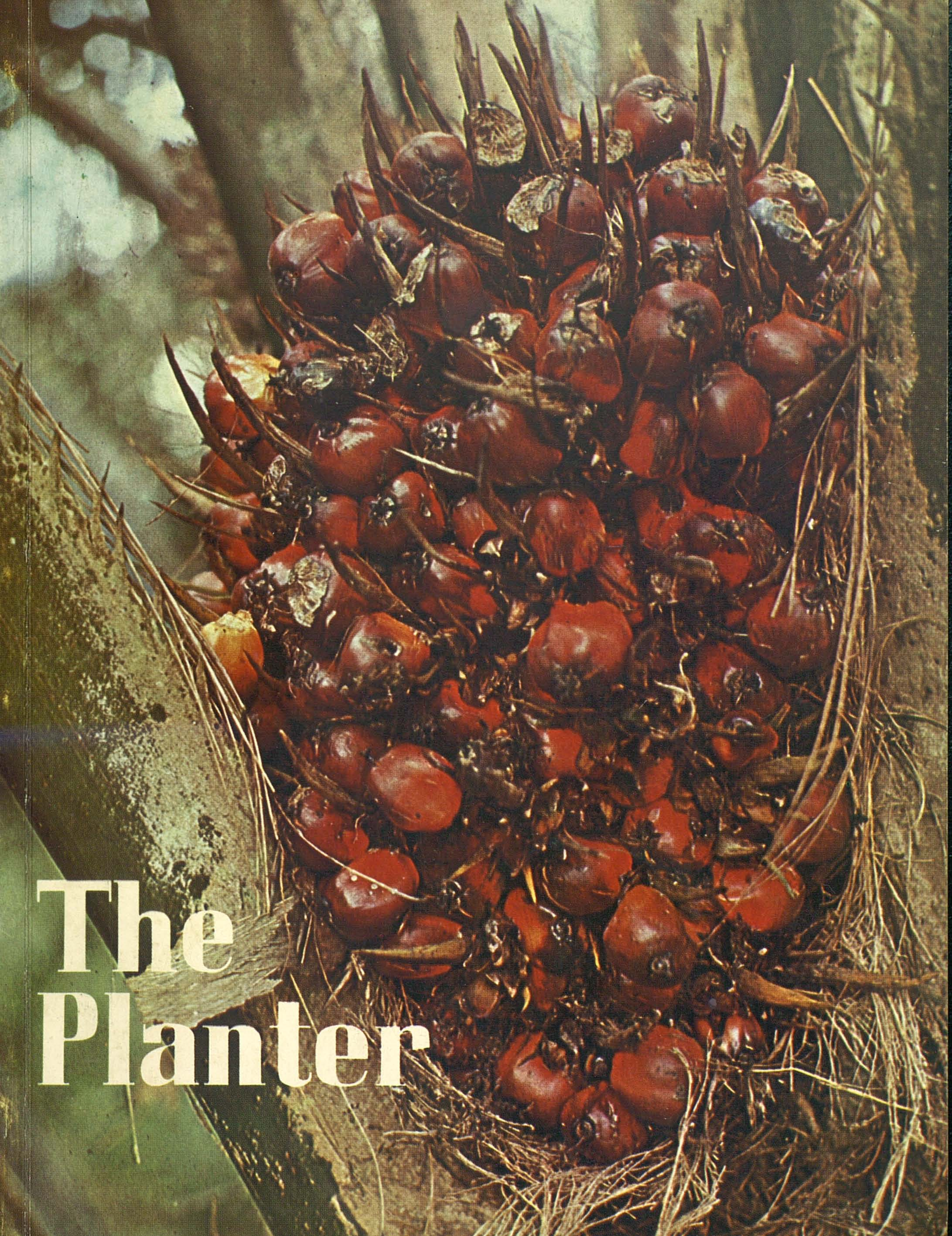


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Editorial :

AN IMPORTANT CONFERENCE

The forthcoming I.S.P. conference in Kuala Lumpur on 25–27 November on Cocoa and Coconut is both timely and pertinent. The new government economic policy and the fulfilment of the aims of the 2nd Malaysia Plan will demand greater agricultural efficiency from all sectors and the conference on these two crops is therefore particularly significant. It is also significant that the intercropping of cocoa with coconut is an economic symbiosis of great potential, creating a revival of interest in and a new appreciation of the flagging coconut industry.

The provision of shade by the coconut at its conventional planting distance which leaves a rather open canopy is ideally suited to the planting of the economically more valuable cocoa as an understorey crop, and accordingly the possibilities of introducing cocoa as an intercrop in existing coconut areas will undoubtedly be given further stimulus from this conference.

Among the participants will be many distinguished visitors from overseas and the papers presented will cover a wide front for both these crops. The papers to be presented and the discussions which will follow them, will deal both with the up-to-date practical as well as research aspects of cocoa husbandry, breeding, pest and disease control, as they will with coconut rehabilitation.

Although the I.S.P. held a Seminar on Cocoa and Coconuts in 1967 and the Sabah Planters' Association have held two Symposia on cocoa, the forthcoming conference will be the first full conference to be held in Malaysia to be devoted to these crops both as monoculture and as dual culture crops.

The outcome of the conference should be a widening of interest in the planting of cocoa and renewed interest in the cultivation of coconuts. Much can be done to upgrade at least half a million or more acres of coconuts in Malaysia and the inclusion of cocoa in the agricultural economy will not only lead to greater profitability per acre where it is grown as an understorey crop but will also make for further diversification of an economy which is rather too dependent on the rubber tree and the oil palm.

Over 40 papers have been offered for this conference and the widespread interest already shown in it guarantees its success. It is a conference which those with a real interest in plantation and smallholder agriculture cannot afford to miss.

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THOSEA BISURA — A NEW MAJOR PEST OF OIL PALMS

by

L. R. Hertslet & J. E. Duckett†*

INTRODUCTION

B. J. Wood (1968) in his "Pests of Oil Palms in Malaysia and their Control" illustrates the caterpillar of *Thosea bisura* in Plate XI (facing page 101) and in the text this is listed with four other Nettle Caterpillars of which it is stated—

> "Isolated representatives of one or more of these species can usually be found on oil palms, but no major outbreaks have so far been recorded. Numbers tend to increase from time to time, often in association with outbreaks of other members of the group".

However experiences of this pest on Paloh Estate since January 1971 have been such that *Thosea bisura* can now be added to the list of pests which have occurred in major outbreaks.

The experience here has been over an area of 500 acres of three and four year-old palms where damage has varied from minor to very severe and has produced a definite economic effect, both in the cost of treatments and in anticipated reductions in crop due to defoliation.

The writers believe that severe drought conditions—8.4 in of rain only, between January 6th 1971 to June 6th 1971 have had a significant effect in this outbreak.

There had been no previous use of insecticides in the area whatsoever.

OUTBREAK

The outbreak bears a very close resemblance to that of *Ploneta diducta* described by T.A.T. Leitch (1966) in *The Planter* of Sept. 1966 in that the first striking signs of the attack are likely to be the patches of eaten epidermal tissue on lower frond stems. However with *Thosea bisura* quite considerable damage was also noted on immature bunches with epidermal tissue on the fruitlets again being the focus (*Fig. 1*).

Immature caterpillars approximately 8 mm long are found in association with this type of damage.

As the caterpillar matures it proceeds up the frond, again as with *Ploneta diducta*, consuming only underside tissue on the leaflets, creating transparent "windows". This appears to confirm Leitch's contention that at this immature stage these nettle caterpillars are most sensitive either to sunlight or heat, the latter being the most likely. This we believe may be a general comment in relation to nettle caterpillars but the possibility of this underside tissue being the more suitable as a food source at the immature stage cannot be excluded.

---

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† Kuala Lumpur-Kepong Amalgamated Ltd., Malaysian Head Office, Kuala Lumpur, Malaysia.



Fig. 1. Initial Signs of Attack on Fronds and bunches.

As the caterpillars approach maturity they eat right through the leaflet, normally commencing at the top of the leaflet and working back to the frond stem.

Observations were kept both in the field and on caged specimens and it has been possible to prepare the following notes: —

The Eggs are round and semi-transparent approximately $\frac{1}{2}$ mm in diameter. Due to their transparency and small size these are extremely difficult to see with the naked eye. However observations of ovulating female moths showed that single eggs were laid at approximately $\frac{1}{4}''$ to $\frac{1}{2}''$ intervals on leaflet edges on the lower fronds. This contrasts with the *batches* of eggs of *Setora nitens* and *Thosea asigna* noted by Wood and Nesbit (1969) in *The Planter* of May 1969.

Dissection of a gravid female showed 600 eggs and similar figures were obtained when counts of eggs laid by captive specimens were made.

The eggs were observed to take from 5–9 days to hatch.

The Larva emerges from the egg and appears to remain in a dormant state from 5–7 days on the leaflet until it reaches 2–3 mm in length. During this period it must be feeding either, as reported with other species, on the egg shell or on leaflet tissue, but we were unable to make positive observations on this point. From this stage the caterpillar was observed to commence feeding on the underside tissue of the lower fronds creating "windows" as described earlier and remained on the lower fronds in an active stage for about two weeks until it had reached a length of approximately 8 mm. At this stage migration to upper fronds takes place and this is the stage when damage to frond stems and bunches, described earlier, takes place. Rate of travel at this stage was noted to be 3 ft per hour.

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On reaching the upper fronds caterpillars develop in both size and appetite and serious damage takes place with total destruction of the leaflet tissue (*Fig. 2*). A fully grown larva measures approximately 15 mm in length.



Fig. 2. Illustration of Severe Damage.

The mature larva is illustrated on Plate XI of B.J. Wood's publication and it is not necessary to describe it. A general comment on this Plate is that the true colours may be the *same* or range darker—*i.e.* the photograph is a true illustration of a lighter specimen.

The larva feeds on upper fronds for approximately two weeks and then retreats down the palm where it then buries itself in plant debris and soil either at the base of the palm or in pruned frond bases prior to pupation. No cases were observed of caterpillars *dropping* to the ground prior to pupation.

Observations show that the larval stage is 28–35 days.

The Pupa. On reaching the ground or pruned frond base the colours of the larva become less vivid and change to an orange/pink overall shade. As in the description of *Ploneta diducta* it writhes around and forms a cocoon from detritus and a thread-like material, which it is presumed is manufactured by itself. The cocoon is ovate and is approximately 10–12 mm in length (*Fig. 3*) and 7 mm across at broadest points.

The colour of the cocoon casing is dark brown to black and usually has some detritus attached which can be removed to reveal the true case.

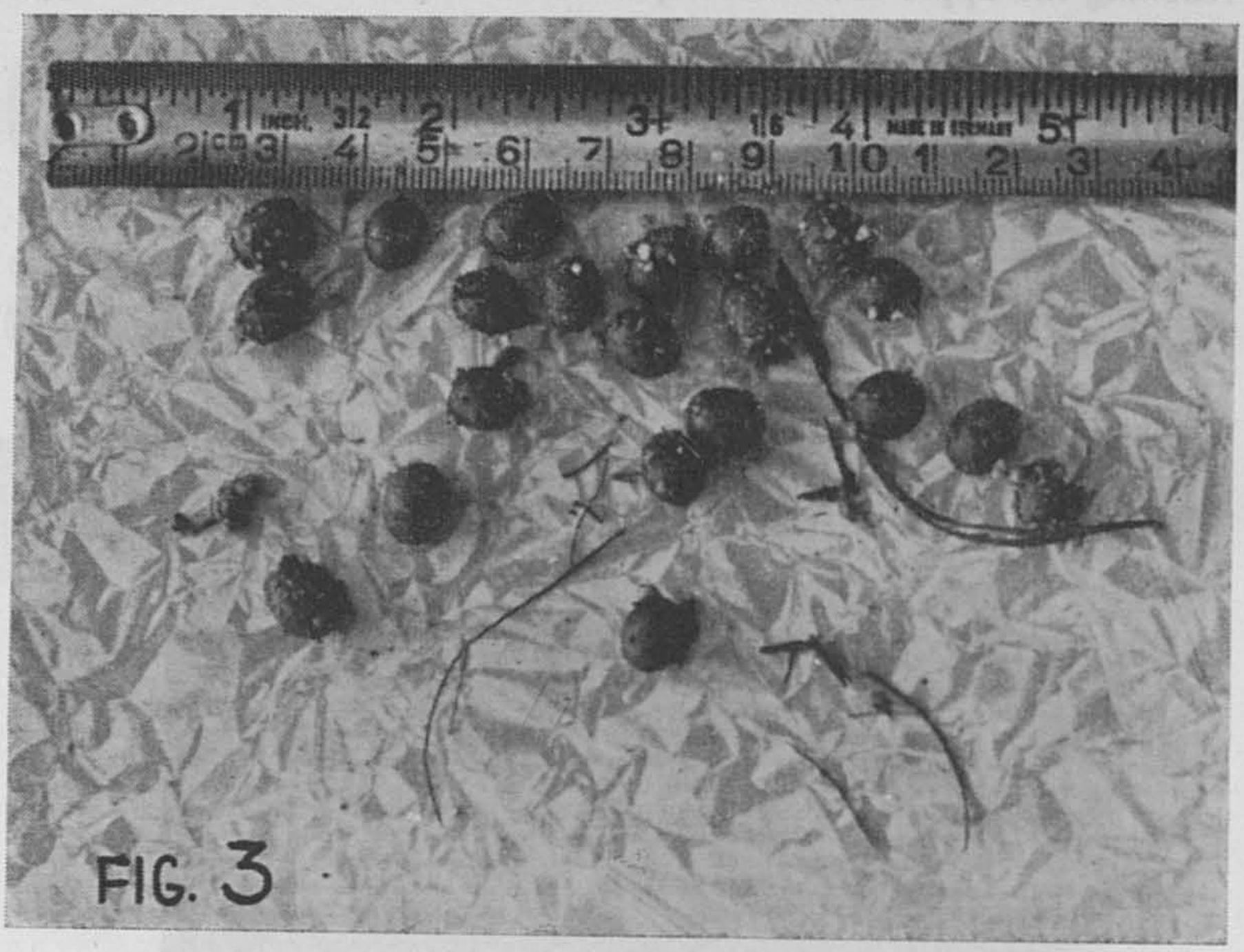


Fig. 3. Cocoons.

In view of the 600 odd eggs laid by each moth it is not surprising that, in areas of heavy infestation, hundreds of cocoons can be found at the base of each palm and in pruned frond bases.

The period in the pupa stage was observed to be 14–18 days.

The Moth. A female moth is illustrated in Plate XII of B.J. Wood's publication referred to earlier*

Both male and female moths are a dingy brown, the female being the larger (30 mm outspread wing span) and having two dark spots on the forewing. The male moth is smaller (25 mm outspread wing span) and of similar colour but without the dark spots on the forewing. The male appears to have more feathered antennae than the female in the specimens inspected.

Life span of the moth in captivity is 2–4 days.

LIFE-CYCLE

From the foregoing notes it is possible to list the life-cycle as follows: —

Eggs	5 – 9 days
Larva	28 – 35 ,,
Pupa	14 – 18 ,,
Moth	2 – 4 ,,
Cycle minimum days	49 – 66 (max.)

* It should be noted that in a few copies of this book the colour rendition is poor and the moth appears green.

Thus it is possible for a full life-cycle to pass in 7 weeks which indicates that failure to arrest it at this stage can result in a fairly quick build-up *via* a second generation.

CONTROL

Natural Control—Predators. The Assassin bug—*Sycanus dichotomus* would appear to be the major predator of the larva and has been very regularly noted attacking immature and mature larvae in this outbreak (*Fig. 4*). While no census was taken, the population of this predator in the affected area was high.

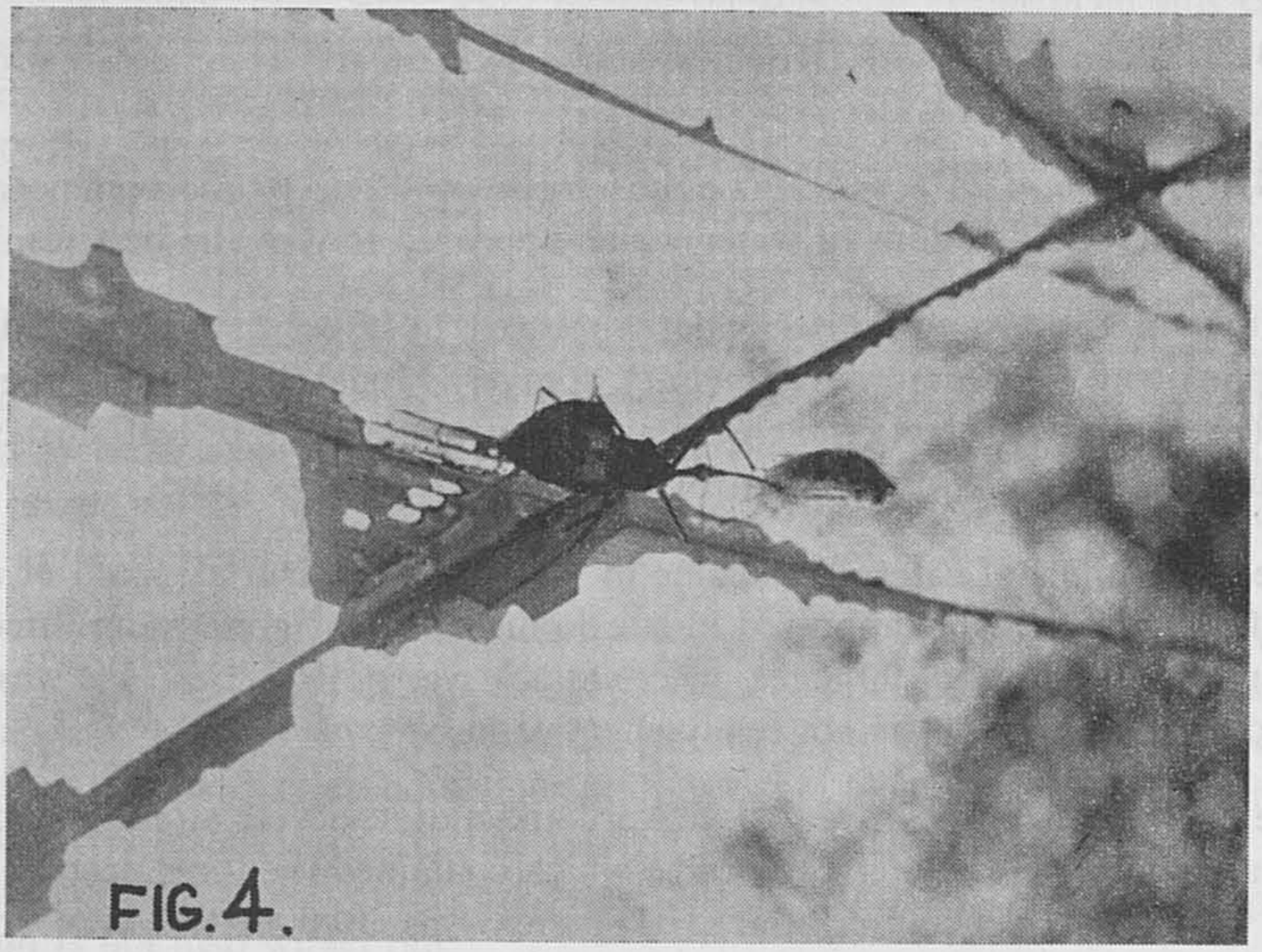


Fig. 4. The Assassin Bug.

The asopinid bugs were also noted to take a large toll on larva.

At the cocoon stage ants of various types appear to cause quite severe damage and deaths, and for this reason it was decided not to expand use of a soil insecticide beyond a small trial area, particularly as the very dry conditions had possibly contributed to the poor results obtained from this.

Various parasitic wasps and flies, which have not yet been identified, were also noted.

Climatic Influences. When the drought finally broke and rains came it was noted that there were a great many deaths of larva from presumed natural causes. In the wetter conditions numerous cocoons died from fungal attack. On circumstantial evidence we are of the opinion that at this stage in the life cycle under normal conditions the greatest mortality rate, and the major check on population build up takes place. However it has been pointed out to us that what happens in an outbreak can be very different from what brings about normal low level regulation (B.J. Wood 1971—Private Communication).

Chemical Control

The Larva. Various chemicals were utilised in trials: —

(1) *Endrex* 20% E.C. (endrin) at 7 oz of commercial product in 50 gallons of water obtained very good knockdown effect and control of larvae but was abandoned in view of the equal effect it had on all predators.

(2) *Lead arsenate* at 4 lb in 50 gallons water was also used but appeared to give a poor result and was abandoned.

Best results were obtained from two more selective insecticides which were taken into widespread use as the general control agents for the outbreak: —

(3) *Dipterex* 95% S.P. (trichlorphon)—1½ lb of the commercial product in 50 gallons of water.

(4) *Gusathion* 25% E.C. (azinphos–methyl)—12 oz of the commercial product in 50 gallons of water which appeared to give the best result of all.

Neither of the last two insecticides appeared to affect natural predators and were applied with Stihl motorised knapsack sprayers Model S.G.17 which performed extremely well and were able to achieve an adequate coverage of leaf surface which is absolutely essential to obtain control in outbreaks such as these.

The generations of caterpillars came in waves, rather than a spread of all ages, and the first one noticeable appeared in late January/early February on three hilltop areas comprising a total of 20 acres, where attack was not severe. This was treated with lead arsenate which was not really effective in control.

The second generation appeared in April and a quite severe attack was observed over an area of 70 acres along a hill ridge which contained the three original hilltops affected in the first generation attack. Dipterex was used in this case and three rounds of spraying were carried out. Although a very obvious kill was achieved this was not adequate to prevent a third generation developing.

This third generation appeared in June and spread in a northwesterly direction from the original outbreak and was sporadic with varying degrees of severity over 500 acres. The northwesterly spread is associated with the predominant wind at the time from the southeast. Dipterex was used for a first round treatment and this was followed up with a treatment round using Gusathion.

There was a later but much reduced generation at the end of July which appeared in small sporadic patches where damage was not severe over the previous 500 acres affected. This was again treated with Gusathion which appeared to achieve a full control.

From the above it appears that Gusathion has an advantage over Dipterex in that whilst Dipterex is adequate to control caterpillars and prevent extensive damage from that particular generation it does not achieve a good enough control to prevent the creation of a new generation. Gusathion achieves a control on the present generation and achieves a reduction in the size of the subsequent generation. We therefore consider this to be the most effective of the chemicals utilised on these outbreaks.

In these notes on chemicals and equipment it should be made clear that other chemicals and equipment may perform equally satisfactorily but were not utilised in this outbreak and the notes produced are purely a statement on control measures utilised in this particular outbreak.

As is normally the case in these outbreaks of spasmodic pests the urgency for control forces widescale applications before proper trial work can be completed.

THE COCOON

Chemical control trials proved disappointing, and as indicated earlier were abandoned in view of the good effect ants were having on cocoons. Control in this case was then changed to hand collection by clearing out cut frond bases and the detritus at base of palms and then crushing the pupae. This is labour-intensive and costly but is positive, and under the circumstances was considered essential in this case to prevent a further generation developing and continuing the outbreak.

CONCLUSION

Whilst drought conditions were considered to be a major factor in the population explosion, giving perfect conditions for build-up and few fatalities at both caterpillar and cocoon stage it is very obvious that given these conditions *Thosea bisura* can be a major pest of Oil Palms and should be added to the list of nettle caterpillars that can create serious outbreaks.

We believe that under normal weather conditions, with regular rains, sufficient casualties take place in the caterpillar stage (due to influence of weather) and in the cocoon stage (through fungal attack) that numbers can be kept to such low levels by the natural predators that no serious outbreaks are likely. In this respect it would be wise in cases of outbreak to employ selective insecticides so that there is not too great an interference with the ecological balance and that the natural predator population is not also wiped out.

If the natural predator population was seriously reduced or eliminated it is feasible that outbreaks of economic importance could also occur under less favourable weather conditions for *Thosea bisura* than reported in this paper.

Acknowledgements. We wish to thank the Board of Directors of Kuala Lumpur-Kepong Amalgamated Limited for permission to publish this paper, and Enche2 K. Duraimaniam and P. Tan for their assistance with field trials and observations. We are also most grateful to Mr. B. J. Wood of Chemara Research Sendirian Berhad for comments on the manuscript and discussions on this pest. Further trials with this pest are being conducted by Mr. Wood and it is hoped that these will be reported on by him later.

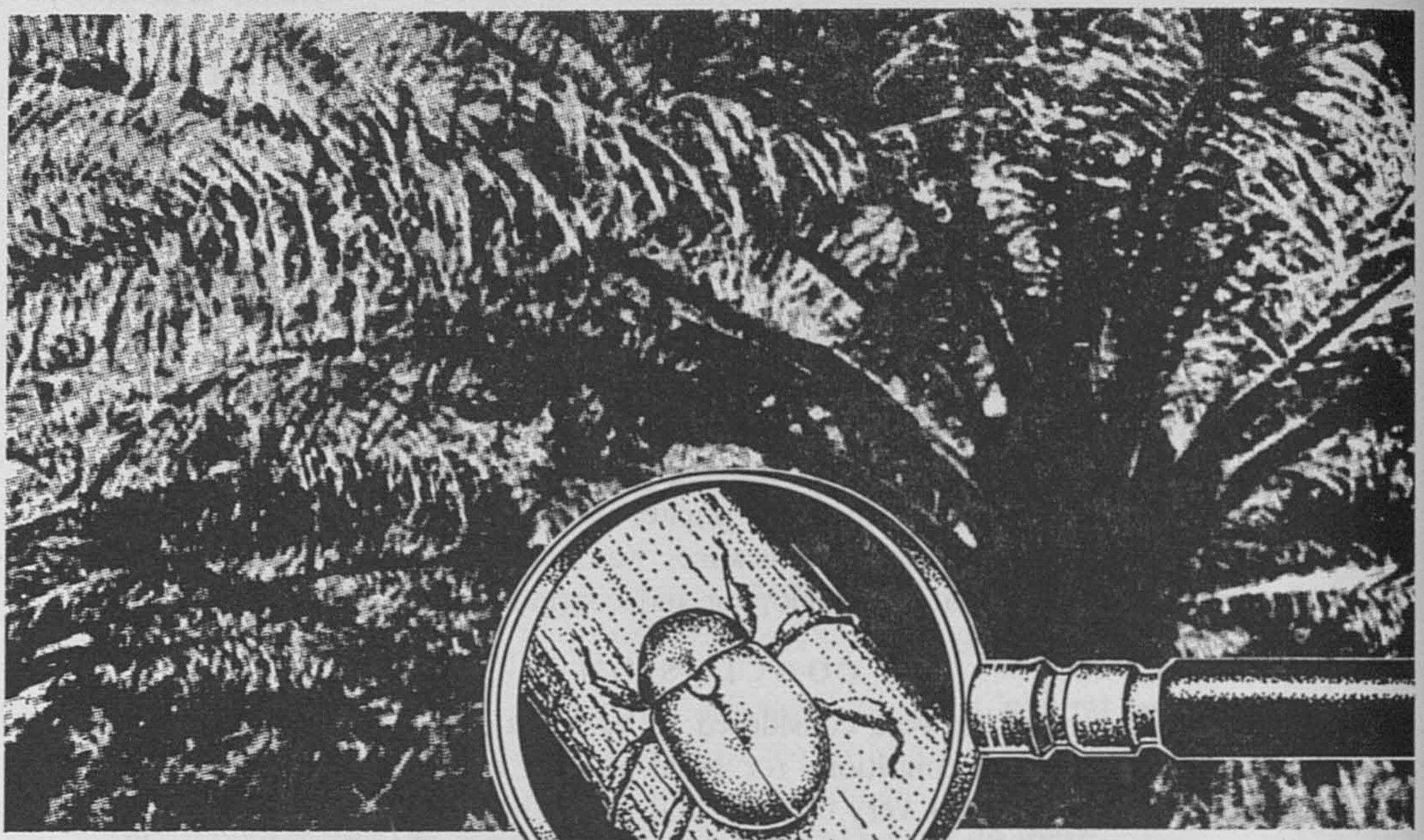
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HEVEA SEED

(PART III)

by

P.R. Wycherley
Rubber Research Institute of Malaya

Viability and Storage

The Annual Reports of the Botany Division of the Rubber Research Institute of Malaya for 1949–51, 1952, 1958, 1959, 1962, 1964, 1965 and 1966 describe various investigations into storage. The first was storage for only three weeks, in which packing in moist, powdered charcoal (20% water by weight) in sealed tins was most satisfactory. Previous experience had shown that most seed stored under normal ambient conditions for three weeks would be shrivelled inside and would not germinate. In the field most seeds germinate or die within three to six weeks.

The experiments in 1952 were concerned with chilling or freezing of seed, which had no adverse effect up to 12 hrs. From 1959 onward attention was given to storage in polythene bags, coating with various substances and at low temperature (4°C). Coating the seed with shellac, wax or latex concentrate was not successful. Storage at 4°C adopted in commercial practice emerged as the most reliable method of storing *Hevea* seed required as planting material.

The later experiments from 1964 to 1966 investigated in addition media such as sand or sawdust and the effect of perforated or intact polythene bags and the number of seeds in each bag. In general the best results at ambient temperature were obtained when the seed was mixed with an equal quantity of sawdust (10% moisture/content) and spread in shallow layers inside perforated polythene bags. Heat build-up was undesirable.

The success of storage at low temperature and under conditions of controlled ventilation and moisture at ambient temperature, suggests that viability is prolonged by restriction of the rate of respiration. Respiration consumes food stored in the seed, reducing its value for any utilisation. There is also enzymatic breakdown to free fatty acids. Georgi, Greenstreet and Gunn (1932) found that the deterioration of untreated kernels during two months storage rendered them unsuitable for any uses, the acid content of the oil was about 27%.

Storage for Utilisation

The rapid deterioration of *Hevea* seeds is a serious disadvantage for other uses as well as for planting. This and the seasonal nature of seedfall mean it is difficult to store the excess falling during the peak period for subsequent processing, thereby spreading out the use of factory facilities economically.

The experiments of Georgi *et al* (1932) showed that after decortication (removal of the shells) to make processing easier and to reduce the bulk for storage, the

kernels must be sterilised, dried and stored dry if the acid content is to be kept below 1.0% for periods of storage in excess of one or two months. These methods enabled satisfactory storage up to six months.

Steam sterilisation was necessary to inhibit autoenzymatic decomposition and to eliminate fungal moulds and insect pests. Sterilisation alone was not enough unless the moisture content was reduced and maintained below 3%, otherwise moulds caused deterioration and beetles were troublesome. Muslin bags protected the kernels from insects to a certain extent and cages were used to protect from rats.

Nadarajah (1969) reports partial drying of the kernel in the sun, but other authors consider this unreliable, drying was completed in a copra kiln. Georgi *et al* (1932) used a hot-air drier at 40°C. Baptiste (1948) found that fresh unshelled seed could be dried in 8 hours and fresh decorticated kernel could be dried in 6 hours at 100°C in both cases. Moreover fresh unshelled seed could be dried in 3 days in a smoke-house at 60°C. Baptiste considered that prior sterilisation was unnecessary if the seed or kernels were dried at these temperatures for the periods stated.

Hydrocyanic acid

Prussic acid vapour evolves from seed or kernel during drying and the early stages of storage. It would be dangerous, perhaps fatal, for a watchman for example to sleep in the storeroom.

Decortication

Most experimenters have shelled the seed manually, although the Imperial Institute reported success with the Miller nut-cracking machine in 1917 and 1919. Azeemoddin and Rao (1962) used rollers to crack the seed and screens to separate hulls and kernels. The shell is about one third of the weight of the fresh seed, or 40% of the dry weight. It has some slight value as fuel and virtually less as a fertiliser, the ash content is about 0.4% of the dry weight of the shell. Nadarajah (1969) suggested that shell flour might be used as a filler in fibre board.

Kernel as Feed

The presence of the cyanogenetic glucoside phaseolunatin could cause poisoning of cattle if an inadequate period was allowed for decomposition and dispersion prior to feeding. Pigs are thought to be less susceptible to such poisoning than cattle.

Feeding trials by Sen (1952) indicated that kernel meal with its natural oil content (*i.e.* from which oil had not been extracted) was not a readily acceptable feed for cattle. The Imperial Institute (1913) carried out some feeding tests. The first series was with cake of a greater fat content than would normally obtain after oil extraction. Some cows refused this, apparently being temperamental beasts. Sheep did not like it as sole feed. A second series of trials was made with cake more typical of the residue after oil extraction. Sheep refused it. Full grown cattle took up to 14 lb per head per day without any untoward results, but it had a laxative effect on young beasts if fed in excess of 5 lb per day. Nadarajah (1969) mentioned reports that the fertility of livestock might be reduced.

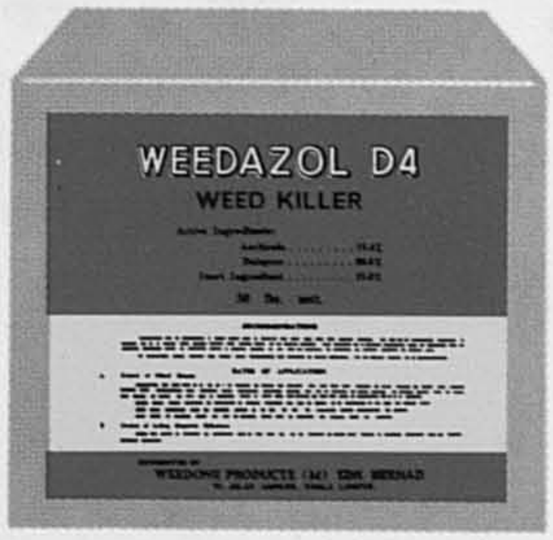
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Various analyses of rubber seeds and of the kernels before and after oil extraction have been made, see reports and summaries by Azeemoddin and Rao (1962), Dawson and Messenger (1932), Georgi *et al* (1932) and Sen (1952). The average of these indicate the following approximate composition.

Fresh whole seed on a dry weight basis=

Shell 42% + Kernel 58% = 100% of dry weight + up to 35% moisture

Oil extracted by solvent is 43% of the kernel on a dry weight basis

Oil extracted by pressing is 38% of the kernel on a dry weight basis (or respectively 25% and 22% of the wholeseed).

The residual meal or cake obtained by pressing out the oil is therefore 62% of the kernel (or 36% of the original whole seed weight before discarding the shell).

The residual meal consists of a dry weight basis of 45% carbohydrate, 35% protein, 7% oil or fat, 7% fibre and 6% ash.

There was however considerable variation in all these proportions according to the state of the seed as received and the processes of extraction used. These analyses confirm the high nutrient value of *Hevea* seed meal.

Hevea seed oil

The properties and composition of the oil have been reviewed by Dawson and Messenger (1932) and by Azeemoddin and Rao (1962). There is considerable variation in the free fatty acid content of the oil according to the period and conditions of storage of the seed prior to extraction, this may affect other properties too. Many analyses have been made on the oil as extracted by solvents especially light petroleum ether. Whereas any commercial extraction would be by pressing or milling. The method of extraction has an effect on the amount recovered, but probably has relatively little effect on the properties or composition of the oil, except for the inclusion of 'fines' in the milled product. These 'fines' are a suspension of small rubber particles. It might be necessary, but troublesome to remove these for some applications.

The properties of rubber seed oil are such that it might be considered as a substitute for linseed oil, therefore its properties are usually compared with those of the latter. The iodine value is a measure of the proportion of unsaturated acids present and of the drying power of the oil, it is about 135 (128–143) for *Hevea* oil and 185 (170–200) for linseed oil. Although *Hevea* oil can be classed as a drying oil, it is inferior to linseed and cannot be used alone for paint manufacture. *Hevea* oil could be used to dilute or extend linseed oil.

The saponification value of *Hevea* oil of about 193 is almost the same as that of linseed oil. The production of soft soap from *Hevea* oil was one of the first experimental uses (Imperial Institute 1903). More recent tests in Ceylon were not entirely satisfactory (Nadarajah, 1969). Other vegetable oils are likely to be available in Malaysia in sufficient quantity for soap manufacture.

Another suggested use for *Hevea* oil is as a substitute for linseed oil to make linoleum, but early tests reviewed by Dawson and Messenger (1932) were not encouraging. The possibility of making alkyd resins from *Hevea* oil was mentioned by Nadarajah (1969).

An abstract bibliography of over 100 references on the subject has been compiled by Kow (1970).

Extraction of Oil

Various screw presses and mills appear to have been used. Nadarajah (1969) gives details of the modification of an Anderson 1 Expeller for the purpose.

Prospects

The imports of linseed oil into West Malaysia during recent years were: —

Year	*1965*	*1966*	*1967*	*1968*	*1969*
Litres ('000s)	474	632	713	611	658
Mal $ ('000s)	510	622	731	530	735

Hevea seed oil could only substitute for part of this, which is probably mainly used in paint manufacture.

Feed for cattle, pigs and poultry is met by a variety of imports and locally grown produce. Doubtless *Hevea* meal could substitute for some of the imports, although other crops raised here might do so more economically. Indeed any enterprise to utilise *Hevea* seed, which provides a second rate feed and poor substitute for linseed oil, would need careful integration.

Hevea seedfall varies with the fertility and other genetic properties of the parent, which may be affected by growth in mono-or polyclonal or seedling stands. There are moreover effects of spacing, manuring and especially flower protection. Assuming that there is a reasonably favourable combination of these factors to produce an adequate seedfall, the problem of seasonal variation remains.

As an adjunct to easy collection of the seed, ground covers must be sprayed out, and allowance made in the costing. Collections must be made at regular intervals of not less than twice each week during the peak period. Collection will not be worthwhile for industrial use at other times.

Assuming the seed are collected fresh, they must be shelled and partially dried or partially dried and shelled (some authors claim greater efficiency for one order *versus* the other), and either milled at once or drying and sterilisation completed prior to storage for up to six months while awaiting the availability of processing facilities. Immediate pressing implies a mill with reserve capacity to take up the seasonal supply. The modifications to accomodate *Hevea* seed between more usual commodities should not be too costly. Storage to allow a steady throughput in mills of limited capacity involves considerable extra handling and processing.

The price of linseed oil say $1.00 per litre indicates a ceiling regain in such a venture. Any value of meal might be regarded as a bonus. A litre of oil weighs about 920 grams and could be obtained from 2.4 kg of dry kernel or 4.2 kg of dry seed or 5.7 kg of fresh seed or nearly 1 200 seeds. Where average seedfalls obtain, labour of collection alone will probably amount to about $1.00 per thousand seed. To this must be added: —

1. Any flower protection or manuring to increase seedfall.
2. Any clearing of ground covers to facilitate fresh seed collection.
3. Decortication and milling.
4. Either periodic modification of expeller to deal with seasonal *Hevea* seed crop, which is processed using excess capacity of a mill mainly devoted to other oils.

Or sterilisation and/or drying, storage and handling.

The prospect is hardly encouraging under present conditions in Malaysia. Historically an interest in rubber seed oil and similar by-products is usually only evident during periods of depression, cheap labour and a subsistence economy.

Hevea seed has a value as planting material and others could give better recommendations than those given here on how to produce it, as well as answering some of the other points raised.

SUMMARY

1. Except for those clones which are susceptible to leaf diseases, there is little evidence that the direction in which a reciprocal cross is made affects the success in pollination.

2. There is a wide range in fertility, some clones are almost sterile and others are very prolific, but most supposedly male or female sterile clones are probably of low fertility however used.

3. Although a few clones are highly self-fertile, most seem to have a moderately higher rate of pollination success when crossed than selfed.

4. There is a wide variation between clones in seedfall in the field, due partly to fertility, partly to the number of flowers born, and partly to coincidence of weather and disease conditions.

5. In spacing trials of advanced age, 30 and 17 years, there was a significant trend towards fewer seeds per hectare in the denser plantings and there were significantly fewer seed per hectare in hedge plantings.

6. Peak seedfall usually occurs within a period of one or two weeks in monoclonal areas or one or two months in polyclonal areas.

7. Seed production may be increased by flower protection and by manuring.

8. The revised mean estimate of number of seed per kilogram is 205 (93 per lb).

9. *Hevea* seed are short-lived unless stored under special conditions, *e.g.* at 4°C.

10. *Hevea* seed deteriorate rapidly in storage, evolving hydrocyanic acid, with an increasing free fatty acid content, unless sterilised and/or dried.

11. After decortication and milling, oil and meal are obtained. The oil is a relatively poor substitute for linseed oil and could not be used to replace the latter fully. The meal is nutritious, but probably cannot be used as a sole feed.

12. It is unlikely that the utilisation of *Hevea* seed for purposes other than as planting material will be profitable under current Malaysian conditions.

(Concluded)

Acknowledgements. The author is grateful to Messrs. Chen Khyun Thai and O. Karanakaran for assistance in the field experiments described and to Mr. S. Subramaniam for the information quoted.

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HEADQUARTERS AFFAIRS

Bye-Law Number One is with us again, and Branches have until 14 November to nominate a Chairman and Vice-Chairman of the Society for next year.

A Company in North Malawi has a position available for a fully qualified rubber planter. Experience with coffee and cocoa would be an advantage though this is not essential. The job involves development of a viable rubber/cocoa/coffee plantation, and the replanting of "worked-out" old rubber is already in progress. The person engaged will require to be a fully-qualified man possessed of great patience and capable of teaching both staff and labour whose present agricultural knowledge falls far below that of their counterparts in Malaysia. Any Planter with the necessary pioneering spirit who wishes to know more about this job is welcome to apply for it throug the I.S.P.

An un-warranted slur on the expertise of Malaysia's felons is contained in a *Straits Times* headline (4 August): SUMATRAN BANK ROBBERS WANTED IN MALAYSIA.

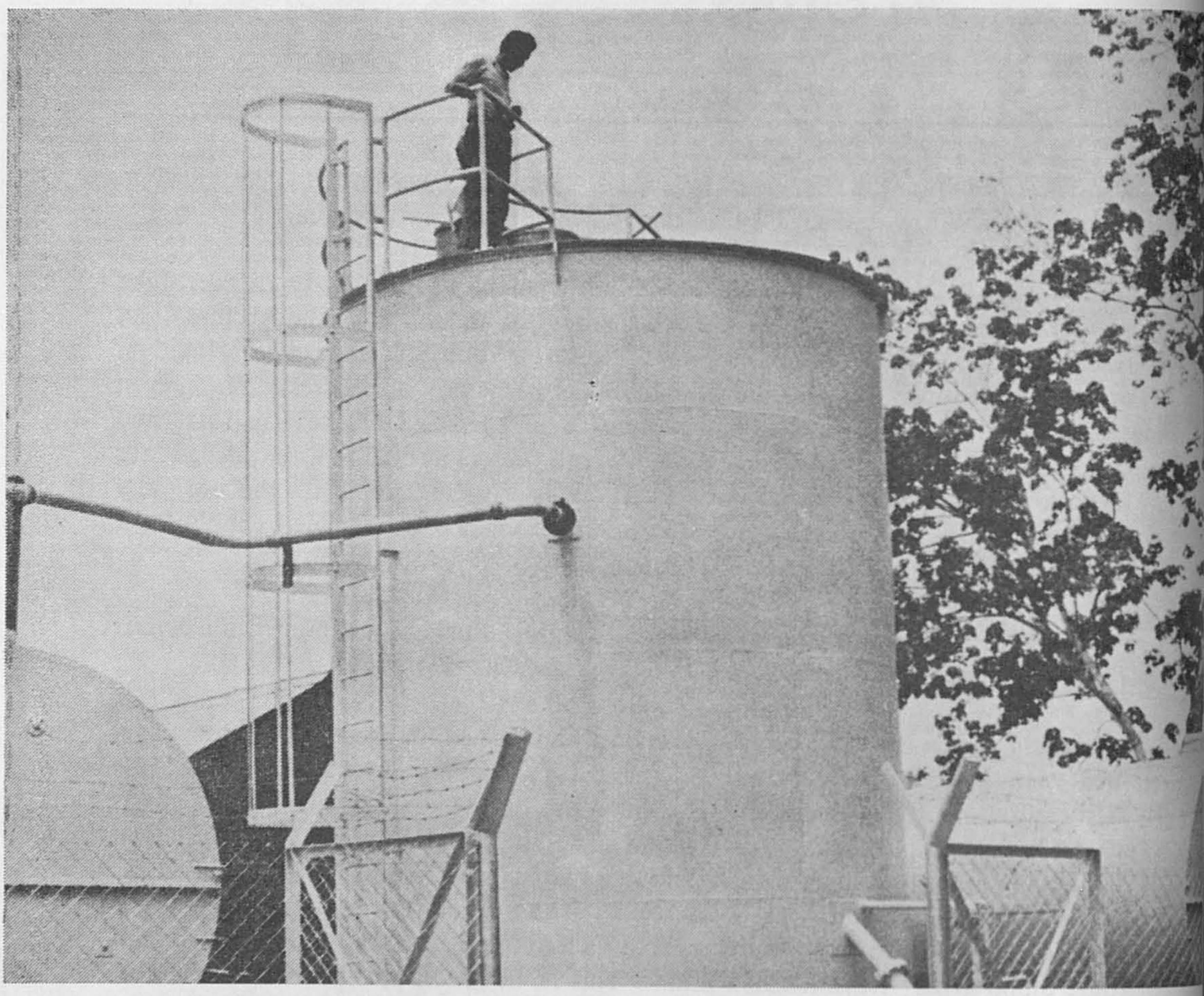
Managers' Union formed A trade union has been formed for executives and management staff in the private sector. We quote from *Majikan Lombong:* 'Called the Association of Management Staff, the union has "a potential membership of nearly 10 000" said the president, Raja Redzwa bin Raja Tun Uda. The A.M.S. aims at "providing security of employment and reasonable terms and conditions of service". "As is obvious from the present-day trend, junior employees have greater security in their jobs and are relatively free from victimisation because of the protection a trade union gives" Raja Redzwa said. "This is, however, not the case with executives because once the ace falls on them, there isn't much recourse."

A.M.S. would also act as a watchdog to ensure that the recruitment policy of employers reflected the ethnic structure of the country as urged by the Government. Raja Redzwa urged the employers not to obstruct or subvert the growth of the association. He said: "I have reason to believe that employers, either directly or indirectly will question the Government on the registration of the union and will also use indirect pressure on individuals not to join or take active part".'

The full Proceedings of the 1970 Conference on Crop Protection are now being printed and will be available in early November. Format and price will be similar to previous Proceedings published by the Society and this will be a book which no

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planter can afford to do without. An order form will be contained with next month's issue of this magazine, if the price is known by then.

Advertisements for "The best car in the world" used to say just that and nothing more; but a new series, beautifully presented, has a lot more information for those of you toying with the idea of buying a Rolls-Royce. We liked the title of one of the better ones: "The whole is greater than the sum of its parts", and were suitable awed by a list of the lesser-known qualities of the Silver Shadow. Did you realise for instance that "The facia veneer is mirror-imaged from the centre line"? This took a bit of working out but we conclude that if you leant across the boot and looked through the rear window at the wood overlay of the instrument panel, for every knot-hole on the driver's side there would be an exactly similar one on the other. To this, nobody could possibly have any objection. We are not so happy about another feature however. It is stated that "A small piece off every crankshaft is both chemically and physically analysed." What people will want to know is why it flew off in the first place.

Registration for this year's Conference is now under way and a form is contained at the front of this issue. Intending participants should complete and return their forms early. The following list of papers will indicate the scope of the conference, which is also the subject of our Editorial this month.

COCOA

World-wide review
Development and management of hybrid cocoa varieties
Promising cocoa hybrids
Cocoa improvement in West Malaysia
Important pests of cocoa
Cocoa die-back
Pod rot
Black pod disease and canker
Age at planting seedlings in relation to month of planting
Thinning and shaping of densely-planted cocoa
Covers and shade
Planting without shade
Cocoa under palms
Suitable cocoa soils
Manuring of cocoa
Weed control for your cocoa
Effects of selected herbicides
Harvesting practice
Fermenting and drying
Quality requirements
Developments in the World cocoa economy
Economics of cocoa planting and cultivation

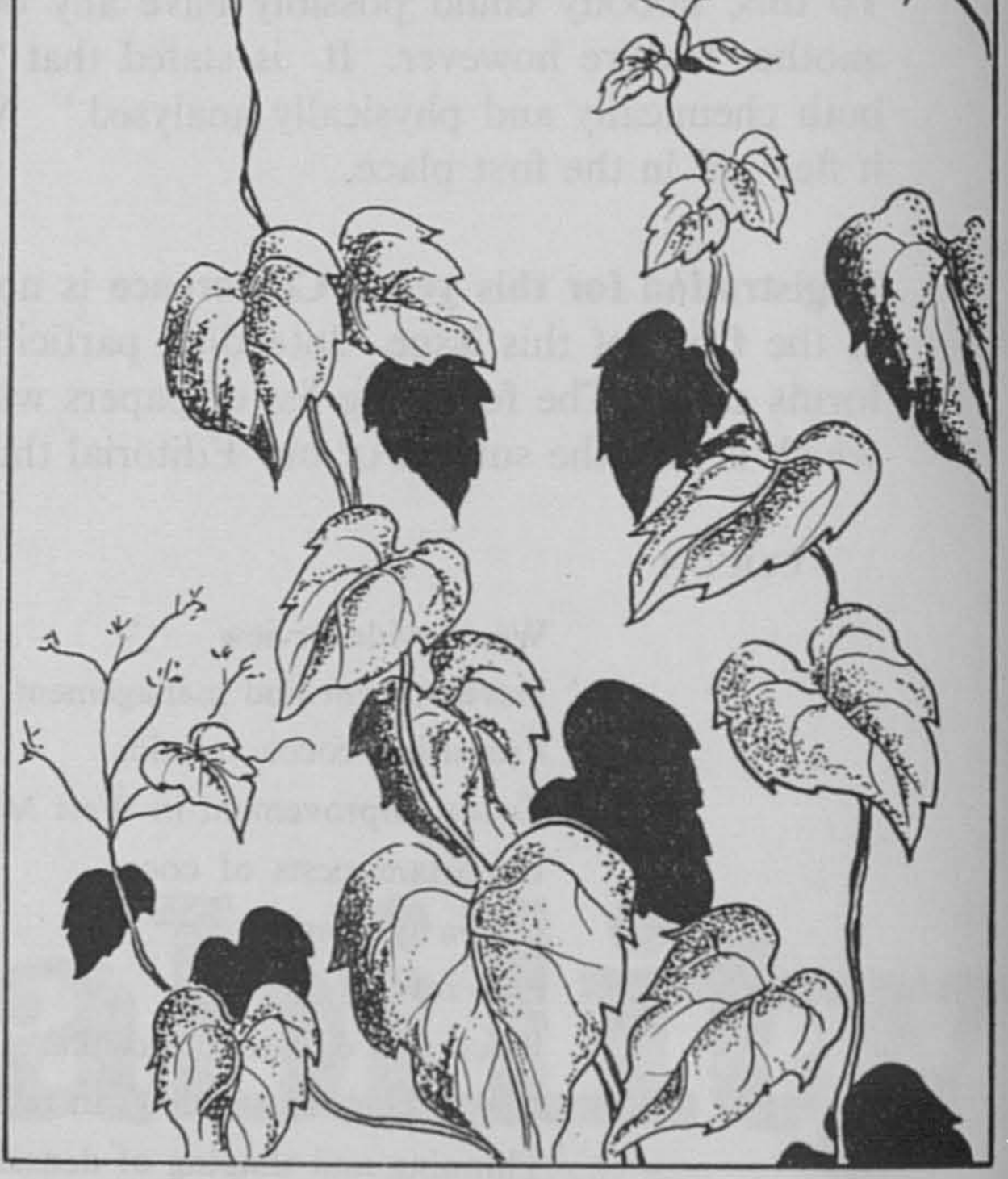
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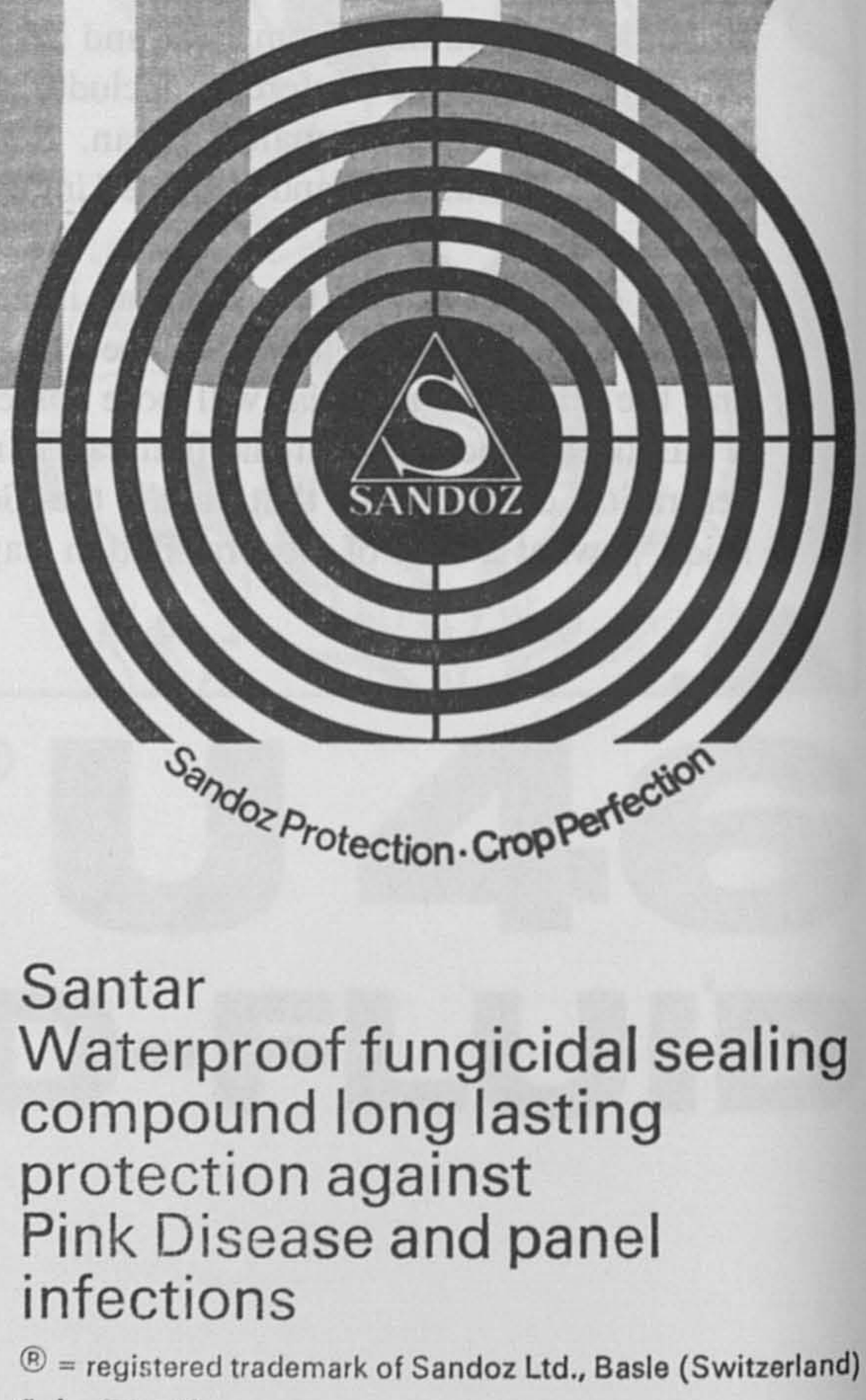
World-wide review
Coconut in Nigeria
Coconut improvement in West Malaysia
The hybrid coconut palm, Malayan Dwarf × West African Tall
Control of *Setora Nitens* (Wlk)
Aerial spraying against *Artona Catoxantha*
Foliar analysis as a guide to manuring
Importance of ensuring suitable mineral nutrition of the young coconut palm
Early results from a manuring trial on a coastal clay
Manuring of coconuts
Upkeep techniques
Weed control in cocoa and coconuts
Cattle under coconuts
Optimum spacing for coconuts
Coconut replanting and rehabilitation scheme in W. Malaysia
Replanting coconut to coconut
Oil content of copra
Controlled forced hot air drying of copra

In addition to authors from East and West Malaysia, a number from overseas will be attending and the conference includes papers from Australia, Ghana, India, Italy (FAO), Ivory Coast, Jamaica, Japan, Netherlands, New Britain, Nigeria, Solomon Islands, Sumatra, Thailand and the United Kingdom.

A TV documentary of the last war is to be made by the BBC. With ex-enemy sources now available there will be contributions from the Germans, Italians *etc* and the choice of material will pose some delicate problems. According to *Punch* it has been conceded that the film can hardly ignore such unpleasantnesses as concentration camps. "In that case", the German representative is reported to have said, "I want a shot of General Patton slapping his privates."

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THE MEANING OF MEANING

or

WHEN IS AVAILABLE 'AVAILABLE'?

Earlier this year I was on top of a bus in London when two boys of about 12 years of age sat down in front of me. They were reading a newspaper account of the big fight between Frazier and Clay, but soon tired of this and turned to other news. One said: *"Let's read about that barmaid who was strangled"*, and this they began to do. *"What does 'buxom' mean?"* asked one. *"I don't know"* said his companion. *"It must be some kind of swear word."* They then went back to boxing and left me with considerable food for thought on some of the jargon being used in agricultural publicity literature.

I suspect that off-hand not many of us could properly define the word 'buxom'. We all know its general meaning and probably associate it at once with 'wench'. I have however consulted the Shorter Oxford Dictionary:

1 Tractable, Meek, Gracious, Obliging, Kingly.

2 Flexible.

3 Blithe, Bright, Lively, Gay.

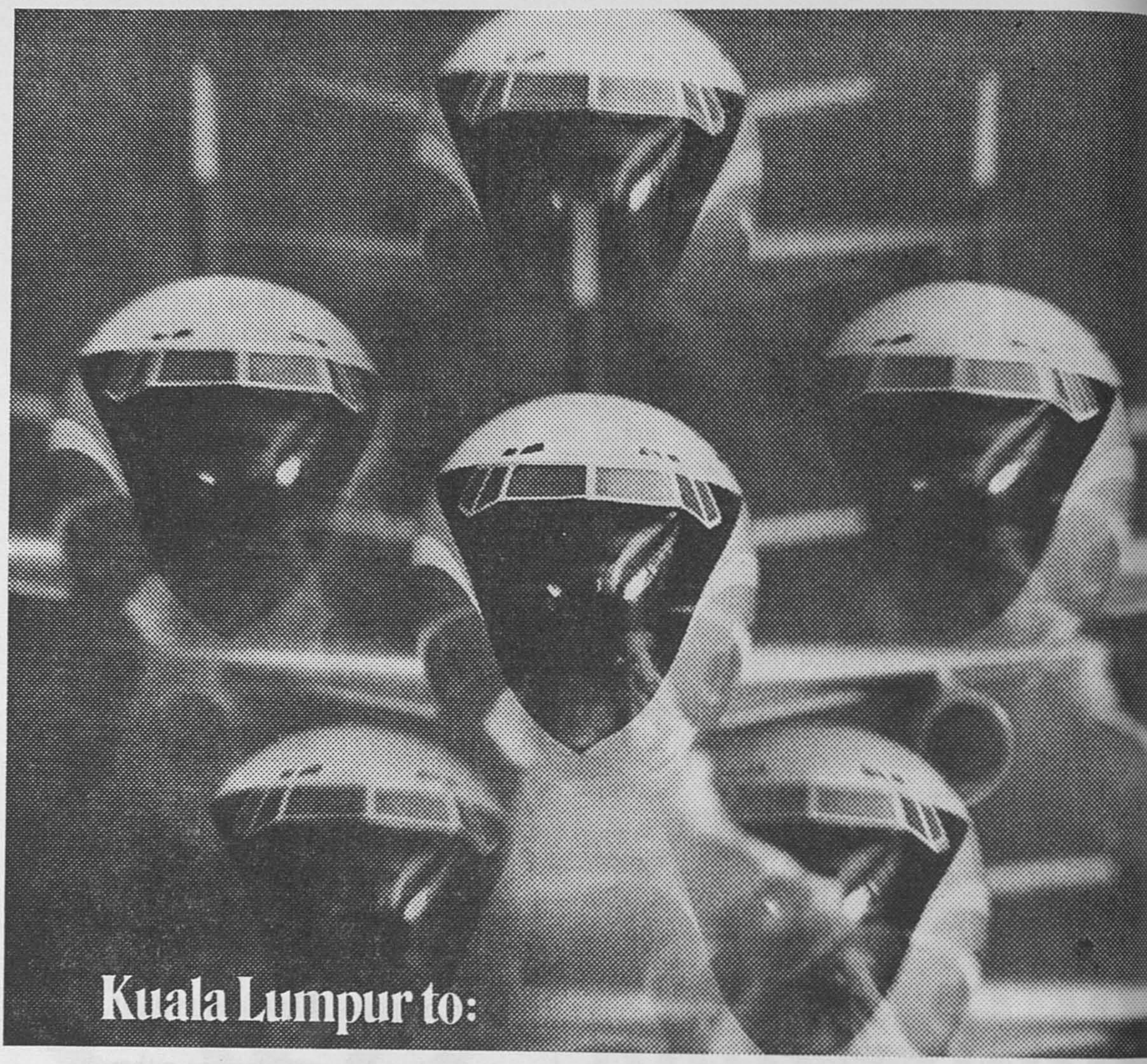
4 Full of Health, Vigour, and Good Temper, and finally

5 Plump and Comely.

So much for buxom.

Most English-speaking people get through the average day on a vocabulary of about 800 words, and these are sufficient for all general purposes. Films and popular newspapers are produced as you know on a vocabulary of about 1 200-1 300 words. In other words, nearly everything we read or see is produced for children or rather with the implication that the rest of us are children. All jokes in the English Language assume both for the narrator and the listener a low standard of intelligence and extremely low powers of comprehension. Thus in any music hall, on any variety broadcast, on any stock exchange, and indeed in every club, public house and commercial organisation in the U.K., the same inanities have been raising shouts of raucous laughter for the best party of a century. No comedian would leave sausages, mothers-in-law, and fat men and women out of his repertoire, or the sort of gag: "When I saw what he'd done I said, 'Good Lord, what 'ave you done'!" That I submit is a good example of an English joke and one of the surest-fire gags in the business.

The advanced or intellectual joke takes this kind of form:
"My uncle was a very honest man." "How can you prove that your uncle was a very honest man?" "I can prove it quite easily because he stood for Parliament and didn't get in." I have it on high authority that that particular joke has been worked into pantomime every year for very nearly 150 years: it never fails to bring down the house.



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M7/6–PM5

The reason why we like this sort of joke is because it puts no strain on the intellect and reminds us of the common exchanges of our fellow commuters. Our newspapers know this; our film masters know it; and I suspect that ordinary technical people, in their ordinary daily lives as citizens, know it also.

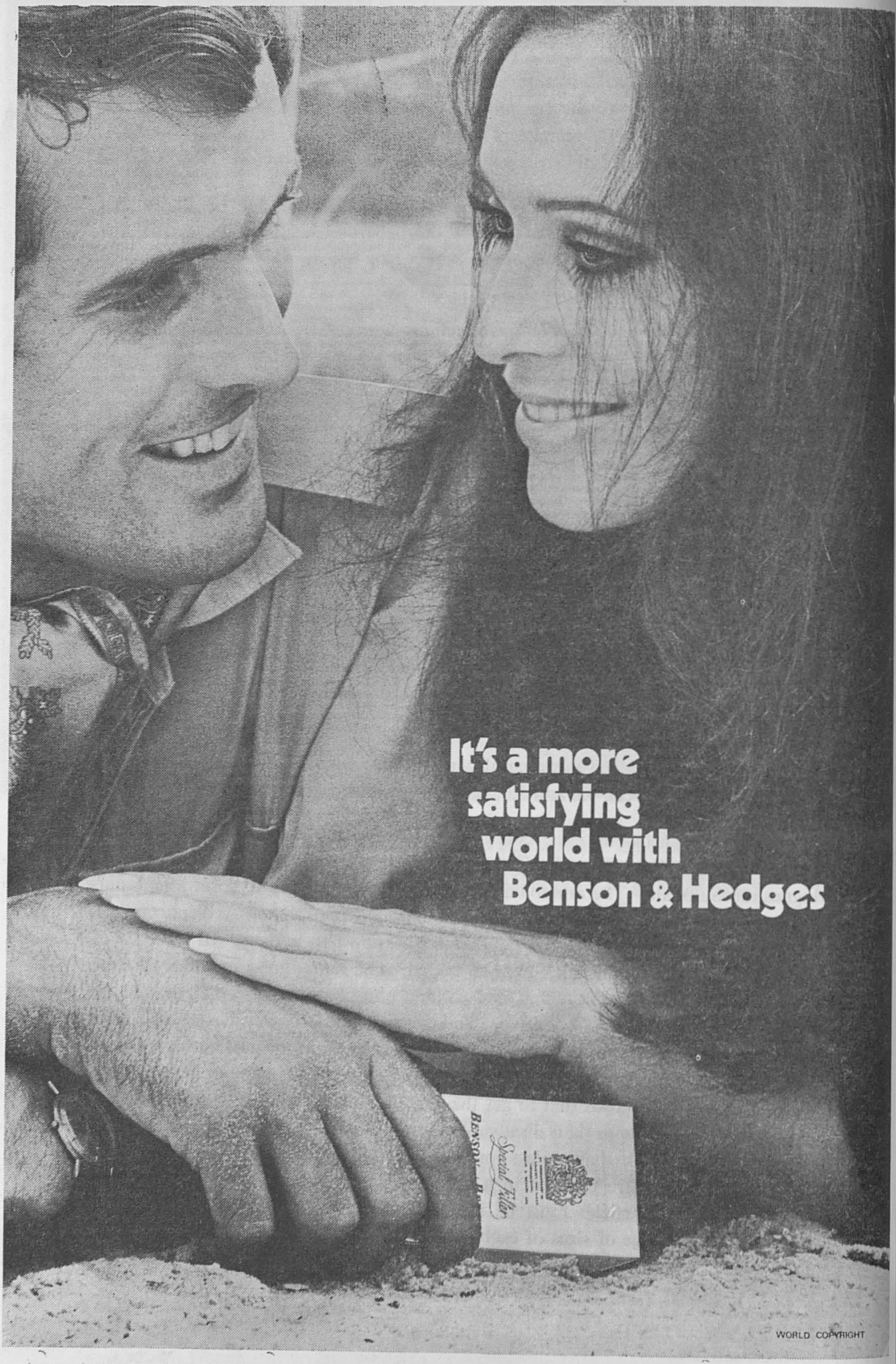
Technical people however are very seriously handicapped in life by their being convinced they are specialists, looking not through rose-tinted spectacles perhaps, but those obscured by say 'water-soluble' vapour or hot air from their enthusiasm for 'blends' over mixtures.

I believe this somewhat lengthy introduction is necessary for an approach to the title. It is 50 years since Sir W.S. Gilbert ended one of his incomparable jingles with the phrase "This is clever, but I don't know what it means." Today we are all bedevilled or indeed misled by cleverness; and this has nothing whatever to do with the intellectual approach to life although frequently confused with it. It is for example undoubtedly clever, but what does it mean to use a phrase in an agricultural leaflet reading as follows: —

"The high effectiveness of the Fertilizers is mainly due to the chemical forms in which they offer the principal nutrients to the plants. The Fertilizers are not mechanical mixtures but chemical complexes, and their nitrogen is present in two different forms, namely as ammonium nitrogen and as nitrate nitrogen, combined with phosphate and potash to form ammonium nitrate, mono-ammonium phosphate, di-ammonium phosphate and di-calcium phosphate in addition to potassium nitrate. The Fertilizers are physiologically neutral fertilizers and therefore do not increase the acidity of the soil."

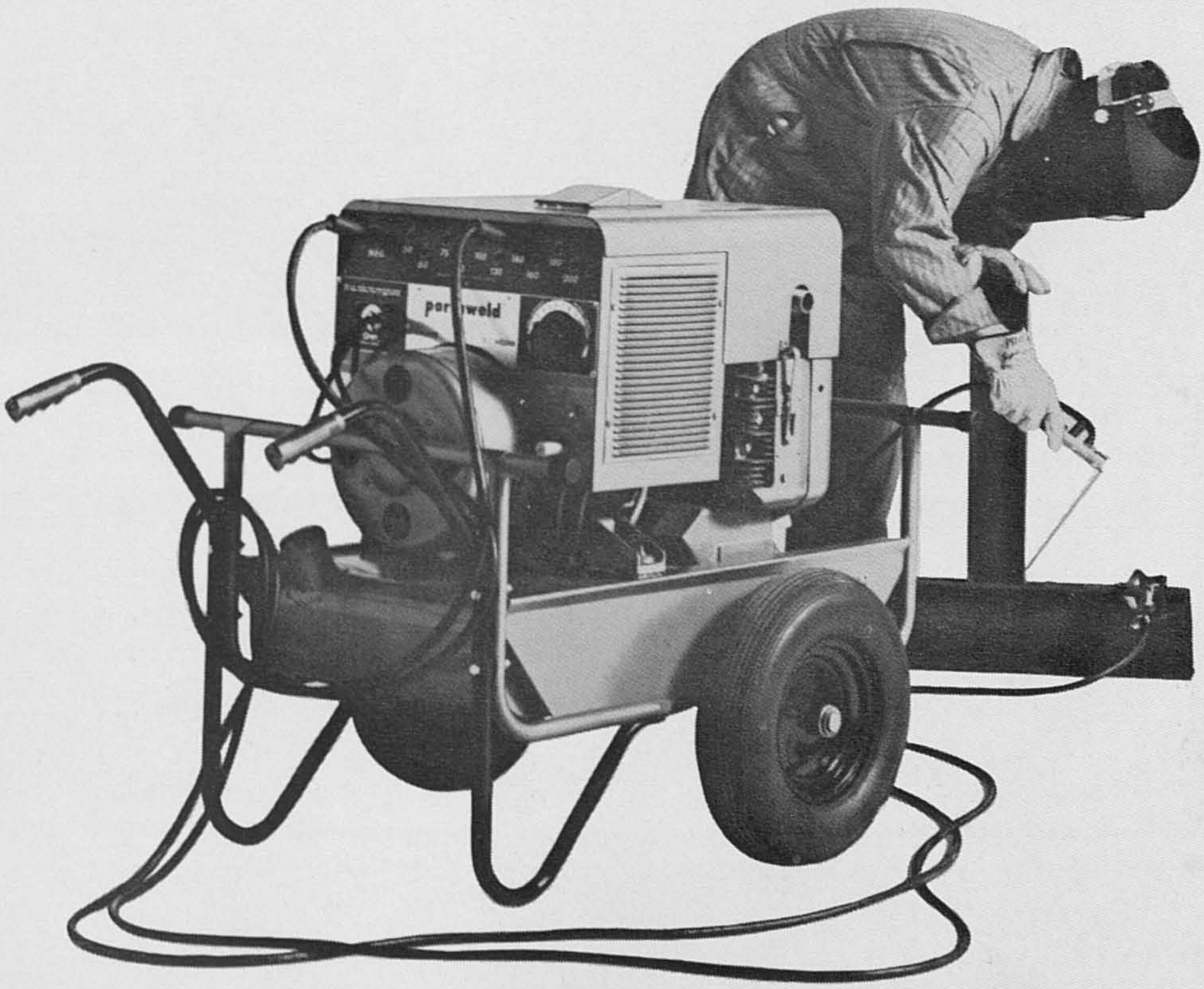
The last sentence is indeed meaningful when we are working in soils with possibly an average pH of between 4.0 and 5.0; but it is perhaps even more clever to write:

"Compounds imported into the country are made using the following materials: Ammonia, Nitric Acid, Phosphoric Acid, Muriate and/or Sulphate of Potash, and Magnesium Sulphate. The ammonia reacts with the nitric acid to form ammonium nitrate and with phosphoric acid to form ammonium phosphate. A blend of these is then granulated to produce the familiar form known to us here. In some cases, a standard set of micronutrients may be added. The many good qualities of these products, *e.g.* low calcium content and soluble phosphate, ensure that despite the high tariff barrier, imports continue. These compounds, however, do have their limitations, *e.g.* a limited range of ratios, high price per unit of nutrient, a standard set of micronutrients that may not be needed or suitable for a particular soil and crop. Our work has shown that to get the benefit of these compounds in Malaysia, and still not to be left with their disadvantages, we must adopt the American concept of granular blends. In its simplest form this entails using well-sized and selected raw materials which are blended in a specially designed plant. The key word is 'well-sized', as the particles must be limited to a range of mesh sizes to prevent segregation. The range of sizes of each ingredient depends on its density."


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What does it all mean? One of the quoted extracts tells us that the fertilizers are chemical complexes which bring about high effectiveness, and the other tells us that a blend of fertilizers is granulated to produce a familiar form known to us here. Finally we are told that "sufficient 'available' phosphorus is particularly important to the immature trees". This statement is often taken to mean "water-soluble". It may be pertinent to ask how available is 'available'?

The term 'available' is used in the fertilizer literature with reference to the phosphatic nutrient. The analytical chemist determines the amount of 'available' phosphorus using three various types of reagents or extractants. The agronomist refers to the amount of available phosphorus responsible for the right amount of crop increase. The chemist, using laboratory techniques, measures the reactivity of phosphorus in a fertilizer in terms of solubility in water, or acid, or in ammonium citrate solutions; the fraction dissolved by any one of these solvents in accordance with an approved but arbitrary technique is termed 'available'. The agronomist on the other hand compares Fertilizer A with an arbitrarily chosen Fertilizer B. He thereby establishes a rating for Fertilizer A based on what he also terms 'available' phosphorus. The two scales of availability cannot possibly measure the same, *i.e.* solubility in whatever medium and assimilability by physiological means cannot relate to an identical effect. What happens in a test tube in Europe cannot be translated into terms for comparison with what happens in say our Malaysian soils.

These are not critical remarks. They are all intended to emphasize the point that the common man only becomes common in relation to something which the technical man thinks he knows but the other does not. Quite often the common man knows a great deal more than the technical man ever knows, and he sometimes knows the meaning of 'meaning'.

When James Joyce was asked what kind of person he expected to be able to read *Finnigan's Wake*, he replied "I not only require the whole mind of my reader but the whole of his life as well." Now no planter, for example, is going to give the writer of a commercial pamphlet his whole mind. We need not bother about his whole life—that, we are told, is dedicated to serving the planting community. But the technical people must make the best use they can of the small part of a planter's mind which he is prepared to devote to commercial literature, and if they are to make their meaning clear to him they must assume that his mind is as good as their own. But what in fact do technical people do? They tend to write and talk in their own jargon because only in that way is their meaning plain to themselves, and thus they develop a cult, a secret language, and all the mumbo-jumbo of the jungle; or is it just that they misconstrue the meaning of 'meaning' or indeed how available is 'available'?

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DATELINE KUALA LUMPUR

The pox is with us again. In Klang, 20 miles from here, and notorious for that rather dubious crow-hunt recently, several people have fallen victims to smallpox. A mass vaccination campaign is going on and the health authorities are confident that they will be able to control the disease and prevent it from spreading.

But there is a new pox in the air. A recent WHO report described the outbreak of monkeypox among human beings for the first time. The cause of this outbreak in Africa remains a mystery but the Organisation was quick to point out that there was no cause for alarm.

Late last year, six cases of suspected smallpox were noted in Liberia, Sierra Leone and the Congo (Kinshasa) after a lapse of about two years. Medical blood-hounds failed to track down the sources of infection and samples from the patients were sent to the WHO's regional centres in Moscow and in Atlanta, Georgia, for positive identification.

Laboratory staff at these centres received quite a shock when they isolated a virus "closely related, if not identical, to monkeypox virus." This was the first recorded instance of this simean pox being found in human beings.

This particular virus was first isolated during a pox outbreak in a monkey colony at Copenhagen's Statens Seruminstitut 13 years ago. The pox was again discovered in seven additional outbreaks among monkeys—six of them in research and vaccine production laboratories and one in a zoo.

Strangely enough, added the report, there is no recorded instance of monkeypox afflicting monkeys in the wilds. The humans, five of them children, suffering from the pox all came from remote African villages situated in humid tropical rain forests widely separated from each other.

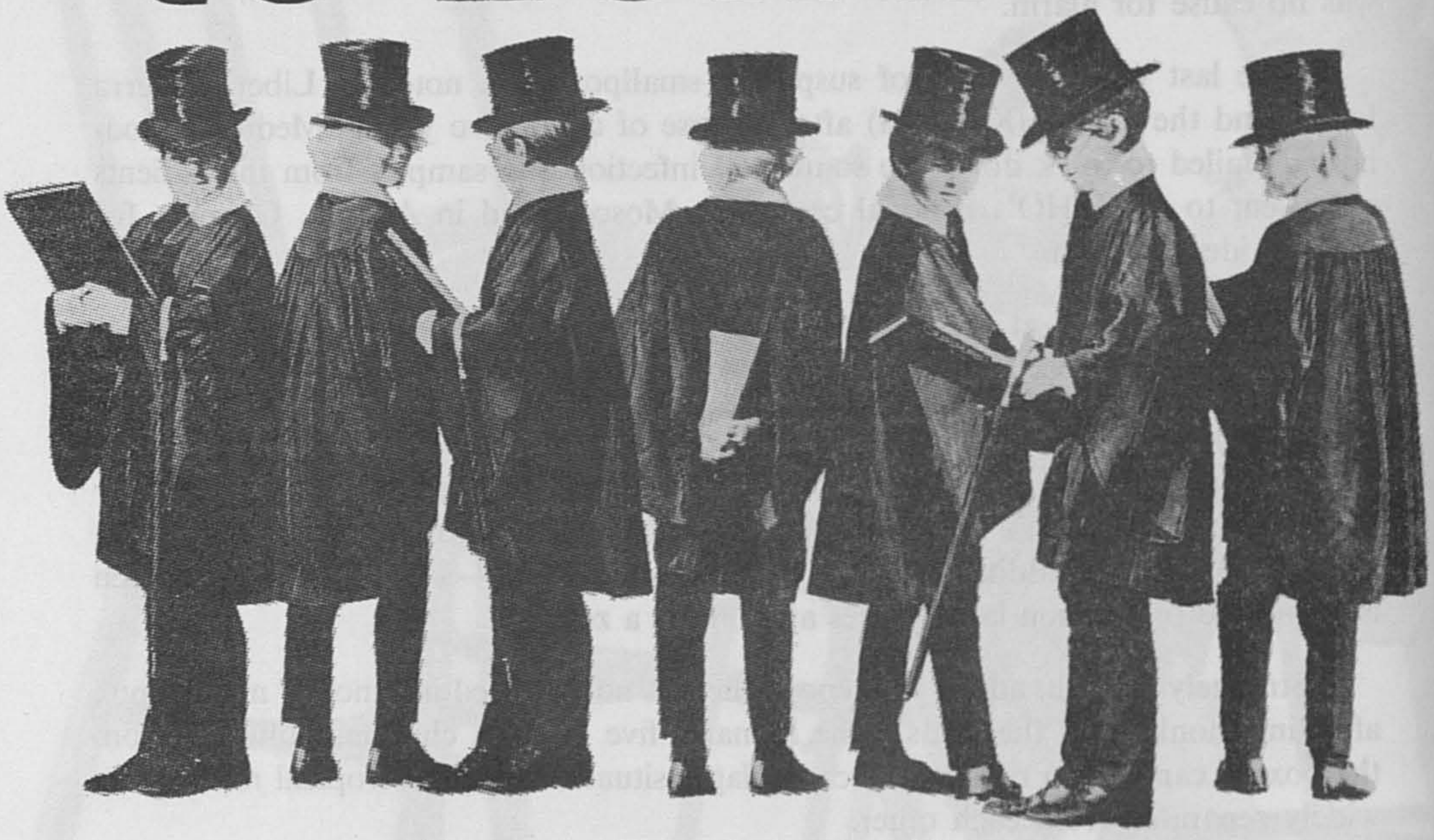
The report said: "All that could be ascertained was that in all three areas, monkeys and apes are prevalent and are frequently killed and eaten by the families concerned, and that monkey skins are used in the households." The puzzle is that no monkeypox was observed in these animals.

Malaysian monkeys became prime suspects in the hunt for natural reservoirs of the disease since five of the eight monkeypox outbreaks involving captive monkeys occurred among Malaysian monkeys.

For the past six months or so, the Institute of Medical Research here and WHO have been doing research into monkeypox among our local simeans. Result: the "locals" were given a clean bill of health as far as the pox was concerned.

A virus expert with the IMR could not explain how captive monkeys contracted the pox. Attempts by the IMR to isolate the anti-bodies involved in monkeypox were also unsuccessful.

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A consolation is that the WHO report made it clear that the situation is far from alarming. Although it had been established that monkeypox could be transmitted to *homo sapiens*, there was reason to believe that persons vaccinated against smallpox may also acquire a degree of immunity against this new-fangled pox.

So if you were thinking of strangling that pet monkey, forget it! And call off that monkey hunt.

Which leads us to ask: have you seen baby monkeys trembling weakly in bird cages in certain "pet shops" in the Federal Capital?

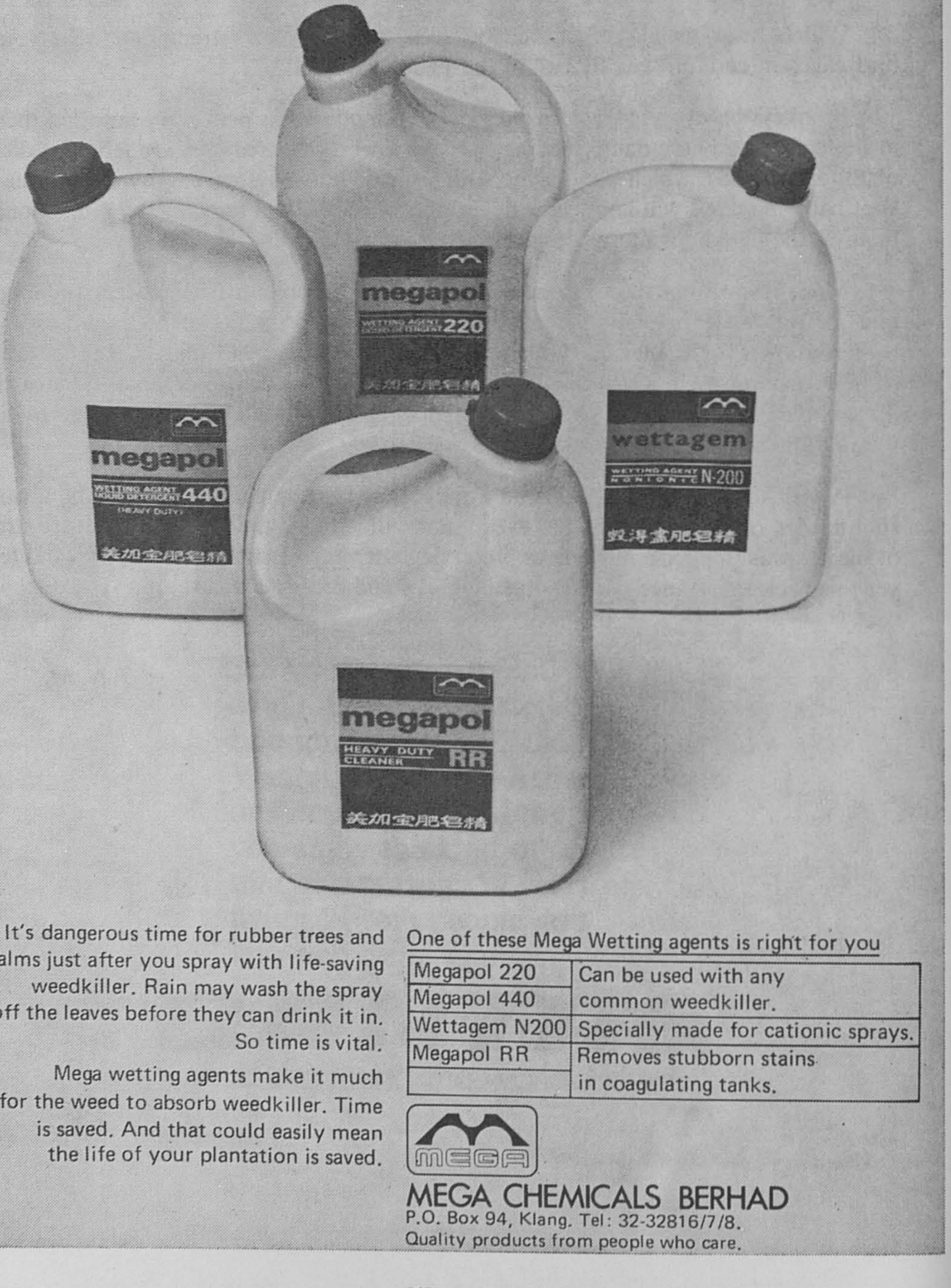
Monkeys barely a few weeks old can be seen offered as pets every now and then in these shops. These damp, bedraggled and woebegone creatures are fed on a diet of rotten bananas, which play havoc with their digestive systems. Anyone who has kept baby monkeys will know how delicate they can be, and the casualty rate among them in the pet shops must be high.

Monkeys are not the only victims. On two separate occasions, a certain shop had for sale an entire family of otters. These endearing, fun-loving creatures are protected by law, yet they can be bought in the heart of Kuala Lumpur. In the same shop not so long ago, seven mouse-deer were seen crowded together in a filthy cage. To complete the picture, a shop assistant was calmly skinning another *pelandok* at the rear of the shop for a customer.

A visit to these shops can be an eye-opener. Depending on your luck, you can spot hawks, owls, porcupines and even a hornbill. Isn't it time this blatant disregard of the law was stopped? We talk of preserving our valuable and irreplaceable wildlife, yet this a clear instance where something can and must be done.

J. N. M.

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PLANTING QUERIES

This title was that given to a booklet published by the Society in 1927 which contained Questions and Answers collected from a competition featured in *The Planter* in 1924 and 1925. We thought it would be both amusing and instructive to publish the questions with both the original answers and those acceptable nearly half a century later. This month we give two examples.

Q. *What method do you recommend to eradicate lallang?*

(a) *On open land.*

(b) *When established in rubber.*

THEN :

A. (a) To eradicate lallang on open land, I recommend the employment of a good contractor to dig over the area three times successively. The points to watch carefully are: —

(i) that the contractor retains sufficient coolies to carry out the first two diggings within three weeks from the commencement of each, and that the third digging be completed within one month from time of commencing.

(ii) that the earth is dug over from six to nine inches deep.

(iii) that no patches are left untreated.

If the work is done thoroughly and within the specified time it will eradicate the lallang, but no opportunity must be given it to regain its hold. To prevent this and to complete the above work, one month from the date of commencing the third digging, sufficient estate coolies should be put on the area to do monthly rounds with *Assam forks*, picking out the lallang roots by hand. After a few months the lallang should be entirely eradicated.

(b) When established in rubber also there is no better method than the above for eradicating lallang, with the additional precaution of avoiding cutting as many lateral roots of the rubber tree as possible.

NOW :

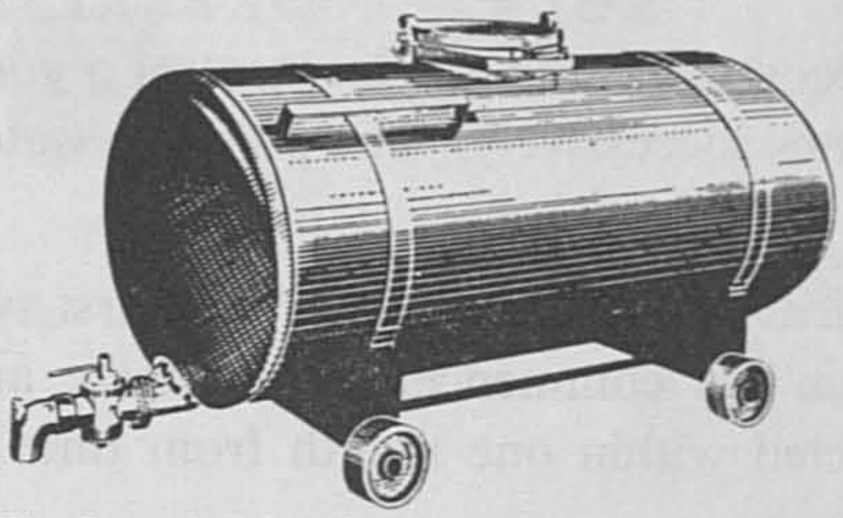
A. At the present time, I favour one method for the eradication of lallang whether the weed is in the open or under rubber—that is by sodium arsenite poison spray.

(1) Using good quality knapsack sprayers, spray the whole area concerned with a 2% solution of sodium arsenite and water at the rate of some 60 gallons per acre. At all times a wetting agent, such as Teepol, should be incorporated at the rate of 1 fl. oz per 4 gallons of solution.

(2) Some 8 to 10 days later spray again using a $1\frac{1}{2}$% solution of sodium arsenite at the rate of some 45 gallons per acre.

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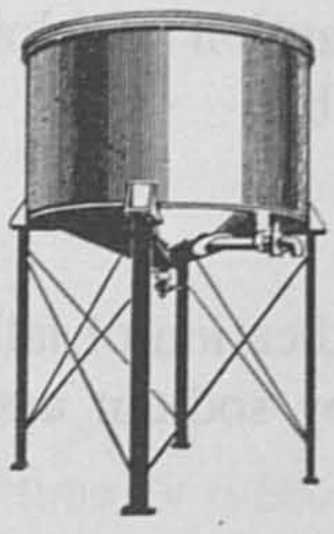
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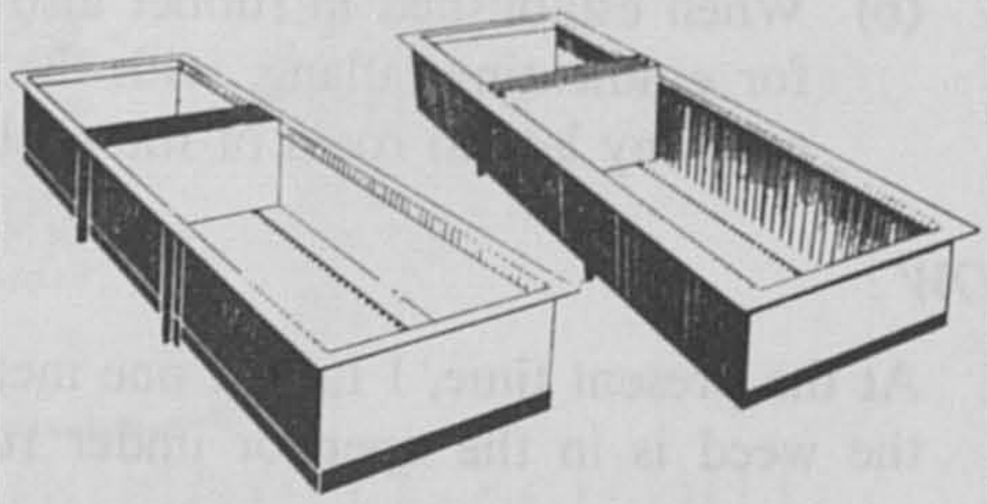
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(3) Repeat the treatment as per 2) some 8 to 10 days later, or before the lallang shows signs of regenerating in strength.

(4) Again, a fourth round is applied in the same way, By this time some 25 to 30 gallons of solution per acre may be all that is required and there will generally be a mat of dead lallang on the ground. At this time a decision is made on whether subsequent regeneration can be dealt with by hand-wiping with lallang oil, or a fifth spraying round is desirable.

(5) Provided weather conditions have been satisfactory and good kills obtained, a fifth spraying round may not be required. Individual shoots of lallang are wiped with a rag soaked in lallang oil. Care should be taken to wipe the whole leaf from ground level to tip. Some workers actually squeeze the rag when the lallang leaf is held in an upright position so that oil runs down the leaf and round the collar at ground level. Provided there is no wastage of oil this procedure is satisfactory.

(6) Subsequent oil wiping rounds follow at judicious intervals of time, always making sure that regeneration never reaches some 50% of the incidence at the previous round. The second oil wiping round could be expected at 3 weeks after the first; the third, one month after the second; and thereafter it might be hoped that upkeep could be done in conjunction with routine weeding.

The total cost of above treatment is estimated at $70 per acre.

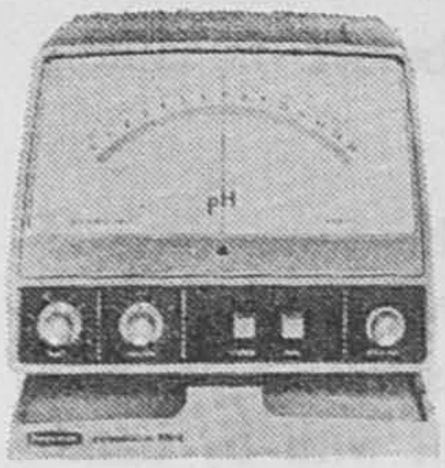
Q. *What type of cover-plant do you suggest for a newly-opened and steep clearing, say 1 in 8 slope?*

THEN :

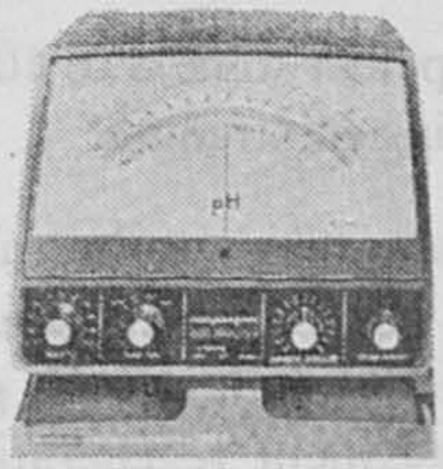
A. If possible a leguminous plant; e.g. *Centrosema Pubescens*. If this is not fully available a mixed cover of Passion-flower and *Centrosema* may be employed. Neither of these can apparently compare, however, with the plant *Calapogonium Mucunoides*. This is leguminous, and has a much more rapid and luxuriant growth, providing a denser cover even in comparatively poor soils. Strong as it is, like all leguminous covers it requires protection from "wash" in the early stages while being established. In all cases scrupulous care must be taken to "supply" all vacant patches, which will always be found where "wash" of top-soil is appreciable.

Modern practice indicates that often a mixed cover of, say, *Centrosema Plumeiri* and *Calapogonium* is preferable to a pure cover. One appears to help the other; when one tends to "die back" the other flourishes. This is to be attributed to the fact that, from the "food-value" point of view, a leguminous cover-plant is of greatest value when it is dead, *i.e.* when it yields its nitrogen to the soil. As one dies it enables the other to thrive on the "proceeds". The quantity of nitrogen put into the soil by the living plant is small when compared with that yielded by the dead plant. Hence the argument for "mulching".

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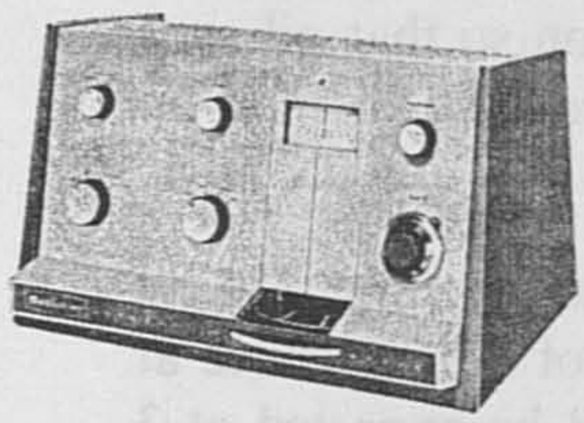
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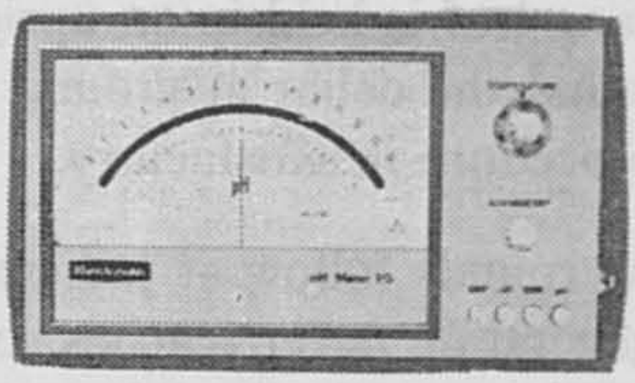
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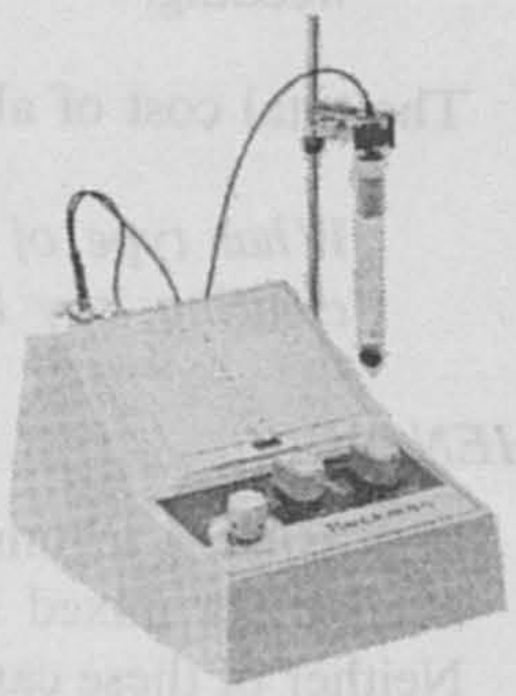
H-5 pH METER.



DIGITAL
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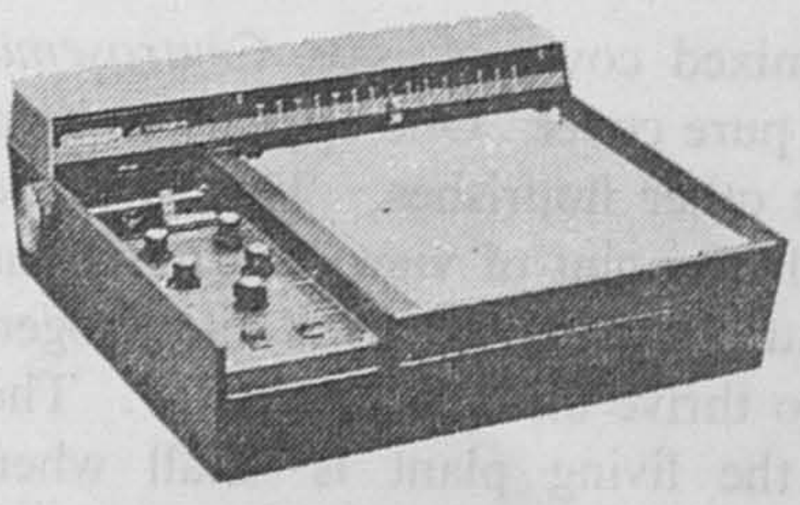
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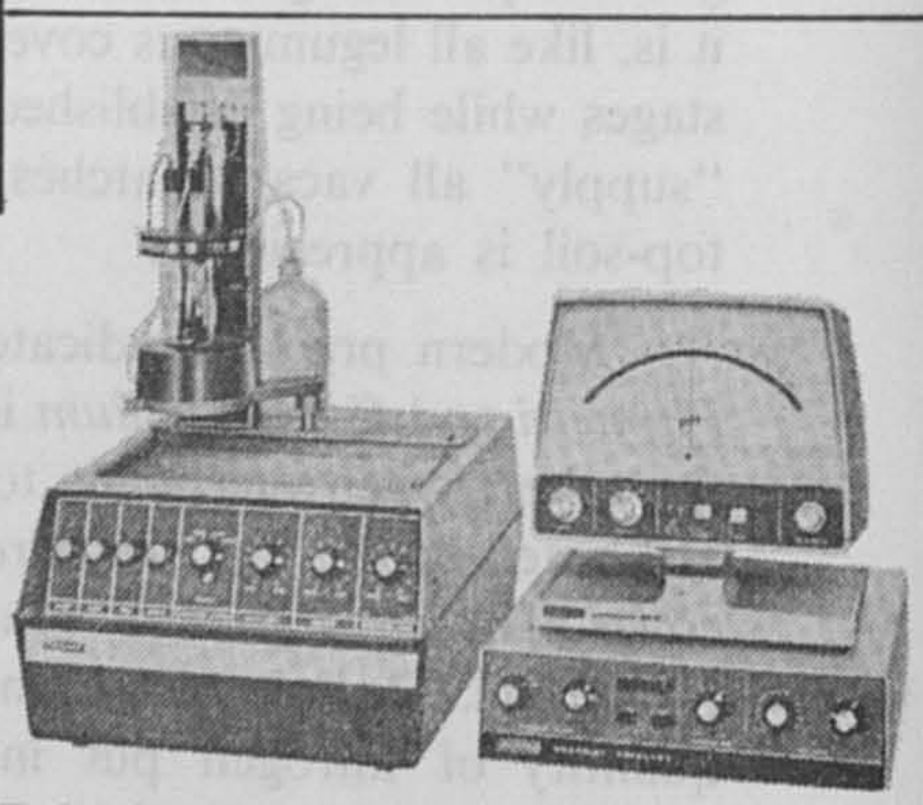
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NOW :

A. The type of cover plant suggested for a newly opened and steep clearing, is a mixture of *Pueraria phaseoloides* and *Calapogonium caereleum.*

At the present time it is the normal practice to mechanically terrace at some 30 chains to the acre.

It is suggested that the *Pueraria* seeds be mechanically rotovated into the loose spoil along the lip of the mechanically made terraces at the rate of 1 lb or so per acre.

Calapogonium caereleum seeds are relatively expensive and may be pocketed along the middle of the interrow in a line of 12″ × 12″ pockets, some 10′ apart, at the rate of some 20 seeds per pocket or about $\frac{1}{4}$ lb per acre.

With proper fertilising it should not be long before there is a relatively thick protection of *Pueraria* along the very important and vulnerable terrace edge. Within 6 to 8 months an effective cover can be expected.

Calapogonium caereleum will be slower to come away and may not become prominent until after the first year. Thereafter, it will increase in strength until the third or fourth year when it may be predominant and remain in strength after *Pueraria* has died back under heavy shade.

The foregoing pre-supposes that a proper legume weeding policy has been maintained—but that is not for discussion here.

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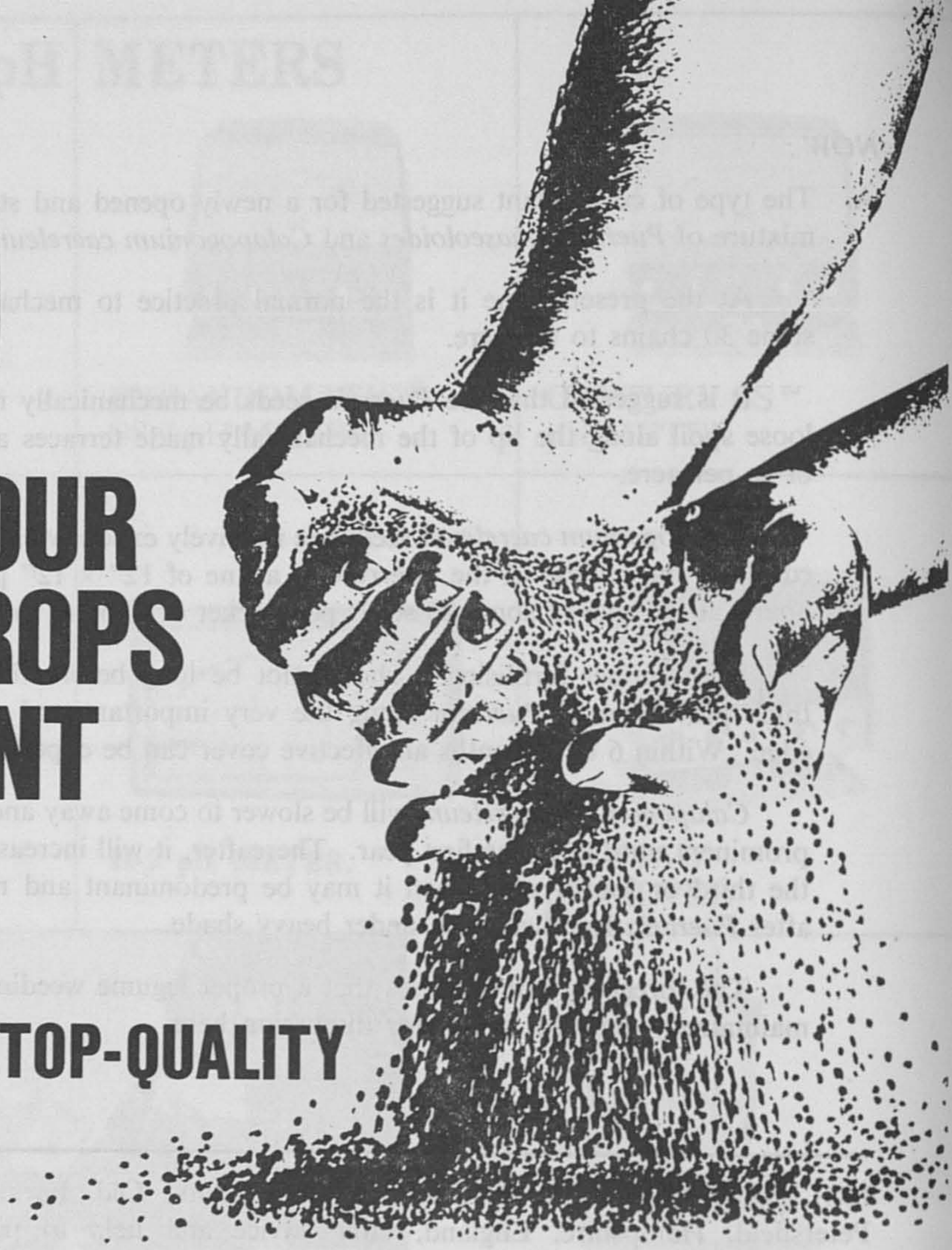
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OF MULES AND HARVESTERS

by

J. Veldhuis

Plantacion San Alberto — Colombia

Think not, dear reader that this article is intended to introduce yet another harvesting system; you lack the ass anyhow. It is merely written so as not to withhold from overseas fellow-planters the cognizance of an unique system adopted on this estate several years ago when large oil palm areas came into bearing and adequate labour was difficult to obtain.

The surprised (and perhaps sceptical) look on my face was understandable when first confronted with rather docile looking mules instead of the familiar canda stick which I was accustomed to for many years, but noticing my facial expression the gentleman in charge quickly told me that the quadruped was part and parcel of the harvesting team. It was soon also obvious to me that it would be of no economical or practical advantage to change this well-established and, I must admit, efficient practice to bring cut bunches to the roadside.

The mule is widely used in this country for transporting a great variety of goods such as sugar cane, coffee, rice, cotton etc., and is particularly useful in hilly and mountainous regions where access by cars or other vehicles is difficult.

Each harvesting team consists of three contract labourers; a fruit-cutter, a bunch-collector in charge of the mule, and a loose-fruit-collector. All are men, since women are not employed in any fieldwork whatever. For carrying fruit the animal is equipped with a double basket of metal specially designed for this type of work which has two sideflaps to allow easy unloading at the reception points. (In view of its weight, trials with fibreglass or plastic baskets are being conducted.) When full, the baskets hold the appreciable weight of approximately 260 lb of fruit. The mule carries about 3.2 tons of fruit daily, the average output per harvesting team.

Unfortunately we have not yet succeeded in teaching the animals the rudimentary facts of the rapid rise of free fatty acid in damaged fruits and it is therefore up to the bunch-collector to keep the animal from trampling on loose fruit, something which at times seems to be equally hard to bring home to the man himself. The enthusiasm of the harvesters at the introduction of gunny sacks for keeping loose fruit along the roadside was soon explained when, two weeks and two issues of new sacks later, the uncontrollable disappearance of most of the sacks made it quite evident that the project was doomed to an early death. A reasonable F.F.A. is being obtained notwithstanding.

Instead of the chisel used by the Malaysian harvester the tool employed is a spade measuring 7 by 10 inches with a razor sharp cutting edge which enables an experienced harvester to bring down a palmfrond or bunch in one stab. Where used in the older plantings the wooden handle has a length of 10 to 13 feet.

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The (sterile) mules are bred on the estate, which keeps around 35 mares for this purpose and of course a donkey. Land for grazing is abundant. The offspring commence working in the field (after a short period of training) when they are about three years old and continue until they are 15 or more. They turn out daily, except on Sundays and festival days when they are allowed to laze and graze. Outside working hours the animals are looked after by a qualified team of men who supplement their needs with specially prepared food grown on the estate. During their work the mules always manage to consume a fair amount of grass or other vegetation growing under the palms. A vet, who resides on the estate to attend to the health of some four thousand cattle owned by the company also takes care of the mules' medical requirements. Incidentally, to put at ease the minds of those readers who may have visions of large herds of cattle roaming the estate, I would mention that meadows are available for all cattle and only controlled grazing under palms of no more than 700 head at one time (less during the rainy season) in selected sections is practised over a total area of some 11 000 acres.

It is interesting to note that apart from fruit-collection mules (as well as horses) are used by junior field staff as a means of moving around when supervising fieldwork. Admittedly it takes a bit more time to get around than on a Honda, but on the other hand it does, or at least it should, do away with the temptation to supervise the work from the roadside, particularly when the field needs weeding or it has just been raining.

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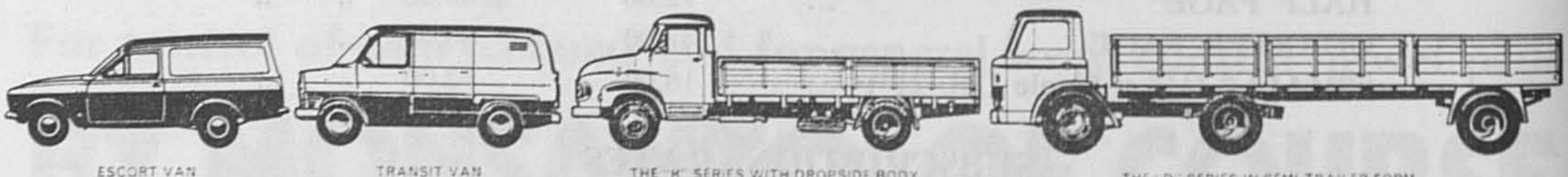
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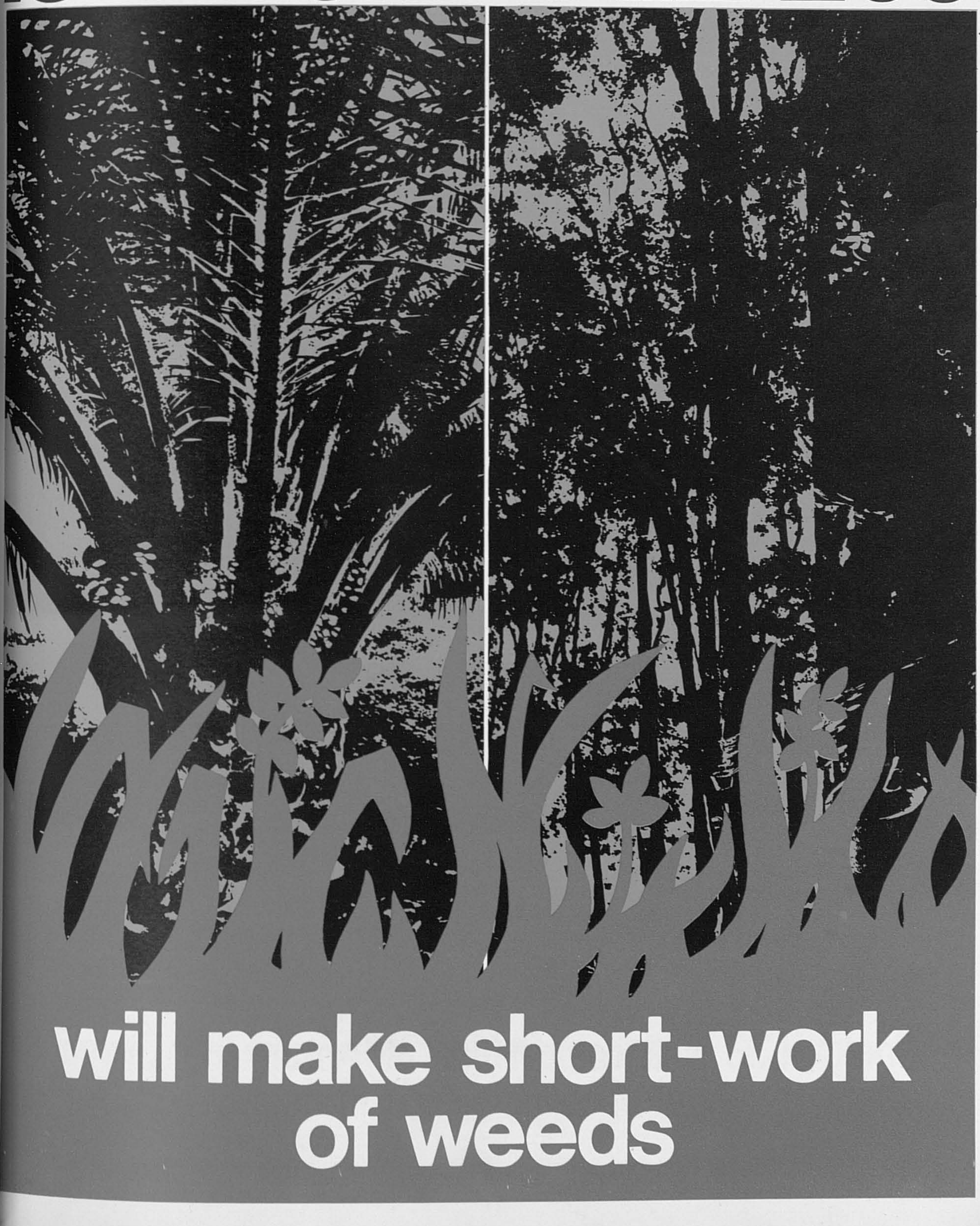


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ONE WANDERS FAR AND WIDE

by

T. Earle

It may seem a far cry from rubber planting in Malaya to rice growing in New Guinea, though not so far agriculturally if you use your imagination. It is however, if you look at the steps this writer took to get there.

First a brief note. When I wrote some articles for *The Planter* some years ago I attempted to portray some of the problems in Papua and New Guinea. Although I cannot refer to them now as I have mislead my copies, I still think the general impression of the time was correct. I was eventually stumped for words because some aspects were either too complicated or controversial. However a reader of some 9 or 10 years ago may recall the articles.

A great deal has changed in the Territory since those days, in nearly every respect. Enormous advances have been made in almost every field. But all this is another subject to be dealt with another day. So let us wander from Malaya to Papua and New Guinea, and about and about.

At the time I wrote last I had embarked on a small rubber venture in Papua near Samarai at the Eastern tip of the main island. With the price of rubber at that time being 40 pence Australian per lb plus freight, and a guaranteed market for all rubber, it was a "knock-over", even with the vagaries of weather, tappers misguided notions of the job, and other minor problems. Then came the collapse of the price, and so all minor difficulties became major.

I would not like to bore an audience with the mechanics of failure. I did at the time write a five-page treatise on the subject but, I am pleased to say, never presented it. I can only say it was sour consolation to know it could happen to anyone, anywhere and in any business.

Anyway when disaster struck I then, to live and pay the bill, found shelter with Burns Philp (one of the "bigs" in island business) as a hardware assistant (sometimes facetiously called a "counter-jumper").

In this guise I was destined to earn my broth for some four years before I could go on the leave of my choosing.

For those who have never been on the other side of the counter, may I give them a picture of its mysteries. I would say that general hardware is at once a most fascinating, complicated and as tough a branch of the shop-keeping business there is. In the main cities of Australia—and other places probably also—the chances are that a hardware aspirant will get into one branch and stay there. When he elects to go to places like New Guinea he will find himself involved in all branches. Thus, one trained in plumbing ware will find himself dealing with batteries of all sizes, paints, radios, kitchenware, tractors, car and marine machinery, and a lot more besides.

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Consider when you are next shopping for estate supplies what you and the shop-keeper know about the subject. Think how many types of nails and screws there are, their specific use and how they are sold. Which types of rope are sold by diameter, by circumference, or by weight, and how you would advise an innocent customer which one he really wanted. Think of the mass of technical terms and their colloquial variants. If a customer asked you for a ½"C x ½"C x ¼"MI Br Tee what would you offer? And so on, nearly *ad infinitum*.

When eventually I went on leave in August 1969 I decided if possible to make a break. So it was that I made application to, and was accepted by the Department of Agriculture Stock and Fisheries in the capacity of a Project Manager. I had hoped to get back into rubber. But authority and circumstance dictated otherwise.

My first posting was to Kavieng at the north west tip of New Ireland. This very pleasant little town fronts on to a small harbour and a bay dotted with a medley of equally pleasant little islands extending out to New Hanover. There are few visible memories of the German occupation, though some of the old inhabitants recall the Germans themselves (my old cook was one and quite fond memories he had, though he would have been about 8 at the time).

I was told, incidentally, that Kavieng fell to the Japanese at the beginning of January 1941, or a month or so before the fall of Singapore. They left a few reminders in the way of some very solid bunkers and the like, and both they and the allies left some very solid memories by way of unexploded bombs and shells which are still being exploded today. Also as in other parts of the Territory, wreckage of various descriptions is every now and again being unearthed.

The agricultural activities of New Ireland consist of cocoa, copra, and some 1 200 hundred acres of rubber of which only about 200 was in production when I left. One of these was leased by an ex-Malayan, one Bill Hastie, whose area was just being opened at the time I was transferred. There is also a small amount of coffee produced.

The concern of a Project Manager is to watch over, guide, encourage and sometimes discourage indigenous projects. He has also other general duties to perform as become necessary.

My first job was to find out the possible value of what you might call extra smallholders rubber ventures (excluding European). I found this negative. The natives have not the slightest idea of values in this and many other respects, no knowledge of what is involved; nor can anyone put over that information. Their idea generally was to plant something like 2 acres (or less) and hope for the best, for they would be unlikely to afford processing equipment, and would not in most cases, be close enough to the larger producers who could absorb their latex. European planters told me they had given every encouragement, but had been forced to give up. And they too are not having a whale of a time. The result was we gave that plan away pending a better day. Of course their chances have been improved by loans from the Development Bank. But generous as this bank is, they want to see at least the glimmering of success.

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The next plan was to take over and manage the local agricultural station. This 100 acre block consists of experimental and demonstration plots, of rubber, cocoa, coffee, oil palm, pepper, vanilla, tropical fruit trees, and an area set aside for rotational crops like maize, ground nuts and so on. There was also 10 acres for a rubber clonal seed garden. But before I could adjust myself to this project a staff rearrangement cancelled it out. The main reason for this reshuffle was that at this time the station was a base for training lads whose schooling had been terminated. It was a scheme devised to give these boys a year's training by way of practical demonstration, and lectures to fit them for a place on the land.

I next found myself building up the marketing/accounting aspect of the fish project. This project I found both interesting and entertaining. Here is another mysterious trade which is not learnt overnight. When you realise that after our freezer plant was installed, the intake of fish rose from 3 000 lbs in a month to 15 000 lbs in about three months, you will see that it was some project. I was beginning to learn the art of filleting, to identify fish and how to buy them, and then freezing, packing, and (once again) the hazards of marketing. At about this time a joint Australian/Japanese company were running a Tuna fishing trial with a view to starting a cannery. I have heard since that the cannery is now to be built.

In October of 1970 this project came to an end as far as I was concerned, for then my transfer was ordained.

(to be continued)

Letters to the Editor:

East Cottage
72, Canford Bottom,
Wimborne,
Dorset BH21 2HF.

19th August, 1971.

Dear Sir,

I am leaving this address very soon, and after a protracted stay with my son in Australia will be living elsewhere—I'm not quite sure where. This change coupled with advancing old age obliges me to ask Headquarters to discontinue sending me *The Planter*.

It's now 14 years since I left Malaya and I have enjoyed getting the magazine every month without fail ever since.

Will you kindly thank the I.S.P. for the courtesy? I wish the Society every success for the future.

Thank you.

Yours sincerely,
(*Sgd.*) G. SCURR.

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Letters :





Eldred Estate

Bekok, Johore

2 July 1971

Sir,

The full view and close-up of a "Multi-branch" oil palm on Eldred Estate may be of interest to readers.

It was a 12-month-old polybag nursery palm, field - planted in August 1968.

The palm sports vegetative growth from frond axils. No flowers have been produced todate.

Can any reader comment on this growth peculiarity, or advise of similar cases?

Yours faithfully:

J. H. Keedwell

Manager

INTERNATIONAL SCHOOL'S OBJECTIVES READY FOR TESTING*

by

M. OWEN

The Singapore International School will meet the needs of a very wide variety of pupils from different educational language and cultural backgrounds. In the way it meets these various and varying needs it will, it is hoped, strive to become a centre of excellence in South East Asia. Broadly speaking there are two aims. The first is concerned with social integration and with the part education can and should play in breaking through the barriers which divide nations and people. It is, for instance, absurd that families living abroad often find themselves forced to send their children to schools in the home country or to schools set up in the country of residence geared solely to University Entrance requirements at home. In preparing pupils for London University "O" and "A" level examinations, the Singapore International School recognises the needs of expatriate children in its catchment area, but at the same time, hopes to broaden its curriculum to provide an education related to the exciting environment in which the school finds itself. Education must become more of an integrating and less of a disrupting force in the world. It must encourage freer movement and exchange of ideas. Barriers of language should also be bridged, and with its language laboratory facilities, and a well qualified staff, the school hopes to encourage all its pupils to acquire at least one second language. Mandarin and Malay will find their place in the languages offered.

The second aim is more fundamental in nature. Advancing material prosperity carries with it certain dangers, not the least of which are a decline in physical fitness, insufficient satisfaction of the youthful instinct for adventure and a decline of compassion which all too often expresses itself in individual unhelpfulness one to another. By involving its pupils in a wide ranging programme of activities and in service to the surrounding community, the school will strive to meet these dangers. Finally there is, of course, the barrier of prejudice. It would be naive to pretend that, by bringing together boys and girls of different nationalities into one school, one removes prejudice like a bad tooth. I believe, however, that international education should seek to bring people face to face with the prejudices and thereby encourage greater tolerance.

The school will open on September 13th. About one thousand pupils have already been registered for admission and the school is in the unique position of having a waiting list even before it exists. Sixty-four teachers have already been appointed and eight more will join the staff in the next few months to make a total of seventy two. All are highly qualified and most come from the United Kingdom but I am happy to say that we have able to recruit some fifteen local teachers of very high calibre. In this way we hope to make the staff of the school as international as its pupils. The broad pattern of education in the school will follow that

---

* Reprinted from *The Beam*, official magazine of the British European Association.

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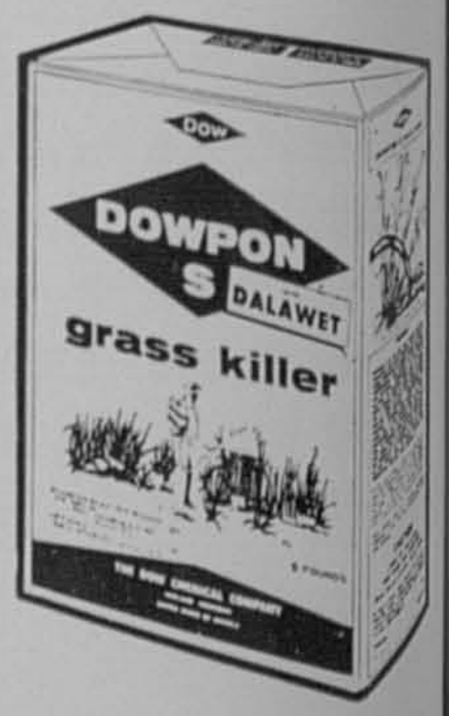
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of an English secondary school and courses are being designed to meet the needs of pupils at varying levels of ability. During the first two years pupils will enjoy a broadly based programme of studies before specialisation becomes necessary to prepare them for examinations at Ordinary and Advanced level G.C.E. and The Certificate of Secondary Education. Business Studies courses will be available in the Upper School and we hope to make full use of the excellent engineering facilities the school offers. The activities programme at the school will be both vigorous and varied and will also, we hope, reflect something of the international character of the school. We have entered into an association with United World Colleges and negotiations are taking place to consider the terms under which this association, which can only benefit the school, will take place in September 1972. Close links will be established with the exciting community in which the school exists. Every opportunity will be taken to introduce speakers who will bring something of their special knowledge and experience to stimulate the thought and broaden the horizons of the pupils while they are at this school.

We are privileged to start life in superb buildings and we are grateful to the Singapore Government for placing these at our disposal. It is my hope that, in the years to come, we shall be able to give to Singapore something valuable in return. In a young and expanding economy it is not difficult to see the practical value of an International School. I hope that our value can also be assessed in spiritual terms and that idealism will always be granted a place alongside practical needs.

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5763 Hill, D.A.G., Faculty of Agriculture, The University, Whiteknights, Reading RG6 2AH, England. (Sabah–Tawau)—September 1971

4581 Inkster, T.G.B., S.D.A., "Benvue", 4 Kings Road, Grangemouth, Stirlingshire, Scotland. (Negri Sembilan)—14/9/71

4096 Martin, W.S., Hope Cottage, Muirhouses, Bo'ness, W. Lothian, Scotland. (S. Trengganu/E. Pahang)—16/9/71

4561 Taylor, J.G., c/o The Knock, Newton Terrace, Blairgowrie, Perthshire, Scotland. (N. Johore)—10/9/71

5150 Wark, G.D., 112 Woodhill Road, Bishopbriggs, Lanarkshire, Scotland. (Selangor)—20/8/71

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5072 Bugatt, A.C., BAL Estates Sdn. Bhd., P.O. Box 135, Tawau, Sabah. (Sabah–Tawau)—24/8/71

3403 Gorddard, P.C., West Country Estate, Kajang, Selangor. (Selangor)—7/9/71

3786 Evans, R.C., Bagan Datoh Estate, Bagan Datoh, Perak. (L. Perak)—September 1971

4473 Jones, J.B. Owen, Kuala Perak Estate, Teluk Anson, Perak. (L. Perak)—23/24 September 1971

3958 Montgomerie, P.J., A.I.S.P., Voules Estate, P.O. Box 506, Segamat, Johore. (N. Johore)—8/9/71

4413 Mackie, E.C., New Rompin Estate, Rompin *via* Gemas, Negri Sembilan. (Negri Sembilan)—1/9/71

4047 Sergeant, C.J., N.D.A., A.I.S.P., Sungei Buloh Estate, Bukit Rotan, Selangor. (Selangor)—9/9/71

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5288 Ariffin bin Ismail, Brooklands Estate, Banting, Selangor. (Kedah/Penang/Selangor)—3/9/71

3637 Alexander, J.S., Damansara Estate, Batu Tiga, Selangor. (Selangor)—3/9/71

4416 Angus, A., Bukit Benut Estate, Kluang, Johore. (S. Johore/C. Johore)—7/9/71

5754 Azhari bin Hamzah, Senawang Estate, Sungei Gadut, Negri Sembilan. (Kelantan/Trengganu/Negri Sembilan)—15/571

5037 Bonner, P.W.I., Muar River Estate, P.O. Box 503, Segamat, Johore. (Selangor/North Johore)—1/9/71

4471 Brown, T.P., N.D.A., A.I.S.P., Kelan Estate, Kulai, Johore. (C. Perak/S. Johore)—10/9/71

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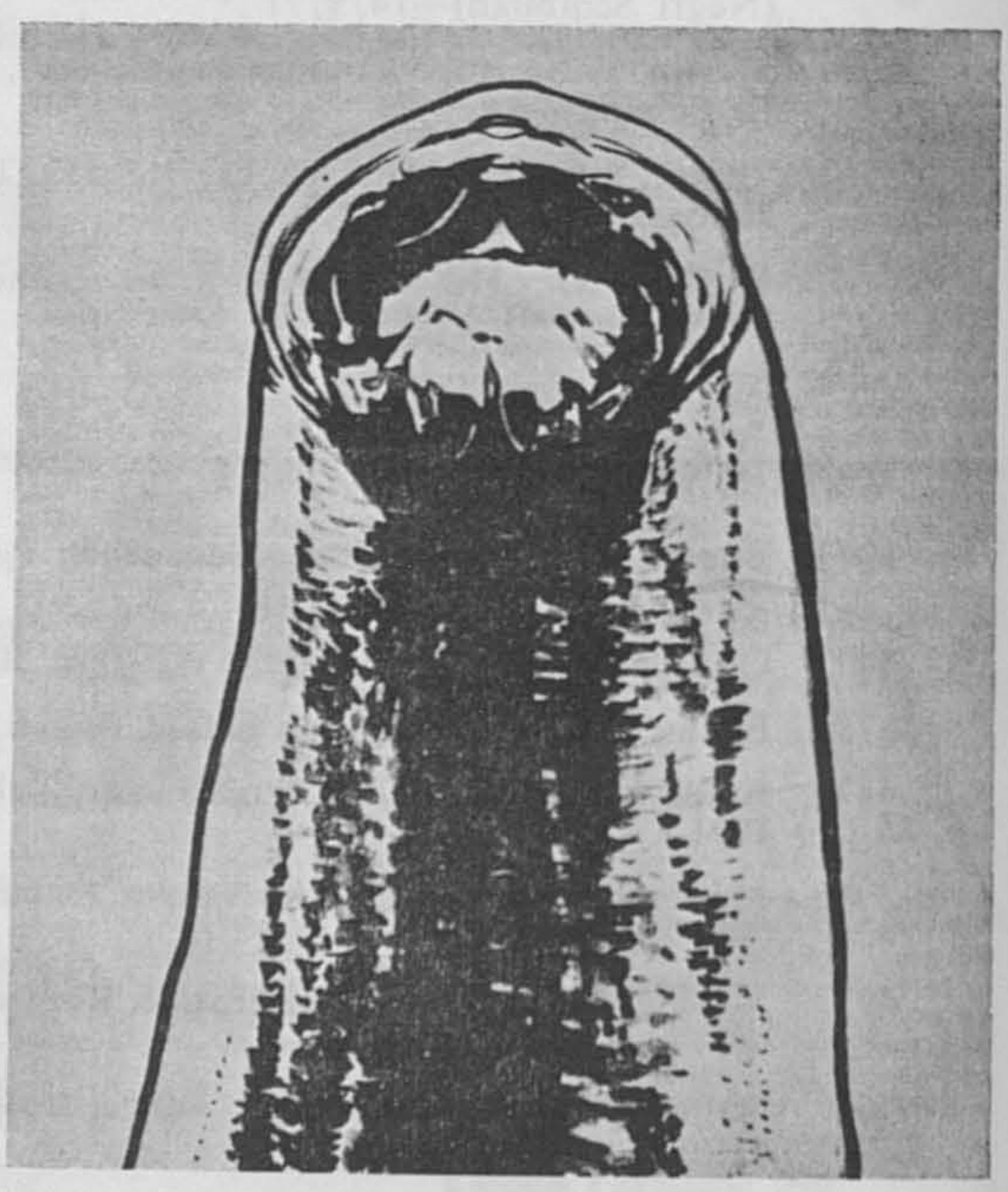
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4976 Boult, P.M. de W., Beradin Estate, Paloh, Johore. (C. Perak/C. Johore)—20/8/71

5383 Blencowe, J.W. (Dr.), F.I.S.P., Rubber Research Centre, Haatyai, S. Thailand. (Selangor/Overseas)—September 1971

3892 Bishorek, J.F., B.E.M., L.I.C., Fraser Estate, Kulai, Johore. (Selangor/S. Johore)—13/9/71

2658 Bangs, Haji Mohd. Yusof (Dato), P.M.K., O.B.E., J.P., Jalan Gaele, Kuala Krai, Kelantan. (Life member)—2/9/71

5258 Crabb, M.B., S.D.A., A.I.S.P., Seafield Estate, Batu Tiga, Selangor. (Selangor)—17/9/71

5400 Edward, N.C., 13 Jalan Nipah, Kuala Lumpur. (Selangor)—6/9/71

4654 Fyfe, F.J., Tali Ayer Estate, Parit Buntar, Perak. (L. Perak/N. Perak)—27/8/71

5521 Goldthorpe, C.C., The University of Bradford, The Management Centre, Emm Lane, Bradford, BD9 4JL, England. (Overseas)—1/10/71

4319 Jones, R.K., A.I.S.P., 5 Western Avenue, Penang. (Kedah/Penang)—24/8/71

4883 Jayesuria, M.R., Dip. Trop. Agri., A.I.S.P., Chenor Estate, Jerantut, Pahang. (Negri Sembilan/W. Pahang)—August 1971

5469 Manurung, Gajus (Ir.), Projek Ekstraksi Minjak, Djl. Udjung Baru, Belawan, North Sumatra, Indonesia. (Indonesia)—16/8/71

5303 Meor Hisham bin Haji Meor Mohd. Yusof, Kulai Young Estate, Kulai, Johore. (North Johore/South Johore)—6/7/71

4997 Montgomerie, J., M.D.A., M.R.A.C., A.I.S.P., North Labis Estate, Labis, Johore. (Negri Sembilan/N. Johore)—8/9/71

5186 Nesbit, D.P., Chenor Estate, Jerantut, Johore. (C. Johore/W. Pahang)—August 1971

5341 Ng Khie Hup, St. Helier Estate, Bahau, Negri Sembilan. (Selangor/Negri Sembilan)—28/8/71

5703 Schnitzler, W.H. (Dr.), c/o BASF (Philippines) Inc., P.O. Box 332, Makati, Rizal, D–708, Philippines. (S. Johore/Overseas)—1/10/71

4218 Hermon, B., Sabah Land Dev. Board, P.O. Box 1253, Sandakan, Sabah. (Tawau/Sabah–N.E.)—4/9/71

5086 Idris b. Raja Shahriman (Raja), Juasseh Estate, Kuala Pilah, Negri Sembilan. (C. Perak/Negri Sembilan)—10/9/71

4382 Krishnan, P.V.U., 36 Jalan Bee Eng Tiga, Taynton View, 6th Mile, Jalan Cheras, Kuala Lumpur. (Selangor)—18/8/71

5158 Mohammed b. Hashim, A.I.S.P., Escot Estate, Tanjong Malim, Perak. (Kedah/Penang/Selangor)—9/9/71

4610 Munchar bin Jajuli, Bikam Estate, Sungkai, Perak. (Negri Sembilan/C. Perak)—10/9/71

5177 Pereira, A.A., 276 Rasah Road, Seremban, Negri Sembilan. (C. Perak/Negri Sembilan)—1/10/71

4606 Tan Kee Boo, A.I.S.P., Cashwood Estate, Ayer Tawar, Perak. (Malacca/Muar/C. Perak) 6/9/71

4539 Subramaniam, K., Tuan Mee Estate Group, P.O. Box 202, Sungei Buloh, Selangor. (S. Johore/Selangor)—13/9/71

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5789 Charl, Raj Singh, BAL Estates Sdn. Bhd., P.O. Box 135, Tawau, Sabah. (Sabah–Tawau)

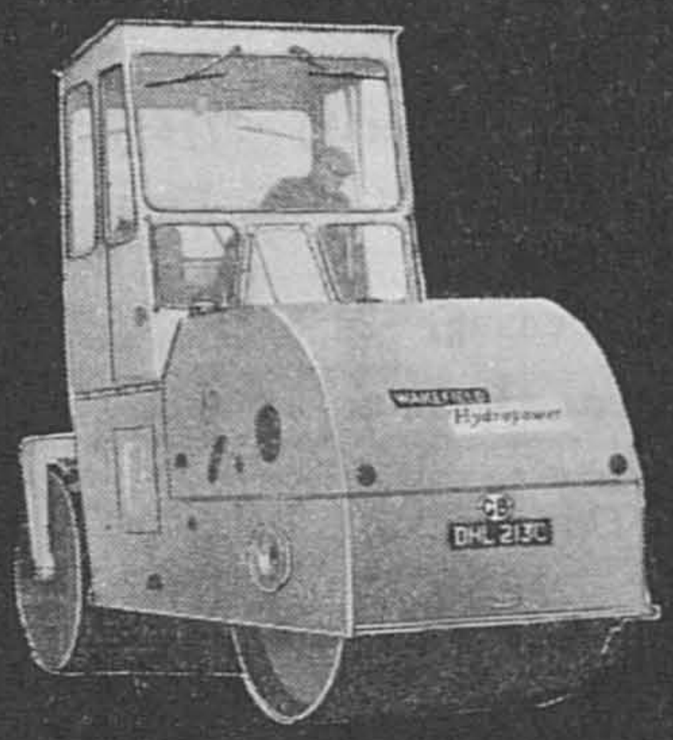
5791 Abdullah bin Hassan, R.R.I. Experiment Station, Sungei Buloh, Selangor. (Selangor)

5792 Selvarajoo, P., Bradwall Estate, Siliau, Negri Sembilan. (Negri Sembilan)

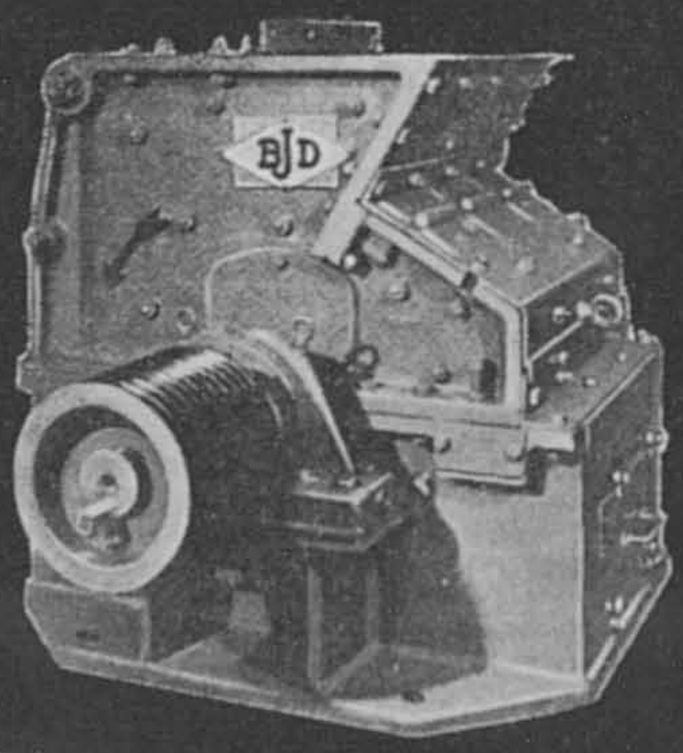
5793 Ng Keng Phoy, Trengganu Development and Management Bhd., P.O. Box 10, Kemaman, Trengganu. (S. Trengganu/E. Pahang)

WAKEFIELD

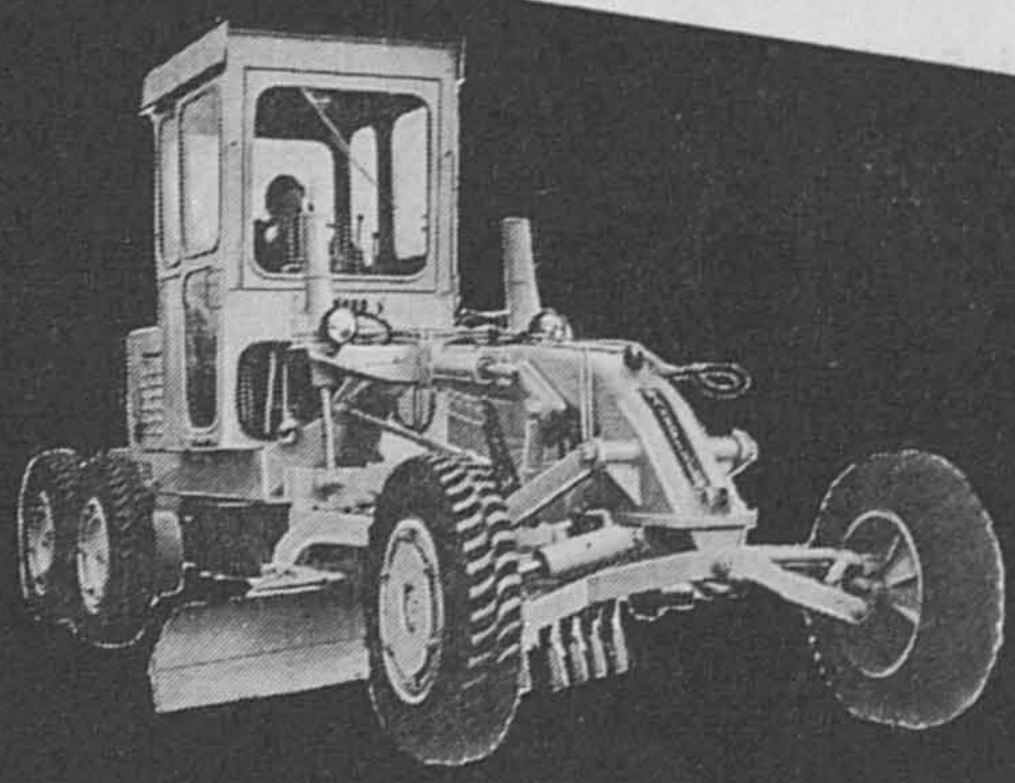
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5796 Haarring, Rainer, (Dr.), c/o Hoechst Indonesia PT., P.O. Box 2390, Djakarta, Indonesia. (Indonesia)

5797 Wong Kim Lian, Diamond Jubilee Estate, Jasin, Malacca. (Malacca/Muar)

5798 Yoong Siew Cheong, Shell Malaysia Ltd., P.O. Box 1027, Kuala Lumpur. (Selangor)

5799 Abdul Wahab bin Hassan, Trengganu Development and Management Bhd., P.O. Box 10, Kemaman, Trengganu. (S. Trengganu/E. Pahang)

5800 Chan Tho Lon, Planting Adviser's Office, P.O. Box 209, Batu Tiga, Selangor. (Selangor)

5801 Chee Kheng Hoy, (Dr.), Rubber Research Institute of Malaya, P.O. Box 150, Kuala Lumpur. (Selangor)

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5803 Leong Ming San, North Hummock Estate, P.O. Box 201, Klang, Selangor. (Selangor)

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4171 Williams, H., Pengkalan Bukit Estate, Muar, Johore. (Malacca/Muar)

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3390 Brooks, N.S., c/o Mrs. M. Brooks, Manser Road, Walberton, Arundel, Sussex, England.

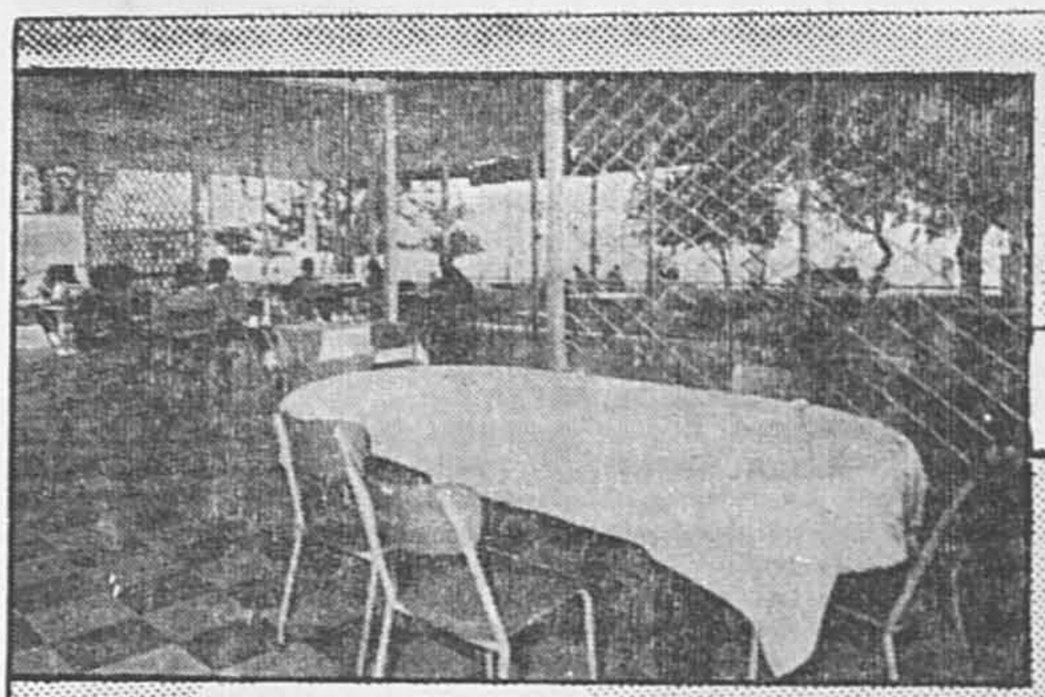
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CONGRATULATIONS TO :—

LIM : To Sally and Hock Teck, a daughter Vivienne Li-Ming on 7th August 1971, sister to Kwang Hui. Thanks to Doctors and Staff.

GRAY : To Adele and Brian a son Alisdair Innes on 1st September 1971, at the Assunta Hospital.

MORRISON : To Elma and Bill a daughter, Helen, sister for Joanne at Assunta Hospital, on 4th September, 1971.



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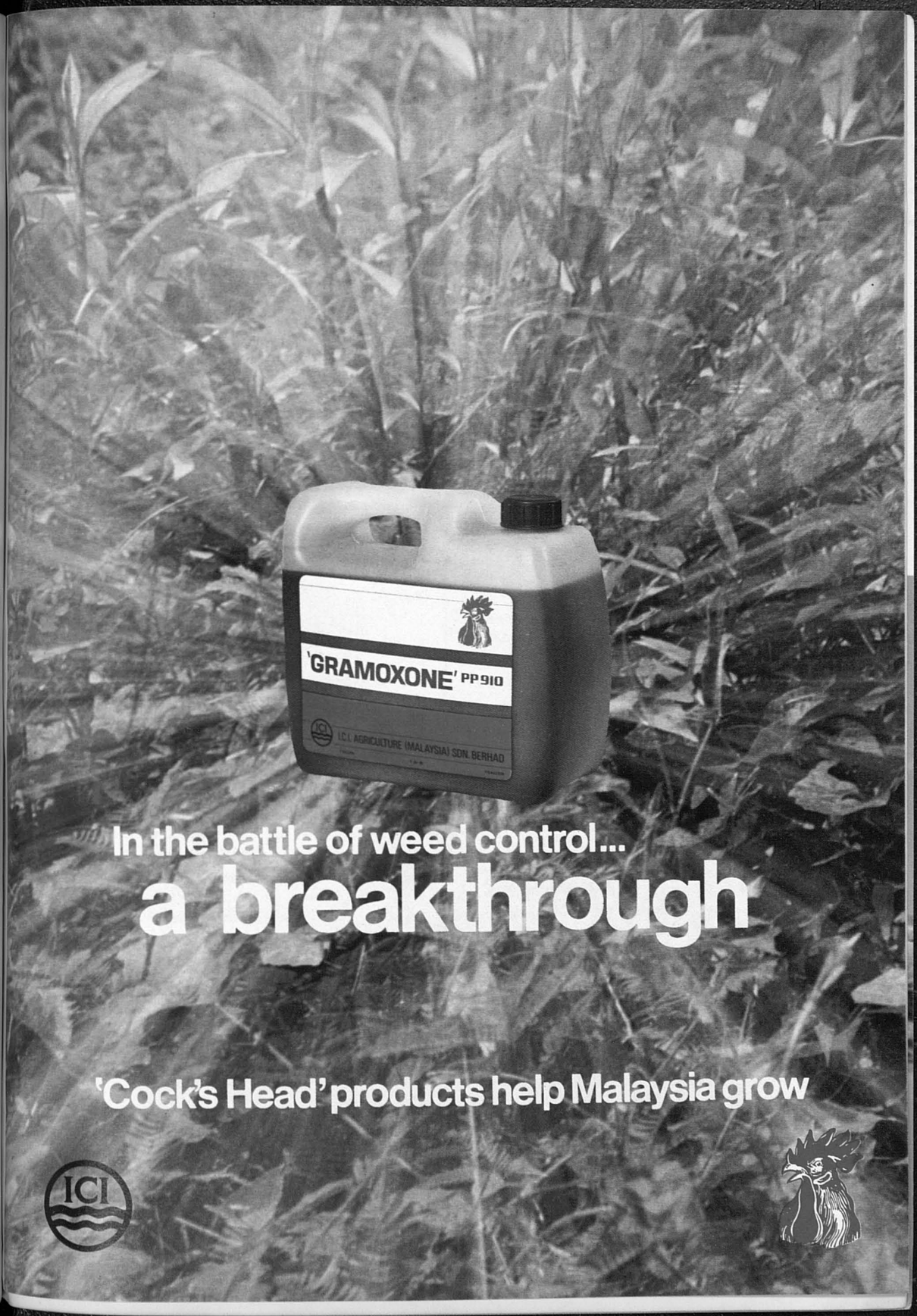
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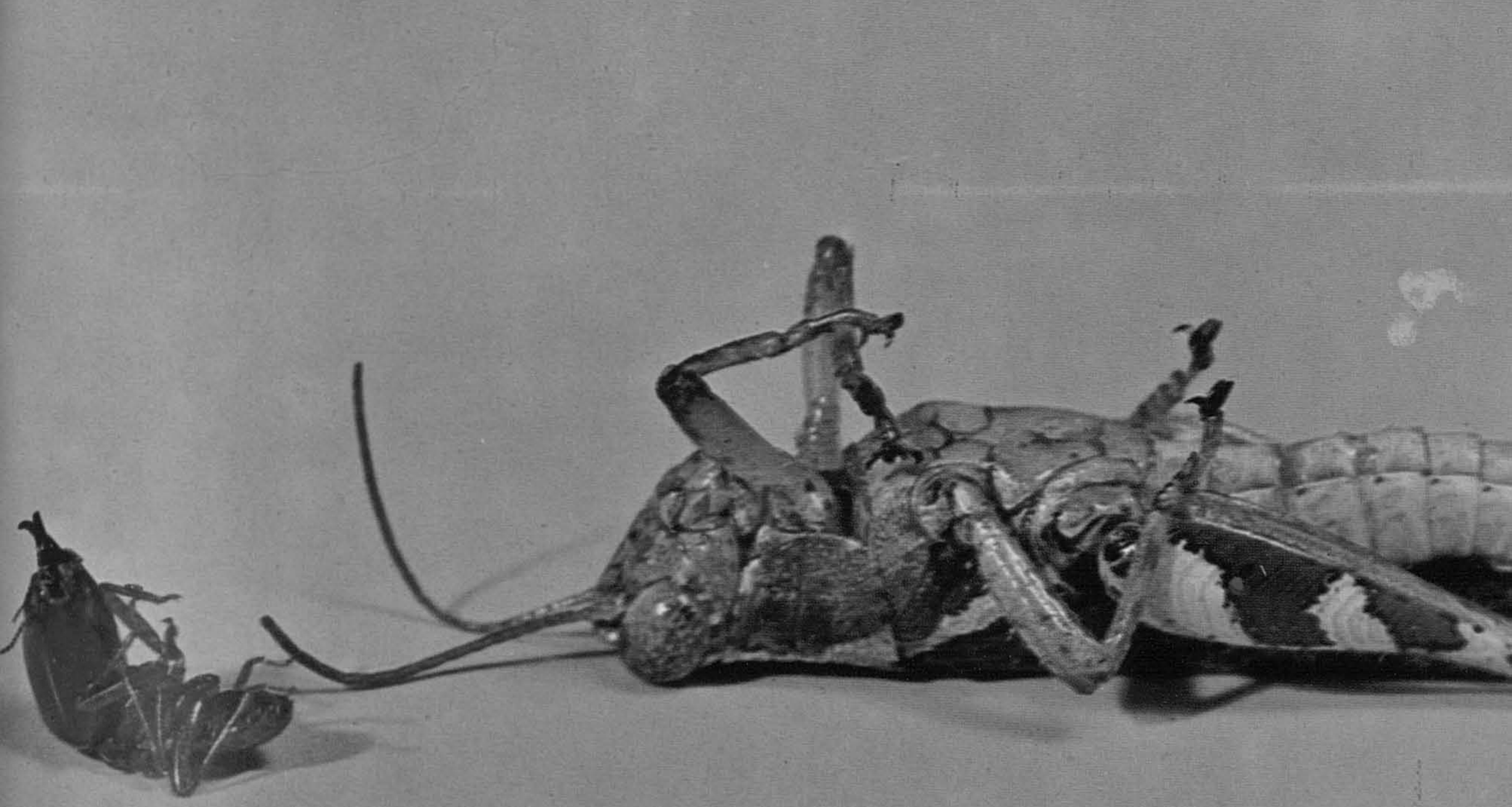
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