The Planter

Published by the Incorporated Society of Planters, 29, 31 & 33, Jln. Taman U Thant, K.L. SEPTEMBER 1977
Printed by United Selangor Press Sdn. Bhd., 8 & 10, Jln. Lengkongan Brunei, Pudu, K.L. KDN 10411 Vol. 53, No. 618

Cover illustration by courtesy of BAL Estates Sdn. Bhd., Mostyn Estates Sdn. Bhd. and Sarawak Oil Palms Sdn. Bhd., producers of palm oil, rubber, cocoa and cocoa seed. The revenue derived from this advertisement is for the I.S.P. Building Fund.

The Planter

KDN 10411

MAGAZINE OF THE INCORPORATED SOCIETY OF PLANTERS

VOL. 53 SEPTEMBER 1977 No. 618

Publishing office:

29, 31 & 33, Jalan Taman U Thant
Kuala Lumpur
Malaysia

Postal address:

P.O. Box 262
Kuala Lumpur 01-02
Malaysia

Telephone: 209405

Telegrams : ISPLA

Price: M$3.00

Annual subscription : M$36.00

ISSN 0126 - 575X

SENTIASA MAJU

The Incorporated Society of Planters

Founded 1919

THE SOCIETY REPRESENTS the Planters of Malaysia and other territories, whose personal and professional interests it is bound to endeavour to secure and promote.

OBJECTS foremost in the Society's Memorandum of Association are:

To promote the general interests of the planting profession.

To promote the advancement and facilitate the acquisition of that knowledge which constitutes the professional qualification of planter.

To watch over, promote and protect the mutual and individual interests of its members in respect of matters pertaining to or arising from their employment in the planting profession.

To promote and maintain good feeling, co-operation and understanding between members and their employers.

ACHIEVEMENTS of the Society are a technical education scheme, the publication of authoritative works on tropical agriculture, a monthly magazine featuring original technical articles, the sponsorship of conferences and symposia on tropical crops, and the organisation of joint consultation with employers.

MEMBERSHIP of the Society is open to:-

A Those directly employed in plantation management such as estate managers, assistant managers, superintendents, supervisors and cadets, and

B Executive engineers, estate medical officers, and qualified scientific or administrative staff of estates or organisations mainly concerned with the planting industry.
Category B may include those employed in such other senior executive, administrative, professional or advisory capacities as may be deemed by the Executive Council as being equivalent thereto.
Neither category shall include clerks, conductors, hospital assistants, etc.

ENTRANCE FEE for new and rejoining members is $10/- and must accompany application.

ANNUAL SUBSCRIPTION RATES* are as follows:-

Category A	During the calendar year in which eligibility for membership occurred and the 4 succeeding calendar years.	Subsequently
Ordinary Members employed as Managers, Assistant Managers etc. and normally resident in:		
Malaysia and Singapore	$48	$78
New Guinea and Brunei	$44	$60
Approved Overseas territories	$44	$44
Category B		
Ordinary Members employed as Executive Engineers, Estate Medical Officers, Research Staff etc., wherever resident	$48	$48

* Rates are proportionate for a part-year when joining.

Officers of the Society are listed opposite

Office Bearers

Chairman	Khoo Kay Tuan AISP Leong Hin San Estate Rantau, Negri Sembilan
Vice-Chairman	M. R. Chandran Johore Labis Estate Cha'ah, Johore
Executive Secretary	M. Rajadurai P.O. Box 262 Kuala Lumpur
Executive Committee	Khoo Kay Tuan AISP *(Chairman)* M.R. Chandran *(Vice-chairman)* G.C. McCulloch FISP M.E. Menon AISP M.P.G.S. Jayawardena FCIP Koh Tian Soo Mohd Dahlan b. Kassim PJK M. Rajadurai *(Secretary)*
Technical Education Scheme Committee	Johari bin Abbas AISP Khoo Khee Ming B Agric. Sc. Dr Ng Siew Kee E. Pushparajah M. Agri. Sc. M.I. Biol Tan Teo Kim M. Rajadurai *(Secretary)*
Executive Councillors	P.R. Viswanathan AISP *Johore South/Singapore/Rhio* Chang Choo Chau AISP *Johore Central* Koh Tian Soo *Johore North* Md Joned bin Yasin *Malacca/Muar* M.D. Stewart *Negri Sembilan* M.E. Menon AISP *Selangor* M.P.G.S. Jayawardena FCIP *Perak Lower* Tan Kee Boo AISP *Perak Central* I J Sayer AMN OBE JP AISP *Northwest Malaysia* W.T. Perera *Pahang West* Tan See Yeok AISP *Kelantan* Mohd Dahlan bin Kassim PJK *Trengganu Central* Ong Kean Teong *Sabah : Tawau* David Wan Yin Foo (Ag) *Sabah : North East* Mazlan Sabri Katon Ali *Sarawak* Johari bin Abbas AISP *S. Trengganu/East Pahang* G.C. McCulloch FISP (co-opted) Mahbob bin Abdullah AISP (co-opted)

Contents

September 1977

The Planter

MAGAZINE OF THE INCORPORATED SOCIETY OF PLANTERS

(1) *The Planter* is published monthly from the Society's Office at No. 29, 31 & 33, Jalan Taman U Thant, Kuala Lumpur, Malaysia.

(2) It features original technical articles in tropical agriculture, for the benefit of the planter (in active service or practice), papers relating to the Society's Technical Education Scheme, and other contributions of more general interest.

(3) The magazine's current print order is 2,230 copies and this is steadily rising.

(4) *The Planter* is read in some 51 countries*.

(5) Copies are exchanged with a wide range of agriculturally based institutions.

(6) Subscription copies go to 32 countries.

(7) Annual subscription is M$36, including postage by surface mail.

(8) Regular advertisers include national, regional and international organisations.

(9) Of particular interest to advertisers is the fact that the readership comprises largely executives and professional persons with considerable spending power.

---

*Australia : Bahrain : Belgium : Brazil : Brunei : Burma : Cameroun : Cambodia : Canada : Central Africa : Channel Is. : Colombia : Costa Rica : Dahomey : Denmark : United Kingdom : Fiji : France : Germany (W) : Ghana : Holland : Honduras : Hong Kong : India : Indonesia : Italy : Ivory Coast : Japan : Liberia : Malta : Mexico : Madagascar : Malaysia : New Zealand : Nigeria : Norway : Papua New Guinea : Peru : Philippines : Portugal : Rhodesia : Singapore : Solomon Is. : S. Africa : Spain : Sri Lanka : Tasmania : Thailand : USA : Vietnam : West Indies.

(Advertisement rates overleaf)

'The Planter' monthly advertisement rates in Malaysian Ringgit (M$)

		Casual	One year
Full page – black & white		$180	$150
Full page – Additional			
2 colours		$320	$290
3 or 4 colours		$480	$450
Half page		$105	$ 90
Quarter page		$ 70	$ 60
Small		$ 25	$ 20
Inserts (bound)	1 page	$150	$135
	2 pages	$225	$195
Inserts (loose)	1 page	$120	
	2 pages	$135	

CONDITIONS

Advertisements are accepted for insertion in *The Planter* subject to the following conditions:

1. The Incorporated Society of Planters reserves the right to decline acceptance of any advertisement.
2. All copy and artwork for advertisements are subject to the approval of the Incorporated Society of Planters whether an order shall have been accepted or not.
3. No order is accepted "subject to renewal on the same terms".
4. No order stipulating any specified position can be accepted though every effort will be made to meet the expressed wish of advertisers.
5. Orders are accepted on a firm basis only, and cannot be cancelled. If copy is not provided, the space will be charged to the advertisers as if the advertisement had appeared.
6. The Incorporated Society of Planters does not accept responsibility for damage to, or loss of artwork or other material supplied by the advertiser for the purpose of producing an advertisement.
7. The advertisement sizes must conform to the requirements printed in the tariff.

COPY

8. All copy is subject to the approval of the Incorporated Society of Planters.
9. When copy is not received in time or, should the copy then supplied be unacceptable, the last copy used for similar space will be repeated, or the space will be left vacant and charged to the advertiser.
10. Approved proofs are required by the date specified to the advertiser at the time they are submitted for approval.
11. No heavy black designs will be accepted unless they can be featured without interfering with textual matter on the reverse of the page.

ACCOUNTS

12. Commission of 15% will be allowed to advertising agents recognised by the Incorporated Society of Planters.
13. Accounts are payable within thirty (30) days of presentation. Should payment not be made by this date terms become strictly net, commission being forfeited.
14. Any infringement of copyright in respect of any design or matter supplied by the advertiser, or any libel is the responsibility of the advertiser or advertising agent, and the advertiser or advertising agent undertakes to indemnify the Incorporated Society of Planters against damage or loss incurred by reason of such infringement or libel.
15. Conditions or stipulations which conflict with the above, will not be accepted as part of the order containing them; advertisements are accepted only if they conform to the conditions stated here.

Editorial:

Quality for equality

The modern philosophy of the environment is that it is only through the protection of the *quality* of life of all peoples that one can ensure *equality* among them.

Where the quality of life suffers, there will neither be equality nor equitability to boast about. In this regard, neither the law nor the community can afford to ignore the basic requirements and parameters on what would constitute the minimum standards on the quality of life. Every section of the people – rich or poor, urban or rural, sophisticated or otherwise – is equally entitled to it. It will be the duty of the State to ensure that no section of the community encroaches upon, or contaminates, the environment of another.

Judged on these principles, the Environmental Quality Act of 1974 passed by the Malaysian Parliament would be widely welcomed by every Malaysian citizen and resident alike.

The Malaysian Government has taken pains to explain to all concerned the broad objectives of the Act, and the improvements it will bring about to the lives of people, especially rural dwellers and those exposed to the ever-increasing hazards of industrial pollution.

That there are problems in the implementation of the Act – and in the protection of the Environment from marauders and chindits, even very highly placed ones – is no secret . . . . . the case of Endau-Rompin is a point which none can ignore now or ever.

Under the circumstances, the implementation of the Environmental Quality Act is bound to cause friction and misunderstanding, if the official echelons charged with such responsibility aren't either aware of its implications on *status quo* in many fronts, or are insensitive to public opinion – 'for' and 'against' any course of action contemplated. It is plain that some sections of the community, long used to the privilege of abuse and disregard of public interest in matters concerning environment and ecology, would do their all to thwart the good intentions of Government to grant a grace period prior to taking stringent action against offenders.

At the same time, the Government will have to consider the implications of throwing the book against the nation's economic bulwark largely due to inexperience in implementing the pollution control regulations soon to be gazetted under the EQA.

It has already been made known that the rubber and the oil palm industries will be singled out as the pioneers for application of the regulations in respect of 'prescribed' premises and industries.

Although both industries do cause pollution in the strictest sense of the word, they are somewhat at a disadvantage in regard to technology to control and combat the pollutants among their factory and mill wastes.

For example, the world of science is yet to catch up fully with anti-pollution technology when it comes to producing natural rubber or extracting palm oil from the fruit of the oil palm. For years, both industries have been striving hard to rid their factory effluents of harmful ingredients which deplete the oxygen in the eco-system and inject problematic chemicals into our public watercourses.

Cost-viable technology available to industry points the way to what may be regarded as a paradoxical solution to a perplexing problem – the land disposal of the effluent into 'each other's planting row' . . . . initial experiments with land application of the untreated palm oil mill effluent have shown that it would act as a soil conditioner and mild fertiliser, rather than harm the soil over which it is spread. The rubber factory effluent may soon be credited with somewhat similar qualities, with the additional possibilities of its nutrients and other humus materials further enriching the soil.

The annual Planters' Conference (1977) to be convened by the Rubber Research Institute of Malaysia in October has an afternoon session devoted to such topics, while the oil palm industry has been holding a series of discussions – both within its own ranks and with the Ministry of Science, Technology and Environment.

It is our earnest hope that such dialogue will result in fruitful consensus to enrich our quality of life, in line with our economic development and social progress.

To coincide with the period of enforcement of the first set of regulations under the Environmental Quality Act, the Society will publish the next number of *The Planter* as a theme issue devoted to environmental topics.

For, the Society is more than convinced that to implement these innovative regulations, it would require the utmost in goodwill, understanding, due modesty and imagination among all concerned – whether they are public sector officials or private sector entrepreneurs.

The planter, as an important link in the environmental chain, is much more than an unwitting spectator or an unwilling middleman . . . . he has a multiplicity of roles, none of which is duplicated elsewhere in the country-side.

Hitherto, he has been concerned with the quality of the crop primarily.... henceforth, he will be a sentinel of society to help maintain not only the prosperity of the land but also the purity of its water resources and cleanliness of the air – thereby adding enrichment and enchantment to a nation which is already a byword for progress in the eastern skies.

Planter, Kuala Lumpur **53** : 381-394 (1977)

Larval biology of *Crematopsyche pendula* Joannis

RADAHA KRISHNAN

School of Biological Sciences, Universiti Sains Malaysia, Penang, Malaysia.

Crematopsyche pendula egg cases and larvae were collected from the field and their biology studied. It was found that an average number of 65 larvae per bag was produced. The larval stages took 29–33 days to complete. Under laboratory conditions 3 larval stages (instars) were found, the 3rd instar being the longest. The implication of these and other facts in the control of this bagworm is discussed.

Before 1956 *Crematopsyche pendula* Joannis was recorded only very occasionally in small numbers but since then it has become a very important pest. The damage to the crop can result in losses of up to 40% in the first year of attack (Wood, 1968).

The length of the life cycle of the bagworm has not been determined accurately neither is there any report on the number of stages the larvae go through though the mortality and migration rate is known to differ with the age of the larvae (Syed, 1973). One of the reasons for the lack of information is due to the difficulty workers have had in rearing these worms in captivity (Kalshoven, 1950 in Conway, 1971; Entwistle, 1963 a & b, Wood, 1968).

MATERIALS AND METHODS

Field Survey

Detection work was carried out along harvesting paths and the palms scrutinized on both sides for foliar damage, as recommended by Syed and Speldewinde (1974). In the case of *C. pendula,* the foliar damage is in the form of 'shot-holes' which is very clear and distinct. Visual assessment of infestation was made and recorded by the use of symbols i.e. 'H' for heavy infestations, 'M' for medium infestations and 'L' for light infestations. For the case of *C. pendula* it is recommended that 'H' is for more than 20 bagworms per palm; 'M' for 11–20 bagworms per palm and 'L' for 1–10 bagworms per palm. In cases of oil palm being too tall, a long bamboo pole with a harvesting knife attached at the end was used to cut down the heaviest infested frond per palm to count the number of bagworms. During a day's field work, the observations were filled in the detection and summary forms (format as follows).

Detection Form

Detector's Name:
Field No:
Division No:
Date:

RN PI	M C	M P	C P	S N	T A	T B	D T	O
3/7			H		L			
20/12 etc.		L	M					—

Summary Form (refer appendix)

Row No.	Total Palms	Pests and Degree of Infestation								No. of Palms Infested		
		M C	M P	C P	S N	T A	T B	D T	O	H	M	L
41	34			23						1	2	20

Key

RN	:	*Row number*	SN	:	*S. nitens*
PI	:	*Palm infested*	TA	:	*T. asigma*
MC	:	*M. corbetti*	TB	:	*T. bisura*
MP	:	*M. plana*	DT	:	*D. trima*
CP	:	*C. pendula*	O	:	*Others*

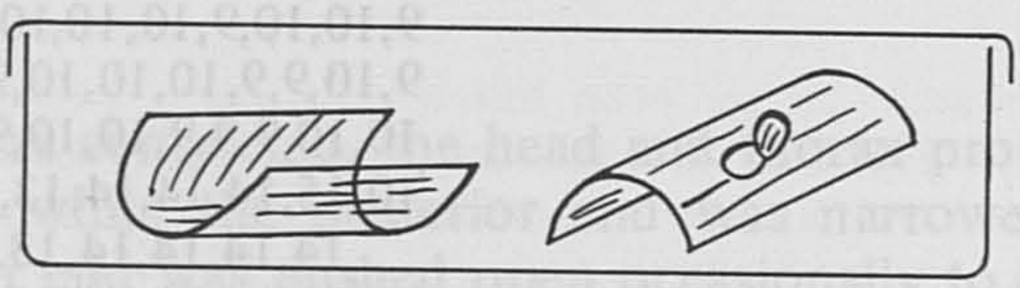
Laboratory Study

To study the different stages of the life cycle of *C. pendula,* the different larval stages from the field were collected and transported to the laboratory. The larvae were kept alive by two means. The first method was to place the larvae in petri dishes in which was cut oil palm leaf (*Figure 1*). Each dish (of diam. 8 cm) contained a maximum of 15 larvae. These were then covered and placed in a room of controlled temperature and humidity whose average readings were 27°C and 85% ± 5% relative humidity. The cut leaves were replaced everyday and the petri dishes cleaned because the leaves tended to wilt and shrivel up in 2 days. The second method of maintaining the bagworm larvae was to place 4 to 5 larvae on an oil palm leaflet which was placed in a small jar of water covered with an aluminium foil to prevent the

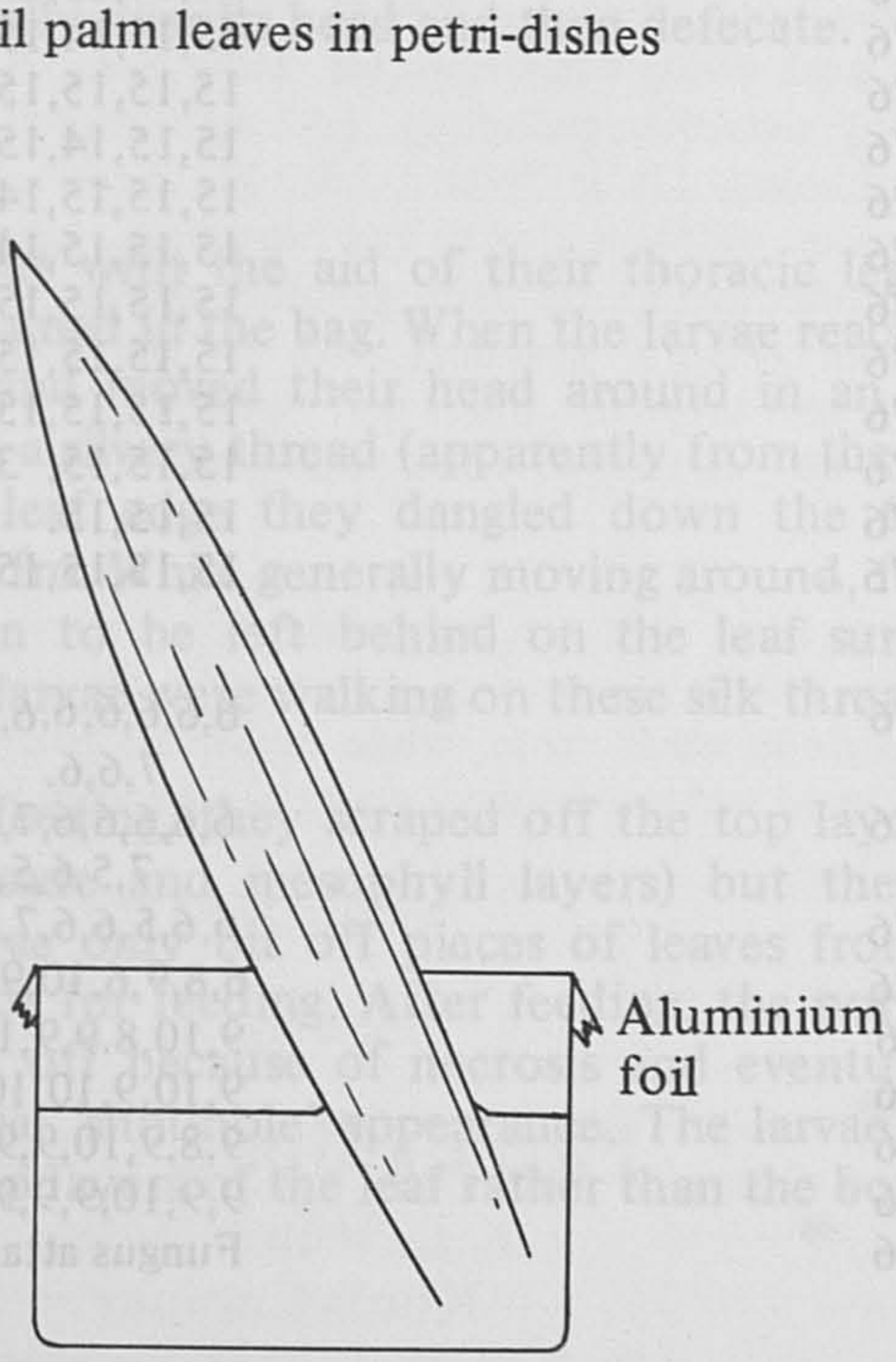
larvae from falling in and drowning. These too were placed in the same controlled temperature and humidity rooms.

These leaflets did not wilt for up to 5 days, nevertheless these were changed every 2 days. Eggs were similarly collected and kept in the same room.

When the eggs hatched, each batch was counted and placed in a set of marked petri dishes. Once the larvae emerged, daily measurements were made from each batch. The measurements were done on head capsule using a binocular microscope and a micrometer at 20x magnification (*Table 1*). From each batch a random sample of about 5 to 10 larvae were measured since they were all of the same age.



Larvae culture on cut
oil palm leaves in petri-dishes



C. pendula larvae culture methods

Figure 1. Larvae culture on oil palm leaflet in water

RESULTS

TABLE 1. LABORATORY DATA

Results of head capsule measurements of C. pendula larvae

Date	*(Size in Micrometer units) 1 unit = 0.043 cm*
Hatching	
1st Batch	
19-20/8/76	5,5,6,5,6,5,5,6. 5,5,5,6,5,5,5,5,5,5.
22/8/76	5,5,5,5,6,6,6,5,5,5.
24/8/76	5,5,5,6,6,6,6,6,5.
25/8/76	5,6,6,6,6,5,6,6,6,5.
26/8/76	5,5,6,6,5,6,5,5,5.
27/8/76	5,5,6,6,5,6,5,6,5,5.
28/8/76	6,5,6,6,6,6,6,5,5,5.
* 1/9/76	9,10,10,10,9,10,9,10,10,9,9.
2/9/76	9,10,10,9,10,10,10,10,9,9.
3/9/76	9,10,9,9,10,10,10,9,9.
4/9/76	10,10,9,9,9,10,10,9,10,10.
* 6/9/76	10,15,14,14,14,13,15,10,14,13, 14,14,14,14,13,14,14.
8/9/76	14,13,14,13,14,14,14,14,14,14.
10/9/76	14,14,13,14,13,14,14,15,15,14.
12/9/76	15,15,14,15,14,15,15,15.
13/9/76	15,15,15,15,10,15,14,14.
14/9/76	15,15,14,15,15,15,15,15.
15/9/76	15,15,15,14,15,15,15.
16/9/76	15,15,15,14,15.
17/9/76	15,15,15,15,15.
18/9/76	15,15,15,15,15.
19/9/76	15,15,15,15.
20/9/76	15,15,15, 3 pupations.
21/9/76	15,15,15.
22/9/76	15,15,15,15, 11 pupations.
2nd Batch	
24/8/76	6,6,6,6,6,6,7,6,7,6,6,6,6,6,5,6,6,5, 7,6,6.
26/8/76	6,6,6,6,6,7,6,6,5,6,6,6,5,7,6, 7,5,6,5,7,6,6,6,6,6,6,6,5.
28/8/76	6,6,5,6,6,7,6,6,5,6,6,6,6,6.
*31/8/76	6,8,9,6,10,9,10,9,9,9,9,8,9,9
3/9/76	9,10,8.9,9,10,9,10,9,9.
4/9/76	9,10,9,10,10,10,9,9.
6/9/76	9,8,9,10,9,9,9,10.
8/9/76	9,9,10,9,9,9,10.
9/9/76	Fungus attack
3rd Batch	
From Field	
26/8/76	6,6,7,6,5,6,6,7,6,20,22.
28/8/76	6,5,6,7,6,20,22.
29/8/76	6,6,5,20.
30/8/76	Fungus attack

*Just moulted

OBSERVATIONS ON GENERAL BIOLOGY OF C. PENDULA LARVAE

Young Larvae

The young larvae emerged from the lower open end of the egg-case and crawled out. On emergence their first reaction was to move towards the light source so much so that they moved towards the edge of the petri dish even though there were no leaflets there. Many perished this way. It was interesting to note that from the time of emergence the abdomen of all young naked larvae was pointed upwards.

If the lighting was even all round, the larvae proceeded to make their cases (bags) with material from the parent bag, dried fluffy material from the edge of leaf, etc. These bags were made with the aid of silken material they produced. Initially, a circular collection of these materials was made and slowly built up.

When the bag was completed, the head and thorax protruded from the anterior wider end, while the posterior end was narrower and appeared closed. The posterior end was pushed open occasionally to defecate whence a trilobed anus would be visible. At time of defecation the larvae would stop moving, draw the bag partially over its head and then defecate.

Movement and Feeding

The larvae moved about with the aid of their thoracic legs and at all times the abdomen was retained in the bag. When the larvae reached the edge of the leaf they stopped and moved their head around in an exploratory manner. They then exuded a silvery thread (apparently from the mouth) and after attaching it to the leaf edge they dangled down the thread while vibrating their head to and fro. While generally moving around, faint outlines of silky threads were seen to be left behind on the leaf surface. It was difficult to establish if the larvae were walking on these silk threads.

When the larvae were feeding, they scraped off the top layer of the oil palm leaf (i.e. outer palisade and mesophyll layers) but they never bit through the leaf. The larvae only bit off pieces of leaves from the edges during bag building but not for feeding. After feeding, the portions of the leaves fed on slowly died off because of necrosis and eventually formed holes, thus giving the typical 'shot-hole' appearance. The larvae exhibited a strong preferance for the top layers of the leaf rather than the bottom.

Moulting

The larvae had a dark brown head and slightly lighter thorax while the abdomen was creamy coloured. Before moulting, the larvae attached the bag to the leaf surface and moulted within. After moulting the larvae would emerge. The moulted head capsule was noticed to be thrown out in a

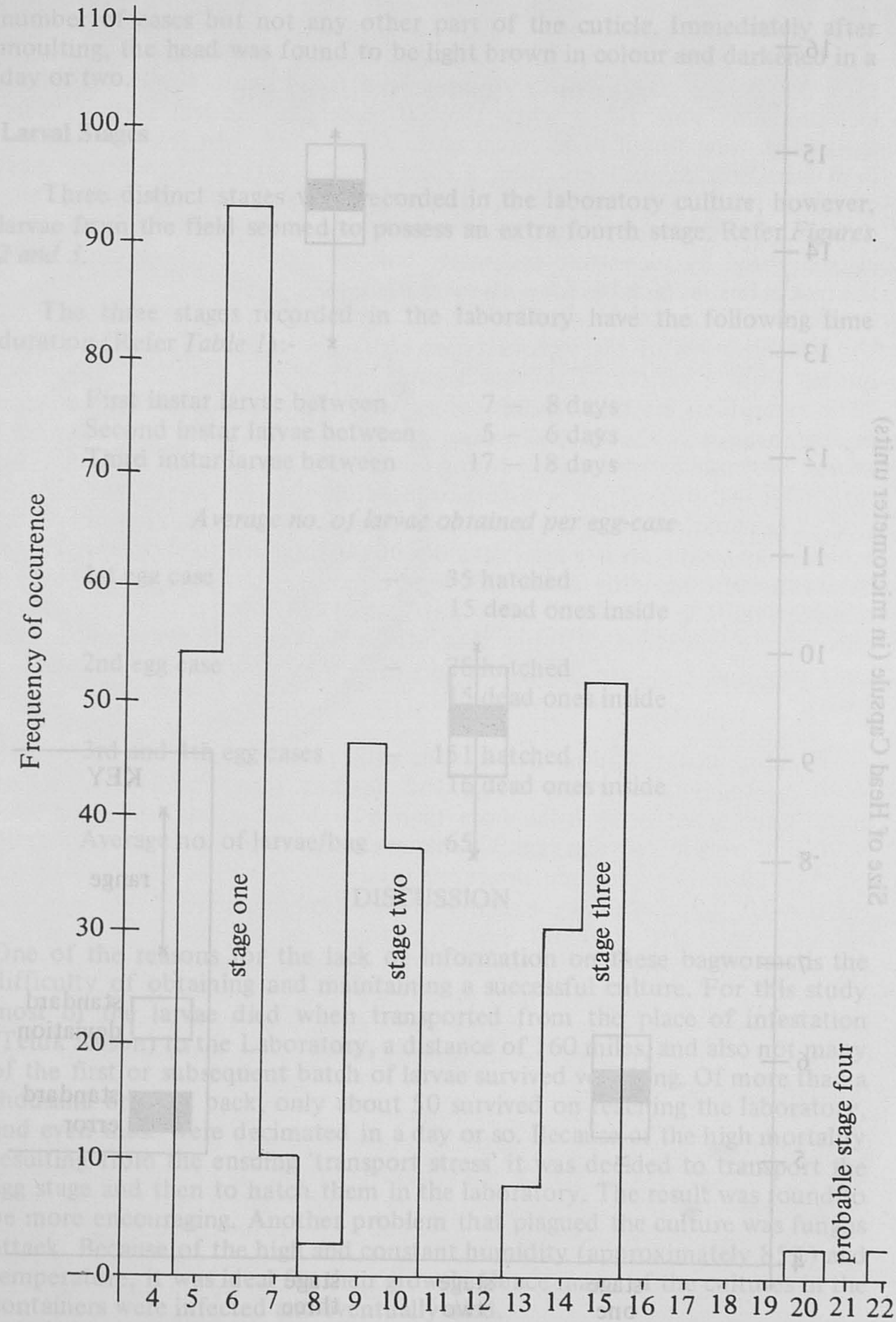


Figure 2. Larval frequency vs. Head capsule size

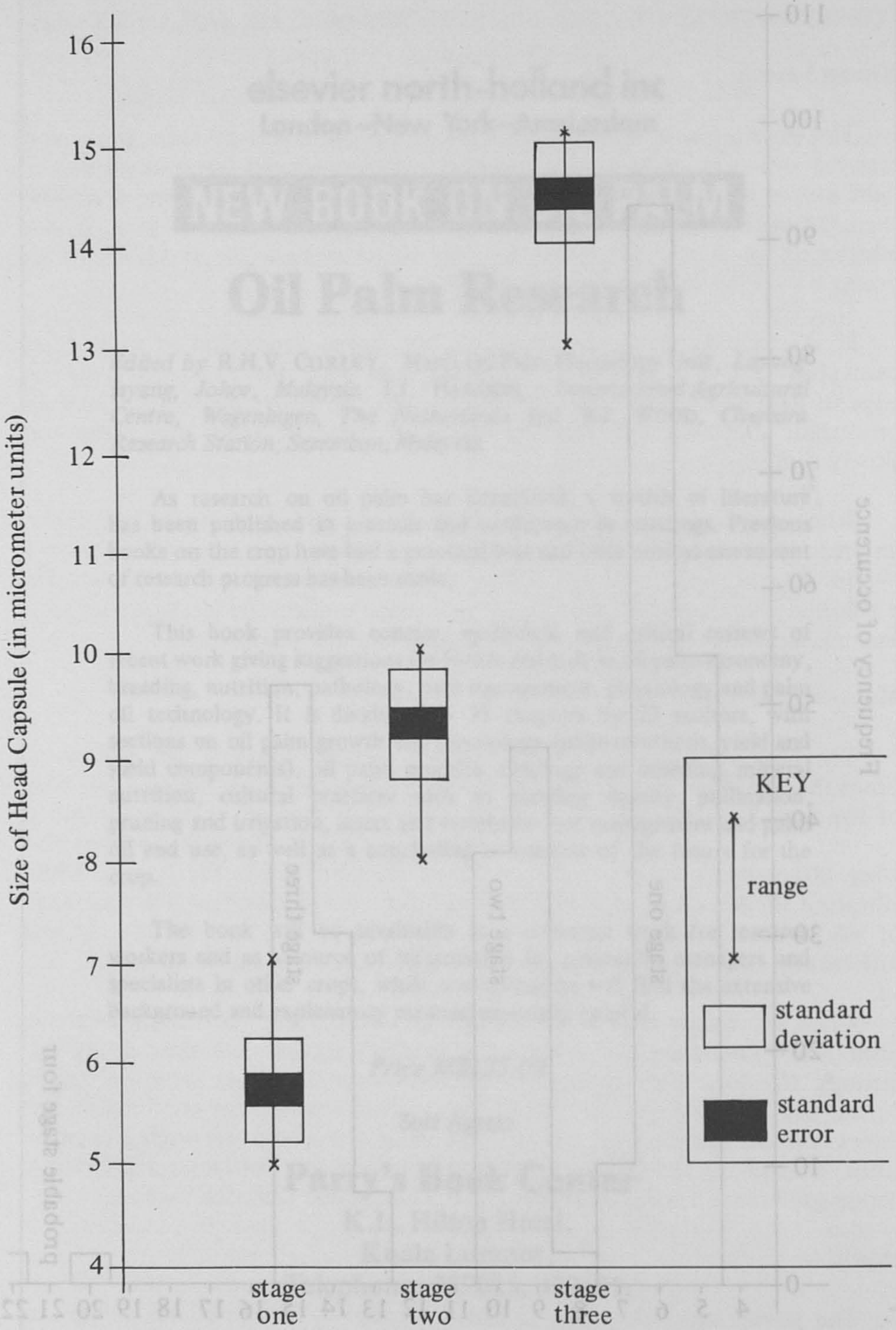


Figure 3. Graphical presentation of statistical data of Head Capsule Measurements according to Hulbs & Hulbs (1952)

number of cases but not any other part of the cuticle. Immediately after moulting, the head was found to be light brown in colour and darkened in a day or two.

Larval Stages

Three distinct stages were recorded in the laboratory culture, however, larvae from the field seemed to possess an extra fourth stage. Refer *Figures. 2 and 3.*

The three stages recorded in the laboratory have the following time duration (Refer *Table 1*):-

First instar larvae between	7 – 8 days
Second instar larvae between	5 – 6 days
Third instar larvae between	17 – 18 days

Average no. of larvae obtained per egg-case

1st egg case	–	35 hatched 15 dead ones inside
2nd egg case	–	28 hatched 15 dead ones inside
3rd and 4th egg cases	–	151 hatched 16 dead ones inside
Average no. of larvae/bag	–	65

DISCUSSION

One of the reasons for the lack of information on these bagworms is the difficulty of obtaining and maintaining a successful culture. For this study most of the larvae died when transported from the place of infestation (Teluk Anson) to the Laboratory, a distance of 160 miles, and also not many of the first or subsequent batch of larvae survived very long. Of more than a thousand brought back, only about 50 survived on reaching the laboratory, and even these were decimated in a day or so. Because of the high mortality resulting from the ensuing 'transport stress' it was decided to transport the egg stage and then to hatch them in the laboratory. The result was found to be more encouraging. Another problem that plagued the culture was fungus attack. Because of the high and constant humidity (approximately 85%) and temperature, it was ideal for their growth. Hence many of the cultures in the containers were infected and eventually died.

Since the larvae had the habit of moving its head and thorax into the bag at the slightest disturbance, it was quite a difficult job trying to measure

them. They took a long time (3 to 5 mins) to emerge from their bag if they were placed in an unnatural substratum like glass or porcelain and even if they did it was only a short distance and for a short while. Therefore measurements were taken when they were still on the leaf surface. Here again they were found to be much more active when light from a tungsten bulb was directed on them from a distance of about 2.5 feet. When they emerged from their bag, rarely did they stay still, contributing to the difficulty of measuring their head capsule accurately. This problem was circumvented by measuring accurately one killed individual and estimating the rest as best as possible for each measurement.

A description of the various types of bagworms and the various stages quoted from a variety of sources is given below for comparative purposes. "The caterpillars are of a whitish colour with characteristic brown markings on the head and thorax and posses a very soft abdomen. The head and thorax protrude from the case during feeding and locomotion but when the caterpillar is disturbed, or is resting or moulting they are withdrawn and the case is fastened to the plant surface. Progression across a bag seems to be achieved by laying on it a zig zag ladder of silk to which the bagworm clings by its thoracic legs, the abdominal legs, of course, being fully occupied in retaining the bag (Conway, 1971; Entwistle, 1972). Often when the caterpillars are under stress or dying, they attach their cases to the frond in the same way and they remain on the leaf for a long time after death (Wood, 1968)."

Pupation occurs within the bag. The adult male moth is a typical winged moth with greying brown wings and feathery antenna. The female is quite 'degenerate' being little more than a large sac, within the pupal case capable of only producing eggs. Copulation occurs through the open end of the bag. Numerous eggs are produced inside the bag. The number of eggs varies with the species for example Wood, 1968 reported 3 000 eggs for *Mahasena corbetti;* 100-300 eggs for *Metisa plana;* about 65 eggs for *Crematopsyche pendula* etc., Syed, 1973 reported an average of 2 009 for *M. corbetti.* The development of an efficient and relatively precise method for estimating the number of eggs inside a given cocoon without destroying or disturbing the contents by the use of radiographic techniques has been reported by White, 1970.

The young caterpillars on hatching make their way to the surface of the bag. There they spin their own bag with pieces from the parent bag material. It has been found that young larvae forced to live on green leaves immediately after hatching later died and were infected with fungus (Syed, 1973). Since the female is incapable of flying to distribute her eggs, the spread of bagworms is entirely dependent on the caterpillar stage. Newly hatched larvae disperse quickly with the help of the fine silk threads they produce. (Entwistle, 1963; Conway, 1971; Wood, 1969). This is also because the young caterpillar are not encumbered with heavy bags (Syed, 1973). The spread of infestation within an oil palm estate therefore is due to caterpillars

REVOLUTION IN RAT CONTROL!

DRATCUN®

DRATCUN® is totally new in Rat Control:
IT IS NOT A WAX BOUND BAIT!
Incorporating chlorophacinone, a powerful and superior anti-coagulant, DRATCUN® is the only genuine ready-to-use bait in the Malaysian market: no necessity for time-consuming, expensive separation of individual baits as in the case of wax blocks!
Packed in "Flexiguard"® , DRATCUN® is moisture-proof and stays fresh in the field for a longer period than conventional wax blocks.

DRATCUN® is

- EFFECTIVE — carefully calibrated in the correct proportion of chlorophacinone to bait.
- ECONOMICAL — higher potency of chlorophacinone ensures a better kill; easier field application than traditional wax-block baits resulting in cheaper labour costs.
- RELIABLE — chemical penetration of bait plus "Flexiguard"® ensures a greater durability in the field.
- SIMPLE to use — pre-packed sachet ready for on-the-spot field application.
- SAFE — workers do not come into direct contact with the poisoned bait.

RAT PROBLEMS?
DRATCUN®'s
THE ANSWER

M&B May&Baker
Member of the Rhone-Poulenc Group of Companies

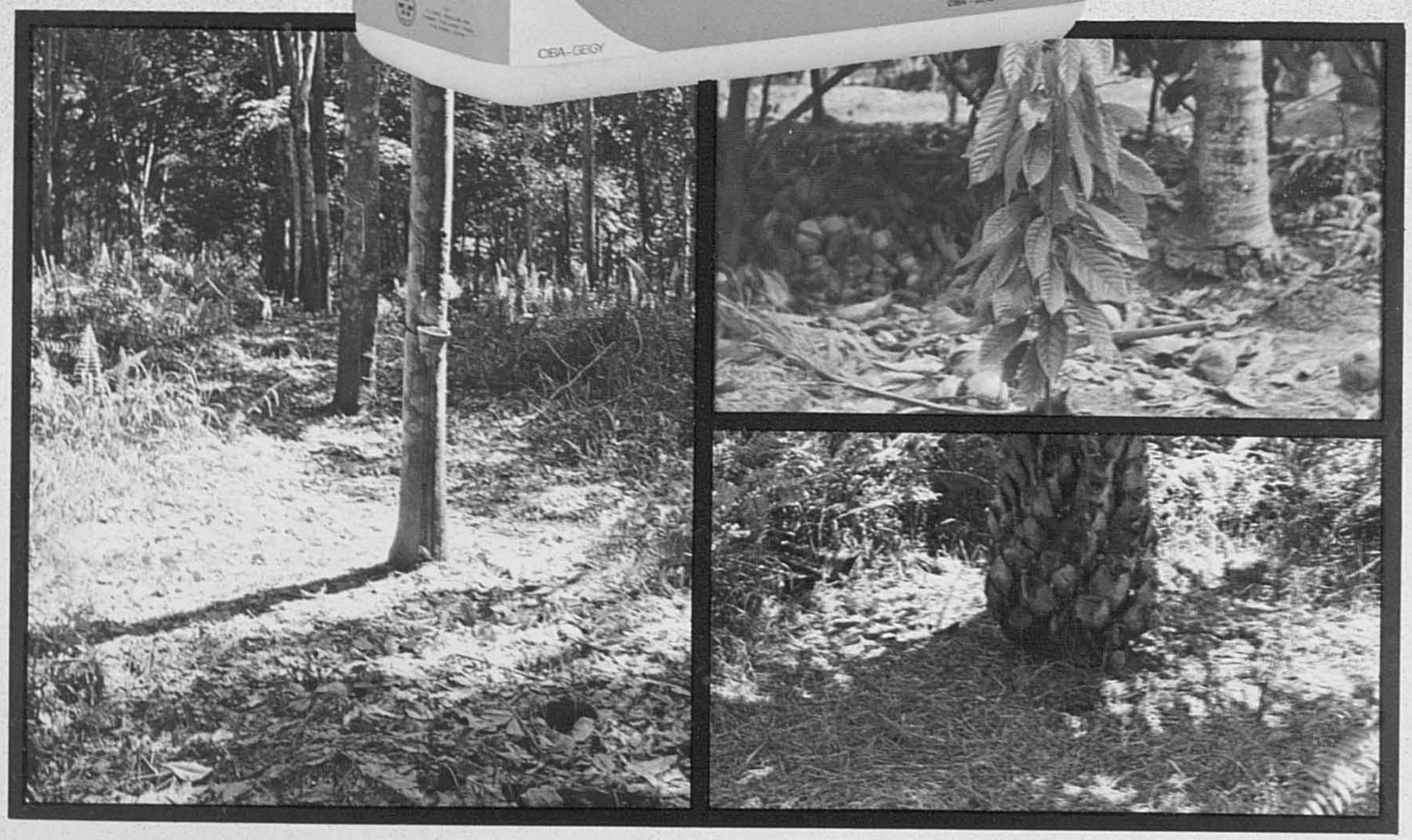
M & B (MALAYSIA) SDN. BHD.
No. 3 Jln. 19/1, Petaling Jaya
P.O. Box 150, Tel: 772355 (3 lines)

GUTHRIE KIMIA Sdn. Bhd.
Head Office: 3rd Floor, Wisma Guthrie
21, Jln. Gelenggang, Damansara Heights
Kuala Lumpur 23-04. Tel: 941444
Butterworth Tel: 332646/333067
Ipoh Tel: 75012
Melaka Tel: 4505/7
Johore Baru Tel: 66264/66538

GESAPAX® 500FW

FOR WEED CONTROL IN RUBBER, OIL PALM, COCOA AND COCONUT

● Safe to crops ● Effective and long lasting weed control
● Economical ● Versatility in application



Distributed by:—

F.E. ZUELLIG (MALAYSIA) SDN. BHD.

Singapore • Kuala Lumpur • Penang • Kota Kinabalu • Kuching

® Registered Trade Mark of **CIBA-GEIGY LTD.** Switzerland.

FOR A BETTER HARVEST

Carbicron 24® scw

1 gallon (imp)

Active ingredient: O, O-dimethyl-O-(2-dimethyl carbamoyl-1-methyl-vinyl) — Phosphate (Dicrotophos 24%

Inert ingredient 76%

Soluble Concentrate in water.

For use against chewing sucking and mining insect pests in oil palm, cocoa, sugar cane, ornamentals, vegetables and coffee.

Manufactured by
CIBA-GEIGY LTD.
BASLE Switzerland.

Distributed by F.E. Zuellig (Malaysia) Sdn. Bhd., Singapore, Kuala Lumpur, Penang, Kuching, Kota Kinabalu.

CIBA-GEIGY

® Registered trademark of CIBA-GEIGY Ltd.

CARBICRON® 24SCW

CIBA-GEIGY DICROTOPHOS

— the answer to most pest problems found in cocoa, oil palm, sugar-cane and orchards

Distributed by:—
F.E. ZUELLIG (MALAYSIA) SDN. BHD.
Singapore • Kuala Lumpur • Penang • Kota Kinabalu • Kuching

® Registered Trade Mark of **CIBA-GEIGY LTD.** SWITZERLAND.

walking from palm to palm, either across fronds in contact with one another or sometimes along the ground since wind does not seem to play a major role (Wood, 1968; Syed, 1973). Also many young as well as older larvae move from higher to lower fronds by hanging on the silken threads. Inter-palm migration has been shown to decrease with age of larvae and is comparatively negligible on young palms whose fronds do not overlap (Syed, 1973).

The larval period of *M. corbetti* is quoted as varying from 80 to 120 days (Syed, 1973) and the whole life cycle is estimated to be completed in four months. In the case of *C. pendula* the larval period was found to be approximately one month. This would then indicate a life cycle much shorter than *M. corbetti.* As such *C. pendula* would tend to have a greater number of generations per year compared to *M. corbetti* and this would compensate for the relatively few eggs in *C. pendula* and also account for the increasing pest potential.

The importance of studying the various stages of the larvae cannot be underestimated. The migration, mortality, parasitism, distribution on the fronds etc. vary with the 'age of the larvae' (Syed, 1973). Entwistle (1972) notes that the first stage larvae are those that are important for migration. It is therefore important to know which stage most of the pest are in so that proper corrective measures can be taken. For example, if most of the larvae are found to be in the first stage and if chemical control were applied one must apply the chemical slightly beyond the boundary of the infested area because this is the dispersive stage. The third stage of the larvae was found to be the longest stage. This would naturally indicate that this is the most destructive stage and therefore more effort must be put in to control this stage. Also since this stage is not dispersive, there is the possibility of using antifeedants to control this stage. If antifeedants are applied at this stage, this would cause the larvae to starve and since this is not the dispersive stage it would form a good method of control. Preliminary experiments on antifeedant control of this bagworm has been found to give promising results. The arbitrary divisions of larvae as young, medium and mature as used in most estates would tend to be misleading. Neither would it be possible to determine the age of the larvae in the field as used by Syed (1973). The best means would be to correlate the bag size with the stage of the larvae (if there was a correlation) since this would provide the most practical means to the planter for identification, of the different stages. This aspect was not carried out in this project due to lack of time and specimens.

In the laboratory, three distinctive stages were detected, but in the field there is a possibility that a fourth stage might be present as indicated in the head capsule width measurements. This may be because of the culture technique itself or it may be because of overcrowding and/or shortage of food. Further investigations are needed since there is no literature on the techniques of bagworm rearing.

ACKNOWLEDGEMENT

I would like to express my thanks to Dr. Tan Kheng Hong, Messers United Plantations Berhad, Mr. H.V. Speldewinde, Dr. Syed, Mr. L. Subramaniam and all my collegues for the guidance, advice and encouragement they have rendered during this project.

REFERENCES

CONWAY, G.R. (1971) *Pests of Cocoa in Sabah and their Control,* Kementerian Pertanian dan Perikanan, Sabah.

ENTWISTLE, P.F. (1963) Observation on the Morphology of some Adult Female and Immature stages of 4 Species of Psychidae on Theobroma Cacao in West Nigeria. *Proc. R. ent. Soc. London,* **A 38,** 145-52, **B 32,** 72-80.

ENTWISTLE, P.F. (1972) *Pests of Cocoa,* Longman, p. 179.

CATER, B.A.R. (1925) Insect on African Oil Palm *Malay Agric. J.* **13(8)** : 250-256.

SYED, R.A., SALAM SHAH AND K.T. LIEW, (1973) Occurance and Control of *Mahasena corbetti,* Torus in Oil Palm in Sabah. *Advances in oil palm cultivation* (ed. R.L. Wastie and D.A. Earp) Kuala Lumpur, Incorporated Society of Planters.

SYED, R.A. AND SPELDEWINDE, H.V. (1974) Pest detection and census on oil palms. *Planter,* Kuala Lumpur **50** : 230-233, Incorporated Society of Planters.

WHITE W.B. (1970) Radiography to Facilitate Bagworm egg Counts *(Thyridopteryx ephemerae* Formis: Lep Psychidae). *J. Econ.* Ent. **63,** 910-911.

WOOD, B.J. (1965) *Insect Pest of Oil Palm – A Handbook for Estate Pest Surveyors.* Layang-layang, Chemera Research Station, Oil Palm Division. Adv. Booklet No. 2 (Mimeo).

WOOD, B.J. (1968) *Pests of Oil Palm in Malaysia and Their Control,* Kuala Lumpur, Incorporated Society of Planters.

APPENDIX

Summary of Field Census for Crematopsyche pendula in Field 91, Jenderata Estate, United Plantations.

Left Side of Field 91

Row No.	*No Palms Infested*			*Total Palms*	*Row No.*	*No Palms Infested*			*Total Palms*
	H	*M*	*L*			*H*	*M*	*L*	
1	7	5	18	33	38	34	–	–	35
2	10	13	11	34	39	36	–	–	36
3	22	1	3	34	40	21	9	5	36
4	29	5	1	35	41	16	11	7	35
5	32	2	–	34	42	32	3	2	37
6	34	–	–	34	43	19	8	8	35
7	19	9	4	32	44	26	9	–	35
8	16	10	5	32	45	28	9	–	38
9	33	–	1	34	46	27	5	4	36
10	31	–	2	33	47	4	5	15	34
11	26	4	3	34	48	19	6	10	35
12	24	6	4	34	49	23	6	2	34
13	34	–	–	34	50	23	1	4	33
14	34	–	–	35	51	7	4	11	32
15	34	2	1	37	52	14	14	–	33
16	7	3	9	19	53	26	5	2	33
17	9	2	8	19	54	20	8	4	32
18	9	2	6	17	55	21	10	–	31
19	7	7	4	18	56	10	10	14	34
20	33	2	1	37	57	10	9	14	33
21	37	1	–	38	58	25	6	2	33
22	34	–	–	35	59	25	6	2	33
23	17	9	8	35	60	27	5	–	32
24	15	6	13	34	61	32	–	–	32
25	28	6	–	34	62	32	–	–	32
26	37	–	–	33	63	19	13	–	32
27	15	2	1	18	64	18	15	–	33
28	6	6	4	16	65	12	16	4	32
29	7	4	6	17	66	11	12	9	32
30	35	–	–	35	67	–	10	14	24
31	35	–	–	35	68	2	7	10	19
32	35	–	–	36	69	23	9	–	32
33	37	–	–	37	70	22	4	6	32
34	31	1	–	32	71	32	–	–	32
35	12	7	14	33	72	27	4	–	31
36	34	–	–	36	73	–	4	22	26
37	26	–	–	36	74	–	4	26	30

(Continued on next page)

Left Side of Field 91

Row No.	No Palms Infested			Total Palms	Row No.	No Palms Infested			Total Palms
	H	M	L			H	M	L	
75	1	9	21	31	91	8	9	13	33
76	3	10	19	32	92	1	3	19	33
77	–	3	11	32	93	–	–	7	29
78	–	2	17	33					
79	26	5	1	32					
80	17	9	5	32					
81	13	19	–	32					
82	14	18	–	32					
83	–	7	19	33					
84	2	1	22	33					
85	2	6	23	33					
86	–	4	29	33					
87	–	1	12	33					
88	–	–	2	33					
89	1	4	6	33					
90	2	4	6	34					

Right Side of Field 91

Row No.	No Palms Infested			Total Palms	Row No.	No Palms Infested			Total Palms
	H	M	L			H	M	L	
1	4	6	24	34	17	3	3	28	34
2	4	8	22	34	18	20	9	3	32
3	24	3	1	34	19	13	5	5	32
4	24	5	–	34	20	13	7	2	32
5	32	2	–	34	21	4	10	20	34
6	34	–	–	34	22	9	16	13	33
7	8	10	16	34	23	9	12	10	32
8	18	7	8	33	24	11	10	12	33
9	20	6	4	34	25	14	15	5	34
10	26	7	–	33	26	10	12	12	34
11	4	7	21	32	27	4	12	18	34
12	5	6	23	34	28	9	23	2	34
13	23	6	1	33	29	30	4	–	34
14	28	5	–	33	30	28	–	6	34
15	26	1	7	34	31	2	9	15	33
16	4	10	19	33	32	1	5	12	33

(Continued on next page)

Right Side of Field 91

Row No.	*No Palms Infested*			*Total Palms*	*Row No.*	*No Palms Infested*			*Total Palms*
	H	*M*	*L*			*H*	*M*	*L*	
33	14	4	15	33	70	–	6	11	33
34	14	7	11	32	71	–	1	23	34
35	4	3	13	35	72	–	2	18	33
36	3	6	16	34	73	12	9	1	34
37	31	1	1	34	74	8	17	2	33
38	3	7	18	34	75	4	12	–	33
39	28	5	–	33	76	8	6	–	33
40	29	4	–	34	77	1	3	18	34
41	1	2	20	34	78	–	2	20	33
42	–	–	3	33	79	–	1	20	34
43	7	6	9	34	80	–	3	16	33
44	9	6	16	33	81	–	–	9	34
45	9	14	11	34	82	–	–	11	33
46	–	3	22	34	83	2	3	10	33
47	–	–	2	34	84	3	1	10	33
48	5	12	15	34	85	7	15	–	34
49	1	1	5	32	86	5	12	–	33
50	6	2	2	34	87	–	–	17	33
51	3	15	14	34	88	–	–	23	33
52	3	12	16	33	89	–	1	5	33
53	17	11	4	34	90	–	1	4	33
54	14	14	5	33	91	–	–	3	33
55	9	4	3	34	92	–	–	2	33
56	5	15	–	33	93	–	1	9	33
57	4	3	22	34	94	–	1	7	33
58	–	9	12	33	95	1	7	–	33
59	–	12	17	34	96	–	4	2	33
60	1	4	21	33	97	–	–	1	33
61	–	3	21	34	98	–	–	4	33
62	–	8	18	33	99	–	–	1	24
63	18	10	2	34	100	–	3	1	9
64	13	12	2	33					
65	11	6	–	34					
66	3	5	–	33					
67	–	2	14	34					
68	–	7	18	33					
69	–	3	18	34					

Key:

H – High infestation i.e. 20.6 pendula per palm.
M – Medium infestation i.e. 11-20 pendula per palm.
L – Light infestation i.e. 1-10 pendula per palm.

Who is John Deere? The world leader.

John Deere is world leader in agricultural machinery. With experience going back to 1837, the John Deere line gives you the widest choice of tractors and farming implements. All the tractors are equipped with the following unique built-in features:

WET-SLEEVE ENGINE. Cools better, has a longer working life. It's easier to overhaul because the wet- cylinder sleeves can be replaced quickly. Reduces your down-time, too.

HYDRAULIC SELF-ADJUSTING DISC-BRAKES for maximum safety and longer brake life. And the brake housing is sealed against mud. Requires minimum maintenance.

CLOSED-CENTRE HYDRAULICS gives constant pressure and instant action for every phase of tractor and implement control.

HIGH-TORQUE RESERVE AND OVERLAPPING GEARS. The right pulling power and speed for each job and less gear shifting. You reduce operator fatigue and increase productivity.

FAST MAINTENANCE. Routine servicing just takes a few minutes. All key points are conveniently grouped together and easily located for quick inspection and servicing.

And John Deere tractors are priced right, too. With efficient spare parts and back-up service throughout Malaysia.

John Deere. For long-term dependability and profitability.

WAGON ENGINEERING SDN. BHD.
a fully owned subsidiary of
Federal Auto Holdings Berhad
P.O. Box 7, Sg. Rengam, Shah Alam, Selangor. Tel: 362101-5.

Branches: KUALA LUMPUR — 80701, ALOR STAR — 722988, PENANG — 22246, IPOH — 515444, SEREMBAN — 75146, MALACCA — 5125, JOHORE BHARU — 53180/53189, KUANTAN — 23106.

W 7968 FA

RACUMIN®

WIPES OUT RATS MOST EFFECTIVELY EVEN WARFARIN RESISTANT ONES!

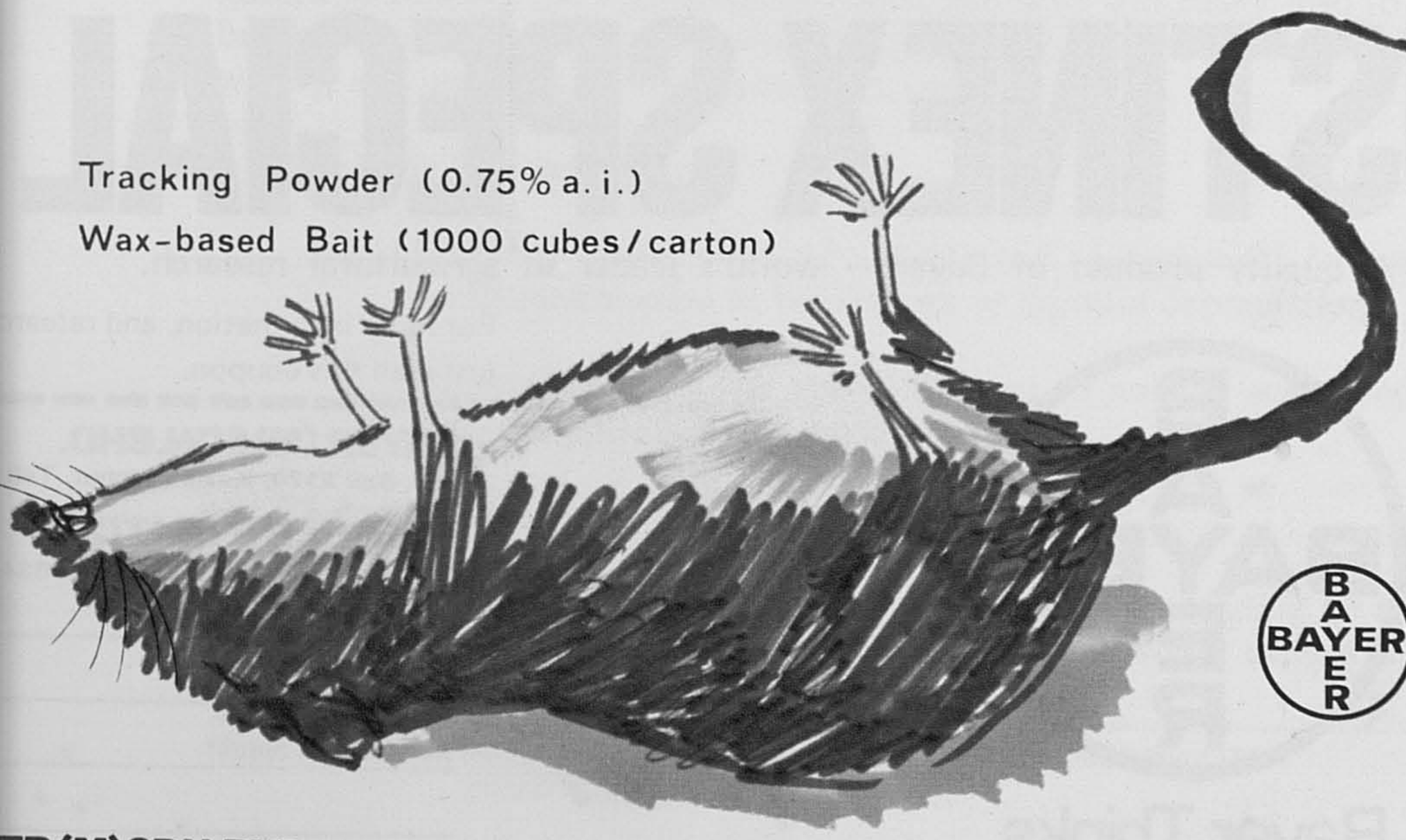
Oil Palm

Cocoa

Padi

Tracking Powder (0.75% a.i.)

Wax-based Bait (1000 cubes/carton)



ER (M) SDN.BHD.

®Registered trademark of BAYER LEVERKUSEN, GERMANY.

ox 2170, Kuala Lumpur. Tel: 208066

BAYER (S) PTE.LTD.

P.O. Box 3019, Singapore. Tel: 634422

USTINEX SPECIAL

A quality product of Bayer — world's leader in agricultural research.

BAYER

Bayer Thinks
of Tomorrow-today

For more information, and resear
just mail this coupon.

BAYER (M) SDN.BHD.
P.O. Box 2170, Kuala Lumpur. Tel

BAYER (S) PTE.LTD.
P.O. Box 3019, Singapore. Tel: 63

Name _____

_____

Address _____

_____

Bayer research is anywhere your problem is

Maintenance of stationary engines*

M.P. BENTLEY

Harrisons Lister Engineering Co. Ltd., Kuala Lumpur

The paper covers fundamental aspects of maintenance of small and medium-sized stationary diesel engines, as being representative of those in use on rubber, palm oil and other estates in Malaysia. Maintenance of steam engines is excluded, although many of the basic points can be equally applied. The importance of preventive maintenance is stressed, together with the advantages that can be obtained. Some basic points are touched upon, which, although in many cases, obvious, are provided as a general guide. The need for satisfactory standards for estate technical staff, particularly those directly concerned e.g. fitters, engine drivers and attendants, is noted, and the subject of training facilities, trade testing etc. is generally covered.

PREVENTIVE MAINTENANCE

One of the more apt comments on maintenance was given by Benjamin Franklin over 200 years ago:

> "A little neglect may breed mischief; for want of a nail, the shoe was lost; for want of a shoe, the horse was lost; for want of a horse, the rider was lost".

Preventive maintenance is of particular importance, and the benefits that can and will result are given below. In particular, attention is drawn to the economies that can result, and on financial grounds alone, this system warrants close attention. Much of this appears to be common sense, but failure to observe the fundamental points can only too easily lead to costly breakdowns, disruption of production, dissatisfied labour force (e.g. lack of water), and unnecessary and unwanted expense.

The basic principles are:

i. Periodic inspection of plant and equipment to uncover conditions leading to breakdown or harmful depreciation.

ii. Maintenance of plant and equipment to remedy such conditions while they are still in a minor stage.

The advantages gained are many, in particular:

a. A reduction in the number of breakdowns, leading to reduced downtime, and all the consequences that would otherwise arise.

---

*Paper presented at the ISP Conference on Estate Engineering & Mechanization 1975.

b. Lower demand on staff and facilities, resulting in reduced expenditure.

c. Lower repairs costs, i.e. the expense of major breakdowns is avoided as far as possible.

d. As a possibility, less standby equipment is required, and/or the expense of hiring, borrowing, installing etc. of a temporary unit is avoided.

e. Staff and facilities are better used by way of phased maintenance, and improved planning and control.

f. Resulting from the above, lower overall costs.

It is possible to carry maintenance programmes to excess, and a sensible balance must be maintained. Effectively, overall costs of a maintenance programme must be weighed against the varied heavy costs that would result from a major or total breakdown.

MAINTENANCE OF DIESEL ENGINES

Later effort and expenditure can be successfully avoided to some extent by a proper level of care and attention prior to, and during, the installation of the engine or plant. The following in particular are stressed: adequate lighting, ventilation, freedom from obstructions, facilities to maintain a standard of cleanliness, fire extinguisher(s), absence of dangerous chemicals and fumes, provision of sensible storage for fuel oil and lubricating oil (and, especially in the case of fuel oil, means to avoid contamination by rain or other water), etc. In general, of course, storage of petrol and lubricating oil within the engine room should be avoided, and fuel oil should be limited to the provision of a daily-storage tank, which in turn should be fed by a hand-operated or electric pump.

A point deserving attention, but often overlooked when installation takes place, is ready access to lubricating oil drain plugs, coupled with a pipe or small lined trench to allow easy draining without fouling the floor or foundations. On this, opinions differ on the finish of engine rooms floors. Tiling or equivalent is attractive but can constitute a danger where oil or water are present to form a slippery surface, and preference should be given to a concrete finish, where the screeding provides an anti-slip surface. It is accepted that such a surface may in time be oil absorbent, but the safety factor should predominate.

Judicious training and supervision of engine drivers, attendants etc. should stress the need for cleanliness, with the corollary of avoiding the pesence of oily rags and any inflammable material. There is an evident requirement for adequate and good quality tools and maintenance equip-

ment, and, where necessary, quick-moving spares, and equally, for adequate storage for these; a wall rack with painted silhouettes for selected tools has advantages in identifying missing articles. To these could be added: a power plug for electric tools or for a portable light, (suitably earthed), a work bench, cleaning trays, lifting tackle and other handling aids etc.

Purchase or provision of inferior tools and equipment is only too obviously a false economy.

Instruction books, spare parts lists and workshop manuals should be available for reference at all times in the engine room.

Full observation of, and compliance with, machinery regulations are of course essential, especially as regards guarding. This is not necessarily all; such regulations do not necessarily cover all hazards and risks, and protection against these should be undertaken both at the time of planning and installing, and during subsequent operation. Another potential hazard to be studied at an early stage is that of fire and the avoidance of fire risks as far as possible.

REPORTS

The drawing-up and regular use of records can be, and often is, tedious, and the temptation often arises to maintain these on an intermittent basis or at the end of each week or month. Equally, the risk arises of having too little or too much paperwork, and, when a sensible balance is achieved, the size of the unit has also to be taken into account.

Appendix A shows a simple daily log sheet for a generating set of, say, 150kw upwards. This form can be readily modified to suit smaller sets or diesel engines having other duties. *Appendix B* shows an equally simple check sheet based on a 250h routine, and here also, the layout can be adjusted to cover more detailed checks, (normally at longer periods, e.g. 1 000-2 500h), or top or major overhauls. These two forms, with variations, should normally be all that is required within the engine room.

It is outside the scope of this paper to comment upon estate accounting procedure, but some readily-available financial history of any given engine or plant is always valuable: spares invoices or internal vouchers: overhaul time sheets and costs (or contractor's invoices if outside labour or service is used): plus some form of basic history, showing date of purchase and commissioning or service commencement; rating and speed; make; purchase price; installed cost; name of local agent or distributor; duty; with space to note briefly any major subsequent events. *Appendix C* shows a suggested format. All this cross-relates to the earlier comments on preventive maintenance, as all aims become thwarted if excessive costs or breakdowns result.

PERSONNEL

This is wide area to cover, as so much depends on the size of the given estate, the number of engines and generating plant etc., and, equally obviously, the amount of other plant, equipment and machinery which would be in the care of the resident fitters, not to mention mill engineers or other senior staff. As many will know, a competent all-round fitter can be invaluable, and there are still too few of these in existence, especially with the level of experience and training that is currently required.

It is not easy to comment upon the relative values – and costs – of using estate-employed staff and of using the services of specialist contractors or firms offering service schemes, where the latter provide both routine servicing at regular intervals or the provision of mechanics in an emergency. One observation is to revert to the earlier remarks on preventive maintenance, that if the engine driver, attendant etc. can be trained to make regular inspections and to observe any apparent malfunction at an early stage, then remedial action can be promptly taken. A competent engine driver will inevitably learn, through experience, the 'feel' of an engine and inspection during running hours of lubricating oil, water (or air) temperatures, oil pressures etc. is an obvious requirement.

Diesel engines have become increasingly sophisticated over the post-war years, and the trend is continuing. Additionally, in the smaller sizes, air cooling has markedly replaced water cooling. Present-day engines have thin-wall automotive-type bearings, improved fuel and lubricating oil consumptions, the capacity for a wide range of speeds, and many other improvements, but the earlier simplicity, especially in respect of maintenance, which could almost be classified as foolproof, has been largely lost.

Figure 1 shows a pre-war watercooled engine of 1930 vintage, 6-8bhp capacity at slow speeds, (although still available and in demand in Malaysia), *Figure 2* a post-war aircooled engine, of 20-30bhp and *Figure 3* a recently-introduced aircooled engine, which on a horsepower basis, could replace that shown in the first slide. Nonetheless, there will be many who have a nostalgic memory of the 6hp slow-speed engine, and its steady and reliable performance, especially during the war years.

Is there merit, especially in respect of performance and maintenance costs, in modern diesel engines? On balance, there is, but perhaps by a narrower margin than engine manufacturers would believe. Ease of maintenance and simplicity count for much; but taking spares costs alone, the more modern engine is preferred, not so much that the manufacturers may be moving, or have moved, towards obsolescence of older models and their related spares, as the relative cheapness by which component parts can be produced by modern quality production within consistent quality limits. In addition, there is the initial cost to consider, the weight, for example, of material being a factor, and taking the examples listed above, the weight

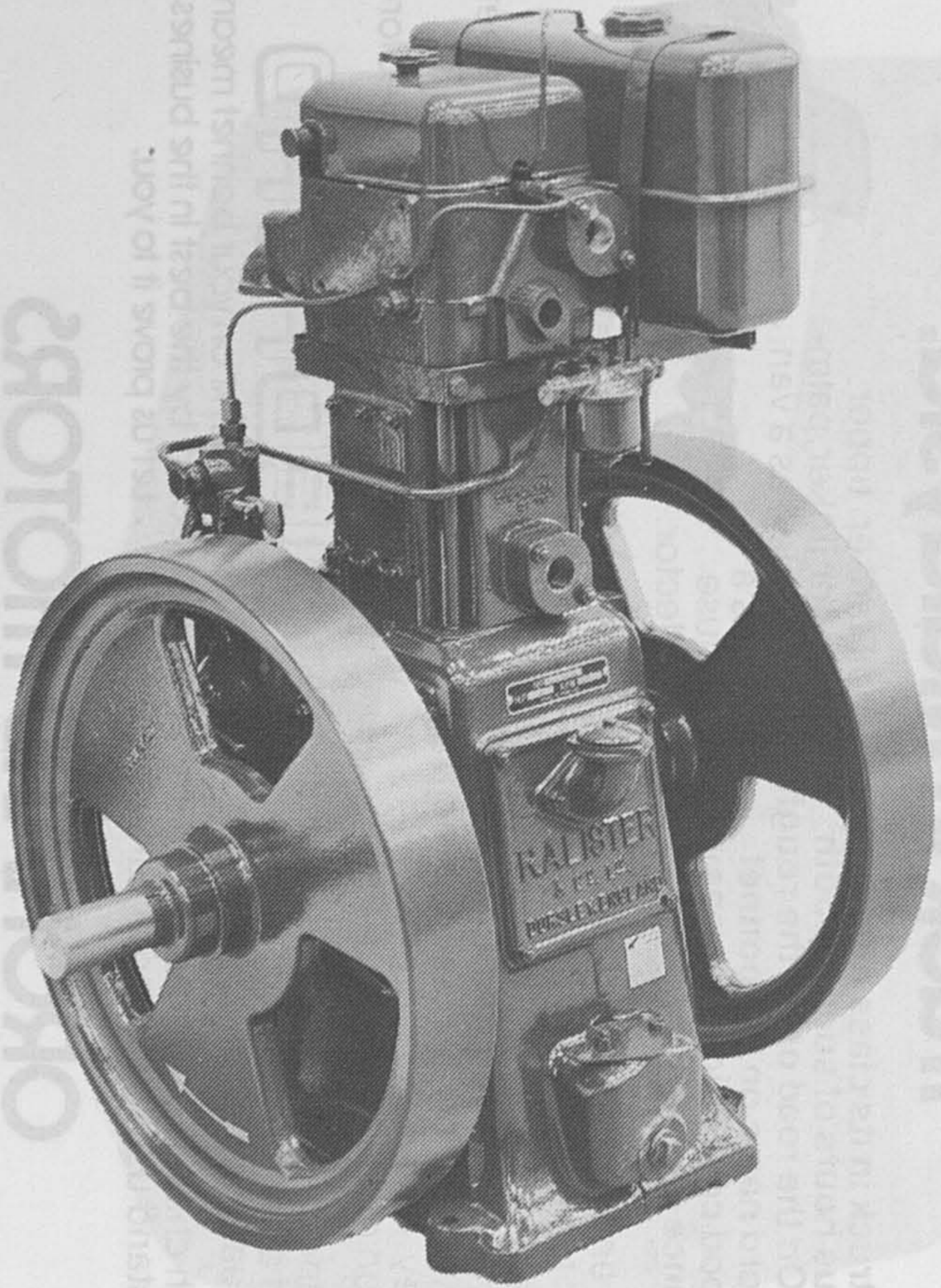


Figure 1. Lister type 8/1 engine, 6–8 bhp at 650–850 rpm, watercooled.

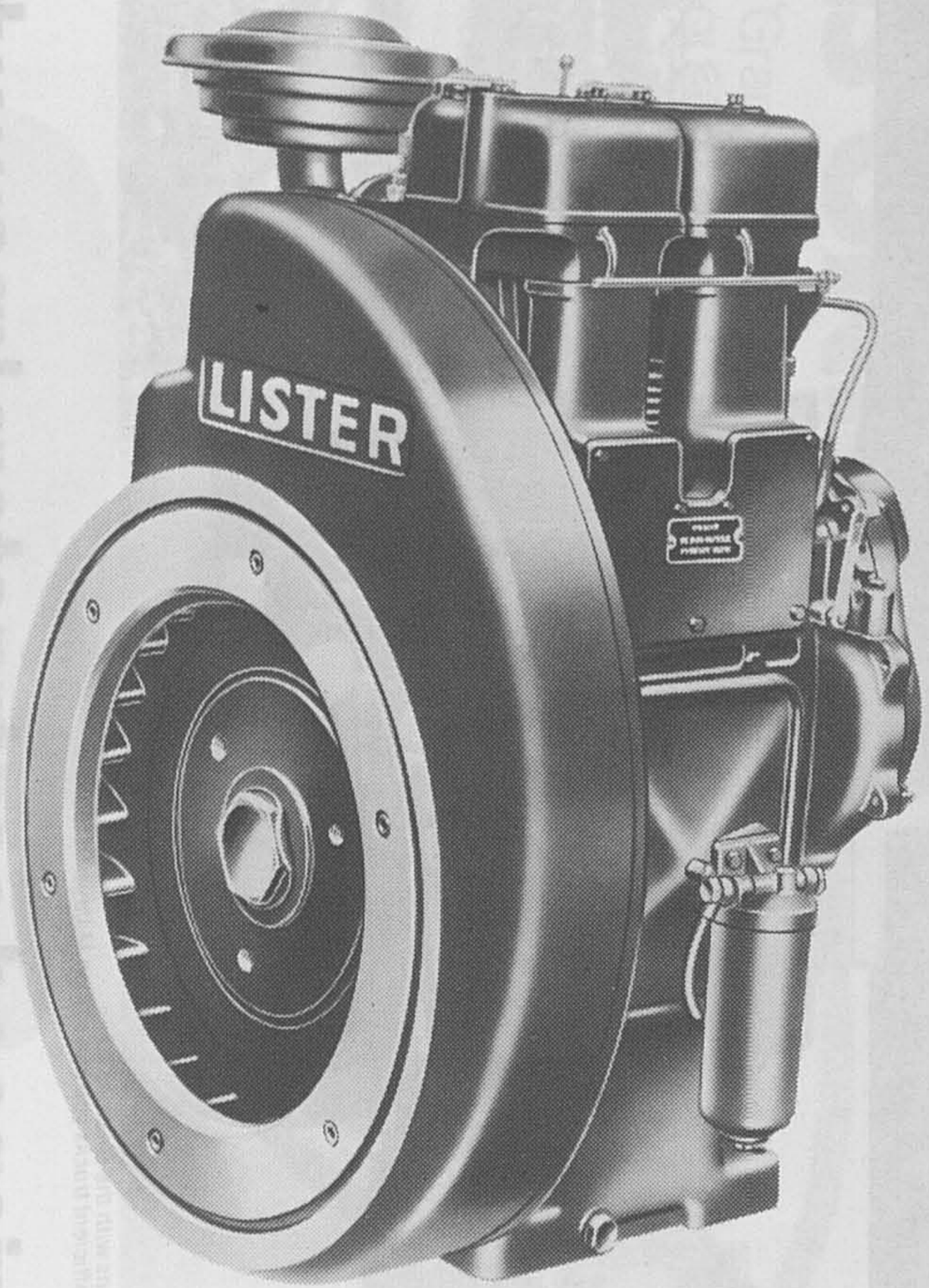


Figure 2. Lister type HR2 engine, 17–29½ bhp, 1 200-2 200 rpm, aircooled.

Smooth continuous runs with the Bedford TJ —
one of the most cost efficient trucks you can see on Malaysian roads.

Experienced contractors know why the Bedford TJ is the most popular truck in Malaysia.

No other truck in its class gives continuous hours of such smooth running. On the road or on the rough. The Bedford name on the bonnet means good cost efficiency, easy maintenance and service.

Powerful engines give you big payloads, from 80 cwt on the J3 to 140 cwt on the J6T/S. This means fewer trips — time and money saved. Same-day servicing also saves time and money. And good weight distribution gives longer tyre life.

Maintenance is easily carried out with the use of a few basic tools. And spare parts are easy to get.

The tough chassis of Bedford's TJ's can withstand uses as a cargo carrier, oil-tanker, tipper, timber jinker, palm-oil carrier, as a van, or as a refuse collector.

Besides the TJ's, Bedford has trucks, ranging from light weights (GVW 26 cwt) to real heavyweights (GVW 440 cwt) to meet your requirements.

When you want transport, get a Bedford.

BEDFORD

The Bedford name on your bonnet means you're backed by the best in the business. Let us prove it to you.

ORCHARD MOTORS

A member of the Inchcape Group of Companies

Branches: Kuala Lumpur . Petaling Jaya . Penang . Ipoh . Seremban . Johore Bharu . Kuantan . Malacca . Alor Setar . Taiping . Batu Pahat .

Dealers: Ariffin Motors, Pekan. Syarikat Jentanian, Sungai Patani. Sirdi Motors, Teluk Anson. Fadason Sdn. Bhd., Bukit Mertajam. Nesco Sdn. Bhd., Kuala Pilah. Ithnin, Yahaya & Woo Auto, Kluang. Hamza (M) Sdn. Bhd., Kota Bharu. Emastulin Automobile Sdn. Bhd., Kuala Lumpur.

'GRAMOXONE' IS UNIQUE!

* 'Gramoxone' has the unique quality of rainfastness
* 'Gramoxone' effectively controls a very wide range of weeds

SEAL OF QUALITY

'Cock's Head' agricultural products help Malaysia grow

ratio between the pre-war slow-speed engine and the equivalent (and latest) engine is in the order of 4.2 : 1, admittedly comparing a watercooled engine against a relatively high-speed aircooled engine. Having said that, it necessarily follows that supervising and maintenance staff have to advance in technical facility in a like manner.

Over the past few years, a realistic attempt has been made to upgrade the standards of fitters and similar personnel, notably by way of the Trade Testing and Certification introduced by the NITTCB (National Industrial Training and Trade Certification Board), a section of the Ministry of Labour. The NITTCB work in conjunction with Government/Ministry representatives, employers and employees, with the aim of setting and maintaining standards

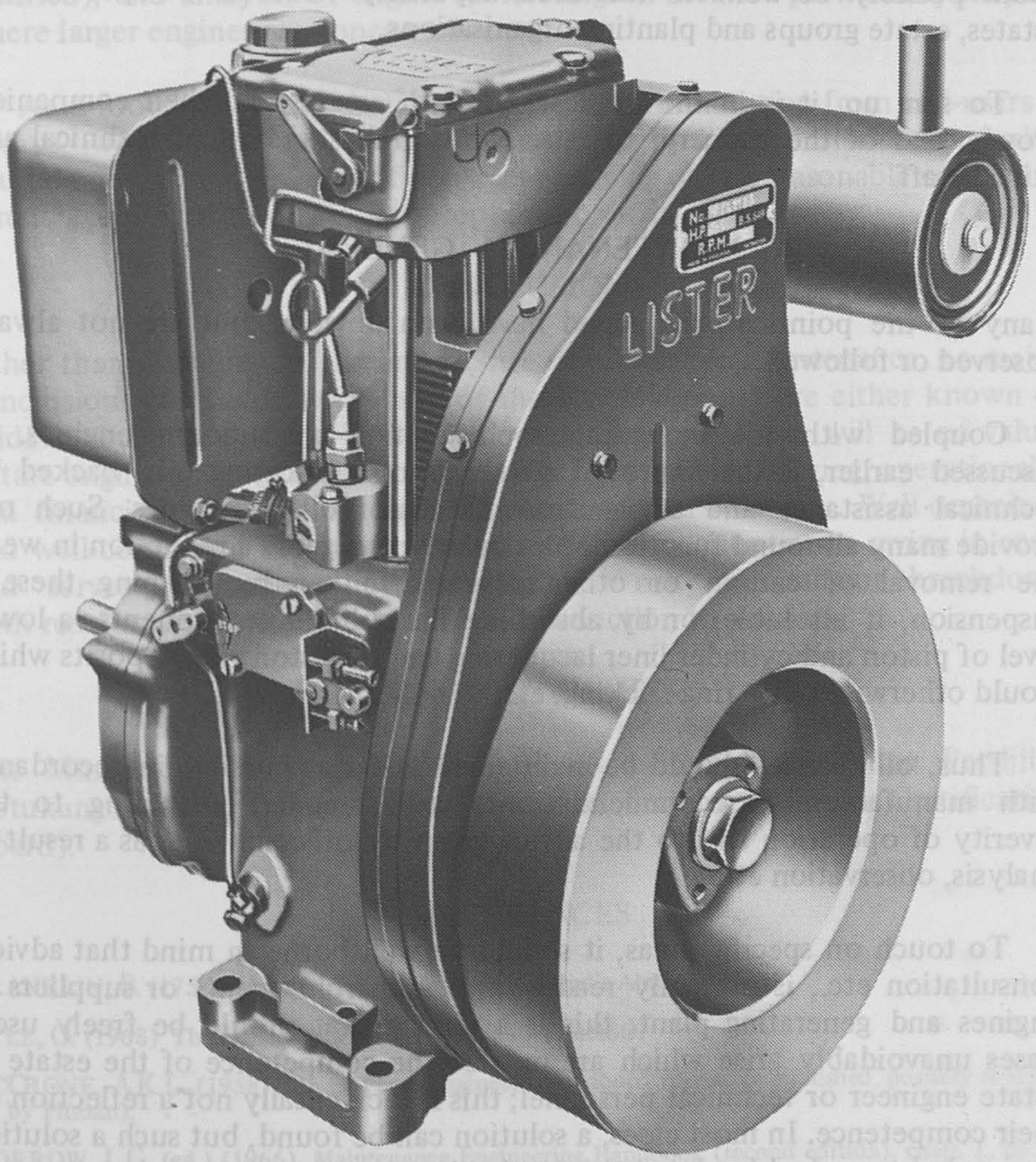


Figure 3. Lister type LT1 engine, 1.8–5.25 bhp at 1 000–3 600 rpm, aircooled.

of technical skill, and the aims of this organisation deserve more attention. By detailing the standards required, and by setting matching tests, both employers and employees have some assurance of levels of competency. *Appendices 4* and *5* give respectively a sample performance guide each for the Intermediate Grade for the earthmoving and constructional machinery mechanic and the Advanced Grade for the general mechanic (fitter). As yet, NITTCB have not produced testing and certification for diesel mechanics, but this will be undoubtedly useful when it is produced. (For estates having electrical maintenance staff, NITTCB have produced a booklet in respect of "Electrician, domestic and industrial", ref. D-2).

Certain commercial and engineering firms offer training of technical staff, both at the lower and higher levels. This is certainly useful, but more could possibly be done in this area, especially with the co-operation of estates, estate groups and planting organisations.

To sum up, it is in the interests of both estates and their companies/ groups, and of the country, to raise the overall standard of technical and skilled staff.

MAINTENANCE – GENERAL

Many of the points so far raised have been obvious, but are not always observed or followed.

Coupled with the increasing sophistication of modern engines, as discussed earlier, is the improved standards of lubricating oils, backed by technical assistance and advice from all major oil companies. Such oils provide many all-round functions, particularly as regards a reduction in wear, the removal of carbon or other deposits, either by keeping these in suspension, if insoluble, or by absorbing the soluble components, a lower level of piston and cylinder liner lacquering and of piston ring deposits which would otherwise cause ring-sticking, etc.

Thus, oil changes should be maintained as far as possible in accordance with manufacturers' recommendations, but amended according to the severity of operation and to the advice given by oil companies as a result of analysis, observation etc.

To touch on specific areas, it should be well borne in mind that advice, consultation etc., is normally readily available from agents or suppliers of engines and generating plant; this is a service that should be freely used. Cases unavoidably arise which are outside the competence of the estate or estate engineer or technical personnel; this is incidentally not a reflection on their competence. In most cases, a solution can be found, but such a solution may only be reached by detailed investigation.

Following this, if or when a major breakdown occurs, the supplier (and,

particularly, the service organisation concerned, if used) should be contacted. Again, this may appear obvious, but all relevant evidence must be preserved if a solution is to be found, and a repetition avoided.

Recommendations in workshop manuals, instructions books etc. should be followed, especially in respect of overhaul/maintenance periods, routine checks, oil changes etc., as far as possible. Such recommendations are, on the whole, based on operating experience, and should not be taken as intended to ensure a maximum spares turnover. There are evident cases of justified variation, e.g. light duty operation and the reverse of particularly adverse duties. Additionally, as mentioned earlier, the major oil companies in Malaysia generally provide ready advice in respect of oil changes, (where a variation from the manufacturer's recommendation might be thought justified), and analyses of engine lubricating oil etc., are particularly helpful where larger engines are concerned.

As a footnote to this section, feed-back of information from end-users is always welcomed, and where operational problems arise over faulty equipment, poor standards of contract servicing etc., a reasonable complaint is much preferred to unwilling acceptance or acquiescence.

CONCLUSION

Other than dwelling on the importance of preventive maintenance, no major conclusions can be drawn. Many of the points covered are either known or evident, but it is hoped that a renewed survey of these will be of value. Estate engine maintenance is possibly a neglected field, as being, operationally and financially, an untidy and uninteresting area to many. Well-organized and well-controlled maintenance can however contribute to a saving in costs and serves as a means of reducing the risk of a major breakdown with resultant expensive disruption to production to a maximum.

ACKNOWLEDGEMENT

The Ministry of Labour: Lembaga Latihan Perindustrian dan Persijilan Ketukangan Kebangsaan (National Industrial Training and Trade Certification Board).

REFERENCES

FRANKLIN, B. (1758) Maxims prefixed to Poor Richard's Almanae.

LYLE, O. (1968) The efficient use of steam, p. 686-7. HMSO.

MCCRONE, A.K.L. (1958) Diesel Plant Engineer's Handbook (privately published, possibly re-issued by Pitman).

MORROW, L.G. (ed.) (1966) Maintenance Engineering Handbook (second edition), chap. 1, pp. 94 and 125, McGraw Hill Book Co.

Workshop manuals and instruction books, miscellaneous manufacturers.

GENERATING SET DAILY LOG SHEET DATE .....

ENGINE NO. ..... OPERATOR ..... SHIFT COMMENCED .....

SWITCHBOARD:	START	HOUR 1	2	3	4	5	6	7	8	9	10
FREQUENCY											
LINE VOLTS											
LINE AMPS.											
K.W.											
K.W. HOURMETER											
ENGINE											
EXH.TEMP ^{O}F CYL.1.											
" 2.											
" 3.											
ETC.											
WATER OUTLET TEMP ^{O}F											
LUB. OIL TEMP ^{O}F											
LUB. OIL PRESS LB/SQ/M											
ROOM TEMP ^{O}F											

ENGINE STARTED .....

ENGINE STOPPED .....

TOTAL PER SHIFT

HOURS RUN ..... HOURS

KW HOURS .... KW HOURS

FUEL USED ..... LBS.

OIL USED ..... PINTS.

HOURS SINCE FILTERS CLEANED .....

FUEL CONSUMPTION ..... LBS/KW/HOUR.

LUB. OIL CONSUMPTION .... PINTS/KW/HOUR

REMARKS

SIGNATURES. THE ABOVE IS A TRUE RECORD OF THE PLANT ON CHANGEOVER:

OPERATOR RELIEVED ..... RELIEF .....

Typical daily log sheet

ENGINE MAINTENANCE 250 HOUR CHECK

ENGINE NO. . . . . .

HOURS RUN . . . . . HOURS SINCE LAST CHECK . . . . . .

	✓	INITIALS
CLEAN LUBRICATING OIL FILTER		
TOP UP ENGINE SUMP (..... GALLS.)		
CLEAN FUEL OIL FILTERS		
CLEAN GAUZE STRAINERS IN FUEL TANK		
CLEAN AIR FILTERS		
WITHDRAW INJECTORS, CLEAN NOZZLES & CHECK ...		
CHECK VALVE GEAR		
GREASE WATER PUMP. CHECK GLAND		
BLOW OUT AND CLEAN GENERATOR WINDINGS		
CHECK AND CLEAN SLIPPINGS AND COMMUTATOR ...		
CHECK BRUSHES AND SPRING TENSION		
CLEAN ENGINE AND FLOOR		

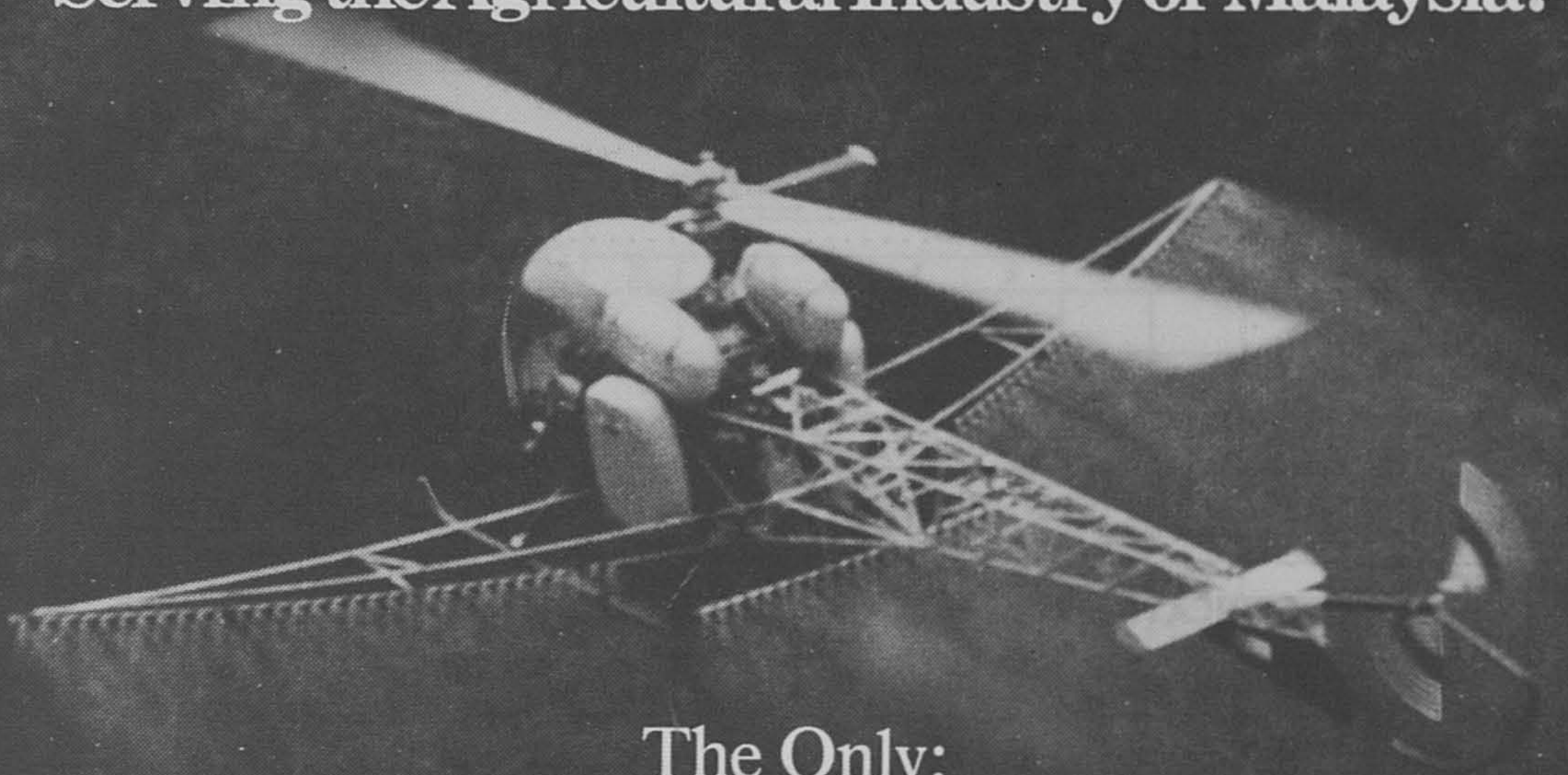
REMARKS:

. . . . . .

SIGNATURE-CHECK COMPLETED.

Typical 250-hour maintenance sheet

S.E.A.
HELICOPTERS
Serving the Agricultural Industry of Malaysia.



The Only:

1) Malaysian Helicopter Company with its own fleet of Aircraft.
2) Agricultural applicator with five years experience in Malaysia.

EXPERIENCE:

Five years in Malaysia.
Experimental programmes for R.R.I.M.
Bag worm and Grasshopper Eradication.
Stemborer control for sugar industry.
Caterpillar control in Tapioca Plantations.

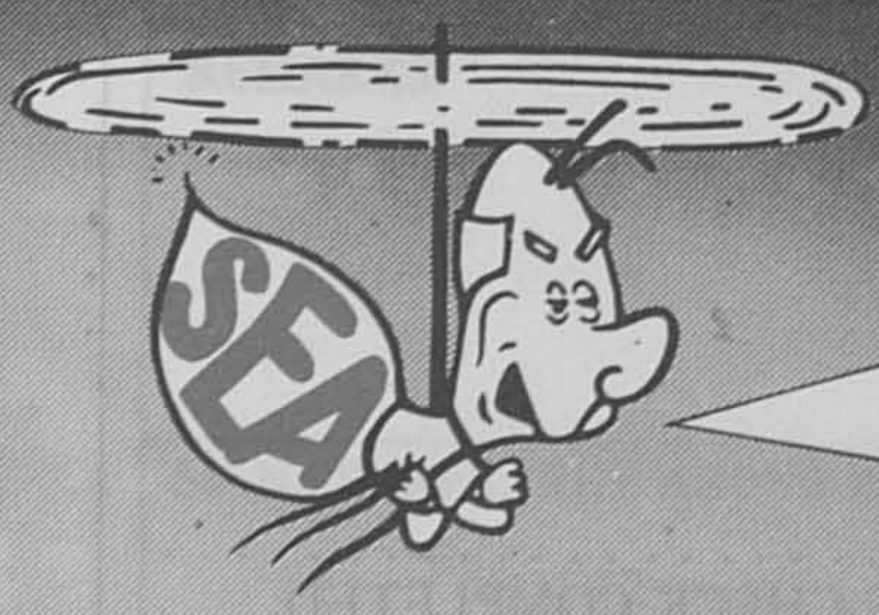
All forms of Pesticide and Herbicide applications.

ADVANTAGES OF AG-COPTER:

Economical use of Chemical due to Rotor Downwash penetration.
Effective coverage in confined areas.
Field side loading reducing ferry time.
More acres per Flying Hour.
Additional seating for Estate Managerial reconnaisance.

SPECIALISTS IN

Aerial Application
Pilot Training
Offshore Oil Rig Support
V.I.P. Transport
Aerial Crane
Flying Doctor Services
Photographic Survey



Call us when THE BUGS BEGIN TO BITE!

S.E.A. HELICOPTERS(M)SDN.BHD.

10th floor, Wisma MPI, Jalan Raja Chulan,
P O Box 2384, KUALA LUMPUR.
Tel: 03-21634/35

AND

Kuching Airport, P O Box 1557, Kuching,
SARAWAK.
Tel: 7-2107/2199

Introducing the contact and residual weed killer

VELPAR® K-51
WEED KILLER

- Good post emergent effect
- Long residual activity
- Safe to crop growth
- Controls a wide range of weeds including grasses and broadleaf weeds.
- Provides extended period of effective weed control.
- Mixing with other herbicides might not be necessary in most cases.
- Safe to users and to animals.

Our technical men will call on you.
Discuss your weed problems with them.
Let them show you how Velpar® K—51 can help you.

DU PONT

DU PONT FAR EAST INC.
~Malaysia Branch
7th Floor, Bangunan Ming, Jalan Bukit Nanas,
Kuala Lumpur. Tel: 23521.

Sole Distributor:
GUTHRIE KIMIA
Sendirian Berhad
Wisma Guthrie, Damansara Heights,
Kuala Lumpur. Tel: 941444

Have you ever heard of a weed killer which has both post emergent and pre emergent weed control activity?

Now you have one!

VELPAR® K-51

Appendix C

RECORD SHEET

(for a diesel engine: modify to suit size of engine i.e. small, medium or large, or to cover generating plant).

Make:
Engine no. Model:
Date of supply:
Date of installation/commissioning:
Purchase price or installed cost:
Operating duty:
12-h continuous rating Speed:
Bore: Stroke:
*Fuel consumption, full load:
Fuel consumption, ¾ load:
Fuel consumption, ½ load:
Agents:
Spares supplier(s):
Servicing by:
Notes:

Appendix D

Extract from National Industrial Training and Trade Certification Board (NITTCB) booklet, E-1.

GENERAL MECHANIC (FITTER)
ADVANCED GRADE

Performance:

Must be able to:

1. Carry out pipe work (including flaring, bending and threading).

2. Perform fitting jobs to given tolerances and quality of finish as specified in given drawings.

3. Locate and fit dowels and set screws.

4. Extract and replace links in a sprocket chain using the correct tools.

5. Carry out alignment tests and slide adjustments on machine tools.

---

*Manufacturers normally work in lb/bhp/h or kg/bhp/h. For ease of reference, given the specific gravity of the selected fuel, these figures could be converted to pints/h (for small engines) or gallons per hour, or alternatively to the number of running hours per gallon.

6. Harden and temper hand tools.

7. Scrape and fit plain bearings, and align shafts (emphasis to be placed on contact area).

8. Layout foundations and install machinery using mounting pads. Level and align properly.

9. Interpret mechanical drawings in order to strip and assemble sub-unit assemblies or complete assemblies. Check for wear and worn parts, recommend repairs or replacement of defective components.

10. Check for leaks in lines and vessels.

Plus as listed for the Basic and Intermediate Grades.

Tools and equipment:

As listed for the other grades plus any allied equipment required to carry out satisfactorily the listed performance items.

To know:

1. The precautions to be taken in the soldering and welding of containers which have contained or have been cleaned with materials likely to give rise to inflammable or poisonous gases or vapours.

2. The methods of, and precautions to be taken when degreasing.

3. The different types of pipes, joints, gaskets and threading equipment used for pipe fitting.

4. The different types of bearings, their uses and operating conditions.

5. The meaning of, and the reason for, hardening, tempering, and stress relieving.

6. The importance of aligning machinery and drive mechanisms and the equipment used.

7. The major components used in hydraulic systems and their functions.

8. The different types of drives and gears in common use.

Plus as listed for the Basic and Intermediate Grades.

Appendix E

Extract from National Industrial Training and Trade Certification Board (NITTCB) booklet, A-2

EARTH-MOVING EQUIPMENT AND CONSTRUCTIONAL MACHINERY MECHANIC

INTERMEDIATE GRADE

Performance:

Must be able to:

1. Carry out a complete top overhaul.
2. Refit a fuel injection pump. Successfully start the engine.
3. Repair and overhaul the steering system of crawler tractors, excavator etc.
4. Diagnose and give reason(s) for performance deficiencies using fault finding charts, necessary gauges and measuring equipment (British and metric).
5. Repair and overhaul construction plant clutch and brake assemblies.
6. By using manufacturers' charts, report on the condition of cylinders, pistons and crankshafts. Recommend all rectification work and/or replacements required.
7. Overhaul auxiliary compressors and adjust compressor controls.
8. Differentiate between electrical and mechanical faults and carry out minor replacements (e.g. fuses).
9. Overhaul hydraulic actuating systems.
10. Carry out checks and adjustments on power transmission hydraulic systems.
11. Overhaul sub-assemblies e.g. water pumps, transmissions (excluding torque convertors).
12. Perform basic arc and gas maintenance welding (e.g. the fixing of brackets).
13. Operate a plant under working conditions.

Plus as listed for the Basic Grade.

Tools and equipment:

As listed for the Basic Grade plus:

Valve facing machine
Valve seat cutters
Cylinder bore measuring gauge
Injector tester

Any allied equipment required to carry out satisfactorily the listed performance items.

To know:

1. The purpose and operation of all cooling system details, fuel system and lubrication system details.

2. The layout and functions of power shift and direct drive transmission (excluding torque converter details).

3. The layout and functions of steering mechanisms for both crawler and wheeler machines.

4. The effect on engine performance of incorrect tappet clearances and defective valves.

5. The layout and function of brakes, steering and main clutches as used in heavy plants.

6. The operation of fuel injection pumps, fuel lift pumps, governors and injectors.

7. The operation of air compressors.

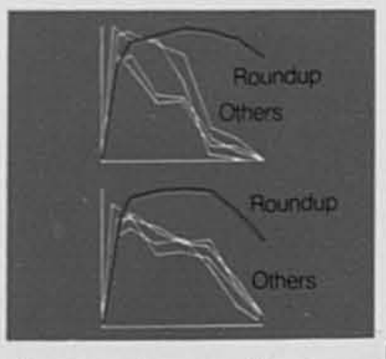
8. Safety precautions applicable to maintenance welding.

Plus as listed for the Basic Grade.

Why should you buy the Rolls Royce of weedkillers?

Find out. Free.

When we go around plantations and ask, lots of times the answer we get back is "Well, I've heard that Roundup® herbicide might be quite good — but of course it's far too expensive for me ..."



But is it? And do you know just how good Roundup really is?

Do you know Roundup literally destroys lalang — leaves, rhizomes and roots?

Or that it controls Ottochloa nodosa and Paspalum conjugatum for over 6 months with a simple, one-shot low-concentration spray?

(Just look at the graph)

And that Roundup (in these days of sky-rocketing labour costs) can save you hundreds of manhours ...

Find out. Let us put on a demonstration for you. Free. On your place.

At your convenience. All you spend is your time ...

It's our money.

Roundup®: real savings with effective weed control.

® Trademark of **Monsanto**

To:
The Agrochemicals Manager,
Shell Malaysia Ltd.,
P.O. Box 1027, Kuala Lumpur.

Please have your representative contact me to demonstrate—at no cost to me—the effectiveness of Roundup.

Name: .....

Address/Phone: .....

.....

.....

Size of plantation: .....

Crop: Young rubber ☐ Mature rubber ☐ Young oil palm ☐ Mature oil palm ☐

Principal weed: Lalang ☐ Ottochloa nodosa ☐ Paspalum conjugatum. ☐

Distributed by
Shell Chemicals

1

If you've been waiting to use Roundup® in mature oil palm

wait no longer.

Our natural caution with Roundup® has just borne fruit.

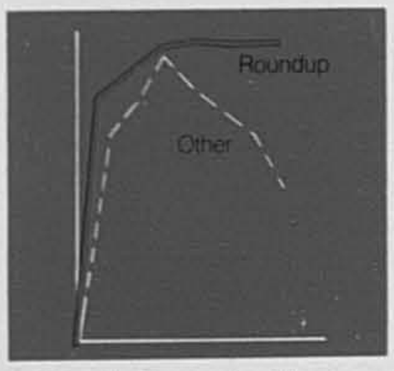
The studies are in, and Roundup can now be used for lalang control during all stages of oil palm growth.

The following table gives the dilutions recommended for use both within and outside the oil palm circle:

Area for control of lalang (Imperata Cylindrica)	Dosage per 4 gallons water
INSIDE the young and mature oil palm circle	100 ml. (3½ fl. oz.)
OUTSIDE the young and mature oil palm circle	200 ml. (7 fl. oz.)

The graph shows characteristic average 12-month-plus lalang control i.e. complete destruction.

Special recommendation: for spraying within the circle of very young oil palm, the use of a spray shield to ensure Roundup does not contact the growing tip is essential. For further details (including shield design) see your Roundup dealer or Shell Chemicals representatives.



And if you'd like a demonstration, send us the coupon.

Roundup :
lalang control in fruiting oil palm.

To:
The Agrochemicals Manager,
Shell Malaysia Ltd.,
P.O. Box 1027, Kuala Lumpur.

Please have your representative contact me to demonstrate—at no cost to me—the effectiveness of Roundup.

Name: .....

Address/Phone: .....

.....

.....

Size of plantation: .....

Crop: Young rubber ☐ Mature rubber ☐ Young oil palm ☐
Mature oil palm ☐
Principal weed: Lalang ☐ Ottochloa Nodosa ☐ Paspalum conjugatum. ☐

® Trademark of **Monsanto**

Distributed by **Shell Chemicals**

The Malay executive : myths and realities *

The Bumiputra executive is a new phenomenon, the product of political independence and economic nationalism. In short, he is a historical accident, a creature of his time, and for practical purposes, an unknown quantity.

He, therefore, excites much the same sort of curiosity as the Loch Ness Monster. The only difference is that whereas Nessie is shrouded in the mist of speculation and mystery, the Bumiputra executive has been photographed with much greater success and confirmed to be your actual two legged creature no different from the other executives, except that to some closed minds, he represents a threat and has to be kept at arm's length. Some sort of legend or myth about him has got to be created to lend credence to biased opinions and preconceived views.

The result is a rather horrid creature, totally undesirable, lazy for sure, and prone to all sorts of unpredictable behaviour including a tendency to sit on his bottom contemplating the debt the world owes him. He is, to put it mildly, a nuisance about whom there is really not much one can do unless one particularly relishes a head-on collision with the New Economic Policy, the Industrial Co-ordination Act and the watch dogs of the Bumiputra Participation Unit. So, like the cynical businessmen we all are, we humour the authorities, appoint a Bumiputra executive and a new statistical figure is born.

Knowing what to do with your ordinary staff is often difficult enough; not knowing what to do with your Bumiputra executive seems to be a standard management pre-occupation. It is in the majority of instances really a case of deliberate indifference, an attitude which, even outside the context of the New Economic Policy, can only be regarded as counter-productive. In terms of the New Economic Policy such behaviour is tantamount to political and economic sabotage of the most vicious kind. There are plenty of subtle examples of this in most organisations employing Bumiputra executives.

Prejudice against the Malays is real and particularly evident in expatriate companies. The Bumiputra executive is often regarded as a threat because of his so-called special position. Malaysia as a country is to blame for this. It used to be said that Malaya was a first rate country for second raters. Malaysia continues to be a first rate country; the only difference is that the present day expatriates are possessed of third rate sensitivity. So, in many foreign companies there has developed a sort of gospel that Malays are divinely inspired and imbued with all the attributes necessary to pronounce on personnel problems and run around the corridors of power, selling their soul and dignity for the dubious privilege of participating in commerce and industry. Another area in which the Malay is reckoned to be God's gift to

---

*Tea Talk Address to MIM members by Tunku Abdul Aziz, General Manager of H & R Johnson Malaysia Sdn. Bhd. on February 9, 1976.

industry is public relations. His contacts and influence are supposed to ensure the granting of such concessions to his masters as pioneer status even though ninety-five other factories are already manufacturing the product and work permits even though superior Malaysian talent is available at 1/3 the cost to the company.

The Malay as everyone else knows has no more divine rights than his non-Malay counterpart and whilst the more enlightened organisations have begun to realise this, too many others continue to delude themselves and, far from pulling wool over anybody's eyes, their action smacks of a machiavellian scheme and, therefore, highly suspect. Even the simple mind of the Malay can see through this ruse. Malays in commerce and industry who are no longer wet behind the ears and who have grown somewhat long in the tooth know that as long as they are confined to personnel and public relations, peripheral areas at best, they will never know enough about the business to play a pivotal and meaningful role.

Arguments against Bumiputra employment in acceptable numbers are wide ranging and invariably centred on the problem of finding Malays of the right calibre, whatever this may mean. It is now unknown for some elaborate fiddle to be set up to prove the point. Another argument apparently swallowed hook, line and sinker is that as customers very nearly all tend to be non-Malays, it would not be politic to appoint Malays in sales or marketing jobs. What is never mentioned is that in many companies marketing directors and sales managers are expatriates. The reasoning seems to be typically John Bull. Another reason is that the Chinese might overreact. Remember what happened to a certain international tobacco company some years ago. The British in particular have not lost their flair for keeping races apart and playing upon human fears, prejudices and susceptibilities.

Yet another charming reason privately circulated is that Malaysians in general, and Malays in particular, have ethical values different from those of the expatriates. This implies that we cannot be entrusted with company funds. We have, of late, been given a jolly good idea by Pinder and Slater Walker what these ethical values are worth.

There is admittedly a shortage of Malay executives with connections in high places who can guarantee pioneer status, investments tax credit, work passes, conversion of land titles, building permission, award of tenders, and appointments to see the Prime Minister. No doubt there would be an even more acute shortage of non-Bumiputra executives if these qualifications were openly specified. The trouble is that in spite of the New Economic Policy, in organisational terms, many companies are giving a new and somewhat cynical twist to the colonial inspired concept of identifying race with economic functions.

No self respecting Malay would agree to be exploited in this way but unfortunately it often looks as if it is the only avenue open to him

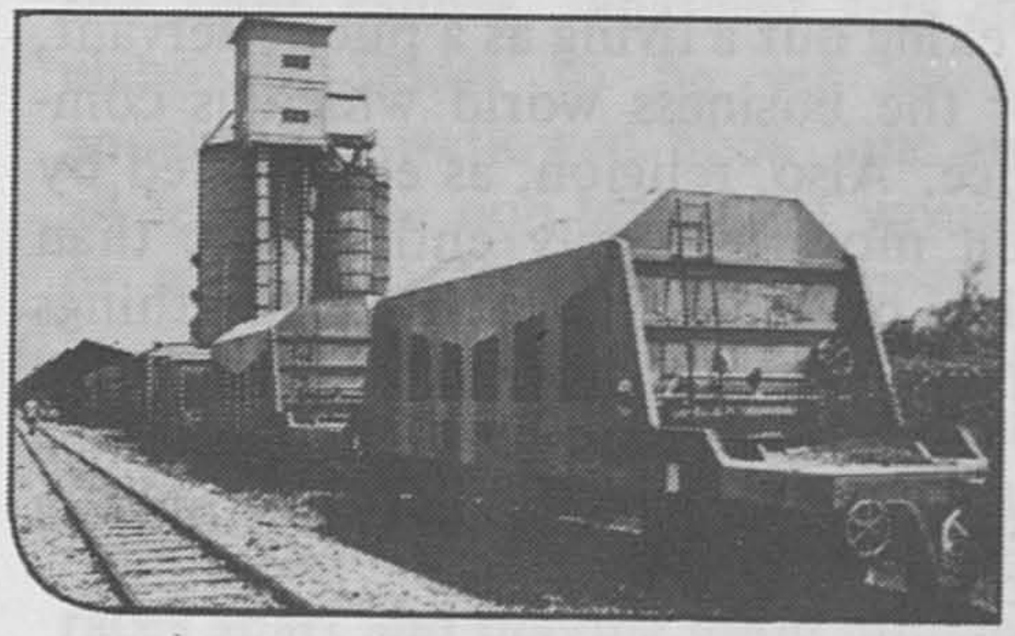
in commerce and industry. It would be interesting to find out how many of the Malay executives employed are engaged as run arounds. As against this side of the picture, there is, statistically, at any rate, satisfactory Malay representation on various company boards. There is, however, a lot more that meets the eye and a closer examination reveals a situation which appears to be an accepted way of life – the corps of fee collecting Bumiputras whose magical names turn up again and again in glossy annual reports. Stripped of the veneer of power and authority, these so called men of affairs and experience, in the majority of cases, are mere tools in a cynical window dressing exercise. It is sad that many excellent Bumiputras have allowed themselves to be seduced in this way. It is my contention that real power resides in executive directors not outsiders however eminent and influential they might be in their own right. Bumiputra policies are often undermined as a result of the Malays themselves acting in concert with foreign interests for their own survival.

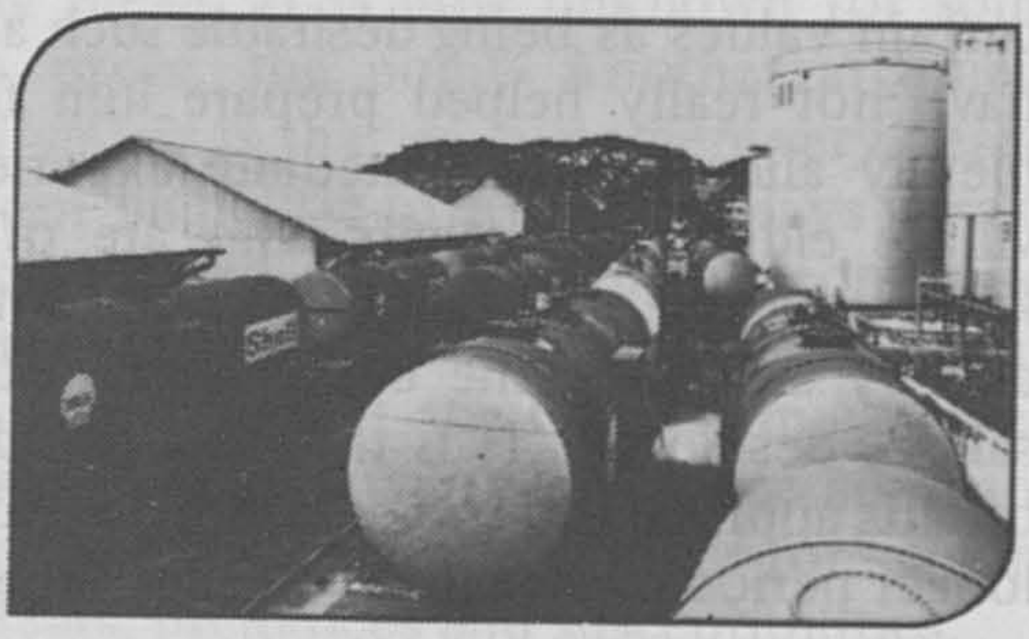
The Malay executive by tradition, upbringing and education starts with an enormous disadvantage. Attitudes conditioned by his environment, philosophy and tradition, coupled with his colonial heritage which hold certain values as being desirable such as eking out a living as a public servant, have not really helped prepare him for the business world which is completely alien to his immediate experience. Also, religion, as expounded by village elders and others who are often more sincerely enthusiastic than knowledgeable, has taught him the futility of hankering after earthly things and by and large the belief persists that the pursuit of money for its own sake is despicable. It is the next world that really counts. Given acceptance of this approach to life, it is little wonder that the Malay executive requires a longer period of stoking to get his fire going.

British rule in Malaya has often been credited with giving us the best civil service in the region. This was no accident; it is consistent with the British ruling class philosophy which, crudely put, said in effect that commerce was all right for the blokes down the road but it certainly was not good enough for those who aspired to a place in the sun which never set on the Empire. Surprising this, for a nation of shopkeepers. Some of this classical nonsense has rubbed off on the Malays. The idea of power in elegant impoverishment still appeals to a lot of Malays. Although the attitude is changing, it is true to say that a Malay would prefer a civil service career to a commercial one.

There is a certain amount of romanticism and idealism in the Malay make-up which the public service tends to satisfy. There is a feeling that one is doing work of national importance and making a direct contribution to national objectives. This has an undoubted attraction for the Malay; it is consistent with his social and philosophical values. There is also the fact that the nature of government service is such as to allow a young graduate to exercise reasonably early responsibility and authority. This power is real as those of us who have occasion to visit government departments are only too well aware.

Ask the people who are in oil, cement or container business why they have rail sidings and use "trainload" transport.





No matter what industry you are in, transport is part of your cost. Rail industrial siding linking your plant with the mainline, assisted by a well-designed operation of a 'trainload' transport can save you some cost items in moving your raw materials and products. The regular and reliable trainload service to and from your own siding assures you a regular supply of raw materials and equipment, as well as an efficient and economical distribution system. In other words, savings.

The Railway, from the very beginning, can help you plan the transport for your new industry, advise on a best possible way of building a rail siding into your factory, even share the cost of its construction, and provide a reliable service of wagonload and trainload transport

Our representatives will pay you a visit with more detailed information.

Please contact Director of Commerce
Malayan Railway Administration, Kuala Lumpur
Tel: 03-84115

With the declaration of the New Economic Policy there has been a dramatic change in attitudes largely brought about by economic necessity and expectations engendered by political considerations. Politicians have over emphasized the rewards of a commercial career particularly in relation to Bumiputra rights. It is a reckless approach and one which can work against the Malay who has yet to find his feet. It is only human that he should exploit his privilege regardless but sooner or later he will find that he is tolerated and not welcomed. This is especially unfair if he had what it takes to make it under his own steam.

It is all rather unfortunate that the idea of privilege is often fostered in a negative way because it affects Bumiputra credibility and subjects the Bumiputra executive, however capable he may be, to uncharitable comments and innuen-does every time he is promoted. Ineffectual and incompetent non-Bumiputras are quick to take advantage of the present situation by blaming their stagnation on racial discrimination.

There is no doubt that acceptability, a key factor which decides his future, is the Malay executive's most frightful worry. He is after all, operating in a social environment which in itself is formidable, but in this country it is an environment compounded by racial prejudices and biases of one kind or another. He has to develop a degree of perception and understanding of the problems involved in working under these conditions. The best way in which he can do this is to underplay his privileged position which is really more apparent than real. He has to work hard at proving that their fears are unfounded and that his ambitions are no different from theirs. Certainly, he must demonstrate at an early stage of his career that all he asks for is a fair crack of the whip and work which makes a real contribution to company objectives. He is prepared to be judged by normal standards and expects no special treatment other than what an enlightened employer ordinarily gives every new employee. No more, no less.

The Malay who comes into commerce or industry is perhaps not as mentally equipped as his non-Bumiputra colleague and consequently, he requires a different kind of adjustment which in turn requires an equally intelligent appreciation and awareness of his problems by his employers. The first 3 – 6 months are crucial. The Malay executive either stays or leaves. Quite often he leaves, disappointed and frustrated. His expectations have not been met. He is really playing into the hands of those whose only interest in him lies in being able to say "We told you so. He won't stay. Malays can't stick it out". So grows another myth.

This is, of course, not just a Malay problem. Others have suffered at the hands of indifferent managers, but the difference is that non-Malays are supposed to be taken on merit, a Malay is often employed as a political necessity – other than normal criteria are used to judge him. The situation is worse for the Malay who comes to a job starry eyed and with his head full of ideas of his own self-importance. Basically he has to remember that

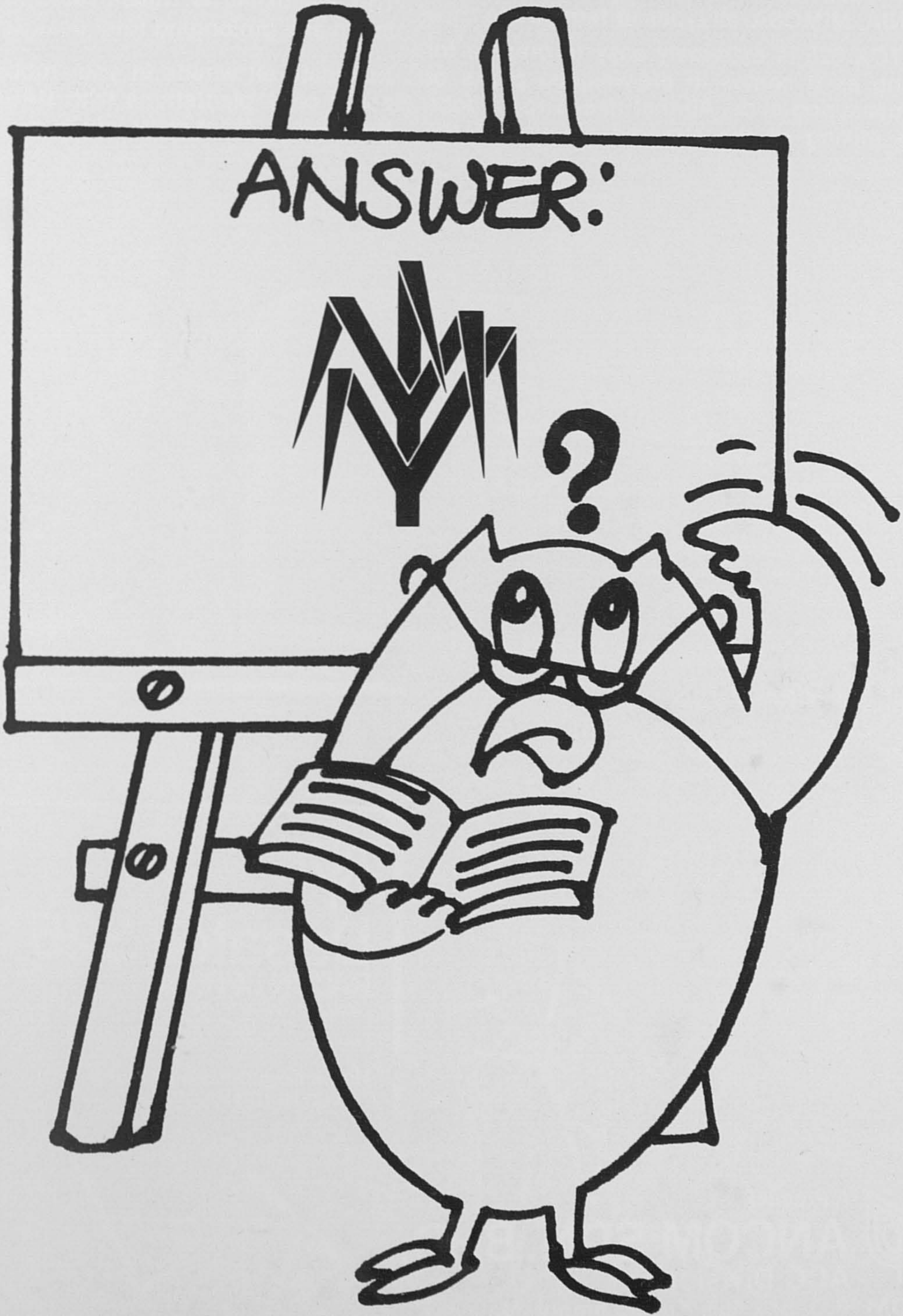
he has got to make a conscious effort to develop a new attitude of mind which might be in total contradiction to what he has been brought up to accept. The social and cultural norms of a leisurely and polite society are all very well but the commercial jungle quite rightly demands a different code. There are adjustments to be made on both sides and the Malay must make concessions to this new and strange setting.

What sort of preparation does a Malay get for work in the private sector? Nothing at university. Some sort of preparation is being made at the MARA Institute of Technology which whilst not perfect is at least an honest attempt. The only criticism is that the courses offered are racially exclusive and this sort of environment is totally unreal to what he will find at work. Business is played for real. In the sort of sheltered atmosphere I have described, I can envisage all sorts of attitudes becoming entrenched, consciously or unconsciously motivated by group preservation. It is in my view an unfortunate atmosphere in which to carry out the vital work of preparing young Malays for commerce and industry. The practical arguments for the MARA Institute of Technology are impeccable, but the Business Administration course could perhaps be treated as an exception to the exclusivity concept. The young Malay in training for a business career needs realistic help, not spoon feeding.

Practical management training as distinct from management education has to be devised with the needs of the Malay in mind. He has got to be broken in gently and given the sort of exposure that will make him aware of the rather peculiar needs and requirements of private sector service with its emphasis on profitability. He must be conditioned to the idea that profitability is not necessarily a dirty word and business conducted with fairness and sensitivity can be a force for good. The Malay executive is no better or worse than his non-Malay colleague provided equal opportunities are offered by way of training and real responsibility. It is in the national interest that the legitimate aspirations of an important section of our community are recognised and met squarely. The rest is up to the Bumiputra executive himself. He might very well prove his critics wrong as his race has done on a number of vital issues.

Reprinted by special permission from the August issue 1977 of the MIM Newsletter.

Need a foolproof, yet easy-as-ABC way to eradicate weeds?



Dasatox 325

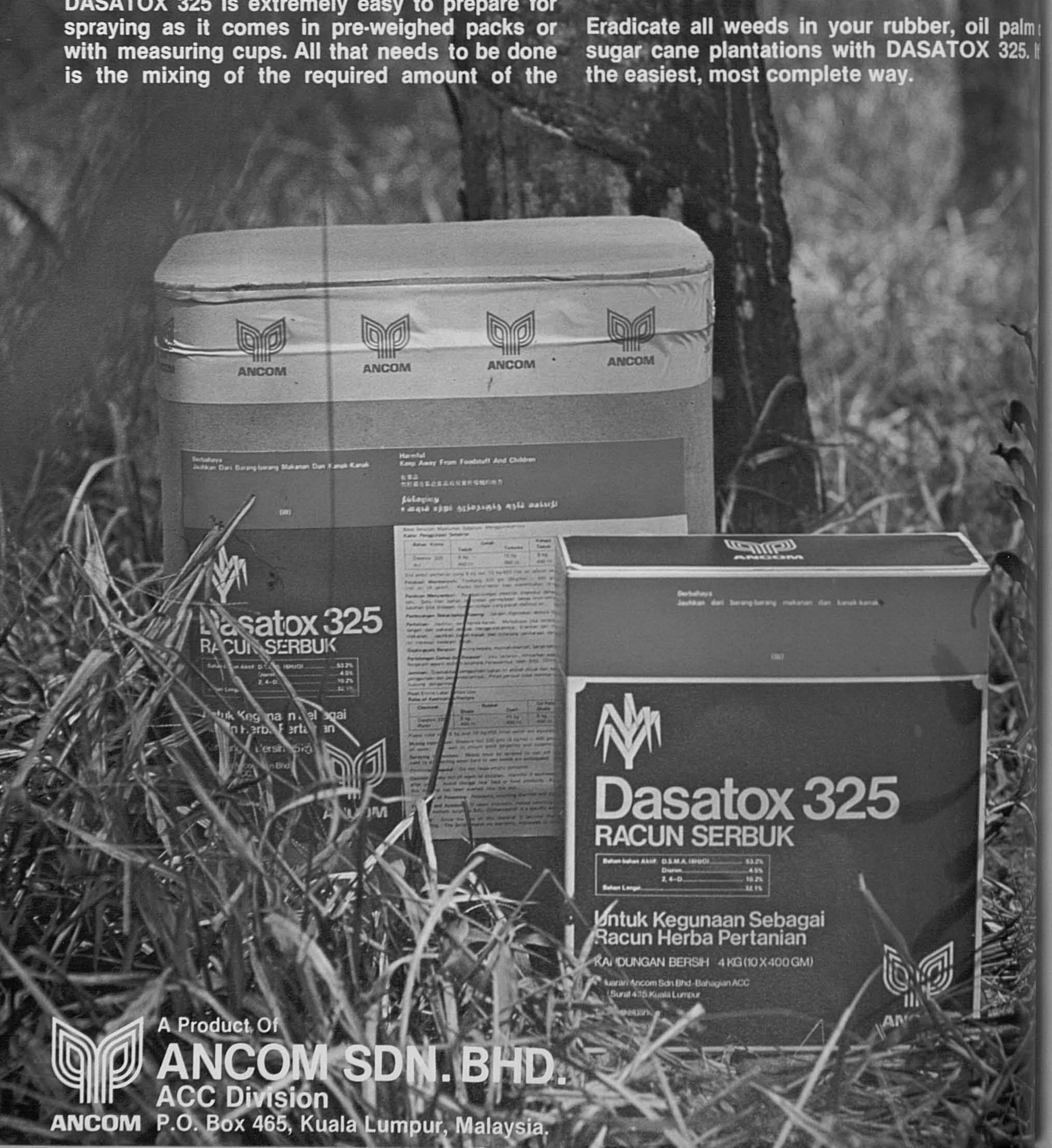
The premixed, broad-spectrum weedkiller that works above and below the groun

DASATOX 325 is a powder herbicide mixture containing DSMA, 2,4-D and Diuron, a formula designed to effectively and totally kill all major weeds such as PASPALUM CONJUGATUM, MIKANIA, MIMOSA, all types of ferns & etc.

DASATOX 325 is extremely easy to prepare for spraying as it comes in pre-weighed packs or with measuring cups. All that needs to be done is the mixing of the required amount of the herbicide with the specified amount of wate No mixing with other weedkillers is require as DASATOX 325 is complete by itself.

This weedkiller is translocated in plants resul ing in and prolonging total destruction of weed

Eradicate all weeds in your rubber, oil palm sugar cane plantations with DASATOX 325. I the easiest, most complete way.



A Product Of

ANCOM SDN. BHD.

ACC Division

ANCOM P.O. Box 465, Kuala Lumpur, Malaysia.

Letters to the Editor

Dunlop Research Centre
Batang Melaka,
Negri Sembilan,
P. Malaysia.
September 30, 1977

Dear Sir,

The Future of Cocoa in Malaysia

In the January, 1976 issue of "The Planter" I wrote – "Most certainly (for cocoa) it is essential that phytosanitary work should be of a high level. Diseases out of hand can have rapid and disastrous effects as has been noted in too many cocoa growing countries of the World". For instance in 1973, referring to the situation in Ecuador, Dr. Don Edwards wrote – "It is reported in the literature that yields averaging over 1 000 dry beans per acre used to be obtained over wide areas of the country before the appearance of *Monilia roreri* and *Marasmius perniciosus* but that yields today would be between 100 and 150 pounds".

In the May, 1977 issue of "The Planter", Dr. Ng Siew Kee stressed the need for deeper understanding of the disease problems that face the Malaysian cocoa industry through "a bold step forward to undertake research on the major problems connected with planting cocoa". He has my full support. Similar support is given in your Editorial in the June, 1977 issue of "The Planter" but I am concerned that your journalistic writing may lull readers into a false sense of security. One may query whether for Vascular Streak Die-back *(Oncobasidium theobromae)* we do in fact have "fore-knowledge of control". Also with reference to diseases – are we in fact sufficiently "fore-armed" to be adequately "fore-warned". In my mind there are doubts and thus, in very simple language, I would say that it appears essential that research be geared with sufficient strength immediately to provide practical answers to current problems. Further it is essential that there should be means to ensure that the implications of these answers are applied in the field.

Finally, we may hope that strict quarantine regulations will prevent diseases, currently unknown in Malaysia, from entering into the country from Africa and the New World. Here, however, there may be dangers from air travellers unwittingly introducing disease organisms. We must therefore be prepared and in a position to combat the arrival of any new disease rapidly and in an all out completely unrestricted attack.

Yours sincerely,

(B.J. Mainstone)

Editor's Note:

In the July edition an article appeared entitled **'Potentials of Puncture Tapping'**. In the following edition we published a letter from Practical Planter, and we now summarise below the main specific questions from this:-

1. *Number of punctures.* In the second paragraph it is stated as '(4 to 6)' whereas later it is stated that trials were conducted with 15 or, later, 16 punctures.

2. *Duration of tapping on a strip.* Also in the second paragraph this is implied as '4 to 5 weeks' whereas throughout the article one month seems to be the duration.

3. *Concentration of ethephon.* No rationale is given for the choice of 3.3% whereas other workers, to whom the authors refer, are using 5%, 2.5%, etc.

4. *Comparative intensity of tapping.* No rationale is given for equating 15 to 16 punctures on a 1m strip (stimulated) with ¾S unstimulated, or in fact for the change from 15 to 16 punctures.

5. *Interval between strips.* No reason is given for the change of spacing from 1cm to 2cm.

6. *Yield statistics.* No mention is made of tree-lace, the quantity of which may vary significantly between treatments; we must presume that tree-lace is included with cuplump, but it should be stated separately.

7. *Location of punctures.* The statement in the second paragraph that punctures are 'made at random' is at variance with procedures used by other workers.

8. *Sucrose content of latex.* There is no explanation of the significance of this phenomenon, and Table 6, which purports to illustrate the effect of treatment on yield and sucrose content, contains no reference to the latter.

9. *Quantity of ethephon/tree/year.* The mean application per strip of 1.38g Ethrel (3.3%) multiplied by twelve gives 546.48mg, and not 554mg as stated (Table 4).

10. *Economics of puncture tapping.* Try as I may, I cannot make any sense out of Table 5; I cannot reconcile the yield figures in this Table with those in Table 3, with or without reference to the authors' explanatory note, and furthermore, the subtraction of dollars (or ringgit) from kg of dry rubber to produce the argument

just has me baffled. It is not stated whether 'Cost of stim.' includes labour, but if it does (as it should), the labour cost appears to be very high. I just don't understand note (a) to Table 5; had there been stimulated ¾S tapping in the trials, the length of cut at 30° on trees of this girth (about 68cm) would have been ± 58cm, to which it would be unusual, to say the least, to apply a 2cm wide band of Ethrel per month.

Practical Planter went on to suggest a number of other aspects that ought to be investigated, and requested clarification about puncture tapping either from the authors of the paper, or another paper from a different source.

Editor

Chemara Research Station,
Jalan Labu,
Seremban,
Negeri Sembilan.

Dear Sir,

Puncture Tapping

I refer to the reply of Practical Planter in the August edition, concerning the paper "Potentials of puncture tapping" (July edition).

As the person responsible for the operation of Chemara Research Station, I am replying to this myself, because the paper unfortunately missed a stage in the normal scrutiny. That it lacked a certain logic in parts and had some errors in composition, cannot be gainsaid. However, having said this, we feel that the criticisms were perhaps rather too numerous in relation to the intention of the paper. This was simply to pass on news of an interesting development.

Practical Planter feels that the paper should have enabled the setting up of widespread trials on the technique. This view is not shared by us at the moment, because the development has not reached this stage. Large-scale trials could give misleading results, unless done with insight into the thinking behind the technique.

The introduction set out to state what puncture tapping involved, under what is currently considered the best practice; but it then described experimentation which had led up to this (Question 1). This might have been clearer to Practical Planter had he consulted the earlier paper referred to (*Planter,* **52** (603) : 209-215). The words "sucrose content" (Q. 8) should have been erased – the significance of this factor also (the authors' views on it, at least) would be apparent by reference to the earlier paper.

There was no rationale for many of the earlier comparisons made (Q's. 3, 4 & 5) nor should any have been expected. The researchers were looking at an entirely new technique (which to be honest, did not impress us at first as all that likely to be particularly successful), and it was just compared in a simple way with the practices that happened to be going on already, in the areas chosen for these early observations.

Some of the questions seem perhaps a little overattentive to detail, e.g., Q.2 – surely a calendar month is 4-5 weeks; Q.6 – the tiny amounts of tree lace with this small number of trees were not worth keeping separate, and were indeed added to the cup lump; Q.7 – neither practice is better, (or at least not proven so yet); Q.9 – this is simply a question of rounding off (1.38 or 1.4g) before multiplying up.

Table 5, referred to in Q.10, contains errors in the yield figures due to the use of a wrong correction factor, in transcribing from Table 3. The correct table is reproduced below:-

Table 5 Comparison of the economics of puncture tapping versus conventional tapping (expressed in dry rubber/ha/yr) (Mean of 29 mths.)

	Puncture tapping (15 punctures at d/3) 3.3% E x 12	*Conventional tapping ¾S.d/3 no stimulation*
Yield kg/ha/yr	2 598	1 534
Tapping cost+	234	234
Cost of stim.++	108	–
Total cost of exploitation	342	234
Nett return	2 256	1 300

Note: The above exercise is based on the following assumptions.

\+ It is assumed that the tapping cost of both treatments are similar. The density is 323 trees/ha, and that task size is 475 panels per task. Price per kg (dry rubber) = $1.87.

++ (a) The vertical strip of 2 cm wide and 1 m long is being assumed to be equivalent to the ¾S cut (3.75 cm wide) in terms of stimulation cost and amount of Ethrel consumed (per stimulation round)

(b) Cost of Ethrel mixture is $10.34 per kg.

The remainder of the points should have been reasonably clear. It is stated in the table that the factors are expressed in terms of dry rubber/ha. In other words, tapping cost and cost of stimulation are converted to a value in rubber, by appropriate reference to price zone collection costs and duties. The figures have to be accepted in a paper like this; there is no appropriate reference whilst a full explanation of the derivation would be excessive. The note (a) refers to comparative value *per stimulation.*

Publication is not aimed towards getting praise or thanks, but we were saddened that there was no leavening of Practical Planter's severity, simply from the fact that we made the results of this work, acquired at considerable

expense by a private research station, available. He refers to the possibility of "a more comprehensive paper from another source". If such source exists, with experimentation equal to or ahead of what we have published at this stage, then we would be most interested to read about it ourselves. At the present time, any such source is apparently hiding its light under a very substantial bushel.

We hasten to assure Practical Planter that most of the suggestions he makes about what experiments are needed, are included in the continuing research programme. If he was able to attend the recent RRIM Planters' Conference, he would have heard a more up-to-date and comprehensive account, based on later results of this experimentation (although not, alas, from another source). Hopefully, this would clarify any other points, and show him current trends in this interesting development.

(B.J. Wood)
Research Services Controller
Chemara Research Station

Teluk Anson,
Perak.

Dear Sir,

Puncture Tapping – Letter from 'Practical Planter'

I wish to refer to the August issue of the Planter and the letter from 'Practical Planter'.

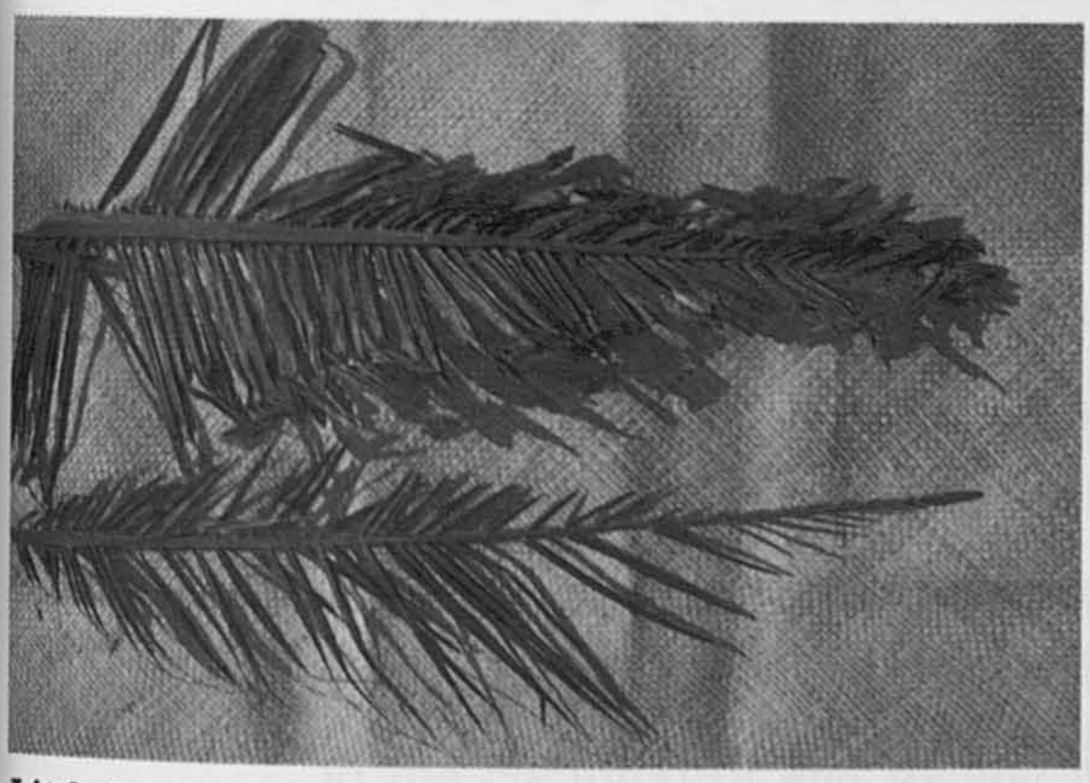
This is a technical letter which is *highly critical* of an original research paper contributed by professional scientists viz. Tan et al. In learned scientific journals, I find no parallel in such un-professional indulgence whereby clandestine critics are allowed printed space under a 'non-de plume'. As a contributor of articles to the Planter, I strongly object to the Planter abetting such ignoble practice as this will undoubtedly discourage original contributions from scientists.

If 'Practical Planter' has any gumption, he should have been the first to insist that his true name be published, as any real professional would and I trust this will be rectified soon.

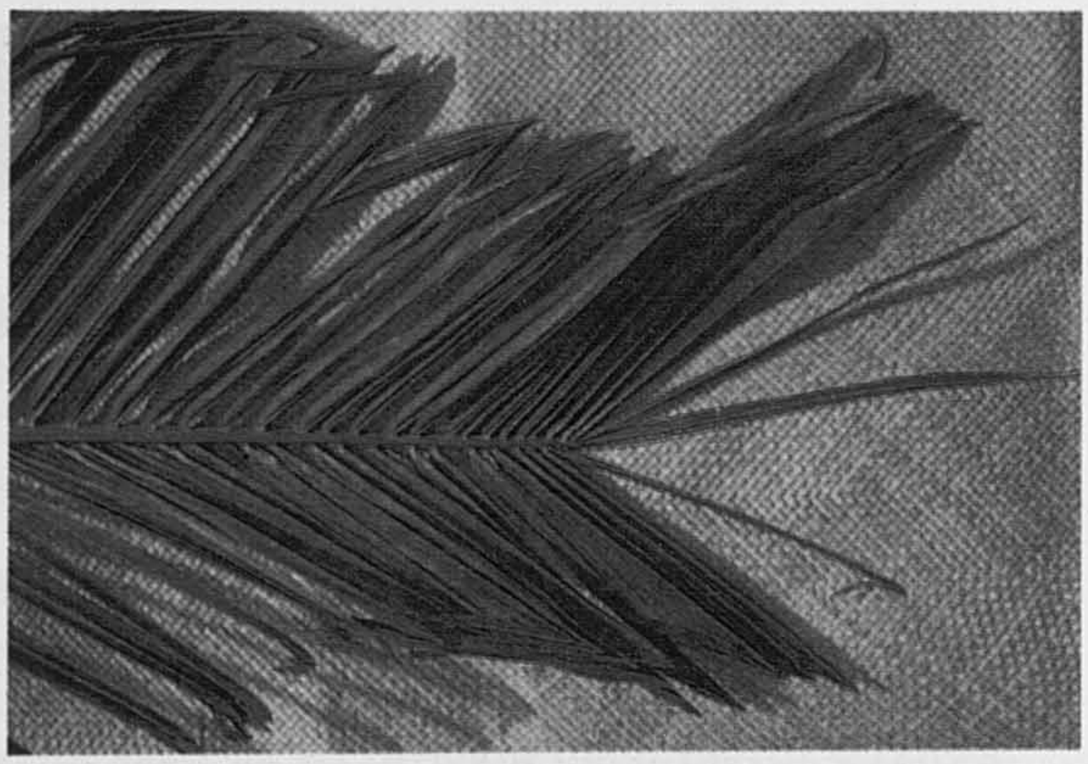
Yours faithfully,

(Dr. Ng Siew Kee)

Use Fertiliser Borate 48 to prevent these deficiency symptoms and improve your oil palms



Little leaf with hooking and folding of lower leaf.



Hook leaf with bristle tip.

Remember to contact:

ICI Agriculture (Malaysia) Sdn. Bhd.,
Peti Surat 284,
Kuala Lumpur.

Made in USA

BORAX

BORAX CONSOLIDATED LIMITED
BORAX HOUSE, CARLISLE PLACE,
LONDON SW1P 1HT, ENGLAND.
RTZ A member of the RTZ group

Art K.L.

A little Fertiliser Borate 48 makes a big difference

Boron applied as Fertiliser Borate 48 is an efficient method of combating boron deficiency in oil palms.

Safeguard your oil palms against boron deficiency by using Fertiliser Borate 48. It can be applied to the soil alone or mixed with a NPK fertiliser.

Diadakan Oleh:

ICI Agriculture (Malaysia) Sdn. Bhd., Peti Surat 284, Kuala Lumpur.

BORAX

BORAX CONSOLIDATED LIMITED
BORAX HOUSE, CARLISLE PLACE,
LONDON SW1P 1HT, ENGLAND.

RTZ A member of the RTZ group

Made in USA

The monthly crop

National Environmental Policy. The Minister of Science, Technology and Environment, Y.B. Tan Sri Ong Kee Hui, in his speech at the Seminar on Environmental Impact Assessment, held in Kuala Lumpur recently, outlined the factors that are considered in formulating the N.E. Policy as follows:-

* the impact that population growth and man's activities in resource development, industrialization and urbanization have on the environment;
* the critical importance of maintaining the quality of the environment, relative to the needs of the population, particularly in regard to the productive capacity of the country's land resources in agriculture, forestry, fisheries and water;
* the need to maintain a healthy environment for human habitation;
* the need to preserve the country's unique and diverse natural heritage, all of which contribute to the quality of life; and
* the interdependence of social, cultural, economic, biological and physical factors in determining the ecology of man.

He further added, 'the ultimate aim of the Federal Government, working in close co-operation with the State Governments, is to ensure as far as possible that all man's activities are in balance with his environment. In the attainment of these objectives, the Government recognizes the need to balance the goals for economic and social development, on the one hand, against those for maintaining sound environmental impact assessment studies which will seek to identify and quantify the relevant trade-offs'.

Oil palm industry cess. It is expected that the palm oil producers will soon have to pay a cess to finance research into more efficient processing techniques and to look for more uses. It is hoped that this will generate at least thirty million dollars from the industry.

The cess is expected to follow the same cess that is levied on the rubber industry, namely, on production. It is understood that the amount derived from such a cess will be sufficient to provide the necessary research facilities in the commodity and its end uses as well as to provide meaningful services to the consumers. So far there is little or no coordinated research done on the oil palm industry although it has become one of the largest foreign exchange earners and is continuing to grow in importance.

Research on oil palm is currently being undertaken by the Malaysian Agricultural Research and Development Institute (MARDI), which is also performing the same function for many other products. With the introduction of the cess it is hoped that the money collected will go to the palm oil research fund which comes under the purview of the Palm Oil Registration and Licensing Authority (PORLA). The formation of PORLA was approved by Parliament in July 1976 and should constitute the main organisation to

coordinate development of the palm oil industry in production, research, marketing and licensing. With the funds generated the industry should for the first time have proper and extensive research which will adequately make the crop more competitive and efficient.

Reprinted by special permission from the August issue 1977 of the MIM Newsletter.

U.K. scholarship – A 19-year old student has been awarded a scholarship by a leading plantation company to study engineering at Kings College, University of London.

The scholarship was awarded to Ambrose Gerard Corray by Harrisons & Crosfield on behalf of Harrisons Malaysian Estates Limited.

Ambrose Gerard Corray's late father worked as a clerk for 21 years in Benut Estate belonging to Hoscote Rubber Estates Limited, a subsidiary of Harrisons Malaysian Estates Limited.

A keen sportsman, A.G. Corray graduated from the Royal Military College in Kuala Lumpur and was awarded a place at Kings College for his outstanding academic record.

Malaysia's helping hand to Vietnam. A team of five rubber experts from Malaysia and officers from the Ministry of Foreign Affairs left for Vietnam on September 8, 1977.

This team was led by Tan Sri Dr. B.C. Sekhar, the Controller and Chairman of the Malaysian Rubber Research & Development Board. The team will be in Vietnam for about two weeks to study the various aspects of the rubber industry and processing of rubber in Vietnam.

This visit is in line with the commitment made by Malaysia towards assisting Vietnam in the rehabilitation of her rubber industry and also with Malaysia's desire to have mutually beneficial relations with Vietnam.

The successful planter

Explain why this was entered, that ommitted,
Why 'A' was sprayed, Why 'B' and 'C" strip weeded.
Note whence this shameful error of three cents,
The Manager forthwith make recompense.

Tis not enough the solid hours to waste
On Agent's letters writ in wrathful haste.
On why the cost per pound is going up
And latex does not fill the latex cup.
Or why the FFB is over ripe
And fruit reports considered so much tripe.
Or why the births increased by twenty eight
(Can one control the urge to fornicate?)
On why it rained on eighty days last year
And *are* machines subject to wear and tear.

For those in Agencies, our rulers say,
Decide all night; investigate all day.
The first rate Planter, (man of equal might)
Reports all day and corresponds all night.
Oh!, Could I raise my fascinated eyes
From letters writ by those so much more wise
To scour observant o'er the whole estate
And on more mundane things then concentrate,
Then all were well; and I might touch the goal,
A square, round man within a round, square hole.

Kephas

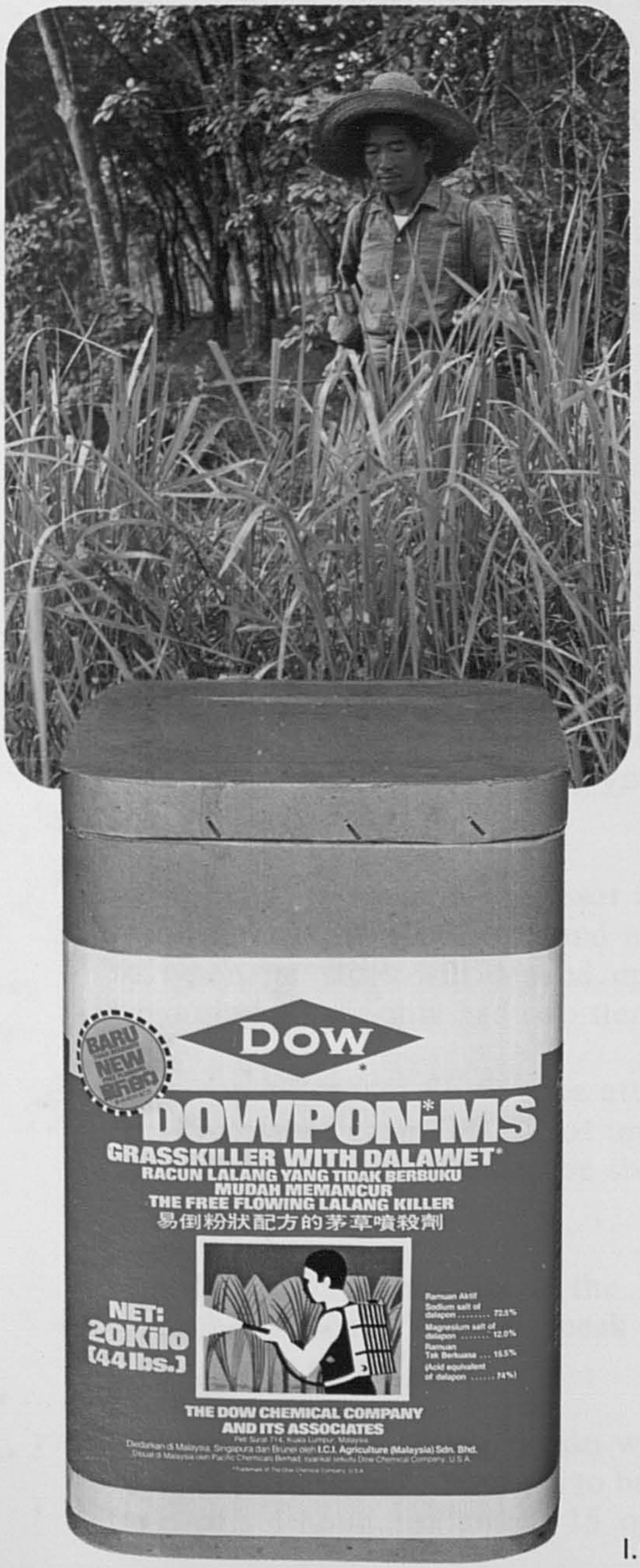
Hotel concession rates for ISP members

We give below a list of hotels offering discounts on room rates to ISP members presenting their current membership cards.

Several hotels have imposed the condition that these discounts will not operate if bookings are made through travel agencies. Credit cards are likewise not favoured.

HOTEL	DISCOUNT	SERVICE CHARGE	GOVT. TAX
KUALA LUMPUR			
Equatorial	15%	10%	5%
Federal	30%	10%	5%
Grand Central	25%	10%	5%
Hilton	20%	10%	5%
Holiday Inn	20%	10%	5%
Majestic	10%	Nil	5%
Malaya	20%	Nil	5%
Merlin	20%	10%	5%
Regent	20%	10%	5%
SINGAPORE			
Cockpit	20%	10%	3%
Goodwood Park	10%	Nil	3%
Hilton	15%	10%	3%
Merlin	20%	10%	3%
Mirama	20%	10%	3%
New Hongkong	15% (Standard) 20% (Moderate) 25% (De Luxe)	10%	3%
Phoenix	20%	Nil	3%
PENANG			
Ambassador	20%	10%	5%
Central	20%	10%	5%
E & O	15%	10%	5%
Merlin	15%	10%	5%
Rasa Sayang	10%	10%	5%
United	40% (except December & Chinese New Year Season)	Nil	5%
KUANTAN			
Samudra	15%	10%	5%
Merlin	15%	10%	5%
IPOH			
Eastern	10%	10%	5%
KOTA BARU			
Kesina	15%	Nil	5%
KUCHING			
Holiday Inn	15%	Nil	5%
CAMERON HIGHLANDS			
Merlin	10%	10%	5%

A WORD TO ALL THOSE WHOSE WEEDING COST IS EATING INTO THEIR PROFITS...



DOWPON*-MS

A paper presented by RRIM at the 1976 Planters' Conference states:

"In large-scale spraying of herbicides for effective control of sheet lalang on flat land where water supply was available, the average labour requirement for spraying was 3.25 man-days per hectare for dalapon and 3.08 mandays per hectare for glyphosate. To work out the cost per hectare of lalang control, only treatments which gave 90% and more effective control for an average duration of eight weeks or more were considered. On clayey loam soil, the average cost for effective control of 1 ha of lalang was about $220 with dalapon. With glyphosate the cost was $543 per hectare. There was a saving of $323 per hectare with dalapon. On sandy soil or in shaded areas the average cost of using glyphosate was $319 per hectare compared to $185 with dalapon."

New DOWPON-MS is the most effective form of dalapon because it contains DALAWET*

If weeding costs are eating into your profits, listen to the experts and use DOWPON-MS

DOWPON*-MS Grasskiller ~The Money Saver.

*Trademark of Dow Chemical Co., USA

DOW

THE DOW CHEMICAL COMPANY AND ITS ASSOCIATES

Distributed in Malaysia, Singapore and Brunei by

I.C.I. AGRICULTURE (MALAYSIA) SDN. BHD.

"Sandy's Spice"

A.A. SANDOSHAM

OLD AGE

I am different about speaking nowadays because old age is creeping up on me. However, I feel richer now with silver in my hair, gold in my teeth, stones in my kidneys and gas in my stomach! Having passed the Biblical maximum life span of three score and ten I now find myself frequently in the predicament of a chap who said that every time he stood up to speak his thoughts sat down.

Besides, as you have noticed already, I tend to fumble with my words, although not so badly as the bridegroom who got up to reply to the wedding toast. No doubt he was somewhat excited and nervous on this auspicious occasion. As he got up, the bride leant towards him and whispered that he was not to forget to thank her mother for the coffee percolator she had given him. So, he ended up his speech by saying, "Ladies and Gentlemen, I am particularly grateful to my mother-in-law for the lovely and beautiful wedding present she has given me in the form of a perky copulator".

A PROFESSOR AS SPEAKER

Another reason for my hesitation to accept an invitation to speak is that a Professor is said to be one who speaks in other peoples' sleep. When I gave this as an excuse our Programme Chairman said, "Not to worry. Coffee would have been served before you start to speak. That should help to keep them awake for a while".

Besides, it seems a Professor is an automaton when it comes to speech making. You press a button and he starts talking. He goes on and on and as to when he stops will depend upon how much he was wound up at the beginning. I have only had two stengahs and should stop soon.

George Bernard Shaw once attended a lecture by a Professor. Soon after the Professor began G.B.S. got up and started to open the windows. When asked if he felt the room to be stuffy he said, "No, I always sleep with my windows open".

When a Professor asked the Rotary President for how long he could speak he replied, "You can speak for as long as you like but we all leave at 2.00 o'clock sharp".

That is probably one reason why Rotary insists on getting the top men of each profession or business to become members. They can give themselves time off, 1 hour for lunch, 15 minutes before and after lunch for social

get-together and half an hour each way to get through traffic to and from office and the hotel.

OFFERING TO SPEAK

A few weeks ago, your President asked me, "How come you haven't been to speak to our club for a long time?". It was on the tip of my tongue to say it was because I hadn't been asked. I realised that it would be tantamount to asking for an invitation and checked myself in time.

There was one occasion in my Rotary career when I actually offered to speak to various Rotary clubs. That was some 10 years ago when the District Governor wrote and said he had appointed me as Registrar of Rotary Speakers. None of the Rotary Directors in my club knew what that post involved. At last, I got the information from that veritable walking encyclopaedia of Rotary information, Rotarian Menon. I was to find out which of the smaller clubs were in need of speakers and which of the Rotarians were willing to go and address them. Speaking at smaller clubs, thus promoting fellowship, is one of the duties of a good Rotarian. Towards the end of the Rotary year, I received a letter from the District Governor asking for the list of speakers who had spoken at other clubs and the distances they had covered. I panicked. I had written to a few clubs and a few Rotarians about this but I had received no replies. At that time I got a phone call from the chief clerk in the Ministry of Health saying if I didn't take the months' leave overdue to me I should lose it completely. So I decided to take the leave and drive up and down the length of the Peninsula and address the smaller Rotary Clubs which I did. I also spoke at Tawau in Sabah and Sibu in Sarawak where I had gone officially to investigate the malaria situation. Thus I found myself the winner of Rotary Speaker's Trophy that year.

IN LIGHTER VEIN

I had written to the various small clubs asking they would like me to speak on, giving a wide choice of subjects like malaria, dengue, spastic children, old folks' homes, etc. or something in a lighter vein. Invariably it was a request for a talk in lighter vein. Presumably the English-speaking peoples have imbibed something of the characteristic of the English people. The Englishman prides himself in having a keen sense of humor. When you tell a story to an Englishman, he laughs 3 times each time more heartily than before, once at the telling, once at the explaining and once when he really understands it. It may be a couple of days later. The Frenchman laughs only twice, once at the telling and once at the explaining. He never understands. The German laughs only once, that is at the telling; it is no use explaining to him. The American listens to the whole story with a solemn mein; he has heard the d-n yarn before and cannot bring himself to laugh.

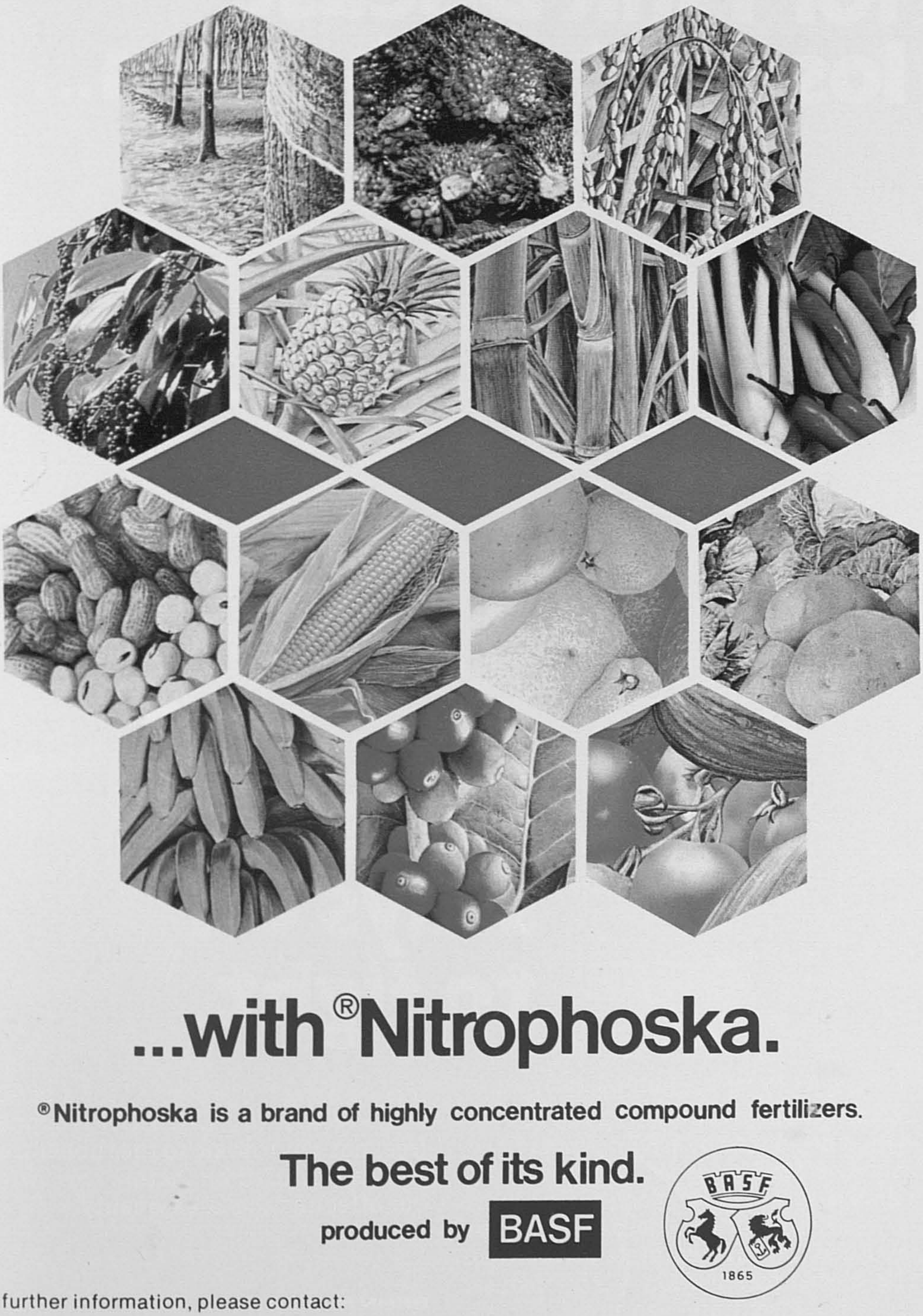
I have some sympathy for the Americans. Nothing can be more

frustrating or boring than to have to listen to stale stories. I am reminded of an occasion when George Bernard Shaw was entertaining some admirers of his from across the Atlantic. All the time they were there, they were doubled up with laughter developing stitches on their sides listening to his wisecracks and witicisms. They were surprised to see Mrs. G.B.S. rocking away on a rocking chair busy, knitting with both hands, absolutely unconcerned with what was going on. They felt sorry for the old man being married to a woman with, as they thought, no sense of humour. When he went out for a little while they took the opportunity to take her to task. They upbraided her by saying, "Madam. we have never in our lives heard such scintillating and brilliant conversation. How come you don't seem to have taken any notice of it?" She replied, "Gentleman, if I heard those stories once, I have heard them a thousand times. If I don't keep both my hands busy, I shall want to throttle him!"

Some of you may feel like throttling me. Most story-tellers have a limited repertoire and only a few of their stories are applicable or tellable on any one occasion. Humour, like history, tends to repeat itself. That is why most story-tellers start off by saying, "Stop me if you have heard this one". I tell my audience, "Don't stop me if you have heard this one but like an artist's model, just grin and bear (bare) it". I am aware there is a good turn-over of members at most Rotary Clubs and I shall be talking to new members and I hope old members have short memories and have forgotten my stories.

Reproduced from the Berita MMA by kind permission of the Author and Editor.

Watch your crops grow....



...with ®Nitrophoska.

®Nitrophoska is a brand of highly concentrated compound fertilizers.

The best of its kind.

produced by BASF

BASF 1865

For further information, please contact:

bm BEHN MEYER

• KUALA LUMPUR 69725-8 & 69544 • PENANG 22333 • IPOH 72342/3 • KOTA KINABALU 53607 • KUCHING 23747 • SINGAPORE 636633

Spray-on fungicides for Pink Disease lose out to the rain...

CALIXIN® stays on to fight.

CALIXIN Ready-Mixed contains Tridemorph—in a new fungicide formulation developed by RRIM, found to be highly effective against Pink Disease. Unlike spray-on fungicides, CALIXIN is ready-mixed, and needs only to be brushed on affected parts of the tree. Its special formulation – 75% natural rubber concentrate – ensures complete prevention of run-off due to rain, and treated areas are protected for a period of 2 – 3 months. CALIXIN is copper-free, not phytotoxic to the rubber tree, and can be used on mature trees without affecting the latex quality.

bm
BEHN MEYER
SINGAPORE—KUALA LUMPUR—IPOH—PENANG
636633 69725-8 & 69544 72342/3 22333

®Calixin is produced by BASF, W. Germany.

Social and Personal

On leave

6078 Mat bin Haji Syed, No 84 Saiong Lembah, Kuala Kangsar, Perak.

4869 Tan Kang Wye AISP, 58E Jalan Ong Kim Wee, Malacca.

Returned from leave

2696 Perkins, R B, PJK JP FISP, Bukit Tersenyum, Batu 10¼ Jalan Pantai, Port Dickson, Negri Sembilan.

Change of address

6357 Aziz Mohd Hashim, Gadek Estate, Tampin, Negri Sembilan.

6691 Anwar bin Shahbuddin (Johny), Tali Ayer Estate, Dennistown Division, Parit Buntar, Perak.

5852 Ahmad Zaini bin Mohd Tahir, Kekayaan Estate, Paloh, Johore.

5131 Ali bin Haji Ahmad AISP, Kemuning Estate, Tebong, Malacca.

6669 Abu Bakar bin Fadzil, Kuala Jelei Estate, Bahau, Negri Sembilan.

6297 Aritonang, Radja, Ulu Dusun Scheme, P O Box 1253, Sandakan, Sabah.

5786 Chik Lwi Siang, Craigielea Estate, Bukit Pasir, Muar, Johore.

6016 Chong Min Liong, Kirby Estate, Labu, Negri Sembilan.

5872 Cheah Fook Wan, Sungei Buloh Estate, Bukit Rotan, Selangor.

5810 Cates, A H, 4B, 74 Shirley Street, Wollstonecraft, NSW 2065, Australia.

6375 David, Michiel, Sungai Sembrong Estate, P O Box 28, Kluang, Johore.

5365 Farquharson, A J C, SDA, Horseshoe Cottage, Peasenhall, Nr Saxmundham, Suffolk, U.K.

6104 Fung Sui Kiong, P O Box 6, Semporna, Sabah.

6264 Gill, Surinder Singh, Budu Estate, Benta, Pahang.

5500 Heng Kuang Tioh, 84/1 Vichitsongkram Road, (opposite Surakul Stadium), Phuket, Thailand.

6576 Kandasamy, A @ Kelvin Mohan, c/o Block 'L' No 2, Hilltop Garden, Tawau, Sabah.

4307 Koshy, P J, AISP, c/o Regional Controller's Office, Kemuning Estate, Tebong, Malacca.

6077 Lim Chin Hock, d/a Pejabat Felda Wilayah NS Barat, Jalan Lister, Seremban, Negri Sembilan.

5302 Lee Swee Bin, Golden Hope Estate, P O Box 26, Port Kelang, Selangor.

6448 Low Eng Kiah, c/o H & C Latex Sdn Bhd, South Port, Port Kelang, Selangor.

5884 Lau Kok Chin, Mamor Sdn Bhd, P O Box 1, Kluang, Johore.

2868 Lewis, K J, Homegrounds, Jesse's Lane, Long Crendon, Aylesbury, Bucks, England.

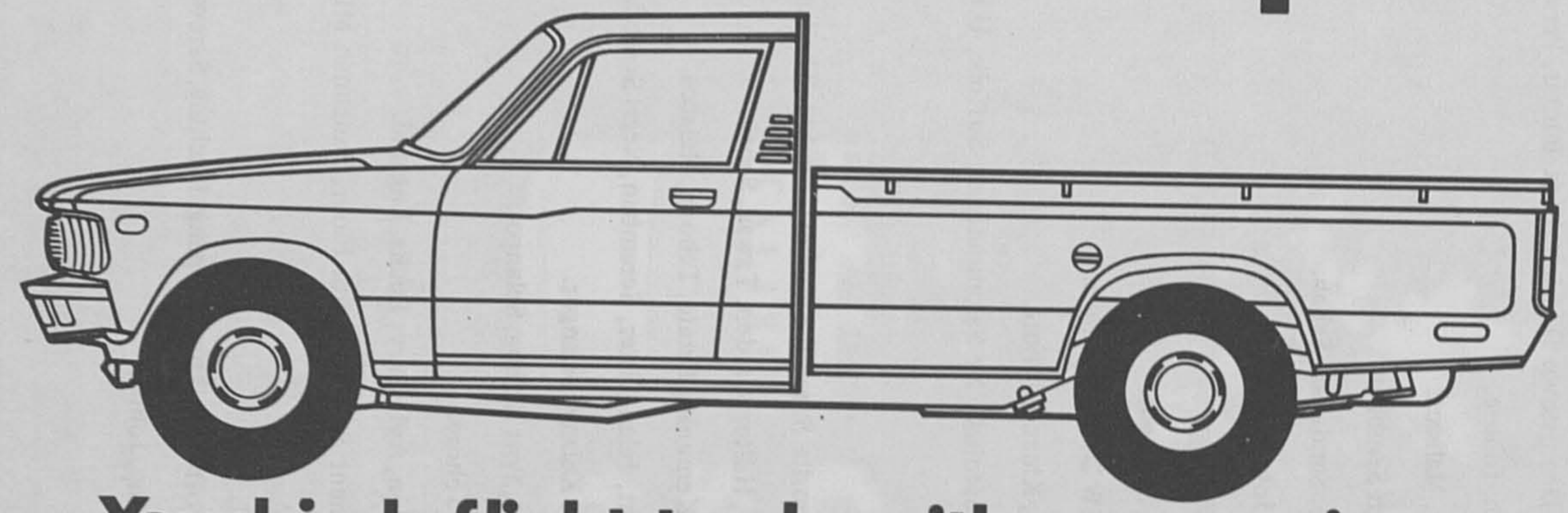
5950 Lum Kong Sun, James , Syarikat Steven Development Sdn Bhd, 6th Floor, Bangunan Ming, Jalan Bukit Nenas, Kuala Lumpur.

5243 Loh Ah Mee, Tali Ayer Estate, Bagan Serai, Perak.

5696 Mohd Amin bin Haji Satem, No 10 Taman Ricketts, off Jalan Tun Hj Openg, Kuching, Sarawak.

4352 Menon A J, Pekan Estate, P O Box 102, Layang Layang, Johore.

The new long Bedford light-trucks, diesel or petrol.

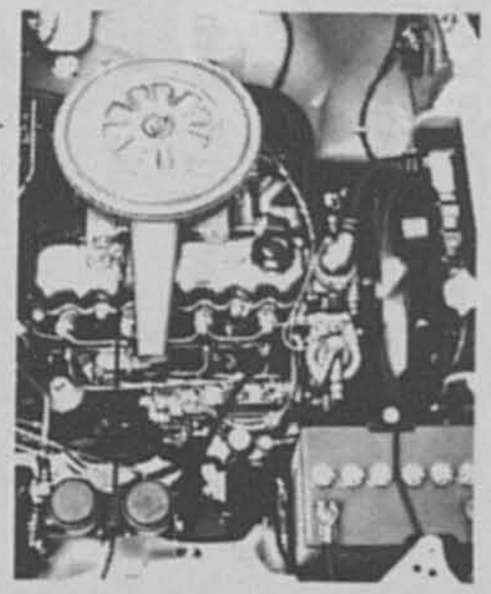


Your kind of light-trucks with more options than you've ever had before.

With a new wheel base 15.563 ins (395 mm) longer than its predecessor, the new KB25 series is now able to offer you greater versatility than any other light truck in Malaysia.

Behind it you have the famous Bedford name for quality, efficient service and turn round, plus the following options to make it the kind of light-truck you'll want to run.

Option 1: The C190 diesel engine designed for your kind of work.



A lot of people tend to think of diesel as only being for large trucks.

Right now we'd like to prove them wrong.

You see, the C190 diesel we've designed for our new KBD25 series incorporates quite a few engineering breakthroughs.

These breakthroughs make it exceptionally quiet, easy-to-handle, lightweight yet strong.

It also responds beautifully to the touch of the accelerator pedal, giving you extra power wherever and whenever you need it.

In fact, the C190's power output of 62 ps/4, 400 rpm is the highest in the world for an engine of this class.

And because it's diesel, the C190 has a much longer service life than comparable petrol engines — with increased economy and serviceability.

Neither will you have to continue worrying about conventional tune-ups, spark plugs, points, distributors, condensors or carburetors.

Actually, the only thing you're really going to have to worry about with the new diesel KBD25 is can you afford not to run one?

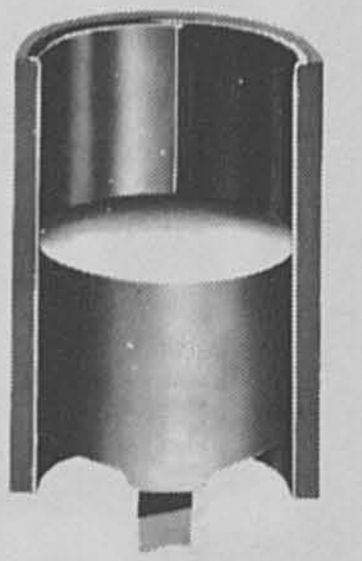
Option 2: The GI6IZ Petrol Engine Designed for your kind of work.

Probably the smoothest engine ever put into a light-truck the GI6IZ (like the C190 diesel engine) has extra large displacement pistons to churn out more power with less piston travel and the 5-bearing crankshaft delivers smooth quiet running with minimal vibration.

All adding up to more power for your money with greater overall efficiency.

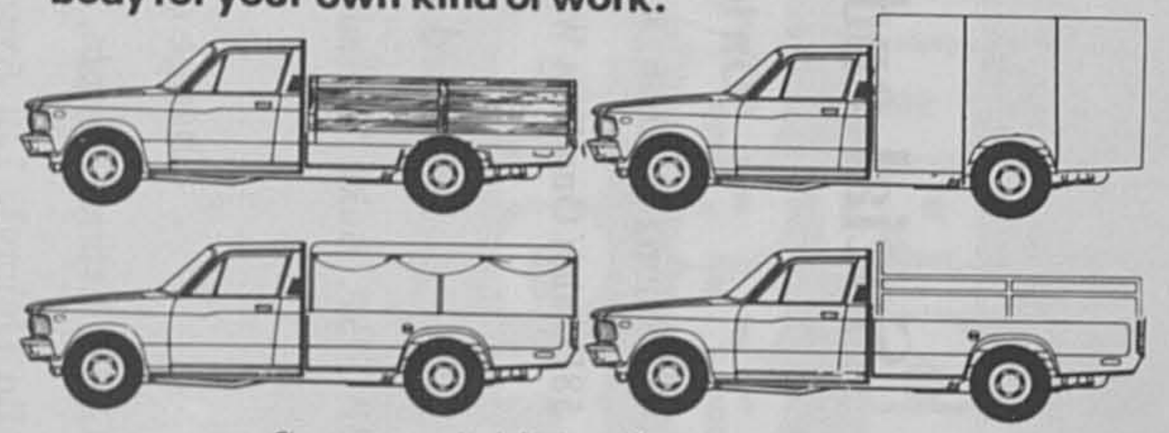
Take a close look at the petrol driven Bedford KB25.

It could well be just right for your kind of work.



Large displacement pistons with less piston travel give more power for your money and less wear and tear on your engine.

Option 3, 4, 5, 6, 7, etc: Choose your own kind of body for your own kind of work.



Choose your own kind of light-truck for your own kind of work.

The new increased chassis length comes ready for you to add any kind of body configuration that you want.

Open, shut, high or low, you name it and the new Bedford KB25's can take it.

Come and see for yourself at your nearest Bedford Dealer.

You could pick up the biggest bargain that you've ever made.

The new long Bedford: your kind of light-truck for your kind of work.

BEDFORD GM LIGHT Trucks

ME 7320

GM AUTHORISED BEDFORD DEALERS:

Lyons Motors: Kuala Lumpur, Petaling Jaya, Ipoh, Alor Star, Johore Bahru, Penang

Weame Brothers: Butterworth, Malacca, Temerloh

Orchard Motors: Petaling Jaya, Ipoh, Tampoi, Seremban

Lim Eng Chuan: Klang

Syarikat International Motor Finance: Seremban

Opel Agency: Kota Bahru

Syarikat Bumi Auto: Kuantan

Tai Seng & Company: Kuala Trengganu

Mok Dan Lui: Sandakan

6069 Muthu s/o Ratnam, Rasak Estate, Batu Tiga, Selangor.

5961 Nair, V D, East Estate, Carey Island, Port Kelang, Selangor.

5930 Neo Eng Soon, AISP, Plantation & Dev (M) Sdn Bhd, Bukit Cantek, c/o Wakil Pos, Kahang, Kluang, Johore.

5829 Ng Hark Peng, Siliau Estate, Siliau, Negri Sembilan.

6134 Pathmanathan, V, Sungei Wangi Estate, Sitiawan, Perak.

6167 Raghavan, P V U Krishnan, CEP Niyor Estate, P O Box 514, Kluang, Johore.

6566 Robb, N J, 6 Hanwell Court, Glen Waverley 3150, Victoria, Australia.

5963 Ramli bin Abd Majid, Kepong Estate, Kepong, Selangor.

5391 Seeveneserajah, K, Perhentian Tinggi Estate, Sungei Gadut, Negri Sembilan.

6734 Sukumaran s/o A Kunjan Nair, Ladang Tebrau, P O Box 501, Majidee, Johore.

4303 Spencer-Smith, S M, No 58 West Heath Road, Hamstead, London NW3, England.

6680 Selvaraj, Charles, Thye Group Estate, Thye Seng Division, P O Box 20, Sungei Patani, Kedah.

5611 Simen, Thomas, Edensor Estate, Mentakab, Pahang.

6612 Taeke Tuinstra, Pauw van Wieldrechtlaan 2, Zeist, Holland.

6509 Teh Sar Moh Nee, Layang Estate, P O Box 105, Layang Layang, Johore.

6526 Tai Lung Khim, Buntar Estate, Ghim Khoon Division, Serdang, Kedah.

5608 Teoh Ban Tong, LKTNS, Rancangan Silabukan, P O Box 211, Lahad Datu, Sabah.

6178 Tan Ten Chai, Joseph, P O Box 14, Tanjong-Aru, Kota Kinabalu, Sabah.

6574 Vaux, S G M, Swaziland Irrigation Scheme, P O Box 1, Tshanai, Swaziland.

New members

6716 Soon Pen Fong, Keng Chew Land Dev. Co-operative Society Ltd, P O Box 101, Sandakan, Sabah.

6717 Tan Hun Yong, Labis Bahru Estate, P O Box 17, Segamat, Johore.

6718 Yeoh Guan Aun, Edtech Associates Sdn Bhd, P O Box 163, Penang.

6719 Chiong Tan Lee, CEP. Rengam Estate, Rengam, Johore.

6720 Jones, B N A, Caixa Postal 445, Belem, Para 66000, Brasil.

6721 Phung Teik Hee, Devon Quality Control Laboratory, Kempas Devon Estate, Merlimau, Malacca.

6722 Mohd Awal bin Noordin, Kempas Devon Estate, Merlimau, Malacca.

6723 Chong Seong Hoe, United Malacca Rubber Estates Bhd, Machap Division, Durian Tunggal P O, Malacca.

6724 Tee Thiam Keng, Merlimau Estate, Merlimau, Malacca.

6725 Tee Keng Tong, Kinrara Estate, Petaling, Selangor.

6726 Lee Kok Seng, Kemayan Oil Palm Bhd, Triang P O, Pahang.

6727 Tan Tee Yong, Dunlop Estates Bhd, Bastion House, P O Box 55, Malacca.

6728 Suresh Thomas, Labu Estate, Labu, Seremban, Negri Sembilan.

6729 Ronstadt, R D J, Apartado Postal 43, Retalhuleu, Guatemala, Central America.

6730 Teoh Ee Seng, Kerilla Estate, Temangan, Kelantan.

6731 Haris bin Sidek, Tanah Merah Estate, Port Dickson, Negri Sembilan.

6732 Mohamed bin Sulaiman, No. 11, Eng Ping Garden, Labis, Johore.

6733 Nadarajan, S, Bukit Rajah Estate, Kelang, Selangor.

6734 Sukumaran s/o A Kunjan Nair, Ladang Sungai Papan, P O Box 106, Masai, Johore.

6735 Sahat Lumbantoruan, P T Uniroyal Sumatra Plantations, Kisaran, Sumatra E. C., Indonesia.

6736 Wildemar Harahap, Serbangan Estate – Uniroyal, Kisaran, Sumatra E.C., Indonesia.

6737 Abdul Rachman Sagala, P T Uniroyal Sumatra Plantations, Kisaran, Sumatra E.C., Indonesia.

6738 Amirsjah Pane, Kwala Piasa Estate, Kisaran, North Sumatra, Indonesia.

6739 Slamet Noegroho, P T Uniroyal Sumatra Plantations, Kisaran, Sumatra E.C., Indonesia.

6740 Letchmana, N, Ulu Bernam Estate, Ulu Bernam, Perak.

6741 Tan Jin Swee, Bukit Rajah Estate, Kelang, Selangor.

6742 Janssen, F W, Plantaciones Goodyear, Apartado 43, Retalhuleu, Guatemala, Central America.

6743 Ong Chee Sing, Sungei Buloh Estate, Bukit Rotan, Selangor.

6744 Soon Heng Teong, Paya Lang Estate, Batu Anam, Johore.

6745 Thaslim, P.T. Sinar Pandawa Rubber Plantation – Sennah Estates, 35 Jalan Hindu, Medan, Sumatra Utara, Indonesia.

6746 Kow Hong Sew, Jasin Lalang Estate, Jasin, Malacca.

6747 Paul Rajendram s/o John Packiam, Kuala Reman Estate, Panching, Kuantan, Pahang.

6748 Ng Kuek New, No. 188 Taman Asean, Jalan Malim, Malacca.

6749 Ng Tim Bock, Sabah Softwood Sdn Bhd, P O Box 137, Tawau, Sabah.

6750 Kannan Kutty, Mann Estate, Port Dickson, Negri Sembilan.

6751 Mohd Khairuddin bin Abdul Hamid, Prang Besar Estate, Kajang, Selangor.

6752 Gopala Kurup, K K, Boh Plantations Sdn Bhd, Ringlet, Cameron Highlands.

6753 Raja Khalid bin Raja Adnan, Yong Peng Estate, Yong Peng, Johore.

6754 Tio Poh Hock, Chin Teck Plantations Bhd, Gua Musang, Kelantan.

6755 Shanmugam s/o K Manicka, Ulu Yam Estate, Rawang, Selangor.

6756 Muhammad Kamil bin Haji Usman, P T Uniroyal Sumatra Plantations, Kisaran, Sumatra, Indonesia.

6757 Masrip, P T Uniroyal Sumatra Plantations, Kisaran, Sumatra, Indonesia.

6758 Subyantoro, R , Serbangan Estate, P T Uniroyal Sumatra Plantations, Kisaran, Sumatra, Indonesia.

6759 Adnan Nya' Umar, P T Uniroyal Sumatra Plantations, Kisaran, Sumatra, Indonesia.

6760 Bachtaruddin, P T Uniroyal Sumatra Plantations, Kisaran, Sumatra, Indonesia.

6761 Tengku Sjaifullah, Serbangan Estate, P T Uniroyal Sumatra Plantations, Kisaran, Sumatra, Indonesia.

6762 Simamora, B U D, P T Uniroyal Sumatra Plantations, Kisaran, Sumatra, Indonesia.

6763 Muhammad Muchtar Sumantri, P T Uniroyal Sumatra Plantations, Kisaran, Sumatra, Indonesia.

The Planter – Revised Advertising Rates

In order to keep pace with the rising cost of printing etc., we are compelled to revise our advertising rates from the November 1977 issue. The revised rates as listed below will apply for all future bookings.

Space	*Revised Rates*
Outside back cover	M$700
Inside back cover	600
Inside front cover	650
Full page (black & white)	250
Full page (colour)	500
Half page (black & white)	180
Inserts bound (1 page)	200
Inserts bound (2 pages)	250
Inserts loose (1 page)	150
Inserts loose (2 pages)	250

Colour Separation Charges will be levied at cost. Further, discount and commission rates have also been amended as follows, effective from the same issue.

Discount for 6 insertions	5%
Discount for 12 insertions	10%
Commission for Advertising Agents	15%

6764 Marpaung, Ir D D , P T Uniroyal Sumatra Plantations, Kisaran, Sumatra, Indonesia.

6765 Soepeno Djajadi, Serbangan Estate, P T Uniroyal Sumatra Plantations, Kisaran, Sumatra, Indonesia.

6766 Bachtiar Kalian, P T Uniroyal Sumatra Plantations, Kisaran, Sumatra, Indonesia.

6767 Rodrigo, M A, No. 2 Jalan Kolam Ayer, Kluang, Johore.

6768 Gunasekaran s/o V Uthiradam, Sepang Estate, Sepang, Selangor.

6769 Ng Kwong Wah, Paul, No. 1-A Jalan Templer, P O Box 16, Seremban, Negri Sembilan.

6770 Ng Kwong Chee, Andrew, No. 1-A Jalan Templer, P O Box 16, Seremban, Negri Sembilan.

6771 Gustaf A, Panjaitan, P T Uniroyal Sumatra Plantations, Kisaran, Sumatra, Indonesia.

6772 Mirun Edysyahputra, P T Uniroyal Sumatra Plantations, Kisaran, Sumatra, Indonesia.

6773 Firman Mangaratua Nainggolan, P T Uniroyal Sumatra Plantations, Kisaran, Sumatra, Indonesia.

6774 Endang Suderajat Sastraprana, P T Uniroyal Sumatra Plantations, Kisaran, Sumatra, Indonesia.

6775 Teuku Iljas, P T Uniroyal Sumatra Plantations, Kisaran, Sumatra, Indonesia.

6776 Ramachandran, K, Kuala Perak Estate, Teluk Anson, Perak.

6777 Pretam Singh Dhillon, Perak River Estate, Teluk Anson, Perak.

6778 Kandiah Jegarajah, Kelapa Sawit (T.A.) Sdn Bhd, No. 22 Jalan Ah Cheong, Teluk Anson, Perak.

6779 Kannan, S R, Kuala Perak Estate, Teluk Anson, Perak.

Rejoining

4999 Liew Sip Kee, Locked Bag 18, Tawau, Sabah.

5406 Paresh N Chakrabarty, See Sun Estate, P O Box 108, Rengam, Johore.

5364 Noordin, A M, No. 10 Jalan Daud, Kampong Bharu, Kuala Lumpur 03-09.

5832 Chandapillai, M M, N.L.D.A. Ministry of Agriculture, Kien Leong Building, Jalan Selangor, Petaling Jaya, Selangor.

Culinary Treasure

TANDOORI SHEHNAZ

Ingredients:

1 no. 750 g spring chicken (without skin)
200 g yoghurt
10 g garlic
10 g ginger
2 tbls. vinegar
2 tbls. coriander powder
2 tbls. cumin seed powder
1 no. lemon
1 tsp. orange colouring (liquid)
salt, black pepper and red chilly powder to taste

Method:

Slit chicken all over slightly.

Crush ginger and garlic.

Yoghurt to be beaten up or churned.

Mix together yoghurt, lemon juice, colouring, garlic, ginger and all spices, then marinate chicken in this mixture for at least 6 hours.

Half roast chicken in tandoor oven. Remove from oven and cool for 15 minutes before roasting completely.

Serve with lemon wedges, raw onion rings and decorative green chilly as garnishing.

Advertisement index

GUTHRIE KIMIA PRESENTS

The Polyphos® Dossier

Polyphos Dossier The Polyphos Dossier
Dossier The Polyphos Dossier The Poly
phos Dossier The Polyphos Dossier Th

TOP PRIORITY
FOR IMMEDIATE ACTION

For successful planting missions, every estate must be equipped with a copy of The Polyphos® Dossier. In today's progressive quality-conscious world you daren't be found without one.

It describes what the Guthrie Kimia team of Special Agents and Agronomists discovered from the world's largest phosphate deposit. It tells how the low iron and aluminium content of Polyphos® Rock Phosphate permits more of the vital phosphorus to penetrate the plant. It gives you the information you need to know, to accomplish your mission successfully .....

Contact the Special Polyphos® Agent at Guthrie Kimia and ask for a free copy of The Polyphos® Dossier.

Subject: Polyphos
Contents: General information, benefits, facts, figures and methods
Contact: Polyphos agent, Guthrie Kimia Sdn Bhd, 21 Jalan Gelenggang, Kuala Lumpur, Tel. 741444.

Guthrie Kimia
— We work with you

Guthrie Kimia Sdn. Bhd.
Wisma Guthrie 21 Jalan Gelenggang
Kuala Lumpur Tel. 741444