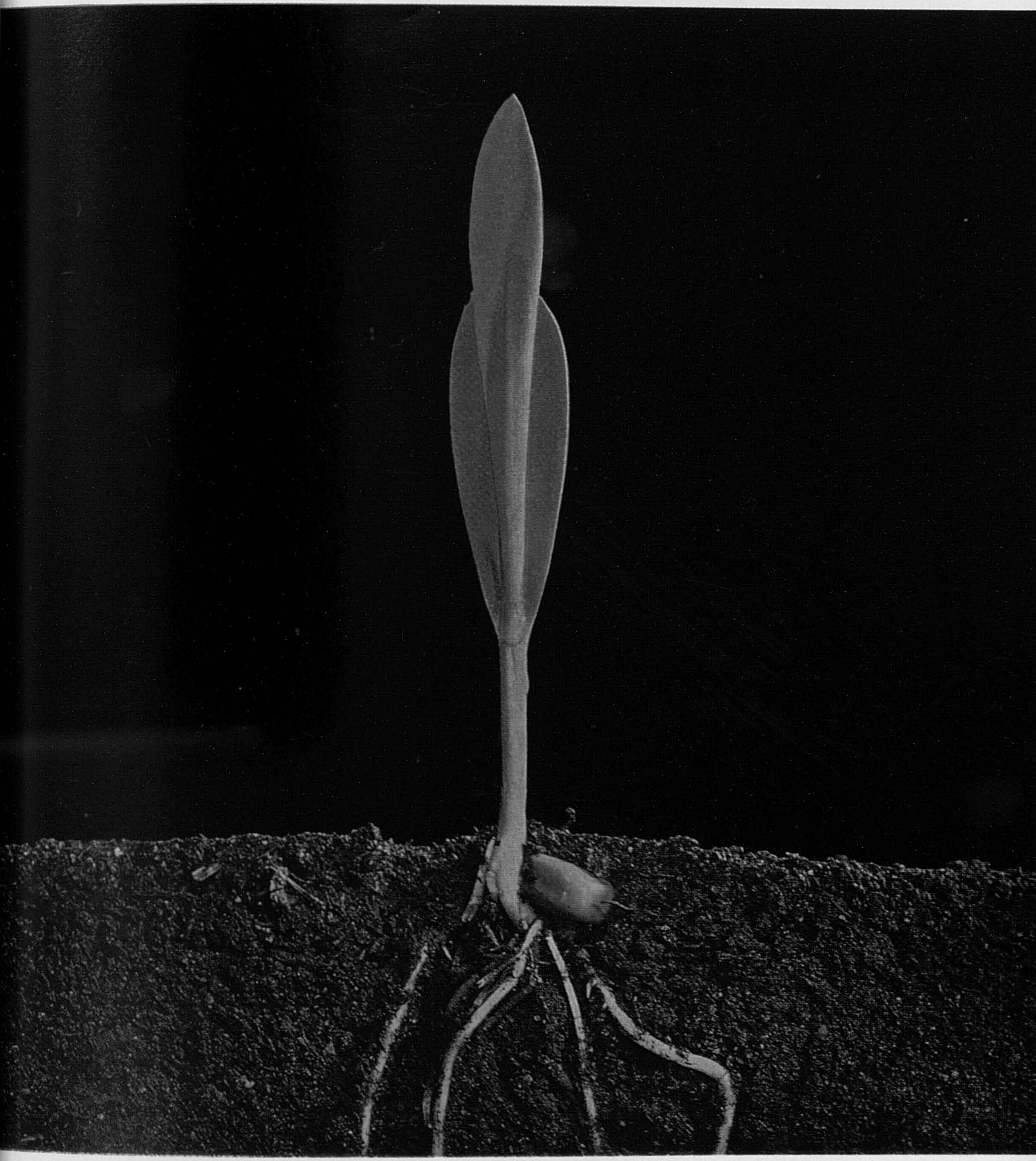

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THE PLANTER DRINKS

by

SARIOBA

It is not often that planters are mentioned in the learned journals. Recently they were mentioned in one, very briefly it is true, but coupled with the epithet "bibulous". To saddle us with this appellation is, I think, a little bit hard. In fact I would say it is a down-grading for us, since the robust traditional term that we rejoice in is surely that of "the whiskey-swilling" planter.

Perhaps "Whiskey-swilling" had to be toned down as being out of place in a scholarly article, but the somewhat effete "bibulous" was hardly the appropriate substitute, since it should more properly be reserved to describe the drinking habits of Bishops—though not, of course, of our present-day ones.

Underneath it all there may not have been all that difference between the bygone Bishops and the early planters in their offerings to Bacchus, but in describing them there has always been a certain respect due to the Cloth which is considered unnecessary when speaking of the agricultural laity. It is better therefore that we retain the epithets appropriate to each of us. Let the Bishops be bibulous and the planters whiskey-swilling.

It is hard to say just how the planters got this reputation. Possibly it was because many of the pioneer planters came from that social order which was supposed to provide the "Officers and gentlemen"—a rare combination—and whose members were traditionally supposed to ride hard, drink hard, and in fact do almost everything hard. But more probably it may have been because so many planters, of not quite so early an era, came from one of the two countries where whiskey (though spelt without an "e"), is the national drink.

Did we, and do we now, drink more whiskey here than we would drink "at home"? I rather doubt it. It is difficult to make accurate generalisations, of course, but this one is surely safe, that if one is on leave in the Gaelic countries one can easily find oneself in a gathering where whiskey is consumed, I will not say necessarily swilled, in quantities to test the mettle of any planter—and this too in spite of the ruinous price one has now to pay for "the real old creature."

It may be, then, that the drinking habits which gave the planters their label were merely imported from their country of origin, but because these habits would be more noticeable in Malaya, the "whiskey-swilling" tag became a firm part of the planter's image.

Quite often the young planter first arriving in Malaya did not drink much whiskey, didn't even much like the stuff, and at $3.50 a bottle couldn't afford it anyway on a salary of $225/- a month. Then after some years he perhaps acquired the taste, and was able to enjoy it; and of course it was very good for keeping

off the malarial mosquitoes, which fortunately never became immune to the whiskey-content of one's blood, which was thus as effective as a modern contact spray. In due course most planters found whiskey to be a very tolerable beverage, a good clean drink, pleasantly social at the time of partaking of it, and not too anti-social on the morning after.

In spite of the popular image as "whiskey-swillers" it is probably true that most planters have always been quite moderate drinkers in their day-to-day lives, and their "whiskey-swilling" sessions have usually happened only on special occasions, or at weekends. The bottle-a-day man, though not a completely unknown species, has always been the exception who proves the rule.

The drinking habits of the modern planter are changing quite noticeably, and for two main reasons. The first reason is the rat-race world in which we live, which affects the planter in the tropics just as much as it does the business executive in London. The professional standards expected of everybody are increasing all the time, and many planters feel that just as an evening of gin "affected my prowess, you know", so also any mid-week parties are out, because of the difficulty of being a ball of fire next morning. Not even Madeira m'dear can be indulged in nowadays. It is early to bed, after an evening at the goggle-box, so as to be in good shape for the next day's work. I dare say it is not that we are weaklings now, but merely that we have to be more serious than we used to be. Life is real, life is earnest—more so now than ever before, alas, and we have to adjust to it accordingly.

The other reason for the change in the drinking habits of the Planter is that the Planter himself is changing. He used to be European, but is now three-quarters Asian. This is not to say that the Asian planter is entirely teetotal, but, to generalise again, alcohol does not loom so large in his life as it does for most Europeans. He may drink hard, but his drinks are usually soft. Perhaps it is just that he takes longer to acquire the taste, though certainly when he does so he is no mean performer.

The truth is that the term "whiskey-swilling planter", though it has been our half-joking hallmark for many years past, is probably quite unfamiliar to many of the younger entry of planters, who would perhaps be surprised and not particularly amused to learn of this unexpected image which they have inherited. As the years go by they will evolve their own image, which possibly may not include a reputation for hard drinking, any more than our Bishops' image is now a bibulous one.

Of course there is another possibility, which is that brandy may take the place of whiskey as the New Planters tipple, for it is a more popular Asian drink than whiskey is. I suppose if this were to happen our new personification might then be called the Brandy-bibbing Planter, and though this loses a little of the tough image of the "Whiskey-Swiller", it is nevertheless a considerable advance on our being merely "bibulous".

A PLANTER REMINISCES

PART II

by

H. D. L. FISHER

My bungalow on the estate was an attap-roofed wooden affair of quaint design very different from the stone buildings of today. In it I had my only experience of an earth tremor which was admittedly all over before I realised what caused the creaking and other unusual noises. A few stone buildings in the vicinity were slightly damaged. There was also a fall of hail during a storm on one occasion when I was living here.

My predecessor in this bungalow was a man named Pleasance whose father had lived some time in India, and was retired. He made an extended visit to his son, and had acquired some reputation in the kampong for having killed a snake by what one might call the Whip-lash method. I had heard of this being done, but was never keen to try it myself. On another occasion he followed a path through the rubber from the bungalow to a point where it joined the narrow estate road which was about to enter a jungle belt about a chain wide. Turning the corner he saw a tiger crossing the road. He was immediately seen by the tiger and they looked at each other. The spell was broken by the tiger continuing on its way to a big tree which, I well remember, stood just off the road drain. It reached up and proceeded to sharpen its claws as a cat does against a rotan chair leg. Pleasance Pere wasted no time in backing around the corner and hurrying to the bungalow.

I was told of a similar experience by the late N. C. P. Bosanquet whom I was fortunate to have as one of my Directors. He was one of the early Ceylon Planters and came to Malaya to live in the Klang district. In those spacious days the interests of most planters centred apparently on horse-racing, and mails were delivered to the club for convenience and attention. The tale was not too dramatic although he said he was walking round a small hill and found himself face to face with his tiger. He too managed to extricate himself, but what amused me was the conclusion to his story: this charming man had a slight difficulty in pronouncing his Rs; he said "I was terrified to a degree".

The only sort of confrontation I experienced, I am glad to say, occurred at Pahi, Kelantan soon after my return to the estate from England when the last war had ended. At that time I had become possessed of a horse, taken over by the military from the Japanese, which I used to exercise most evenings. Because of the many ravines and the few roads there was really not enough scope for this activity and the war years had left everything much overgrown. I had heard of the presence of Seladang on the estate, bears had done a lot of damage to coconut palms on the other side of the river and other animals had been reported in the

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deserted estate areas. One evening I was riding along a path through the rubber, then largely under *belukar*, when turning a bend I saw one of these *Seladang*, which seemed much taller than a buffalo standing in the path ahead of me. It seemed as tall as my horse which was a biggish animal.

I remember how it made a sudden twist of its head to the right, as if preparing to run, but immediately recovered itself and stood firmly where it was. Having heard and read of the offensive qualities of these animals, I was quite relieved to be able to turn my horse and return the way I had come.

Returning again to tigers, the most curious incident I know of occurred when a Malacca planter named Berry with a friend named Morton rowed out to fish for *ikan merah* off Tanjong Kling, and saw a tiger in the sea. Hurrying ashore they secured a rifle and went back and shot it. This seems somewhat unsporting, a swimming tiger turned into a sitting duck! The incident was fully reported in *The Straits Times* and I feel sure that had the type of person who complained bitterly in the Press a few years ago about the Duke of Edinburgh's tiger-shooting in India existed in those days, he or she would have burst into tears.

Taking the risk that we are all not yet sick of tigers I remember a curious incident at Pahi. Malays from the village used a path through the rubber across a corner of the estate to reach some smallholdings on its borders. At the time the rubber was under a cover of wild coffee which, kept at a uniform height of about $3\frac{1}{2}$ feet, looked quite nice. (That, without wishing to be too controversial, is all that one should expect of a cover crop). About 6 o'clock one evening a Malay was returning to the village when a tiger jumped out of the wild coffee, gave the frightened man a few smart cuts with its forepaws and then as suddenly returned to the cover. It was thought that it was eating a kill and did not wish to share it with anybody. I believe a short spell in hospital to repair his scratches saw the lucky man all right again.

I seem to have rambled away from Malacca days so feel I should return there whilst on the subject of tigers. There was an elderly Chinese named Ah Fat who acted as factotum to the Manager and who was an expert gardener, amongst other things. He looked upon assistants, incidentally, with a certain amount of scorn, but deigned to visit our bungalow and advise on garden upkeep occasionally. He had a big fat dog of which he was very fond and lived in a hut by himself at the bottom of a slightly rising road at a spot about 150 yards from the Manager's bungalow. The dog used to be out on the narrow estate road in the evenings and on the last occasion it was ever to do so, Ah Fat heard a wild yelp and coming to the door of his hut he saw that a tiger had just landed on his beloved dog. In a flash he grabbed a parang leaning against the wall and rushed at the animal which was so frightened that it leapt 16 feet (according to someone who measured the pug marks) into the jungle belt nearby and disappeared. The dog, however, was dead. Many years after I left Malacca I was interested to read in Blackwood's Magazine, a poem dedicated to Ah Fat by Andrew Buchanan Hunter (the former estate Manager's name). It was very good indeed, as it naturally had to be, to be printed in that journal.

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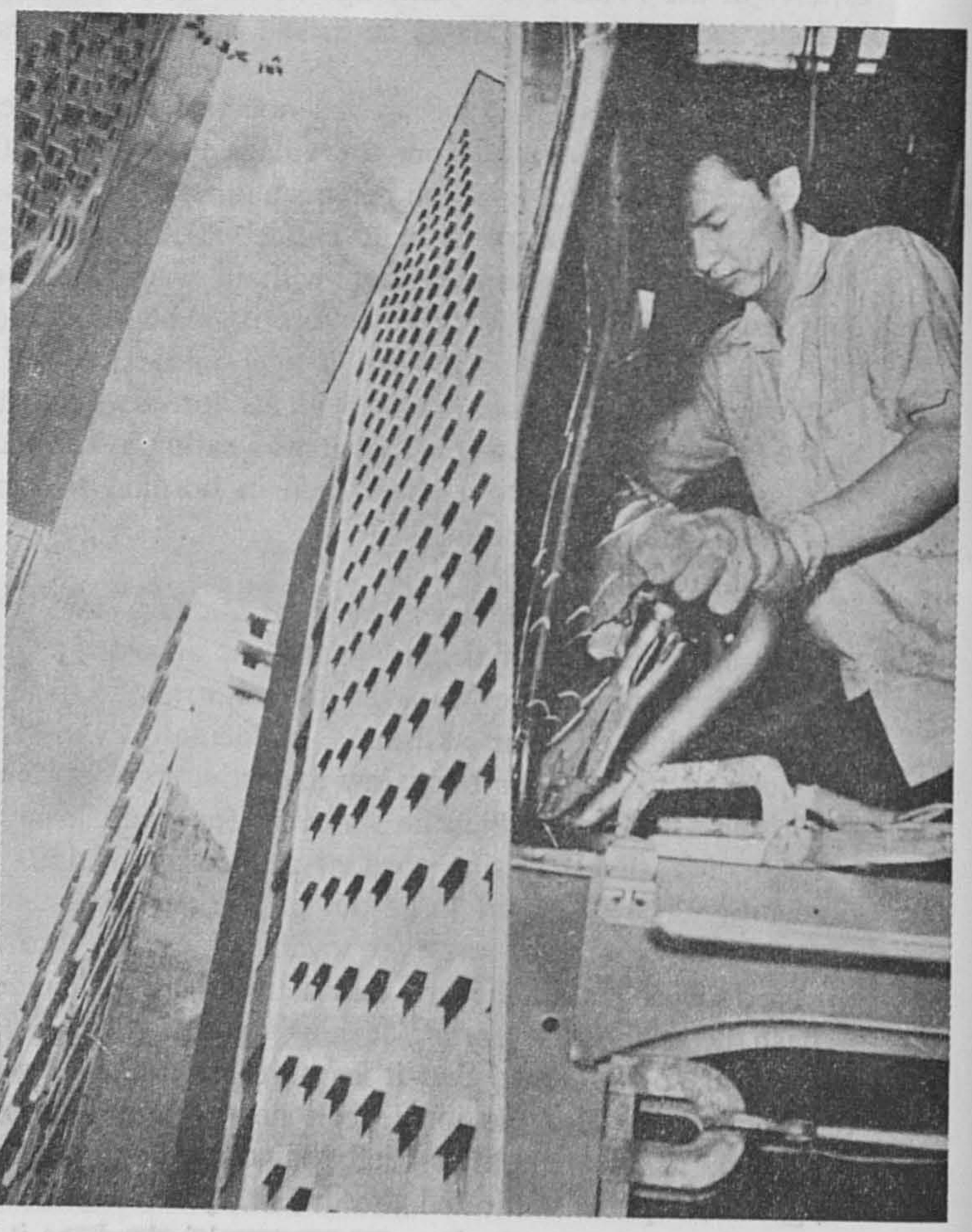

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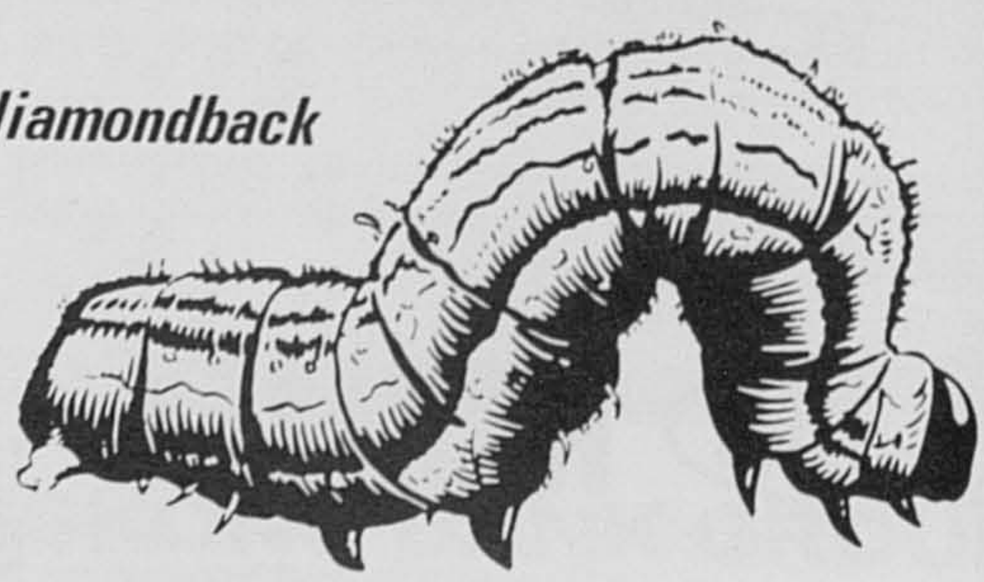

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Before avoiding any further tiger mention, I might add that although many men came to Malaya and had it in the back of their minds that they would like to shoot a tiger, I think probably one whose name was given to me as Cameron holds the record; he shot a tiger within a month of arriving in the country in the middle twenties (at Kuala Pergau, Kelantan).

I saw more interesting animals such as anteaters, porcupine, wildcat in Malacca than I saw later in Kelantan (except probably a young tapir). In Malacca, there were flying squirrels which did not fly and were not squirrels but something longer and generally bigger. I used to like watching them in the early morning gliding from one tall tree to another by means of the membrane which stretched from their forepaws to the hind legs and was spread out in passage. The black and white ones were beautiful and so were the red and brown types. The kind of lizard which gets from tree to tree in a similar fashion is, I was told, unpopular with Malays because on one occasion one of them by a curious movement of the lower jaw, rather similar to the way a Malay points with his chin, indicated the whereabouts of the Prophet, when he was being pursued by his enemies.

The crocodiles which used to be seen at any time on the small island off Malacca seem to have disappeared. Where the sea reached the road passing the old Malacca club, they were often seen and I have the stuffed body of a young one about 3½ feet long in my possession in England, caught in the drain which I think still runs along the club *padang* next to the Convent. Returning from the popular bathing and curry tiffin parties which were to attract us to the nice sandy beach at Pulau Besar, we would invariably see crocodiles on the edges of the more muddy islets inshore.

A Malacca Japanese in about 1920 or 1921 took a trip down the little Kellang river on the way to Muar from Malacca and surprised us all by shooting a number of crocodiles, quoted as 60. Two other fellows and myself made a similar run down this river, but were only able to pick up the eye, by means of our car-battery lamp, of a single one.

A Malacca planter named Strivens used to tell an amusing story of when he was in Perak; he and a friend had shot a crocodile and had hauled it into their boat. The reptile however began to show signs of life, threshing around with its tail, and in the excitement his friend shot a hole in the bottom of the boat. It must have been fun.

Eventually the Jasin district had its own club, with 9 holes of golf around it, which became very popular. Presumably, similar conditions obtained elsewhere in the country and on a Saturday there would be 60–70 Europeans, including wives, engaged in golf, tennis (*i.e.* courts in constant use) not to mention a busy billiard table. Later there was usually dancing, Bridge and poker. I settled for Bridge usually, being very fond of cards and I am reminded of an incident when cutting for partners when the cards had been spread out as usual on the table and each of us drew a Jack. The odds against this happening may not be high, but I have never seen or heard of anything similar in many years of playing.

Get the taste

the 'Three Fives' taste

555
FILTER KINGS

I remember the names of the other players and one of them Gregg, then D.O., was to die of starvation some 16 years later, on an island off Singapore, endeavouring to escape from the Japanese.

Talking of odds reminds me of a friend of mine (I was best man at his wedding in Kuala Lumpur) named Hanningan (whose brother eventually became I.G. Police). He was in the bar of the Malacca club one evening playing one of the several dice games popular before "Liar Dice" swept them away, with the local C.P.O. known as Major Bowers. Han had thrown 5 aces whereupon the major said "I'll bet you ten thousand dollars to one you can't do *that* again". Han said, more in fun than aything "I'll take that" and after shaking the box, rolled out 5 aces once more. When they had fully recovered, the major was in rather a spot, but anyway, refused to take the matter as a joke and arranged to pay $20 or it may have been $30 per month to the credit of Hanningan's account. This did not last very long, however, as the popular major was shortly due, I believe, for retirement.

Incidentally, Major Bowers was also in charge of the Malacca Fire Brigade and I recall a practice demonstration of fire-fighting on the Malacca Club padang; the brigade was called to action against an artificial fire when something went wrong with the drill; we could hear Major Bowers calling distractedly "Mana nozzle punya orang.....Mana nozzle punya orang." I'm afraid that the gallant major's obvious embarrassment was greeted with much laughter by the onlookers—the rather quaint language being possibly to blame.

Han's luck did not hold. Wisely deciding (as many men did not) to get his wife out of Singapore before it fell to the Japanese, he arranged for her to leave by one of the planes which got away just before the end. He drove her down to the airport, and at the last moment someone had reneged and there was a vacant seat. Han could have it if he liked. He dropped everything and took it. Soon after his arrival in England, he died from pneumonia contracted as an Air Warden in the blitz. I feel pretty sure that he, with whom I had played a lot of cricket, tennis and golf, was a pretty fit man and would have survived the years of internment; but there was that vacant seat.

During the time I was in Malacca (10 years) the estate bungalow had no electric light, water supply or plumbing. There were a few refrigerators appearing, but ice became available to me by means of transportation in a block from Malacca (21 miles) once a week. I managed to conserve what was left of it in an old ice chest.

Assistants were able to leave the estate for relaxation in Kuala Kubu Bharu by hiring one of the Ford cars which had reached Malacca in greater numbers than any other variety, and were available for hire. This was usually reasonable and so a visit to the club in Malacca in one of these "Tin Lizzies" would cost three or four of us about $6 including a bounteous tip—notwithstanding return—in the early hours of the morning.

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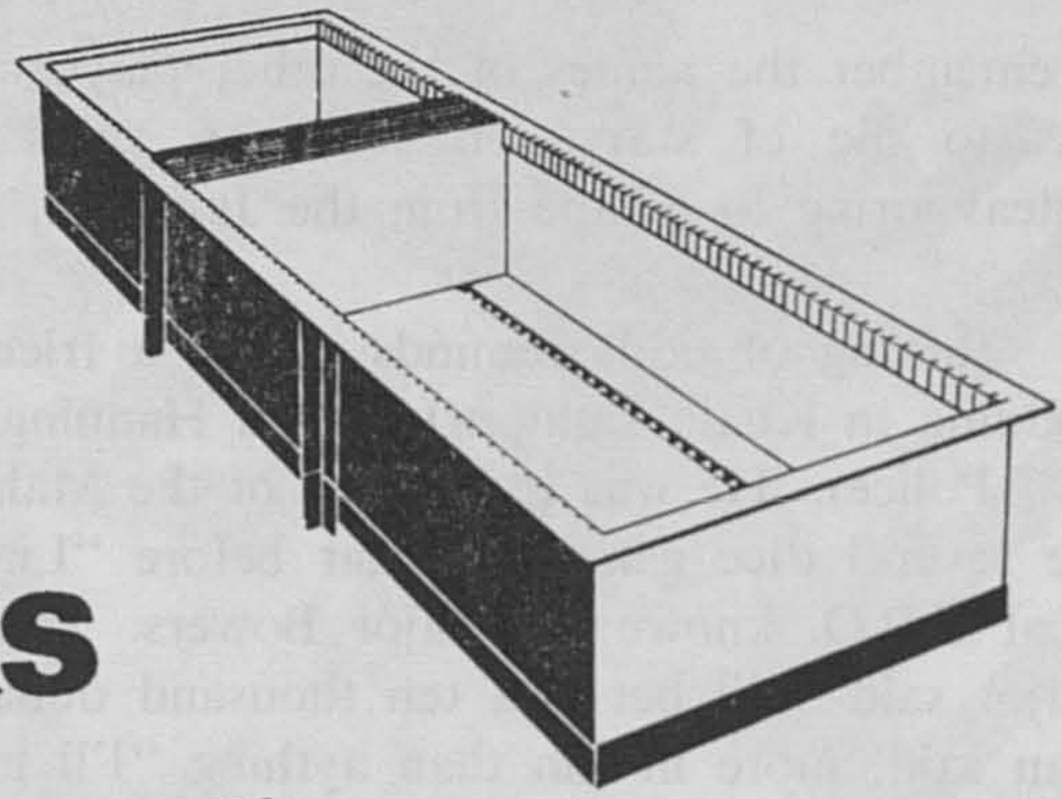

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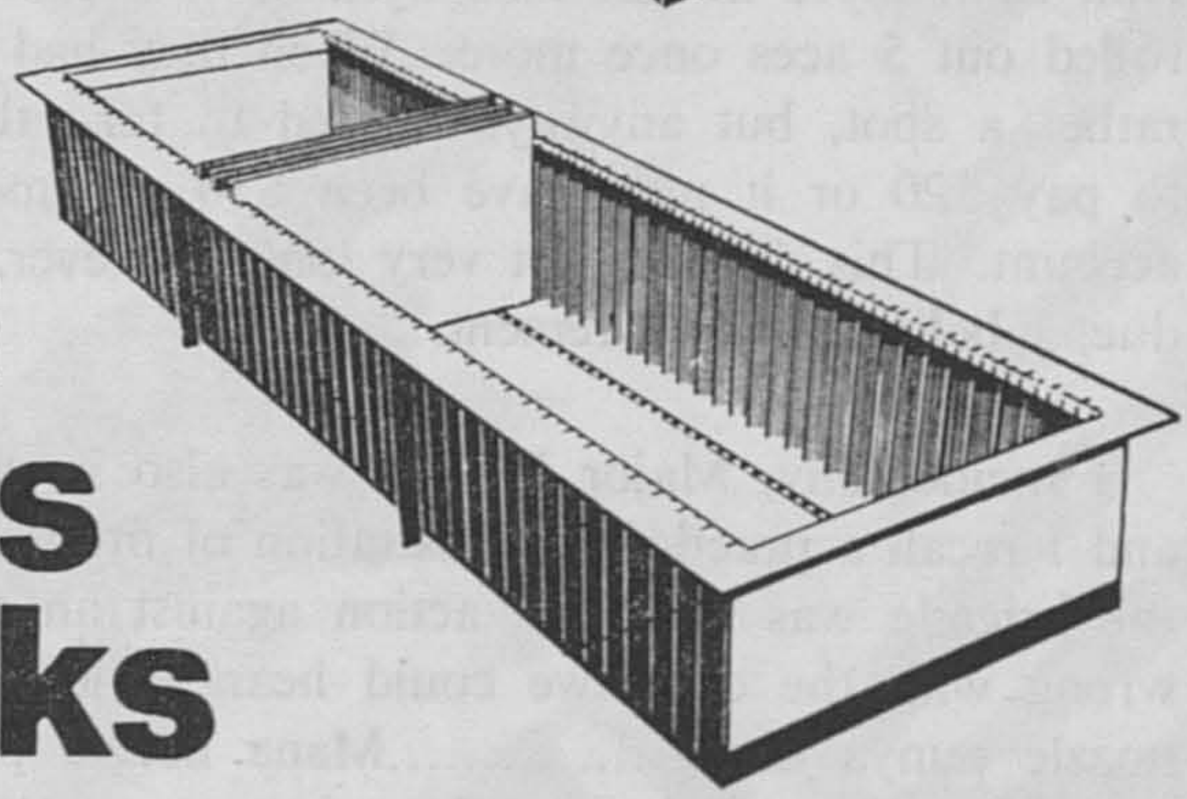

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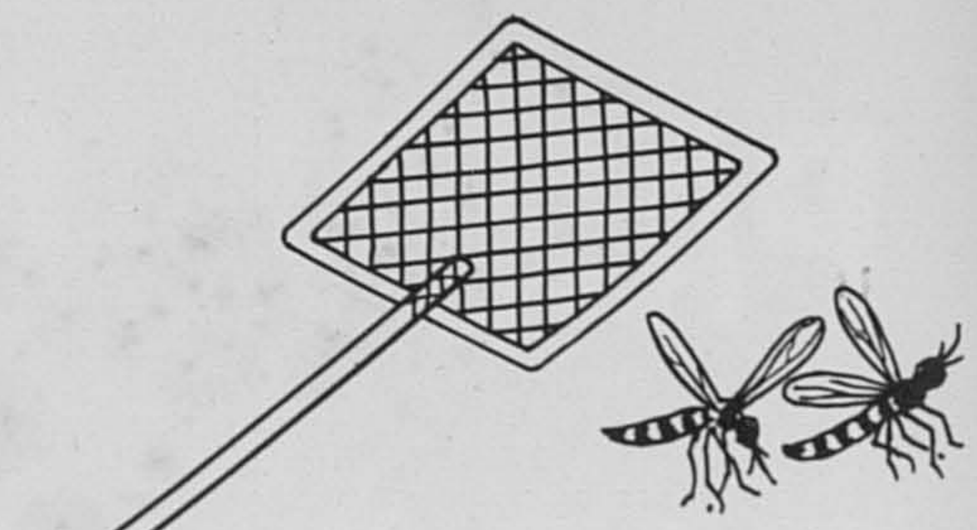

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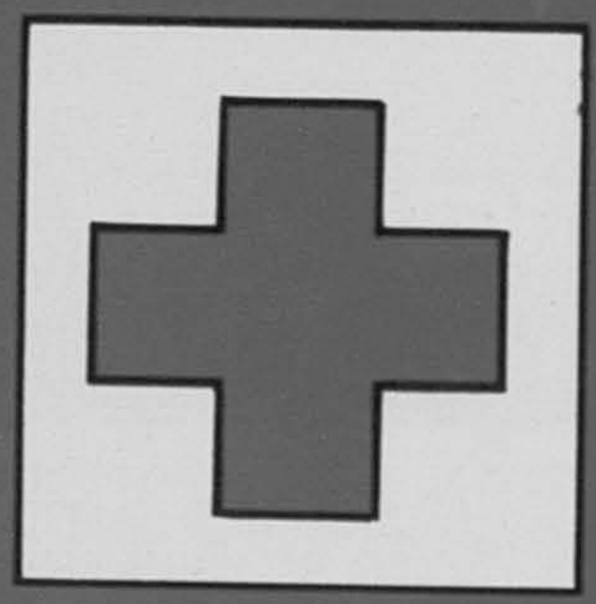

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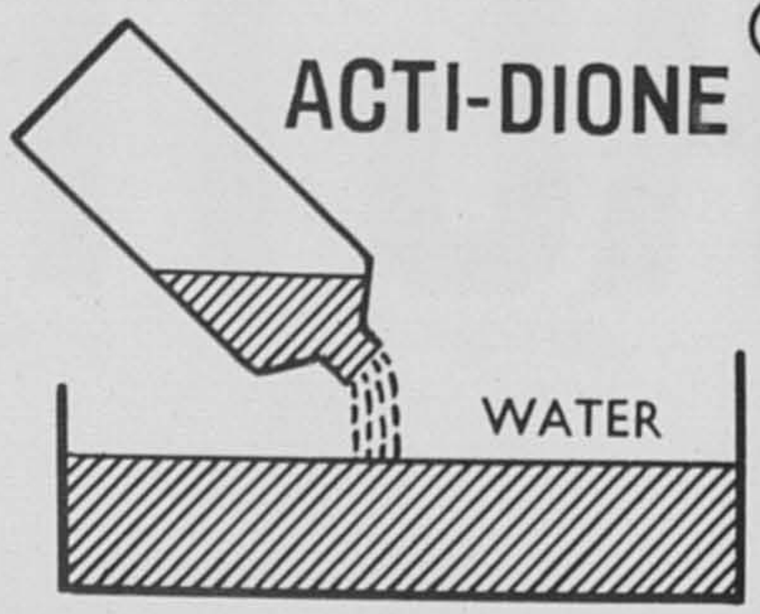

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Motor cycles appeared in about 1922, but an acquaintance of mine on an estate nearby told me later about an experience which had befallen him in Singapore. He had been on the staff of one of the Agency Houses, but feeling that office hours in the tropics were not to his liking he had managed to become an assistant on a rubber estate. He had an accident on his motor cycle before leaving Singapore and woke up to find himself in the General Hospital. Noticing the arrival of ward staff with trolley and strange preparations, he was sufficiently himself to insist on reference to the detailed reason for his admission and this was given as "concussion" and that he was not at all a candidate for "circumcision". A close shave, or nearly so.....doctors used not to be very good penmen.

I had my second leave in 1927 and the journey to England was remarkable insofar as when the ship arrived at Aden there had been a pretty well unheard-of spell of a week's continuous rain. A party of us which went ashore arrived at the Grand Hotel (I am pretty sure this was its name) which looked out on a sandy space, rather more like a triangle than a square. The bedrooms had all been leaking, and hotel guests had been obliged to sit under large parasol umbrella affairs on the hotel verandah. There were at that time several curious sea mammals which could be viewed (by gentlemen only) on payment of a small charge, in one of the hotel's rooms.

What with slumps and so on it was 10 years before I had leave to visit Britain again and what with the war it was a further nine before I did so subsequently. After release from internment I went back to Kelantan before going home, having left it in rather a hurry. When I arrived in Kota Bharu by train through Siam I found that the military had managed to persuade one of the Chinese anti-Japanese organisations known, I think, as the "Nine Star" to vacate the Mercantile Bank building which had been the headquarters of the Japanese Kempetai. They were not particularly pro-British and I suppose are not to be blamed for feeling that the time had come for them to take over the country.

On the telegraph pole opposite the Rest House where I installed myself, there was a poster suggesting that all should now join together and dispose of any Europeans or military in the state without delay. The military apparently expected some sort of an attack, because machine gun posts were erected near the Rest House along the Krai road. Fortunately nothing occurred and as far as I know the Nine Star Party had never at any time caused much trouble with the Japanese. However, when I made my way to Krai shortly afterward I was stopped by a member of the group, heavily armed, at Machang, but he let me through with no trouble.

The Nine Star people were eventually induced to surrender their arms on payment of $100 for each rifle as a sort of bonus. The B.M.A. type who arrived in Kelantan to conclude the deal was persuaded by the principal 'Star' to allow him to distribute the money and that was the last that was seen of him. I seem to remember the British Adviser of Kelantan telling me that the fellow got away with a useful $5,000—not "banana" money. There was a particularly poisonous

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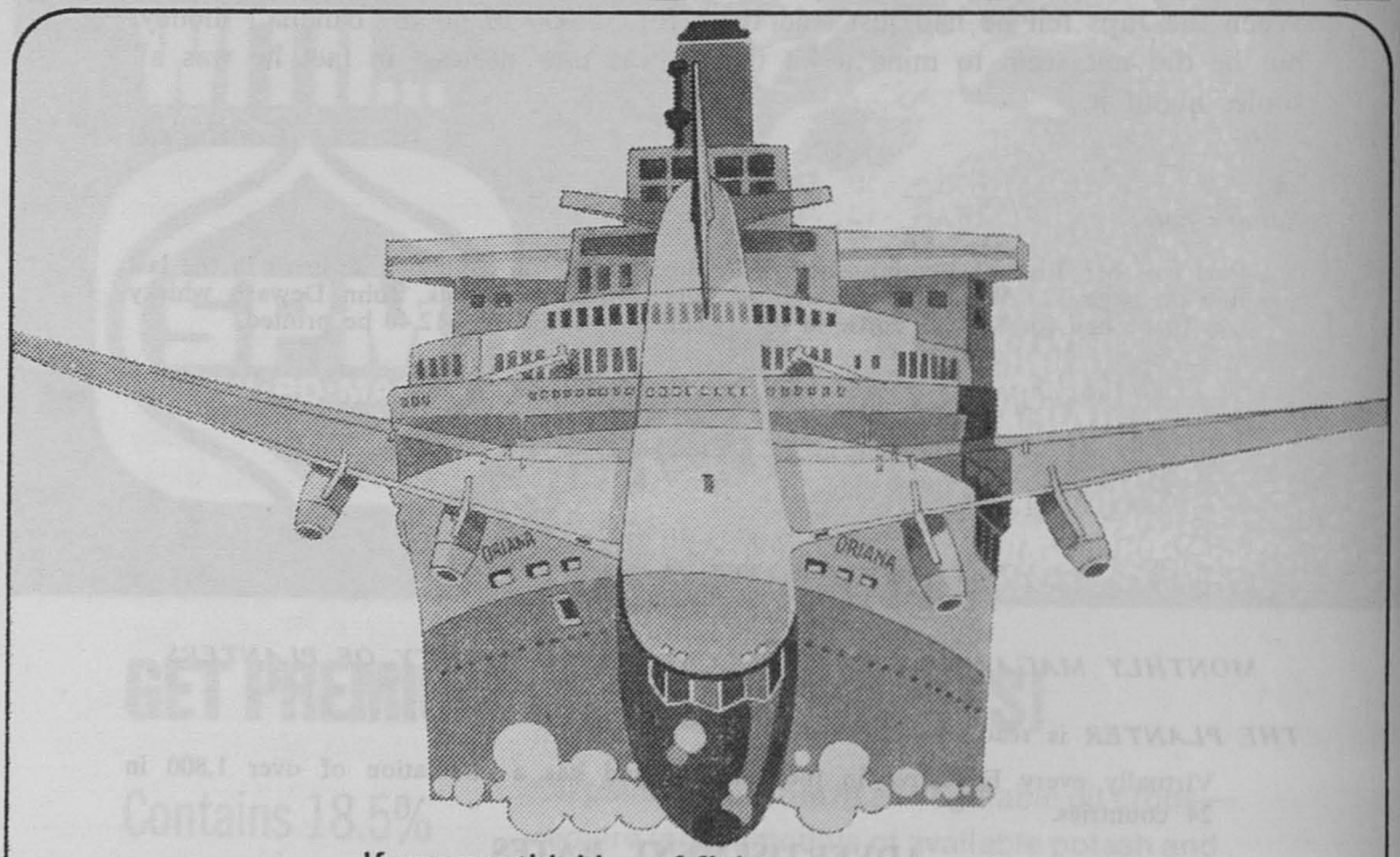

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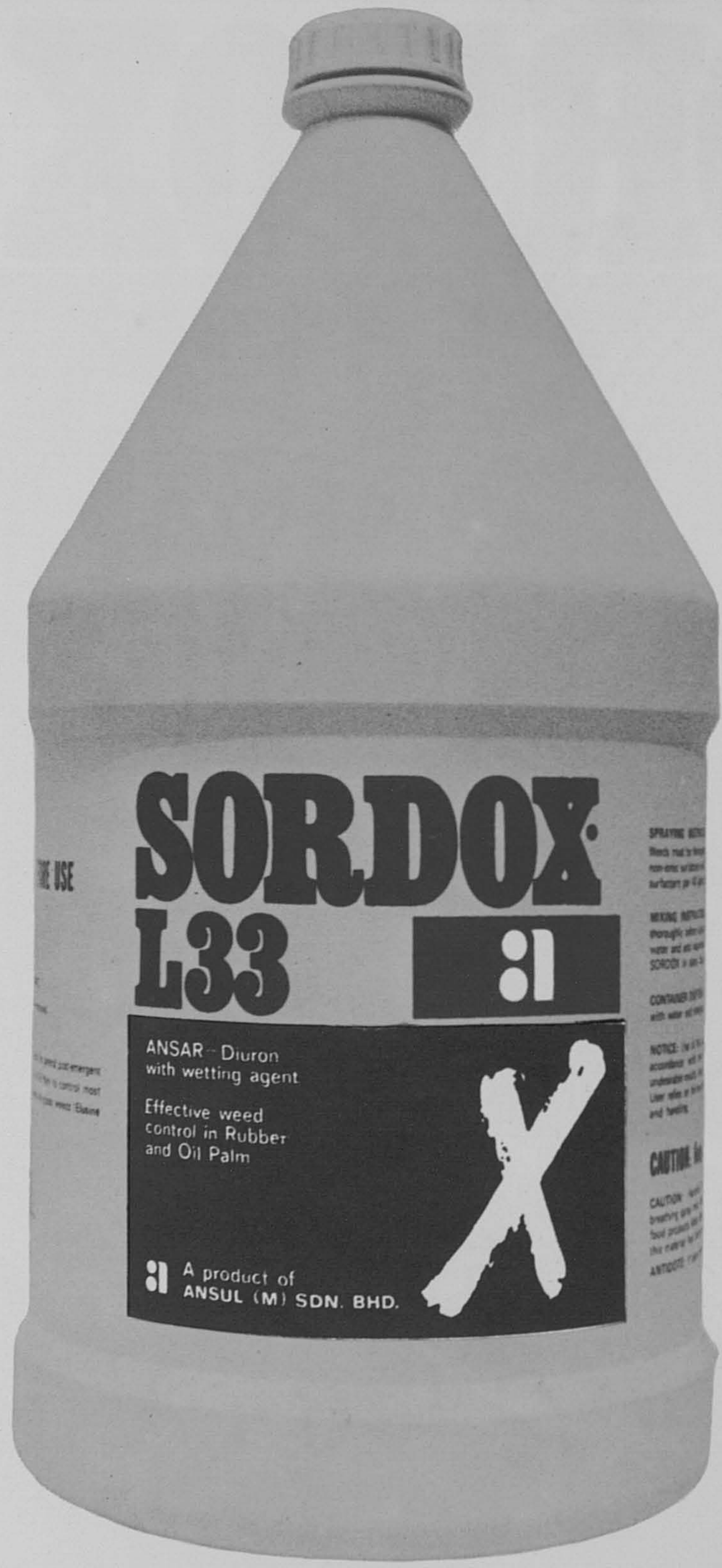

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Announcement:

QUESTION AND ANSWER PAGE

Readers are invited to submit questions on any aspect of Planting to the Planter Editorial Committee. The Committee will endeavour to obtain brief answers to the questions from senior planters and scientists. Provided there is a satisfactory response from both sides, it is intended to make the page a regular feature of *The Planter* and your co-operation and interest is solicited to this end.

For a long time, there have been requests from candidates for the Society's Technical Education Scheme examinations, for "model answers" to questions set in papers. The T.E.S. Committee and the Society's examiners decline to provide "model answers" for several sound reasons. However, the T.E.S. Committee are now prepared to comment on contributions to the Question and Answer Page. Where a question could reasonably be expected to appear in a T.E.S. examination paper, the Committee are prepared to commend the content of the answers to T.E.S. candidates and to comment on the standard of the answer as if they were marking an examination paper.

The P.E.C. and the T.E.S. will not consider questions which have been lifted from previous examination papers. They exhort members to make full use of the new page to acquire knowledge which cannot always be gained from textbooks.

Chairman,
Planter Editorial Committee.

London Letter:

STRIKES ALL AROUND US

The London letter is early this month because we are in the midst of a postal strike which does not look like ending for a week or two and so one has to take advantage of any kind people who may be going overseas and who agree to post letters for other parts of the world.

To say we are tired of strikes is to put it mildly. Efforts are being made to beat the strike and messengers have been set up in various places to take important letters. This of course only touches the fringe of the problem. The postal people want more money, not realising that if they get it everything will rise accordingly. It has been stated that letters inland would cost at least 9d and without doubt this would mean a terrific curtailing of letters. Then we have an oil delivery strike and many people are without central heating and hot water, etc. The BOAC pilots have a quarrel with their employers and this is said to be threatening peoples' holidays.

In Parliament things are equally tricky. The Industrial Relations Bill has had a very stormy passage and a "guillotine" has had to be imposed—which means that a certain time only is allotted for the Bill's numerous Clauses. This has annoyed the Labour Opposition so much that they are doing all they can to curtail Government business. Thus last night one Labour Member spoke for an hour and a half on the Fire Precautions Bill—which is in fact a very worthy Bill—in order to annoy the Government. Another two Labour Members have put down Prayers to about 100 Statutory Instruments which means considerable delay. Such Instruments are usually agreed during the passage of legislation and this may cause annoyance and hardship to those waiting for them to give effect to the law.

So much for our domestic problems. Another very big topic a week ago was the Commonwealth Conference held in Singapore which seems to have had a rather stormy passage. Perhaps the air has been cleared and it might be better for all that it was not just a "pat on the back" between the members. As one newspaper pointed out, Mr. Heath met the members of the Commonwealth and treated them not like teenagers to be smiled at but like grown-ups with whom to discuss the affairs of real life. It would appear that the Conference was overshadowed by the Arms for South Africa issue, and perhaps as a result of the Conference we shall look more carefully at the realities of the position.

Another big issue looming up is the Common Market and how the Commonwealth trade partners will fare. No doubt we shall go in in due course subject to safeguards but on the whole one doesn't really believe that in the event of a referendum, the public as a whole would vote for going in.

Another matter which affects the public seems to have reached a sticky impasse. That is the question of a third London Airport. The Roskill Report chose Cublington but there has been as much row about this as there was before about Stansted. Many people say Foulness would be the best as it would not take much land, but again petitions are starting against this. It looks as though we shall be without a third London Airport for a very long time.

A tragedy about which we all expressed great grief was that which resulted in four of the crack RAF Red Arrows team being killed after a mid-air crash last week. Planters will remember that one of their members had at one time a son in this team. The crash was the 6th involving the Red Arrows since they were formed six years ago, but it was the first mid-air crash in an RAF jet aerobatic team. As is expected the Red Arrows include some of the finest pilots in the R.A.F.—perhaps in the world.

In the Sports World we are concentrating on the Cup. Football has certainly been exciting this year since many famous people have been reprimanded or suspended, and there is concentration on the safety of football grounds. This has stemmed from the Ibrox disaster when 66 people died as the crowd stampeded back to the ground when Glasgow Rangers scored a goal at the last moment. Since this incident there have been one or two further disasters but nothing fortunately causing any deaths. The Government has ordered a full enquiry into safety measures to be undertaken and one presumes this will be done. The cricket in Australia seems pretty dull with plenty of criticism, but on the other hand the weather does not seem to have been particularly good.

In spite of our strikes there is still plenty of humour about and one verse sent in by a reader to the *Daily Mail* which he is said to have found in a cemetery should make anybody cheer up.

Grieve not for me, my husband dear
I am not dead, but sleeping here
With patience wait, prepare to die
And in a short time you'll come to I.

The husband added the following:

"I am not grieved my dearest life
Sleep on, I've got another wife
Therefore I cannot come to thee
For I must go and live with she."

Watney and Powell.

London, January 27th, 1971.

SOCIAL AND PERSONAL

ON LEAVE

4741 Chandran, M.R., 19, Kia Peng Road, Kuala Lumpur. (L. Perak)—24/1/71

3798 Stuttard, G.D., c/o The Midland Bank, Henley-on-Thames, Oxon, England. (Selangor) —12/2/71

RETURNED FROM LEAVE

3432 Earp, D.A., The Incorporated Society of Planters, P.O. Box 262, Kuala Lumpur. (Secretary/Executive Officer)—1/2/71

5354 Gopalakrishnan, C.P., Linsum Estate, Rantau, Negri Sembilan. (Selangor/Negri Sembilan)—1/3/71

4383 Maclean, R.J., A.I.S.P., Kuala Gris Estate, Kuala Krai, Kelantan. (Kelantan/Trengganu) —13/1/71

4540 Morrison, W.H., Sungei Mai Estate, P.O. Box 206, Mentakab, Pahang. (W. Pahang) —1/2/71

4331 Shaw, A.F., Austral Malay Tin Berhad, P.O. Box 980, Penang. (N. Perak/Kedah/ Penang)—19/1/71

3953 Davies, G., Diamond Jubilee Estate, Jasin, Malacca. (Malacca/Muar)—10/2/71

CHANGE OF ADDRESS

5563 Anaweokhai, V.E., Urhonigbe Rubber Estate, Urhonigbe *via* Agbor, Midwestern, Nigeria. (Overseas)—11/1/71

5454 Abdul Malik bin Mohd. Amin, Bukit Paloh Estate, Paloh, Johore. (L. Perak/C. Johore)—26/1/71

5371 Chew Keong Lye, I.C.I. Agriculture (M) Sdn. Bhd., P.O. Box 284, Kuala Lumpur. (L. Perak/Selangor)—1/2/71

5187 Chieng Ngie Leong, Kerilla Estate, Temangan, Kelantan. (N. Perak/Kelantan/ Trengganu)—10/2/71

5424 Chuah Hock Leng, Eric, A.I.S.P., No. 1141, Jalan 17/46, Happy Garden, Petaling Jaya, Selangor. (Selangor)—1/2/71

4830 Eastaugh, G.C., N.D.A., A.I.S.P., West Estate, Carey Island, Port Swettenham, Selangor. (Selangor)—8/2/71

5584 Ganesamoorthy, K., Foong Lee Plantations Sdn Bhd., Pondok Tanjong, Taiping, Perak. (N. Perak)—30/1/71

4199 Hodgson, G.A., A.I.S.P., P.T. Consulting Services, Indonesia, P.O. Box 2972, Djakarta, Indonesia. (Life member)—31/1/71

4993 James, N.C., Mah Sing Building, Mezzanine Floor, 112–114, Jalan Pudu, Kuala Lumpur. (Selangor)—26/1/71

4085 Khoo Peck Leong, c/o P.O. Box 10, Kemaman, Trengganu. (Life member)—29/1/71

5080 Leitch, T.A.T., A.I.S.P., Bhutan Estate, Nilai, Negri Sembilan. (Negri Sembilan/Selangor)—2/2/71

4167 McDonald, B.F., Bukit Mertajam Estate, Kulim, Kedah. (Selangor/Kedah/Penang)—15/1/71

4675 Milne, G.M., Giram Estate, P.O. Box 137, Lahad Datu, Sabah. (Malacca/Muar/Sabah-Tawau)—8/2/71

4694 Osman bin Abdul Ghani, No. 14, Jalan 22/48, University Garden, Petaling Jaya, Selangor. (Selangor)—30/1/71

5729 Peters, E.W., Regional Office Schemes, P.O. Box 1253, Sandakan, Sabah. (Sabah-Tawau/N. East)—18/1/71

5222 Palanisamy, K., Kuala Jelei Estate, Bahau, Negri Sembilan. (N. Johore/Negri Sembilan)—30/1/71

5540 Raghavan, V., Jasin Lalang Estate. Jasin, Malacca. (Negri Sembilan/Malacca/Muar)—1/2/71

5621 Raj, S.D., 63, Evergreen Garden, Jalan Nanas Barat, Kuching, Sarawak. (Sabah-Tawau/Sarawak)—1/2/71

5265 Soo Fook Ngun, A.I.S.P., Kota Bahroe Estate, Gopeng, Perak. (Selangor/C. Perak)—12/1/71

5358 Tang Sew Hon, A.I.S.P., Lanadron Estate, P.O. Box 101, Panchor, Muar, Johore. (Negri Sembilan/Malacca/Muar)—1/2/71

4846 Wakefield, O.F., Gedong Estate, Bagan Serai, Perak. (C. Johore/N. Perak)—2/2/71

1415 Walker, H., J.P., F.I.S.P., "Cicely", Polurrian Road, Mullion, Helston, Cornwall, England. (Life member)—24/11/70

5240 Abu Hassan bin Mamat, Ranchangan Kemajuan Tanah Kemelah, Wakil Pos Kemelah, Segamat, Johore. (Selangor/N. Johore)—9/2/71

4815 Blincoe, A.D., Kuala Selangor Estate, Bukit Rotan, Selangor. (Selangor)—11/2/71

5183 Chong Fong Chin, A.I.S.P., Nadefinco Ltd., P.O. Box 10, Kemaman, Trengganu. (Selangor/S. Trengganu/E. Pahang)—1/2/71

3561 Cuthill, W.L., 50, Taman Jesselton, Penang. (Kedah/Penang)—25/1/71

4745 Dixon, R.B., N.D.A., A.I.S.P., Sogomana Rubber Estate, Pantai Remis, Dindings, Perak. (S. Johore/C. Perak)—18/2/71

5250 Hoh Kam Yong, Christopher, Ulu Dusun Oil Palm Research Station, P.O. Box 1401, Sandakan, Sabah. (Sabah—N.E.)—10/2/71

5547 Lim Cheong Chai, Ulu Yam Estate, Rawang, Selangor. (Selangor)—6/2/71

5431 Lim Hean Peng, Patrick, Rasak Estate, Batu Tiga, Selangor. (N. Perak/Selangor)—9/2/71

4750 Lee Lye Huat, Robert, Tebong Estate, Tebong, Malacca. (Malacca/Muar)—13/2/71

2757 Potter, J.S., P.J.K., Sendayan, Bracken Park, Scarcroft, Nr. Leeds, England. (Life member)—5/1/71

5304 Stewart, M.D., Cheng Estate, Alor Gajah, Malacca. (Kedah/Penang/Malacca/Muar)—13/2/71

5630 Wong Shee Donn, 53, Tamby Abdullah Road, Kuala Lumpur. (Selangor)—12/2/71

5523 Zainal Abidin bin Muhamad, Kuala Gris Estate, Bukit Abu, Kelantan. (N. Johore/Kelantan/Trengganu)—16/2/71

AWARDS

CONGRATULATIONS TO :—

SENATOR K. R. SOMASUNDRAM, A.M.N., on his being made Justice of the Peace by H.H. Sultan of Kedah.

BIRTHS

CONGRATULATIONS TO :—

WYCHERLEY: To Jennifer and Paul a daughter Eleanor Ann, on 6th February, 1971, at Lourdes Poly Clinic, Kuala Lumpur.

CHONG: To Beatrice and Fong Chin a son Andre Chong Kheng Ho (first child), on 16th January, 1971, at the Chinese Maternity Hospital, Kuala Lumpur.

DEATH

WILKEN: William Anderson, M.C., B.SC., J.P., A.I.S.P., late of Merlimau Estate, Malacca, died at Assunta Hospital, on 10th February, 1971, aged 76.

ADVERTISEMENT INDEX

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