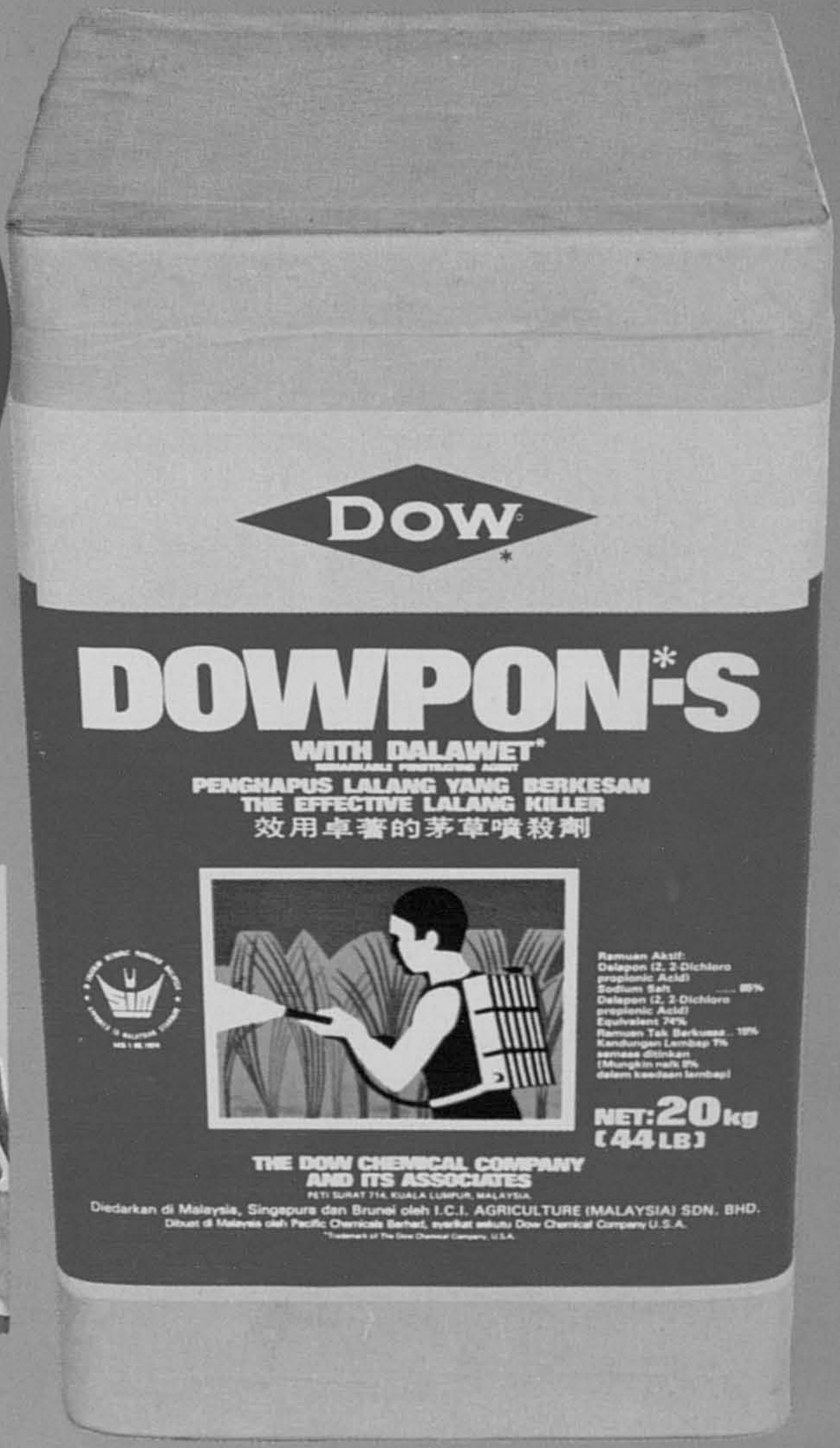
Published by the Incorporated Society of Planters, 1 Kelantan Lidcol, Kuala Lumpur 04-06 JULY 1976
Printed by Yau Kong Press, 26 Jalan 5/4, Kuala Lumpur 01-04 KDN 5432/76/12/Jld. 104

The Planter

NEW
20 kilo
BARU



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The Planter

KDN 9432

MAGAZINE OF THE INCORPORATED SOCIETY OF PLANTERS

VOL. 52 JULY 1976 No. 604

Publishing office :

1 Pesiaran Lidcol
Kuala Lumpur 04-06
Malaysia

Postal address :

P O Box 262
Kuala Lumpur 01-02
Malaysia

Telephone : 86396/209705

Telegrams : ISPLA

Price : M$3.00

Annual subscription : M$36.00

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The Planter assumes no responsibility for the statements and opinions expressed by contributors.

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: —

	During the calendar year in which eligibility for membership occurred and the 4 succeeding calendar years.	Subsequently
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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.

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The Planter

KDN 9432

MAGAZINE OF THE INCORPORATED SOCIETY OF PLANTERS

(1) *The Planter* is published monthly from the Society's Office at 1, Pesiaran Lidcol, Kuala Lumpur 04-06, 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 2 000 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.

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Editorial:

THE AMBITIOUS 'LEAP FORWARD'

Malaysia's development efforts have acquired 'new dimensions', says the Prime Minister, YAB Datuk Hussein Onn, in his foreword to the Third Malaysia Plan (1976–80) just announced.

None could have put it better, nor in more modest, yet highly pragmatic terms indeed—virtues for which our Third Prime Minister (like his illustrious father, the late Dato' Onn bin Ja'afar) is already well known among friends and foes alike!

The Third Malaysia Plan, envisaging the nation's 'triple thrust' against poverty, remnants of the 'balkanised' society of colonial days and anti-national forces, represents the biggest-ever outlay in terms of materials, money and manpower.

Even as the Prime Minister himself stated, Malaysia's now well-known national goals have been given more concrete and explicit form in the Third Malaysia Plan, "which has been painstakingly formulated to take full cognizance of the socio-economic needs of our multi-racial people, the political realities of our time and the security threat confronting us".

In ascending order of importance, we have learnt to plan together for a strong economy, a stable society and a safe country—in successive development plans for the respective quinquennium. That social pressures and security requirements have been successfully integrated into the framework of economic development is no mean achievement—especially for a semi-developed nation like Malaysia, notwithstanding the initial advantages we have enjoyed in this regard.

Needless to say that our first 'advantage' was freedom itself . . . we had in fact made a head-start with five year plans even before our Merdeka Day (1955–60), and we have learnt to build steadily on the solid foundations laid by the subsequent efforts so tastefully and innovatively woven together within the infrastructure of Malayan, then Malaysian Development Plans.

Now, we intend to hit at poverty, racialism and rancour in no uncertain terms . . . in so doing, we shall take on all comers, whether they are communists or communalists masquerading in whatever disguise or dare!

The Malaysian economy is in a strong position to take full advantage of these opportunities (or challenges), thanks to the forecasted expansion of world economic activity which should generate a substantial growth in demand for Malaysian exports during the next five-year period.

The total investment target under the TMP is M$22.9 billion in real terms (at 1970 prices) and $44.2 billion at current prices. It amounts to an increase of 49.3% over the cumulative amount expanded in real terms during the Second Malaysia Plan. Of the total, some 40.3% of the anticipated development would be in the public sector—leaving a major share of it all to the genius and entrepreneurship of the private sector!

Public sector expenditure envisaged during the TMP period is $18.6 billion, some 25.5% of it to be invested in agriculture, and a further 36.5% in infrastructure development as compared to 9.5% for mining, manufacturing and commerce, 16.6% for social development including education and 11.9% for defence and security.

Thus, agriculture will continue to remain the mainstay of the Malaysian economy, with the public sector providing the opportunities (including land) and the private sector entrepreneurially exploiting such opportunities—but, "along socially responsible lines".

The TMP states that, conscious of the need to *restore* confidence in the investment climate, the government would continue to take positive measures towards developing a constructive 'working partnership' with the private sector . . . it is now upto the latter to respond positively, especially in relation to the achievement of the objectives of the New Economic Policy.

The TMP hopes to 'blend' the strength-features of the Malaysian society (*e.g.*, young, adaptable and dextrous population and work force which is also substantially literate) to overcome the challenges posed by the 'triple torments'. The effects of development on the nation's environment will not also be ignored.

The TMP has also emphasised that, in the coming years, corrective action 'can and will be taken' to steer more efficiently the growth of employment in the major sectors of the economy so that it progressively reflects the racial composition of the labour force. However, the TMP has also assured that, in this regard, the government will ensure that any possible adverse impact such action would have on the economic aspirations of any group including the foreign sector will be minimized.

A similar, and equally welcome, feature as emphasised by the Prime Minister himself in Parliament is that uncertainties in implementation will be removed 'once and for all', and certain basic principles will govern the mode of enforcing policies for restructuring the Malaysian society.

To the world of the Planter, the TMP perhaps provides the greatest-ever opportunity as well as professional challenge.

For, the pace of development during the TMP period may perhaps be unrivalled and unprecedented . . . yet, such pace will—and must—come about only along "socially responsible lines".

This is no shocking development however. The advanced societies of the west have, for many years, known the price of corporate behaviour not in keeping with socially responsible attitudes of entrepreneurship and enterprise.

Thus, these societies have learnt to restructure their policies and approaches to ensure that, in the race for progress and prosperity, the well-being of the community as a whole is not sacrificed at the altar of urban elitism, entrepreneurship and vested interest, all banes of irresponsible, albeit unfettered, private capitalism.

That Malaysia has chosen to come to grips with this problem even in the early stages of her national socio-economic development is in itself a tribute to the calibre of national leadership and the pragmatism of political behaviour in this country.

Given the same goodwill and understanding which pulled us through the more taxing quinquennium just ending, there is no doubt that Malaysia shall emerge once again as the pioneer in planning for progress—the Third Malaysia Plan is well and truly a blueprint for our ambitious 'leap forward' together into a future in which the best defence of freedom shall be stringent self-discipline, however irksome in the interregnum.

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KL 836(DC 10)	2025	Sun	1035	Mon
Amsterdam to Kuala Lumpur				
KL 831(DC 10)	0940	Mon	1025	Tues
	via Singapore			
KL 845(747B)	1810	Mon	1905	Tues
KL 843(747B)	1815	Wed	1905	Thur
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Planter, Kuala Lumpur **52**: 257–270 (1976)

ESTATE ENGINEERING AND MECHANIZATION

With this issue, *The Planter* begins publication of papers presented at the Society's 1975 Conference on Estate Engineering and Mechanization. The papers will appear in order of their presentation, and such editing as has been done, in no way affects their technical content.

Regulations governing buildings on estates

DIONG CHIN SAN*

SUMMARY

This paper is concerned with workers' housing (i.e. workers' dwellings and nurseries) on estates. It is based on provisions made under the Workers (Minimum Standards of Housing) Act, 1966. Its aim is to describe in simple language the regulations contained in the Workers (Minimum Standards of Housing) Regulations, 1966 and the Workers (Minimum Standards of Housing) (Nurseries) Regulations, 1969 and to arrange them in a coherent, easy-to-follow manner that will save employers who intend to construct workers' dwellings or nurseries the trouble of having to wade through a mass of stipulations in order to find the relevant regulations, which may lie scattered in the book, governing the construction. For example, if an employer wants to know about all requirements concerning floor space, inner partitions, sleeping platforms, etc., he needs only to refer to the section under the heading "habitable area" in the paper; if he wants to know the sanitary requirements, he need only refer to the sections under "drainage" and "latrines".

The paper covers three different aspects; they are (a) the site, (b) the building and (c) sanitation.

Besides reflecting the Labour Department's interpretation of the law on workers' housing, the paper also presents certain "recommendations" made by the Department with a view to securing general improvement on the buildings. These are made as a result of the long experience the Department has had in dealing with employers and the favourable response from the employers to such recommendations.

Employers will, therefore, find the paper handy and useful and that the construction of workers' dwellings in accordance with the conditions spelt out in the paper will not only meet with the prompt approval but also receive the blessing of the Labour Department.

INTRODUCTION

This paper is confined to estate buildings used for the housing of workers or as nurseries for workers' dependants.

The law governing workers' housing, including nurseries, is laid down in the Workers (Minimum Standards of Housing) Act, 1966. The act requires all employers who elect to house their workers to ensure that the buildings they provide do not fall short of the standards laid down in the Workers (Minimum Standards of Housing) Regulations, 1966 and the Workers (Minimum Standards of Housing) (Nurseries) Regulations, 1969. These standards are only the minimum; they should not be mistaken for the maximum.

---

* Kementerian Buroh dan Tenaga Rakyat, Kuala Lumpur.

Under the provisions of the Act, employers may be given approval to construct permanent or temporary workers' dwellings to suit their needs. Generally speaking, permanent dwellings are for the married couples or for those workers with dependants residing with them, while temporary dwellings are for the single workers, and the use of which is for a period of not more than 3 years in the first instance and thereafter for such extended periods (not exceeding 12 months at any one time) as the Labour Department may specify. Since estates are generally interested only in providing housing on a long-term basis, regulations governing temporary dwellings have been excluded from this paper. *Items marked with an asterisk denote Labour Department recommendations.*

PROCEDURE REGARDING CONSTRUCTION OF WORKERS' DWELLINGS

Before an employer commences building dwellings for his estate workers he must ensure that the following steps are taken:

The site

After having selected a suitable site, submit a site plan, in quadruplicate, to the Labour Department for necessary approval. The site plan must

(1) be drawn in ink on a scale of a minimum of 1 in. to 66 ft but a photo-stat or sun-print can also be accepted;

(2) specify

(a) name of place of employment (estate);

(b) name of employer; and

(c) details concerning location of existing latrines, wash places, factories, offices and other buildings, roads situated within 200 yards of proposed building, proposed site of new buildings, distance between proposed buildings and other buildings and roads, location of new and existing paths, roads, surface drains, subsoil pipes and sewers within 200 yards of proposed building.

See regulations 32 and 33 of Workers (Minimum Standards of Housing) Regulations, 1966.

The building

A building plan must be submitted, in quadruplicate, to the Labour Depart-Department for necessary approval. It must

(1) be drawn in ink on a scale of a minimum of 1 in. to 8 ft but a photo-stat or sun-print can also be accepted;

(2) specify

(a) name of place of employment (estate);

(b) name of employer;

(c) whether permanent or temporary dwelling; and

(d) details relating to structure of building.

In the case of a building originally built for a purpose other than the housing of workers or of an existing building below the stipulated minimum standards, which is to be converted and brought up to the required standards, a plan properly drawn in ink on a minimum scale of 1 in. to 8 ft must be submitted in quadruplicate to the Labour Department for necessary approval. The plan will have to set out

(a) name of place of employment (estate);

(b) name of employer;

(c) plan of existing building and its location; and

(d) details relating to the conversion.

See regulation 32 of Workers (Minimum Standards of Housing) Regulations, 1966.

The details relating to structure of building are as follows:

Habitable area

(a) Roof covered floor space of not less than 260 sq. ft, excluding area covered by eaves, which can be either

i. all fully enclosed; or

ii. not less than 200 sq. ft fully enclosed with remainder forming a verandah or verandahs and

iii. verandah not less than 5 ft on any side.*

(b) Shorter side of building not less than 10 feet.*

(c) Longer side parallel to roof ridge; but if the shorter side is 15 ft or more, it may be parallel to roof ridge.*

(d) Floor

i. if not raised, to be of not less than 3 in.-thick cement rendered concrete or brick;

ii. if raised, to be of planed wood and $2\frac{1}{2}$ ft–$4\frac{1}{2}$ ft above the level of surrounding ground.

(e) Outer walls

i. to be not less than 10 ft high from floor level to top of wall-plate;

ii. if floor is not raised, lower portion not less than 9 in. high to be of brick, concrete or other impervious material;

iii. to be of weather resistant material; attap, thatched grass, split bamboo, unplaned timber or corrugated iron sheets not allowed.

(f) Inner walls separating dwellings to extend to roof.

(g) Inner partitions separating rooms within dwellings to be 6 ft–6½ ft high.

(h) Room, if provided within a dwelling

i. to have a floor area of not less than 80 sq. ft with a minimum of 8 ft on each side.

ii. to have a door to ensure privacy.*

(i) Ventilation

For each room or area walled on all sides, total area of openings into the open air to be not less than $\frac{1}{8}$th of floor area, consisting of:

i. permanent openings of at least 1/80th of floor area placed as near as possible below the level of ceiling or the roof framing, and resistant to entry of driving rain;

ii. permanent openings of at least 1/80th of floor area placed elsewhere which will be resistant to entry of driving rain and will prevent direct vision into the dwelling at any point below 6 ft from the floor level;

iii. remaining openings in the form of window or windows.

(j) Sleeping platforms or bedsteads with space not less than 3 ft × 6½ ft per adult, unless the dwelling has a raised, wooden floor; immovable platforms should be not less than 2 ft high.*

(k) Sleeping accommodation for spouses to be screened off by a partition 6 to 6½ ft high to ensure privacy.*

(l) Shelves or cupboard or *almeirah* with surface area of not less than 25 sq. feet.

See regulations 6, 11, 12, 13, 15 and 16 of Workers (Minimum Standards of Housing) Regulations, 1966.

Roof

(a) To be of water-proof material; attap, thatched grass or corrugated iron sheets not allowed.

(b) Ceiling or insulation of aluminium foil or fibreglass to be provided for roof of material other than tiles, concrete or wood-wool slabs or asbestos cement or aluminium sheets.

(c) Eaves to project horizontally 18 in. from outside wall.

See regulations 14 and 15 of Workers (Minimum Standards of Housing) Regulations, 1966.

Kitchen

(a) To be so constructed as to keep smoke from entering habitable area; e.g. under a separate roof connected to habitable area by a covered way.

(b) To have a height of not less than $7\frac{1}{2}$ ft at any point.

(c) To have a floor area of not less than 50 sq. ft, with a minimum of 5 ft on each side.

(d) To have outer walls that are

i. of weather resistant material; attap, thatched grass, corrugated iron sheets, split bamboo or planed timber not allowed;

ii. of brick or concrete or other impervious material for the first $2\frac{1}{2}$ ft from floor.

(e) To have openings, for purpose of ventilation, of not less than $\frac{1}{6}$th of floor area, inclusive of fixed openings of not less than 1/40th of floor area.

(f) To have concrete or cement rendered brick floor of not less than 3 in. thick, laid to fall to an outlet.

(g) To have outlet leading to drain or soak-away or other disposal point.

(h) To be provided with

i. fireplace of brick or concrete with smokehood and flue of not less than 8 in. in diameter; the flue should extend to a height of 3 ft from the roof;*

ii. durable working table *(with surface area of not less than 2 ft × 3 ft);

iii. shelves or cupboard or meatsafe with surface area of not less than 18 sq. ft;

iv. adequate supply of wholesome water for drinking and cooking purposes, *(to be piped or by other means as approved by Labour Department).

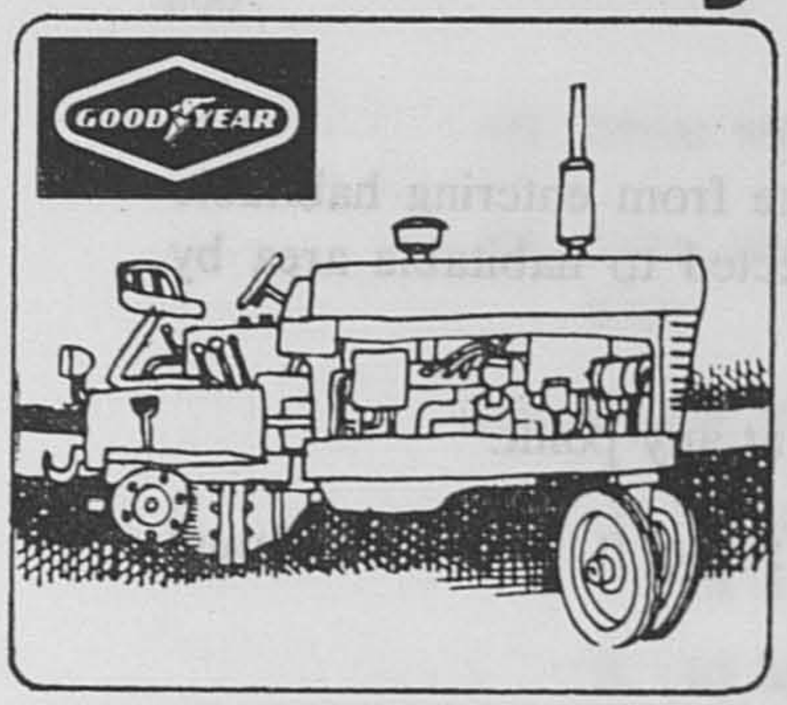
See regulation 17 of Workers (Minimum Standards of Housing) Regulations, 1966.

Bathroom or washing space within dwelling

(a) To have a floor area of not less than 16 sq. ft, with a side of at least 3 feet.

(b) To have at least 3 in. thick concrete or cement rendered brick floor, laid to fall to an outlet.

Goodyear leads the field.



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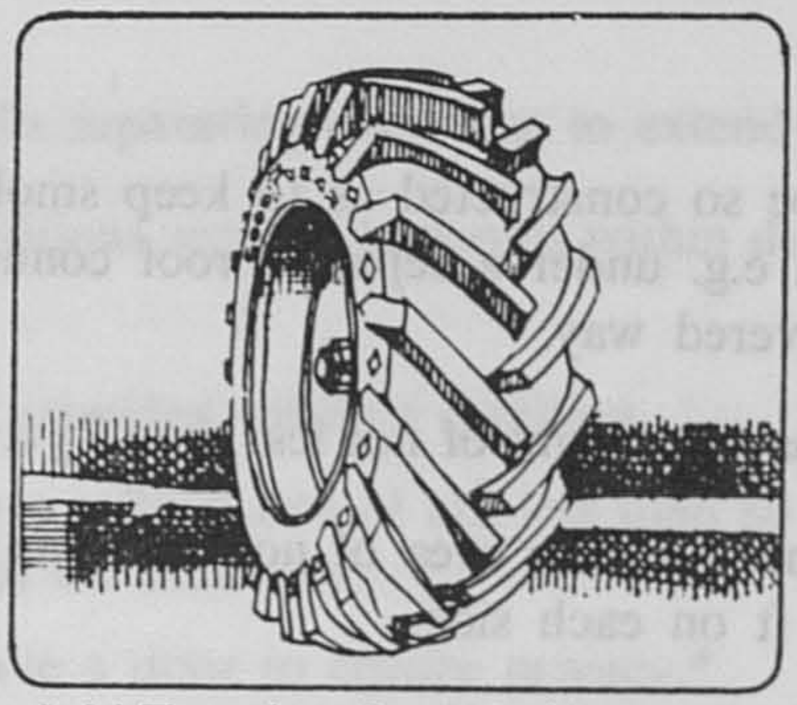

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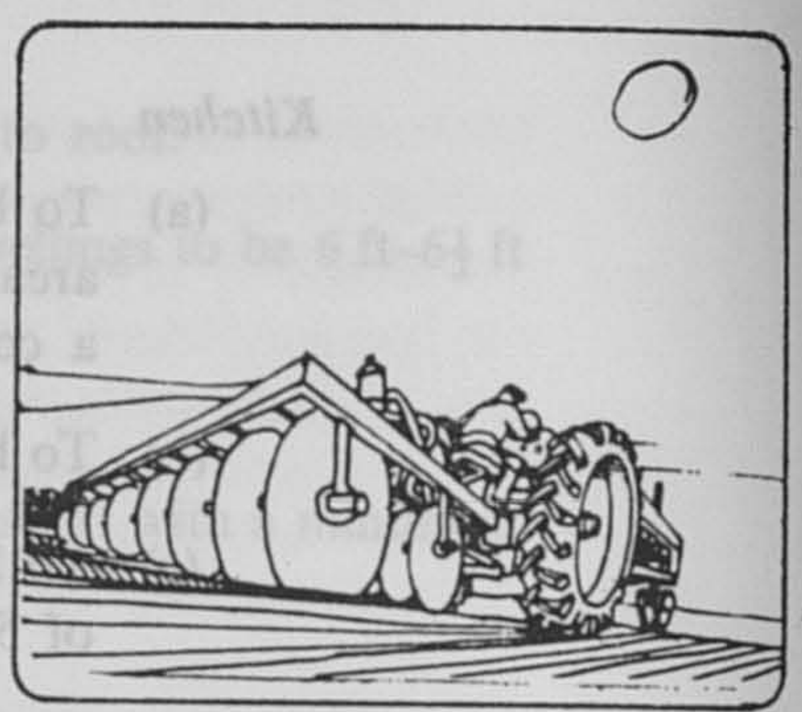
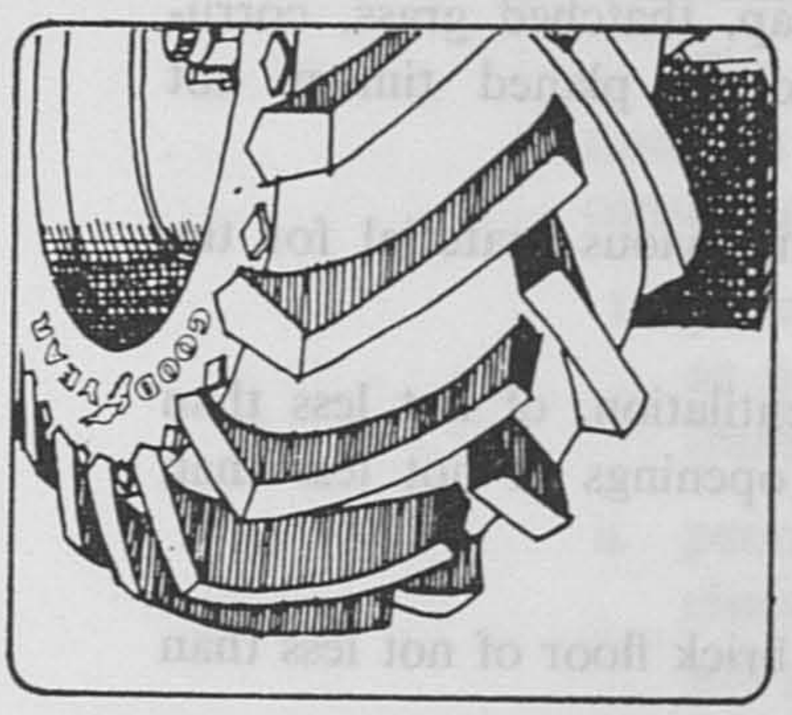
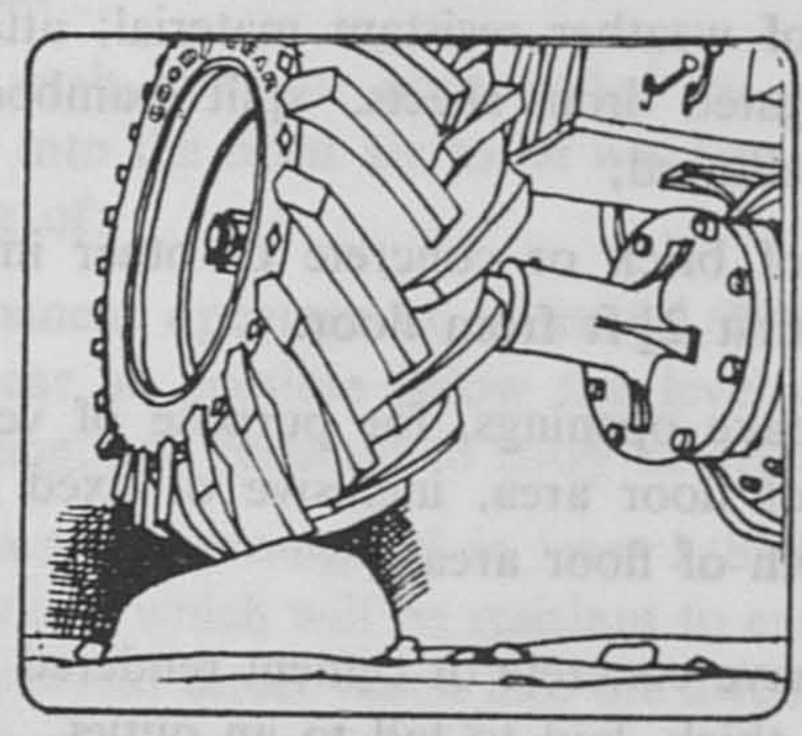


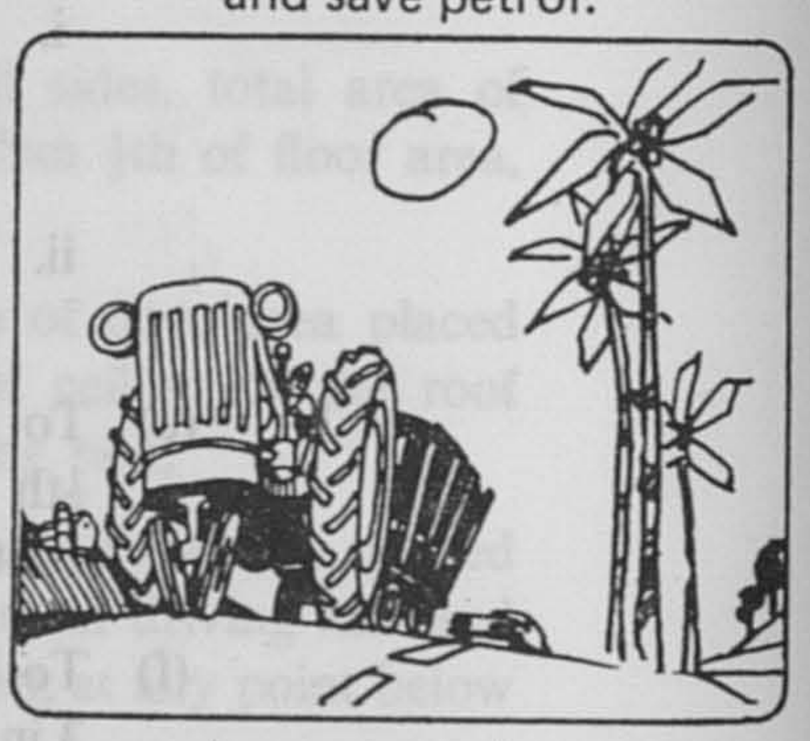
Now — get extra pulling power and save petrol.



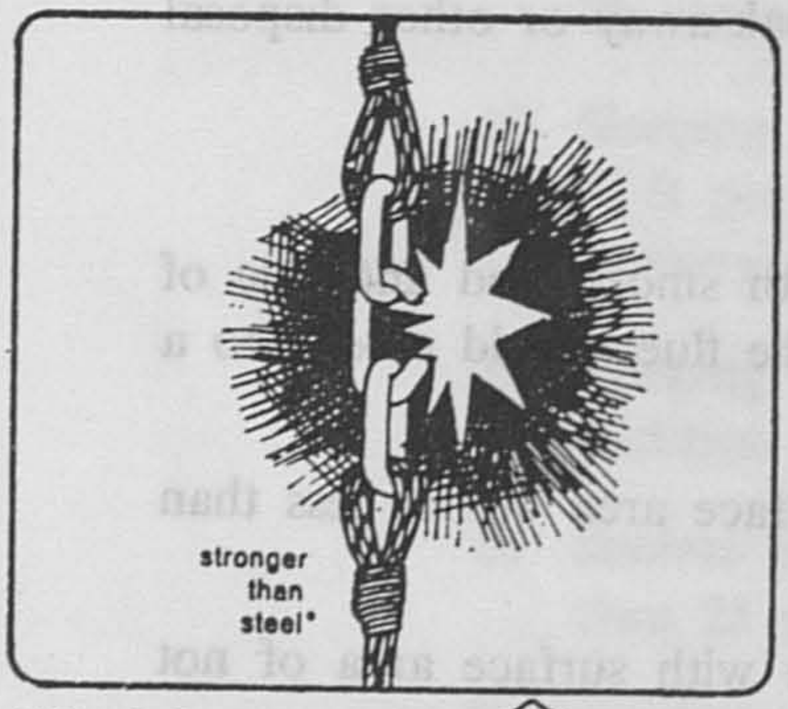
Reason: wedge-grip action.



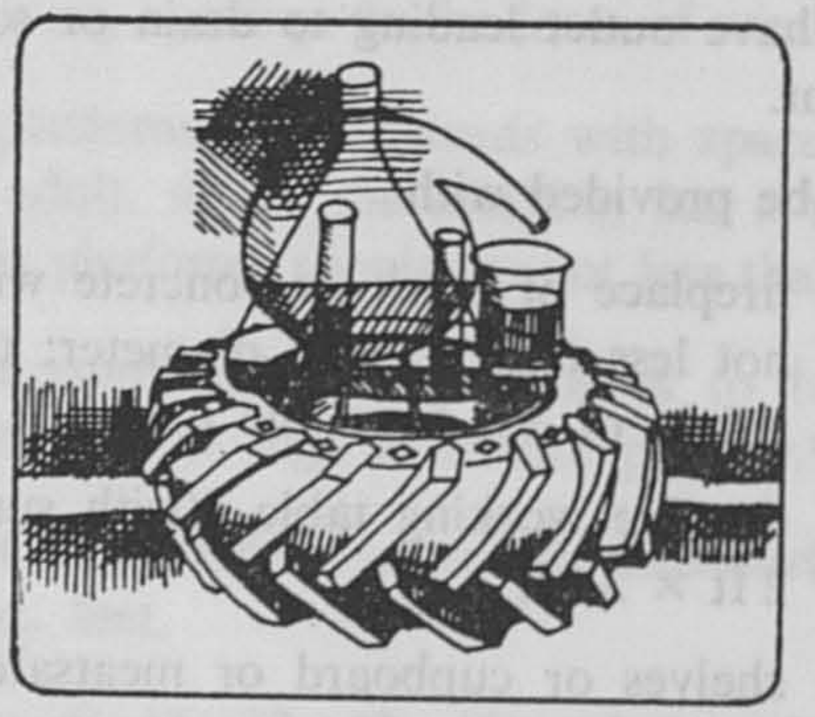
Forget field damage . . .



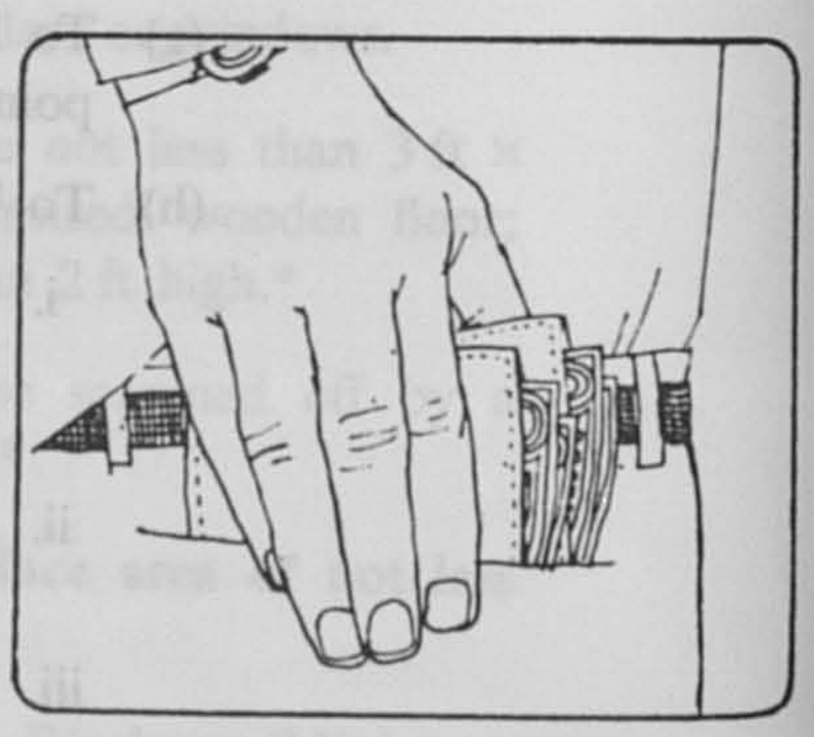
and excess road wear.



Why? Super tough 3T nylon cord body . . .



tough rubber compounds.



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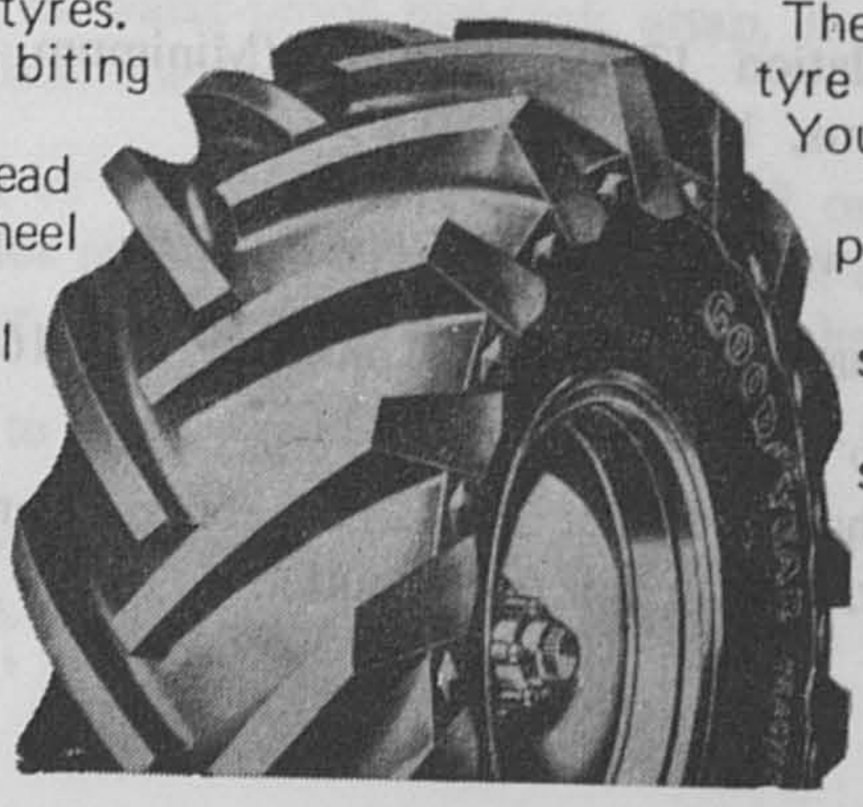

GOODYEAR

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(c) To have an outlet leading to drain or soakaway or other disposal point.

(d) To have walls that are

i. of concrete or other impervious material for the first $2\frac{1}{2}$ ft from ground level;

ii. not less than $7\frac{1}{2}$ ft high*;

iii. of weather-resistant material; attap, thatched grass, corrugated iron sheets, split bamboo and unplaned timber not allowed.

(e) To provide ventilation by means of openings

i. equivalent to $\frac{1}{8}$th of floor area;

ii. in the form of fixed louvres*;

iii. placed not below $6\frac{1}{2}$ ft from ground level.

(f) To provide adequate piped water supply or other means as approved by Labour Department.

Communal ablution block may be permitted by the Labour Department if they are satisfied that the available water supply is inadequate for the provision of individual bathrooms or washing spaces; it should

i. be between 25 ft and 150 ft from the dwellings it serves;

ii. have separate compartments for each sex;

iii. have a washing space of not less than 16 sq. ft for every two dwellings;

iv. have concrete or cement rendered brick floor that is at least 3 in. thick*;

v. have outlet leading to drain or soak-away or other disposal point;

vi. have water-proof material, other than attap or thatched grass, for the roof;

vii. have walls that are

(a) of weather resistant material; attap, thatched grass, corrugated iron sheets, split bamboo or unplaned timber, not allowed;

(b) of concrete or other impervious material for the first $2\frac{1}{2}$ ft above ground level*;

(c) not less than $7\frac{1}{2}$ ft high;

viii. have permanent openings, for purpose of ventilation, equal in area to $\frac{1}{8}$th of floor area in the form of louvres, at least $6\frac{1}{2}$ ft above floor level;

ix. have eaves projecting horizontally 18 in. from outside wall;

x. have adequate piped water supply or other means as approved by Labour Department.

See regulation 18 of Workers (Minimum Standards of Housing) Regulations, 1966.

*Doors and windows**

(a) Windows to open outwards or slide horizontally.

(b) Doors to open flat against walls.

(c) Upper half of stable door to be regarded as a window.

Painting

(a) Each dwelling to be painted or otherwise finished (both inside and outside) so as to present a satisfactory appearance.

(b) Black or dark brown paint is not permitted*.

See regulation 21 of Workers (Minimum Standards of Housing) Regulations, 1966.

Sanitation

Drainage

(a) Adequate surface drains with aprons to be provided on all sides of a dwelling or block of dwellings.

(b) They should be so constructed as to catch rain water from roof.

(c) They should be of concrete, with adequate outlet.

See regulation 10 of Workers (Minimum Standards of Housing) Regulations, 1966.

Latrines

These should be either of the aqua privy or of the septic tank (water borne) type.

(a) Aqua privy

i. One seat for every two dwellings.

ii. Located not less than 10 ft from, and with no direct access into, dwelling or kitchen.

iii. Having a tank with a working capacity of at least 300 gallons plus 15 gallons for every adult in excess of ten using the aqua privy.

iv. Design, construction and method of disposal of effluent to be approved by Medical Officer of Health.

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(b) Septic tank (water-borne) type

i. Preferably one seat for each dwelling; one seat for every two dwellings is allowed.

ii. Arrangements for flooding, discharging, or other form of disposal of effluent to be approved by Medical Officer of Health.

Pit or borehole latrines may be permitted if Labour Department is satisfied that the provision of an aquaprivy or septic tank (water-borne) latrine is not practicable.

Pit latrine

i. To be not less than 50 ft from any dwelling and 150 ft from any well, and not above the water level of any such well.

ii. To have one seat for every dwelling.

iii. Pit to be not less than 10 ft deep from the level of the squatting plate.

iv. Diameter of round pit or width of oblong pit to be not more than 3 feet.

v. Length of oblong pit to be not more than 12 feet.

vi. Pit to be unlined.

vii. Pit to be covered with reinforced concrete squatting plate of adequate thickness not less than 12 in. wider than the width of pit at ground level.

viii. Squatting plate sloping towards hole or holes each measuring 10 in. × 4½ in. to be provided with raised foot rests on each side embedded in the plate, and to be surrounded with a concrete apron not less than 2 ft wide sloping to a concrete gutter of adequate capacity to prevent flooding of pit.

ix. Superstructure to be of timber*.

x. Roof to be of waterproof material*; attap or thatched grass not permitted.

Bore-hole latrine

i. To be not less than 50 ft from any dwelling and 150 ft from any well.

ii. To have one seat for each dwelling.

iii. Pit to be not less than 18 ft deep or deeper as directed by Medical Officer of Health.

iv. Pit to be unlined; its diameter between 16 in. and 18 inches.

v. Pit to be covered with reinforced concrete squatting plate of adequate thickness not less than 12 in. wider than the width of pit at ground level.

vi. Squatting plate sloping towards hole or holes each measuring 10 in. × $4\frac{1}{2}$ in. to be provided with raised foot rests on each side embedded on the plate, and surrounded with a concrete apron not less than 2 ft wide sloping to a concrete gutter of adequate capacity to prevent flooding of pit.

vii. Superstructure to be of timber*.

viii. Roof to be of water-proof material*; attap or thatched grass not permitted.

Each latrine compartment should have*

i. a floor area of not less than 12 sq. ft, with a side of not less than $2\frac{1}{2}$ feet;

ii. a concrete floor;

iii. a height of not less than $7\frac{1}{2}$ ft at any point;

iv. walls ensuring privacy of which the first $2\frac{1}{2}$ ft from ground to be of concrete or other impervious material;

v. permanent openings equal in area to $\frac{1}{8}$th of floor area in the form of fixed louvres placed not less than $6\frac{1}{2}$ ft from floor level for ventilation purposes.

See regulation 19 of Workers (Minimum Standards of Housing) Regulations, 1966.

Combined latrine and washing space within a single room of dwellings should have

i. a floor area of not less than 20 sq. ft, with a side of not less than 3 feet;

ii. a concrete floor;

iii. a height of not less than $7\frac{1}{2}$ ft at any point;

iv. walls ensuring privacy of which the first $2\frac{1}{2}$ ft from ground to be of concrete or other impervious material;

v. permanent openings equal in area to $\frac{1}{8}$th of floor area in the form of fixed louvres placed not lower than $6\frac{1}{2}$ ft from floor level for ventilation purposes.

See regulation 20 of Workers (Minimum Standards of Housing) Regulations, 1966.

General requirements

(a) Each dwelling occupied by married couple or worker with dependants not to be shared with outsiders.

(b) Each dwelling to accommodate not more than five adults in one family, unless there is added to the dwelling a fully enclosed area of 40 sq. ft, *with proportional increase to kitchen, verandah, shelves, sleeping accommodation, bathroom and washing facilities for every adult in excess of the five adults accommodation therein.

(c) Two children of between 3 and 11-years-old to be deemed as adult.

(d) Each block of dwellings to have not more than four units, unless approved by Labour Department.

(e) Each dwelling to be not less than 20 ft from edge of any road or boundary of road reserve in case of public highways.

(f) Distance between any dwelling or block of dwellings and any other dwelling or block of dwellings to be

i. not less than 25 ft front to front;

ii. not less than 20 ft in other cases.

(g) Where dwelling is shared by single workers:

i. workers to be of the same sex;

ii. each person to have not less than 52 sq. ft habitable area that is either

(a) all fully enclosed; or

(b) not less than 40 sq. ft fully enclosed, with remainder forming a verandah.

iii. not more than four persons to be accommodated in the dwelling;

iv. employer to notify Labour Department of sharing by single workers.

See regulations 6, 7, 8, 9 and 22 of Workers (Minimum Standards of Housing) Regulations, 1966.

PROCEDURE REGARDING CONSTRUCTION OF NURSERIES

Before an employer commences building nurseries for his workers' dependants he must ensure that the following steps are taken:

The site

After having selected a suitable site, submit a site plan, in quadruplicate, to the Labour Department for necessary approval. The site plan must

1. be drawn in ink on a scale of a minimum of 1 in. to 66 ft, but a photostat or sun-print can also be accepted;
2. specify
   i. name of place of employment;
   ii. name of employer; and

iii. details concerning location of existing latrines, wash places, factories, offices and other buildings, roads situated within 200 yards of proposed building, proposed site of new buildings, distance between proposed buildings and other buildings and roads, location of new and existing paths, roads, surface drains, subsoil pipes and sewers within 200 yards of proposed building.

See regulation 2 (4) of the Workers (Minimum Standards of Housing) (Nurseries) Regulations, 1969.

Under no circumstances should a nursery be sited nearer than 40 ft from the edge of any road or any other building; neither should it be sited within a road reserve.

See regulation 8 of the Workers (Minimum Standards of Housing) (Nurseries) Regulations, 1969.

The building

A building plan must be submitted, in quadruplicate, to the Labour Department for necessary approval. It must

1. be drawn in ink on a scale of a minimum of 1 in. to 8 ft, but a photostat or sun-print can also be accepted;

2. specify

   i. name of place of employment;

   ii. name of employer;

   iii. whether permanent or temporary building; and

   iv. details relating to structure of building.

In the case of a building to be converted, a plan properly drawn in ink on a minimum scale of 1 in. to 8 ft must be submitted, in quadruplicate, to the Labour Department for necessary approval. It has to set out—

i. name of place of employment;

ii. name of employer;

iii. plan of existing building and its location; and

iv. details relating to the conversion.

See regulation 2 (3) of Workers (Minimum Standards of Housing) (Nurseries) Regulations, 1969.

The details relating to structure of building are as follows:

General requirements

i. A covered floor space of not less than 200 sq. ft, excluding verandahs and space covered by the eaves.

ii. Each side to be not less than 10 ft long.

iii. Height of nursery from floor level to the top of wall plate to be not less than 9 feet.

iv. No nursery is to accommodate more than ten dependants unless additional facilities and a covered floor space of not less than 20 sq. ft are provided therein for every dependant in excess of ten dependants.

See regulations 4 and 6 of Workers (Minimum Standards of Housing) (Nurseries) Regulations, 1969.

Verandahs

i. Must be at least 5 ft deep.

ii. To be provided on two parallel open sides of nursery.

iii. A balustrade grille *(with 2 in. interstices) or perforated wall not less than 4 ft high to be provided along the outer edge of each verandah.

See regulations 5 and 12 (3) of Workers (Minimum Standards of Housing) (Nurseries) Regulations, 1969.

Floor

i. To be at least 6 in. above ground level.

ii. To be of concrete or brick, not less than 3 in. thick, and finished to a smooth impermeable surface.

iii. If raised.

(a) To be not less than $2\frac{1}{2}$ ft high from the level of surrounding ground.

(b) Space underneath to be enclosed with wire netting.

(c) Wooden floor board to be wrought tongued and grooved.

See regulation 10 of Workers (Minimum Standards of Housing) (Nurseries) Regulations, 1969.

Roof

i. To be of waterproof material; attap, thatched grass or corrugated iron sheets not allowed.

ii. Ceiling or insulation of aluminium foil or fibre glass to be provided for roof of any material other than tiles, wood-wool slabs, asbestos cement or aluminium sheets.

See regulation 11 of Workers (Minimum Standards of Housing) (Nurseries) Regulations, 1969.

Walls

i. To be of weather resistant material; attap, thatched grass, split bamboo, unplaned timber or corrugated iron sheets not allowed.

ii. Walls not abutting verandahs to be extended to the wall plate.

iii. Walls abutting verandahs to be built to a height of not less than 4 feet.

iv. A securely lockable gate to be provided at the entrance to the nursery.

See regulation 12 of Workers (Minimum Standards of Housing) (Nurseries) Regulations, 1969.

Eaves

i. To project not less than 24 in. horizontally from the outer edges of verandahs.

ii. To project not less than 18 in. horizontally from the walls where there are no verandahs.

See regulation 13 of Workers (Minimum Standards of Housing) (Nurseries) Regulations, 1969.

Equipment/facilities to be provided

i. Movable wooden sleeping platforms of adequate surface area (not applicable to raised building).

ii. Sufficient number of portable wooden cribs or hammocks on springs.

iii. A reasonably spacious covered area adjacent to the nursery (may occupy part of the verandah); *this should be properly enclosed to prevent children from entering it freely.

iv. A sink and a supply of water (piped where practicable).

v. A working table with 12 sq. ft surface area.

vi. A fly-proof meat safe *cum* cupboard with 20 sq. ft storage space.

vii. A cupboard providing 20 sq. ft shelf space.

viii. A *dapur* or gas-burner or kerosene stove to facilitate boiling of utensils and feeding bottles and warming of meals for dependants.

See regulation 14 of Workers (Minimum Standards of Housing) (Nurseries) Regulations, 1969.

Painting

i. To be painted or otherwise finished (both inside and outside) so as to present a satisfactory appearance.

ii. Black or dark brown paint is not permitted*.

iii. Repainting to be carried out at least once in 3 years.

See regulation 15 of Workers (Minimum Standards of Housing) (Nurseries) Regulations, 1969.

Sanitation

Drainage

i. Adequate concrete drains to be provided for disposal of rain or other surface water.

ii. Movable concrete slabs covering drains to be provided at points where people have to cross frequently.

Bathroom and water closet

i. An attached bathroom to be provided, equipped with squatting water closet, water tap, wash basin and water storage tank, with not less than one water closet to every ten dependants.

ii. Each water closet to be provided with arrangements, approved by Medical Officer of Health, for flooding, discharging into a septic tank or other form of sewerage disposal, and for disposal of effluent*.

See regulations 9 and 14 (h) of Workers (Minimum Standards of Housing) (Nurseries) Regulations, 1969.

It is hoped that employers will find this paper helpful towards their understanding of the regulations governing the construction of workers' dwellings and nurseries on estates.

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Planter, Kuala Lumpur **52**: 271–291 (1976)

Planning a new estate village in a development from jungle

J. E. DUCKETT*

INTRODUCTION

This paper does not profess to present the ideal or perfect way to develop an estate village but is basically a description of how we, in Kuala Lumpur Kepong Berhad, dealt with the setting up of two villages to act as centres in a 28 000 acres jungle development in Johore.

These are both basically 'planter-built' villages rather than 'engineer-built' villages as the main responsibility has lain with the two managers running this project—Mr L. R. Hertslet on Kekayaan Estate and Mr D. R. Benton on Landak Estate, who have each had a separate village to develop.

This paper, hopefully, describes and illustrates any measures of success achieved without glossing over the areas where we would deal with things in a different fashion if we had a similar project to deal with in the future.

THE TASK FACED

Initially the Company took over 7 000 acres of jungle in January 1972 followed by a further 7 000 acres in October 1972 to which was added a further 14 000 acres in May 1973. All these areas were divided up by the Forest Department into 1 000-acre blocks for the purpose of timber extraction and clearance for felling.

The planting programme decided upon was as follows: —

year		*acres*
1972	—	2 000
1973	—	7 000
1974	—	7 000
1975	—	6 000
1976	—	6 000

This programme has been adhered to, and with work progressing on the 1975 current year's planting there remain only 6 000 acres of jungle where extraction of timber is almost complete and which will be felled subsequently. The first area planted is now in harvest.

Within the agreement as regards this land is a clause that stipulates that 6 000 acres (1 500 acres from each 7 000-acre block) will revert to Perbadanan Kemajuan Ekonomi Negeri Johor at some stage after planting up, for which area the Company will be recompensed for costs incurred.

Thus the final area to remain in the Company's hands is to be 22 000 acres.

* Kuala Lumpur Kepong Berhad, Kuala Lumpur.

It was decided that for the purposes of management it would be preferable to have the areas divided up into two estates, each of 14 000 acres initially to be reduced to 11 000 acres each when the land being planted up for P.K.E.N.J. was handed back.

It was apparent to all concerned that, due to the relative isolation of the locations of the villages, the larger the village units the better, although this might mean rather more transportation of workers to their working areas. It was thus decided that each of the properties would operate from one main village and there would be no divisional villages.

The reasoning behind this was that the larger the population in each village the better the infrastructure could be and the greater the variety of amenities e.g. for the same total expenditure in a large village you can have a badminton court *and* a sepak raga court instead of one badminton court in each of two smaller villages.

More important, a large village can support more shopkeepers which means competition and hopefully lower prices for goods for those living on the estate. Mobile butchers, fish-sellers, vegetable sellers etc. are also encouraged to make regular runs for a large community where the volume of potential sales more than compensates for the cost of travelling the extra distance. Large communities also make bus and taxi services a good business proposition and were certainly an attraction to the many operators of mobile cinemas.

In opening up this area which is, by any standards, a large one, it was quite obvious that obtaining an adequate work force of a good standard was going to be one of the major problems. It was for this reason that such initial stress was laid on the factors relating to the social infrastructure.

PLANNING ACTUAL REQUIREMENTS FOR THE VILLAGES

Whilst it was the intention to utilize a considerable amount of contract workers, both immediately and in the future, it was apparent that most workers, be they contract or checkroll, would have to be housed on the property, as otherwise transport to work would become a prohibitive burden. Also the pool of non-resident workers in the immediate Paloh district would be quite inadequate for an area of this size. We thus planned requirements for each separate estate as follows, and actual building costs (not including site levelling) are given as a matter of interest: —

(1) *Executive housing*

(a) 1 × manager's house	@	$ 73 500
(b) 3 × assistants' houses	@	$ 40 250

(2) *Subordinate staff housing*

(a)	13 × clerks and conductors houses	@	$ 16 800
(b)	3 × semi-detached blocks of artisans/ junior staff houses	@	$ 13 000 per pair

(3) *Workers housing*

	200 × semi-detached blocks	@	$ 7 400 per pair

(4) *Ancillary buildings*

(a)	1 × office 20 ft × 85 ft with full length verandah and inclusive of furniture and fittings	$ 19 500
(b)	1 × fertilizer store 100 ft × 50 ft with 15 ft covered loading bay	$ 20 000
(c)	1 × workshop/garage 70 ft × 28 ft utilizing jungle hardwood timber uprights	$ 8 200
(d)	1 × engine room 18 ft × 36 ft	$ 4 400
(e)	1 × carpenter's shop and pollen room (under one roof)	$ 6 000
(f)	1 × dispensary/clinic with furniture and fittings	$ 9 500
(g)	1 × creche (for 50 children)	$ 8 200
(h)	1 × poisons store 40 ft × 20 ft	$ 5 000
(i)	2 × contractor's houses 40 ft × 36 ft @	$ 8 500

(5) *Amenity and service buildings*

(a)	1 × community hall 100 ft × 50 ft	$ 22 000
(b)	1 × general shop/coffee shop 50 ft × 40 ft (divided building)	$ 15 500
(c)	1 × general shop/barber shop 45 ft × 40 ft (divided building)	$ 11 600
(d)	1 × *surau* 60 ft × 40 ft	$ 10 950

(6) *Other requirements*

(a) Playing field/football field

(b) Badminton court

(c) *Sepak raga* court

LOCATION OF VILLAGE SITES

Having established the requirement in the way of buildings the next step was to decide on sites. This was not as easy as it may sound as the area was mostly under virgin jungle and whilst the normal ordnance survey 1 in./mile maps gave the general outlay and topography, things never appear quite the same on the ground. Streams shown as a blue line on the maps can turn out to be a mere trickle in a valley or a full-sized river.

It was realised that water supply was a critical factor, and as the land was fairly undulating we required an area that was reasonably flat or where housing terraces could be positioned to keep the whole village area as compact as possible. For Kekayaan Estate, fairly level land was the big factor as an area or more than 50 acres was needed for a central nursery, whilst for Landak Estate, water was the deciding factor as it was decided that the palm oil mill would be located there.

Obviously it was also preferable that the village sites would be as centrally situated as possible for the 11 000 acres that each was eventually to serve.

Suitable sites were found after a great deal of jungle 'bashing' and considerable wear and tear on the executives concerned. In fact almost all buildings eventually had to be built on terraces as the flat areas were either not adequate or were thought to be liable to flooding at monsoon periods.

Permission was then applied for and obtained from the Forest Department for these site areas to be felled out of sequence so that as early a start as possible could be made on building.

Subsequent felling of other jungle areas nearby has since (2–3 years later) revealed areas that may have been more suitable and it is felt that here is one aspect where, if we had to repeat a similar project it might well pay to take aerial photos of the area and have these interpreted by an expert to suggest suitable sites. We believe that such action could have dispensed with a great deal of footwork and would have given a better assessment than we arrived at when working solely from ground level with a restricted view.

FIRST STEPS

We were fortunate when commencing operations that Paloh Estate was only a few miles from the nearest point to our jungle. It was even more fortunate that Paloh Estate was just replacing some old and rather dilapidated staff houses which were retained as temporary accommodation for staff in the jungle. We thus at least had a roof over our heads whilst the initial works were being carried out.

The felling contractors constructed attap longhouses for their people in their working areas.

The first problem was access to the new village areas, and permission to fell for roads was applied for at the same time as permission for felling the village sites, and a good all-weather laterite road was driven through.

This was obviously a top priority as the total weight of building materials to be moved in was quite considerable.

The next step was a very quick felling and burning operation on the village site with stumping out of the jungle trees where the main housing area was to be.

This done, work continued at a rapid pace with lining of the terraces for the first phase of the housing (100 semi-detached houses). A surveyor was called in for a site plan which was then submitted to the appropriate authorities. Very quick inspection and approval of the site by these authorities than allowed us to put in the bulldozers and construct the building terraces.

In the meantime tenders for the various buildings had been called and these were reviewed. An enormous variation in rates quoted was seen, and it was also very obvious that many of the applicants were unlikely to have the financial backing for contracts of this scale.

The correct choice of contractors for work of this nature is of paramount importance as inadequate financing or an inability to obtain supplies can cause absolute chaos. For this reason we decided in quite a few cases that contracts could not be given to the lowest tenderer but were confined to contractors who quoted reasonable prices, had a record of good work on a fairly large scale and would produce for us confirmed orders for building materials for their work programme within a very short time of being awarded the contract. This latter point was of great importance when the period of materials shortages occurred half way through our programmes.

When dealing with contractors for work on this scale it was most apparent that many of them were genuinely worried about their own 'cash flow' problems. By establishing a regular 'progress payment' system with no delays over these payments, and by imposing no unreasonable penalty and retentions clauses these worries seem to have been overcome. Also we found it reasonable, where very large quantities of building materials are stockpiled on site prior to work, to make allowances in progress payments for 'value of materials on site'. Whilst very great caution must, as a matter of prudence, be exercised in such matters it is to our mind most short-sighted to go to the other extreme and place undue pressures on contractors. Once the reputation as a good and fair paymaster was established subsequent tenders brought forward a much wider range of good contractors who were prepared to tender very competitively despite the distance, isolation and rough living associated with the locations.

LAYOUT OF TERRACES

Once the site selected has been approved the first step is to decide where storm water drains will be led off This is most important in order to get such water away from the village quickly after rains and is particularly important when housing is sited on terraces which can catch enormous quantities of storm water.

From experience we have found that a concrete lead off monsoon-type drain, preferably stepped down the slope, is required for every ten to twelve blocks depending on the terrain.

Having sited but not installed these major lead off drains terraces are then laid out with a Dumpy level so that they have a lengthwise fall of 6 in. in 100 ft, found by experience to be the best fall.

From front to back over the 70-ft terrace it has been found that a backfall of 9 in. is the most suitable. Failure to have such a backfall results in bad erosion of banks and flooding out of lower houses.

The distance between two terraces at the minimum point should not be less than 90 ft (terrace front to terrace front) and this gives a 20 ft space for back cut and bank and 70 ft for the actual terrace platform. This 70 ft gives ample space for the house with an access road at the front and a rear area for clothes lines.

Initially we laid out the terraces on the same sight line with the result that where the slope was less steep the interspace became wider, and wasted space. To overcome this, and keep things compact, we found that by 'stepping' the terrace a constant interspace can be achieved.

Another point not utilized initially but brought into use in the later development of Landak Village was to cut a small (3 ft) anti-erosion terrace in the middle of interterrace banks. Besides acting as an anti-erosion measure this is also likely to be very useful for grass cutting in the future.

Initially, housing terrace was cut for each phase of development as required but in any similar future scheme we would strongly recommend that terraces for the whole envisaged project be laid out and cut as early as possible so as to be settled and, preferably, grassed over before building operations are commenced. Such action would certainly result in far less erosion of banks.

HOUSE SPACING ON TERRACES

Whilst regulations state that a minimum of 20 ft is required between outer walls of any two houses, our villages have been laid out with an average 30-ft spacing. Thus with the 70-ft terrace plus the 20-ft width of back cut cash double block utilizes approximately $1\frac{1}{3}$ square chains; thus we get a density of around $7\frac{1}{2}$ double units per acre which does not cramp houses and at the same time does not given an unmanageable area for upkeep and maintenance.

The only real variation comes where the siting of a communal septic tank is concerned. Where these are sited on the terrace between houses, a 40-ft gap is left to allow adequate space for the tank and soakaway pit.

SEPTIC TANKS

As mentioned above these are communal, serving up to ten double units. Whilst septic tanks are currently a bone of contention with the Health Department and new regulations are awaited, we constructed to a plan approved by the necessary authorities. The price of the septic tank was included in the house contract and was to a standard plan which had dimensions increased according to the number of houses served.

Figure 1. A general view of Kekayaan village which gives an idea of spacing, use of terraces and the "stepping" of terraces.

Figure 2. Semi-detached workers houses at Landak village with small anti-erosion bund shown in back slope of terrace.

Figure 3. A section of Kekayaan village which gives a good impression of the type of gradient experienced and terrace widths.

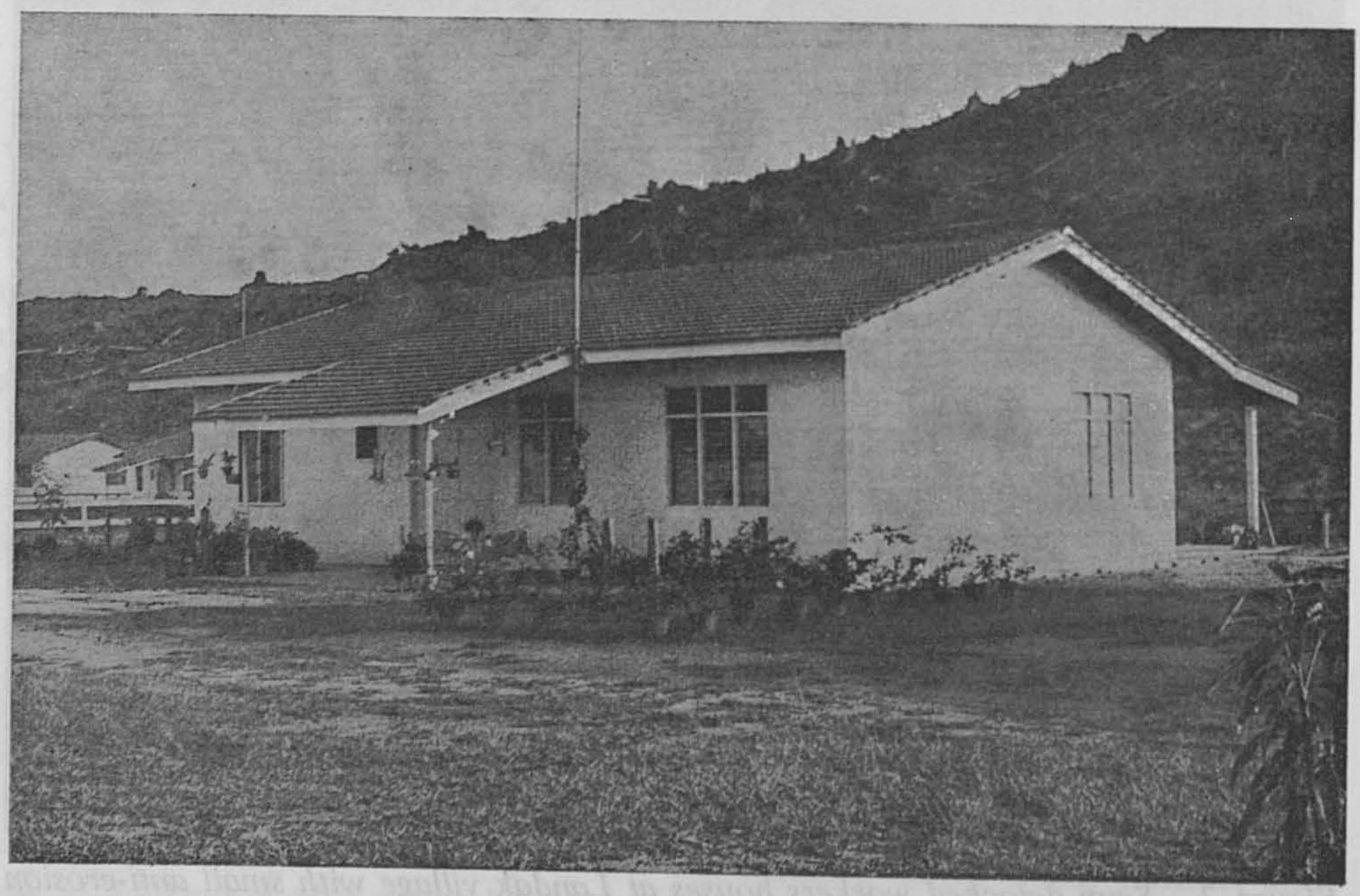

Figure 4. A conductor's house.

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Or simply to stimulate and prolong ne duration of latex flow, thereby oosting up yield per acre substantially ETHREL is the pinnacle of over 30 ears' research in plant growth egulators by Amchem Products, Inc. f Pennsylvania, U.S.A. Minor product veaknesses have been identified and atisfactorily rectified, so that THREL Latex Stimulant now vailable commercially is virtually free f defects and inconsistencies.

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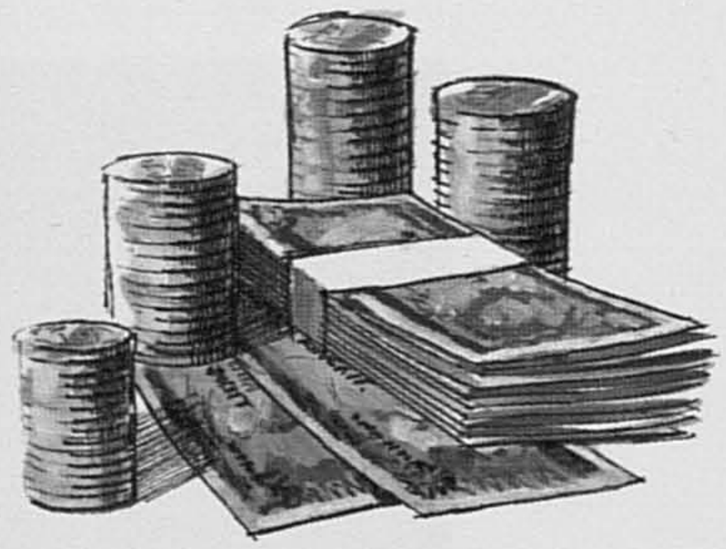

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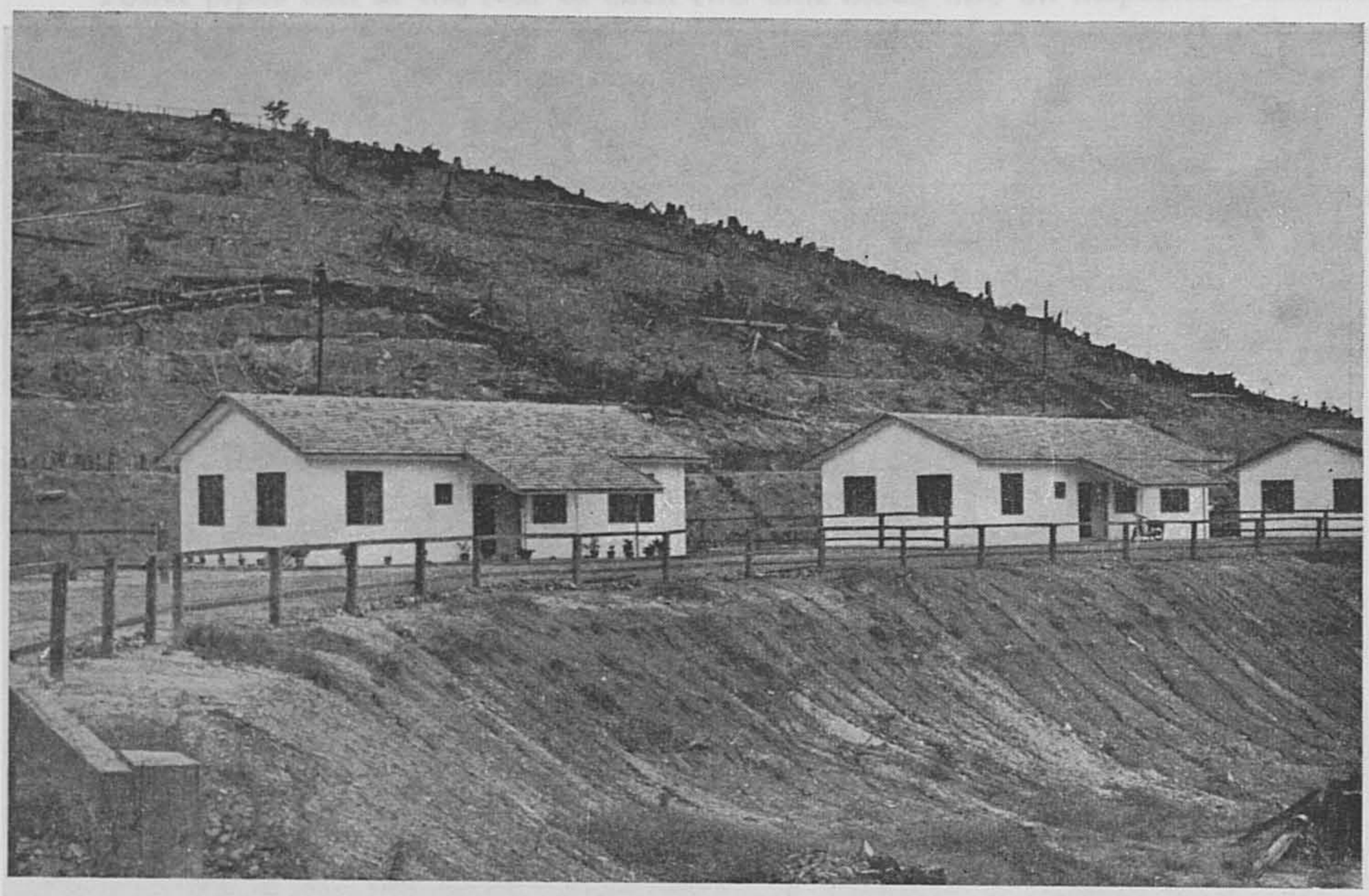


Figure 5. Conductors' houses. The "ranch fencing" utilizes jungle timber square cut with a chainsaw.

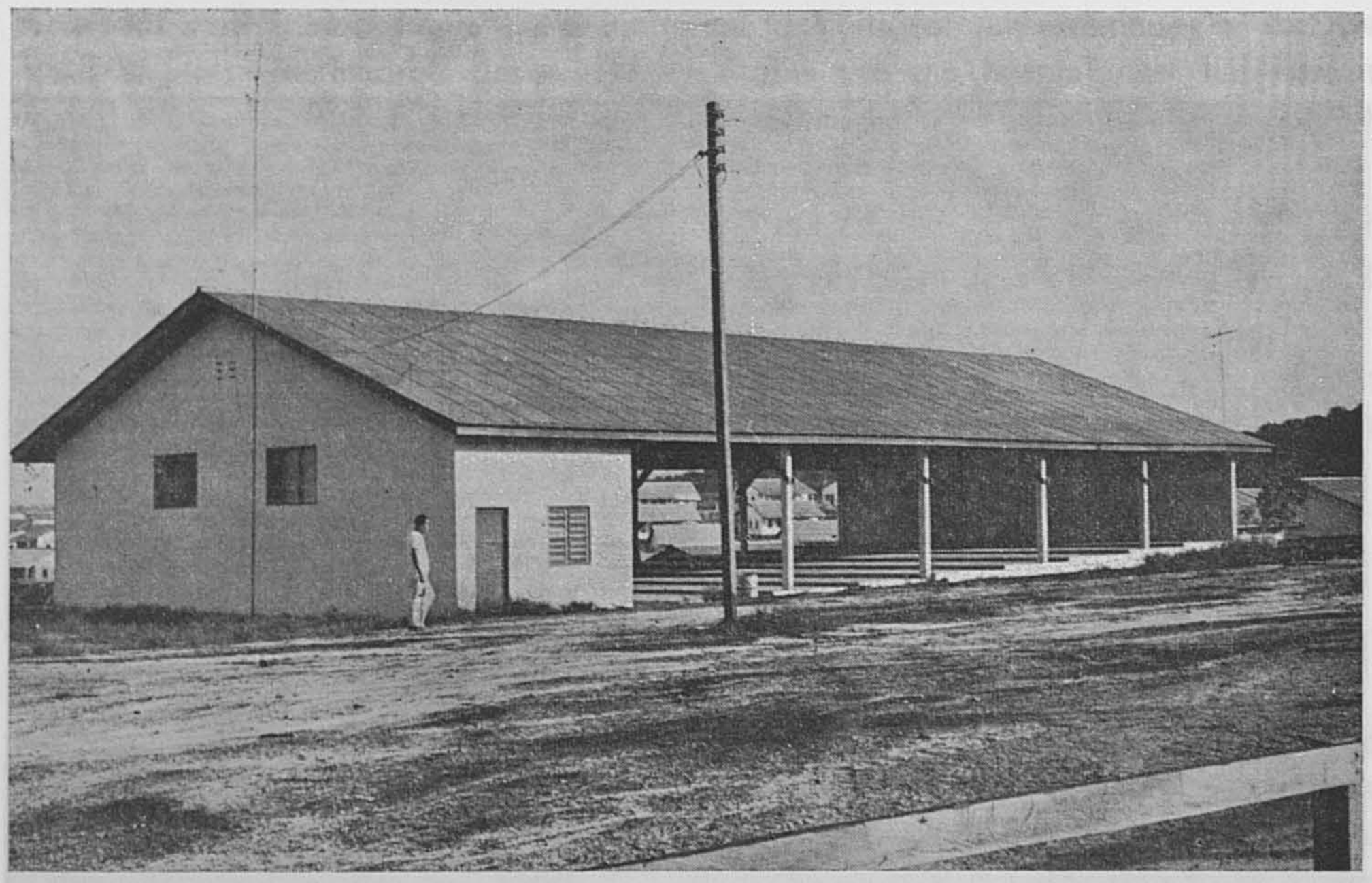


Figure 6. The balai raya. *The staging of the floor is clearly shown. The walled section contains a raised stage and secure changing and store rooms. Badminton and* sepak raga *courts are situated on a wide terrace below this building.*

Figure 7. The clinic/dispensary at Landak village with a rear view of the shop block behind.

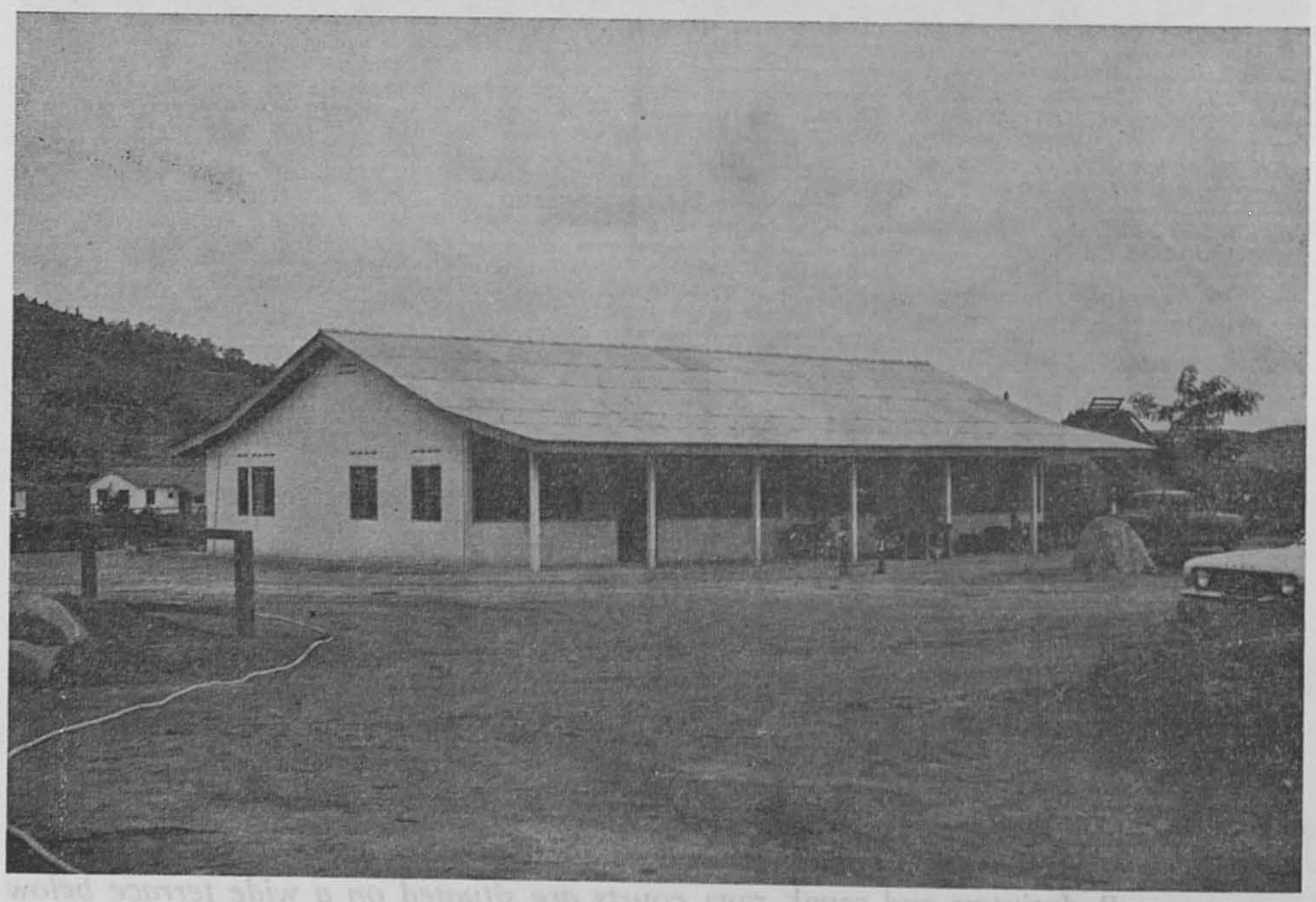


Figure 8. General store and coffee shop at Landak.

Toilet pipes exit at the rear of each two unit block into an inspection chamber at each block. The first four inspection chambers are linked by 4 in. glazed sewer pipes and any subsequent blocks have the pipe diameter increased to 6 inches. Failure to make this increase after four blocks is certain to result in blockages.

When working on terraces with these linked inspection pits it was found that on a concave terrace the back space could increase over 40 ft and here an extra inspection pit should be sited so that there would be no problems with 'rodding'.

Soakaway pits in the rather clayey soil initially gave some problems but it was found that if these were dug 5 ft × 5 ft and 10 ft deep and filled with alternate layers (of 1–1½ ft thickness) of 2 in. granite chips and palm kernel shell, they were very effective.

WASTE WATER AND STORM WATER DRAINS

When sited on terraces the correct pattern for drainage of storm and waste water is most important.

When designing the layout it was noted that prior to terracing, the position of main storm drains down the slopes was sited (taking into consideration the natural features) but not carried out, and that one of these drains was required for each run of ten to twelve blocks of houses. Equally important is the need to allow for increased drain capacity between houses along the terrace feeding these lead off drains.

The connecting drain between, and at the rear of houses, is 9 in. size for the first four or five blocks and this is increased to 12 in. for the remainder of the row until it joins the lead-off drain. These drains are the normal cast half-section channel drains. Failure to allow for this increased size will result in flooding of the end houses.

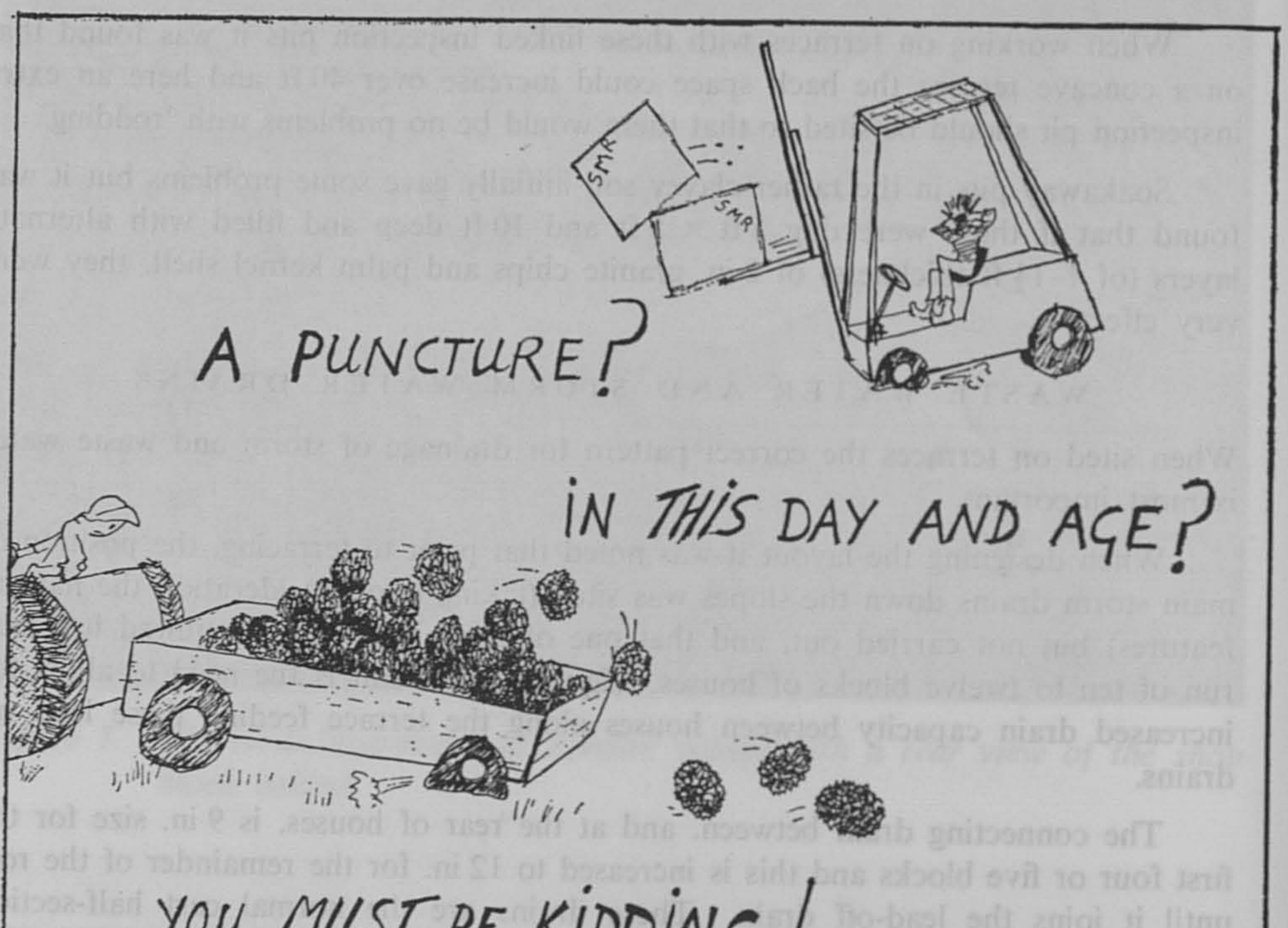
The lead-off drains are not constructed until building is complete, as earlier construction will only result in their being badly damaged by builders' lorries bringing in materials.

It should of course go without saying that all such drains from villages lead off so as not to contaminate water catchment areas and preferably debouch into a completely separate watershed.

GENERAL LAYOUT OF VILLAGE ANCILLARY BUILDINGS

Having decided on the major point, the location of workers houses, it is then necessary to site the ancillary buildings appropriately.

It has in the past been the policy to site manager's and assistants' houses on hills, the higher the status the higher the hill, and this has come in for some caustic comment in various novels on planting. However, if such a site commands a general panorama of the village and the estate, there is quite a lot to be said for it as the thought that the manager may be watching from his hilltop eyrie does have a very salutary effect upon intending mischief-makers who may (or may not) at that moment be subjected to his view. Similarly a view over one's estate is of definite advantage in dry weather when leaf fires are a problem.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Again there is a distinct advantage in having the office, stores, fertilizer store, workshop and garages etc. grouped together under the view of executive or staff houses. A grouping together of such administrative buildings does make work easier in issuing and receiving stores etc, and obtaining information on any particular subject quickly.

Preferably this administrative area should not be sited in the village, but at the edge or slightly away from it as by so doing the dust raised by visiting vehicles on laterite roads is not a constant annoyance to residents.

A similar village-edge position should be sought for the shop area (and here it is preferable to see all the shops in one place) which always seems to have enormous numbers of vehicles coming and going. Whilst tarmac can be laid down around the shops themselves it is generally far too costly to extend to the main village area where vehicle traffic is usually very slight.

Where large contractors are utilized houses for these will be required, incorporating their office, and adequate space adjacent to these should be allowed for their workshops, lorry garage area etc. The area allocated to them should be clearly marked and they must be made fully responsible for proper upkeep of these areas, or they will soon degenerate into unsightly scrap heaps. Again it is preferable to have such areas sited at the edge or away from the main part of the village.

Creches should preferably be sited on the top of small hillocks or in a fairly open area where they can get the benefit of breezes, and preferably have a fenced play area around them. The installation of swings and see-saws in these areas is advocated by some, but creche-age children are generally too young for these sort of things and some nasty accidents can occur. Thus it is considered preferable to have such play facilities for older children located in separate recreation areas within the housing area for use when children are under the supervision of their own parents and not of estate employees.

The community hall should preferably be fairly central so that all can be within reasonable reach of this very important building, where television, films and meetings are held. It has been said that two community halls are necessary now there are two television channels (in this respect the Johore properties problems with this are doubled as they receive the two Singapore channels as well) but this can usually be overcome by having another TV, in the coffee shop.

Whilst on this point it should be stressed how important on a clearing from jungle a large coffee shop is. With a very large percentage of workers unmarried, the coffee shop becomes the canteen where they take their meals, and a really good cook to run it is essential.

Badminton and *sepak raga* courts can usually be sited fairly close to the community hall and the changing rooms there can be utilized by visiting teams.

Lighted public toilets are a necessity at or near the community hall if one does not want to find a most unhygienic state of affairs in the locality on the morning after the showing of an epic film.

Dispensary, *surau* etc. should again be located fairly centrally and normally it is found that a social and amenity complex develops in one area as a natural choice.

The football/playing field will usually locate itself on the flattest area available and whilst Landak Village already has its field levelled, Kekayaan Village looks as if it will have to wait until the oil palm nursery site is finished with, any other location requiring far too much earth moving.

Garden areas should preferably be close to the houses and in both our villages use is made of ravine areas that intrude into the village areas. Bananas and fruit trees can be grown on the slopes whilst the ravine bottoms make good vegetable growing areas that do not dry out. These are marked off into sections with hard-wood timber markers and are allocated to individuals who are then responsible for seeing that their sections are properly maintained.

All the above points were taken into consideration when planning these villages and if the ideal could not be implemented then the next best possible thing was done.

WATER SUPPLY

Whilst not coming strictly within the scope of this paper a few interesting practical points have arisen from our experience.

The original source of supply in the case of Kekayaan is a stream which has had an earth dam constructed across it to give a 12-acre lake. This is situated upstream of the village and water intake is from the overflow stream from this dam. From a pumping sump the raw water receives chemical treatment, passes through settling tanks and is then passed through a filter. From there it is pumped up to a 40 000-gallon concrete tank situated on the hill that overlooks the whole village.

Initially water was gravity fed direct to the village houses from this tank but we found real problems arising:

(1) The pressure due to the fall was far too great and at the lowest levels when a tap was opened the result was like a pressure hose.

(2) The high pressure led to a very quick emptying of the main storage tank as residents were not inclined to close taps after they had opened them.

To overcome this problem we have sited, much lower on the hill and at various points on housing terraces, brick-built and concrete faced, 2 000-gal closed 'distribution' tanks. These tanks are fed direct from the main storage tank through a $1\frac{1}{2}$ ft ball-cock with a control valve to adjust inflow. Each tank serves approximately twenty blocks (20×2 units) and is sited so that there is around 10 ft fall for pressure.

By utilizing these distribution tanks we found the following advantages:

(1) Estate can now control the inflow of water

(2) Pressure of water at houses is reduced

(3) Workers quickly learn that failure to turn off taps is likely to result in complaints from their neighbours.

(4) Daily water consumption has been cut from over 40 000 gal per day to below 30 000 gallons.

ELECTRICAL SUPPLY

This is a specialist operation and will not be dwelt upon at length in this paper. On the two properties discussed here the whole job was contracted out. However a few points to be borne in mind are:

(1) Ensure that a stand-by set is available for at least the essential works if the main engine goes wrong. Remember that water pumps run by electrical motors are no use if the generator is out. An obvious point but still sometimes overlooked.

(2) In original planning do not work on full capacity use; build in some spare capacity. A new electric welding set, or extra immersion heaters in staff housing can play havoc with power requirements.

(3) Whilst it is impossible to make things absolutely foolproof, village lighting should be of fluorescent variety as it is harder to connect illegal fittings. The fitting of current limiters to serve four or five blocks is recommended which results in a switch off if overloaded. These current limiters should preferably be of the lockable type so that an inconvenient delay in return of power arises. A few of these delays, and residents soon learn not to interfere.

(4) Do not overlook the advantages of a certain amount of street lighting. As well as being a convenience to residents it has a very definite security aspect.

LINESITE OR VILLAGE?

Buildings in themselves do not make a village and all the regulations can be complied with and all you end up with is a 'linesite'. What then makes a village? In the author's opinion the following points have to be considered.

(1) *Layout.* There is little doubt that a curving terrace is much more aesthetically pleasing to the eye than a straight row of houses. In our villages we did not even consider this as the lie of the land dictated terraces; but even on a flat site it is possible to use imagination and break away from straight rows. Angled and arced layouts can be achieved and the wider interspaces arising can be utilized for play and recreation areas or the siting of the various amenity buildings. In village layouts standardization is a necessity but regimentation is not.

(2) *Type of buildings.* Most buildings on estates have to be practical but this does not mean that the proportions have to be awkward or the materials used unsightly to the eye. Colour variations in decoration can be utilized in order to break away from regimentation although all the buildings are of the same design.

(3) *Attractive surrounds.* Nothing softens the harsh lines of buildings like trees and greenery. They also provide shade for the houses, and can be productive. In each of our villages every house has its dwarf coconut tree which we hope will be of value to the residents. Fruit trees are planted in open areas for shade and fruit in the future.

Australian wattles are planted quite extensively. These are grown from seed and mainly planted along laterite roads in double rows. They are very quick-growing and help to create an effective barrier between roads and houses when conditions are dry and dusty. Silver wattles are more beautiful as decoratives but are slower growing and do not attain the size of the common wattle.

Trees, when strategically placed can greatly beautify a village but they should not be planted where they are going to undermine buildings or drains or interfere with power or telephone lines.

Grassing of village areas has great advantages, dust is kept down, the area is kept cleaner, edges of concrete drains do not erode and inter-terrace banks are protected. However we have found the grassing of building surrounds to be difficult in establishment. The sowing of *Axonopus compressus* seed has given very variable results and undoubtedly the best results are obtained by planting tufts of turf, spaced so as to get an eventual full cover.

A very promising grass for areas that are not going to get very great wear and tear is the caterpillar grass introduced by Chemara Agricultural Services. Cuttings of this spread very rapidly and being of a prostrate habit they have great potential for banks and slopes. A few handfuls of this obtained a year ago has now been propagated over approximately 5 acres in our villages. We would recommend most strongly that anyone contemplating the development of a reasonably-sized village should establish a few acres of grass well ahead so that this area can be continuously cropped for turfing.

A clear definition of the areas for which each householder is responsible, be he a normal worker or a staff member, is definitely essential if these are to be properly upkept. What is to be avoided is the creation of areas of "no man's land".

(4) *Cleanliness and tidiness* are of course essential but facilities such as adequate rubbish bins and rubbish collection and an incinerator (well away from the village) must be available. At the same time a good discipline regarding cleanliness with appropriate penalties for those that do not comply is essential.

(5) *Amenities.* These have been listed earlier and are essential to foster a community spirit, for it is the community spirit in a workforce that brings a village to life. If this is developed, pride in the houses and surrounds automatically develops and workers will themselves reprimand other workers who are acting against the community as a whole. We have seen this happen in our villages and know its effectiveness but it needs to be fostered initially and keen management interest is called for.

Monsanto® ROUNDUP* NEWS 1976

Additional recommendations for new Roundup* uses.

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Monsanto's Product Development team explained that additional recommendations for Roundup now extends the uses of this unique herbicide.

Same product: Extended uses

Roundup's success in lalang control under rubber has been firmly established. Continuous research into applications now makes it possible to recommend Roundup for:-

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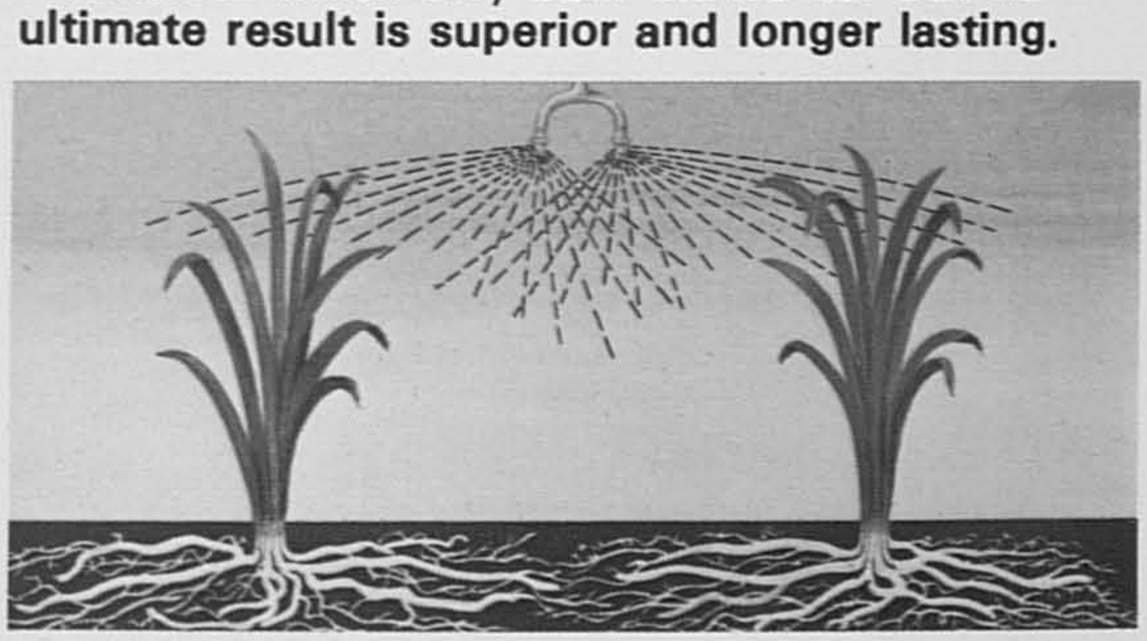
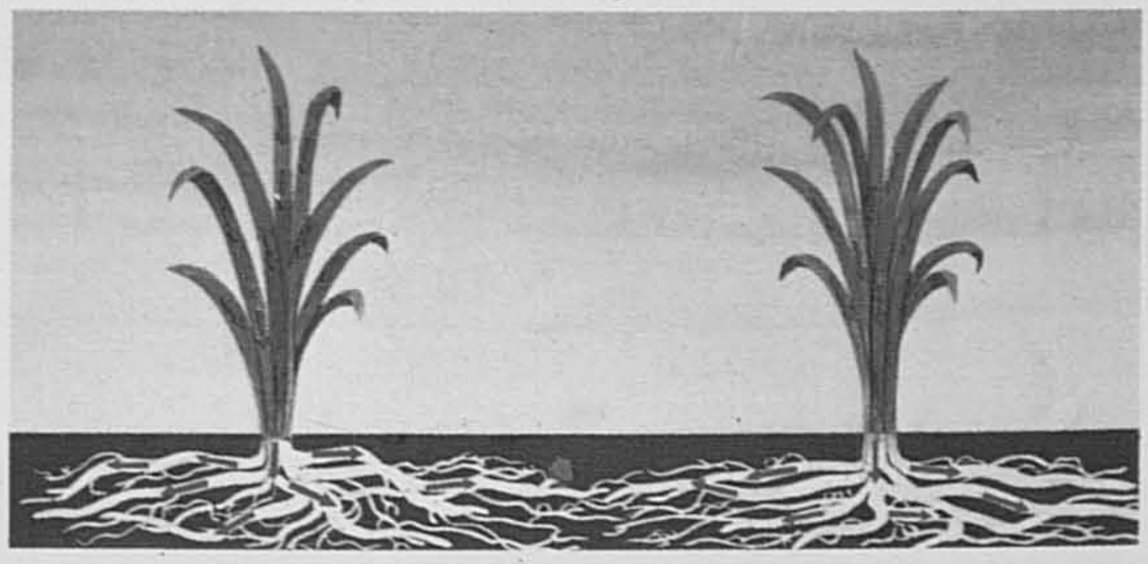
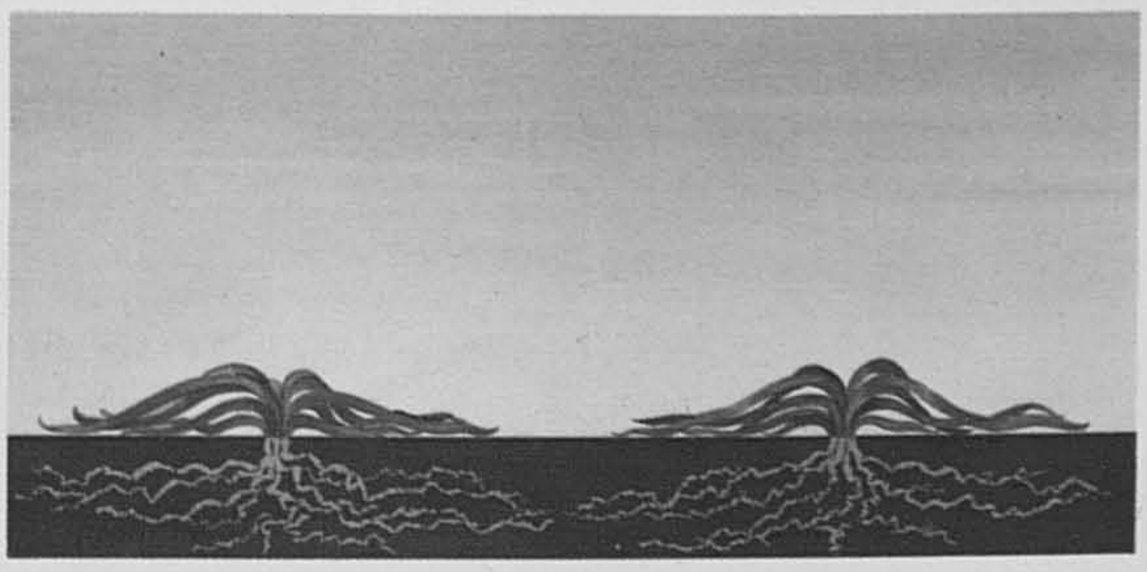
As planters have found, Roundup is effective with **a one-shot treatment.**

"Translocation" the basis of Roundup's effectiveness

Roundup works itself from the leaves into the root system **to destroy the entire weed** and not just the leaves. It is a **translocated weedicide.** The initial effects of Roundup may become evident later than in the case of contact weedicides which only burn the leaves. **But its ultimate result is superior and longer lasting.**



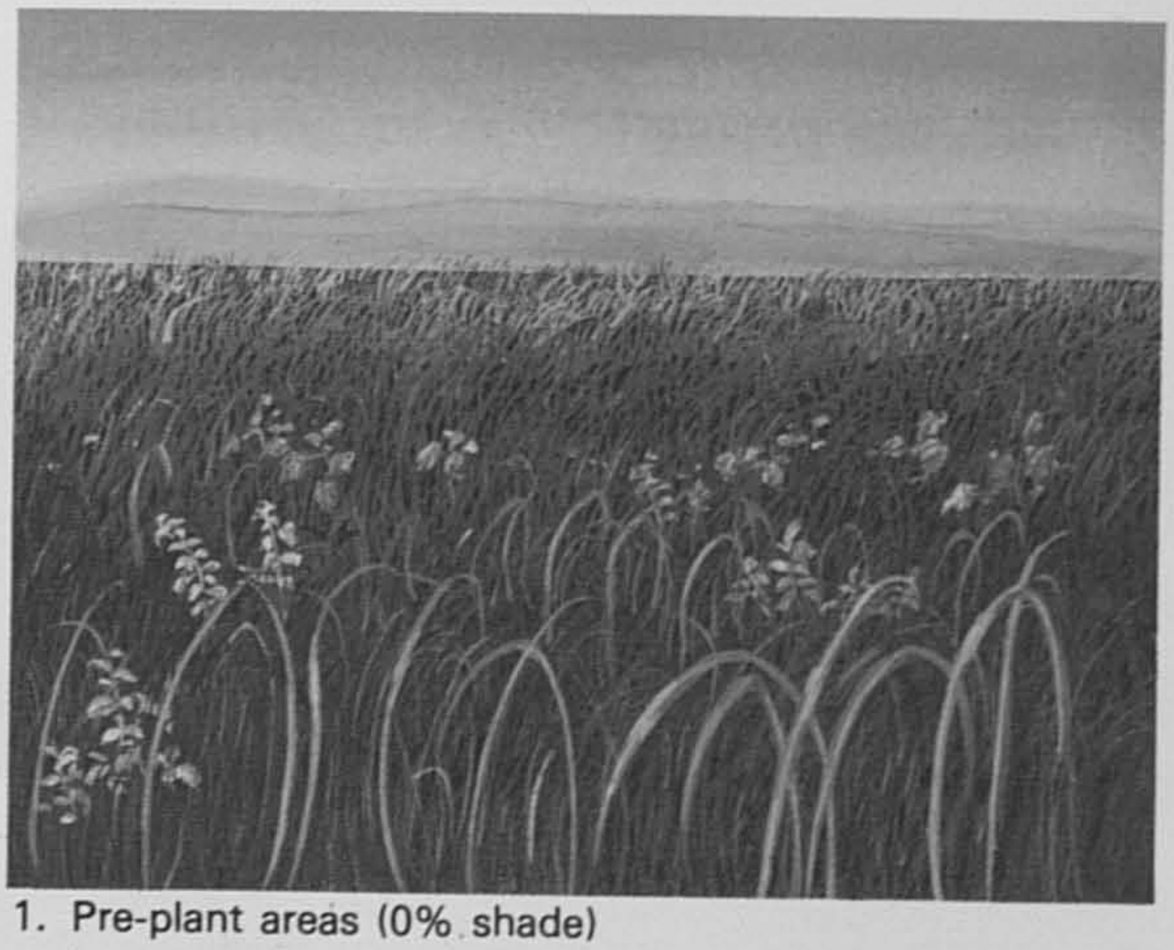




Roundup discovery : Shade is the key to weed growth and vigour

Monsanto found that shade is a determinant of weed growth and vigour. In open conditions, weeds are tougher and less susceptible towards weedicides than those weeds growing under shade. For optimum results, Monsanto's Product Development team therefore suggests dividing your weed problem areas into percentages of shades. This will enable planters to judge more accurately the appropriate dosage rate of Roundup to use.

The picture below show the four broad divisions of shade which field survey indicates that planters and their experienced field staff can easily differentiate and use as a practical guide.



1. Pre-plant areas (0% shade)

2. Very Young Rubber (0% – 30% shade)

3. Young rubber (30% – 60% shade)

4. Mature rubber (60% plus shade)

These extended uses are the result of continuous research and testing Monsanto conducts to establish additional applications of Roundup in all areas of weed control.

You can expect recommendations for further uses of Roundup from Monsanto in the years to come.

Continuous research for extended uses.

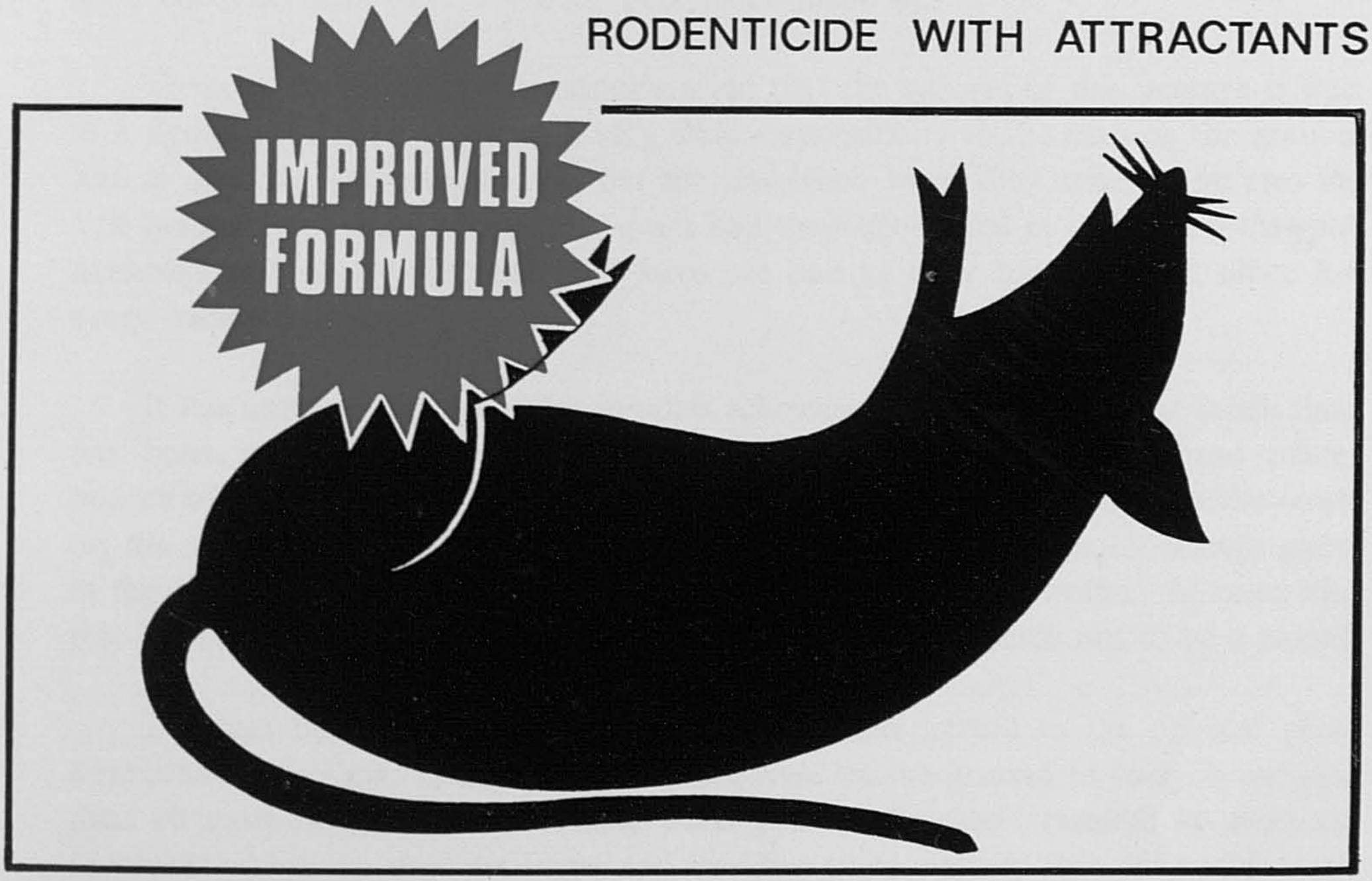
ROUNDUP.

POSTEMERGENCE HERBICIDE BY Monsanto

BUAH EMAS

RAT BAIT

RODENTICIDE WITH ATTRACTANTS



The Rat Killer for Plantations

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These and other points all contribute towards making a success of a village but best results can be obtained if an objective view can be taken of the needs of the residents. Status structures are all very well but in many cases more mundane and practical things have a greater use to a village community, and in this respect the racial make-up of a work force can have a considerable bearing on priorities.

When building a brand new village much use can be made of experience on other established estates and full cognizance should be taken of the failures as well as the successes on other properties.

CONCLUSION

In the operations described in this paper time was of the essence and the phasing of work and establishment of priorities was quite critical. That the original programme is running right on schedule is a measure of the success of the particular venture. Despite weather interference, inflation, and material shortages, no delays have occurred that have not been able to be made up.

There is no doubt in the author's mind that the success of this venture is due in a significant degree to giving a very wide responsibility to the man on the ground and in allowing that man to sort out the problems, when they arise, as he sees fit. The managers of these schemes have not had their hands tied in making on-the-spot decisions and alterations, and they have not had to refer back to head office for every minor variation.

It has appeared to the writer in other schemes he has observed, that much time has been lost and disruptive influences allowed to creep in where head office, boards of directors or some other nebulous committee, far removed from the work on the ground, have been unable to refrain from the temptation to change plans in the middle of the job and thereby throw a spanner into the works. In cases like this the horse that was designed by the committee so often turns out to be a camel.

The fact that the board of directors in this case agreed to the original plan, approved the budget, had confidence in the men on the ground to carry it out and then virtually said "Tell us about it when you are finished" resulted in everyone involved taking up the challenge and making quite certain that it would work out well.

In all aspects of planting operations the commercial aspect is the major factor but in planning of villages such as this the employer has a very definite social responsibility. Admittedly government has imposed minimum standards for buildings, health, hygiene etc but looking around the country it is quite easy to see many examples where all the rules and regulations have been complied with and even so the end result has been a characterless set of barracks within which the residents can have little heart to develop a community spirit.

In my view such developments are bad business practice as the workers will very naturally be looking for better places, and in this respect I believe very strongly that good amenities and social services are not only of benefit to the employees but are really good investments for the employers which pay dividends in the form of settled work forces who then look to the estate villages as their 'home towns'.

Acknowledgements. The writer would like to express his greatest appreciation for the assistance given in preparation of this paper by the managers of Kekayaan and Landak Estates, L.R. Hertslet and D.M. Benton, upon whose practical experience it is based. Dick Hertslet being the first in the field, and who opened up the pioneer property, has been the innovator of many of the points raised and should in reality be considered a co-author. My thanks must also go to all staff of the two estates whose joint efforts have resulted in the bringing into being of these two villages.

I would also like to take this opportunity to thank on behalf of the managers and myself all the officers of the Labour and Health Departments both in Johore and at head office in Kuala Lumpur whose help and assistance at all times has been greatly appreciated.

To my Board at Kuala Lumpur Kepong Berhad my thanks for their kind permission to allow publication of this paper.

APPENDIX A

Workers semi-detached house

In view of the isolation of the properties it was evident from a very early stage that a good standard of housing was essential if workers were to be attracted to these villages.

In selecting the house plan we were looking for a building that would meet all the current requirements for estate workers housing and which preferably should look to the future and hopefully still meet all requirements in 10–20 years time.

We thus had quite considerable discussion with Labour and Health Department officials in Johore, and using our previous standard workers house as a baseline came up with a new plan that incorporated quite a lot of modifications suggested both by Government officials and by our own managers. The end result, whilst not the ultimate in suburban living has been generally considered to be a good semi-detached house that can still be erected at an economic cost.

The floor plan no. 1 gives the general layout but does not show the obligatory shelving, sleeping platforms etc.

The construction is of concrete blocks with a corrugated asbestos roof. Roof timbers are of pressure treated material and louvre windows are used throughout. Cement walls inside and out are painted with Snowcem and all woodwork is painted with ICI Dulux gloss paint. The house doors are of wooden construction and in two parts so that the upper half can be opened separately. The bathroom door is a standard Diethelm aluminium door.

The bathroom has a flush squat-type toilet and a concrete water tank with tap.

The kitchen has a concrete water tank with tap, a concrete *dapur* and a cement slab work-table adjacent to the store which is amply shelved.

Bedroom dividing walls are carried up to a height of $6\frac{1}{2}$ ft and wooden shelves are fitted in each bedroom as well as raised wooden sleeping platforms.

Lighting is of the fluorescent variety as this is less consuming of power and makes the attachment of illegal electrical fittings more difficult.

A 6-ft wide verandah runs along the whole front of the building and the two houses are divided here by a 3 ft-high wall. On the recent Landak houses a 3 ft-long concrete bench has been added below the window on the verandah.

These houses have been very well received by the people taking up residence but a few points do arise:

(1) The concrete *dapurs* which comply with the regulations have in no cases at all been used for solid fuel cooking fires. All workers use either kerosene or gas cookers. This is not due to lack of fuel as jungle timber is everywhere to be found and after the big burns even charcoal is there for the picking. Most workers say they prefer to use gas or kerosene so as not to get their house dirty and we are approaching the Labour Office to see if a kerosene burner stove can be fitted as an alternative to the concrete *dapur*.

(2) Workers have approached the management and the Labour Office to have a bedroom door fitted for privacy. This is a very reasonable request and one of the rooms will have a wooden door fitted in the future.

(3) It is noted that the sleeping platforms and some of the shelves required by regulations have been removed by some of the residents. This is not vandalism but a necessity to allow them to place their own furniture in the house. In view of the increased incidence of workers purchasing their own furniture I wonder if regulations should continue to insist on these being fitted as standard as this creates extra expense and waste if they are not required. I would prefer to see this regulation complied with "if the resident so requires".

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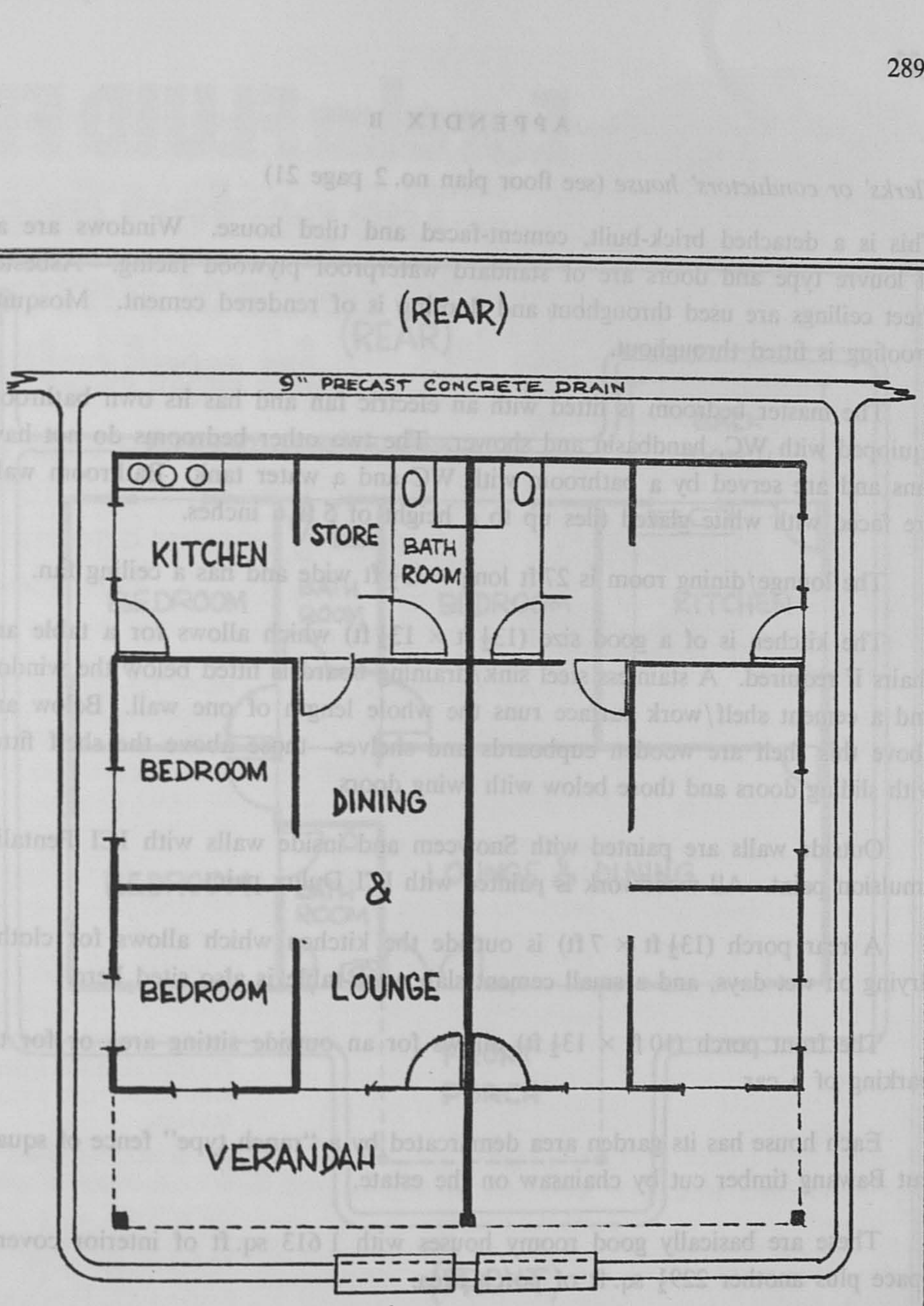


(FRONT)

FLOOR PLAN No 1. SEMI-DETACHED WORKERS HOUSES.
SCALE 8' = 1"

APPENDIX B

Clerks' or conductors' house (see floor plan no. 2 page 21)

This is a detached brick-built, cement-faced and tiled house. Windows are all of louvre type and doors are of standard waterproof plywood facing. Asbestos sheet ceilings are used throughout and flooring is of rendered cement. Mosquito proofing is fitted throughout.

The master bedroom is fitted with an electric fan and has its own bathroom equipped with WC, handbasin and shower. The two other bedrooms do not have fans and are served by a bathroom with WC and a water tank. Bathroom walls are faced with white glazed tiles up to a height of 5 ft 6 inches.

The lounge/dining room is 27 ft long × 13½ ft wide and has a ceiling fan.

The kitchen is of a good size (13½ ft × 13½ ft) which allows for a table and chairs if required. A stainless steel sink/draining board is fitted below the window and a cement shelf/work surface runs the whole length of one wall. Below and above this shelf are wooden cupboards and shelves—those above the shelf fitted with sliding doors and those below with swing doors.

Outside walls are painted with Snowcem and inside walls with ICI Pentalite emulsion paint. All woodwork is painted with ICI Dulux paint.

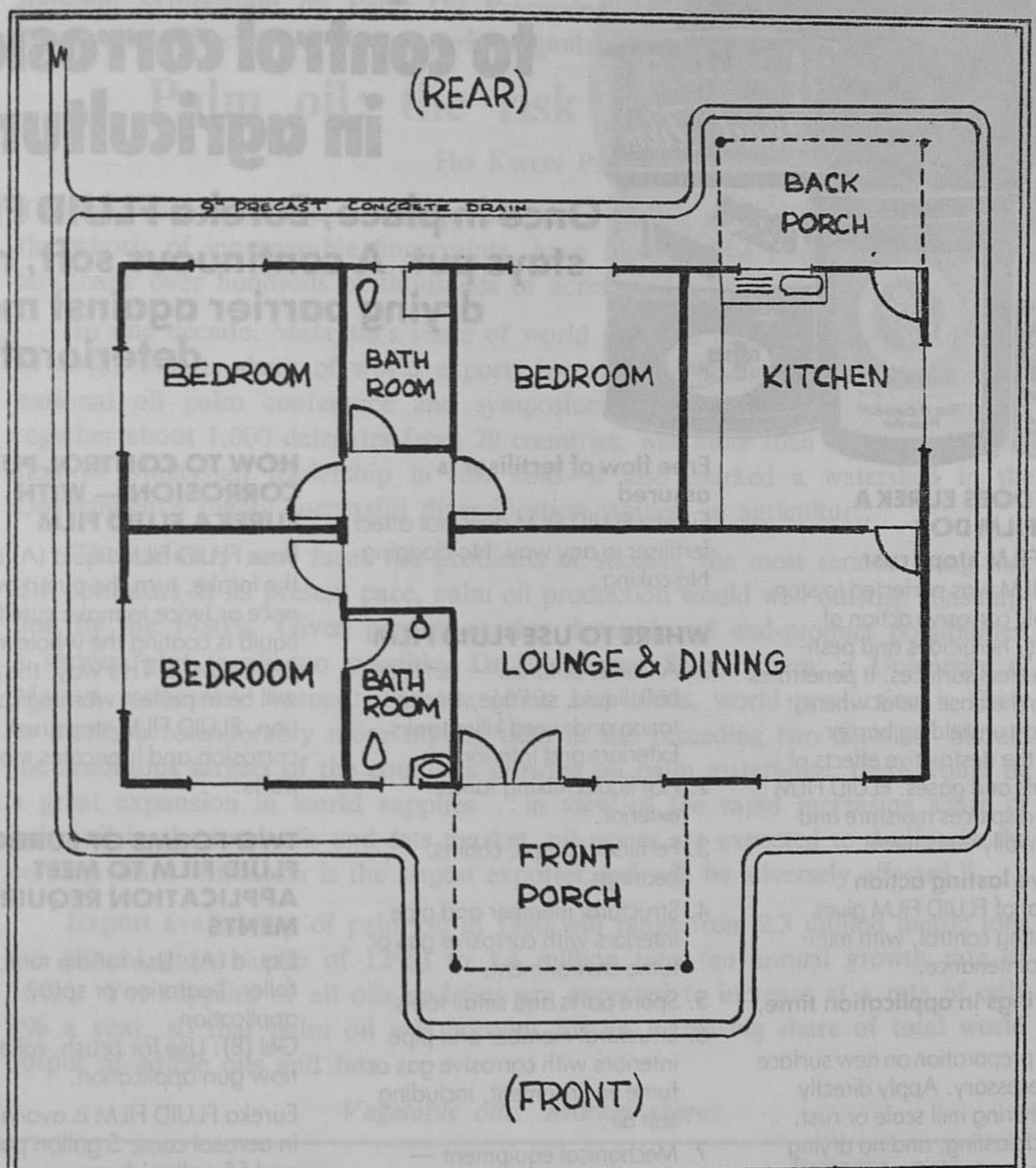
A rear porch (13½ ft × 7 ft) is outside the kitchen which allows for clothes drying on wet days, and a small cement slab work-table is also sited here.

The front porch (10 ft × 13½ ft) allows for an outside sitting area or for the parking of a car.

Each house has its garden area demarcated by a "ranch type" fence of square cut Bawang timber cut by chainsaw on the estate.

These are basically good roomy houses with 1 613 sq. ft of interior covered space plus another 229½ sq. ft of porch area.

Generally they are well accepted by our staff but a general complaint is their dislike of the situation of the toilet near the front door and next to the lounge. Repositioning in future buildings may be considered in view of this being a general complaint, and a more discreet location sought.



FLOOR PLAN No2. DETACHED CLERKS or CONDUCTORS HOUSE

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5. Spare parts and small tools.
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The following articles appeared in the "Far Eastern Economic Review" dated July 9, 1976 and are reproduced here with the kind permission of its Editor. The author, who is a staff writer for the "Review", attended both the 1976 Malaysian International Agricultural Oil Palm Conference and the 1976 Malaysian International Symposium on Palm Oil Processing & Marketing as a guest of the Incorporated Society of Planters, who organized these events.

Palm oil: the risk of oversupply

Ho Kwon Ping

The long concentric lines of stumpy oil palms, curling around Malaysia's hills like the whorls of innumerable fingerprints, have replaced the traditional rubber-tree landscape over hundreds of thousands of acres.

In one decade, Malaysia's share of world palm oil production has quadrupled to 40%, and its share of world exports has risen to nearly 67%. But the international oil palm conference and symposium here last month, which brought together about 1,000 delegates from 29 countries, was more than a formal recognition of Malaysian leadership in this field—it also marked a watershed in the Government's highly successful diversification strategy in agriculture.

The industry now faces the problems of success, the most serious being that if it continues at its present pace, palm oil production would well outstrip consumption by the 1980's. Given present market demand and end-product possibilities, a serious glut is all too possible. Dr Harcharan Singh Khera, a University of Malaya economist, warned: "In the 1970s and 1980s, world production is likely to increase considerably more rapidly than in the preceding two decades. Should the ambitious targets of the countries growing oil palm materialise, there would be a great expansion in world supplies . . . in view of the rapid increasing share of palm oil in the total oils and fats market, oil prices are expected to decline in the coming years. Malaysia is the largest exporter and will be adversely affected."

Export availability of palm oil in 1980 will range from 2.3 million metric tons (an annual growth rate of 12%) to 3.4 million tons (an annual growth rate of 16%). Yet supplies of all oils and fats are expected to increase at a rate of only 3% a year, so that palm oil will account for an increasing share of total world output of edible oils and fats.

Vegetable oils: Market shares

(Thousand metric tons)	*1960–62 Amount*	*% of market*	*1970–72 Amount*	*% of market*	*Projected 1980 Amount*	*% of market*
Soyabean	1,265	24	2,820	35	3,360	30
Palm	350	11	937	12	3,000	27
Sunflowerseed	277	5	645	8	1,033	9
Rapeseed	102	2	575	7	813	7
Others*	2,994	58	3,040	38	3,049	27
Total	5,188	100	8,017	100	11,255	100

* Including groundnut, cottonseed, sesame, olive, coconut, palm kernel.
Sources: Commonwealth Secretariat, United Nations.

In fact, palm oil's share in the total oils and fats supply is expected to double to more than 10%. The United Nations Food and Agriculture Organisation (FAO) predicts that in 1980 there will be an export excess of 1.2 million tons of oils and fats on the world market.

Professor Tan Bock Thiam, of the University of Malaya's Agriculture Faculty, says that this excess in supplies will indicate a falling price trend for fats and oils, although "the recent world food shortage and the boom in fats and oil prices may appear to some optimists to invalidate such a gloomy prediction." Others argue that population growth and increasing applicability of palm oil in various end-products can provide the necessary consumption demand.

With nearly half its oil palm acreage still immature, and with further plantings under the Third Malaysia Plan, by 1980 Malaysia is expected to contribute three-quarters of the world exports of palm oil and one-third of world trade in all edible oils and fats. So much of Malaysia's economic development plans have been pinned on continued expansion of the palm oil sector that any substantial cutback in planting could have a serious effect on overall growth.

Prime Minister Datuk Hussein Onn said at the conference that under the Third Malaysia Plan (1976–80), "agriculture will continue to be the largest source of employment, providing about 126,000 jobs, or 17% of total new employment." The bulk of the new jobs will be in land development schemes, of which oil palm cultivation is primary.

During the Second Malaysia Plan, palm oil production more than doubled. Acreage rose by 115% in West Malaysia and 444% in East Malaysia. The volume of exports rose 78% and prices nearly doubled.

Palm oil: Production and exports

(Thousand metric tons)	*1974*		*1980 (projected)*	
	Production	*Exports*	*Production*	*Exports*
Malaysia	1,047	901	2,100–2,370	2,013–2,320
Indonesia	334	281	450	312
Zaire	180	62	275	131
Nigeria	450	1	650	15
Ivory Coast	135	102	250	197
Dahomey	47	11	100	68
Cameroon	60	18	95	29
Others	421	293	235	48
Total	2,674	1,669	4,155–4,425	2,813–3,120

Source: United Nations.

Lack of diversified markets is a problem, with 70% of Malaysia's palm oil exports going to the European Common Market, Japan and the US. Yet in 1974 the net import balance of these countries in edible oils was only 1 million tons compared with their own fats and oils consumption of 11 million tons.

In recent years, the edible oil output in developed countries has increased faster than consumption, and the trend of reduced import requirements may continue. Professor Tan estimates that "if the developed countries are to maintain the 70% level of palm oil imports in 1980, then they must absorb something in the region of 2 million tons of palm oil, while the rest of the world will absorb close to 1 million tons."

But "this high level of palm oil imports by developed countries may not materialise" because of their growing protectionist trend. The Common Market already has a 14% tariff on refined palm oil and 4% on crude palm oil.

Even in Western Europe, the major edible oil deficit area, domestically-produced oils satisfy about 40% of total requirements. To protect domestic producers against rising palm oil competition, these Governments may resort to price support schemes, quotas and tariffs.

US Agriculture Secretary Earl Butz recently assured Malaysia that he would oppose possible Congressional restrictions on palm oil imports. But it is not only the American soyabean lobby that is worried about the disrupting effect of cheaper palm oil on soyabean oil and meal prices. The US Government itself is not eager to see Malaysian palm oil exports reduce American foreign-exchange earnings through concessional sales of soyabean oil to developing countries.

Borg Bek-Nielsen, chairman of United Plantations and an outspoken representative of Malaysian palm oil producers, believes that there is no immediate danger of US restrictions. But, he says, "in Rome, Monaco, and other international meetings, we have had direct confrontations with US soyabean and cottonseed producers. In Malaysia, I met Butz, and we showed him our palm oil from the breeding level to finished product." Thus he was able to convince the US it was impossible to cut back.

Bek-Nielsen also sees "socio-political" elements in the issue: "Every time we plant nine acres, we employ one worker, and this is important to Malaysia's stability. But while they complain about our increased production, US soyabean producers unloaded an additional 2.5 million tons of oil onto world markets from 1972 to 1975. This was more than our increase in exports."

Another disadvantage is palm oil's lack of by-product value and its perennial nature. Oilseeds grown in developed countries, such as soyabean, cottonseed and sunflowerseed, do not depend primarily on the market demand for oils and fats, because they are widely used for animal feed.

This flexibility allows for stable production in the face of declining price trends. On the other hand, because these are seasonal crops, output can be increased rapidly and with little long-term consequences whenever world demand for oils and fats increases. Tree crops like palm oil, because of the long investment period and fixed nature of the resource itself, cannot quickly respond to changes in demand, and the by-product value of palm oil is almost nil, although extensive research is being conducted in this field.

A commodity agreement to ensure price and supply stability has been rejected by most producers because of its impracticality. A commodity cartel to cover all edible oils and fats would have to include the US and China (the top soyabean oil producers) and the Soviet Union and Canada (the main exporters of sunflower-seed and rapeseed oils).

This would be an almost impossible political task. An agreement covering only palm oil would seem more feasible, since Malaysia, Indonesia, Zaire and the Ivory Coast will account for nearly 95% of palm oil exports by 1980. But the ability of such an agreement to maintain stable prices and control supply will be minimal because of the ease of substitution of other vegetable oils for palm oil.

A buffer stock scheme would also be difficult because of the bulk, and rapid quality deterioration under storage. Instead, Professor Tan advocates "a policy of rapid expansion in palm oil production and at the same time an active market expansion policy . . . which can include concessionary sales."

Tan estimates that if Malaysia diverts 30% of its 1980 exports to concessionary sales at 80% of the world market price, the net effect will be a 6% rise in palm oil export revenue. The sales would be to edible oil deficit countries like India, Pakistan, China, Egypt and Bangladesh, which do not have sufficient foreign-exchange reserves to purchase the oils at commercial terms. Payment would be by barter agreements or long-term, low-interest credits.

Dr Khera suggests "a feasibility study on the economic and technical viability of establishing a price stabilisation board." Along these lines, Hussein Onn reconfirmed that arrangements were being made to establish a palm oil exchange in Kuala Lumpur.

"As the industry expands, some measure of coordination is necessary to maintain the quality, production and viability of the industry. With this end in view, we propose to establish a Palm Oil Registration and Licensing Authority (PORLA). Eventually we would be thinking of establishing a standard Malaysian palm oil scheme, as has been done with regard to rubber," he said.

According to David Allott, chairman of the Malaysian Palm Oil Producers Association, the commodity exchange may take another two years to set up. But he is confident that with the large local market, and proper encouragement of commodity brokers engaging in speculative trading, the palm oil exchange will be successful.

Allott said PORLA "may be necessary because of the inconsistent quality of Malaysian palm oil exports and consistent number of complaints from buyers." Not all palm oil producers, however, appear to welcome the idea of more Government intervention. Bek-Nielsen, probably forlornly, proposed the creation of a privately-administered central research station with inspection duties similar to PORLA'S.

It would not engage in scientific research currently being handled by the official Malaysian Agricultural Research and Development Institute (MARDI), but would concentrate on marketing research and sending "roving ambassadors" to potential buyers.

Because of Malaysia's strong position in the edible oils and fats market, local palm oil producers are cautious rather than worried about their future. Advances in refining and processing will reduce the technical disadvantages palm oil has compared to other vegetable oils and increase its popularity in end-product usage.

As the cheapest vegetable oil with the lowest level of price instability, palm oil has an edge over competitors. On a yield-per-acre basis it is also the most efficient oilseed. Malaysia appears poised to take advantage of these factors, for among palm oil producing countries, Malaysia's estates have the world's highest yield, most efficient rate of extraction, and lowest costs of production.

Malaysia: using up the wastes

HO KWON PING

As the effluent from palm oil processing becomes a growing problem, the Malaysian Agricultural Research and Development Institute (MARDI) has undertaken pioneering research not only into pollution control systems for the country's 150 mills but also into development of useful by-products from the wastes.

The current annual prduction of 1 million metric tons of crude palm oil has a parallel effluent production of 3 million tons, which is discharged into nearby streams. The biological oxygen demand of this effluent is equivalent to that of 70 million people—seven times Malaysia's total population (*Review*, June 11).

Pollution in the 100,000 acre (40,470 hectare) Jengka oil palm development scheme in Pahang has affected wildlife so seriously that the World Bank has been requested to study the environment problems caused by palm oil effluents.

Researchers from the University of Malaya estimate that the waste can be converted into a valuable animal feed which would be a substitute for maize, with a potential market value of M$230 (US$91) a ton—25% lower than the current import price for maize feedmeal.

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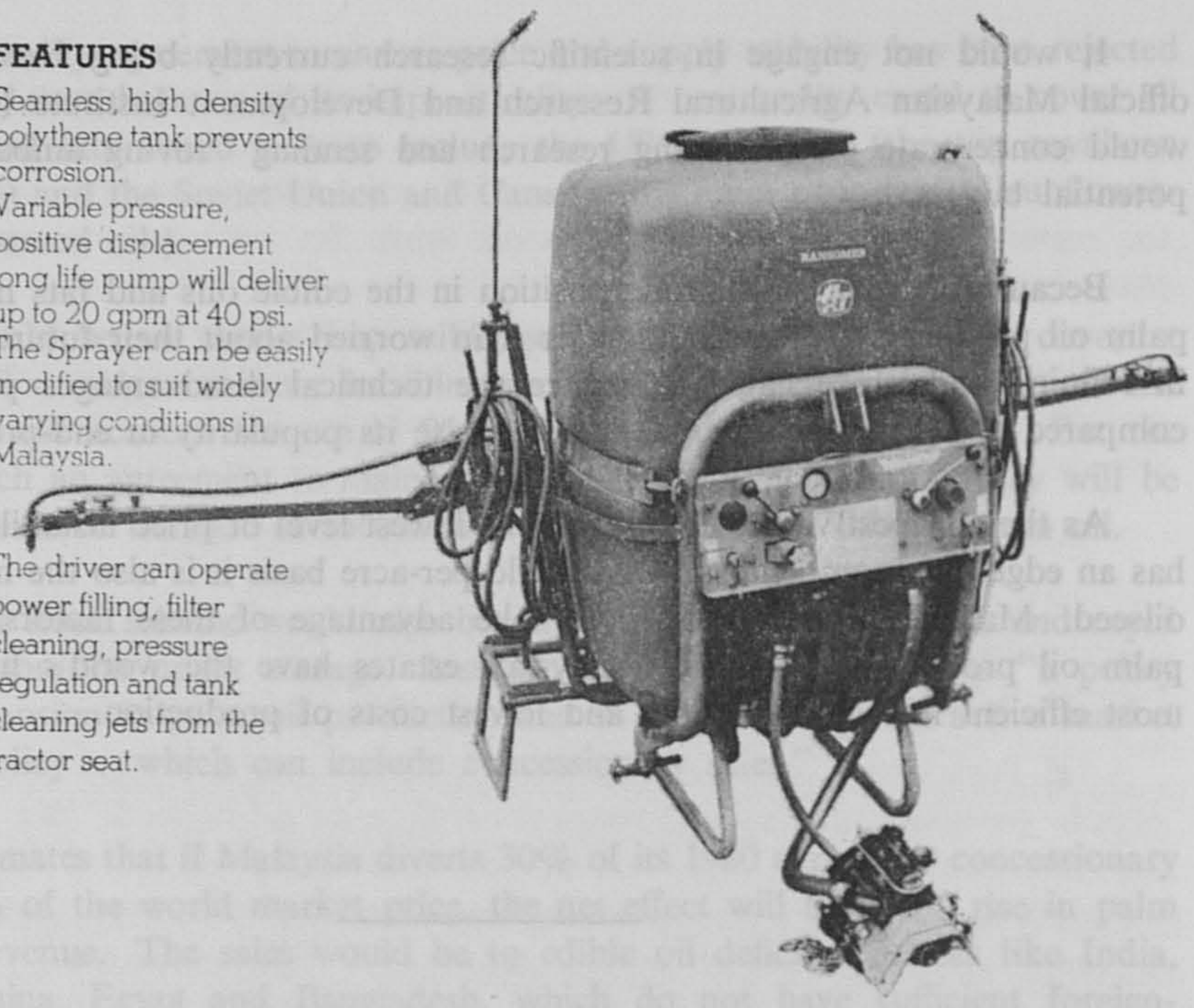

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The researchers add that "improvement in the nutritive value of the palm oil sludge, particularly in the reduction of ash and fibre content and increased protein level . . . could make the products nutritionally equivalent to imported feed ingredients," which could bring an annual foreign-exchange saving of M$40 million and increased revenue to the industry of nearly M$140 million (assuming conversion of all sludge produced in 1978).

Cheap local substitutes for maize are not only desirable but "imperative," if the Government is to achieve its goal of increased meat consumption for all its citizens. Animal feed production from palm oil wastes can replace at least half of the imported maize for poultry diet and up to 100% for pig diet.

The scientists claim "this major breakthrough in oil palm processing technology is a commercially feasible proposition as the research in its development has been done on equipment of an industrial scale." Capital cost is expected to be about M$600,000 for a plant with capacity of 20 tons a day and M$1 million for one with a 60 ton capacity.

MARDI has also been investigating the possibilities of manufacturing paper pulp from bunch waste—the discard from threshers after the oil palm fruit has been stripped. This waste currently totals around 304,000 tons a year and will rise to 788,000 tons in 1980. The institute claims that writing paper and newsprint can be economically produced from the bunch waste, and can "justify the setting up of pulp processing plants."

MARDI has also pioneered other fields of research. One major drawback to market expansion in affluent countries where consumers worry about health is the high solid fat content and low poly-unsaturated fat content (about 10%) of palm oil.

But industry experts feel confident that with rapidly improving refining technologies the poly-unsaturated content of palm oil can eventually be raised to make it more popular among Western households. Even so, the industry will have to aim to sell more to developing countries unworried by poly-saturated oil.

Although the rate of local refining of palm oil has risen dramatically, with 20 plants refining one-third of domestic production by the end of this year, there are problems in local end-product manufacture. The prospect of large-scale export of finished products to developed countries appears dim for technical and economic reasons.

Margarine, for instance, requires refrigerated storage and shipping, and its shelf life will be reduced by storage and transportation time. Sales of other products to developing nations do not face the same difficulties, so it appears that the diversification into their markets will be an increasingly important objective.

The monthly crop

EMPA Cocoa/Coconuts Seminar. The East Malaysia Planters Association (EMPA) is organising a Cocoa/Coconuts Seminar to be held at Tawau, Sabah from Nov. 12th–13th, 1976. Eighteen papers, thirteen on cocoa and five on coconuts, covering major topics of these crops will be presented during the Seminar.

Registration fee of M$100 for the Seminar covers the issue of all preprints, admission to two cocktail parties, mid-morning and afternoon refreshments, two luncheons and transport charges for excursions.

Registration forms are obtainable from the EMPA and intending participants are requested to complete and return the forms not later than August 31st, 1976 to:

The Chairman, EMPA 1976 Seminar Committee, P. O. Box 135, Tawau, Sabah, Malaysia.

Secretaries favour bosses who praise. A recent survey of Secretaries in West Germany points out that secretaries most appreciate the bosses who care to praise their work. Secondly, they felt it is important that a boss should be attentive to his secretary. Jean Werner Sommer, a psychologist, who conducted the survey, claims it shows that praise and recognition by the boss for his secretary can be more important to her than a pay rise. Reinforcing this view, Annelore Schliz says: "The survey also shows how a pat on the back, literally and metaphorically, can work wonders. Bosses fail to realise they can encourage their secretaries to be more productive by noticing their work and praising it when it is good.— *International Management.*

It's superfluous. A private member's Bill, called the Employment (Unfair Dismissal) Bill 1976, which would give the worker the security of tenure of his job and the right not to be abruptly or unfairly dismissed, was rejected by the Dewan Rakyat as "superfluous."

The Bill, tabled by DAP Member of Parliament for Kota Melaka, Lim Kit Siang, was dismissed by the Minister of Labour and Manpower, Datuk Lee San Choon, who said it was "superfluous and should therefore be rejected."

In tabling the Bill, Mr. Lim said: "At present, a worker has no job security as his services can be properly terminated provided the employer complies with the requisite minimum notice stipulated by Section 12 (3) of the Employment Ordinance 1955."

According to Section 12 (3) of the Ordinance, the services of an employee can be terminated with four weeks' notice if he has been so employed for five years or more.

"Thus, an employer can properly terminate the services of an employee who has spent, say 15 to 20 years, in his employment by four weeks' notice of termination, as provided for by Section 12 of the Ordinance," Mr. Lim added.

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"This is clearly unfair where an employee has not been guilty of either incompetence or misconduct," he pointed out.

"Just as the employer has the interest in planning production and in being protected against its interruption, similarly a worker has the equivalent interest in planning his and his family's life and in being protected against interruption in his mode of existence through the loss of his job," Mr. Lim argued.

He stressed the need to provide statutory protection to workers to guarantee their security of job tenure, particularly in sectors where workers were less highly organised.

"We will appreciate the magnitude of this problem when we realise that only some 10 per cent of the work force in Malaysia is organised," he added.

Speaking against the motion, Labour and Manpower Minister Datuk Lee San Choon said the existing labour laws and practice in industry were adequate protection for the worker.

He said: "The protection of a worker against arbitrary and unwarranted termination of his employment and against the economic and social hardship resulting therefrom is a matter that has always received the utmost concern and consideration of the Government over the last 15 years."

Such protection had been provided by various laws, provisions in collective agreements, work rules at places of employment, the Industrial Court and the Code of Conduct for Industrial Harmony, he added.

Datuk Lee said the Employment Ordinance stipulated that an employer might dismiss a worker for misconduct after due inquiry had been carried out.

Redress for wrongful dismissal was also provided for in the ordinance.

Datuk Lee added: "The Industrial Relations Act, 1967, goes further to ensure that the security of employment is not jeopardised through the most commonly known causes of victimisation which are generally associated with the rights of a worker *vis-à-vis* his trade union activities.

"Other provisions of this Act provide procedures for workers who wish to seek redress against termination of employment without just cause or excuse."

The Minister said a union member could take his cause to the Industrial Court, while workers who did not belong to any union could refer their grievances to him.

He added that the Employment Ordinance would be amended to ensure that compensation was paid to all retrenched workers.—*Majikan Lombong.*

Participants to the International Oil Palm Conference and Palm Oil Symposium held in June and others who may be interested are advised that extra copies of preprints are now available from the ISP at a small charge.

Orders should be addressed to the Executive Secretary ISP, P O Box 262, Kuala Lumpur.

"Sandy's Spice"

A. A. SANDOSHAM

At the M.M.A. Public Health Society Seminar on Health Education, I was singled out by several speakers as a poor health educator for setting a bad example to the public at large by smoking a pipe. The general idea was that every doctor should consider himself a health educator, the more senior and prominent he was the greater his responsibility for setting a good example. I was secretly happy to note that the Chairman of the Seminar, the Director General of Medical Services, Malaysia was chain-smoking furiously; although the cigarette is considered even more injurious than the cigar or pipe, no one thought fit to point an accusing finger at him. One even suggested that having written an editorial in the M.M.A. condemning the smoking habit and voting against it at the AGM I should have known better than start smoking a pipe. I remember that many who voted with me were puffing away frantically. Since I had no opportunity on that occasion to defend myself I feel I might take this opportunity to do so.

Probably you would remember the story of a patient who on being told by his doctor that the best thing for him would be is to give up smoking and drinking, asked if by doing so whether he would live a long number of years, the doctor told him "you may not, but it would certainly appear as if you did". "Doc," said the patient, "somehow I don't feel that I deserve the best. What's second best?"

I am 65 and neither am I anxious for many more years of boredom I am well aware that I come from a long-lived family, my parents and grandparents having lasted till their late eighties. A recent medical check up revealed that little was wrong with me except for being slightly overweight. With a resting pulse of 65 and a BP of 120/80, I fear I may end up as decrepit and senile antedilivian unless I take positive steps to curtail my inherent tendency for longevity. I can't think of a more elegant and pleasant way of committing slow suicide. Can I?

It must be remembered that I am setting an example for old folks like myself and not the youngsters who should do as I say but not as I do. In the good old days before the statisticians started playing with computers smoking was not considered so serious a crime. I never indulged in smoking those days and when some well meaning friends trying to be sociable pressed a cigarette on me, I used to tell them "Sorry, I dont smoke, I dont believe in minor vices".

It may surprise you then to learn that I took up smoking partly to please my wife. It is well known that a woman instead of making a good wife is always trying to make him a good husband. If he has faults she wants to correct them. For instance, if he smokes or drinks nothing can give the wife greater pleasure than being able to cut down on the number of cigarettes or stengahs he normally consumes.

So if you wish to make your wife happy you should not hesitate to cultivate some vices thus giving her the opportunity to improve you. I have been married some 40 'awed' years and I have so few vices that my wife was beginning to be unhappy. So I started smoking furiously to make her happy by giving her the opportunity to try and improve me.

If you are clever enough you can beat her at her own game and keep all your vices while at the same time give the wife the satisfaction of improving you. I remember one classic instance of this. I used to be pally with a senior medical student living in the same floor as myself in the old FMS hostel who was an inveterate smoker. In fact, you rarely saw him without the stub of a cigarette hanging on his lips and a tin of Capstan in his hand. When he qualified and took up a job in the Government I used to visit him during the holidays.

He was courting a nurse who used to visit him in his quarters on alternate evenings when she was off duty. I have seen her pull out a cigarette from a new tin (he used to finish one tin in two days) and even light it for him. In due course he married her and he told me that how no sooner had he said "I do" at the Alter she tried to check his smoking habit. She said, "Darling, you have made me the happiest woman in the world etc. You'll make me even happier if you can cut down the number of cigarettes you smoke from 50 to 30 a day." He only smoked 25 a day but he wasn't going to allow his wife to control his actions. So he made a protest and they ultimately compromised to 35 which was actually 10 more than his normal quota. Then came her birthday and she insisted that the only present she wanted was a promise from him that he would cut down his cigarettes by another 15. Again he put up a fight and they compromised to the figure of 25.

At the birthday party itself to which he had invited several of his colleagues I mentioned this state of affairs to them. Only then did they realise why he had been so generous with his cigarettes at the office. He had more than the usual number he used to smoke, and not, as they had thought, because marriage had made him so generous. They then resolved that they wouldn't in future deprive him of any of his cigarettes and insisted on his smoking theirs instead. Thus it was, with a little subterfuge, he made his wife happy, his colleagues happy, and what more he was very happy too.

I must explain that I keep biting my pipe even when I am not smoking. Someone said this gives me an air of distinction. Besides, it is a new toy. It is a genuine block Meerschaum presented by Dr. Mamuyee the Tanzanian delegate at the Commonwealth Medical Council meeting, assuming that a CMA president would be obviously a pipe smoker. I have to live to his expectations. Musn't I? You may be interested to learn that one day at a meeting, an attractive female came and sat next to me saying that she enjoyed the fragrance and aroma of my pipe tobacco. Another girl was not so complimentary because she said that she liked the idea of my having taken up to pipe smoking because it helped to keep my mouth shut.

My wife is getting accustomed to the idea of my smoking because she probably finds that the more I "fume" the less I "fret". So I have started a bigger vice in the form of alcoholic drinks. Of that Anon!

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Social and Personal

Awards

Mr. D. Duncan Kidd being conferred with the MBE by Her Majesty Queen Elizabeth II on her birthday.

EXAMINATION SUCCESSES

Estate Survey (Theory)

10th March 1976

Chik Lwi Siang — (Negri Sembilan)
Gunasegeram, T. — (South Johore)
Ng Toong Yew — (N. W. Malaysia)

Estate Practice (Cocoa)

28th April 1976

Subramaniam, L. — (Lower Perak)

On leave

5008 Baskett, J.P.C., AISP, Oakleigh, Kilmington, Axminster, Devon, U.K.
4685 Bamford, B.P., Crodara, Kells, Co. Meath, England.
5015 Clifton-Brown, N. AISP, 65, Pier Avenue, Southwold, Suffolk, England.
4606 Tan Kee Boo, AISP, 19, Jalan Ayer Madu, Hotspring, Setapak, Kuala Lumpur.
4939 Woodworth, P.E., c/o P.O. Box 96, Caloundra, QLD, 4551, Australia.

Returned from leave

4581 Inkster, T.G.B., SDA, Sembrong Estate, Layang-Layang, Johore.

Births

CUNNINGHAM: To Bill and June, on 20th June, 1976 a son Robert, at Pantai Medical Centre, Kuala Lumpur.

HEW: To Anthony and Agnes, a daughter Joanna, on 7th July, 1976 at Muar Hospital.

RATHAKRISHNAN: To Rathakrishnan and Vimalah, a son Rahul, on 13th June, 1976.

Change of address

6006 Abdul Aziz b Yusoff, c/o 63, Jalan Ibu Kota Kiri, Taman Ibu Kota, Gombak, Selangor.
4676 Abdul Rahman b Abdul Hamid, Johore Estates Agency Sdn. Bhd., P.O. Box (K.B.) 503, Majidee, Johore.
3907 Armstrong, R., Sg. Buloh Estate, Bukit Rotan, Selangor.
5529 Arulampalam, N., Byram Estate, Nibong Tebal, Province Wellesley.
6394 Ahmad Tajuddin b Abdul Hamid, Rancangan Ulu Keratong, Peringkat II, d/a Pejabat RISDA, Segamat, Johore.
6034 Ahmad Tajuddin b Mohd. Mustafa, Johore Labis Estate, Cha'ah, Johore.
4815 Blincoe, A.D., Tangkah Estate, Tangkak, Johore

5653 Cheryan, Thomas, Badenoch Estate, Kuala Ketil, Kedah.

6126 Chua Ngeun Seong, 2, Jalan Union Tiga, off Jalan Sentul, Kuala Lumpur.

3283 Downs, W.H., Apartment 6-C, Casa Guiem, La Massana, Principat D' Andorra, Portugal.

5826 Daud b Mohd Amin, Altad Kemajuan Sdn. Bhd., 332-A, (B), Jalan Pudu, K. Lumpur.

5583 Hubbard, F.T.P., PJK, 9, Jalan Chin Choon Sam, Ipoh, Perak.

5921 Hor Tuck Fook, Jeram Estate, c/o Kapar Pos, Kapar, Selangor.

5281 Ibrahim b Mohd. Amin, Sg. Bahru Estate, Masjid Tanah P.O., Malacca.

5086 Idris b Raja Shariman (Raja), c/o Oil Palm Research Station, P.O. Box 207, Banting, Selangor.

4883 Jayesuria, M.R., Sengkang Estate, Port Dickson, Negri Sembilan.

6227 Kamarudin Abidin, Torkington Estate, Sabak Bernam, Selangor.

3289 Kidd, D. Duncan, MBE, "Glenhead Cottage", Glenfarg, PH2 9PZ, Perthshire, Scotland.

6482 Kang Yu Sean, CEP Rengam, P.O. Box 106, Rengam, Johore.

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5302 Lee Swee Bin, Pertang Estate, Bahau, Negri Sembilan.

6231 Lin Fan Chung, Rancangan Pegagau, P.O. Box 68, Semporna, Sabah.

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4995 Ling Ting Hang, AISP, Sg. Sebaling Estate, Bahau, Negri Sembilan.

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5475 Lim Men Jang, AISP, Ulu Tiram Estate, P.O. Box 710, Johore Bahru.

6374 Maan, K.S., L.K.T.N.S., Pinawantai, Kudat, Sabah.

4719 Mathews, C.T., AISP, Athlone Estate, Kapar Pos, Selangor.

6379 Mohd. Yousof b Othman, Chan Wing Estate, P.O. Box 512, Kluang, Johore.

6205 Meango, A.M., 368, Sri Taman Cicely, Teluk Anson, Perak.

6066 Ng Toong Yew, Gedong Estate, Bagan Serai, Perak.

5275 Ng Kow Chai, AISP, Sg. Wangi Estate, Sitiawan, Dindings, Perak.

5136 Raj, H.G. (Dr.), Jabatan Agronomi Kulturakebunan, Universiti Pertanian, Serdang, Selangor.

5352 Rajasingam, C. Sg. Tekal Estate, Mentakab P.O., Pahang.

6215 Rahman b Lambak, 114-D, FELDA Cahaya Baru, Masai, Johore.

6098 Ramakrishnan, K.N., Yong Peng Estate, Yong Peng, Johore.

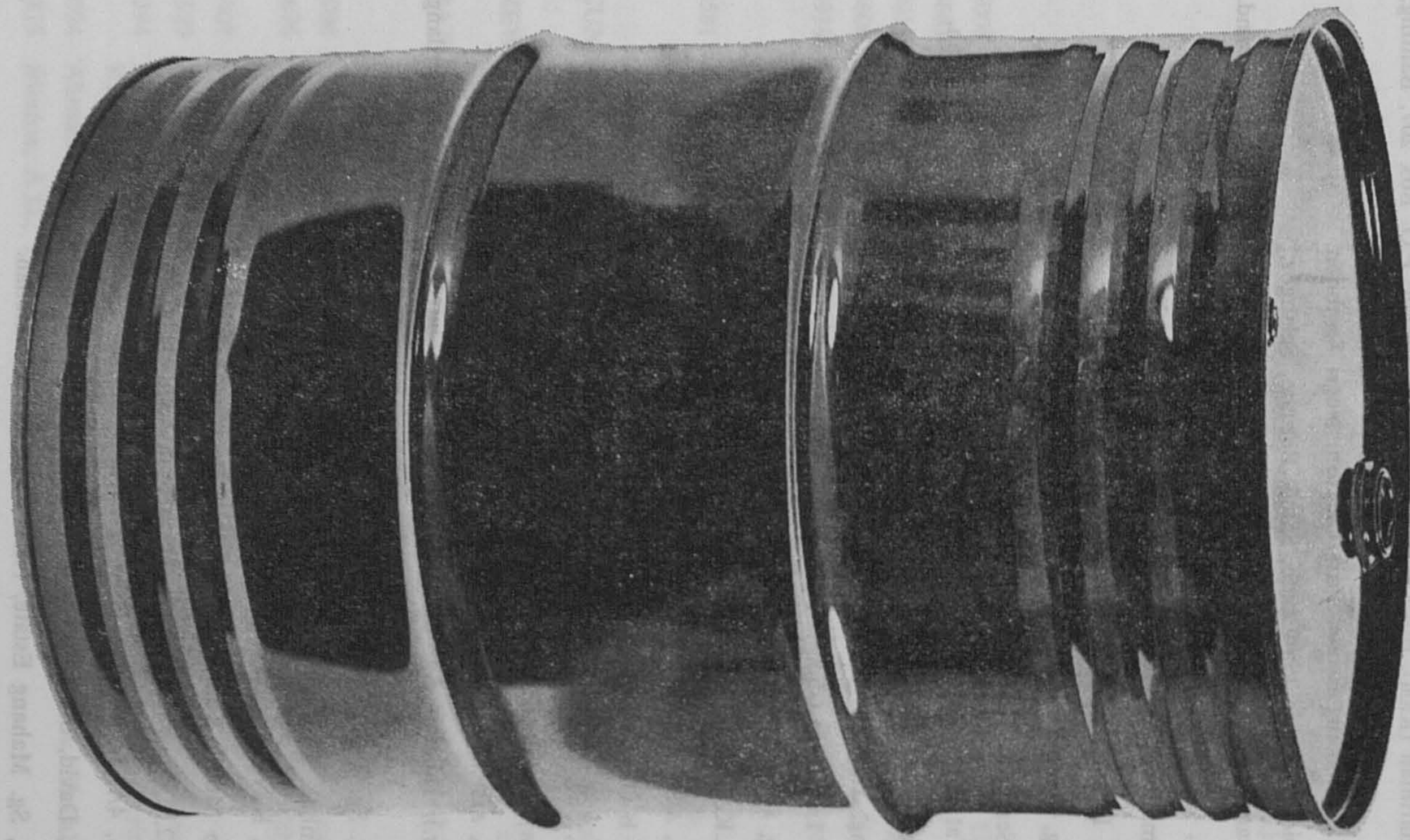
6212 Shahabuddin b Mohd. Kamil, Tuan Estate, Bentong P.O., Pahang.

5586 Stuart, J.N., 82, Lobibonds Avenue, Orpington, Kent, England.

5479 Standley, C.G., 4A, Jalan 6/10, Petaling Jaya, Selangor.

6429 Soh Hoi Wah, David, Stoughton Estate, Batu Kurau, Perak.

4525 Wallace, K.T., Sg. Mahang Estate, Nilai P.O., Negri Sembilan.



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RH 1/76

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6117 Lai Hock Yii, Lian Hup Mfg. Co. Sdn. Bhd., (Oil Palm Estate, Block 12), 56, Jalan Genuang, Segamat, Johore.

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Resignations

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4715	D. M. Benton	— (Overseas)
5718	T. Fleming	— (Selangor)
5869	Mariano C. Pamintuan	— (Overseas)
5498	Dr G. Riehle	— (Overseas)
3237	L. J. Adcock	— (Overseas)
5187	Chieng Ngie Leong	— (Central Perak)
5309	S. Visvanathan	— (Central Perak)
5419	Jee Yan Khoon	— (Central Perak)
4612	N. T. Bewick	— (West Pahang)
3559	L. J. Connolly	— (North West Malaysia)

Life membership

4065	G. S. Sankar	— (Overseas)
3652	G. N. Hoddinott	— (Overseas)
5586	J. N. Stuart	— (Selangor)
3592	I. T. Stevenson	— (Overseas)
3289	D. Duncan Kidd	— (Selangor)

Culinary Treasure

KUEH BINGKA DURIAN

Ingredients:
2 pots rice flour
3 coconuts
4 cups durian (only pulp)
2 katis sugar

Method: From 3 coconuts obtain about 4 to 6 Chinese rice bowls of thick milk. Mix together in a bowl-rice flour, sugar and coconut milk and cook over a slow fire until mixture thickens and is free from lumps. Add durian and cook for a while more before removing from fire.

Pour cooked mixture into prepared baking tin (line the tin with banana leaves) and bake in a slow oven for about an hour. Cool and cut into serving pieces.

RAMBUTAN JAM

Ingredients:
100 seeds sour rambutans (peeled)
1 kati sugar
1 inch cinnamon bark
5 cloves
½ inch ginger (mashed)
colouring

Method: Put peeled rambutans in cooking receptacle. Stir this over a slow fire until half cooked, then add a quarter kati sugar.

Keep stirring until it becomes a liquid or watery. Remove pan from fire and separate the rambutan flesh from the seeds.

After this, put rambutans into pan and stir over a slow fire. Add cinnamon, ginger, cloves, remaining sugar and colouring.

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